MERCEDES-BENZ

SERVICE INFORMATION

SERVICE DEP.
MERCEDES-BENZ OF NORTH AMERICA

Band 2
1970 bis ...

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 95	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Maintenance Service Beyond 100,000 Miles

The advantages of having their cars serviced as recommended in our Service Inspection Booklet, is being recognized by more and more of our customers.

The preventative maintenance services should be performed on vehicles with a mileage of more than 100,000 miles as covered by the furnished Service Inspection Booklet.

After the mentioned odometer readings are reached, a new Service Inspection Booklet should be used accordingly, as follows:

A. For cars before 1965:	KD 00130 6013 with supplement KD 130 6015
B. For cars between 1965 and 1968:	KD 00130 6013
C. For 1968 cars: Models 220/8 to 300 SEL/8:	KD 00130 6017
D. For 1968 cars: Model 300 SEL/8 6.3:	KD 00130 6017 and supplement No. 1, KD 00130 6939
E. For cars since 1968:	KD 00130 6017 or KD 00130 6017-1
F. For 1970 model cars:	KD 00130 6019

A deviation between the A and B Service Charts is required, since they are performed on new cars only.

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The following services for old vehicles in connection with a new Service Inspection Booklet are recommended:

- At 96,000 miles: E Chart Service (as per old Service Inspection Booklet)

- At 99,000 miles: C Chart Service (as per old Service Inspection Booklet)

- At 3,000 miles: (103,000 miles) D Chart Service, additional work item Z (instead of Chart B in new Service Inspection Booklet)

- At 6,000 miles: (106,000 miles) D Chart Service (as per new Service Inspection Booklet)

and continuously in compliance with new Service Inspection Booklet.

The above arrangement is necessary for:

Oil change and a filter service between 96,000 and 6000 (106,000) miles.

A reduction of the time interval until performance of service work according to additional item Z.

Please advise your customers accordingly.

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Service Department

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 101	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Alteration of the Crankcase Ventilation System and Installation of Extended Air Correction Jets in the Zenith Carburetors to Improve Cold Start and Warm-Up Operation

I. Alteration of Crankcase Ventilation System

A. Models 230/8, 250/8 and 280 S/8

As of June 1968, the engines of the above mentioned models have been equipped (during series production) with an air cleaner housing, on which the sheet metal cup (1, illustration 1) has been lengthened.

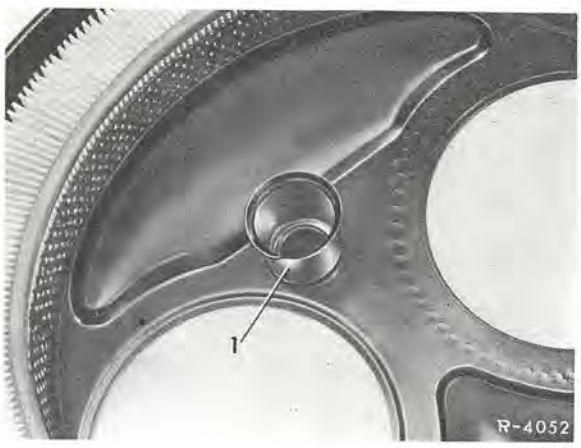

Illustration 1

1. Lengthened sheet metal cup at the bottom section of the air cleaner housing.

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As a substitute for the lengthened sheet metal cup, a molded rubber piece (2, illustration 2) may be subsequently installed on the air cleaner cover.

Installation Procedure

1. Remove the air cleaner cover.

2. Screw the connector (part no. 615 997 00 72) (internal diameter of which has been enlarged to .51" Ø or 13 mm) into the cylinder head cover using a new gasket.

3. Using a drill which has been extended to approximately 9.8" (250 mm), drill out the by-pass nozzle in the intake manifold from .04" (1.5 mm) to .08" (2 mm) diameter.

   NOTE: Be sure to coat the drill well with high temperature bearing grease, so that metal chips will adhere to the drill and will not drop into the intake manifold.

4. Slip the molded rubber piece (2) onto the vent pipe, which projects into the air cleaner cover, in such a way that the gap in the rubber piece rests on the recess in the cover (see arrow - illustration 2). Use soapy water as a lubricant.

Illustration 2

2. Molded rubber piece installed in the air cleaner cover.

5. Reinstall the air cleaner cover.

The time allowance for labor on this job is 0.5 hours.

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B. Models 230 (with Zenith Carburetors), 230 S and 250 S (1967 and 1968/I models)

On all engines of the above mentioned models with by-pass ventilation, an alteration can be made whereby the venting gases are no longer passed into the intake scoop, but instead, into the damper chamber of the air cleaner, before the filter insert (illustration 3).

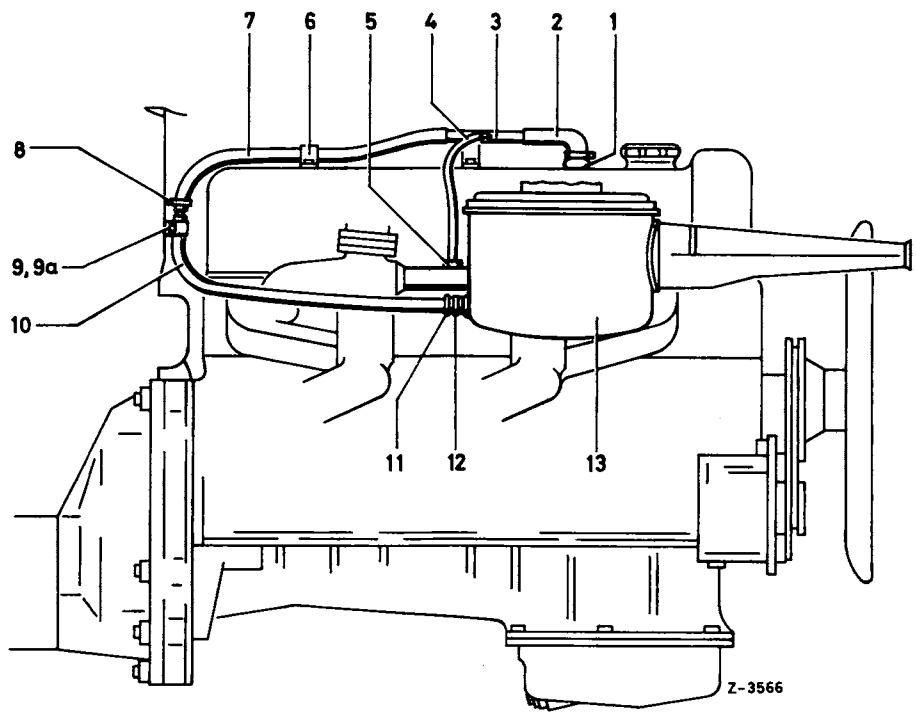

Illustration 3

1. Connector
2. Molded rubber hose
3. Bent tube with branch leading to by-pass nozzle
4. Hose between by-pass nozzle and bent tube
5. By-pass nozzle
6. Connecting clamp
7. Hose
8. Hose clamp
9. Pipe clamp
9a. Hex head screw
10. Ventilating tube
11. Rubber sleeve
12. Hose clamp
13. Air cleaner

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Procedure

1. Remove the air cleaner. Drill a hole of .83" Ø (21 mm) as shown in illustration 4, item "X", break off burrs and blow out chips. Insert the rubber sleeve (11, illustration 3) into the drilled hole in such a way that the long part faces outward and the flat section on the groove faces upward.

2. Using a drill which has been extended to approximately 9.8" (250 mm), enlarge the by-pass nozzle (5, illustration 3) from .04" (1.5 mm) to .08" (2 mm) diameter.

   NOTE: Be sure to coat the drill well with high temperature bearing grease, so that metal chips will adhere to the drill and will not drop into the suction tube.

3. Screw the connector (part no. 615 997 00 72) (internal diameter of which has been enlarged to .51" diameter or 13 mm) into the cylinder head cover using a new gasket. The rubber hose (2, illustration 3) can still be used.

4. Mount the bent tube (3, illustration 3) with branch leading to the by-pass nozzle on the middle cylinder head cover screw.

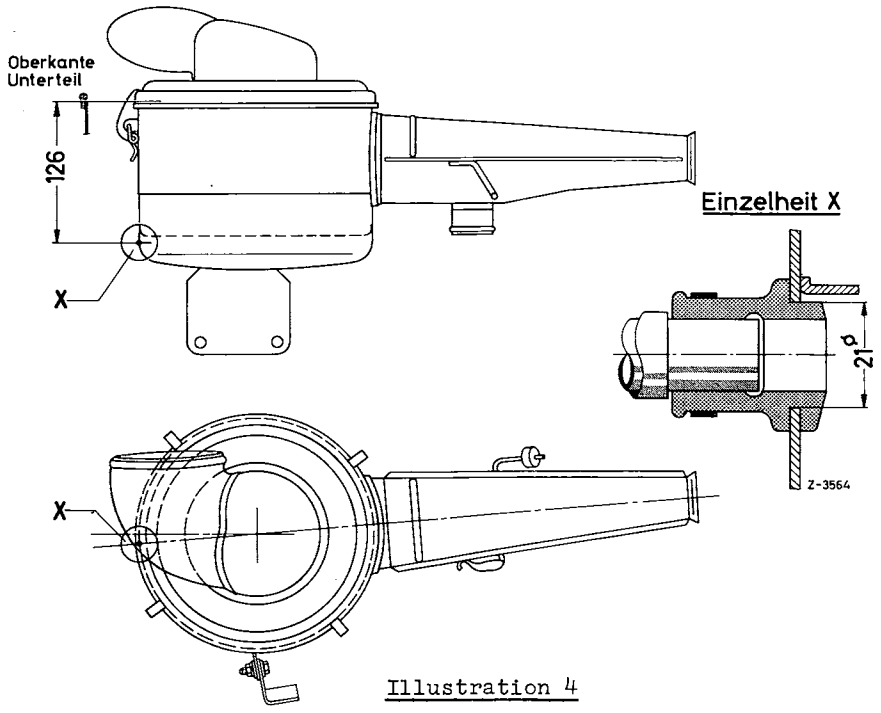

Illustration 4

Oberkante Unterteil = top edge of bottom part
Einzelheit = detail
126 mm = 5.16 inches
21 mm Ø = .83" Ø

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5. Using a hose (4), make a connection from the by-pass nozzle (5) to the bent tube (3, illustration 3).

6. As shown in illustration 5, drill a .14" (3.6 mm) diameter hole in the dashboard for the hex head screw (9a, illustration 3).

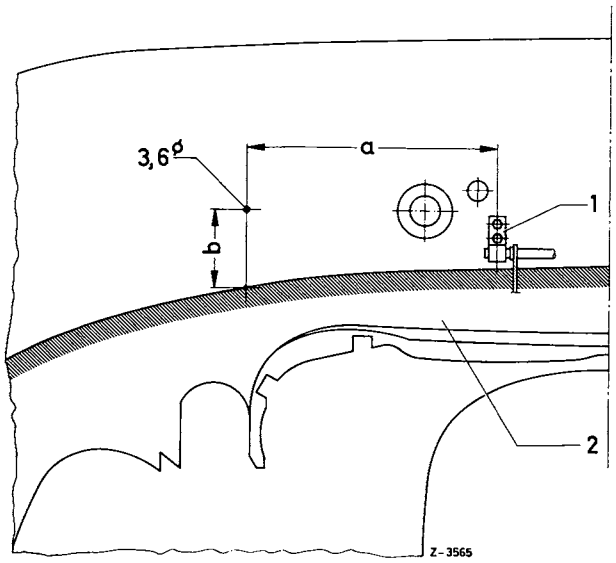

Illustration 5

1. Bearing bracket for regulating shaft on the dashboard
2. Transverse support

3.6 mm ø = .14" ø

MODEL	DIMENSION a	b
230	9.84" (250 mm)	3.15" (80 mm)
230 S	10.63" (270 mm)	3.15" (80 mm)
250 S	10.23" (260 mm)	3.35" (85 mm)

7. Slip the hose clamp (12) over the rubber sleeve (11), insert ventilating tube (10) in the rubber sleeve (11), and install the air cleaner (illustration 6).

   NOTE: The ventilating tube (10, illustration 3), as delivered, fits the model 250 S and need not be altered. But, for model 230 S, the tube and the rubber cover must be shortened by 1.10" (28 mm) and for model 230 by 3." (77 mm).

8. Using the pipe clamp (9) and the hex head screw (9a), attach the ventilating tube (10) to the dashboard and tighten the hose clamp (12) (illustration 6).

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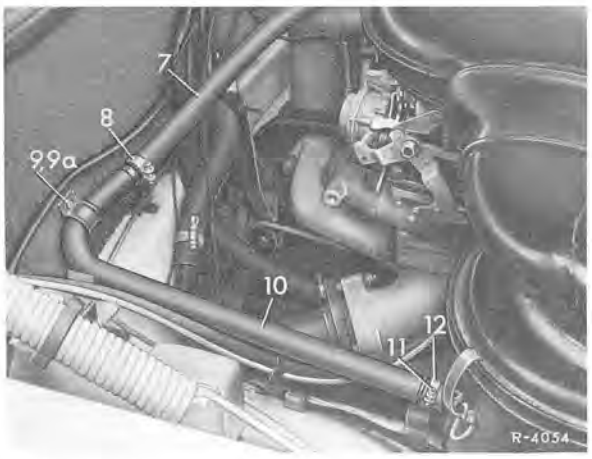

Illustration 6

7. Hose
8. Hose clamp
9. Pipe clamp
9a. Hex head screw
10. Ventilating tube
11. Rubber sleeve
12. Hose clamp

9. Using the hose (7), make a connection from the bent tube (3) to the ventilating tube (10). The hose is held at the rear cylinder head cover screw with the connecting clamp (6) and is attached to the ventilating tube (10) by the hose clamp (8) (illustration 7).

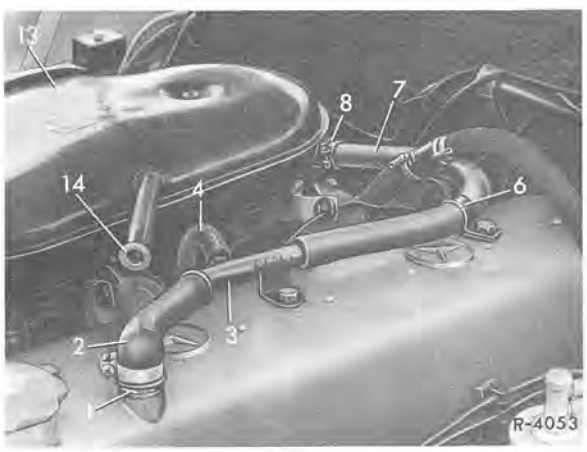

Illustration 7

1. Connector
2. Molded rubber hose
3. Bent tube
4. Hose between by-pass nozzle and bent tube
6. Connecting clamp
7. Hose
8. Hose clamp
13. Air intake scoop
14. Cap

10. Close the old vent connections on the air intake scoop, air-tight, with the plastic caps (14 and 15) (in illustration 7, only cap 14 is shown).

When closing the old vent connection, be sure that the venting line running from the rubber hose (2) at the cylinder head cover to the muffler is laid with a steady drop (illustration 7).

The time allowance for labor on this job is 1.5 hours for model 250 S and 1.6 hours for models 230 and 230 S.

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Parts Required: (models 230/8, 250/8 and 280 S/8)

Item No.	Quantity	Description	Part No.
2	1	Molded rubber piece	114 094 00 91
3	1	Connector	615 997 00 72
4	1	Gasket	007603 018100

The above parts are available from your local parts depot, in kit form, under part number 700 090 00 99.

Parts Required: (models 230 (with Zenith Carburetors), 230 S and 250 S (1967 and 1968/I models)

Item No.	Quantity	Description	Part No.
1	1	Connector	615 997 00 72
2	1	Gasket	007603 018100
3	1	Bent tube	108 090 00 31
4	1	Hose 180 mm long (7.09")	108 997 04 82
7	1	Hose 490 mm long (19.29")	108 997 07 82
6	1	Connecting clamp	303 995 01 01
8	1	Hose clamp	900269 022100
10	1	Ventilating tube	108 090 01 32
9	1	Pipe clamp	136 995 01 35
9a	1	Hex head screw	007976 004214
11	1	Rubber sleeve	108 997 11 81
12	1	Hose clamp	900269 022100
14	1	Cap for intake scoop, top	
15	1	Cap for intake scoop, bottom	

The above parts are available from your local parts depot, in kit form, under part no. 700 090 01 99.

II. Installation of Extended Air Correction Jets in Zenith Carburetors

Remove the air correction jets and replace them with the new extended air correction jets as follows:

Models 230, 230 S, 230/8		Part No.
Stage I	Size: 3.94" (100 mm)	000 071 61 34
Stage II	Size: 5.12" (130 mm)	000 071 64 34

Models 250 S, 250/8		
Stage I	Size: 3.94" (100 mm)	000 071 61 34
Stage II	Size: 4.73" (120 mm)	000 071 63 34

Model 280 S/8		
Stage I	Size: 3.54" (90 mm)	000 071 60 34
Stage II	Size: 4.33" (110 mm)	000 071 62 34

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The time allowance for the installation of extended air correction jets is 0.3 hours. However, if this job is performed at the same time as the crankcase ventilation alteration, the time allowance for both jobs is covered by the time allowance for the crankcase ventilation alteration.

A warranty claim for parts plus labor (as indicated) may be submitted for the preceding jobs.

The required parts are available from your Mercedes-Benz parts depot.

MERCEDES-BENZ OF NORTH AMERICA, INC.
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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 124	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	0	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: D-B Standard Text Book and D-B Operation Time Guide

Enclosed is your copy of the Standard Text Book including Supplement #1 and the new Operation Time Guide (print number KD 00 140 0201 04).

Effective May 15, 1969, the operation time listed in the Operation Time Guide for all repair and maintenance work is applicable and should be used in determining labor operation time for warranty claims and for customer and internal repair costs.

The Operation Time Guide is used in conjunction with the Standard Text. The advantages of this system are outlined in the Preface, page I, of the Standard Text. The procedures with examples and definitions are on pages III, IV, and V of the Standard Text, followed by the Index. Become familiar with the content of these pages and you will understand the Standard Text.

The Operation Time Guide will be easy to use when you have become familiar with the front section which includes the purpose, layout, footnotes and index.

You are requested to return your old Flat Rate Manual immediately to our Literature Warehouse:

MERCEDES-BENZ OF NORTH AMERICA, INC.
196 Coolidge Avenue
Englewood, New Jersey 07631
Attn: Mr. J. Schwarz

MERCEDES-BENZ OF NORTH AMERICA, INC.
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Enclosure

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 134	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	0	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Relocation of the U.S. Certification-Identification Tag

This is to inform you that on all models the certification tag has been relocated from the left windshield pillar post to the center pillar post (lock position). This change became effective as of the following chassis end numbers:

MODEL	CHASSIS TYPE	CHASSIS END NO.
220 D/8	115 110	076 285
220/8	115 010	034 047
230/8	114 015	033 510
250/8	114 010	030 983
280 S/8	108 016	031 250
280 SE/8	108 018	031 833
280 SE/8 Cp./Conv.	111 024/025	003 144
280 SEL/8	108 019	032 041
280 SL/8	113 044	010 704
300 SEL/8	109 016	002 047
300 SEL/8 6.3	109 018	002 390
600	100 012/014/016	001 392

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 161	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

This Service Information supersedes Service Information MB-T 106, Group 0, of February 1969

Subject: Summary of 1970 Registration and Licensing Data

The attached summary contains registration and licensing data applicable to Mercedes-Benz cars of the 1970 registration year.

For registration purposes only, effective October 1, 1969, all Mercedes-Benz vehicles with serial numbers not lower than those listed in the attached summary are listed as 1970 vehicles. As you know, there are no annual model changes or annual model designations on Mercedes-Benz cars. The aforementioned registration year designation has no significance of any kind with regard to mechanical specifications, trim or equipment of Mercedes-Benz cars.

The right is reserved to change specifications, designs, and models at any time without notice and without incurring obligation.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Attachment

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1970 REGISTRATION AND LICENSING DATA

TYPE	BODY STYLE	NO. OF PASS.	SHIPPING WEIGHT (1)	CURB WEIGHT (2)	WHEELBASE
SEDAN MODELS					
220/8	4 Dr. Sedan	5	2948	3086	108.3
220D/8	4 Dr. Sedan	5	3036	3174	108.3
250/8	4 Dr. Sedan	5	3080	3218	108.3
250C/8	2 Dr. Coupe	5	3100	3238	108.3
280S/8	4 Dr. Sedan	5	3278	3452	108.3
280SE/8	4 Dr. Sedan	5	3344	3517	108.3
280SEL/8	4 Dr. Sedan	5	3580	3754	112.2
300SEL/8	4 Dr. Sedan	5	3630	3804	112.2
300SEL/8 6.3	4 Dr. Sedan	5	3820	4000	112.2
600	4 Dr. Sedan	5	5109	5349	126.0
600	4 Dr. Sedan	7	5527	5767	153.5
SPORT MODELS					
280SL/8	2 Dr. Roadster	2	3102	3276	94.5
280SL/8	2 Dr. Coupe	2	3102	3276	94.5
280SL/8	2 Dr. Coupe Roadster Comb.	2	3102	3276	94.5
280SE/8	2 Dr. Coupe	4	3454	3628	108.3
280SE/8	2 Dr. Conv.	4	3630	3804	108.3

(1) Does not include gasoline and water
(2) Ready-for-the-road weight, with standard equipment

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SERIAL NUMBERS FOR 1970 REGISTRATION:

220/8	115.010-(10)-037069	300SEL/8 6.3	109.018-12-002839
220D/8	115.110-(10)-084964	280SL/8	113.044-(10)-011948
250/8	114.010-(10)-033533	280SE-Cp/8	111.024-(10)-003549
250C/8	114.023-(10)-000018	280SE-Cv/8	111.025-(10)-003549
280S/8	108.016-(10)-035214	600 5-pass.	100.012-12-001435
280SE/8	108.018-(10)-036081	7-pass.	100.014-12-001435
280SEL/8	108.019-(10)-036081		
300SEL/8	109.016-(10)-002221		

*** (10) - This number designation will be (12) if equipped with automatic transmission

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OPTIONAL EQUIPMENT WEIGHTS:

Automatic Transmission	55 lbs.
Sun Roof	22 lbs.
Power Steering	20 lbs.
Air Conditioning	80 lbs.
Radio W/Antenna	10 lbs.

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1970 REGISTRATION AND LICENSING DATA

TIRE SIZE	TYPE OF ENGINE	ENGINE DISPL.	BORE	STROKE	NO. OF CYL.	(NACC) TAXABLE
6.95 S x 14	OHC. Gasoline	134	3.43	3.64	4	18.8
6.95 x 14	OHC. Diesel	134	3.43	3.64	4	18.8
6.95 H x 14	OHC. Gasoline	152.4	3.23	3.10	6	25.08
6.95 H x 14	OHC. Gasoline	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
195 VR 14	OHC. Gasoline - Fuel Inject.	386.2	4.05	3.74	8	52.7
9.00 H x 15	OHC. Gasoline - Fuel Inject.	386.2	4.05	3.74	8	52.7
9.00 H x 15	OHC. Gasoline - Fuel Inject.	386.2	4.05	3.74	8	52.7
185 HR x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
185 HR x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
185 HR x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97
7.35 H x 14	OHC. Gasoline - Fuel Inject.	169.5	3.41	3.10	6	27.97

SERIAL AND ENGINE NUMBER LOCATIONS:

	Serial Number	Engine Number
All Models	(1) Right front frame rail (2) In front of left side center pillar post ("B" pillar) (3) Visible through left side of windshield	Left front or rear cylinder block

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Additional 1970 Vehicles, not shown on Data Sheet

The following vehicles are also 1970 models, although they are below the serial numbers shown on the data sheet.

Model 250/8	End Numbers		
114.010	033415	033468	033503
	033421	033470	033504
	033424	033471	033506
	033427	033474	033507
	033429	033479	033510
	033432	033484	033512
	033435	033487	033514
	033437	033488	033518
	033442	033490	033520
	033444	033491	
	033454	033493	
	033455	033497	
	033458	033499	
	033465	033501	

Model 220/8			
115.010	036778		
	036838		
	036909		
	036931		

Model 220 D/8			
115.110	084574	084826	084908
	084624	084830	084912
	084637	084845	084915
	084642	084868	084919
	084646	084877	084928
	084652	084880	084935
	084655	084886	084952
	084665	084893	084957
	084670	084896	
	084674	084901	

Model 280 S/8			
108.016	034467	035089	035165
	034500	035127	035200
	034853	035142	
	034928	035155	
	034942	035160	
	035068	035164	

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Model 280 SE/8 - 280 SEL/8

108.018/019	035298	036017	036040
	035333	036025	036044
	035839	036026	036045
	035870	036033	036050
	035924	036035	
	036016	036038	

Model 300 SEL/8 6.3

109.018	002816	002835
	002818	002837
	002822	

Model 280 SE/Cp/8 - 280 SE/Cv/8

111.024/025	003479	003519
	003498	003527
	003516	003540
	003517	

Model 280 SL/8

113.044	011784	011912	011921
	011830	011916	011930
	011899	011918	011933
	011903	011920	011941
			011945
			011947.

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 147	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	0	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Trouble-Shooting Guide for Automobile Radios

Attached is a car radio trouble-shooting guide to help you diagnose radio difficulties quickly and efficiently.

In cases of radio failure, it is generally found that the radio itself is not always the cause of trouble, but rather, a component part such as the antenna, loudspeaker, power pack, or one of the connecting cables. In many cases, a simple adjustment or repair is all that is required to eliminate the source of radio trouble.

The attached guide may be used to perform the applicable checks/tests before removing a radio to determine the source of trouble.

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Attachment

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CAR RADIO SYSTEM TROUBLE-SHOOTING GUIDE

Condition	Possible Cause	Check/Test
1. Radio dead on all wave bands; dial light off.	a. Radio not switched on.	a. Check.
	b. Fuse defective or blown.	b. Check radio fuse box.
	c. Battery cable connection loose.	c. Check battery and radio power cable connections.
2. Radio dead on all wave bands; dial light on; no noise from loudspeaker, even at full volume. On automatic units, stations selected with automatic selector produce no sound.	a. Loudspeaker defective.	a. Substitute loudspeaker for test purposes.
	b. Loudspeaker cable open.	b. same as above
	c. Cable between radio and loudspeaker loose or disconnected.	c. Check connections.
3. Weak reception.	a. Antenna unpluged.	a. Substitute antenna.
	b. Antenna cable open; antenna shorted to ground.	b. same as above
	c. Battery voltage too low.	c. Check voltage between radio ground and power lead.
	d. Radio set for incorrect voltage.	d. Check operating voltage of radio.
4. Radio makes noise on full volume, but no station reception.	a. Antenna cable connector not inserted tightly.	a. Check connections for tightness.
	b. Antenna cable broken.	b. Substitute antenna for test purposes.
	c. Telescopic antenna not pulled out or, for automatic antennas, breakdown of telescope unit.	c. Check.
	d. Wave band switch incorrectly switched.	d. Switch wave band switch once more.

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Condition	Possible Cause	Check/Test
5. Radio seems to play normally on FM (VHF) band, but no station reception on AM (MW).	a. Defective antenna cable.	a. Substitute antenna.
	b. Antenna has low resistance to ground.	b. same as above
	c. Lower mast section of antenna not fully extended.	c. Check.
	d. Antenna trimmer incorrectly adjusted.	d. Tune in a weak AM station (around 1500 KHz) and adjust antenna trimmer for maximum output.
6. Station reception breaks down while driving.	a. Breakdown of voltage to radio.	a. Examine battery connections, as well as all electrical connections from fuse box to radio, for proper contact.
	b. Fuse rusty/corroded.	b. Clean or replace as required.
	c. Defects in antenna.	c. Check to see if antenna mast is pulled out. If wiggling of extended antenna causes sound, use substitute antenna for test purposes.
	d. Loose cable connection at radio.	d. Examine antenna power speaker cables for proper connection.
	e. Partially severed loudspeaker cable.	e. Check with substitute speaker.
	f. Fringe reception area.	f. Check reception on another frequency (local station).
	g. Incorrect antenna length.	g. For optimal FM (VHF) reception, the antenna mast should be pulled out approx. 40" and the lower part should be completely extended.

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Condition	Possible Cause	Check/Test
7. Volume/tone control cannot be switched (Becker Europa TR and Monte Carlo TR sets).	a. Knob of volume/tone control installed too far in on axle, rendering the push-pull switch inoperable.	a. Correct position of knob on axle.
8. Automatic station selector finds some or no stations. Manual tuning produces normal radio reception. (Valid only for radios with full automatic station selection.)	a. Antenna mast not fully extended.	a. Check antenna position.
	b. Lower mast section of antenna not fully extended.	b. Check position of lower mast section.
9. Automatic station selector runs through all wave ranges.	a. Automatic selector contact or selector switch incorrectly adjusted.	a. Check.
10. Distorted audio output.	a. Defective speaker.	a. Substitute speaker.
	b. Poor/incorrect speaker installation.	b. Check speaker installation (see respective installation instructions).
	c. Low battery voltage.	c. Check input voltage to radio.
	d. Radio set for incorrect voltage.	d. Check voltage setting of radio.
11. Noisy reception.		
A. With engine running and car standing still.	a. Poor antenna ground.	a. Check installation; wiggle antenna and cable.
	b. Poor ground.	b. Check installation/ground connection.
	c. Poor engine suppression.	c. Check reception with engine off.
	d. Poor suppression of electrical equipment.	d. Check reception with electrical equipment switched off.

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13. (cont.)

B. AM (MW) reception noisy when driving.	a. Fringe AM reception area.	a. Check reception in other areas (local AM station).
	b. Antenna not fully extended.	b. Check.
	c. Tire static (occurs in dry weather and on certain road surfaces only).	c. Stop car to check.
C. FM (VHF) reception noisy when driving.	a. Fringe FM reception area.	a. Check reception in other areas (local FM station).
	b. Incorrect antenna length.	b. Check length. Should be approximately 40".
	c. Incorrect antenna installation.	c. Check. Antenna mast should be parallel with windshield post line.
	d. Strong local signal area.	d. Check reception in other areas or try reception with lowered antenna.

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 139	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 0	Passenger Cars

This Service Information supersedes: Service Information No. 55, Group 00, dated September 1963.

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Service Booklet for Passenger Cars up to 1965

The previously-used customer service booklets for models up to 1965 are no longer available and have been replaced by the following service booklet issues, which are valid at the present time for current production models:

Romanic issue: KD 00 130 6013 1
German, English, French, Spanish
Portuguese, Italian

Nordic issue: KD 00 131 6014 1
German, English, French, Dutch,
Danish, Swedish

For models up to 1965, the following supplements must be used in conjunction with the above booklets:

Supplementary booklet
Romanic issue: KD 00 130 6015 0

Supplementary booklet
Nordic issue: KD 00 131 6016 0

This regulation alters the service inspection intervals for passenger cars up to 1965 from every 2,000 mi. (3,000 km) to every 3,000 mi. (5,000 km). Accordingly, the C Schedule intervals, which were formerly every 2,000 to 4,000 mi. (3,000 to 6,000 km), are now every 6,000 mi. (10,000 km); the D and E Schedule intervals are the same as before, every 12,000 mi. (18,000 or 20,000 km).

This change does not affect the individual jobs to be carried out during the various service schedules.

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On the diesel-engine cars without combination oil filters, i.e., types 180 D to 180 Dc and 190 D to 190 Db, an additional oil change must be made every 1,500 mi. (2,500 km); therefore, the previously-used service booklets and the following work sheets may be used as before for those models.

Schedule	MBNA Form Number
C	Form MBNA 441
D	Form MBNA 442
E	Form MBNA 443
Spring/Fall	Form MBNA 444

Do not use older issues of the above schedules.

The flat rates for jobs specified in Service Information No. 55, Group 00, dated September 1963, should be taken from the enclosure to the Flat Rate Manual (No. KD 00 170 0202 766 20).

The new supplementary booklets may be ordered through the Home Office Technical Service Department, Fort Lee, N.J.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 90	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, September 1968

This Service Information supersedes Service Information No. 36, Group 0, dated May 1968, which was published in issue MBNA 5/68.

TO OUR MERCEDES-BENZ DEALERS

Subject: Time Allowances for Service Jobs According to the Service Booklet and Service and Maintenance Sheets "A" through "E" Including Exhaust Emission Control Systems

The chart on the following page contains the time allowances for service jobs according to the Service Booklet and the Service and Maintenance Work Sheets (A through E) for cars as of January 1968 with standard and automatic transmissions, see Table I respectively Table II.

The chart includes the time allowances for service jobs on cars with exhaust emission control systems. The labor is listed in hours and includes time allowances for oil changes for the engine.

With Service Information No. MB-T 25, Group 07, of August 1967, we sent you a copy of the booklet, "Exhaust Emission Control Systems, Passenger Cars, U.S.A. Version", which contains information about the systems, including engine test data sheets (which were subsequently up-dated with Service Information No. MB-T 31, Group 07, of October 1967), and the additional service jobs to be performed during the various service schedules. The additional service jobs are also given in a supplementary sheet to the Service Booklet (see Service Information No. MB-T 26, Group L, of August 1967).

For models 200, 230, 230 S, 250 S, 250 SE, and 250 SL with exhaust emission control, the additional time allowances are outlined in Table III.

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Time Allowances For Service Jobs "A" through "E" For Vehicles With Exhaust Emission Control Systems

Table I - Vehicles With Standard Transmission

Model	Schedule A Hours	Schedule B Hours	Schedule C Hours	Schedule D Hours	Schedule E Hours
220 D/8	2.2	2.0	1.3	2.3/2.5 +)	3.8/4.0 ++)
220/8	2.6	2.5	1.3	3.0/3.2 +)	4.5/4.8 ++)
230-250/8	3.0	3.1	1.4	3.3/3.5 +)	5.0/5.2 ++)
280 S/8	3.1	3.2	1.5	3.2/3.4 +)	5.1/5.3 ++)
280 SE/8	2.8	4.0 X)	1.4	3.2/3.4 +)	5.3/5.5 ++)
280 SE/8 Cp/Conv.	2.8	4.0 X)	1.4	3.2/3.4 +)	5.3/5.5 ++)
300 SEL/8	2.8	5.1 XX)	1.5	3.3/3.6 +)	5.4/5.7 ++)
280 SL/8	2.8	4.0 X)	1.4	3.2/3.4 +)	5.3/5.5 ++)

Table II - Vehicles With Automatic Transmission

220 D/8	2.3	2.1	1.4	2.4/2.6 +)	4.0/4.2 ++)
220/8	2.7	2.6	1.4	3.1/3.3 +)	4.7/4.9 ++)
230-250/8	3.1	3.2	1.6	3.4/3.6 +)	5.0/5.4 ++)
280 S/8	3.2	3.3	1.5	3.5/3.7 +)	5.5/5.7 ++)
280 SE/8	2.9	4.1 X)	1.5	3.3/3.5 +)	5.7/5.9 ++)
280 SE/8 Cp/Conv.	2.9	4.1 X)	1.5	3.3/3.5 +)	5.7/5.9 ++)
300 SEL/8	2.9	5.2 XX)	1.6	3.4/3.7 +)	5.8/6.1 ++)
280 SL/8	2.9	4.1 X)	1.5	3.3/3.5 +)	5.7/5.9 ++)

Table III - Additional Time Allowance for Models with Exhaust Emission Control Systems

200	0.4	0.5	0.4	0.4
230-230 S	0.5	0.9	0.4	0.4
250 S	0.5	0.9	0.4	0.4
250 SE/SL	0.2	0.2	0.2	0.2

Service Jobs Without Oil Change: Gasoline Engine - less 0.2 hours, Diesel Engine - less 0.3 hours.
+) - at 30,000 miles (50,000 km)
++) - at 60,000 miles (100,000 km)
X) - on a dynamometer
XX) - road test (second man required to check instruments) depending upon local conditions

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner File Classeur Archivador	Gruppe Group Groupe Grupo	
88	Service Information	0	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Additional Maintenance Jobs for Model 300 SEL/8 6.3

Enclosed is a chart listing additional work to be performed when servicing cars in accordance with the Service and Maintenance check sheets "A", "B", "D" and "E".

This chart for model 300 SEL/8 6.3 (print no. KD 00 130 6939 0) is being glued into the Service Booklet (print no. 00 130 6017).

Following are the time allowances for the service jobs according to the Service Booklet "A" through "E":

Schedule A Hours	Schedule B Hours	Schedule C Hours	Schedule D Hours	Schedule E Hours
6.0	4.4	1.9	6.7 8.7 1)	9.1 11.1 2)

1) After each 50,000 km (30,000 miles)
2) After each 100,000 km (60,000 miles)

Service jobs without oil change: Schedule A - less 0.4 hours
Schedule B through E - less 0.3 hours

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Enclosure

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 67	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	0	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Cut-Off Chassis End Numbers for Out-of-Production Models

Following are the cut-off chassis end numbers for the respective out-of-production models:

Model	Chassis Type	Chassis End No.
200	110.010	200761
200 D	110.110	387263
230	110.011	040258
230 S	111.010	110798
250 SE	108.014	055181
230 SL	113.042	019832
250 SL	113.043	005196
250 SE Cpe./Conv.	111.021/023	089205
300 SEb	108.015	002737
300 SEL	109.015	002369
300 SE Cpe./Conv.	112.021/023	009875

Please note that model 250 S, chassis type 108.012, is still in production; however, it is no longer being imported.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 27	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, December 1968

This Service Information supersedes:
Service Information No. 23, Group 0,
of March 1965.

Modification: Extended.

TO OUR MERCEDES-BENZ DEALERS

Subject: Replacement of Steering Lock Components and Warranty Procedure for Same -- All Models except Model 600

In Service Information No. 23, Group 0, of March 1965, we pointed out that the complete steering locks on our passenger cars consists of the following three components, each of which can be replaced separately:

I. Lock cylinder with appropriate keys
II. Ignition starter switch (electrical part)
III. Steering lock (mechanical part)

When performing replacement jobs, including those covered by warranty, the following instructions should be observed:

I. Lock Cylinder

On all models, the lock cylinder can be pulled out without removing the steering lock.

A. Models 200, 200 D, 230, 230 S/SL, 250 SL, 250 SE Cpe./Conv., and 300 SE Cpe./Conv.

If the lock cylinder is found to be defective, it must be removed and replaced.

In case of warranty, the faulty lock cylinder must be kept in claim parts storage together with both keys. If, however, the customer requests a lock cylinder with the same lock, a new lock cylinder must then be installed on a loan basis and the following information must be entered on the warranty claim: "Customer requests lock cylinder with the same lock". Upon receipt, the new lock cylinder with the old (standard) lock number must then be installed and the temporarily-installed lock cylinder removed. If a spare key

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is subsequently required, the Parts Department can then determine the lock number from the chassis number of the car. This, of course, can only be done if the lock number is not changed during repairs.

B. Models 220 D/8, 220 /8, 230/8, 250/8, 250 S/SE, 300 SEb/ SEL, 280 S/8, 280 SE/8, 280 SL/8, 280 SE Cpe./Conv./8, and 300 SEL/8 (one-key system)

Contrary to the instructions given under section (A), because of the "one-key system" on the above models, a new lock cylinder must be installed in all cases temporarily on a loan basis and subsequently replaced with a new lock cylinder with the old (standard) lock number.

In case of warranty, the lock cylinder must be kept in claim parts storage together with the spare key.

C. Replacement of lock cylinder

1. Turn key to position "1" and remove.

2. Using a small screwdriver, remove cover sleeve (2) from lock cylinder (illustration 1).

3. Place a hook (4) under the cover sleeve (2) and pull the cover sleeve out (illustration 2). The hook can be fabricated from a .06 in. Ø (1.5 mm) steel wire by bending it 1/8" (3 mm) from the end.

   Important!

   When pulling out the cover sleeve, be careful not to remove the escutcheon (3) on the dashboard paneling at the same time (illustration 3).

4. Insert hook (4) between escutcheon (3) and steering lock (1) (illustration 3). Press in locking pin (6, illustration 5) and, using the ignition key, pull out lock cylinder (5).

5. Insert replacement lock cylinder and switch to position "1". Check for trouble-free functioning.

6. Press cover sleeve (2) in in position "1" (illustration 1).

II. Ignition Starter Switch (Electrical Part), All Models except Model 600

If the ignition starter switch (7, illustration 5) is found to be defective, it must be removed and replaced. The lock cylinder (5) and steering lock (1) must be reused (illustration 5).

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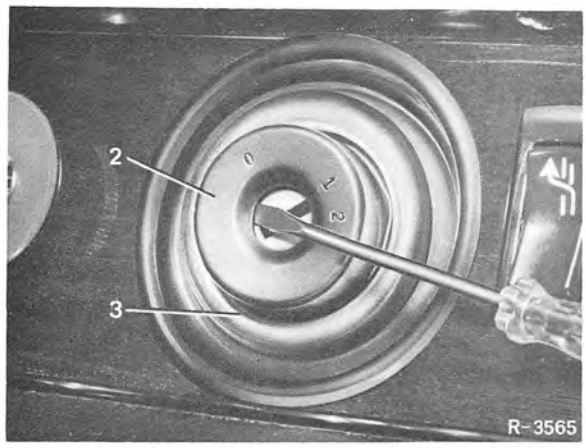


Illustration 1

2. Cover sleeve
3. Escutcheon

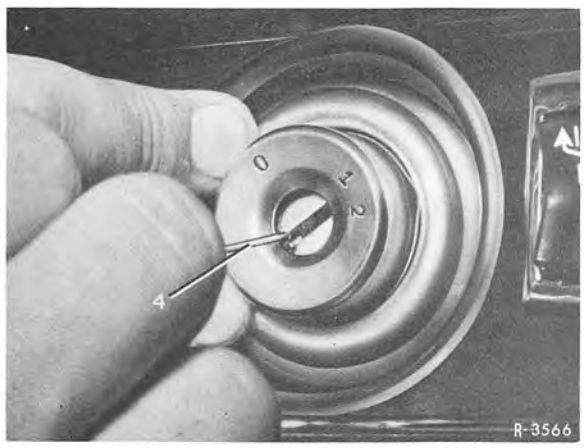


Illustration 2

4. Hook

Illustration 3

1. Steering lock
3. Escutcheon
4. Hook
5. Lock cylinder

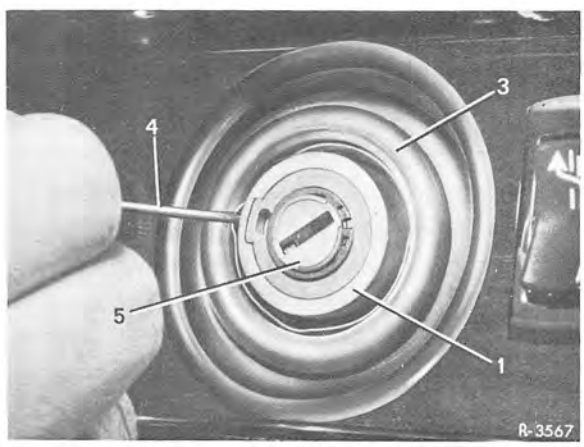
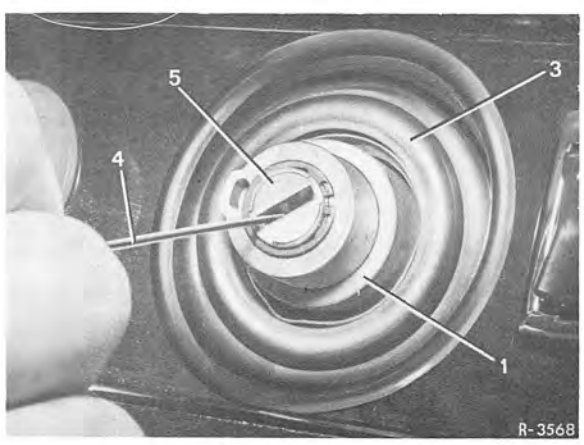


Illustration 4

1. Steering lock
3. Escutcheon
4. Hook
5. Lock cylinder



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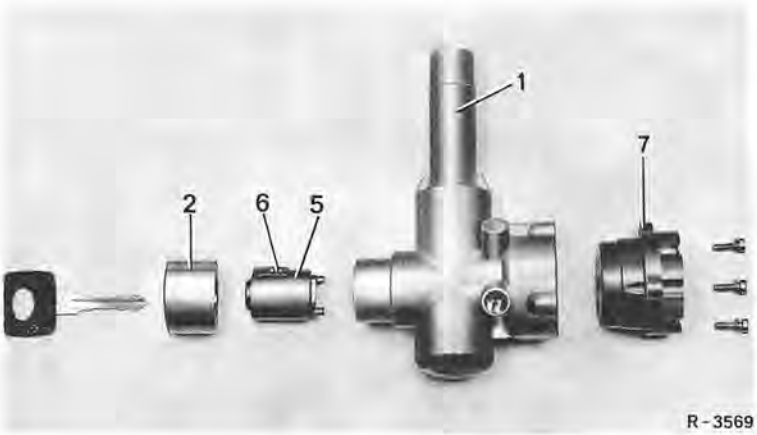

Illustration 5

1. Steering lock
2. Cover sleeve
5. Lock cylinder
6. Locking pin
7. Ignition starter switch

Replacement of ignition starter switch

1a. On models 200, 200 D, 230, 230 S/SL, 250 SL, 250 SE Cpe./Conv., and 300 SE Cpe./Conv., remove covering from below dashboard.

1b. On models 220 D/8, 220/8, 230/8, 250/8, 250 S/SE, 300 SEb/SEL, 280 S/8, 280 SE/8, 280 SL/8, 280 SE Cpe./Conv./8, and 300 SEL/8, remove instrument cluster.

2. Using a short screwdriver, unscrew ignition starter switch (7, illustration 5).

3. Check ignition starter switch.

4. Install new ignition starter switch.

III. Steering Lock (Mechanical Part), All Models except Model 600

If the steering lock (1, illustration 5) is found to be defective, it must be removed and replaced. The lock cylinder (5) and ignition starter switch (7) must be re-used (illustration 5).

Removal/replacement of steering lock

1. Remove instrument cluster.

2. Using a short screwdriver, unscrew ignition starter switch (7, illustration 5).

3. Loosen the three fitting screws at the steering lock (clamping screw on the new type steering with impact damper) and completely remove the steering lock (illustration 5).

4. Remove lock cylinder (5, illustration 5).

5. Check and recondition steering lock.

6. Install steering lock.

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Warranty Procedure

Henceforth, complete steering lock assemblies will not be accepted on warranty. Only the faulty component may be claimed, since usually it is only one of the three main components that is complained about.

Lock cylinders without keys will also no longer be accepted.

Warranty claims should be prepared and submitted at the time of the permanent repair; i.e. when the matching lock is installed. Additional labor only in the amount as shown in the table below, can be claimed for the temporary installation of the "loaner" lock.

Following are the labor allowances for the present models:

Model	Job No. 46-410 Replace lock cylinder	Job No. 46-415 Replace lock cylinder (steering lock assembly removed)	Job No. 46-420 Remove and reinstall complete steering lock assembly	Job No. 46-430 Replace steering lock assembly	Job No. 46-435 Replace steering lock assembly (steering lock assembly already removed)
220 D/8	0.6 hours	0.3 hours	1.2 hours	1.5 hours	0.3 hours
220/8	0.6 hours	0.3 hours	1.0 hours	1.3 hours	0.3 hours
230/250/8	0.6 hours	0.3 hours	1.0 hours	1.3 hours	0.3 hours
280 S/SE/8 incl. Cp/Conv.	0.6 hours	0.3 hours	1.6 hours	1.9 hours	0.3 hours
300 SEL/8	0.6 hours	0.3 hours	1.6 hours	1.9 hours	0.3 hours
280 SL/8	0.6 hours	0.3 hours	1.6 hours 1)	1.9 hours 2)	0.3 hours

1) 4.2 hours with power steering
2) 4.5 hours with power steering

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 28	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 0	Passenger Cars

Fort Lee, September 1967

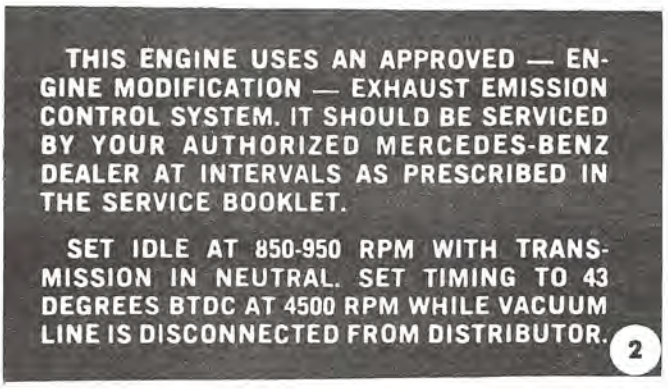
TO OUR MERCEDES-BENZ DEALERS

Subject: Exhaust Emission Control System Label

A blue vinyl label which contains pertinent information about the exhaust emission control system will be attached to all 1968 models equipped with the system. The label will be attached to the radiator support frame or to the wheel arch in the engine compartment (model 250 SL only).

Federal Regulations require that these labels be permanently affixed; for this reason and because the labels contain valuable engine adjustment data for service technicians, they must not under any circumstances be removed. Please inform your service and sales personnel accordingly.

There are four different labels (see illustrations), each containing different specifications for the various models; the number in the lower right-hand corner of each label indicates the model(s) for which the label is applicable.



Label #2 - Model 200

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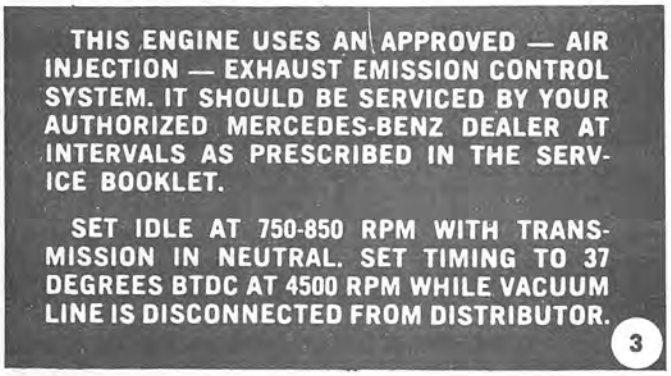
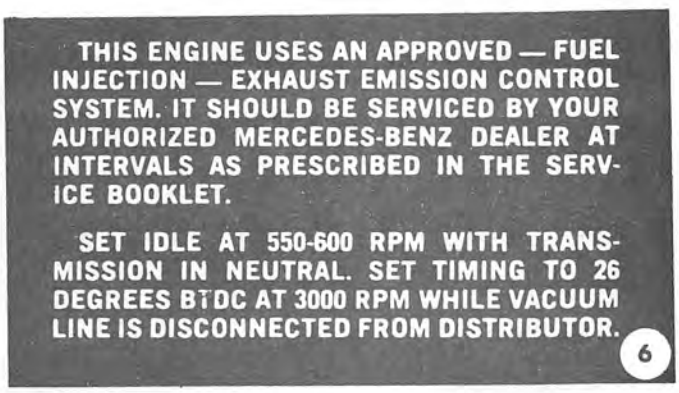


*Label #3 - Models 230, 230 S, and 250 S

*On the applicable models, in critical cases the idle may be set at 800-900 RPM, instead of 750-850 RPM as specified on the label. Please make note of this exception.

Label #5 - Models 250 SE, 250 SE Cpe./Conv., and 250 SL



Label #6 - Model 600

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Article No.	File	Group	Application
MB-T 262	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ADJUSTMENT GAUGE FOR WINDSHIELD WIPER LINKAGE, MODELS 220D/8 TO 250/8 Cp.

Since September 1970 new windshield wiper linkage (U-shaped) has been installed on the above referenced models during production.

Production cutoff numbers are as follows:

MODEL	CHASSIS DESIGNATION	BEGINNING CHASSIS END NO.
220/D	115.110	156487
220/8	115.010	062376
250/8 - 2.8	114.011	001767
250/8 Cp	114.023	003060

To adjust the new version linkage, the previous version adjustment gauge may not be utilized. A modified gauge, part number 115 589 21 23 00 must be used.

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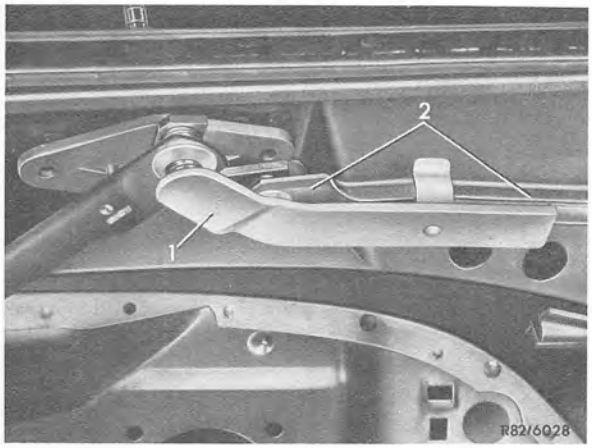

Illustration

1. Adjustment Gauge
2. Linkage

To adjust the wiper linkage, the adjustment gauge pin must be inserted into the linkage joint axle and the gauge connected to the linkage by means of the retaining clamp. The linkage is then properly adjusted and may be tightened.

NOTE: Previous version linkage may only be adjusted with the adjustment gauge, part number 115 589 08 23 00.

Tools may be ordered from our Mercedes-Benz Parts Depot, 400 Alfred Avenue, Teaneck, N.J. 07666.

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Article No.	File	Group	Application
MB-T 264	SERVICE INFORMATION	00	PASSENGER CARS

June, 1971

SUBJECT: USE OF UNLEADED FUELS.

Presently there are no laws in the United States which regulate gasoline lead content (tetra ethyl lead or tetra methyl lead). However, Federal and state regulations are in process which will eliminate lead and other additives.

Authorized by the Clean Air Act of 1970, the Envioronmental Protection Agency will restrict fuel additives considerably starting in all probability with the 1974 model year.

New York City has pending regulations reducing the lead content in gasoline beginning:

In July	1971	to	2.0 grams per gallon
In January	1972	to	1.0 grams per gallon
In January	1973	to	.5 grams per gallon
In January	1974	to	.0 grams per gallon

The reasons for eliminating lead are to reduce particulate pollutants from automobile exhaust and to allow the installation of emission control devices which would be adversely affected by lead. These new emission control devices are presently the most promising means of reducing automotive pollutants to the limits required by the government by 1975.

Up to and including 1971 Mercedes-Benz gasoline engines, the gasoline octane rating is the only primary factor to be concerned with. The use of unleaded gasoline will not result in any damage to our engines as long as the octane number is 98 RON or higher for vehicles with carburetor engines and 96 RON or higher for fuel injection engines. Damage such as exhaust valve recession, is unknown on our engines as they

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are equipped with cylinderhead exhaust valve inserts and stellite valves which insure tight fit for lifetime even if the car runs on lead free gasoline.

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Article No.	File	Group	Application
MB-T 229	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES BENZ-DEALERS

SUBJECT: APPROVED ENGINE OILS, MODELS 300SEL/8-6.3 AND 600.

Effective immediately, only recommended SAE engine oils as listed below should be used for Models 300SEL/8-6.3 and 600.

SEASONAL REQUIREMENT	MULTIGRADE OIL	SINGLE GRADE OIL
Winter Operation	SAE 10 W-50 SAE 10 W-40 SAE 10 W-30	Not recommended
Summer Operation	SAE 10 W-50 SAE 20 W-50 SAE 10 W-40 SAE 20 W-40	SAE 30
Year Around Operation*	SAE 10 W-50 SAE 10 W-40	Not recommended

*Change oil a minimum of twice a year (e.g. Spring and Autumn)

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The Specifications for Fuels, Coolants, Lubricants, and Brake Fluids Manual, page 224, and the Owner's Manuals for both models will be revised accordingly. Recommended engine oils (by manufacturer) are listed on pages 225.1 and 226 of the Fuels, Coolants, Lubricants, and Brake Fluids Manual.

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Article No.	File	Group	Application
MB-T 223	SERVICE INFORMATION	00	PASSENGER CARS

This Service Information supersedes Service Information No. 105, Group 00, of February 1970.

FORT LEE, JANUARY 1971

TO OUR MERCEDES BENZ DEALERS

SUBJECT: APPROVED ENGINE OILS, OIL CHANGE INTERVALS AND OIL FILLING QUANTITIES -- MODEL 220 D/8

Diesel engine OM 615, installed in Model 220 D/8, is designed and built of the finest materials to ensure a high degree of operating reliability. This engine, however, is also rather sensitive to the quality of oil used. For this reason, we must again emphasize our recommendation to use only brand name engine oils approved by Mercedes-Benz.

This Service Information contains a list of recommended oils available in the United States and Canada, information regarding oil change intervals, oil capacities, and information pertinent to oil coolers.

A. ENGINE OILS APPROVED/ENGINE OM 615

Tests covering various field operating conditions were conducted and the following oils were found satisfactory:

BP Super Visco Static
Castrol HD DB
Chevron Motor Oil Special DB
Esso Motor Oil
Esso Uniflo Motor Oil
Gulf Super DB Motor Oil
Mobiloil Special
Shell Rotella T
Texaco Havoline Motor Oil

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For summer use, SAE 30 grade oil is recommended, and SAE 10 grade for winter use. Recommended multigrade oils are available in SAE grades 10 W/30, 10 W/40 and 20 W/50. It is recommended that 20 W/50 be used during the summer and 10 W/30 for the winter period. SAE 10 W/40 may be used for all seasons.

NOTE: SERVICE INFORMATION NO. 55, GROUP 00, DATED AUGUST 1968, PROVIDES ADDITIONAL INFORMATION ON THIS SUBJECT.

The engine oils listed on page 1 are also approved for all other M-B engines.

B. OIL CHANGE INTERVALS:

Under normal operating conditions, OM 615 engine oil should be changed every 3,000 miles (5,000 km).

If the Diesel fuel sulphur content exceeds 0.5% in weight or severe operating conditions are constantly encountered (extensive short distance driving, taxi service, or extreme dust conditions), engine oil should be changed every 1,500 miles (2,500 km). In this case, it is sufficient to perform the engine oil filter service every second oil change, i.e., after every 3,000 miles (5,000 km). The full flow filter must be cleaned and the by-pass filter element replaced.

C. OIL CAPACITIES (QUARTS):

Oil capacities depend upon how the engine is equipped and are as follows:

MODEL	OIL FILTER	OIL COOLER	OIL PAN MAX.	OIL PAN MIN.	TOTAL FILLING MAX.
220 D/8	1 1/8	1/2	4 3/4	3 1/4	6 1/3

D. ENGINE OIL COOLER:

During the normal 3,000 miles (5,000 km) oil change, engine oil cooler oil must be changed.

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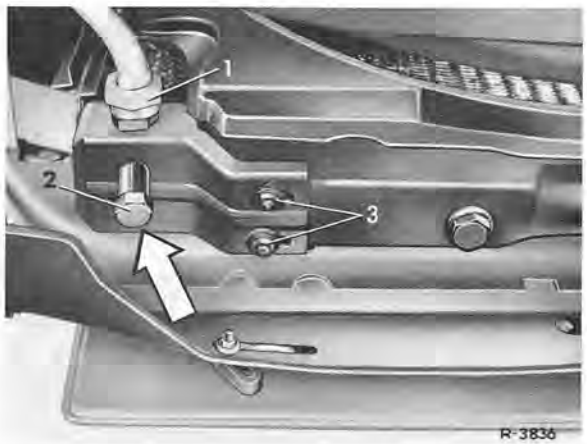
To drain the oil, first remove the oil filter lower section and then remove the oil drain plug (2, Illustration) from the engine oil cooler. After the oil has drained from the oil pan and cooler, the drain plugs should be reinstalled and tightened to the following torques:

OIL DRAIN PLUG	TIGHTENING TORQUE	
	Ft. lb.	kpm
Oil pan	36.17 ± 1.81	5.0 ± 0.25
Engine Oil cooler	14.50 + 3.62	2.0 + 0.5
Oil Filter lower section	28.93 - 3.62	4.0 - 0.5



ILLUSTRATION

1. Connector, oil filter line
2. Oil drain plug at engine oil cooler
3. Nut, engine oil cooler at water cooler

The oil drain plug seal rings (engine oil cooler: copper oil pan: copper/asbestos) may be reused only if they are undamaged. Damaged seal rings should be replaced.

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Article No.	File	Group	Application
MB-T 213	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: OIL LEVEL CHECKS AND CONSUMPTION

Many customers cannot be led to believe their engine uses oil. In fact, they will insist that their engine uses absolutely no oil. This, of course, is not true.

Today, even with the advanced automotive engineering techniques, no internal combustion engine is marketed that does not use oil. Consumption naturally varies and is caused by several factors, one of which is engine load.

For example, operating a vehicle at high speeds or in the high RPM ranges increases the oil consumption over normal operation. This requires the engine oil level to be checked more often. When the oil level is below the required minimum, adequate lubrication is not furnished, and may result in severe engine damage.

Since automobile manufacturers allow for a certain amount of oil consumption, it is safe to assume an engine will use from 1% to 1.5% of the total fuel used. For example, for every 100 gallons of fuel the engine may consume 1 to 1½ qts. of oil.

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Customers should be reminded periodically that the engine oil level should be checked regularly, especially when driving long distances, preferably during refueling stops.

Before checking the oil level, other services should be accomplished such as refueling, window cleaning and tire pressure checks. This enables oil circulated throughout the engine to return to the oil pan for more accurate checking.

Customers should be provided with accurate, up-to-date oil checking instructions by service personnel, in an attempt to eliminate engine failure due to inadequate lubrication.

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C O R R E C T I O N

Re: Service Information No. MB-T 213, Group 00, Issue 1/71, "Oil Fuel Checks & Consumption"

In the above mentioned Service Information, MB-T 213, the last sentence on the first page should read as follows:

> "For example, for every 100 gallons of fuel the engine may consume 1 to 1½ gallons of oil."

Please adjust your records accordingly.

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Article No.	File	Group	Application
MB-T 209	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SERVICE INFORMATION FILING SYSTEM CHANGE

A complete and accurate Service Information file is instrumental in solidifying customer relations and provides for complete, current and organized servicing.

Automobile sales increased, therefore technical literature and information also reached higher proportions. In the past, Service Information files were comprised of four binders, grouping L - 32, 33 - 99, Tools and Workshop Equipment, and Special Versions L - 97.

To provide a more expansive system, an additional binder has been added and the grouping changed to L - 13, 14 - 54/55, 56 - 97, Tools and Workshop Equipment and Special Versions L - 97.

The additional binder and revised filing labels will be mailed to dealers free of charge. Additional binders and labels may be ordered through normal channels.

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Article No.	File	Group	Application
MB-T 208	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: VEHICLE PRESERVATION INSTRUCTIONS FOR NEW CARS

During manufacture, vehicles receive some anti-corrosion protection. However, vehicles which are stored for extended periods, require additional specified protective measures. This Service Information covers these measures in detail.

GENERAL

ENGINE:

New engines are provided anti-corrosion protection through the use of "break-in" oils. The protective additives of these lubricants are more than adequate for storage at normal temperatures and humidity. Engines destined for overseas shipment receive a protective anti-corrosive spray covering which must not be removed or damaged.

COMPONENTS:

All components of a new vehicle are filled with recommended fluids, lubricants, etc., which contain anti-corrosion additives.

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BODY:

All parts of the body are protected against corrosion at the factory through various means including sealing of the underbody.

Various protective measures must be applied subsequently, depending upon the time element involved.

A. STORAGE UP TO 3 MONTHS:

1. Remove the spark plugs and/or glow plugs and spray anti-corrosive oil into the spark plug bores. Replace plugs.

2. Batteries should be removed, stored in a warm, dry area, and kept fully charged. CAUTION: Mark batteries before removing to ensure batteries are installed in the same vehicles from which they were removed.

B. STORAGE 3 MONTHS AND OVER:

CARBURETOR ENGINES:

1. Disconnect fuel line between the fuel pump and tank. Run the engine until the carburetor is empty. Replace fuel line.

2. Remove the spark plugs, disconnect the high tension lead to the ignition coil. Actuate the starter and allow the engine to rotate 15 revolutions to enable combustion gases to escape.

3. Spray (do not pour) anti-corrosive oil into spark plug holes. Actuate the starter motor twice, to ensure both the cylinders and valves have been sufficiently lubricated. Replace the spark plugs and electrical lines.

INJECTION ENGINES:

1. On Diesel engines, place the control rod in the "stop" position (with pneumatic governor, disconnect wire cable to adjusting lever).

2. With mechanically gasoline injected engines, remove fuse No. 4 (electric feed pump). Disconnect the ignition coil high tension lead and remove the spark plugs.

3. Then proceed as outlined under B. 3.

4. Remove the plug on the ignition distributor and throttle valve switch.

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MISCELLANEOUS (STORAGE 3 MONTHS AND OVER)

1. Service batteries in accordance with directions provided in the Workshop Manual "Passenger Cars, August 1959, Job No. 54-13." Charge to 1.28 Specific Gravity, if needed.

2. Check component oil levels and accomplish lubrication in accordance with lubrication charts.

3. Clean the oil filter, oil filter housing, and oil bath air filter. Fill with anti-corrosive oil. Store the paper filter element separately and spray anti-corrosive oil into the upper and lower sections of the filter housing.

4. Fill the fuel tank. Add 5% anti-corrosive oil to gasoline and 10% to Diesel fuel for fuel system protection.

5. Jack-up vehicle in the prescribed manner.

6. Hermetically seal all openings including the air filter, dipsticks, air vents on components, and exhaust pipe.

NOTE: FOR SAFETY REASONS, DO NOT SEAL FUEL TANK VENTILATION.

7. Remove and store V-belts.

8. Drain off condensation water on air suspension systems. Fill anti-freeze device with alcohol.

9. Clean rust accumulation from pulleys, rods, levers, pipes, and spray with anti-corrosive oil.

10. Cover alternator, starter motor, and pulleys with oiled paper.

11. Release emergency brake.

12. Disengage clutch to prevent clutch plate sticking.

13. Treat paint and chromium plating with prescribed preserving agents.

14. Cover tires for protection against dampness and sunlight.

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15. Drain brake fluid, flush brake system, and replace brake fluid yearly. (Preferably in spring)

16. Inflate tires to 40-45 PSI.

17. Spray engine and engine compartment with light coat of #10 engine oil.

18. Open air vents at the dashboard to ensure ventilation.

19. Close all windows.

20. Re-wash and dry vehicle.

21. Spray entire vehicle with Tectyl 400D (body, chrome and glass).

NOTE: APPROXIMATELY ONE QUART OF TECTYL 400D IS REQUIRED PER AUTOMOBILE AND MAY BE APPLIED WITH AN OLD SPRAY GUN, AREO GUN, ETC. TECTYL DRIES TO A TACKY CONDITION IN APPROXIMATELY 30 MINUTES. HOWEVER, A CERTAIN AMOUNT DISSEMINATES INTO THE ATMOSPHERE, THEREFORE, DO NOT APPLY TECTYL CLOSE TO YOUR BODY SHOP, AS RESIDUE MAY SETTLE ON AREAS PREPARED FOR PAINTING.

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Ann. No. MB 206	File SERVICE INFORMATION	Group 00	Application PASSENGER CARS

This Service Information Supersedes Service Information No. 115, Group 00, of January 1970.

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MEASURES FOR IMPROVED WINTER OPERATION

In this Service Information you will find the most important "Measures for Improved Winter Operation of Passenger Cars" in a summarized form. Subjects which are assumed to be generally known (previously published) will be dealt with briefly, whereas the greater emphasis will be given to our current production models.

1. CARBURETOR ENGINES

On earlier models, the carburetors should be supplied with pre-heated air by manually adjusting the air cleaner intake tube air flap to the "winter" position. However, as of January 1968, our automobiles are equipped with an automatic system which utilizes pre-heated air for cold weather operation.

2. COLD-STARTING ENGINES WITH INAT AND STROMBERG CARBURETORS

Engines with INAT and Stromberg carburetors (all later carburetor models):

Push the accelerator pedal fully down once and completely release it to engage the automatic choke, prior to a cold start.

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NOTE: THE STROMBERG CARBURETOR OIL RESERVOIR ON MODEL 220/8, SHOULD BE FILLED WITH AUTOMATIC TRANSMISSION FLUID (ATF) ALWAYS, REGARDLESS OF SEASON!

3. CLEANING THE FLAME ARRESTER SCREEN (MODELS 250/8, 250/8 CP., 280 S/8, 280 SE/9 3.5 CP./CV., 300 SEL/9 3.5)

A flame arrester screen has been installed between the valve cover and air filter to prevent the effects of cold start backfiring, which occasionally occurs. This screen should be checked for cleanliness every 6,000 miles and during cold weather servicing. The screen may be cleaned by washing it in solvent and the long portion of the hose should be blown out with compressed air.

4. DIESEL ENGINES

Diesel engine starting ability during cold weather may be improved by using winterized Diesel fuels. However, these fuels are not always available in all areas or in time for extremely cold weather. Regulated amounts of kerosine or regular grade gasoline may be added in proportion to the ambient temperatures. Additives should be used in all cases where temperatures below -4° F (-20° C) are encountered, even when using winterized Diesel fuels.

The following table indicates the mixture data, using either regular or winterized Diesel fuel:

MIXING AMOUNTS (Percent by Volume)

AMBIENT F°	TEMPERATURE (C°)	SUMMER DIESEL FUEL %	ADMIXTURE %	WINTERIZED DIESEL FUEL %	ADMIXTURE %
32 to 14	(± 0 to -10)	80	20	100	--
14 to 5	(-10 to -15)	70	30	100	--
5 to -4	(-15 to -20)	50	50	100	--
-4 to -13	(-20 to -25)	--	--	70	30
-13	below -25	--	--	50	50

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NOTE: IT IS RECOMMENDED THAT A LOW PERCENTAGE OF ADDITIVE FUEL BE UTILIZED IN THE BEGINNING. IF, HOWEVER, A 50% MIXTURE SHOULD BE NECESSARY, ONLY KEROSINE MUST BE USED.

For particular details concerning the causes and remedies pertaining to "knocking of Diesel engines" in cold weather, Service Manual, Passenger Cars, August 1959, Job. No. 00-23/1 and Service Information No. 113, Gr. 00, of April 1968 should be referenced.

5. VALVE CLEARANCE

In areas where temperatures below -13° F (-25°C) are encountered, the following valve clearance values for the intake valves may be used to improve starting:

MODEL	Valve Clearance Winter Value	Valve Clearance Standard Value
190 DC, 200 D, 220 D/8, 300 SEL/8 - 6.3, 600	.006 in. (.15 mm)	.004 in. (.10 mm)
220/8, 230/8, 250/8, 250 S, 280 S/8, 280 SE/8, 280 SE/8 - Cp./Conv., 280 SL/8, 300 SEL/8	.005 in. (.12 mm)	.003 in. (.08 mm)

At higher temperatures, the valve clearance must be readjusted to the respective standard values.

6. COOLING WATER PRE-HEATING DEVICE

The purpose of the cooling water pre-heating device is to keep the cooling water warm at low ambient temperatures. There are three basic devices available; namely, engine block heater, also a unit to be installed in the lower radiator hose, and a unit to be installed into the water heater circuit. These devices are available on the open market and may be installed upon customer request on all of our cars.

7. WINTER THERMOSTAT

A winter thermostat should be installed in order to increase the heater capacity. The Part No. is 001 203 91 75 for all models presently manufactured.

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8. ENGINE OIL

To improve engine starting at extremely cold temperatures, light weight engine oil should be used. The table listed below provides guidance regarding SAE Grade/temperature recommendations.

Ambient Temperature	SAE Grade
below -13° F (-25° C)	SAE 5 W or 5 W/20
from -13° F (-25° C) to 50° F (+10° C)	SAE 10 W or 10 W/30
exceeding 32° F (0° C)	SAE 30 or 10 W/30

9. ANTI-FREEZE

The cooling systems on cars shipped from the factory are anti-freeze protected year around to a temperature of -22° F (-30° C).

When anti-freeze is added at your dealership, the degree of protection should be indicated on the tag furnished with the anti-freeze and the tag then attached to the car, next to the radiator filler cap.

NOTE: ANTI-FREEZE LOOSES ITS EFFECTIVENESS AGAINST FREEZING AND CORROSION WITH AGE AND HIGH TEMPERATURE OPERATION. THEREFORE, IT SHOULD BE REPLACED YEARLY.

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ILLUSTRATION 1

Radiator Tag
(form MBNA 460)

The anti-freeze tags (form MBNA 460) may be ordered from our Technical Service Department.

CAUTION: SEVERAL COOLANT/ANTI-FREEZE PRODUCTS ARE AVAILABLE ON THE MARKET, HOWEVER, ONLY THOSE LISTED IN THE FUELS AND LUBRICANTS MANUAL (BETRIEBSSTOFF-VORSCHRIFTEN), PAGE 325, ARE RECOMMENDED FOR USE IN MERCEDES-BENZ PRODUCTS.

Recommended anti-freeze coolants available on the American and Canadian markets are:

Caltex Anti-freeze
Chevron Anti-freeze
Esso Anti-freeze
Gulf Anti-freeze and Summer Coolant
Mobil Permazone Anti-freeze
Prestone Anti-freeze
Shell Anti-freeze
Sinclair Anti-freeze
Texaco Anti-freeze
Vavoline Anti-freeze

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10. ANTI-FREEZE FOR AIR SUSPENSION SYSTEM

At temperatures below 41° F (5° C), the air suspension anti-freeze container should be filled with alcohol containing 96% ethyl or methyl.

11. WINTER TIRES

On page 7 you will find a list of winter tires presently approved for our passenger cars, and Page 8 shows a list of tire pressures for winter tires.

For best results, winter tires should be utilized on both front and rear. Speeds in excess of 80 MPH (130 km/h) using conventional winter tires and 90 MPH (150 km/h) using radial ply winter tires are not recommended.

If studded tires are utilized, speeds over 60 MPH (100 km/h) should not be exceeded for the first 60 miles and excessive braking should be avoided. Studded tires that have been used prior to the current winter season should be mounted so that all of them have the same direction of rotation. This policy should also be observed when rotating the tires every 1500 miles (2500 km).

12. SNOW CHAINS

Snow chains require retightening after driving a short distance. They should, however, be fitted loosely so that at one point the hand may be slipped between the chain and the tire.

A maximum speed of 45 MPH (70 km/h) should not be exceeded when snow chains are being used.

Snow chains wear rapidly. If roads are not snow covered, moderate speeds are urgently recommended. Remove them as soon as possible.

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RECOMMENDED WINTER TIRES:

MODEL		SIZE OF TIRE PLY RATING 1)	CONTINENTAL	DUNLOP	SEMPERIT	VEITH-PIRELLI
190 C, 190 DC, 200, 200 D, 230	bias ply	7.00 - 13 4 PR	M + S studded	M + S studded	-----	M + S Studded Cortina
220 B, 220 Sb, 220 SEb, 220 SEb Cp., 230 S	bias ply	7.25 - 13 4 PR or 6 PR	M + S studded	M + S studded	-----	M + S Studded Cortina
220 SEb Conv., 300 SE, 300 SEL	bias ply	7.50 - 13 6 PR	M + S studded	M + S studded	-----	M + S Studded Cortina
220/8, 220 D/8, 230/8, 250/8, 250/8 Cp., 250/8 2.8	bias ply	6.95/175 - 14 4 PR	M + S studded	M + S studded	-----	-----
	radial ply	175 SR 14	M + S 2) studded	M + S 2) studded	-----	-----
250 S, 250 SE, 250 SE Cp./Conv., 280 S/8, 280 SE/8,	bias ply	7.35/185 - 14 6 PR	M + S studded	M + S studded	M + S 4) studded M 211	-----
280 SE/9 3.5 Cp./Conv., 280 SE/8 Cp.Conv., 300 SEb, 300 SEL, 300 SEL/9 3.5, 300 SEL/8, 300 SE Cp./ Conv., 230 SL, 250 SL, 280 SL/8	radial ply	185 SR 14	M + S 2) studded	M + S 2) studded	-----	-----
300 SEL/8 6.3 3)	radial ply	185 SR 14 185 R 14	M + S 2) studded M + S studded/ non-studded	-----	-----	-----
600	bias ply	9.00 - 15 6 PR	-----	-----	-----	M+S-studded Cortina

1) Ply rating (PR) is the international designation of the tensile strength of the carcass. The PR figure does not, in all cases, correspond to the actual number of fabric layers.
2) With tube (only with rubber valve).
3) Winter tires only with rim size 6 J x 14 H, Part No. 108 400 00 02, or vented rim size 6 J x 14 H, Part No. 108 400 07 02.
4) Not for 280 SE/9 3.5 Cp./Conv. and 300 SEL/9 3.5.

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TIRE PRESSURES FOR WINTER TIRES

MODEL	TIRE SIZE	TIRE PRESSURE (COLD TIRES) FRONT PSI	REAR PSI
CONVENTIONAL WINTER TIRES			
220/8, 220 D/8 230/8, 250/8	6.95/175 - 14	24 1) 27 2)	31 1) 34 2)
250 S, 250 SE, 250/8-2.8, 280 S/8, 280 SE/8, 300 SE, 300 SEb, 300 SEL, 300 SEL/8	7.35/185 - 14	28	36
600	9.00 - 15	28	34
600 Long	9.00 - 15	30	36
RADIAL WINTER TIRES			
220/8, 220 D/8 230/8, 250/8	175 R 14 or 175 SR 14	27	36
250 S, 250 SE, 280 S/8, 280 SE/8, 300 SE, 300 SEb, 300 SEL, 300 SEL/8, 300 SEL/9 3.5	185 R 14 or 185 SR 14	28	36
300 SEL/8 6.3	185 R 14 or 185 SR 14	30	36
230 SL, 250 SL, 250/8 2.8 280 SL/8	185 R 14 or 185 SR 14	26	31

Tire Pressure for Warm Tires

After city driving: +3.0 PSI
After long-distance driving: +7.0 PSI

1) For low load
2) For high load

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13. GENERAL INFORMATION

Should size 6.95/175-14 or 175 SR 14 tires be unavailable, the approved 185 SR 14 tire, in conjunction with rim size 5 1/2 J x 14 H may be utilized on Models 220 D/8 to 250/8. Use of tires 7.35/185-14, on these models is not recommended, due to the large speedometer variation produced. Tire or rim size changes are also not recommended.

JURISDICTIONS PERMITTING THE USE OF STUDDED TIRES

The following 46 jurisdictions permit the use of studded tires as of March, 1970:

Alabama
Alaska
Arizona (Oct. 1-May 1)
California (Oct. 1-May 1)
Colorado
Connecticut
Delaware
District of Columbia
Florida
Hawaii (illegal in Honolulu)
Idaho (Oct. 1-April 15)
Illinois (Oct. 1-May 1)
Indiana (Oct. 1-May 1)
Iowa (Nov. 1-April 1)
Kansas (Nov. 1-April 15)
Kentucky
Maine
Maryland
Massachusetts
Michigan (Nov. 1-May 1)
Minnesota (Oct. 15-May 1)
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey (Nov. 1-April 15)
New Mexico
New York (Oct. 16-April 30)
North Carolina
North Dakota (Oct. 15-April 1)
Ohio
Oklahoma (Nov. 1-April 1)
Oregon (Oct. 1-May 31)
Pennsylvania
Rhode Island (Oct. 31-April 1)
South Carolina
South Dakota
Tennessee
Utah
Vermont
Washington (Nov. 1-April 1)
West Virginia (Nov. 1-April 1)
Wisconsin (Oct. 15-April 15)
Wyoming

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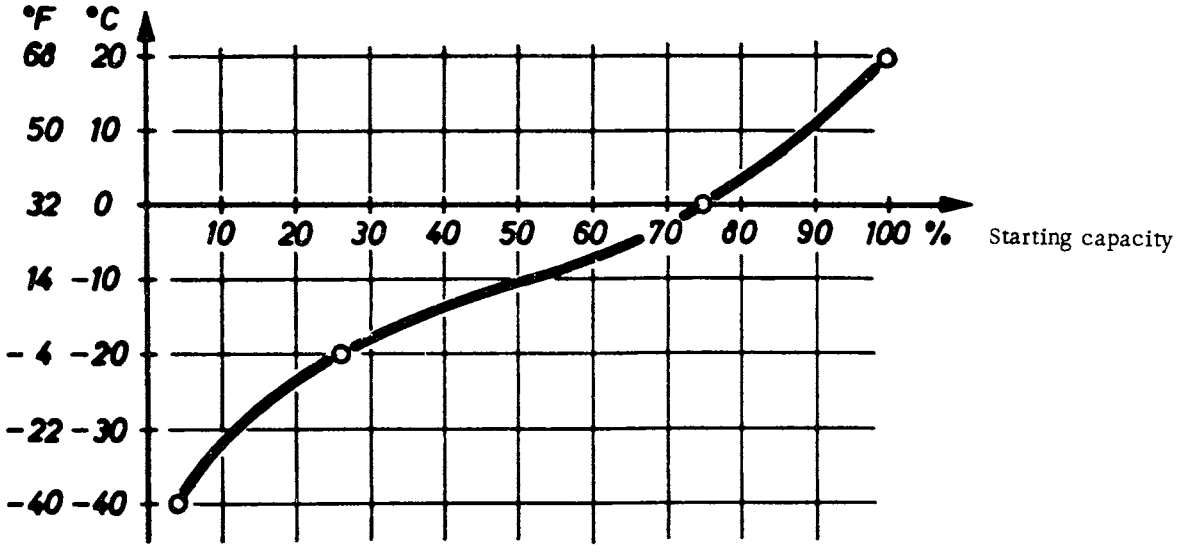
14. BATTERY

The following graph illustrates how the starting capacity of the battery is reduced as the surrounding temperature decreases:



Heavy duty batteries have been installed as standard equipment on some models which improves starting at extremely low temperatures. The parts listed below may be ordered for subsequent installation on those models without this system.

Qty.	Part	190 DC, 200 D	190 C, 200 230	220 b/Sb/SEb 230 S, 250 SE 280 SE/8	280 S/8, 250 S
1	Battery	000 541 83 01 (88 Ah)		000 541 74 01 (66 Ah)	
1	Supporting plate	110 541 04 35	110 541 05 35	110 541 01 35	
1	Mounting frame	110 540 07 23	110 540 08 23		108 540 04 23
1*	Tightening screw		120 541 01 24		
1	Static Grounding strap	110 540 06 31	-	-	-
1	Starter cable	-	-	-	108 540 04 30
1	Mounting clamp	-	-	-	187 995 00 37
1	Hex. head sheet-metal screw	-	-	-	007976 004205

* On Models 220 b/Sb/SEb, 230 S, 250 S, two tightening screws are required.

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The Models 220, 230 and 250/8 may be equipped with an 88 AH heavy duty battery, Part No. 001 541 10 01. This battery is standard equipment for the 220 D/8.

The state of electrical charge and the acid level of the batteries should always be thoroughly checked. Correct if necessary. Keep battery terminals clean, treat with special grease. For details concerning batteries see "Technical Data Booklet, Passenger Cars", 1969 edition, page 486.

15. ALTERNATOR

In order to avoid alternator diode damage, the following points should be observed:

a) While the engine is running:

do not disconnect alternator from battery,
do not loosen or remove battery terminal,
do not remove the plug from the regulator,

b) do not tow-start the vehicle without the battery being connected,

c) do not short-circuit the terminals in order to check whether the alternator supplies charging current,

d) disconnect the battery if it is to be re-charged by means of a rapid charger.

A 55 Amp. alternator is standard equipment on most Models as of 1970.

16. D.C. GENERATOR

The D.C. generator does not charge the battery at low engine speeds, therefore, it is advisable to run the engine at high speeds.

If necessary, a higher capacity generator (300 W) should be installed (standard on Model 300 SE, W 112).

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17. STARTER

A 1.4 hp starter is standard equipment on most models since March, 1969. It may be subsequently installed in earlier models.

18. IGNITION SYSTEM

To improve the starting capability of passenger cars with gasoline engines, modifications have been introduced in production. These modifications are available for subsequent installation on automobiles not so equipped. For details, refer to Service Information No. 116, Group 00, dated December 1968. The ignition system should be checked before the cold season starts. Important: inspect the cables for chafing and cracks. According to Service Information No. 25 a, Group 00, dated June 1969, starting troubles caused by creeping currents can be remedied by means of contact spray.

19. TRANSISTOR IGNITION SYSTEM AND ELECTRONIC FUEL INJECTION SYSTEM

CAUTION: Do not, by mistake, reverse polarity when a booster battery is being used to start engine. This would damage the diodes in the switching unit and electronic unit.

20. WINDSHIELD WASHER WINTERIZATION

To prevent the windshield washer system from freezing, M-B windshield washer concentrate should be added to the system. This concentrate, Part No. 000 986 41 71, may be ordered from our depots in a 3.5 oz. container with directions on the label.

21. HEATED REAR WINDOWS

Heated rear windows, both tinted and clear, are available for subsequent installation on all current sedan or coupe models. Installation instructions and part numbers for Models 220/8 through 250/8 Cp. are available in MB-T 192, Group 60-81, 84-89, dated August 1970. For Models 190c - 300 SEL, refer to Service Information S 5, Group 83, dated November 1967. Further information for other models will be published in the near future.

22. DOOR LOCKS

Numerous "spray type" anti-freeze lock defroster products are available for defrosting and protection against lock freezing. These anti-freeze products, however, should be selected and used carefully, to ensure the paintwork is not damaged.

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23. UNDERFLOOR PROTECTION

During the cold season, the underbody of the vehicle is subject to extreme gravel and salt exposure.

The entire underbody is provided with a highly resistant poly-vinyl chloride (PVC) coating at the factory.

Older vehicles should be treated with an approved underside protective agent before the cold season starts. The approved agents are listed in our Fuels and Lubricants Manual (Betriebsstoff-Vorschriften), sheet No. 385.

The underbody, all tube lines (in particular the brake lines) and the exhaust system should be checked. If repairs are necessary, they should be performed prior to applying the undercoat.

The required parts are available from our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. MB-T 205	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 00	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: 1971 MODEL DATA

In order to comply with the air pollution standards, carburetor engines (1971) have been changed, however, gasoline injection engines will remain unaltered.

Paragraphs A, B and C list changes by vehicle models.

PRODUCTION CUT-OFF:

MODEL	CHASSIS END NO.
220/8	058628
250/8 Sedan (114.011)	000001
250/8 Cp.	002575
280 S/8	058292

A. MODEL 220/8

A new distributor (Part No. 001 158 39 01) with a modified ignition advance curve is being installed. In addition, the carburetor vacuum connection for ignition advance has been changed so that the ignition retardation remains in operation until the mid-engine speed range limit is reached. Then, to avoid high fuel consumption, ignition retardation will be shut-off by an engine speed switch at approximately 2400 RPM. The engine speed relay (Illustration 1, Item 4) therefore contains two engine

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speed switches. The engine speed switch No. 1 holds the throttle valve slightly open. During deceleration, it opens the throttle at 2000 RPM and closes to idle position at 1800 RPM. Switch No. 2, for ignition change-over, switches to "advance" at 2400 RPM and to "retard" at 2200 RPM.

SWITCHPOINT TESTING/IGNITION CHANGE-OVER SWITCH

1. Connect tachometer.
2. Remove the two pole connector on the two-way valve and connect a voltmeter (Illustration 2, Item 9).

   CAUTION: THE ELECTRONIC ENGINE SPEED RELAY MUST ONLY BE TESTED WITH A VOLTMETER! A TEST LAMP WILL DAMAGE THE RELAY.

3. Start the engine and slowly increase the engine speed. At approximately 2400 RPM, the engine speed switch should connect to ground, thus interrupting the vacuum connection to the distributor. The voltmeter should indicate approximately 13 volts at this time. Allow the RPM to drop to approximately 2200 RPM. At this point, the voltmeter should indicate "0" volts (ground connection of engine speed switch broken).

   Should the switch points vary considerably from the aforementioned values, the engine speed relay must be replaced.

   NOTE: FOR AN INTERMEDIATE PERIOD, THE PREVIOUS CARBURETOR, PART NO. 000 070 63 04, IS BEING INSTALLED IN PRODUCTION. THE ONLY DIFFERENCE IS THAT IT STILL HAS A SINGLE TERMINAL ELECTRICAL CONNECTION FOR THE CHOKE.

   The present single terminal connection for the carburetor automatic choke will soon be replaced by a double terminal type. When subsequently installing the new carburetor (Part No. 000 070 65 04) or a new choke cover with the double terminal connection, the choke cover connecting cable (+) and the ground cable (-) must be connected to one double terminal connection. The positive/negative connections are indicated on the choke cover.

   When installing a new type carburetor or choke cover on an earlier model year car, the ground (-) terminal must be connected to ground with a wire.

4. Intake manifold, Part No. 115 140 18 01, was replaced by Part No. 115 140 22 01. Both manifolds are fully interchangeable.

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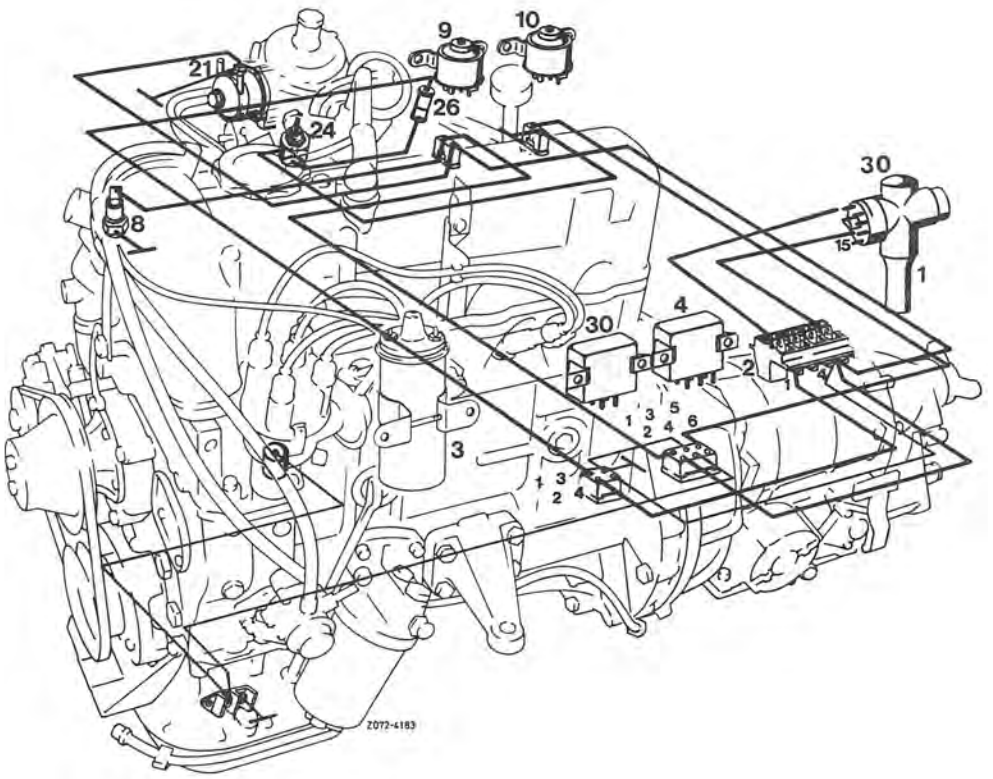

ILLUSTRATION 1

1. Ignition switch
2. Fuse box
3. Coil
4. RPM switch.
8. Temperature switch
9. Two way valve (ignition changeover)
10. Two way valve (throttle lifting)
21. Heating coil for automatic choke
24. Idle shut off valve
26. Electrical connection
30. Delay switch (for idle fuel shut-off)

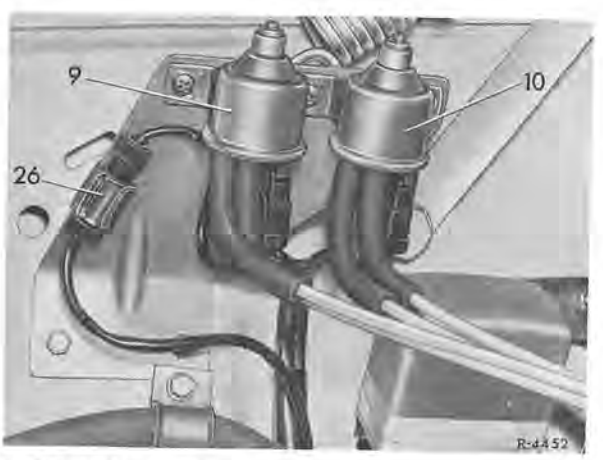

ILLUSTRATION 2

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B. MODEL 250/8 SEDAN (MODEL NO. W 114.011)

As of 1971 model year, the 250/8 Sedan, equipped with the 2.8 liter carburetor engine, will be available in the USA only. The engine is similar to the one in Models 280 S/8 and 250/8 Cp.

TECHNICAL DATA:

Shipping weight . . . . . 3069 lbs.

Curb weight . . . . . 3179 lbs.

SPEEDS, CONSUMPTION FIGURES, OPERATING CONDITIONS

	AUTOMATIC TRANSMISSION
Maximum speed 4th gear	180 kph 112 mph
Climbing ability 1st gear 2nd gear 3rd gear 4th gear	 44 % 41 % 22 % 14 %
Accelerating, engaging individual gears 0-100 km/h	11.2
Fuel consumption for average highway travel mpg.	13.5 - 22

C. MODELS 250/8, 250/8 CP., 280 S/8 (W 108, 114)

These automobiles, equipped with the carburetor 2.8 liter engines will have an enlarged warm air scoop for air intake plus a new thermostat in the air filter intake pipe. This thermostat switches the warm air supply off 18° F higher, which will result in improved driving qualities during the warm-up period.

Model 280 S/8 enlarged intake air scoops will be installed in the near future. The brackets, however, are already installed.

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D. PARTS REQUIRED

MODEL	DESCRIPTION	PART NO.
220/8	Carburetor	000 070 65 04
	Engine speed relay	000 545 21 32
	Wire harness	115 540 31 09

The above listed parts can be ordered from our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 105	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, February 1970

TO OUR MERCEDES-BENZ DEALERS

Subject: Approved Engine Oils, Oil Change Intervals and Oil Filling Quantities -- Model 220 D/8

On diesel engine OM 615, as installed in Model 220 D/8, materials are used which guarantee the highest degree of operating reliability, but which, however, are rather sensitive to the quality of oil. For this reason we repeat our recommendation to use only the brands of engine oil approved by us for this engine. Section A of this article contains a list of these oils; Section B lists the oil change intervals under various operating conditions; Section C lists the oil filling quantities; and Section D explains the oil change for cars with engine oil coolers.

A. Oils Approved for Engine OM 615

Numerous tests have been conducted to cover all operating conditions to be expected in the field. The following engine oils are approved to be suitable:

Castrol HD DB

Esso Motor Oil

Esso Uniflo Motor Oil

Mobiloil Special

Shell Rotella T

Texaco Havoline Motor Oil

Additionally in Canada: BP Super Visco Static

BP Energol HD Motor Oil

Make sure you use the right SAE grades: SAE 30 in summer and SAE 10 W during the winter season. Listed multigrade

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oils are available in SAE grades 10 W/30 or 10 W/40 and 20 W/50. Use SAE 20 W/50 during summer. At the beginning of the winter season, change to SAE 10 W/30. (Refer to Service Information No. 55, Group 00, dated August 1968.) SAE 10 W/40 may be used all year round.

The engine oils listed have, of course, been approved for all of our engines.

B. Oil Change Intervals

Under normal operating conditions the oil in the engine OM 615 should be changed every 3,000 miles (5,000 km). If the sulphur content of the diesel fuel exceeds 0.5 percent by weight or if severe operating conditions exist (short distance driving, taxi service, very dusty roads), the engine oil should be changed every 1,500 miles (2,500 km).

In this case it is sufficient to perform the engine oil filter service at every second oil change, i.e. after every 3,000 miles (5,000 km). The full-flow filter element has to be cleaned and the by-pass filter element has to be replaced.

C. Oil Quantities Required

The oil quantities depend upon the engine equipment. The following quantities of oil should be used:

1. Intermediate oil change at 1,500 miles (2,500 km) (without filter and without engine oil cooler): 4.25 qts. (4.0 liters).

2. Normal oil change at 3,000 miles (5,000 km) vehicles without engine oil cooler (filter service included): 5.5 qts. (5.0 liters) (including 1.125 qts. (1.0 liters) capacity of oil filter).

3. Normal oil change at 3,000 miles (5,000 km) for vehicles with engine oil cooler (with filter service): 6.0 qts. (5.5 liters) 0.5 qt. (0.5 liter) capacity of the engine oil cooler included).

D. Engine Oil Cooler

In the course of the normal oil change at 3,000 miles (5,000 km), the oil in the engine oil cooler also has to be changed.

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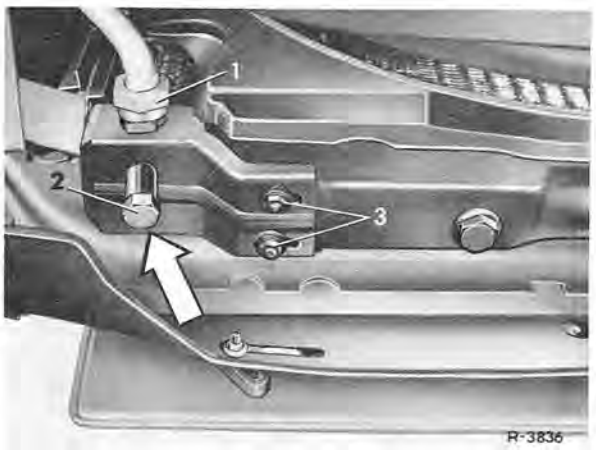

ILLUSTRATION

1. Connector, oil filter line
2. Oil drain plug at engine oil cooler
3. Nut, engine oil cooler at water cooler

To drain the oil from the engine oil cooler, first remove the oil filter lower section and then remove the oil drain plug (2) from the engine oil cooler. (see illustration)

Since air can enter the oil filter, the oil can drain off completely from the engine oil cooler. After the oil has been drained from the oil pan, the oil plugs of the oil pan and the engine oil cooler should be tightened with the following torques:

Oil Drain Plug	Tightening Torque	
	Ft. lb.	kpm
Oil pan	36.17 ± 1.81	5.0 ± 0.25
Engine oil cooler	14.50 + 3.62	2.0 + 0.5
Oil filter lower section	28.93 - 3.62	4.0 - 0.5

The oil drain plug seal rings (engine oil cooler: copper, oil pan: copper/asbestos) may be reused only if they are in perfect condition. Damaged seal rings should be replaced.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 126	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 00	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: EXCHANGE OF ENGINES FOR VEHICLES WITH POWER STEERING -- ENGINES M 115, M 121, OM 615, OM 621

Prior to the installation of one of the above mentioned exchange engines into a vehicle with power steering, a threaded hole M 8 must be tapped into the oil pan in order to mount the support of the power steering pump. A check should be made whether the tapped hole was provided at the factory.

ENGINE MODELS M 121 AND OM 621 WITH OIL PAN LOWER SECTION, PART NO. 121 010 00 28 (Distance of joint to ground approximately 3.70 in. (94 mm))

A drill jig (illustration 1) and an elongated hole of .26 in. (6.7 mm) has to be made in your shop.

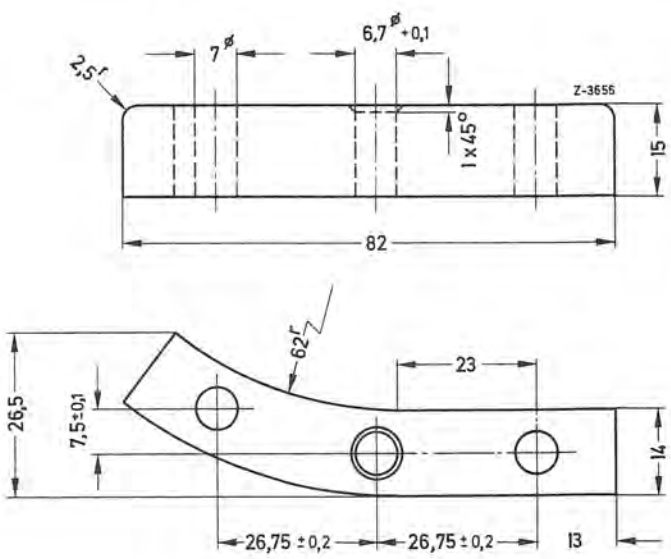

ILLUSTRATION 1

For this job, place the engine on one side, or if on an assembly stand, bring it into a suitable working position.

2.5 mm R = .098 in. radius
7 mm dia. = .28 in. dia.
6.7 mm dia. ± 0.1 = .26 in. dia. ± .004
1 mm x 45° = .04 in. x 45°
15 mm = .59 in.
82 mm = 3.23 in.
62 mm R = 2.44 in. radius
23 mm = .91 in.
26.75 mm ± 0.2 = 1.05 in. ± .008
13 mm = .51 in.
14 mm = .55 in.
26.5 mm = 1.04 in.

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INSTRUCTIONS

1. Remove mounting screws of the oil pan lower section on both sides of the support.

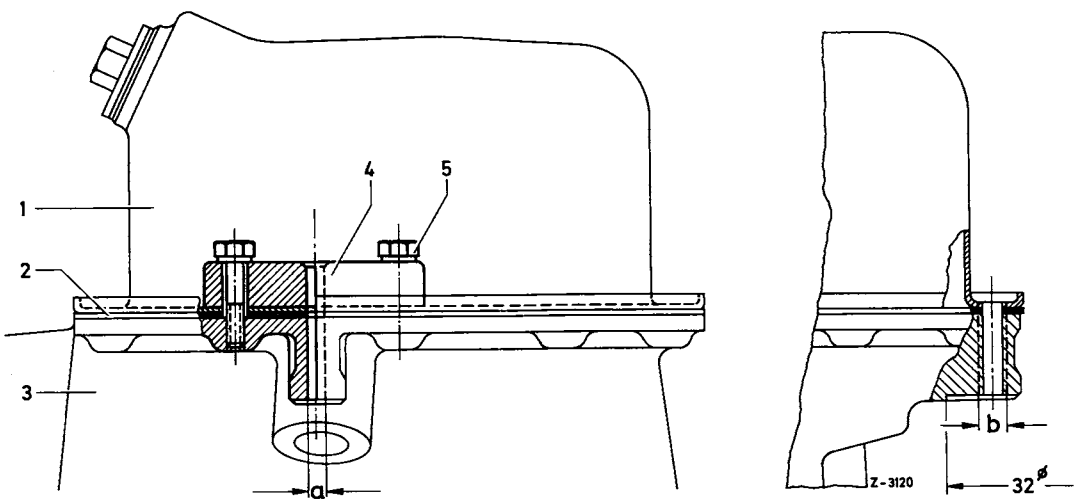

ILLUSTRATION 2

1. Oil pan lower section
2. Gasket
3. Oil pan upper section
4. Hex. head screw M 8 x 30 (location of)
5. Long screws

32 mm dia. = 1.25 in. dia.

2. Secure drill jig to oil pan lower section, using two long screws (5) (illustration 2).

3. Drill one .26 in. dia. (6.7 mm dia.) hole, remove drill jig and reinstall mounting screws.

4. Tap M 8 threads, de-burr, and clean off with compressed air.

The established time to thread the hole is 0.4 hours.

ENGINE MODELS M 121 AND OM 621 WITH OIL PAN LOWER SECTION part No. 115 010 01 28 OR 115 010 02 28, (Distance of joint face to ground approximately 3.15 - 3.35 in. (80 - 85 mm)) as well as engine models M 115 and M 615.

On the engines mentioned above a threaded bushing 8 mm inside dia. x 12 mm outside dia. x 13 mm long must be installed into the oil pan upper section. A drill jig in accordance to illustration 3 has to be made in your shop.

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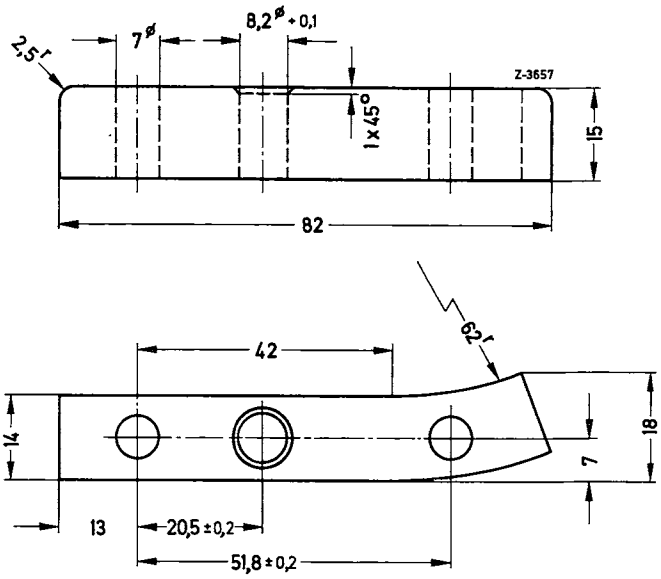

ILLUSTRATION 3

Drill jig

2.5 R = .098 in. radius
7 mm dia. ≈ .28 in. dia.
8.2 mm dia. ± .1 = .32 in. dia. ± .004

1 mm x 45° = .004 in. x 45°
15 mm = .59 in.
82 mm = 3.23 in.
14 mm = .55 in.
42 mm = 1.65 in.
62 mm R = 2.14 in. radius
18 mm = .71 in.
13 mm = .51 in.
20.5 mm ± 0.2 = .806 in. ± .008
51.8 mm ± 0.2 = 2.04 in. ± .008

INSTRUCTIONS

1. Remove oil pan lower section. Fasten drill jig to joint face of oil pan upper section.

2. Drill .32 in. dia. (8.2 mm dia.) hole.

3. Re-drill hole with .39 in. dia. (10 mm dia.) drill, .59 in. (15 mm) deep. Tap M 12 x 1.75 pitch threads .55 in. (14 mm) deep, into oil pan upper section. Insert threaded bushing.

NOTE: THREADED BUSHING MAY NOT PROTRUDE FROM OIL PAN (ILLUSTRATION 4).

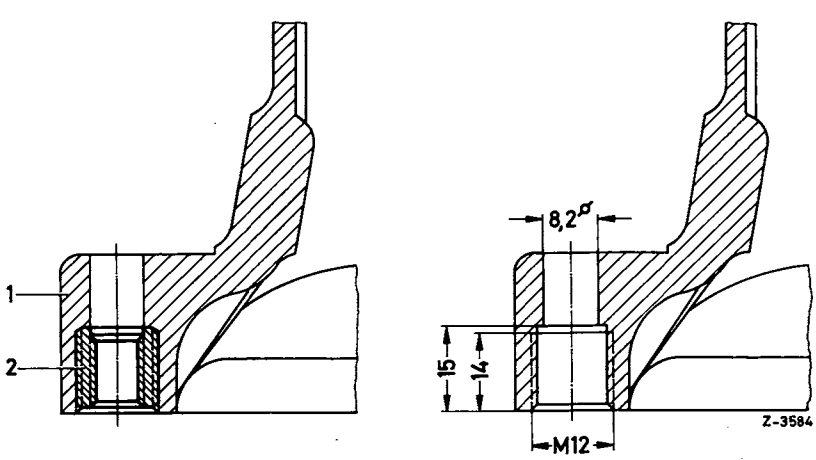

ILLUSTRATION 4

Section view of oil pan

1. Oil pan upper section
2. Threaded bushing

8.2 mm dia. = .32 in. dia.
15 mm = .59 in.
14 mm = .55 in.

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4. Clean sealing surface of oil pan. Using a new gasket, attach oil pan lower section to upper section (torque applied to hex. head socket screw 5.79 ft. lb. (0.8 kpm)).

The established working time is 0.8 hours.

The threaded bushing 8/12 x 13 DIN N195 b, part No. 900195 008103, may be ordered through our Mercedes-Benz parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 69	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 00	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATIONS -- MODELS 250/8 Cp., 280 S/8, 280 SE/8, 300 SEL/8

The following modifications entered production as of the indicated chassis end numbers. These changes were made together with the recent changes on the manual and automatic transmissions as well as on the driveshaft.

MODEL	CHASSIS END NUMBER
280 S/8	027 623
280 SE/8 Sedan	028 986
280 SEL/8 Sedan	029 326
280 SE/8 Cp/Conv	002 764
300 SEL/8	001 859
250 Cp	from start of production

Clutch Actuation

The operating rod of the clutch slave cylinder is shorter on models 280 S/8 through 300 SEL/8, and the measuring flange is smaller. Otherwise, the clutch actuation is the same as on models 220 D/8 through 250/8.

The method of measuring the wear of the clutch plate corresponds to that described in the Workshop Manual W 114/115, Job. No. 25-7/1 and 2.

Engine Mounting

Front Mounting

The left-hand and right-hand front engine mounts, part No. 108 223 01 12, are identical. No adjustments are required on the engine travel limit system.

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Rear Mounting

No adjustments are required for the rear mount, part No. 108 240 03 18.

The new rear engine mount is pressed against the frame floor unit with one rubber buffer each, part No. 108 987 07 40. The rubber buffer should be pretensioned by approximately .4 in. (10 mm)

In case complaints are received about humming and droning noises, these can be reduced or eliminated by adding washers and thus increasing the pretensioning of the rubber.

Steering Gear

Jacket Tube

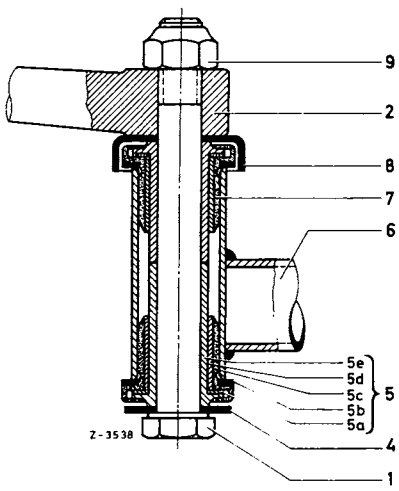
The jacket tube is now similar to that of models W 114/115 where the steering shaft is exposed between the upper section of the jacket tube and the steering wheel hub cover plate, whereas the shifting shaft is located inside the jacket tube.

Steering Relay Arm

The steering relay arm support has been arranged in a lower position. Furthermore, the steering relay arm is located between the self-locking hexagon nut (2) and dust cap (8) (this arrangement corresponds to that in Model 300 SEL/8 6.3).

Steering relay arm part number:

Left-hand drive 108 463 05 10 Code number 805



ILLUSTRATION

1. Hex nut
2. Steering relay arm
4. Sealing washer
5. Lower rubber bearing
5a. Plastic washer
5b. Steel washer
5c. Rubber bushing
5d. Plastic bushing
5e. Bushing
6. Journal bearing
7. Upper rubber bearing
8. Dust cap
9. Self-locking hex nut

(over)

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Air Suspension Switch

Instead of the previous lever switch, a pull knob is now installed. It has the same function as the switch:

Pushed in: Normal level = normal driving position.

Intermediate position: Air is prevented from escaping the air suspension valve. This position is necessary when loading or unloading by crane, jacking up the car with a jack or hoist and when shipping by rail or ship.

Pulled out: Higher level = increased ground clearance.

For rough terrain or poor roads. In this position the vehicle may only be driven at moderate speed.

The air suspension warning light has been transferred from the combination instrument to the pull knob. It lights up white either when the pull knob is pulled or the air pressure is too low.

Body

Modifications on the frame floor unit and tunnel were necessary to accomodate the new 4-gear transmission G 76/27 and the new MB automatic transmission K 4 C 025 on models 280 S/8 to 300 SEL/8.

This fact and the different shifting mechanisms are the reason that the new transmissions cannot be installed in old vehicles - and vice versa.

When body repairs are being performed, it must be remembered that, besides the modifications on the tunnel and fire wall, the steering relay arm support is not anymore welded to the side member but to the console of the front axle lateral support. This indicates that a new drilling template is required for the Celette body/frame measuring bench when installing a new steering relay arm support.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 157	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, February 1970

TO OUR MERCEDES-BENZ DEALERS

Subject: 149° F (65° C) and 212° F (100° C) Temperature Switches, 1970 Passenger Car Engines - USA Version

Temperature Switches on 6 Cylinder Carburetor Engines

Our "Model Year 1970 Passenger Cars USA Version" introductory booklet, Figure 97, p. 46, shows the 149° F (65° C) temperature switch, which controls the rear carburetor choke, located between cylinders number 2 and 3. This location has been changed before any of our automobiles were delivered to our dealers. This switch is now located behind number 6 cylinder.

The sensor for the coolant temperature indicator in the instrument panel, which was originally located behind number 6 cylinder, is now installed between cylinders number 2 and 3.

In production this change came in effect starting with the following chassis end numbers:

Model	Chassis End Number
250/8	36 584
280 S/8	39 563
250/8 Cp	00 475

On tourist delivery vehicles below the above mentioned chassis end numbers, the temperature switch, 149° F (65° C), and the sensor for the coolant temperature indicator have to be exchanged during the next maintenance service when your customers bring their cars in.

The operating temperatures of all 1970 Mercedes-Benz engines - USA Version - are higher than on previous engine models (except Diesel). There is no danger to the engine, as long as the temperature indicator in the instrument panel does not reach the red indicator mark. Please advise your customers accordingly.

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For engines with carburetors, the following table should be used:

Model	250/8 Cp., 250/8, 280 S/8	220/8
Dwell Angle	$38^{\circ}\ ^{+3^{\circ}}_{-1^{\circ}}$	$50^{\circ} \pm 2^{\circ}$

Due to wear on the cam, the adjustment values of the distributor points have to be changed. Therefore, when installing new distributor points on vehicles with transistorized ignition, the dwell angles listed below are to be used:

Model	250/8 Cp., 250/8, 280 S/8	220/8
Dwell Angle	$30 \pm 2^{\circ}$	$47 \pm 2^{\circ}$

Servicing Requirements

On model 220/8, equipped with Stomberg carburetor 175 CDT, the automatic choke should be readjusted to the normal setting, i.e. the index marks on the choke housing and the choke cover should be in alignment. This should be included in the "B Service Schedule" at 3,000 miles. We refer you to "Adjusting the Automatic Choke", p. 43 of the introductory brochure "Model Year 1970 Passenger Cars - USA Version".

Besides the work items mentioned in the Service Booklet, these additional operations have to be performed:

- Initial wear on the cam rider in the circuit breaker causes a change of the contact gap and dwell angle which requires checking and/or readjustment of the breaker point gap at the 3,000 mile "B" inspection service.

- At the 3,000 mile "B" inspection service, the lubricating points according to the latest chart No. 400 and No. 415 - "Lubricating with the oil can" - should be performed.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 142	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 00	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: OIL CHANGE INTERVALS AND FLUIDS FOR AUTOMATIC MERCEDES-BENZ TRANSMISSION -- ALL PASSENGER CARS

A. OIL CHANGE INTERVALS

1. In automatic transmissions without oil filter, the oil should be changed every 12,000 miles (20,000 km).

   In models 600 and 300 SEL/8 6.3, with oil filter, the filters and the oil have to be changed every 12,000 miles (20,000 km).

   For specification on whether or not the automatic transmission has an oil filter, see Service Information No. 17, Group 27, of April 1966 and Service Information No. 56, Group 27 of September 1967. All transmissions with three sets of planetary gears have an oil filter.

2. In all other automatic transmissions with oil filter, the oil must be changed and the filter element must be replaced every 30,000 miles (50,000 km) if normal conditions exist.

   When severe driving conditions exist, such as predominantly city driving, pulling a trailer, or driving in mountains, an additional oil change (without filter replacement) should be performed. The oil change should take place every 15,000 miles (25,000 km).

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B. TRANSMISSION FLUIDS

Up to the end of April 1969, models 280 S/8, 280 SE/8 and 300 SEL/8 were equipped with K 4A transmissions with two sets of planetary gears. Since May, 1969 these models are being equipped with transmissions of type K 4C 025 with three sets of planetary gears.

The latter corresponds essentially to that of the W 114/ 115 model series. When changing or refilling transmission fluid, make sure which type of transmission is installed, since the various versions require different types of oil.

The automatic transmission fluids released by us are listed in our Fuels and Lubricants Manual (Betriebsstoff-Vorschriften). Make sure that the brand name on the container and the number corresponds precisely to the data listed in the Fuels and Lubricants Manuals (Betriebsstoff-Vorschriften).

The proper transmission fluids are also listed in Service Information No. MB-T 140, Group 27 of October, 1969.

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Article No.	File	Group	Application
131	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: HYPOID GEAR OIL FOR REAR AXLES, ALL PASSENGER CAR MODELS.

Only the improved quality rear axle oils, listed below and on page 235 of the "Specifications for Service Products" manual, must be used in all Mercedes-Benz automobile differentials, with the exception of limited slip versions.

Amalie Multi-Purpose Lube
Caltex Multi-Purpose Thurban EP90
Chevron (RPM) Universal Gear Lubricant
Kendall Three Star Gear Lube
M.P. Gear Lube
Pennzoil Gear Lubricant 4080 MP/4090MP
Philube SMP Gear Oil
Sinclair Extra Duty Gear Lube
Texaco Multigear Lube EP

Gear oils listed on page 235.1 of this manual, must no longer be used for differentials.

Page 235.3 of the Service Products manual lists hypoid gear oil, "Veedol Multigear Limited Slip Special", for use in limited slip differentials.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	126	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	00	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: EXCHANGE OF ENGINES FOR VEHICLES WITH POWER STEERING -- ENGINES M 115, M 121, OM 615, OM 621

Prior to the installation of one of the above mentioned exchange engines into a vehicle with power steering, a threaded hole M 8 must be tapped into the oil pan in order to mount the support of the power steering pump. A check should be made whether the tapped hole was provided at the factory.

ENGINE MODELS M 121 AND OM 621 WITH OIL PAN LOWER SECTION, PART NO. 121 010 00 28 (Distance of joint to ground approximately 3.70 in. (94 mm))

A drill jig (illustration 1) and an elongated hole of .26 in. (6.7 mm) has to be made in your shop.

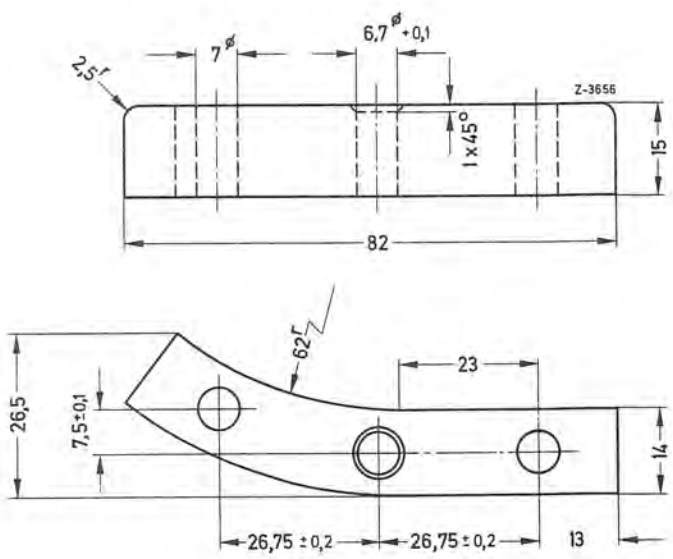

ILLUSTRATION 1

For this job, place the engine on one side, or if on an assembly stand, bring it into a suitable working position.

2.5 mm R = .098 in. radius
7 mm dia. = .28 in. dia.
6.7 mm dia. ± 0.1 = .26 in. dia. ± .004
1 mm x 45° = .04 in. x 45°
15 mm = .59 in.
82 mm = 3.23 in.
62 mm R = 2.44 in. radius
23 mm = .91 in.
26.75 mm ± 0.2 = 1.05 in. ± .008
13 mm = .51 in.
14 mm = .55 in.
26.5 mm = 1.04 in.

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INSTRUCTIONS

1. Remove mounting screws of the oil pan lower section on both sides of the support.

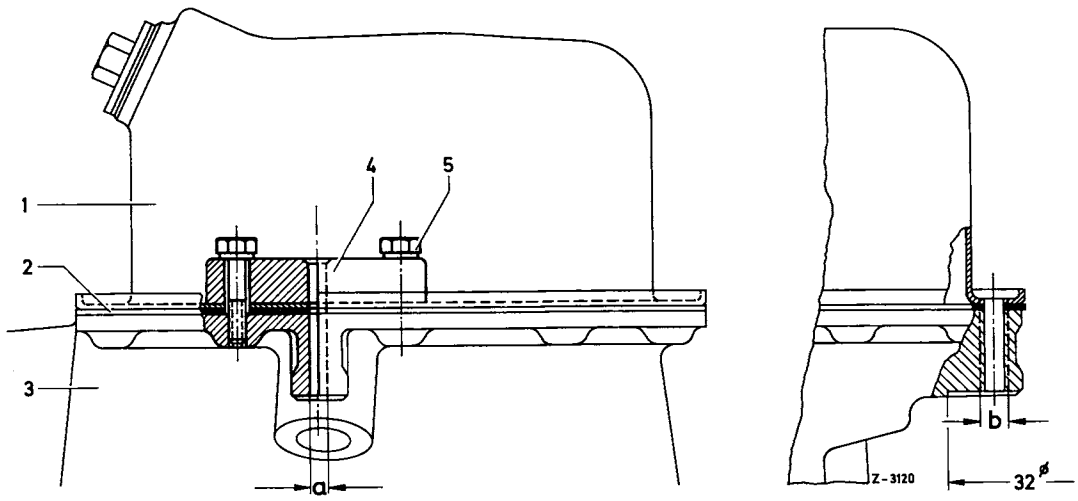

ILLUSTRATION 2

1. Oil pan lower section
2. Gasket
3. Oil pan upper section
4. Hex. head screw M 8 x 30 (location of)
5. Long screws

32 mm dia. = 1.25 in. dia.

2. Secure drill jig to oil pan lower section, using two long screws (5) (illustration 2).

3. Drill one .26 in. dia. (6.7 mm dia.) hole, remove drill jig and reinstall mounting screws.

4. Tap M 8 threads, de-burr, and clean off with compressed air.

The established time to thread the hole is 0.4 hours.

ENGINE MODELS M 121 AND OM 621 WITH OIL PAN LOWER SECTION part No. 115 010 01 28 OR 115 010 02 28, (Distance of joint face to ground approximately 3.15 - 3.35 in. (80 - 85 mm)) as well as engine models M 115 and M 615.

On the engines mentioned above a threaded bushing 8 mm inside dia. x 12 mm outside dia. x 13 mm long must be installed into the oil pan upper section. A drill jig in accordance to illustration 3 has to be made in your shop.

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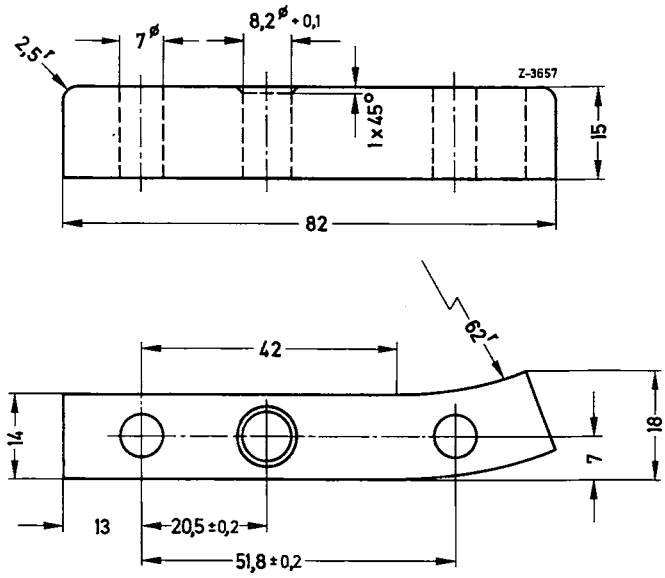

ILLUSTRATION 3

Drill jig

2.5 R = .098 in. radius
7 mm dia. ≈ .28 in. dia.
8.2 mm dia. ± .1 = .32 in. dia. ± .004

1 mm x 45° = .004 in. x 45°
15 mm = .59 in.
82 mm = 3.23 in.
14 mm = .55 in.
42 mm = 1.65 in.
62 mm R = 2.14 in. radius
18 mm = .71 in.
13 mm = .51 in.
20.5 mm ± 0.2 = .806 in. ± .008
51.8 mm ± 0.2 = 2.04 in. ± .008

INSTRUCTIONS

1. Remove oil pan lower section. Fasten drill jig to joint face of oil pan upper section.

2. Drill .32 in. dia. (8.2 mm dia.) hole.

3. Re-drill hole with .39 in. dia. (10 mm dia.) drill, .59 in. (15 mm) deep. Tap M 12 x 1.75 pitch threads .55 in. (14 mm) deep, into oil pan upper section. Insert threaded bushing.

NOTE: THREADED BUSHING MAY NOT PROTRUDE FROM OIL PAN (ILLUSTRATION 4).

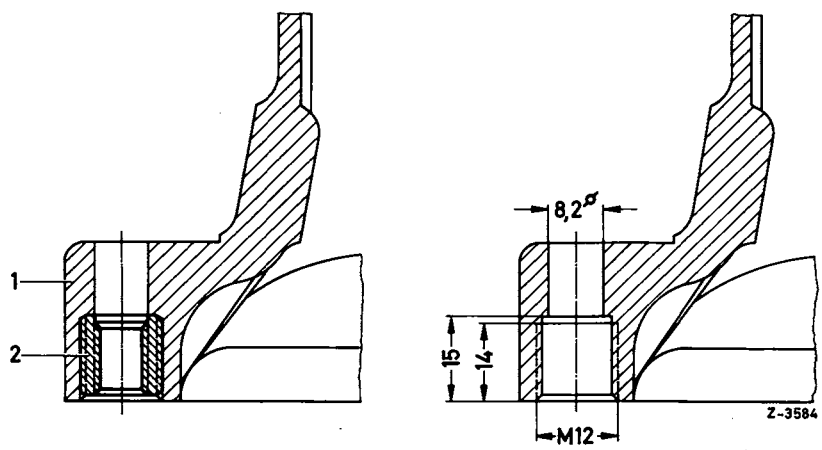

ILLUSTRATION 4

Section view of oil pan

1. Oil pan upper section
2. Threaded bushing

8.2 mm dia. = .32 in. dia.
15 mm = .59 in.
14 mm = .55 in.

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4. Clean sealing surface of oil pan. Using a new gasket, attach oil pan lower section to upper section (torque applied to hex. head socket screw 5.79 ft. lb. (0.8 kpm)).

The established working time is 0.8 hours.

The threaded bushing 8/12 x 13 DIN N195 b, part No. 900195 008103, may be ordered through our Mercedes-Benz parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 115	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 00	PASSENGER CARS

This Service Information Supersedes Service Information No. 115, Group 00, of January 1969.

FORT LEE, JANUARY 1970

Changes: Completely revised

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MEASURES FOR IMPROVED WINTER OPERATION

In this Service Information you will find the most important "Measures for Improved Winter Operation of Passenger Cars" in a summarized form. Subjects which are assumed to be generally known (previously published) will be dealt with briefly, whereas the greater emphasis will be given to our current production models.

A. OPERATING PRODUCTS

1. ANTI-FREEZE

The cooling system of all cars shipped from the factory is continuously protected all year long with anti-freeze to a temperature of -22° F (-30° C).

Whenever the anti-freeze is added to a car at your dealership, the degree of protection should be indicated on the tag furnished with the anti-freeze and the tag should be attached to the car, next to the radiator filler cap.

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REQUIRES IMMEDIATE ATTENTION

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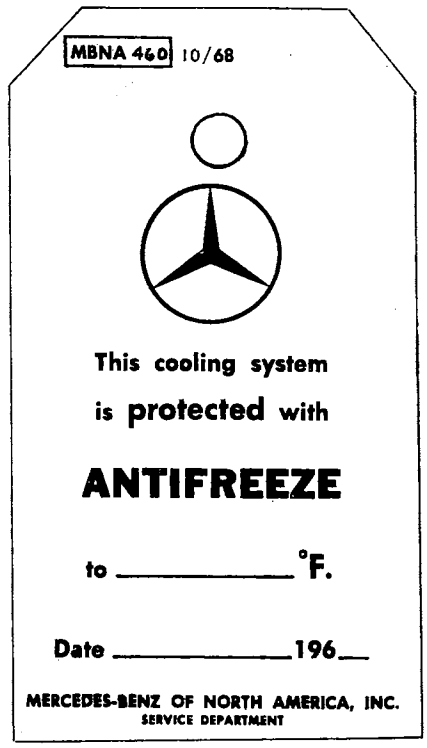

Illustration 1

Radiator Tag
(form MBNA 460)

The anti-freeze tags (form MBNA 460) may be ordered from our Technical Service Department.

CAUTION: MAKE SURE ONE OF THE ANTI-CORROSION TREATING AGENTS RELEASED BY US IS ADDED TO THE COOLING WATER - REFER TO THE "SPECIFICATIONS FOR OPERATING PRODUCTS" (BETRIEBSSTOFF VORSCHRIFTEN) BOOKLET, SHEETS NO. 310 TO 325. TREATING AGENTS SHOULD BE ADDED EVEN IF THE ANTI-FREEZE MANUFACTURER'S SPECIFICATIONS ARE TO THE CONTRARY.

2. ENGINE OIL

To improve the starting of the engine, at constantly low temperatures, an S 1 engine oil should be used as indicated in the following table:

Air Temperature	SAE Grade
below -13° F (-25° C)	SAE 5 W*
from -13° F (-25° C) to 50° F (+10° C)	SAE 10 W*
exceeding 32° F (0° C)	SAE 30*

* or an appropriate multigrade oil

Generally, as of October 1, engine oil of grade SAE 10 W, and beginning April 1, engine oil of grade SAE 30 should be used.

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3. FUEL

Gasoline does not require any special measures during the winter months. To ensure trouble-free winter operation of Diesel engine cars, however, winter diesel fuel must be used. If winter Diesel fuel is not available, regular Diesel fuel can be adapted for winter operation by mixing it with kerosene (tractor fuel) or regular gasoline (not premium gasoline or benzene mixture).

For further details, including a chart listing mixing ratios, see "Specifications for Operating Products" (Betriebsstoff Vorschriften) booklet, sheet No. 137 or the owner's manual.

4, ANTI-FREEZE FOR AIR SUSPENSION SYSTEM

At ambient temperatures below 41° F (5° C), the anti-freeze device container on cars equipped with air suspension should be filled with alcohol containing 96% ethyl or methyl.

5. MERCEDES-BENZ WINDSHIELD WASHING CONCENTRATE

To prevent the windshield washing system from freezing, add M-B windshield washing concentrate to the water in the container. This concentrate may be ordered under the following part number through our MB parts depots:

3.53 oz. (100 gram) container - Part No. 000 986 41 71. The mixing ratio is printed on the package.

B. VALVE CLEARANCE

In areas where ambient temperatures below -13° F (-25° C) are experienced, the following valve clearance values for the intake valves may be used to improve starting behavior:

MODEL	Valve Clearance Winter Value	Valve Clearance Standard Value
190 DC, 200 D, 220 D/8, 300 SEL/8 - 6.3, 600	.006 in. (.15 mm)	.004 in. (.10 mm)
220/8, 230/8, 250/8, 250 S, 280 S/8, 280 SE/8, 280 SE/8 - Cp./Conv., 280 SL/8, 300 SEL/8	.005 in. (.12 mm)	.003 in. (.08 mm)

At higher temperatures, the valve clearance must be readjusted to the respective standard values.

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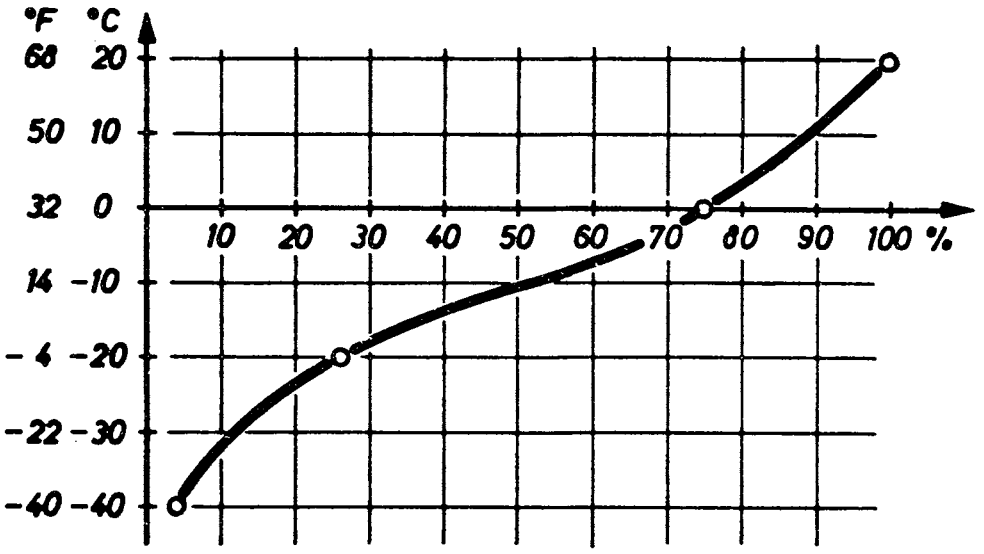
C. ELECTRICAL EQUIPMENT ON ENGINE

1. BATTERY

The following graph illustrates how the starting capacity of the battery is reduced as the ambient temperature decreases:



To improve the starting of the engine at extremely low ambient temperatures, those passenger cars listed below are equipped with heavy duty batteries which have been standard U.S. equipment for some time. The following parts are required for a subsequent installation:

Qty.	Part	190 DC, 200 D	190 C, 200 230	220 b/Sb/SEb 230 S, 250 SE 280 SE/8	280 S/8, 250 S
1	Battery	000 541 83 01 (88 Ah)		000 541 74 01 (66 Ah)	
1	Supporting plate	110 541 04 35	110 541 05 35	110 541 01 35	
1	Mounting frame	110 540 07 23	110 540 08 23		108 540 04 23
1*	Tightening screw		120 541 01 24		
1	Static Grounding strap	110 540 06 31	-	-	-
1	Starter cable	-	-	-	108 540 04 30
1	Mounting clamp	-	-	-	187 995 00 37
1	Hex. head sheet-metal screw	-	-	-	007976 004205

* On models 220 b/Sb/SEb, 230 S, 250 S, and 280 S/8, two tightening screws are required.

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The batteries for the models 220, 220D, 230/8, 250/8, 250C are different and are available from our parts depots under the following part numbers:

Capacity	Part Number
66 Ah	001 541 09 01
88 Ah	001 541 10 01

Model 220 D/8 is equipped with an 88 Ah battery from the start of production.

The state of electrical charge and the acid level of the batteries should always be thoroughly checked. Correct if necessary. Keep battery terminals clean, treat with special grease. For details concerning batteries see "Technical Data Manual, Passenger Cars", 1966 edition, page 424.

2. ALTERNATOR

In order to avoid damages to the diodes of the alternator, the following should be observed:

a) While the engine is running:
do not disconnect alternator from battery,
do not loosen or remove battery terminal,
do not remove the plug from the regulator,

b) do not tow-start the vehicle without the battery being connected,

c) do not short-circuit the terminals in order to check whether the alternator supplies charging current,

d) disconnect the battery if it is to be recharged by means of a rapid charger.

3. D.C. GENERATOR

The D.C. generator does not charge the battery at low engine speeds, therefore, it is advisable to run the engine at high speeds.

If necessary, a higher capacity generator (300 W) should be installed (standard on models 300 SE).

4. IGNITION SYSTEM

To improve the starting capability of passenger cars with gasoline engines, a few modifications have been introduced in the series. These modifications may also be installed at a later date. For details

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refer to Service Information No. 116, Group 00, dated December 1968. The ignition system should be checked before the cold season starts. Important, inspect the cables for chafing and cracks. According to Service Information No. 25 a, Group 00, dated June 1969, starting troubles caused by creeping currents can be remedied by means of contact spray.

5. COOLING WATER PRE-HEATING DEVICE

The purpose of the cooling water pre-heating device is to keep the cooling water warm at low ambient temperatures. A number of these devices are available on the open market and may be installed upon customer request on all of our engines.

D. CARBURETOR AND INJECTION SYSTEM

1. CARBURETOR ENGINES

To prevent icing of the carburetor, the hot-air flap of the air cleaner intake pipe should be adjusted to winter operation. Various new models (series as of January 1968) convert automatically (for details refer to Service Information No. 118, Group 00, of December 1968, and to Owner's Manual).

2. ENGINES WITH INAT CARBURETORS

Owners of cars equipped with INAT carburetors should be reminded that prior to a cold start, the accelerator pedal should be pushed down once in order to engage the automatic choke.

3. DIESEL ENGINES

In order to improve the starting ability of vehicles equipped with Diesel engines, the information contained in the owner's manual advises about the starting limit and the measures to improve the starting ability should be observed. Concerning model 220 D/8, we refer to Service Information No. 16, Group 00, of March 1969.

Service Manual, Passenger Cars, August 1959, Job No. 00-23/1, and Service Information No. 113, Group 00, of April 1968, give particular details concerning the causes and remedies about the "knocking of Diesel engines" in cold condition.

E. TIRES

On page 7 you will find a list of winter tires presently approved for our passenger cars.

Page 9 shows a list of tire pressures for winter tires.

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Model	Size of Tire 1) Ply Rating	Continental	Dunlop	Semperit	Veith-Pirelli
190 C, 190 DC, 200, 200 D, 230	7.00 - 13 4 PR	M + S studded	M+S-Eis	------	------
220 B, 220 SB, 220 SEB, 220 SEB Cp. 230 S	7.25 - 13 4 PR or 6 PR	M + S studded	M+S-Eis	------	------
220 SEB Conv., 300 SE, 300 SEL	7.50 - 13 6 PR	M + S studded	M+S-Eis	------	------
220/8, 220 D/8, 230/8, 250/8, 250/8 Cp.	6.95/175 - 14 4 PR 175 SR 14	M + S studded	M+S-Eis	------	------
		Radial M+S 2) studded	M+S-Eis 2)	------	------
250 S, 250 SE, 250 SE Cp./Conv., 280 S/8, 280 SE/8, 280 SE/8 Cp/Conv., 300 SEB, 300 SEL, 300 SEL/8, 300 SE Cp./ Conv., 230 SL, 250 SL, 280 SL/8	7.35/185 - 14 6 PR 185 SR 14	M + S studded	M+S-Eis	M+S-Eis M 211	------
		Radial M+S 2) studded	M+S-Eis 2)	------	------
300 SEL/8 6.3 3)	185 SR 14	Radial M+S 2) studded	----------	------	------
600	9.00 - 15 6 PR	----------	----------	------	M+S-Eis Cortina

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1) Ply rating (PR) is the international designation of the tensile strength of the carcass. The PR figure does not, in all cases, correspond to the actual number of fabric layers.

2) With tube (only with rubber valve).

3) Winter tires only with disc wheel 6 J x 14-H, Part No. 108 400 00 02, or vented disc wheel 6 J x 14-H, Part No. 108 400 07 02.

In this connection we would like to stress the most important operational instructions:

1. WINTER TIRES

As a matter of principle, winter tires should be mounted on all 4 wheels. A maximum speed of 80 mph (130 km/h) for conventional winter tires and 90 mph (150 km/h) for radial winter tires should not be exceeded.

Studded tires should be driven carefully during the first 60 miles (100 km). During this period, a speed of 60 mph (100 km/h) should not be exceeded, and excessive braking should be avoided. Previously used M+S-Eis tires should be mounted in such a manner that all of them have the same direction of rotation. This should also be observed when the tires are rotated every 1500 miles (2500 km).

2. SNOW CHAINS

Snow chains require retightening after driving a short distance. They should, however, be fitted loosely so that at one point the hand may be slipped between the chain and the tire.

When driving with snow chains, a maximum speed of 45 mph (70 km/h) should not be exceeded.

Snow chains are subject to fast wear. When roads are not covered with snow, moderate speeds are urgently recommended. Remove them as soon as possible.

3. GENERAL INFORMATION

In case winter tires of size 6.95/175-14 or 175 SR 14 are not available, the released tires of size 185 SR 14 mounted on disc wheels 5 1/2 J x 14 H may be used for models 220 D/8 to 250/8. We do not recommend the use of the tires 7.35/185-14 for the mentioned models, since they cause a greater variation of the tachometer indication. A change of the tire or rim sizes is not recommended.

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TIRE PRESSURE FOR WINTER TIRES

MODEL	TIRES	TIRE PRESSURE (Cold Tires) FRONT PSI	FRONT ATU	REAR PSI	REAR ATU
Conventional Winter Tires					
220/8, 220 D/8 230/8, 250/8	6.95/175 - 14	24 1) 27 2)	1.7 1) 1.9 2)	31 1) 34 2)	2.2 1) 2.4 2)
250 S, 250 SE, 280 S/8, 280 SE/8, 300 SE, 300 SEB, 300 SEL, 300 SEL/8,	7.35/185 - 14	28	2.0	36	2.5
600	9.00 - 15	28	2.0	34	2.4
600 Long	9.00 - 15	30	2.1	36	2.5
Radial Winter Tires					
220/8, 220 D/8, 230/8, 250/8	175 R 14 or 175 SR 14	27	1.9	36	2.5
250 S, 250 SE, 280 S/8, 280 SE/8, 300 SE, 300 SEB, 300 SEL/ 300 SEL/8,	185 R 14 or 185 SR 14	28	2.0	36	2.5
300 SEL/8 6.3	185 R 14 or 185 SR 14	30	2.1	37	2.6
230 SL, 250 SL, 280 SL/8	185 R 14 or 185 SR 14	26	1.8	31	2.2

Tire Pressure for Warm Tires

After city driving: +3.0 PSI (+0.2 ATU)
After long-distance driving: +7.0 PSI (+0.5 ATU)

1) For low load
2) For high load

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JURISDICTIONS PERMITTING THE USE OF STUDDED TIRES

The following 46 jurisdictions permit the use of studded tires as of November, 1968:

Alabama
Alaska
Arizona (Oct 1-May 1)
California (Oct. 1-May 1)
Colorado
Connecticut
Delaware
District of Columbia
Florida
Hawaii (illegal in Honolulu)
Idaho (Oct. 1-April 15)
Illinois (Oct. 1-May 1)
Indiana (Oct. 1-May 1)
Iowa (Nov. 1-April 1)
Kansas (Nov. 1-April 15)
Kentucky
Maine
Maryland
Massachusetts
Michigan (Nov. 1-May 1)
Minnesota (Oct. 15-May 1)
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey (Nov. 1-April 15)
New Mexico
New York (Oct. 16-April 30)
North Carolina
North Dakota (Oct. 15-April 1)
Ohio
Oklahoma (Nov. 1-April 1)
Oregon (Oct. 1-May 31)
Pennsylvania
Rhode Island (Oct. 31-April 1)
South Carolina
South Dakota
Tennessee
Utah
Vermont
Virginia (Oct. 31-April 15)
Washington
West Virginia (Nov. 1-April 1)
Wisconsin (Oct. 15-April 15)
Wyoming

F. INCREASED HEATER CAPACITY

1. HEATER

If the customer desires, a heat exchanger with enlarged surface may be installed subsequently into models 200, 200 D, 230 and 230 S, in order to improve the heater capacity. For details refer to Service Information No. S 11, Special Version, Group 83, of December 1961.

Due to the high cost of material and labor, a subsequent conversion of models 250 S/SE, 280 SL/8, 280 S/8, 280 SE/8, 300 SEB/SEL, 300 SEL/8 and 300 SEL/8 6.3 is not recommended since the entire heating unit and the operating system has to be replaced.

2. WINTER THERMOSTAT

A winter thermostat should be installed in order to increase the heater capacity. The part No. is 001 203 91 75 for all models presently manufactured.

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G. UNDERFLOOR PROTECTION

During the cold season the underbody of the vehicle is subject to extreme exposures, particularly caused by the effects of gravel and salt.

Especially exposed sections (such as wheelhouses and door sills) are provided with a highly resistant poly-vinyl chloride (PVC) coating at the factory. Moreover, the entire underside is coated with a layer of spray wax which lasts for about 3 months.

Older vehicles should be treated with an approved underside protective agent before the cold season starts. The approved agents are listed in our Specifications for Service Products, (Betriebsstoff Vorschriften), sheet No. 385.

The frame, all tube lines (in particular the brake lines) and the exhaust system should be checked. If necessary, repairs be performed prior to applying the undercoat.

H. BODY

Make sure that damages to the paint are patched up, antifreeze should be applied to the door locks regularly (Keso locks excepted) to prevent freezing (caution-affects paint). All door and trunk-lid weatherseals should be coated regularly with antifreeze.

The required parts may be ordered from our Mercedes-Benz parts depots.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 105	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, February 1970

TO OUR MERCEDES-BENZ DEALERS

Subject: Approved Engine Oils, Oil Change Intervals and Oil Filling Quantities -- Model 220 D/8

On diesel engine OM 615, as installed in Model 220 D/8, materials are used which guarantee the highest degree of operating reliability, but which, however, are rather sensitive to the quality of oil. For this reason we repeat our recommendation to use only the brands of engine oil approved by us for this engine. Section A of this article contains a list of these oils; Section B lists the oil change intervals under various operating conditions; Section C lists the oil filling quantities; and Section D explains the oil change for cars with engine oil coolers.

A. Oils Approved for Engine OM 615

Numerous tests have been conducted to cover all operating conditions to be expected in the field. The following engine oils are approved to be suitable:

Castrol HD DB

Esso Motor Oil

Esso Uniflo Motor Oil

Mobiloil Special

Shell Rotella T

Texaco Havoline Motor Oil

Additionally in Canada: BP Super Visco Static

BP Energol HD Motor Oil

Make sure you use the right SAE grades: SAE 30 in summer and SAE 10 W during the winter season. Listed multigrade

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oils are available in SAE grades 10 W/30 or 10 W/40 and 20 W/50. Use SAE 20 W/50 during summer. At the beginning of the winter season, change to SAE 10 W/30. (Refer to Service Information No. 55, Group 00, dated August 1968.) SAE 10 W/40 may be used all year round.

The engine oils listed have, of course, been approved for all of our engines.

B. Oil Change Intervals

Under normal operating conditions the oil in the engine OM 615 should be changed every 3,000 miles (5,000 km). If the sulphur content of the diesel fuel exceeds 0.5 percent by weight or if severe operating conditions exist (short distance driving, taxi service, very dusty roads), the engine oil should be changed every 1,500 miles (2,500 km).

In this case it is sufficient to perform the engine oil filter service at every second oil change, i.e. after every 3,000 miles (5,000 km). The full-flow filter element has to be cleaned and the by-pass filter element has to be replaced.

C. Oil Quantities Required

The oil quantities depend upon the engine equipment. The following quantities of oil should be used:

1. Intermediate oil change at 1,500 miles (2,500 km) (without filter and without engine oil cooler): 4.25 qts. (4.0 liters).

2. Normal oil change at 3,000 miles (5,000 km) vehicles without engine oil cooler (filter service included): 5.5 qts. (5.0 liters) (including 1.125 qts. (1.0 liters) capacity of oil filter).

3. Normal oil change at 3,000 miles (5,000 km) for vehicles with engine oil cooler (with filter service): 6.0 qts. (5.5 liters) 0.5 qt. (0.5 liter) capacity of the engine oil cooler included).

D. Engine Oil Cooler

In the course of the normal oil change at 3,000 miles (5,000 km), the oil in the engine oil cooler also has to be changed.

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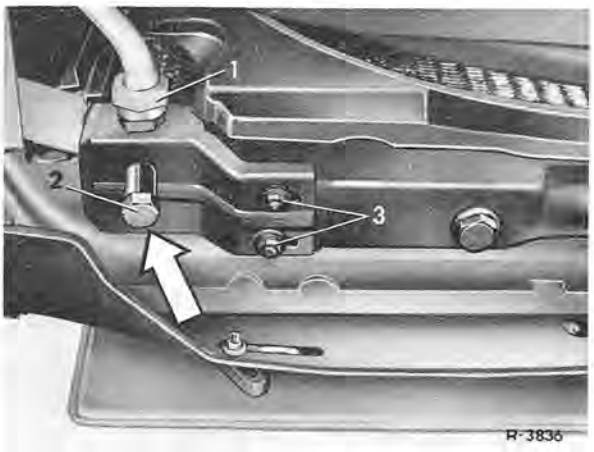

ILLUSTRATION

1. Connector, oil filter line
2. Oil drain plug at engine oil cooler
3. Nut, engine oil cooler at water cooler

To drain the oil from the engine oil cooler, first remove the oil filter lower section and then remove the oil drain plug (2) from the engine oil cooler. (see illustration)

Since air can enter the oil filter, the oil can drain off completely from the engine oil cooler. After the oil has been drained from the oil pan, the oil plugs of the oil pan and the engine oil cooler should be tightened with the following torques:

Oil Drain Plug	Tightening Torque	
	Ft. lb.	kpm
Oil pan	36.17 $\pm$ 1.81	5.0 $\pm$ 0.25
Engine oil cooler	14.50 + 3.62	2.0 + 0.5
Oil filter lower section	28.93 - 3.62	4.0 - 0.5

The oil drain plug seal rings (engine oil cooler: copper, oil pan: copper/asbestos) may be reused only if they are in perfect condition. Damaged seal rings should be replaced.

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 69	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 00	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATIONS -- MODELS 250/8 Cp., 280 S/8, 280 SE/8, 300 SEL/8

The following modifications entered production as of the indicated chassis end numbers. These changes were made together with the recent changes on the manual and automatic transmissions as well as on the driveshaft.

MODEL	CHASSIS END NUMBER
280 S/8	027 623
280 SE/8 Sedan	028 986
280 SEL/8 Sedan	029 326
280 SE/8 Cp/Conv	002 764
300 SEL/8	001 859
250 Cp	from start of production

Clutch Actuation

The operating rod of the clutch slave cylinder is shorter on models 280 S/8 through 300 SEL/8, and the measuring flange is smaller. Otherwise, the clutch actuation is the same as on models 220 D/8 through 250/8.

The method of measuring the wear of the clutch plate corresponds to that described in the Workshop Manual W 114/115, Job. No. 25-7/1 and 2.

Engine Mounting

Front Mounting

The left-hand and right-hand front engine mounts, part No. 108 223 01 12, are identical. No adjustments are required on the engine travel limit system.

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Rear Mounting

No adjustments are required for the rear mount, part No. 108 240 03 18.

The new rear engine mount is pressed against the frame floor unit with one rubber buffer each, part No. 108 987 07 40. The rubber buffer should be pretensioned by approximately .4 in. (10 mm)

In case complaints are received about humming and droning noises, these can be reduced or eliminated by adding washers and thus increasing the pretensioning of the rubber.

Steering Gear

Jacket Tube

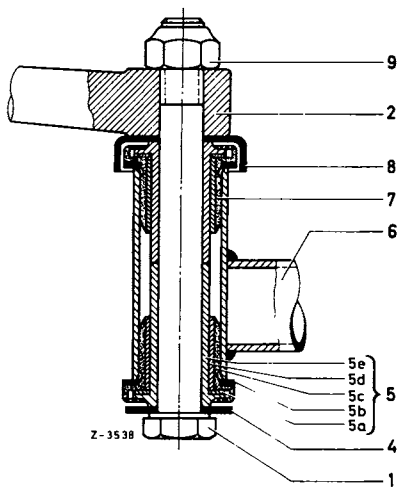
The jacket tube is now similar to that of models W 114/115 where the steering shaft is exposed between the upper section of the jacket tube and the steering wheel hub cover plate, whereas the shifting shaft is located inside the jacket tube.

Steering Relay Arm

The steering relay arm support has been arranged in a lower position. Furthermore, the steering relay arm is located between the self-locking hexagon nut (2) and dust cap (8) (this arrangement corresponds to that in Model 300 SEL/8 6.3).

Steering relay arm part number:

Left-hand drive 108 463 05 10 Code number 805



ILLUSTRATION

1. Hex nut
2. Steering relay arm
4. Sealing washer
5. Lower rubber bearing
5a. Plastic washer
5b. Steel washer
5c. Rubber bushing
5d. Plastic bushing
5e. Bushing
6. Journal bearing
7. Upper rubber bearing
8. Dust cap
9. Self-locking hex nut

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Air Suspension Switch

Instead of the previous lever switch, a pull knob is now installed. It has the same function as the switch:

Pushed in: Normal level = normal driving position.

Intermediate position: Air is prevented from escaping the air suspension valve. This position is necessary when loading or unloading by crane, jacking up the car with a jack or hoist and when shipping by rail or ship.

Pulled out: Higher level = increased ground clearance.

For rough terrain or poor roads. In this position the vehicle may only be driven at moderate speed.

The air suspension warning light has been transferred from the combination instrument to the pull knob. It lights up white either when the pull knob is pulled or the air pressure is too low.

Body

Modifications on the frame floor unit and tunnel were necessary to accomodate the new 4-gear transmission G 76/27 and the new MB automatic transmission K 4 C 025 on models 280 S/8 to 300 SEL/8.

This fact and the different shifting mechanisms are the reason that the new transmissions cannot be installed in old vehicles - and vice versa.

When body repairs are being performed, it must be remembered that, besides the modifications on the tunnel and fire wall, the steering relay arm support is not anymore welded to the side member but to the console of the front axle lateral support. This indicates that a new drilling template is required for the Celette body/frame measuring bench when installing a new steering relay arm support.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
69	SERVICE INFORMATION	00	PASSENGER CARS

FORT LEE, SEPTEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ADJUSTMENT OF VALVE CLEARANCE -- MODELS 280 SE/9 3.5 AND 300 SEL/9 3.5

Complaints of knocking noises have occasionally been received on 3.5 liter engines during idling or at increased idling speed. These noises sound like the knocking of a connecting rod bearing. Improper adjustment of the valve clearance on the 4th and 5th cylinders is frequently the cause. The arrangement of their exhaust and intake valves differs from the other cylinders of the respective cylinder row. Between cylinders 3 and 4 as well as 5 and 6, two intake valves are arranged next to each other rather than being alternated by 1 exhaust and 1 intake valve. It is for this reason that the valves on the 4th and 5th cylinders (during servicing) may have been incorrectly adjusted. The adjusting values for the 3.5 liter engine, incidentally, have been revised as follows:

Intake .003 in. (0.08 mm)
Exhaust .008 in. (0.20 mm)
with cold engine

NEW VALUES !!

With customers who are very sensitive to noises, the exhaust valve clearance can be set back to 0.18 mm (.007 in.).

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REQUIRED IMMEDIATE ATTENTION

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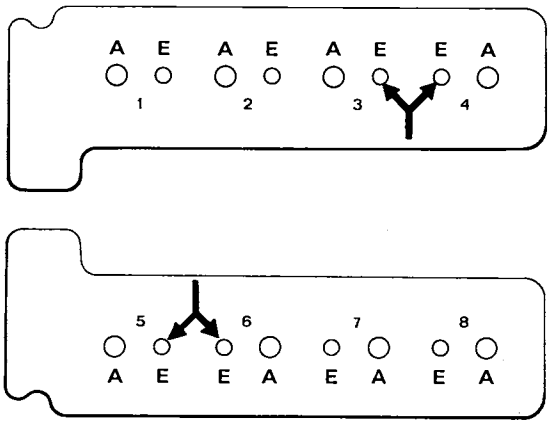

ILLUSTRATION 1

Firing Order:
1 5 4 8 6 3 7 2

Arrangement of valves

A = exhaust
E = intake

The valve clearance must be measured between the rocker arm contact surface and the base circle of the camshaft. It is most important that the cam lobe points exactly opposite and vertically to the contact surface of the rocker arm.

Please inform your staff of the unsymmetric valve arrangement in the 3.5 liter engine.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 136	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Technical Changes -- Models 280 S/8, 280 SE/8, 280 SE/8 Cp.Cv., 280 SEL/8, 300 SEL/8 and 300 SEL/8 6.3

This will inform you of production changes on the above models and their effect on the proper operation and maintenance of these vehicles. In the future, the respective supplements (enclosed) for the above models, which contain this and other information will be placed with the owner's manual in the respective model cars.

1. Electrically Operated Windows

The operating switches for all four side windows which were previously located on the driver's door, are now located on top of the transmission tunnel. Only the rear doors will continue to have individual switches.

The electrical wiring diagram, as well as the operation of the power windows remain unchanged. Naturally, the wiring harness itself had to be modified accordingly.

2. Keys (only applicable to 280 SE Cp/Conv.)

Instead of three different keys, only two keys will now be supplied:

Master key - has square head - fits all locks on the car.

Secondary key - with rounded head - fits only the door locks and ignition lock.

The lock number which must be supplied along with the model designation for replacement keys is punched on the delivered key ring plate.

3. Manual Transmission

The oil filler and drain plugs of the manual transmission are different in shape, however their location has remained the same.

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The oil capacity is now: 1.7 U.S. quarts (1.8 litres) for the 4-speed transmission.

4. Automatic Transmission

Oil Change: Before starting the engine, approximately 3.8 U.S. quarts (4 litres) of an approved Dexron Type B automatic transmission fluid have to be filled in through the dipstick tube (filler pipe). Start the engine, with your foot on the brake and engine idling, move the selector lever through all gear positions a few times and return the lever to "P" position. Check the oil level with the warm engine idling and add oil if necessary.

5. Clutch for Standard Transmission

Most vehicles are now provided with a common fluid reservoir for the brake and clutch which has approximately the same location as shown in the illustration of the lubrication plan in the owner's manual. The separate reservoir for the clutch shown there is omitted in these vehicles.

Model 300 SEL/8

In addition to the aforementioned changes, the following is additionally applicable for model 300 SEL/8:

6. Switch for Air Suspension

Instead of the previous lever, a pull knob is now being installed. Its functions correspond to those of the lever-type switch:

Pushed in:	normal level = normal driving position.
Center position:	air outlet of air suspension control valve unit is closed. This position is required when loading and unloading the car by means of cranes, when raising the car by means of a workshop car lift or lifting platform and during shipping.
Pulled out:	increased road clearance: for bumpy or bad road conditions; in this position the car should be driven at moderate speeds.

The indicator light for the air suspension has been shifted from the instrument cluster to the pull knob. It lights up both when the pull knob is not completely pushed in and when the air pressure is too low.

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Model 300 SEL/8 6.3

In addition to items 1 and 6, the following change is applicable for model 300 SEL/8 6.3:

7. Automatic MB Transmission

The transmission is now provided with an oil filter which must be replaced every 25,000 miles (40,000 km) as follows:

a) Drain oil from transmission and clutch as described in the owner's manual.

b) Remove transmission oil pan after loosening the attaching screws and detach oil line.

c) Replace filter; it is attached by means of an easily removable hex head socket screw.

d) Then reattach transmission oil pan and line.

e) Screw on drain plugs using new seals, tightly screw on clutch housing cover and fill transmission with oil as described in the owner's manual.

8. Emergency Hints

Changing the wheels

If the vehicle is raised by using a workshop car lift (or a lifting platform) so that both wheels of one axle are off the ground at the same time, the pull knob for the air suspension must be set to "center position".

The centering bolt mentioned in the owner's manual is no longer required for changing the wheels; however, it can be ordered as a spare part.

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Service Department

Enclosures

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 129	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, July 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Technical Changes In Production -- Models 220 D/8 to 300 SEL/8 (W 108/109/115)

This is to inform you of technical changes entered in production on the above models:

1. REAR AXLE RATIO - Applicable to models listed below

The rear axle ratio on models below has been changed from 1:4.08 to 1:3.92:

MODEL	SERIES	STARTING CHASSIS END NUMBER
280 S/8	W 108	027 623
280 SE/8	W 108	028 986
280 SEL/8	W 108	029 326
300 SEL/8	W 109	001 859

2. NEW TRANSMISSIONS

Two newly designed transmissions have entered production with the same chassis end numbers as for the new rear axle ratio. Additionally, model 280 SE/8 Cp/Conv., was equipped with the new transmissions as of chassis end number 002 764.

A. New 4-Speed Manual Transmission G 76/27

In place of transmission G 72, models 280 S/8, 280 SE/8, 280 SE/8 Cp./Conv. as well as 300 SEL/8 will be equipped with a new 4-speed transmission designated G 76/27. Except for a higher torque lay-out, its basic concept is similar to transmission G 76/18 with 3 shift rods, used in models 220/8 to 250/8. Differences between new transmission and previous version are:

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REQUIRES IMMEDIATE ATTENTION

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- 3 shift rods in lieu of 2, which provides for even more precise shifting.
- Housing and shafts are longer. For reasons of quiet operation, gears are being made wider.
- Constant ratio of the countershaft gears is slightly modified (number of teeth 39:25 instead of 43:28), whereas the number of teeth of the individual gears is the same. This results in the following overall ratios:

	NOW: G 76/27	PREVIOUSLY: G 72	220-250/8 G 76/18
1st Gear	3.96	4.05	3.90
2nd Gear	2.34	2.23	2.30
3rd Gear	1.43	1.40	1.41
4th Gear	1	1	1
Rev. Gear	3.72	3.58	3.66

Shifting into reverse on both column and floor shift requires pulling out the shift lever in order to override the positive reverse gear lock.

B. Automatic Transmission (M-B Automatic)

Models 280 S/8, 280 SE/8, 280 SE/8 Cp./Conv. as well as 300 SEL/8 will be equipped with a new automatic transmission designated K 4 C 025. With the exception of minor modifications, this transmission complies in its concept with the transmission K G C 025 used in models 220/8 to 250/8. In comparison with the previous version, this transmission offers the following advantages:

- More favorable gear ratio steps in the individual gears by applying 3 planetary gear sets in lieu of 2.
- New shifting sequence: since this transmission always starts in 1st gear, it was possible to use a more favorable gear spacing as can be seen from the chart below.

A comparison of the overall gear ratios is listed below:

	PRESENTLY: K 4 C 025	PREVIOUSLY: K 4 A 025
1st Gear	3.98	3.98
2nd Gear	2.39	2.52
3rd Gear	1.46	1.58
4th Gear	1	1
Rev. Gear	5.47	4.15

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C. Additional Modifications

On models 280 S, 280 SE and 300 SEL, various modifications on the frame floor unit were required (enlarging the tunnel and further modifications resulting thereof) to accomodate the installation of the new type transmissions. For this reason, the new transmissions cannot be subsequently installed in older vehicles.

Due to the different design of the automatic transmission, the shifting control of the steering column shift as well as the floor shift have been modified and adapted to the version for models 220/8 to 250/8. Therefore, selector lever positions on automatic transmission with floor shift have been reversed (from front to rear: P-R-N-4-3-2; previously: 2-3-4-N-R-P). Thus the selector lever positions are the same as on models 220/8 to 250/8 and correspond to international standards.

Due to the different gear ratios of the new transmissions, the speedometer gear range markings have been altered. Simultaneously the speedometer dial range has been extended from 220 to 240 km/h and to 160 mph respectively.

Models 280 SL/8, 300 SEL/8 6.3 and 600 will continue to be produced unchanged and will be equipped with the same transmissions as have been installed up to this date.

NOTE: Only automatic transmission fluids released for use in the automatic transmissions of models 220/8 through 250/8 may be used. In this connection, please refer to the "Specifications for Service Products" manual and/or Service Information Nos.:20, Group 00, of March 1968, MB-T 92 and MB-T 104, both of Group 00, December 1968, in which we specify the use of Dexron Type B transmission fluid.

3. NEW ENGINE OIL COOLER - Model 220 D/8 (W 115)

Starting with chassis end no. 052 894, an engine oil cooler and a modified radiator entered production on model 220 D/8. This oil cooler is designed to keep oil temperatures at a lower level.

Please be aware of the fact that the engine oil capacity was therefore increased by approximately one pint which must be taken into consideration when performing oil changes during servicing. The total refill quantity is now twelve (12) pints including oil cooler and oil filter.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 125	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Approved Lubricants For Use On All M-B Passenger Car Models

Due to the variety of Molykote lubricants available for special applications, we wish to provide you with a list of factory approved Molykote brand products which are available in the United States and can be purchased through your local Dow Corning Distributor (see enclosed literature).

The following specifies the German product and our U.S. equivalent product:

German Product	United States Product
Molykote G Paste	Molykote G Paste
Molykote G Rapid	Molykote G Paste
Molykote M-55 Plus	Molykote M Dispersion
Molykote DX Paste	Dow Corning 3450 Paste *
Molykote Longterm 2	Molykote BR2-S Grease

*This product must be ordered directly from Dow-Corning Corporation, Midland, Michigan 48640.

Important!

On the attached literature in addition to the list of distributors, Dow-Corning provides a brief introduction to many of their "Specialty Lubricants". Please be aware, however, that only those products specified above are approved for use on our passenger cars.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Enclosure

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 121	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 00	PASSENGER CARS

FORT LEE, DECEMBER 1969

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ELECTROSTATICAL CHARGING

When atmospheric conditions with low relative air humidity prevail, complaints about electrostatical charging occur. Electrostatical charging is a physical phenomenon which may occur when nonconductive materials are rubbed against each other or are separated. Nothing has been developed yet to avoid this. However, there are certain preventative measures to eliminate or at least ease the effects resulting from this phenomenon. Electrostatical charging in passenger cars does not constitute a risk for either the vehicle or the passengers.

There are two basic causes for the formation of electrostatical charges in automobiles:

1. The body may become charged as a result of the insulating effect of the tires. This type of charging may be avoided by adding certain ingredients to the rubber compound. The tires used and approved by us are highly conductive. For this reason, a static grounding strap between vehicle and road does not achieve any improvement.

2. The passengers may also become charged. This will happen if the car is equipped with plastic seat covers or genuine leather. The formation of charges is also favored by the passengers' clothes and its discharge may be impeded due to the insulating effect of the shoe soles.

For genuine leather seats a temporary improvement may be achieved by using Mercedes-Benz Anti-Electrostaticum. If applied in accordance to the instructions, it will prevent the formation of static electricity approximately 3 to 4 weeks; then, the treatment has to be repeated. A very thin protective coating, which increases the surface conductivity and facilitates the dissipation of accumulating charges.

The unpleasant effect of electrostatical charges, i.e. the discharge causing an electric shock, may be avoided by a preventative measure:

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When arising from the seat, touch a piece of bare metal, e.g., a chromium-plated window frame or a door handle. Do not let go until there is no more contact with the seat. The electric potential of the passengers created by the electrostatical charges is grounded by the vehicle and the tires.

Charges may be prevented to a great extent by wearing shoes with leather soles. Therefore sensitive persons should not wear shoes with plastic or rubber soles. For plastic upholstery material, no remedy similar to Anti-Electrostaticum for genuine leather has been developed. You can help your customers only by giving them the advice as outlined above. Please inform all employees who have customer contact about this Service Information.

M-B Leather Polish contains anti-static additives, therefore, M-B Leather Polish, part no. 000 986 05 71, may be used. It may be obtained through our Mercedes-Benz parts depots.

MERCEDES-BENZ OF NORTH AMERICA, INC.
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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 88	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: New Exhaust Valve Clearance For Gasoline Engines -- Models 200 through 300 SEL/8

The exhaust valve clearance for the above 4 and 6 cylinder gasoline engine models (with the exception of the 3 litre engine M 189*) has been increased.

Effective immediately, the exhaust valve clearances are to be set to .008" (cold engine).

Please inform your workshop personnel of this important change.

*This engine was used in models 300 SE (W 112) up to July 1965 and in models 300 SE (W 108) and 300 SEL (W 109) up to December 1967 as well as in the respective coupes and convertibles.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	70	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Tightening of Connecting Rod Bolts and Flywheel Bolts on Engines of Passenger Car Models as of January 1968

This is to advise you that all connecting rod bolts and flywheel bolts on our four and six cylinder engine passenger cars will, in the near future, be pre-tightened with a torque wrench and finally tightened according to the turning angle. In Service Information No. 19, Group 00, of July 1968, which was published in issue MBNA 7/68, you were informed of the uses and advantages of tightening these bolts and/or screws by means of a torque wrench. This Service Information will provide you with the specific instructions for tightening the various bolts to their torque values and the permissible limits for reuse of these bolts.

Tightening of Stretch Bolts

1. Pre-tighten to the prescribed torque reading with a torque wrench.

2. Final tightening is achieved by turning the bolt a prescribed number of degrees according to turning angle using an ordinary socket wrench with a handle.

   NOTE: When using the socket wrench be sure that the prescribed turning angle is achieved in one motion. Under no circumstances use the torque wrench for final tightening as this can easily lead to an inaccurate tightening torque angle.

   Prior to mounting the bolts or screws, liberally oil the threads and contact surfaces. Only perfect socket wrenches may be used for tightening. Since higher torques are reached during the final tightening, excessively wide or unsatisfactorily applied socket wrenches can easily slip off.

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Re-Using Stretch Bolts

As the stretch bolt is extended elastically (stretched), the diameter of the "stretch section" of the bolt reduces, and at the same time the bolt is stretched.

Depending on the method of use and how much of the stretch capacity has been used, some stretch bolts can be reused.

The determination is made by measuring the diameter of the "stretch section" of the bolt using a vernier caliper with a cutting edge (illustration 1) to check whether it is within the permissible limits prescribed for reuse. The stretch bolt, of course, should be replaced if the minimum diameter (listed in the dimension tables) is reached at the stretch section.

Illustration 1

I. Connecting Rod Bolts

In order to determine if these bolts can be reused, only the diameter of the "stretch section" (which is visible after removing the connecting rod cap) should be measured, since only this section is subject to deformation. The connecting rod bolts should only be knocked out of the connecting rod if they are to be replaced. The newly developed bolts can only be pre-tightened with a torque wrench and final tightening is achieved, according to the turning angle, with a socket wrench. Tightening of these bolts according to torque alone is not permitted.

NOTE: The connecting rod bolts for angular tightening will be gradually introduced in series production. Therefore, the bolts which have been used in the past are still being used. For this reason, when replacing connecting rod bolts be sure

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that the new bolts are of the same type as the ones originally installed on that particular engine. At a later date the connecting rods of replacement engines will be fitted with the new bolts which are to be tightened according to the turning angle. Therefore, in the future, prior to tightening the connecting rod bolts of any engine, be sure to determine whether the respective bolts are to be tightened according to the turning angle and/or just the tightening torque.

EXCEPTION: On the engines of models 280 SL/8 and 300 SEL/8, the presently used connecting rod bolts (illustration 2) must be tightened according to the turning angle. The turning angles are identical to those on other six cylinder engines. Angular tightening has been introduced as of the following engine end numbers:

Model	Engine End No.
280 SL/8	000 001
300 SEL/8 - standard transmission	000 012
300 SEL/8 - automatic transmission	000 121

When measuring and evaluating the "stretch section" diameter of stretch bolts presently used in these engines, the following should be noted:

If the connecting rod bolt projecting from the connecting rod after the cap has been removed has not been stretched (stretch section diameter of a new stretch bolt should be not less than .35" $-.003"$ ($9.0\ ^{-0.1}$ mm), knock out the bolt and measure the stretch section diameter which is normally covered by the connecting rod. If a minimum diameter of .31" (7.8 mm) has been reached in this section, the bolt cannot be used again.

This procedure applies to the bolts presently used in models 280 SL/8 and 300 SEL/8. After introduction of the newly developed bolts for these engines, the evaluation should be made according to the instructions given for all other models on the previous page.

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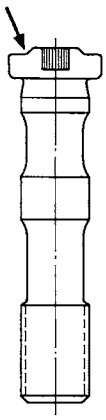
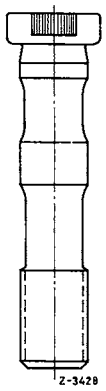
Distinctive Features, Dimensions, Tightening Torques and Turning Angles of Connecting Rod Bolts

A. Distinctive Features

	Prescribed Torque Reading	Prescribed Angular Tightening	Note
4-Cylinder Engines			Differing in stretch section diameter
"Stretch section" diameter of stretch bolt (when new)	.34" -.003" (8.8 -0.1 mm)	.33" -.003" (8.4 -0.1 mm)	
6-Cylinder Engines 1)	 .35" -.003" (9.0 -0.1 mm) Illustration 2	 .35" -.003" (9.0 -0.1 mm) Illustration 3	Differing in bolt head

1) On engines of models 280 SL/8 and 300 SEL/8 tighten according to the turning angle (see "EXCEPTION" on page 3).

B. Dimensions, Tightening Torques and Turning Angles

Connecting Rod Bolts for Angular Tightening	6-Cylinder Engines	4-Cylinder Engines
Part Number	108 038 02 71 2)	615 038 02 71 2)
Thread	M 11 x 1	M 10 x 1
Diameter (when new)	.35" -.003" (9.0 -0.1 mm)	.33" -.003" (8.4 -0.1 mm)
Minimum Diameter 1)	.31" (7.8 mm)	.29" (7.2 mm)
Pre-tightening Torque	15.98 ft. lbs. (2.5 mkp)	
Turning Angle	180° - 20°	

1) When the minimum diameter has been reached, the bolts must no longer be used.
2) Stretch bolts for angular tightening will be available as replacement parts in the near future.

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II. Bolts for Flywheel or Driven Plate on Models as of January 1968

Standard Transmission

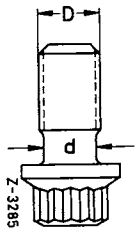

Illustration 4

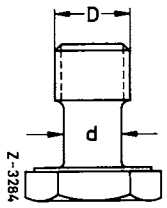

Illustration 5

Automatic Transmission

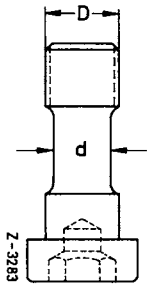

Illustration 6

Part No.	615 032 05 71	621 032 00 71	108 032 01 71	108 990 03 19	108 990 04 19
Thread Diameter	M 10 x 1	M 10 x 1	M 12 x 1	M 10 x 1	M 12 x 1
Diameter "d" of Stretch Bolt When New	.33" -.01" (8.5 $^{-0.2}$ mm)	.31" -.01" (8.0 $^{-0.2}$ mm)	.36" -.01" (9.2 $^{-0.2}$ mm)	.31" -.01" (7.7 $^{-0.2}$ mm)	.36" -.01" (9.2 $^{-0.2}$ mm)
Minimum Diameter 1)	.31" (8.1 mm)	.30" (7.6 mm)	.34" (8.8 mm)	.29" (7.3 mm)	.34" (8.8 mm)
Installed in Engines of Models:	220/8 220 D/8	230/8	250/8 280 S/8 280 SE/8 280 SE/8 Cp/Cv. 300 SEL/8 280 SL/8	220/8 220 D/8 230/8	250/8 280 S/8 280 SE/8 280 SE/8 Cp/Cv. 300 SEL/8 280 SEL/8

1) When the minimum diameter has been reached, the bolts must no longer be used.

Tightening the Flywheel Bolts

Model	220/8, 220 D/8 and 230/8	250/8, 280 S/8, 280 SE/8, 280 SE/8 Cp/Cv., 280 SL/8, and 300 SEL/8
Pre-tightening Torque	21.70 + 7.23 ft. lbs. (3 + 1 mkp)	
Turning Angle 1)	60° + 10°	90° + 10°

1) The turning angle must never fall short of the prescribed value. However, no harm will result if the value is slightly exceeded.

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NOTE: In the 4-cylinder engines, the flywheel is fastened to the crankshaft by 12 bolts without being positioned by a dowel pin. The flywheel and crankshaft are balanced together as a single unit. The flywheel must positively be refitted in the same position with respect to the crankshaft as it had originally. Therefore, both the crankshaft and the flywheel are marked with either an "0" or a notch or a red dot depending on the type of transmission and the production series. Before the flywheel is removed a check should be made on whether this marking is actually present; if not, the marking must now be made before the two parts are separated.

In the 6-cylinder engines the flywheel is fitted with 6 bolts and a dowel pin.

If a new flywheel is installed it must be statically balanced in accordance with the used one.

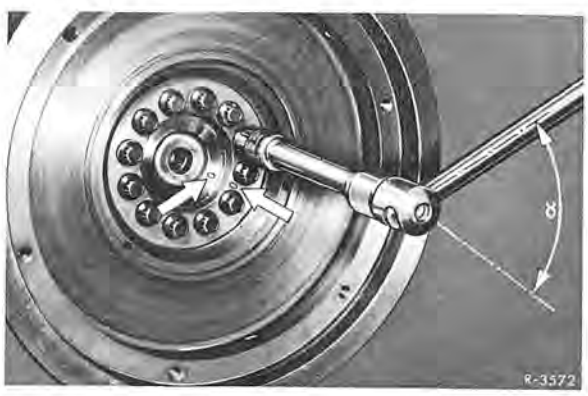

Illustration 7

If bolts which are to be tightened with a pre-tightening torque and finally tightened according to the turning angle are not properly tightened, damage will inevitably result. For this reason it is imperative that your personnel are informed in detail of the contents of this Service Information.

The required parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 67	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, November, 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Timing of Delivery From The Fuel Injection Pump Model 220 D/8

Accurate timing of the beginning of delivery from the fuel injection pump is of extreme importance with the diesel engine. Incorrect timing may lead to the following complaints:

- Premature glow plug failure
- Heavy smoke emission
- High fuel consumption
- Rough idling
- Knocking during partial load
- Poor performance

On some OM 615 engines, it was found that the TDC marking on the counterweight, part No. 615 031 08 07, does not coincide with the actual TDC. The beginning of delivery of the injection, therefore, starts too early.

If an OM 615 engine is found to have one or more of the above mentioned conditions, and no irregularity is found during a check of the beginning of delivery, a check of the TDC mark in relation to the actual TDC of the first cylinder should be made on cars up to the following chassis end numbers:

Model	Standard Trans.	Automatic Trans.
220 D/8	030 249	006 732

PROCEDURE

1. Remove front rocker arm shaft assembly.

2. Set crankshaft to approximately 10° before TDC.

3. Remove valve spring from intake valve of first cylinder (valve rests on piston).

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4. Screw hex. nut on intake valve (watch for correct thread).

5. Slide on valve spring retainer plate and tighten by using a cap nut.

6. Attach dial gauge to front valve cover mounting bracket so that the feeler pin of the dial gauge is seated vertically on the valve spring retainer plate and may not be moved away from the cam during turning of the crankshaft.

7. Determine the exact TDC position by slowly turning the crankshaft and observing the dial gauge and compare with the TDC mark on the balancing plate. Repeat measurement twice.

8. After verification of correct TDC, punch mark the surface above the odometer drive connection.

9. If the measurement differs by more than 2°, modify the pointer for the TDC adjustment as required. For this purpose, remove adjusting pointer, weld on sheet metal strip on the adjusting pointer, install pointer temporarily, trace the exact measurement, refinish pointer to size until pointer points to the TDC mark. Mark pointer and balancing plate with two clearly visible punch marks each.

10. Reinstall rocker arm shaft assembly, check and adjust the four front valves as required.

11. Correct beginning of delivery of the injection pump. Set on model 220 D/8 to 24° before TDC or retard by 2° in the case of premature glow plug failure, i.e. on Model 220 D/8 to 22° before TDC.

NOTE: Moreover, if premature glow plug failure is experienced, the installation of glow plugs with a heavier wire is recommended

There glow plugs can be ordered from your Mercedes-Benz parts depot.

A warranty claim for 1.0 hour maximum labor for checking the TDC mark may be submitted. If changing of the pointer becomes necessary, an additional 0.8 hours labor may be submitted.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 47	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Exhaust Emission Control System -- Model 230/8

A modified exhaust emission control system (without Saginaw pump) as already described in Service Information No. MB-T 103a, Group 07, of January 1969 is installed in the above model as of chassis end number 018 018.

The following describes all relevant information pertaining to this modification, i.e., section A describes the functioning of the new system. Section B contains testing and adjustment operations. Section C describes those modifications that have to be subsequently made on a car below chassis serial no. 018 018, if a replacement engine is installed. From now on we will only deliver engines with the new exhaust emission control system for model 230/8.

The % CO at idle speed for engines without Saginaw pumps is 1.5 to 2.5% CO in neutral for standard and automatic transmissions. The idling speed, carburetor jet system, distributor and ignition timing remain the same as with engines equipped with the Saginaw pump.

A) Function of the Exhaust Emission Control System

When "coasting" (decelerating), the rear carburetor vacuum control unit is governed to keep the throttle valve slightly open at engine speeds above 1800 rpm, thus controlling the hydrocarbon emission.

Principally the system consists of an electrical speed relay and a solenoid valve. This valve is connected with the vacuum hose leading from the intake manifold to the vacuum control on the rear carburetor. When the engine speed exceeds 1800 rpm, the speed relay energizes the valve. This shuts off the intake vacuum from the vacuum control diaphragm and opens it to atmospheric pressure.

Since no vacuum is acting on the vacuum control at that moment, its spring pushes out the hex head adjustment screw (7, illustration 2). When coasting, this adjustment screw serves as the carburetor "stop" and keeps the throttle valve opened slightly more than in the idle position.

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If the engine speed drops below 1800 rpm, the engine relay de-energizes the solenoid valve and the intake vacuum retracts the hex head screw of the rear carburetor vacuum control unit to its normal (idle) position.

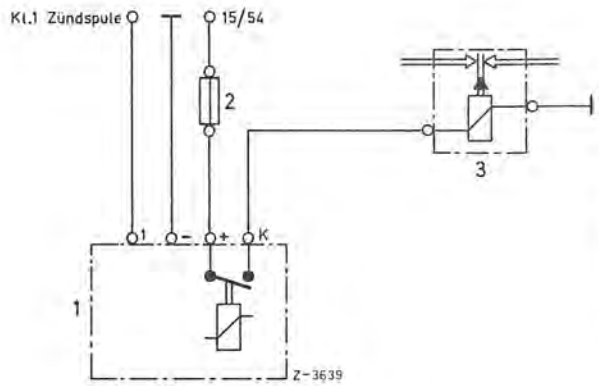

Illustration 1

1. Speed relay switch
2. Fuse #5
3. Solenoid valve

Kl. 1 Zündspule = Terminal 1 - ignition coil

B) Testing and Adjustment Procedures

1. With engine shut off, turn hex head screw of vacuum control unit (7, illustration 2) to lift vent valve (2) .02 - .04" (0.5 - 1 mm) by means of actuating lever (8) (illustration 2).

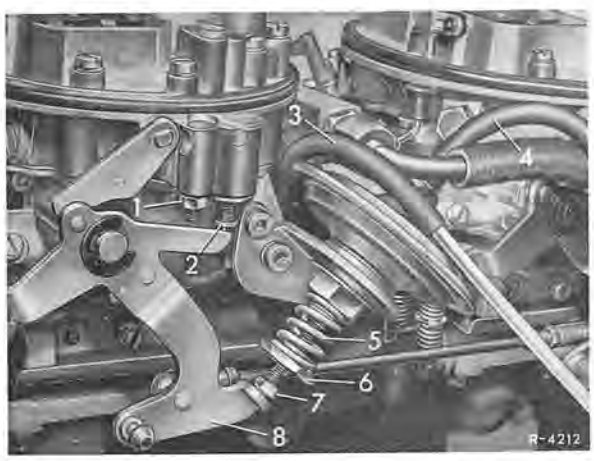

Illustration 2

1. Idle stop screw
2. Vent valve
3. Vacuum hose to valve
4. Vacuum hose connecting valve and vacuum control unit
5. Compression spring
6. Knurled nut
7. Hex head adjustment screw
8. Actuating lever

2. Adjustment of the Compression Spring

Start engine but do not operate additional power consumers such as air conditioning, etc.

During idling (neutral or park position), adjust compression spring (5) by means of knurled nut (6) so that a clearance of approximately .004 in. (0.1 mm) exists between the hex head screw (7) and the actuating lever (8) (illustration 2).

3. During idling, and with engine warm, remove the vacuum hose (4). The engine speed now should not exceed 1750 rpm. If necessary, screw in hex head screw (7) (illustration 2).

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4. Testing of Electrical Speed Relay

a. Connect tachometer.
b. Pull off two-prong connector at solenoid valve and plug test lamp onto connector.
c. Start engine and increase engine speed gradually.
d. Test lamp should light up at approximately 2000 $^{+50}_{-30}$ rpm. The test lamp should go off when the engine speed drops to 1750 to 1800 rpm.

NOTE: The solenoid valve operation may also be determined by observing the vacuum control. Increase engine speed and then release accelerator linkage:

When speed exceeds 1800 rpm, the hex head screw (7) must contact the actuating lever (8).

When speed drops below 1800 rpm, the hex head screw (7) is retracted by the vacuum and moves away from the actuating lever (illustration 2).

C) Modification Instructions - For cars below chassis end no. 018 018 which will have a replacement engine installed (see first page).

1. Disconnect battery ground cable.
2. Remove air filter.
3. Install mounting bracket (1) on right-side wheel housing. Screw on speed relay (2) and solenoid valve (3) to bracket (1) (illustration 3).

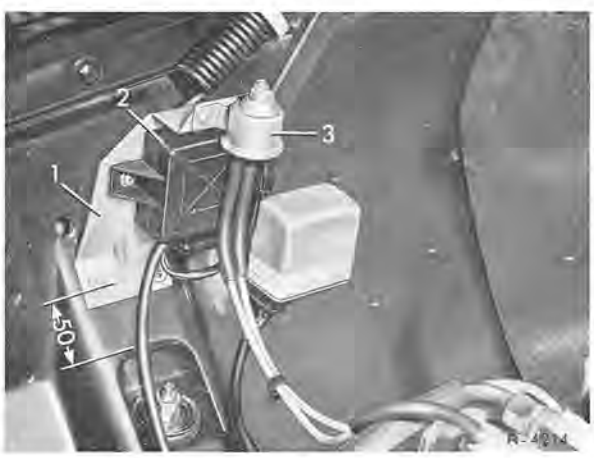

Illustration 3

1. Mounting bracket
2. Electrical speed relay
3. Solenoid valve

50 mm = 2 inches

4. Disconnect rubber hose from vacuum control unit (7) and connect a new rubber hose (6) (2" long) to the unit (illustration 4).

5. Connect rubber hoses (2" long) to each vacuum connection of the solenoid valve (3, illustration 3).

Cut plastic line, part no. 000 158 07 35, in half and install: a) plastic line (5) from hose of rear solenoid valve connection to vacuum hose of rear carburetor and b) other half of plastic line from front hose connection (2) to vacuum control unit (illustration 4).

NOTE: Be sure not to confuse front and rear connections.

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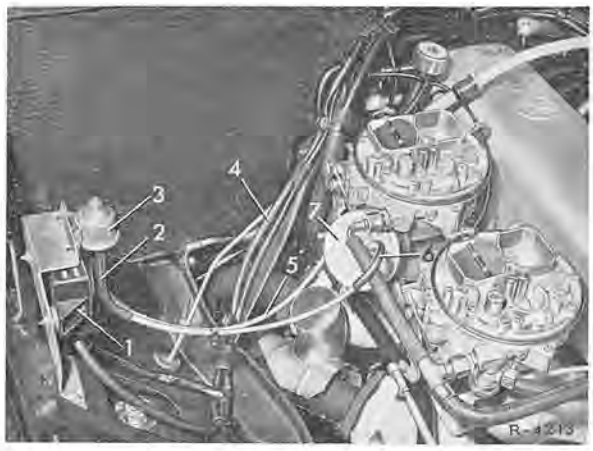

Illustration 4

1. Electrical speed relay
2. Solenoid valve - front connection
3. Solenoid valve
4. Additional wiring harness
5. Vacuum line connecting intake manifold and solenoid valve
6. Hose connecting vacuum control and vacuum line
7. Vacuum control unit

6. Route additional wiring harness (4) parallel to main wiring harness and connect as follows:

   - four-prong coupling to speed relay (1)
   - two-prong coupling to solenoid valve (3)
   - black/blue wire to main fuse box (fuse no. 5 - consumer side)
   - brown wire (ground) to ignition coil bracket
   - green/brown wire to terminal 1 of ignition coil

7. Adjustment and testing of electrical engine speed increase system to be performed in accordance with section B, page 2, of this article.

PARTS LIST

Quantity	Description	Part Number
1	Plastic vacuum line (order 40 in.)	000 158 07 35
1	Solenoid valve	001 540 00 97
1	Additional wiring harness	114 540 05 09
1	Electrical speed relay	000 545 02 32
1	Bracket	114 545 04 40
3	Rubber hose 2 in. (50 mm) long	180 997 22 82
2	Hex head sheet metal screw	007976 004205
4	Flat head screw	007981 004240
5	Cable strap	001 997 41 90

The above parts are available from your Mercedes-Benz parts depot under their respective part numbers.

In the case of warranty, a claim for parts plus 1.7 hours labor may be submitted.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner File Classeur Archivador	Gruppe Group Groupe Grupo	
25a	Service Information	00	Passenger Cars

This Service Information supersedes Service Information No. 25, Group 00, dated April 1969.

Fort Lee, June 1969

Change: Text of last paragraph.

TO OUR MERCEDES-BENZ DEALERS

Subject: Improved Starting Ability of Passenger Cars with Gasoline Engines

Due to the increased use of rock salt on highways during winter, vehicles are subjected to a greater extent to potential corrosion. Simultaneously, exposure to these salts increases the possibility of cross-firing (surface discharge across insulations). To avoid this, a number of ignition sprays providing a protective coating are available on the open market.

To prevent starting trouble due to cross-firing developing from the formation of moisture and rock salt, the ignition cable, ignition coil, distributor cap, rotor arm, and contact breaker points may be treated with these ignition sprays.

In addition to this precautionary measure, we again refer you to Service Information No. 116, Group 00, of December 1968, from which we summarize the following:

> Be sure to check whether the ignition distributor cap and ignition distributor rotor (both specially coated) as well as the protective dust cover inside the ignition distributor have already been installed. (Part I of above mentioned article.)
>
> To increase the ignition voltage during the starting procedure, the series resistor of the ignition coil can be by-passed by installing a relay. (Part II, item B, of the above mentioned article.)

As an additional measure, both the ignition coil and the series resistor of the 6-cylinder engines can be subsequently installed into 4-cylinder engine models. In this case the series resistor has to be by-passed either by a relay or by connecting it to the starter terminal #16 (see Service Information No. 107a, Group 15, of March 1969).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 16	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, March 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Important Hints for Cold Start Improvement -- Model 220 D/8

We have recently been advised of cold start difficulties on model 220 D/8, in some cases, when the temperature is below 32° F (0° C). In some instances it became evident that the engines of these cars were not filled with SAE 10 W engine oil as specified for winter operation in the Owner's Manuals. After the required oil change, the engines started without hesitation.

For this reason, we are giving you a summary of important hints which will improve the cold start ability of the above mentioned model.

1. During the winter season, the required engine oil viscosity grade is SAE 10 W. The influence of the engine oil viscosity on the cold start ability is often underestimated. Please keep in mind that at 32° F (0° C) an SAE 30 engine oil has approximately the same viscosity as an SAE 10 W engine oil at 0° F (-18° C).

2. The adjustment of the glow-start control cable must be correct. This will ensure that during the starting procedure the full starting fuel quantity is being injected.

   NOTE: With the glow-start control knob completely pulled, there should only be a small margin of movement further towards the starting quantity (maximum: .06" or 1.5 mm) on the injection pump lever. To control this, check whether the hot engine can be shut off.

3. For starting a cold engine (where ambient temperatures of approximately 14° F or -10° C prevail), we recommend the following: turn the idle speed adjuster knob all the way counter-clockwise, pre-glow for a full minute, press down completely on the clutch pedal and press the accelerator pedal approximately half way down.

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Only then the engine should be started. If the engine does not start up after 10 to 15 seconds after the starter motor has been engaged, pre-glow once more and repeat the starting procedure. If, during starting, sporadic ignitions occur, the starter motor should be engaged somewhat longer, i.e. until the engine starts to run. During this time, an increased fuel quantity is injected.

4. In areas where ambient temperatures below 5° F (-15°C) are experienced, we recommend increasing the intake valve clearance from .004" (0.10 mm) to .006" (0.15 mm).

Further hints for remedial measures at very low ambient temperatures can be found in the Workshop Manual - Passenger Cars, Starting August 1959, Job No. 00-25, entitled "Minimum Diesel-Engine Start Temperature" as well as in the respective Owner's Manual.

In this connection, we also wish to remind you of the cooling water preheater device which can be subsequently installed in order to keep the engine cooling water warm during cold weather. The installation is described in detail in Service Information S 1, Special Versions, Group 20, of August 1968.

Please be sure to advise your customers as well as your shop personnel of the above measures which can be taken to ensure good cold start operation of our diesel engine passenger cars.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 136	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Axle Oil Change Specifications -- Passenger Cars

Previous specifications regarding rear axle oil changes have been modified and are hereby invalidated. The following specifications are effective immediately:

1. First oil change: after 180-600 mi. (300-1,000 km) during A Cycle Inspection

2. Second oil change: after 3,000 mi. (5,000 km) during B Cycle Inspection

3. No further oil changes are required; however, after every 12,000 mi. (20,000 km) or during each E Cycle Inspection, the oil level in the rear axle housing must be checked and the oil replenished, if necessary.

In rear axles with standard differential gears, a break-in hypoid gear oil or a hypoid gear oil should be used to replenish the oil; in rear axles with differential lock (differential gear with limited slip), only the special oil "Veedol Multigear Limited Slip Special" should be used.

Note: The oil must be changed during the next cycle inspection in rear axles which have already (before the publication of these new specifications) been in operation for more than 3,000 mi. (5,000 km) but not yet 12,000 mi. (20,000 km). Then proceed according to point 3.

A sticker reading "REAR AXLE OIL CHANGE at A and B Services at 600 and 3000 miles, respectively" will be attached to the left front door post on all passenger cars from now on. (See page 2.) Please remove this sticker after performing the B Cycle Inspection, including the rear axle oil change.

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The time allowances stated in the Service Booklets for the respective cycle inspections are altered as follows:

A Cycle Inspection: plus 0.2 hour
B Cycle Inspection: plus 0.2 hour
E Cycle Inspection: minus 0.1 hour

The corresponding changes in flat rates will be included in the next Flat Rate Manual supplement.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 118	Ordner File Classeur Archivador: Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Pre-heating of Intake Air for Carburetor Engines Models 220/8, 220 B, 220 SB, 230, 230 S and 250 S

The above mentioned models with carburetor engines are equipped with an intake air pre-heating device as standard equipment which, in the "winter position", serves to direct the air flow past the exhaust manifold and thereby heating it.

On models 230/8, 250/8 and 280 S/8, the intake air pre-heating is controlled by a thermostat. On model 220/8 and on all models manufactured prior to 1968 Phase II series, the device must be positioned by hand according to the ambient temperatures. As of the middle of 1968, model 220/8 was also equipped with the thermostatically controlled intake air pre-heating device.

In vehicles without thermostatic control, the intake air pre-heating device is frequently not set (positioned) in accordance with the season. Therefore, the following will describe the correct positioning of the air intake flap on the air filter scoop according to the ambient temperatures.

For your convenience we have enclosed 20 "IMPORTANT! AIR INTAKE FLAP" stickers which should be attached on the air filter scoop of cars without a thermostatically controlled intake air pre-heating device, to remind customers of the correct positioning of this lever for both summer and winter. An additional supply is available free of charge from the Home Office Technical Service Department.

Please advise your customers accordingly!

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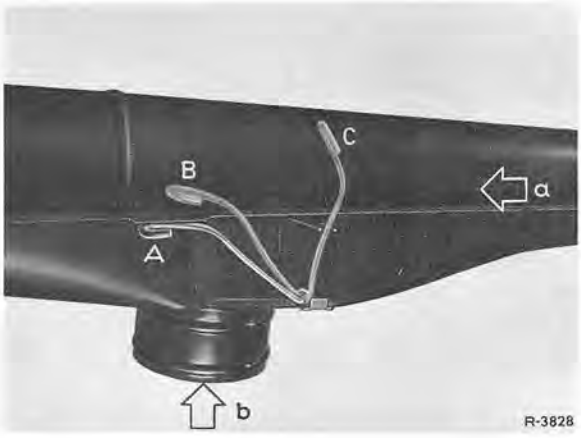
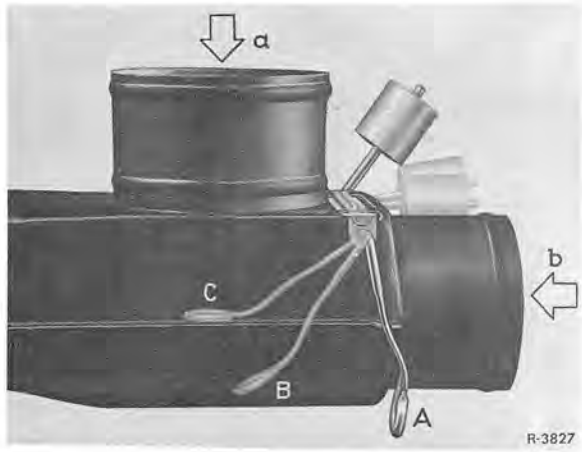
Models 200, 220 B, 220 SB, 230, 230 S and 250 S



a. Fresh air
b. Warm air

Model 220/8



A. Summer Position

Lever under beaded edge of intake air scoop engaged.

Air intake flap closed; intake air pre-heating shut off. Permanent position for summer operation.

B. Intermediate Position

Lever disengaged.

Air intake flap moves freely. At idling and partial load of engine, warm air is supplied. At full load cold air is fed.

This position to be used only at temperatures above freezing.

C. Winter Position

Lever engaged in notch.

Air intake flap open. Only pre-heated air is sucked in. Position for conditions with high relative humidity or ambient temperatures below freezing.

As soon as temperatures permit, the lever can again be disengaged from position C and set to position B.

NOTE: Vehicles of models 200, 220 B, 220 SB, 230, 230 S and 250 S, manufactured prior to October 1966 (warm air tube on intake pipe of air filter approximately 1.65" Ø or 42 mm Ø) should not be driven at high speeds with the lever in position C.

For vehicles produced after October 1966 (warm air tube approximately 2.17" or 55 mm in diameter) this restriction is not applicable.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 116	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Precautionary Measures for the Improved Starting of Gasoline Passenger Car Engines

Over the course of time, the ignition systems of our passenger car models have been changed with regard to various items in order to provide better operation, thus preventing cross fire due to moisture, splash water, etc.

In this article we wish to provide you with important data which will ensure the proper functioning of the ignition system under normal and adverse driving conditions. Part I describes recent developments on the ignition system in order of their importance. Part II lists precautionary measures which should be adhered to. In Part III we give general hints on improved starting. Part IV consists of the various parts available in accordance with Parts I, II, and III. Part V provides you with the necessary illustrations.

Part I - Important Data on the Ignition System

A. Ignition Distributor Cap

Since October 1967, all cars have been equipped with new ignition distributor caps which are made of polyester and sprayed on the inside with a special colorless coating which are clearly identified by their bright inner surfaces (see Service Information No. 3, Group 15, of May 1968).

The labor time for subsequent installations is 0.2 hours.

B. Ignition Distributor Rotor

As of March 1968, the ignition distributor rotor, made of polyester is sprayed with a special coating on the outside (see Service Information mentioned under "A" and Service Information No. 93, Group 15, of December 1968).

The labor time for subsequent installations is 0.1 hours.

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C. Ignition Distributor Protective Cover

To avoid accumulation of moisture in the distributor cap possibly caused by splashing water, a protective cover is now available for all 4 and 6 cylinder engines (except the 300 series engines) (see illustration 1).

This protective cover is installed in series production on top of the distributor cap with the ignition cables routed through the opening in the cover extension. (For details on subsequent installations, refer to Service Information MB-T 81, Group 15, of December 1968.)

The labor time for subsequent installations is 0.4 hours on a carburetor engine and 0.6 hours on a fuel injection engine.

D. Protective Dust Cover Inside the Ignition Distributor

The protective dust cover presently installed in series production will shortly be converted to that of a plastic material, thus preventing ignition voltage spark discharges.

The labor time for subsequent installations is 0.1 hours.

Part II - Precautionary Measures to be Taken on the Ignition System

A. Series Resistor for the Ignition Coil (6 cylinder engines)

It is recommended to replace the Bosch series resistor (color: brown) by the Beru series resistor WZ 09 (color: white) (illustration 2).

The labor time for subsequent installations is 0.2 hours on carburetor engines and 0.3 hours on fuel injection engines.

B. Relay for By-passing the Series Resistor During Starting

To increase the ignition voltage during the starting procedure, the series resistor of the ignition coil can be by-passed by installing a relay (illustration 3).

A modified starter with a modified wiring harness will soon be introduced in series production in order to by-pass the series resistor during the starting procedure, which will then eliminate the subsequent installation of a relay.

Requisite instructions when installing a relay:

1. Attach relay.

   a. Models 230, 230 S, 250 S, 280 S/8, 250 SE, 280 SE/8, 300 SEB

      Using screws, attach the relay on the left-hand side radiator cowl (for dimensions see illustration 4).

   b. Models 230/8, 250/8

      Screw the relay bracket (2) with the relay (1) to the wheel housing plate (illustration 5).

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NOTE: With special electrical equipment, the relay bracket may already have been installed.

c. Models 230 SL, 250 SL, 280 SL/8

Screw the additional bracket, part no. 113 545 04 40, onto the relay bracket on the left-hand side wheel housing plate and mount the relay on top of it.

d. Models 300 SEL, 300 SEL/8

Screw the additional bracket, part no. 109 542 05 40, to the ignition coil and mount the relay on it.

2. Route additional wiring harness along main wiring harness and connect as follows:

4 prong plug connection on relay.
Cable color black on series resistor (outlet).
Cable color black/red on series resistor (inlet).
Cable color violet on starter terminal 50.
Cable color brown (ground) on ignition coil mounting screw.

For connecting the relay, use the additional wiring harness, part no. 108 540 16 09 or 700 542 51 99, which should be modified according to the various models.

The labor time for subsequent installations is 0.7 hours.

(Also see Service Information MB-T 61, Group 07, of April 1968.)

C. Ignition Distributor Suppressor Plug

Because of the close-range interference from car radios and other electrical disturbances, suppressor plugs (2) are installed during series production on which a direct contact to the ignition cable core is assured during the assembly (illustration 6).

The labor time for subsequent installations is 0.2 hours for 6 cylinder models and 0.1 hours for 4 cylinder models.

D. Suppressed-type Spark Plug Wire Connectors

Upon installation of new spark plugs (of the non-suppressed version) only the suppressed-type spark plug wire connectors, made of polyester, with a resistance of 5 kilo ohms should be used. (See Service Information No. 96, Group 82, of November 1968.)

The labor time for subsequent installations is 0.4 hours for 6 cylinder models and 0.3 for 4 cylinder models.

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E. Protective Cover for Suppressed-type Spark Plug Wire Connectors

In the near future protective covers will be introduced for sealing the ignition cables on the wire connectors against water and dirt (illustration 8).

The labor time for subsequent installations is 0.2 hours.

F. Anti-Interference Condenser on the Ignition Coil

Because of close-range interference from car radios and other electrical disturbances, a short circuit-proof condenser (2) is being installed on the ignition coil terminal 15 (illustration 9).

The labor time for subsequent installations is 0.1 hours.

III. General Hints for Improved Starting When Troubles Develop

A. Spark Plugs

Clean spark plugs. Check, and if necessary, correct electrode gap or replace spark plugs. Bosch W 200 T-27 or equivalent for carburetor engines or Bosch W 215 T-28 or equivalent for fuel injection engines.

The labor time for subsequent installations is 0.4 hours on 6 cylinder models and 0.3 hours on 4 cylinder models.

B. Ignition Wiring Harness

Clean: ignition cables, ignition distributor cap, plug connectors, rubber sleeves, and ignition coil (top section).

The labor time is 0.1 hours.

C. Dwell Angle

Check dwell angle.
Adjust ignition timing (labor time: 0.4 hours).
Replace points, if necessary (labor time: 0.3 hours).

D. Checking Starting Device of Carburetors

1. Zenith Carburetor INAT

a. Check the choke throttle flaps for ease of movement.

b. Check pre-throttle gap adjustment.

c. Check cold start idle increase (see Workshop Manual - Passenger Cars Starting 1968 - W 114/115).

The labor time is 0.4 hours.

NOTE: For vehicles with engine exhaust emission control systems, the following new values are applicable:

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Pre-throttle gap: Model	230 230 S 230/8 250 S 250/8	.082" ± .004" (2.1 ± 0.1 mm)
	280 S/8	.086" .004" (2.2 ± 0.1 mm)

Cold start fast idle: 2500 - 2700 rpm

CAUTION !

If customers complain about cold start trouble, before checking the car, be sure to ascertain that they have followed the operating instructions contained in the owner's manual. If not, please review them with your customers.

Also, please note this:

In vehicles with Zenith Carburetors 35/40 INAT, prior to starting a cold engine, engage the automatic choke by depressing the accelerator pedal once.

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Parts Required:

Qty.	Description	Part Number	Illustration	Notes
1	Ignition distributor cap (special colorless coating)	000 158 18 02		4 cylinder engines
1	Ignition distributor cap (special colorless coating)	000 158 16 02		6 cylinder engines
1	Ignition distributor rotor (specially coated)	000 158 20 31		for ignition distributors with cast-iron distributor housings
1	Ignition distributor rotor (specially coated)	000 158 21 31		for ignition distributors with aluminum housings
1	Ignition distributor protective cover	000 158 06 85	1	
1	Ignition distributor protective dust cover	000 158 04 11		for all ignition distributors except models 300 SE and 600
1	Series resistor	000 158 08 45	2	6 cylinder engines
1	Relay	000 542 58 19	4,5	6 cylinder engines
1	Wiring harness	108 540 16 09 or 700 542 51 99 } are identical		6 cylinder engines
5	Cable clamp	001 997 96 90		for attaching the wiring harness
2	Sheet metal screw	007981 003230		for attaching the relay -- models 230, 230 S, 250 S, 280 S/8, 250 SE, 280 SE/8, 300 SEB, 250 SE Cp./Conv., 280 SE/8 Cp./Conv.
1	Relay bracket	115 821 01 14		for attaching the relay -- models 230/8, 250/8
3	Sheet metal screw	007981 003230		
2	Hex head screw M 4 x 18	000933 004045		
2	Hex head nut M 4	000934 004004		
2	Lock ring .16" ø (4 mm)	000127 004203		
1	Relay bracket	113 545 04 40	4	for attaching the relay -- models 230 SL, 250 SL, 280 SL/8
2	Hex head screw M 4 x 13	000933 004045		
2	Hex head nut M 4	000934 004004		
2	Lock ring .16" ø (4 mm)	000127 004203		

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Parts Required:

Qty.	Description	Part Number	Illustration	Notes
1	Relay bracket	109 542 05 40		for attaching the relay -- models 300 SEL, 300 SEL/8
2	Sheet metal screw	007981 003230		
	Ignition distributor suppressor plug	000 156 25 10	6	for close range interference suppression
	Spark plug wire connectors (suppressed-type) 5 kilo ohms	000 156 30 10 (straight connector)	7	for close range interference suppression
	Spark plug wire connectors (suppressed-type) 5 kilo ohms	000 156 32 10 (angular connector)		for close range interference suppression
	Spark plug wire connectors (suppressed-type) protective cover	000 159 15 85	8	for close range interference suppression
	Spark plug wire connectors (suppressed-type) protective cover	000 159 21 85	8	for far range interference suppression
1	Anti-interference condenser	000 156 86 01	9	for close range interference suppression

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The required parts are available from your Mercedes-Benz parts depot.

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Part V

Illustration 1

Ignition distributor protective cover

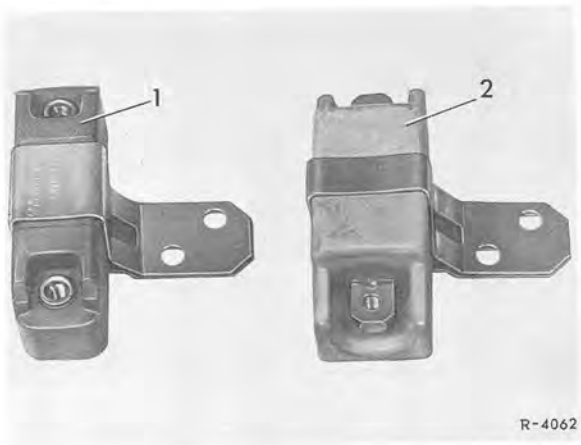

Illustration 2

1. Former version (Bosch color: brown)
2. Improved version (Beru color: white)

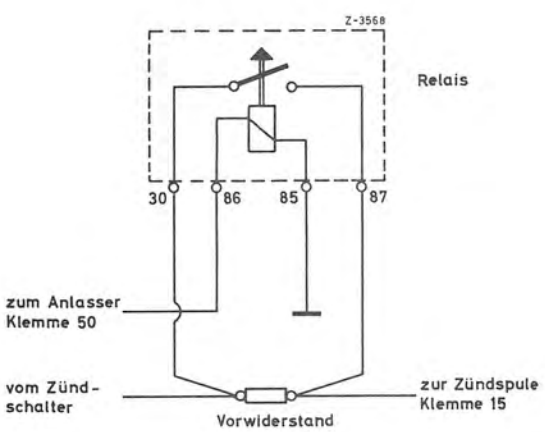

Illustration 3

Relais = Relay
Zum Anlasser Klemme 50 = to starter terminal 50
Vom Zundschalter = from ignition switch
Vorwiderstand = series resistor
Zur Zundspule Klemme 15 = to ignition coil terminal 15

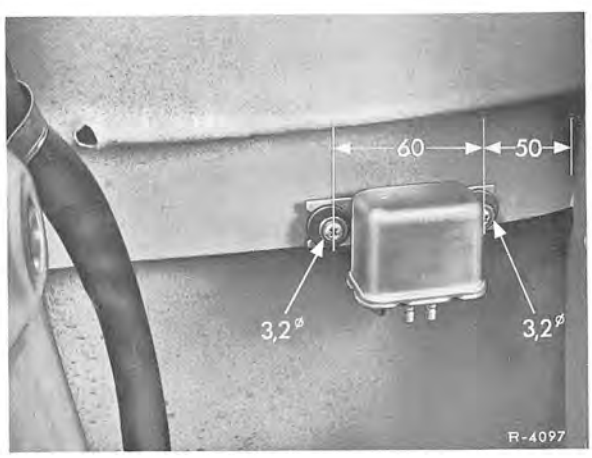

Illustration 4
Dimensions for installing a relay

60 mm = 2.36 inches
50 mm = 1.97 inches
3.2 mm ø = .087 inches ø

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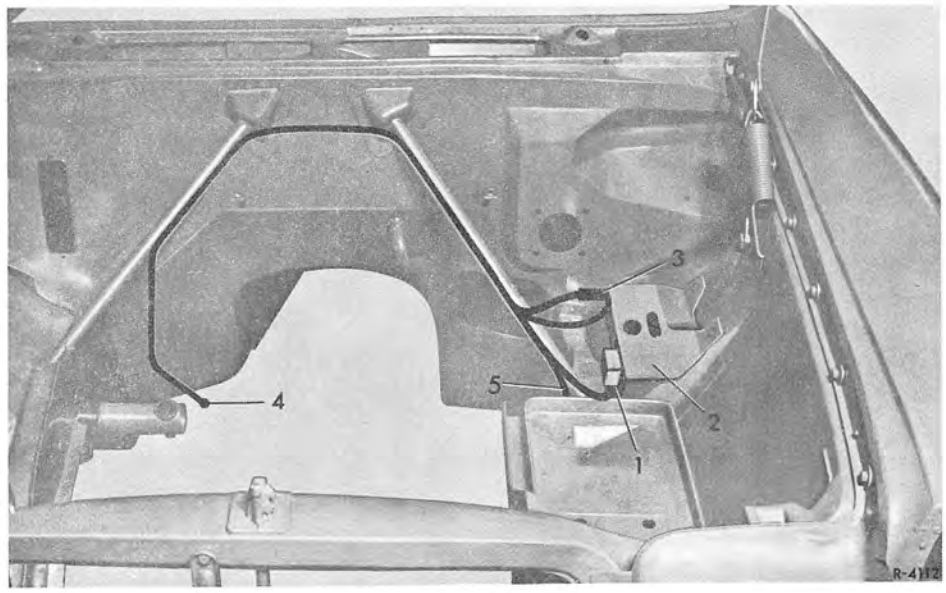

Illustration 5

1. Relay
2. Relay bracket
3. Series resistor
4. Cable connection
   starter terminal 50
5. Ignition coil, ground

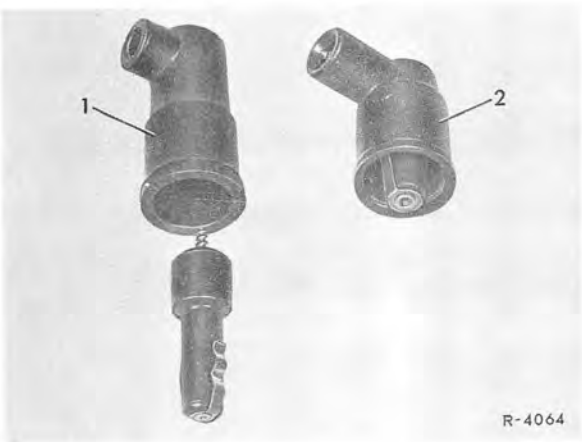

Illustration 6
Ignition distributor
suppressor plug

1. Former version
2. Improved version

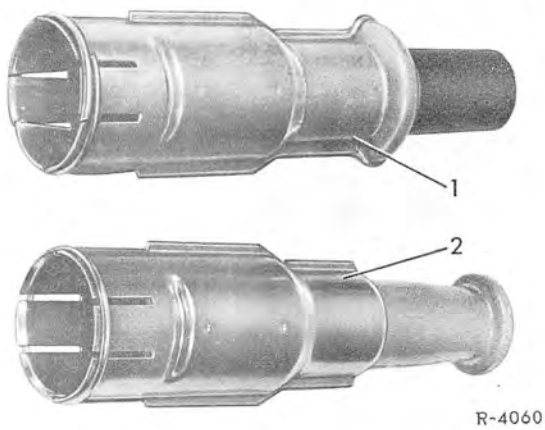

Illustration 7
Spark plug wire
connectors

1. Former version (non-suppressed)
2. Improved version (suppressed)

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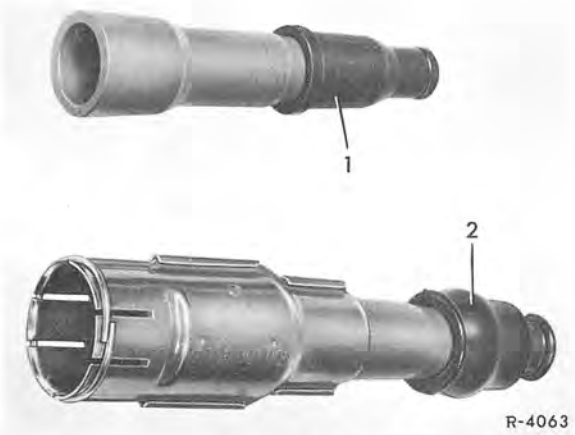

Illustration 8

1. Protective cover for spark plug wire connector (far range interference suppression) 1 kilo ohm

2. Protective cover for spark plug wire connector (close range interference suppression) 5 kilo ohms

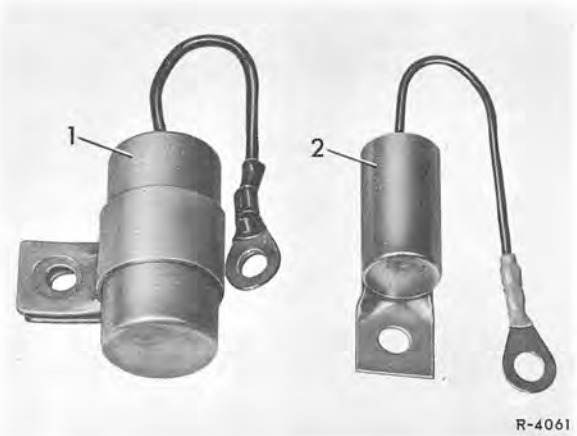

Illustration 9
Anti-interference condenser

1. Former version
2. Improved version

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 113	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Remedy for "Diesel Knock"

Diesel knock is a combustion noise resulting from the sudden combustion of fuel particles in the combustion chamber due to excessive ignition delay. The causes for the excessive ignition delay include the ignition quality of the fuel, the kind and quality of the fuel atomization, the engine temperature, and the timing of fuel injection. In contrast with pinging in carburetor engines, diesel knock has no adverse effect on the engine.

"Knock" symptoms can be categorized by operating conditions as follows:

A. Knocking during idling
B. Knocking at partial load in the lower speed range
C. Knocking at partial load in the medium to upper speed range
D. Hard knocking and shaking of the engine

If you are aware of the specific operating condition in which the knocking occurs, conclusions for the required remedy can be drawn much easier. However, every possible cause for the knock must be checked very accurately to obtain a permanently successful remedy.

In this connection, we should also like to emphasize that replacing the injection nozzles (a practice which is far too frequently followed) will be effective for reducing knock only if the knocking occurs at partial load in the lower speed range (refer to section B of this article, item 7), or in the case of hard knocking and shaking of the engine (refer to section D, item 1).

For the other cases, nozzle replacement is completely useless because the knocking will be moderated only for a short time (if at all) since the actual cause is not eliminated. Frequently the noise will be louder (see section A which follows).

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A. Knocking during Idling

Loud idle of the cold engine, particularly in new vehicles or after installation of new or cleaned injection nozzles.

Cause	Remedy
Louder combustion noise during idle due to larger orifice of new, clean nozzles.	After a relatively short mileage (approx. 600 miles max. or 1000 km), the noise will automatically become softer as a result of slight carbonization of the orifices.

B. Knocking at Partial Load in the Lower Speed Range

When this occurs, it occurs in a cold engine and then reduces as the engine warms up.

Cause	Remedy
1. Use of fuels with too low a cetane rating, diesel fuels for between-season or winter use, or even mixtures of diesel fuel and standard gasoline.	As an experiment, use a different fuel brand. In addition, experience shows that now and then approximately 1 quart (1 liter) of HD engine oil or a carbon-dissolving fuel additive should be added per tank filling, according to the manufacturer's instructions.
2. Air lock in the fuel and injection system.	Check all connecting hoses and connections of the fuel system from the fuel tank up to the injection pump; check rubber hoses for aging, porosity, cracks, and chafing; check hose clamps and screw connections for tightness. Check fuel filter and priming pump for leaks. Bleed the fuel system. Measure vacuum, feed, and "feed final" pressure of fuel system (refer to Workshop Manual, OM Diesel Engines, Job No. 00-9 and see illustration 1 of this Service Information).

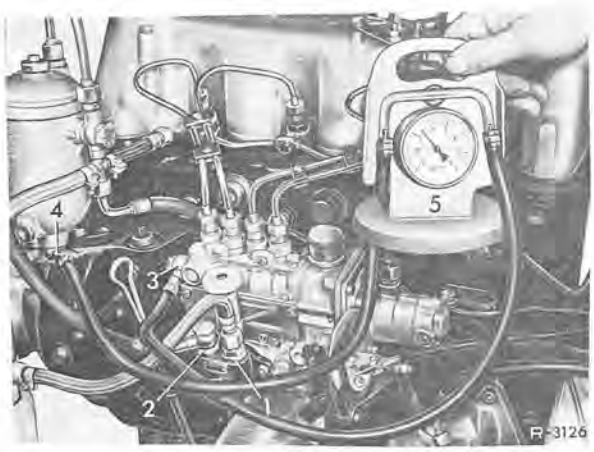

Illustration 1

1. Feed pump fuel inlet (suction end)
2. Feed pump fuel outlet (pressure end)
3. Injection pump fuel inlet
4. Fuel main filter fuel outlet
5. Feed pump tester

Vacuum of fuel feed pump during idle speed should be 2.8 - 5.7 psi (0.2 - 0.4 kg/cm^2).

Feed pressure (opening pressure) of relief valve during idle speed should be 11.4 - 21.3 psi (0.8 - 1.5 kg/cm^2).

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Cause	Remedy
	(Try to obtain the maximum value.) At 3000 rpm, the opening pressure should be 31.3 psi (2.2 kg/cm^2) minimum.
	"Feed final" pressure with pinched hose at idle speed must be 28.5 psi (2.0 kg/cm^2) minimum. At 3000 rpm, it must be 35.6 psi (2.5 kg/cm^2) minimum.
	Note: When measuring, you can determine whether air is present in the fuel by observing the glass tube of the tester (5, illustration 1).
3. Has wrong timing pointer for top dead center (on Type 200 D).	On type 200 D, remove pointer (2, illustration 2) and check measurement "a" as shown in illustration 3.

Note: In some cases, the timing pointer for Type 190 Dc has mistakenly been installed on 200 D engines. Where this mistake occurs, the ignition timing is retarded by approximately 3 degrees.

Type	Pointer Part Number	Measurement (illustration 3)
190 Dc	121 032 01 15	a = 1 inch (25.0 mm)
200 D	121 032 02 15	a = 1-1/16 inch (27.0 mm)

Illustration 2

1. Counterweight
2. Pointer
10. Lock screw

Illustration 3

Injection Timing Pointer

Mark tested pointers with a white dot of paint on the pointer tip, as indication of correctness to eliminate necessity of rechecking it in the future.

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Cause

4. "Feed begin" incorrectly set.

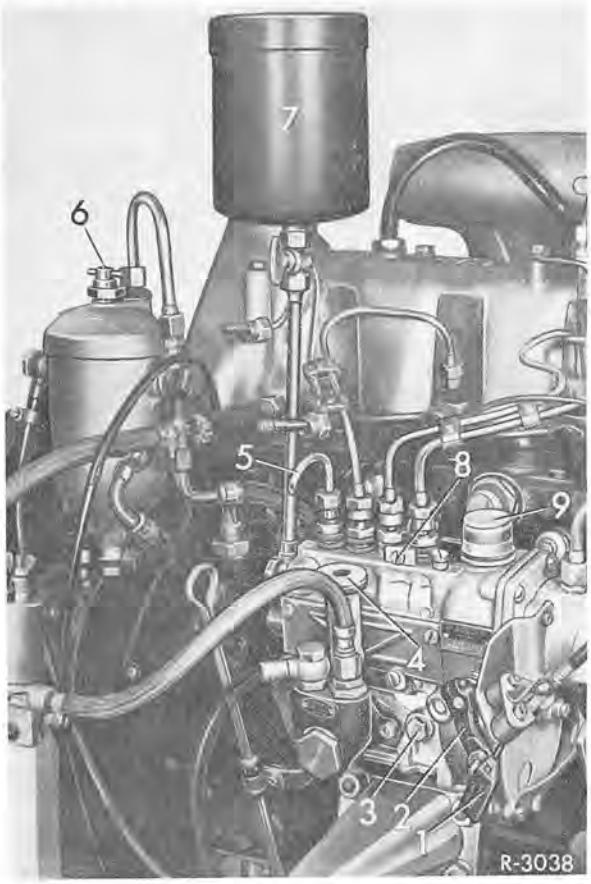

Illustration 4

1. Starter bowden cable
2. Adjusting lever
3. Oil level inspection plug
4. Priming pump
5. Overflow pipe
6. Bleed screw for fuel filter
7. Measuring vessel
8. Clamping jaw
9. Vent filter

Remedy

Check "feed begin" as follows (refer also to Job No. 00-6, Workshop Manual, OM Diesel Engines and illustration 2 of this Service Information):

Step 1. Check feed begin on cylinder 1. (Feed begin is 26° before TDC.)

To do this, detach starter bowden cable (1, illustration 4) on adjusting lever (2) of injection pump so that the control rod is positively at full load.

Prior to checking for feed begin, turn crankshaft at least 1/2 turn in direction of rotation so that the chain is tight for pulling and the centrifugal weights in the injection timer are in idling position.

Step 2. Check feed begin on cylinder 4 (rotate fully once).

If the deviation between cylinder 1 and 4 is more than 2° on the crankshaft, replace the injection pump.

Note: If fuel line connectors (pipe connectors) (1, illustration 5) are loosened during inspection work, always replace copper seal and O-ring (4 and 2, illustration 5). Be sure to tighten pipe connectors, screws for clamping jaws, and injection line nuts with a torque spanner. In the process, be sure to observe the following sequence and values without deviation:

Lubricate threads of pipe connector (1) with grease; using new copper seal and O-ring, tighten with a torque of 21.7 ft.-lbs. (3.0 mkp) and loosen; tighten once again with 21.7 ft.-lbs. (3.0 mkp) and loosen;

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Cause

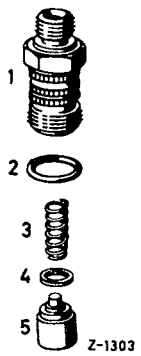

Illustration 5

1. Pipe connector
2. O-ring
3. Compression spring
4. Copper seal
5. Pressure valve

Remedy

and finally, tighten with $\left[21.7\ {}^{+3.6}_{-\ 0}\right]$ ft.-lbs. ($\left[3.0\ {}^{+0.5}_{-\ 0}\right]$ mkp).

(The values in the Technical Data Manual, Edition 1966, page 83, note 6, are superseded. Accordingly, please make these corrections in your book.)

Tighten screws on clamping jaws with torque of 6.5 ft.-lbs. (0.9 mkp).

Tighten the injection line nuts with torque of 18.1 ft.-lbs. (2.5 mkp).

Note: If the applied tightening torques for these connections are either too low or too high, distortions on the pressure valve holder, relief piston, and pump housing will develop which will lead to deviations of the feed begin, and irregularities and trouble on the pump and engine. The only possible remedy then is to replace the pump.

5. Knocking during driving, caused by fuel main filter.

Replacement of fuel filter by felt plate filter, part No. 000 477 54 15 (refer to Workshop Manual, OM Diesel Engines, Job No. 09-3).

6. Knocking during driving, caused by the injection lines.

Replacement of injection lines by version having approx. 1/16 inch (1.5 mm) I.D., and the following part numbers:

621 070 08 33 621 070 10 33
621 070 09 33 621 070 11 33

(Use the tightening torques and procedure outlined in section B, item 4 of this Service Information.)

7. Orifices of nozzles constricted because of carbonization.

Remove nozzles and check. Clean, if necessary, or replace if condition demands (use nozzles with part No. 000 017 28 12).

(over)

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C. Knocking at Partial Load in the Medium to Upper Speed Range

This occurs at 31 to 44 mph (50 to 70 km/h) in third gear and increases when the engine warms up.

Cause	Remedy
1. Chain tensioner draws in air, and chain loses tension. There may be vibrations on the timing chain and on the injection timer. Chain rattle may develop. As a consequence, timing and feed begin are "retarded".	Check chain tensioner according to Workshop Manual Passenger Car Models Starting August 1959, Job No. 05-11. Replace, if necessary.
2. Deep impact grooves on the injection timer hub, scored or blue centrifugal weights, or formation of burrs and scratched pattern on the injection timing device segment plate and flange (machined surface of the segment plate and flange no longer present due to wear by centrifugal weights).	Remove the injection timer and check. (See Job No. 07-25, Workshop Manual, OM Diesel Engines.) Replace parts or entire injection timer, as the condition demands. Note: Install injection timers with divided governor weights only.

D. Hard Knocking and Shaking of Engine

Cause	Remedy
1. Injection nozzle sticking.	Locate the faulty injection nozzle by loosening the individual pressure lines. Remove it and check it. Clean or replace it, according to condition. (Use nozzle with part No. 000 017 28 12.)
2. Pressure valve holder distorted.	Refer to Section B, item 4, of this Service Information.
3. Presence of fuel in governor vacuum chamber of injection pump, caused by leaks between pipe connectors and pressure valve holders.	(Refer to Workshop Manual, OM Diesel Engines, Job No. 07-10.) Replace copper seals between pipe connectors and pressure valve holders. Unscrew oil level inspection plug (3, illustration 4) of injection pump. Slightly loosen fastening bolts of governor housing. Raise housing slightly and drain out the fuel which has penetrated into the governor vacuum chamber. Shorten the overflow pipe (5, illustration

(continued)

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Cause	Remedy
	4) on the pump rear end and point it downward. Tighten governor housing and screw down the oil level inspection plug. (For tightening torques, refer to section B, item 4 of this Service Information.)
4. Loss of compression pressure.	Check valve clearance and compression pressure; check cylinders for leaks, if necessary. Compression pressure should be 313 to 341 psi (22 to 24 kg/cm^2). Minimum allowable value is 242 psi (17 kg/cm^2). Permissible losses during test using CLT apparatus: Total loss: 25% max. above valves and cylinder head gasket: 5% max. above pistons and piston rings: 20% max.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 103	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Towing of Vehicles Damaged in Accidents -- Models 220/8 through 250/8 (W 114/115)

Dollies with solid rubber tires are frequently used for transporting damaged or reconditioned vehicles between workshop areas. With the engine and the front axle removed (so the front fenders can be dismounted) the dolly is normally positioned below the front cross member.

This method of transportation cannot be employed on the above mentioned models if the front axle support has been removed, since, the front axle support, as a supporting member, renders additional rigidity to the cowl. If a vehicle of this model series were to be towed in the above mentioned manner, it would involve the risk of the cowl yielding upwards and thereby cracking the wheel arch plates. Therefore, vehicles damaged in a collision may only be transported with a dolly if a used front axle support is temporarily substituted as a supporting base for the body in place of the original support.

However, vehicles may be towed over short distances without a substitute front axle support if both front fenders are firmly mounted and the dolly is positioned in such a way that its fork does not rest on the spot welded seam of the cross member, but on the cross member itself.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 95	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Additional Service Jobs To Be Carried Out During Inspections -- Model 600

This will advise you of additional service jobs which are to be performed during inspections on the model 600.

1. During inspections according to schedules "C" and "D" of the Service and Maintenance Work Sheets (after 3,000 miles or 5,000 km):

   a. Bleed tandem master cylinder at both vent screws.

   b. Check the brake pedal travel.

      Press the brake pedal until strong resistance is felt. If, at this point, the pedal travel is more than 3" (75 mm), additionally bleed all the wheel brake cylinders.

      NOTE: Prior to making this check, with the engine running, make sure that the air pressure warning light is NOT lit.

2. During inspections according to schedule "E" of the Service and Maintenance Work Sheets (after 12,000 miles or 20,000 km):

   a. Bleed the entire brake system.

The time required for carrying out the above mentioned jobs is already included in the flat rates for the individual inspections. Therefore, the customer may only be charged according to the current rates.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 92	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Use of Automatic Transmission Fluids (ATF)

We have received inquiries concerning the use of automatic transmission fluids for our passenger cars in the two different types of automatic transmissions as well as in our standard transmissions and power steering units. To clarify this, the following will summarize the use of the automatic transmission fluids.

Attached is a chart showing part numbers, model applications, and types of fluid to be used.

All transmissions shown as using Type A, Suffix A Transmission Fluid, require this type of fluid exclusively for oil changes and new or rebuilt transmissions.

As this Type A, Suffix A Fluid is no longer readily available, we are stocking this fluid in our parts depots under part no. 700 270 00 00. This part number covers one quart with a dealer net price of 65¢ and $1.00 suggested list.

With each transmission order placed with our parts depots for transmissions which require Type A, Suffix A Fluid, six quarts of this fluid will be shipped and charged together with the transmission.

For transmission top off only, it is permissible to use the Dexron Type B Fluids listed below on all automatic transmissions. (See Service Information No. 20, Group 00, of March 1968.)

MOBIL ATF 220 - DEXRON B 10104

TEXACO #6673 - DEXRON B 10101

These two Dexron Type B Transmission Fluids can also be used for all standard transmissions and power steering units.

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Attachment

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CHART SHOWING AUTOMATIC TRANSMISSIONS WITH MODEL APPLICATION & TYPE OF FLUID TO BE USED

Automatic Transmission Part Number	Model Application	Type A Suffix A	Type B Dexron
100 270 03 01	All 600's		X
108 270 07 01	280 SL/8, 280 S/8, 280 SEL/8, 300 SEL/8 (109.016)	X	
109 270 09 01	300 SEL/8 6.3		X
110 270 01 01	190 c up to chassis no. 110010-12-086351	X	
110 270 05 01	190 Dc - 200 D	X	
110 270 14 01*	190 c - 200	X	
110 270 20 01	230	X	
111 270 01 01*	220 b, 220 Sb, 220 SEb, 230 S	X	
111 270 13 01*	220 b, 220 Sb, 220 SEb, 230 S	X	
112 270 01 01*	300 SE, 300 SEb, 300 SE (112.015)	X	
112 270 09 01*	300 SE, 300 SE Cp/Cv., 300 SEb, 300 SEL (109.015)	X	
112 270 16 01*	300 SE, 300 SE Cp/Cv., 300 SEb, 300 SEL (109.015)	X	
113 270 01 01	230 SL, 250 S, 250 SL, 250 SE, 250 SE Cp/Cv.	X	
114 270 01 01	230/8, 250/8		X
115 270 02 01	220/8		X
115 270 04 01	220 D/8		X

NOTE: Rebuilt transmissions for above are carried under part number with "80" prefix. Example: 80 100 270 03 01

* All transmissions with an asterisk have chassis number limitations. Refer to Spare Parts Information No. 131, Section V, of February 16, 1968, for information.

New and rebuilt transmissions requiring Type A, Suffix A Fluid, will be shipped from your M-B parts depot with six quarts of (part no. 700 270 00 00) fluid.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 73	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Cranking the Engine During Service and Repair Work

Please be advised that under no circumstances should one crank the engine by the camshaft sprocket hex bolt. The engine should always be cranked by the crankshaft pulley hex bolt.

When cranking the engine by the camshaft sprocket on the 6-cylinder and the former 4-cylinder engines, the timing chain is subject to an excessive overload. In the present 4-cylinder engines the pressure arm of the tension rail resting against the chain tensioner may be bent. This deformation may not be recognized immediately due to the extreme curvature of the pressure arm. If the tension rail has been bent, the tensioning is lost and the tension rail may come into contact with the edge of the oil pocket, causing chain noises.

Bent tension rails must not be re-aligned, but must by all means be replaced.

Please be sure to bring this information to the immediate attention of your personnel.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 72	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, July 1968

TO ALL MERCEDES-BENZ DEALERS

Subject: Shell Rotella T Motor Oil

The "Fuels and Lubricant Specifications" booklet (Betriebsstoffvorschriften), which will be distributed to our dealers in the near future, includes, among the list of approved motor oils, the "Shell Rotella T" motor oil for the OM 615 engine, installed in model 220 D/8.

Please be advised that this information is invalid for the U.S.A., as only the European made "Shell Rotella T" motor oil fullfills the specifications required for the OM 615 diesel engine. The U.S. manufactured "Shell Rotella T" motor oil is not suitable for this engine, and might cause premature engine wear.

Please advise your customers accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 72	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Gruppo 00	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Cylinder Leakage Test

The cylinder leakage test, made with the SUN-CLT tester or the compression recorder, is used for diagnosing inadequate performance, unsatisfactory starting, high oil consumption, excessive smoke formation, irregular running, etc. in the mechanical section of the engine. Although these tests may tend to produce a realistic picture of leakage in an engine, they should not be considered as conclusive evidence for judging the condition of an engine, as both testing procedures present advantages and disadvantages which might falsify the test results.

In order to avoid making false judgements, which might lead to the premature removal of a cylinder head or an engine, we are giving the following hints which will help in making your analysis of these tests more accurate.

Compression Test using the Compression Recorder

The compression test, as generally applied to using the compression recorder, presents the disadvantage that cylinders with decreased compression reduce the inner resistance of the engine and consequently, contribute to an increase in the starter speed. Therefore, the compression test using the compression recorder tends to be not quite so objective, since it is influenced by the respective starter speed. Therefore, we now specify upper and lower limits for the compression, instead of fixed compression values.

Cylinder Leakage Test using the SUN-CLT Tester

During the cylinder leakage test, using the SUN-CLT tester, a static pressure is led into the cylinder while the piston is in the compression stroke at TDC and the valves are closed. The device shows the total leakage in percent past the piston rings and valve seats.

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The percentage reading is a characteristic feature of the SUN-CLT tester, and is not dependent on the amount of air pressure introduced momentarily via the restriction valve of the leak tester. Introducing the air pressure via a restriction valve is imperative in order to compensate for air pressure fluctuations in the compressed air system during the test.

When the compressed air is led into the cylinder, the piston must be exactly on the TDC mark in the compression stroke. Thus the valves are closed and the piston cannot be moved by the air pressure. In order to clearly differentiate between the pressure losses at the valves and at the piston rings, we recommend that you measure the total loss first, and then spray some drops of engine oil (viscosity: SAE 30) through the spark plug opening onto the cylinder wall, using an oil spray can. This oil will seal the piston against the cylinder temporarily. The pressure loss, measured now, will correspond to the leaks through the valves. Then if the air pressure forces the oil from the piston rings, the total pressure loss will again be indicated. The pressure loss at the piston can be ascertained by subtracting the valve loss from the total loss.

NOTE: The TDC of each cylinder can easily be determined with the aid of a test light. Connect the test light to the distributor at the primary terminal and the other lead to ground. Turn engine to #1 cylinder TDC in the compression stroke and adjust distributor so that the light just comes on at TDC. In sequence of the firing order the TDC for each cylinder can be determined by turning the engine and observing the light.

(For a more detailed description of the Cylinder Leakage Test procedure, please refer to page 51 of the SUN booklet - "SUN Rastronic Engine Diagnosis").

It is possible though, that for individual pistons, the ring gaps are directly in line above each other, with the result that the respective cylinders will show an increased pressure loss, which will considerably falsify the results of the test. Therefore, it must be clearly stated that there may be engines with a measured pressure loss of 30% at one cylinder, which have no abnormal oil consumption and whose performance values are normal. In such cases, the cylinder leakage test results will obviously be false.

Warranty Claims

When the above testing procedure is used to diagnose an engine problem on a car under warranty, be sure to include the test values and oil consumption data on the claim. Other information such as leaks at the valves and pistons for each cylinder should also be indicated on the claim.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 68	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Wash Primer (Metal Preparation)

Before applying primer to base metal surfaces, a coating of wash primer P-4833Y, a cleaning and degreasing agent which has been tested and approved by us, should be applied to the metal. (Wash primer is more commonly known in the U.S. as "metal preparation".)

In addition to cleaning and degreasing metal, wash primer provides a chemical coating that bonds paint to metal, ensuring better adhesion. It also makes metal more rust-resistant, thus making rust creepage beneath the paint film practically non-existent.

Wash primer P-4833Y is available from:

East Coast Specialties Corp.
Saw Mill River Road
Yonkers, New York

It can be applied with a brush and does not require sanding; follow application instructions on container. Before applying primer, be sure to allow sufficient time for the wash primer to dry.

Caution: Wash primer contains acid and is flammable; therefore, during application, handle with care, wear rubber gloves, and avoid contact with skin and eyes. In case of contact with skin or eyes, rinse contacted area with plenty of water for approximately 15 minutes; get medical attention for eyes.

Please advise outside shops which handle paint jobs for your dealership accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 68	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Hypoid Gear Oils

The development of hypoid gear oils, as approved by our parent company and listed below, has reached a point where they may not only be used for normal and heavy-duty operating conditions but also during the break-in period in rear axles, standard steering boxes and water pumps. The hypoid gear oils used in these components should be of SAE 90 viscosity grade.

NOTE: In rear axles with differential lock (differential gear with limited slip), only the special oil "Veedol Multigear Limited Slip Special" part no. 000 583 08 04 should be used (available from all M-B parts depots).

Listed below are the presently approved hypoid gear oils manufactured in the United States:

Caltex Multipurpose Thuban EP 90	- Caltex Petroleum Corp. New York, New York
Chevron (RPM) Universal Gear Lubricant	- Chevron Oil Company San Francisco, California
Gulf Multi-Purpose Gear Lubricant	- Gulf Oil Corporation Pittsburgh, Penna.
Mobilube HD 90	- Mobil Oil Corporation New York, New York
Shell Spirax HD 90	- Shell Oil Company New York, New York
Texaco Multigear Lub EP	- Texaco Inc. New York, New York

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 64	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Paint Thinners

Various paint thinners have been tested to determine their compatibility with Mercedes-Benz synthetic resin paints.

Of the thinners tested, only Acme 65 has been found to be suitable for use with these paints; therefore, until further notice, please use only Acme 65 paint thinner with M-B synthetic paints. It is suitable for air-drying enamel and baking enamel (including metallic and clear enamels).

Please inform outside paint shops which do work for your dealership accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 63	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Plastic Vacuum Lines

Our present passenger car 1968/II models, if equipped with a carburetor engine, have a vacuum line from the intake manifold to the brake booster, which is made of plastic material. Please observe that on these models there is only a minimum clearance for this vacuum line above the cylinder head cover, especially on models featuring the Zenith carburetor.

If the cylinder head cover must be removed, i.e. for re-adjusting of the valves or for re-tightening of the cylinder head, we strongly recommend that you disconnect the vacuum line at both connections. If the vacuum line is disconnected only at the brake booster, and if later the cylinder head cover is removed, the vacuum line may be kinked between the check valve and the connection at the intake manifold.

If th vacuum line was warm when disconnected, a permanent reduction of the cross-sectional area of the vacuum line at the kink would result after cooling down.

Be sure to replace the vacuum line, should any kinks or deformations be observed.

Although vacuum lines in general should be handled with special care, it is important to handle other plastic lines, i.e. fuel lines accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	55	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Changing Winter Oil (SAE 10 W) to Summer Oil (SAE 30)

In Service Information No. 16, Group 00, dated March 1968, we prescribed the use of SAE 30 engine oils during the summer months in passenger cars operated in areas where ambient temperatures above 32° F (0° C) prevail. Furthermore, when ambient temperatures below 32° F (0° C) prevail, winter oil, SAE 10 W, of an MS or S 1 quality or an equivalent multigrade oil 5 W/30 or 10 W/30 should be used.

Since it is difficult to know exactly when these temperatures for the different seasons will begin, we recommend that you change to winter oil (SAE 10 W) as soon as the warm weather ends; and to summer oil (SAE 30), as soon as the winter weather ends. In this way, you can be assured that the appropriate oil change has already been made when the various seasonal temperatures begin.

Especially with the Diesel engine OM 615 (used in model 220 D/8) it is important that the change to SAE 30 summer oil be made prior to the warm weather beginning.

NOTE: The use of a single grade summer oil of SAE 30 viscosity is preferable only if it is of S 1, MS, or DG quality. Should this quality not be readily available as a single grade oil, use SAE 10 W/30 or 10 W/40 of the above quality as a summer oil.

Be sure that these regulations are followed. Despite the fact that the materials used in present engines provide longer, trouble-free engine operation, it is more and more imperative that our regulations governing oil viscosity and oil quality are conscientiously observed, in order to preserve the condition of the engine.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

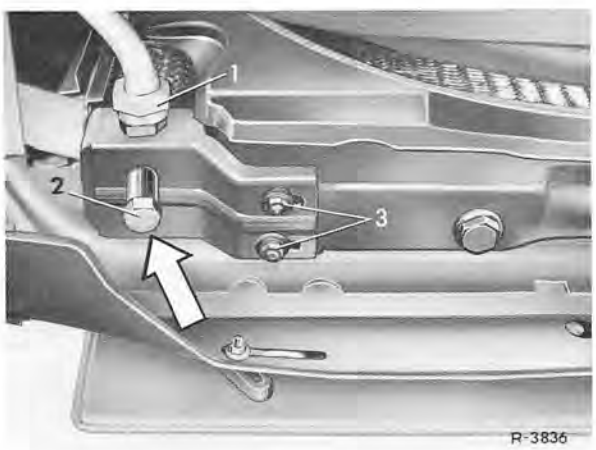
No.	51	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

Fort Lee, June 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Engine Oil Change -- Models 250/8, 280 S/8, 280 SE/8, 280 SE/8/Cp./Conv., 280 SL/8, and 300 SEL/8 (2.8 and 6.3 litre-engines)

The following is the procedure for changing the oil of the engine oil cooler on the above mentioned models. It should be stressed that this oil must also be changed whenever the engine oil is changed.



1. Connection, pipe from oil filter.
2. Oil drain plug on engine oil cooler
3. Tightening nuts, engine oil cooler on radiator.

Illustration 1

In order to drain the oil from the engine oil cooler, first remove the bottom part of the oil filter and then the oil drain plug (2, illustration 1). The oil from the oil cooler can now fully drain due to the ventilation of the oil filter. After the oil has been emptied from the engine oil pan, the oil drain plugs of both the oil pan and the oil cooler, and the mounting screw of the oil filter bottom part must be tightened to the following torque readings:

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	Tightening Torque Readings	
Oil pan, drain plug	36. ft. lbs.	(5 mkp)
Oil cooler, drain plug	$14.^{+3}$ ft. lbs.	($2^{+0.5}$)
Oil filter bottom part, screw	$29.^{-3}$ ft. lbs.	($4^{-0.5}$)

The seal rings of the oil drain plugs (oil cooler: copper; oil pan: copper asbestos) may only be reused if they are in satisfactory condition. Be sure to replace any damaged seal rings.

NOTE: On model 280 SL vehicles, the oil cooler drain plug has been omitted as of chassis end No. 002 904. On these cars, the oil has to be drained by means of the oil pan drain plugs only.

This is a temporary measure. Installation of the oil cooler drain plug will be resumed shortly in a different location.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 19	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars

Fort Lee, July 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Tightening of Stretch Screws

Stretch screws are used for certain highly stressed connections, which are to be tightened to exact tightening values.

When tightening screws with a torque wrench, the tightening torque is partially used up by friction in the thread and at the screw head contact surface. At a certain indicated tightening torque reading, the actual real torque of the connection is smaller, as part of the tightening torque is used up by friction.

As the real torque of the connection depends upon the surfaces and the lubrication, it cannot be kept perfectly under control. Also, the apparently correct torque reading can vary to a greater extent when higher torque values are applied.

These uncertainties can be eliminated by using a combined method of pre-tightening to a small tightening torque reading and final tightening done by turning the screw a prescribed number of degrees of angle.

The screws are initially pre-tightened to a certain torque reading until the parts to be connected are joined. Then the stretch screws are turned toward a certain angle by using an inflexible wrench. The turning angle has been determined to a value where the metal of the screw does not exceed its elastic stretch limit.

Since the influence of friction is practically eliminated, a very limited spread of the real stress of the connection can be achieved with the above mentioned method and the stressing capability of a stretch screw can be fully utilized.

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As the stretch screw is extended elastically (stretched), the diameter of the "stretch section" (see illustration 1) of the screw reduces, and at the same time the screw is stretched.

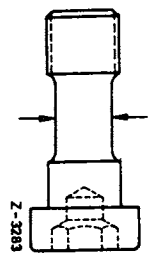

Illustration 1

Depending on the method of use and how much of the stretch capacity has been used, some stretch screws can be reused.

The determination is made by measuring the diameter of the "stretch section" (see illustration 1) of the screw to check whether it is within the permissible limits prescribed for reuse.

The tightening values for the various screws and the permissible limits for reuse of the stretch screws will be listed for each case in the appropriate publications.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 16	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of Engine Oil Viscosity Specifications -- All Passenger Cars

Effective immediately, SAE 30, instead of SAE 20 W/20, engine oils should be used during the summer months in passenger cars operated in areas where ambient temperatures above 32°F (0°C) prevail. In areas where outside temperatures above 86°F (30°C) prevail, SAE 40 engine oils may be used.

Thus, depending upon the ambient temperature, we now recommend engine oils of the following SAE viscosity ratings:

Ambient Temperature	SAE Viscosity Rating
below -13°F (-25°C)	SAE 5 W
between -13°F (-25°C) and +50°F (+10°C)	SAE 10 W (or a corresponding multigrade oil)
above +32°F (0°C)	SAE 30
above +86°F (+30°C)	SAE 40

The preceding recommendations also apply to previous passenger car models.

The owner's manuals for diesel-engine types contain a list of the engine oils which are particularly suitable for those types. These oils may, of course, also be used in all other passenger car types, as well as commercial vehicles.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 14	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 00	Passenger Cars/ Trucks/Busses

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Engine Oils for Diesel Engine OM 615

Only the single-grade engine oils specified in the respective owner's instruction manuals should be used in vehicles equipped with the newly-developed diesel engine OM 615.

The specified oils which are available in the U.S. and Canada are as follows:

Castrol (HD)
Esso Engine Oil (HD)
Valvoline Super HPO HDM
Veedol High Detergency HD 900

The above oils may also be used in all other M-B passenger car, truck, and bus engines. We will advise you as we determine additional suitable oils.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	10	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	00	Passenger Cars

This Service Information supersedes and cancels Service Information No. MB-T 44, Group 00, dated December 1967.

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Service Intervals for Checking Valves -- Type 600

Effective immediately, the valve clearances on all Type 600 vehicles are to be checked (and adjusted if necessary) at every D and E service inspection, beginning with the D inspection at 6,000 miles (10,000 km). As a result of adding this check at the D service, the interval between valve checks is now 6,000 miles (10,000 km).

The flat rate time allowance for the D inspection on Type 600 is now increased by 1.9 hrs.

Since this change will not be in the Owner's Manual until a new issue is published, please be sure to inform all of your service staff about it at the present time.

The valve clearances on a cold engine are 0.004 in. (0.10 mm) for intake valves and 0.010 in. (0.25 mm) for exhaust valves.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 8	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 00	Passenger Cars/ Trucks/Busses

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: A. Checking and Evaluating Diesel Fuel Injection Nozzles
B. Policy for Handling Warranty Claims

The procedure for checking and evaluation of Diesel injection nozzles has already been published (Workshop Manual, Diesel Engines, Models OM 636 and OM 621, Job No. 07-18), but in this Service Information, we give you revised checking instructions and advice for cars, trucks, and busses, as a result of experience.

The functioning test with the Bosch hand-operated test stand EFEP 60 A, part No. 000 589 14 27, is valid for both uncleaned and cleaned and for reconditioned and new nozzles.

A. Functioning Tests

1. Checking of Spray Pattern

With short, quick strokes (approx. two strokes/sec.) of the lever of the Bosch hand-operated test stand (and with the pressure gauge switched off), the spray pattern should be fairly concentrated, but well atomized. However, when evaluating, do not give great consideration to separated, "stringy", or broader-than-usual sprays. Such deviations are of no importance for combustion in the engine.

2. Buzz Test

Press hand lever slowly and completely (approximately one stroke/sec.) with the pressure gauge switched off. The buzz of the nozzle should sound audibly muffled. If the nozzle buzzes only slightly or not at all, the test must be carried out in accordance with point 4 of this Service Information. When carrying out the buzz test, the same criteria as for the spray test should apply.

(over)

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Note:

Nozzles with small orifice (DN 0 SD), which are subject to complaint due to knocking at partial load, can be reconditioned and put into buzzing condition again. However, they are still more liable to knock at partial load (see also Service Information No. 113, Group 00, of April 1968, regarding knocking) than those of today's standard version which have a larger orifice (DN 0 SD 1510) (part No. 000 017 28 12).

3. Injection Pressure and Leakage Test

a. Opening or Injection Pressure

Slowly press down the hand pump lever of nozzle test stand (one stroke per second), with the pressure gauge switched on, and read injection pressure when opening, or at the beginning of the injection of the nozzle; the nozzle must buzz distinctly.

Caution!

When the gauge is switched on, increase the pressure only slowly, and, still more important, release it only slowly, as the gauge can otherwise be damaged. The injection pressure of new nozzles should be 1635 psi (115 kg/cm^2) and of used nozzles at least still 1422 psi (100 kg/cm^2). The difference of the injection pressure within one set of nozzles for any one engine may not be more than 71 psi (5 kg/cm^2).

b. Leakage Test

Slowly press the pump lever downward until the pointer of the pressure gauge reads 284.5 psi (20 kg/cm^2) below the observed injection pressure (opening pressure). If no drops leave the nozzle orifice, the nozzle is tight. If a leak cannot be eliminated by careful cleaning of the seating surfaces on the nozzle body and nozzle needle, the nozzle must be replaced.

If the nozzle meets the requirements stated in points 1 to 3, the nozzle is usable. If the tests 1 and 2 do not result in a definite evaluation, continue the test according to point 4. The test according to point 4 is also valid for nozzles which have been in stock for a long time and as a result have become stuck.

4. Control and Cleaning Test

The hand lever should be actuated for several seconds at higher speeds (two to three full strokes/sec.) with the pressure gauge switched off. The spray must be solid and must emerge with a high whistling tone.

(continued)

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Note:

If the requirements in point 4 are not fulfilled, the nozzle might be distorted, dirty, damaged, or heavily worn. In such cases, the sealing surfaces on nozzle body, nozzle needle, and washer should be cleaned and checked for grooves and pressure marks. After the injection pressure has been read as correct and a leakage test carried out, the nozzle must be checked again in accordance with points 1 and 2.

Nozzles which have not been found satisfactory at this point are to be replaced.

B. Policy for Handling Warranty Claims

In the above section under "Checking of Spray Pattern", we mentioned that the spray pattern need not be "precise". Since our warranty inspection shows that 75 to 80% of the nozzles declared defective because of spray pattern are not defective at all, we see that considerable misunderstanding exists in this matter. Please instruct your service staff accordingly.

In warranty cases, the procedures in the Claims Policies and Procedures Manual must always be followed. The fault determined during the test of each nozzle turned in on a claim is to be stated on form 420, "Returned Parts Identification Tag", attached to the nozzle and on the claim form 403, "M-B Dealer Claim for Credit", sent in to the Home Office. Write the defect specifically, such as "bad spray pattern", "nozzle fails to buzz in spite of cleaning", nozzle fails leak test", "nozzle needle carbonized", "distorted", "pressure and scuff marks on needle guide shaft", etc.

If the Field Service Technician requests the shipment of claims nozzles to Mercedes-Benz of North America, Inc., Claim Parts' Receiving Department, care should be taken in packing that nozzles are individually wrapped in paper within the package rather than all packed together in the package.

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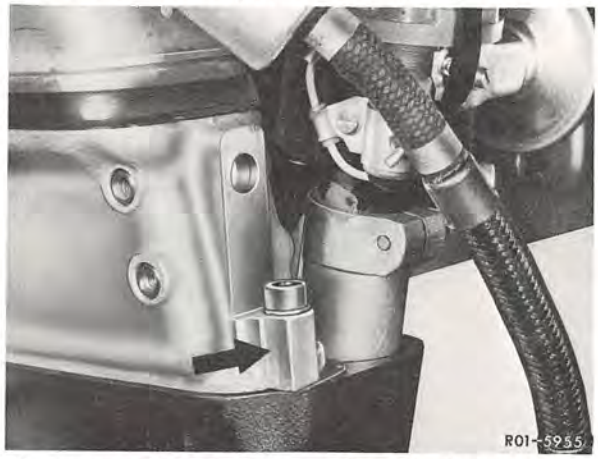
Article No.	File	Group	Application
MB-T 249	SERVICE INFORMATION	01	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CYLINDER HEAD/CYLINDER HEAD BOLTS, MODELS 250/8 AND 280S/8.

The cylinder head securing lug height (left front, driving direction) has been increased from 11/16" (16mm) to 7/8" (23mm). (See Illustration) Therefore, the corresponding cylinder head bolt was lengthened by 7/32" (5mm)(M8X35).



Chassis end number production cutoff data is as follows:

Model	Beginning Chassis End No.
250/8	055352
250/8 2.8 (114.011)	002369
250/8 Cp (114.023)	003243
280S/8	066688

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Care should be taken when performing repairs requiring removal/installation of these bolts. Cylinder heads with 11/16" (16mm) securing lugs may only be installed in conjunction with the M8X30 cylinder head bolt. The M8X35 bolts must be used only when installing cylinder heads with 7/8" (23mm) securing lugs.

Parts Information:

Nomenclature	Part No.
Cylinder Head Bolt (M8X30)	000912 008019
Cylinder Head Bolt (M8X35)	000912 008022

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
MBSI 158	SERVICE INFORMATION	01	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ADAPTER PLATES, MANUAL TRANSMISSIONS, MODELS 220/8 TO 300 SEL/8

Adapter plates which connect the clutch housing to the engine have been standardized on all four and six cylinder engines. This standardization began in 1968. However, since that time, numerous "mix-ups" have occurred, especially during engine replacement. Therefore, this service information will provide information pertaining to all flange/transmission combination possibilities.

Production cutoff information is as follows:

Model	Intermediate Flange As of Chassis End No.	New Version Manual Shift Transmission As of Chassis End No. (laterally shifted transmission)
220 D/8	007080	Since start of production
220/8	002855	
250/8	018073	
280S/8	016983	027623
280SE/8	016102	028986
280SE/8/C	001596	002869
280SL/8	005378	-
300SEL/8	001100	001859

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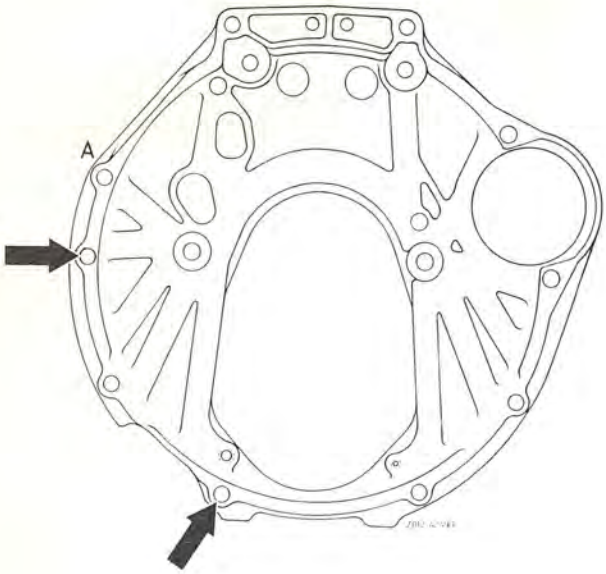

Illustration 1
Hole Locations/New Version
For all models

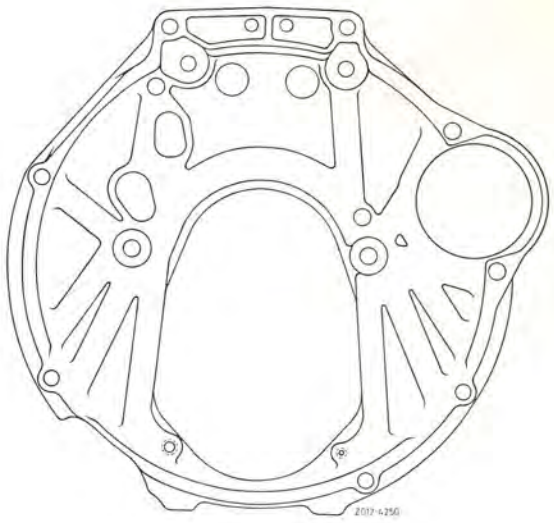

Illustration 2
Previous Version
Models 280S/8 to 300 SEL/8

The new adapter plate (Illustration 1) is provided with hole "A" for Models 280S/8 to 300 SEL/8 with earlier version transmissions and two holes (indicated by arrows) to facilitate installation of a new version manual transmission.

CAUTION: The previous version adapter plate (Part No. 621 011 02 45) for Models 280S/8, 280SE/8, 280SEL and 300 SEL (Illustration 2) may not be used with new version manual transmissions as this combination utilizes only one hole.

Other combinations are possible. The bolt holes not utilized on any combination must not be subsequently rebored. This is unnecessary as connections correspond to requirements.

PARTS INFORMATION:

NOMENCLATURE	PART NUMBER
Adapter plate, 4 cylinder engine	115 011 05 45
Adapter plate, 6 cylinder engine	115 011 04 45

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
88	SERVICE INFORMATION	01	PASSENGER CARS

FORT LEE, OCTOBER 1970

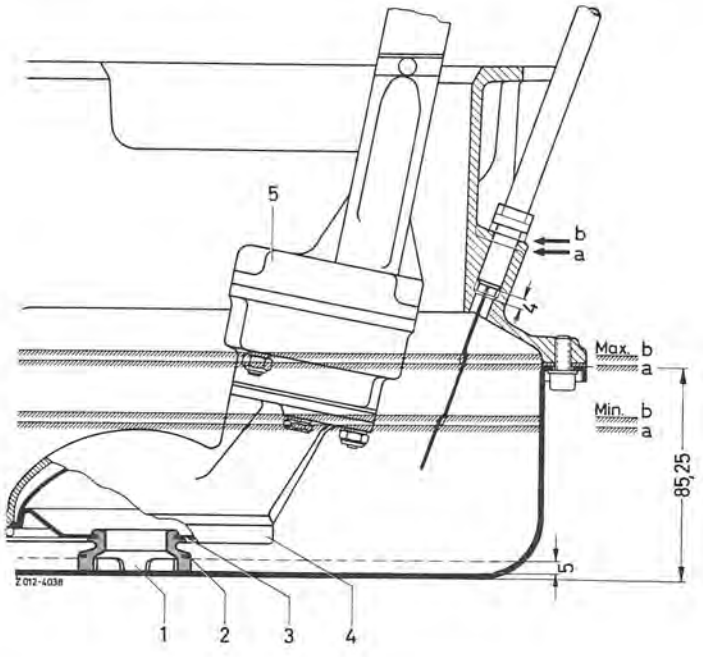
TO OUR MERCEDES-BENZ DEALERS

SUBJECT: OIL PUMP INTAKE ADAPTER - INCREASED OIL SUMP CAPACITIES -- MODELS 220 D/8 AND 220/8

Reference, our Service Information No. 66, Group 01, dated August, 1970. Subject: Increased Engine Oil Filling Capacities - Models 220 D/8, 220/8.

Increasing oil sump capacities on 4 cylinder engines required that the sump base and oil pump intake be lowered. To ensure a more efficient and dependable oil dispersing system, an adapter, made of oil resistant rubber, is now installed on the oil suction bowl.

This adapter may be utilized only in conjunction with the new increased capacity sump. When installing the new sump, the oil pump suction bowl strainer must also be replaced, as it is designed to allow for the adapter installation (See Illustration).



ILLUSTRATION

Oil pump with adapter
a. Oil level, former sump version
b. Oil level, new sump version
1. Adapter
2. Steel ring
3. Strainer with stiffening ring
4. Oil suction bowl
5. Oil pump
4 mm = 5/32 in.
5 mm = 13/64 in.
85.25 mm = 3 23/64 in.

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PRODUCTION CUT-OFF:

MODEL	FROM ENGINE NO.
220 D/8	114372
220/8	040692

In addition to parts required in Service Information No. 66, Group 01, of August 1970, additional parts, as listed in the following table, are necessary to complete the modifications.

MODELS	DESCRIPTION	PART NUMBER
220 D/8	Strainer with adapter	615 180 02 55
220/8	Adapter	615 186 00 07
220 D/8 220/8	Oil pump, complete	115 180 04 01

NOTE: OIL CAPACITIES WILL REMAIN AS INDICATED IN THE REFERENCED SERVICE INFORMATION.

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	Gruppe Group Groupe Grupo 01	PASSENGER CARS

FORT LEE, SEPTEMBER 1970

LERS

SUBJECT: INCREASED ENGINE OIL CAPACITY - ALL MODELS WITH 3.5 LITER V8 ENGINE

This will inform you that the engine oil capacity on all cars with 3.5 liter V8 engines has recently been increased by one quart in production. This has been accomplished by the use of a different oil dipstick with oil level marks in different, higher places. The new oil dipstick can be identified by a yellow handle.

PRODUCTION CUT-OFF:

MODEL	AS OF CHASSIS END NO.
280 SE/9 3.5 Cp/Cv	001645
300 SEL/9 3.5	001921

All Mercedes-Benz dealers are asked to subsequently furnish all cars sold by them and/or presently in dealer inventory or transit, with the modified oil dipstick with the yellow handle. The engine oil level should then, of course, be topped off accordingly.

Please place your order for a sufficient quantity of the new oil dipstick, Part No. 116 010 07 72, right away with your Mercedes-Benz Parts Depot and make the necessary arrangements for all your customers to bring their cars in for this modification.

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REQUIRES IMMEDIATE ATTENTION

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Warranty claims should be submitted on each individual car modified.

NEW ENGINE OIL CAPACITIES

	Capacity in Quarts
Crankcase max/min (without oil filter)	8.0/5.8
Oil filter	0.8
Oil cooler	0.4
Total capacity	9.1

When changing oil, a total of 9.1 qts. is required after the oil has been drained from engine, oil cooler and filter housing.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
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No.	MB-T 197	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	01	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: EXCHANGE OF CYLINDER HEAD BOLTS -- MODEL 280 SL

On model 280 SL, it was found that those 6 cylinder head bolts, which are also holding the 3 mounting brackets for the cylinder head cover are not sufficiently long and have to be replaced by bolts which are 13/64 in. longer, Part No. 000 912 012 031.

All affected vehicles are listed below. You are requested to check the listing and contact those owners who purchased their cars from you in order to have all vehicles called in to your dealership to perform this modification as soon as possible. This is not a modification necessitated by an expected impairment in the operation of the vehicles, but is necessary in order to ensure long engine life.

A warranty claim may be submitted for material (6 bolts) and .8 hours labor for each vehicle modified.

The work instructions for this modification follow the list of affected vehicles.

CHASSIS END NOS.	PRODUCTION NOS.
113 044 12-016502	9 706 3095
12-016503	9 706 3107
12-016505	9 706 1826
12-016510	9 706 1835
12-016518	9 706 3096
12-016519	9 706 2605
12-016520	9 706 2164
12-016522	9 706 1825
12-016523	9 706 2413
12-016526	9 706 2401
12-016527	9 706 1824

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REQUIRED MODIFICATION

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CHASSIS END NOS.	PRODUCTION NOS.
113 044-12-016531	9 706 2165
12-016536	9 706 2607
12-016538	9 706 2017
12-016539	9 706 2396
12-016541	9 706 1823
12-016542	9 706 2403
12-016543	9 706 1821
12-016544	9 706 2404
12-016545	9 706 1820
12-016548	9 706 2601
12-016549	9 706 3099
12-016550	9 706 2398
12-016553	9 706 3097
12-016556	9 706 2012
12-016558	9 706 2412
12-016559	9 706 3109
12-016562	9 706 3103
12-016563	9 706 1816
12-016564	9 706 2011
12-016565	9 706 2603
12-016571	9 706 3094
12-016573	0 707 4170
12-016574	9 706 2166
12-016576	9 706 2610
10-016579	9 706 2390
12-016580	9 706 2415
10-016581	9 708 2314
12-016583	9 706 2608
12-016588	9 706 1815
12-016589	0 703 0414
12-016592	9 706 3106
12-016595	9 706 2019
12-016598	9 705 9730
12-016602	9 706 2606
12-016606	9 706 2399
12-016609	0 703 0581
12-016613	9 706 2411
12-016614	0 703 0576
12-016615	0 703 0580
12-016618	0 703 0434
10-016632	0 703 0384
12-016646	0 703 0404
12-016648	0 703 0399
12-016655	0 703 0429
10-016673	9 708 7829
10-016694	0 703 0389
12-016709	0 703 0586
10-016735	0 703 0392
12-016737	0 703 0583
12-016745	0 703 0417
10-016748	0 703 0381
10-016809	0 703 0391
12-016849	0 703 0434
12-016851	0 703 0577
12-016871	0 703 0431
12-016875	0 703 1570
12-016980	0 703 2150

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CHASSIS END NOS.	PRODUCTION NOS.
113 044-12-017288	0 703 1846
12-017335	0 703 1359
12-017539	0 703 1032
12-016521	0 701 0274
12-016567	0 701 0268
12-016572	0 701 0271
12-016587	0 701 0267

WORK INSTRUCTIONS

IMPORTANT: REPLACEMENT OF THE 6 BOLTS HOLDING THE CYLINDER HEAD COVER MOUNTING BRACKETS MAY ONLY BE MADE ON A COLD ENGINE, AS FOLLOWS:

1. Remove injection pump control shaft.
2. Detach crankcase ventilation hose from cylinder head cover.
3. Remove cylinder head cover.
4. Replace the 6 affected cylinder head bolts, one by one. It is very important to replace only one bolt at a time and to reinstall one new longer bolt immediately and tighten it to a tightening torque of 72 ft. lbs.
5. Reinstall cylinder head cover.
6. Reattach crankcase ventilation hose.
7. Reinstall injection pump control shaft.

The new cylinder head bolts, Part No. 000 912 012 031, are available from our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
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No. 66	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 01	PASSENGER CARS

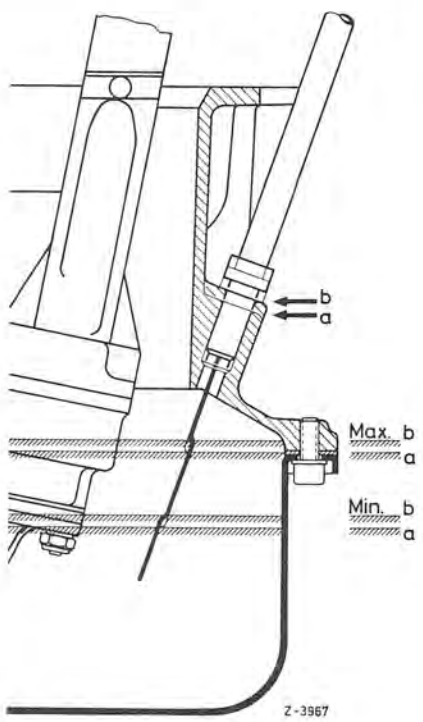
FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: INCREASED ENGINE OIL FILLING QUANTITIES -- MODELS 220 D/8 AND 220/8

The size of the oil pan in the above mentioned models was increased. The filling capacity will increase by one-half quart. The modification was made in order to secure a greater lubricating reserve for extreme operating conditions.

The cars are equipped with a two-piece oil pan. The bottom part was lowered by 3/16 in. (5 mm) and the guide tube for the dip stick on the upper member of the oil pan was raised (See positions "a" and "b" in the Illustration).



ILLUSTRATION

a = previous arrangement

b = new arrangement

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In these oil pans, the oil level is at maximum filling quantity above the separating line of oil pan upper - and oil pan lower member.

START OF PRODUCTION

MODEL	AS OF CHASSIS END NO.
220 D/8	120 830
220/8	049 765

FILLING CAPACITIES OF THE NEW VERSION (QUARTS)

MODEL	OIL FILTER	AIR OIL COOLER	OIL PAN MAX.	OIL PAN MIN.	TOTAL FILLING MAX.
220 D/8	1 1/8	1/2	4 3/4	3 1/4	6 1/3
220/8	1/2	1/2	4 3/4	3 1/4	5 3/4

PARTS REQUIRED

DESCRIPTION	PART NO.
Oil pan, lower member	115 010 02 28
or	
Oil pan, upper member and oil pan, lower member complete	115 010 12 13

The filling quantity has to be increased by 1/2 quart if only the deeper oil pan lower member is installed. In this case, the oil level will reach slightly above the maximum line of the dip stick.

In the future, only the new version will be delivered after the existing stock is exhausted.

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The oil filling quantity of the engine should not be increased on vehicles with the old oil pan. If this is not observed, the crankshaft dips into the oil which results in an excessive formation of foam and malfunctioning of the lubrication system.

Please instruct your personnel, especially those on the lubrication station, about this important modification.

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PGH:SD

MBSI #66, Gr. 01

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 127	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 01	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CRANKCASE VENTILATION SYSTEM -- MODELS 230/8, 250 S, 280 S/8 (UP TO JUNE, 1969 PRODUCTION), AND 220/8 (US VERSION OF 220/8 WITH PDSI CARBURETORS)

On the above mentioned models, the crankcase ventilation hose between the water separator on the air cleaner housing and the by-pass nozzle on the intake manifold has been altered. Section A of this Service Information describes the modifications up to the end of June 1969. Later modifications are described in Section B.

A. CRANKCASE VENTILATION SYSTEM UP TO THE END OF JUNE 1969

When repair and maintenance jobs on the engine are performed, check the condition of the braided crankcase ventilation hose. Should the fabric covering have frayed at the ends, or should the hose be kinked, a new hose with an outer layer of rubber should be installed as used in production from March to the end of June 1969.

When exchanging the crankcase ventilation hose, special attention must be given to the shape of the water separator - either round (Illustration 1) or oval (Illustration 2) - in the air cleaner housing. The length of the connecting piece (dimension 'a', Illustration 1 and 2) and the length of the hoses required differ for the two versions:

Round water separator	Hose length 5.32 in. (135 mm)
Oval water separator	Hose length 4.53 in. (115 mm)

Since only the 5.32 in. (135 mm) crankcase ventilation hoses are in stock, part No. 108 997 02 82, they must be shortened by .79 in. (20 mm) for the air cleaner housings with oval water separators.

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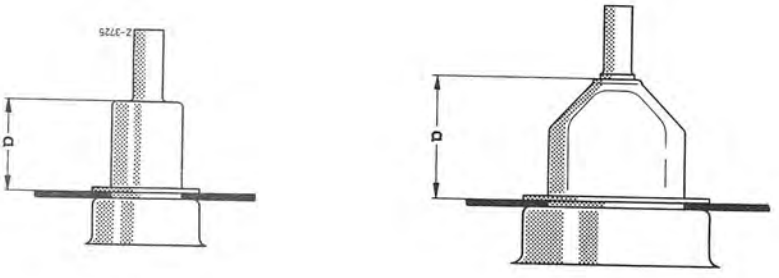

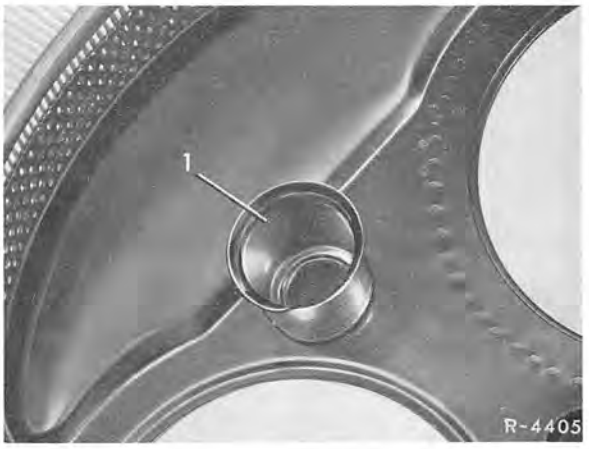

ILLUSTRATION 1

Dimension "a" = .91 in. - .98 in. (23 - 25 mm)

Round water separator (up to December 1968)

Required hose length: 5.32 in. (135 mm)

ILLUSTRATION 2

Dimension "a" = 1.65 in. - 1.77 in. (42 - 45 mm)

Oval water separator (as of December 1968)

Required hose length: 4.53 in. (115 mm)

NOTE: THE HOSE ENDS MAY BE DIPPED INTO OIL TO FACILITATE INSTALLATION.

First fit hose to water separator, then slip it over the connecting piece with by-pass nozzle.

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B. CRANKCASE VENTILATION SYSTEM AS OF THE END OF JUNE 1969

Models 230/S, 250/8, and 280 S/8 are provided with a Polyamid crankcase by-pass pipe since the end of June 1969 (see Illustration 3).

The Change Started With:

MODEL	AS OF CHASSIS END NUMBER/ENGINE
230/8	034286
250/8	031650
280 S/8	032053

The new by-pass pipe facilitates easier insertion of the water separator into the ventilation hose and thus the installation of the air cleaner housing.

INSTALLATION:

First push by-pass pipe with rubber grommet onto connector (5) up to the collar; then, place air cleaner housing into position. It is not possible to convert older vehicles to the new version. (see Illustration 3)

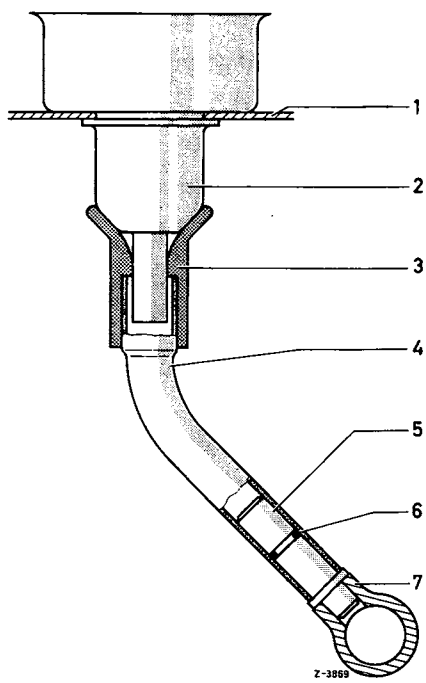

ILLUSTRATION 3

1. Suction noise damper
2. Water separator
3. Rubber grommet
4. By-pass pipe
5. Fitting with by-pass nozzle
6. Seal ring
7. Connection between intake manifolds

(over)

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The Modified Ventilation System Consists of the Following Parts:

QUANTITY	PART NAME	PART NUMBER
1	FITTING WITH SEAL RING	114 140 00 57
1	BY-PASS PIPE	114 141 00 37
1	RUBBER GROMMET	114 094 01 91
1	SEAL RING	008 997 81 45

The required parts may be ordered through our Mercedes-Benz parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	80	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 01	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Crankshaft Seal - OM 636

It has come to our attention that after a change of the oil pan on the above mentioned engine, oil leaks appear on the rear end of the crankshaft.

In most cases, the fault can be traced to the woven sealing ring half.

We must refer to the specific assembly instructions.

When a new woven sealing ring half is installed, it must be correctly seated in the oil pan groove. The protruding ends of the sealing ring should project .012-.020 in. (0.3-0.5 mm) beyond the separating surface after they have been cut.

We refer to the Workshop Manual for engine OM 636, Group 02-21/1. This section describes the removal and installation of an oil pan.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	37	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	01	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

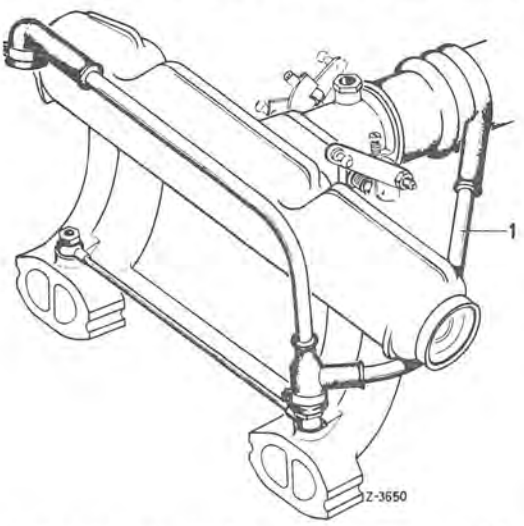
Subject: Closed Crankcase Breather System -- Model 220 D/8

Since November 1968 the above mentioned model has been fitted with a closed crankcase breather system with water (moisture) separator.

When an engine without water separator is exchanged for a replacement engine with water separator, take special note of the following:

Since replacement engines are supplied without a breather tube, this tube (1, illustration) (part no. 615 016 05 30) must be subsequently installed to ensure proper functioning of the breather system.

Additionally, the rubber sleeve must be turned to the rear by 180° (see illustration).



1. Breather tube

The breather tube part no. 615 016 05 30 is available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 45	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 01	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Cylinder Head Cover -- Model 220 D/8

It has repeatedly been brought to our attention that the cylinder head covers are being over-tightened, resulting in damage to the rubber seal - especially in Diesel engines.

To avoid this, cylinder head covers with rounded edges are now being installed during series production.

During service or repair work, we ask you to examine these edges and if necessary, round them off using a suitable device (e.g., a file or grinding wheel).

The three (3) mounting screws for the cylinder head cover must only be slightly tightened - torque to approximately 3.6 ft. lbs. (0.5 kpm).

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No. 80	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 01	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Elimination of Engine Number Plate -- Phase II
Passenger Car Models

The well-known engine number plate with stamped-in model and series designation, code and serial numbers is no longer being used.

Instead, on all passenger car models of the present production series the engine number is stamped directly into the cylinder block in the same location where the previous engine number plate used to be.

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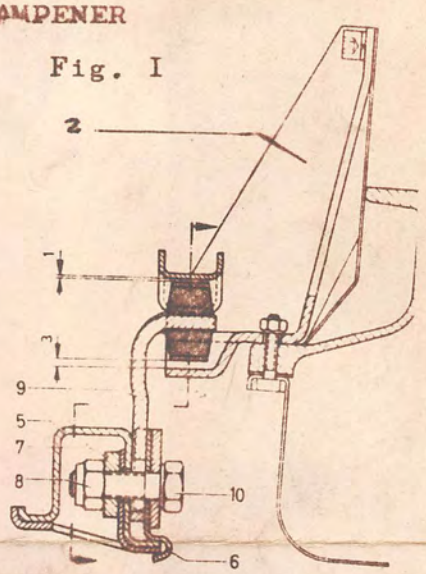
INSTALLATION OF ENGINE DAMPENER

MODELS 220/8 & 220D/8

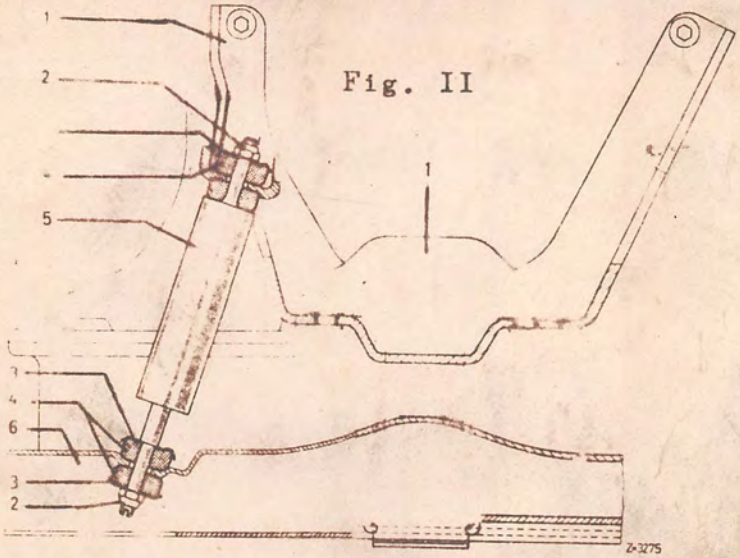
Fig. I



1 Bracket for limit stop
2 Support
3 Hexagon bolt
4 Lock washer
5 Front axle support
6 Retaining bracket
7 Washer
8 Self-locking nut
9 Limit stop plate with rubber mounting
10 Hexagon bolt

Fig. I
Remove complete support (2) from engine and limit stop plate with rubber mounting from front axle support.

Fig. II



1 Support bracket at [illegible]nkcase
2 Self-locking nut
3 Cup plate
4 Rubber ring
5 Engine shock-absorber
6 Front axle support

Fig. II
Install new support bracket with engine shock absorber to the engine and the front axle support.
Note: Install shock absorber with shaft down.

Time allowance for installation is 45 minutes. Please make a regular claim for parts and material.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 165	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	03	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR CRANKSHAFT SEAL FOR FOUR AND SIX CYLINDER ENGINES.

For the above models the following two rear crankshaft seals are available through the parts depots:

Graphite seal, gray color, Part No. 000 997 69 41

Asbestos seal, brown color, Part No. 000 997 77 41

IMPORTANT: IMPROPER INSTALLATION OF THE ASBESTOS SEAL MAY RESULT IN OVERHEATING OF THE REAR MAIN BEARING, CAUSING THE BEARING TO SEIZE. IN ORDER TO PREVENT SUCH POSSIBILITIES, WE RECOMMEND THE USE OF THE GRAPHITE SEAL, GRAY COLOR, DURING ENGINE REPAIR OR OVERHAUL WORK ONLY.

The above instruction also applies to the engine gasket kits. In case you find an asbestos seal, brown color, in a gasket kit, do not use it, but use a Graphite seal, gray color, only.

In the future, no warranty claims will be accepted in cases of rear main bearing failure due to improper installation of this seal.

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C O R R E C T I O N

REFERENCE: MBNA Service Information Issue No. 11/70.
Service Information No. 68, Group 03.
Subject: Crankcase Assembly Cooling Grooves -- Model 280 SL/8

The graph on page 2 of the above mentioned Service Information should be changed as follows:

BLOCK ASSEMBLY	WITH GASKET	ENGINE END NO. MAY BE USED	
~~130 010 05 06~~	~~130 016 21 20~~	up to: 10-006148	up to: 12-010808
130 010 07 06	130 016 24 20	up to: 10-007373	up to: 12-013745
130 010 09 06	130 016 30 20	from: 10-007374	from: 12-013746

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 44	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 03	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: 3-Ring Pistons for Model 220 D/8

The 3-ring pistons, part no. 615 030 40 17, have been installed in the OM 615 engine of model 220 D/8 during a large-scale test into the following engines:

from engine end no. 044 551 to 048 789 - Standard Trans.

from engine end no. 004 850 to 005 352 - Automatic Trans.

According to our experience, this test was successful and these pistons are giving good performance.

Therefore, in case of repair work on engines of the above type fitted with cylinder sleeves, only these 3-ring pistons should be installed. After our stock on these pistons is depleted, only new 3-ring pistons of a further improved version will be delivered under part number 615 030 58 17. This piston will be installed in production beginning about August 1969.

For engines without cylinder sleeves - use the previous version pistons under part no. 615 030 10 17.

The above mentioned parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 117	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	03	Passenger Cars

Fort Lee, April 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Piston Clearance - Present Passenger Car Models

Questions have arisen lately regarding the proper piston clearance on our present production of passenger cars.

We would like to inform you that the correct clearance is as follows:

GASOLINE ENGINES:	0.02 mm = 8/10000 inches
DIESEL ENGINE OM 615:	0.03 mm = 12/10000 inches

In addition, please be informed that the diesel engine OM 615 uses a special type piston whose first groove has a cast-in steel ring which carries the double tapered and molybdenum coated compression ring (size 3 mm high by 3.7 mm wide).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 110	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	03	Passenger Cars

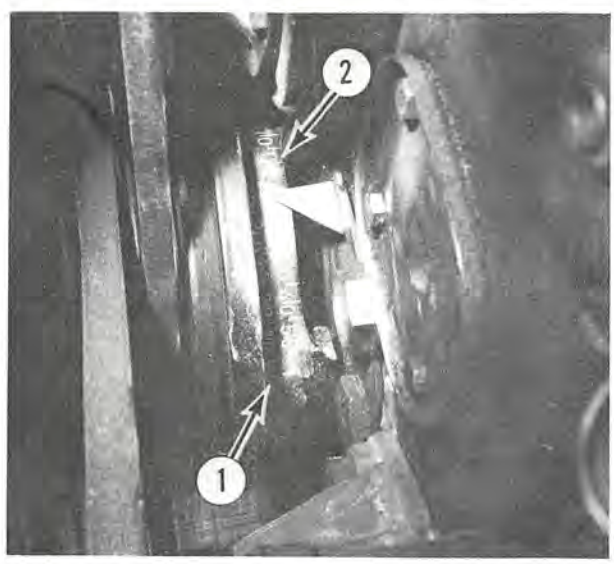
Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of Timing Pointer and Counter-Weight for All 6-Cylinder Engines

A new timing pointer and counter-weight has entered series production on all 6-cylinder engines.

In relation to the old timing pointer (shown on next page), the new pointer is located 40 degrees toward the center of the engine. This modification made it necessary to add an additional set of degree graduations onto the counter-weight.



NEW VERSION

NEW VERSION

As shown (left) in the new version, the rear graduation, (Arrow #2), positioned next to the engine block, applies to the new version.

The front graduation (Arrow #1) on the counter-weight is applicable to the old version timing pointer.

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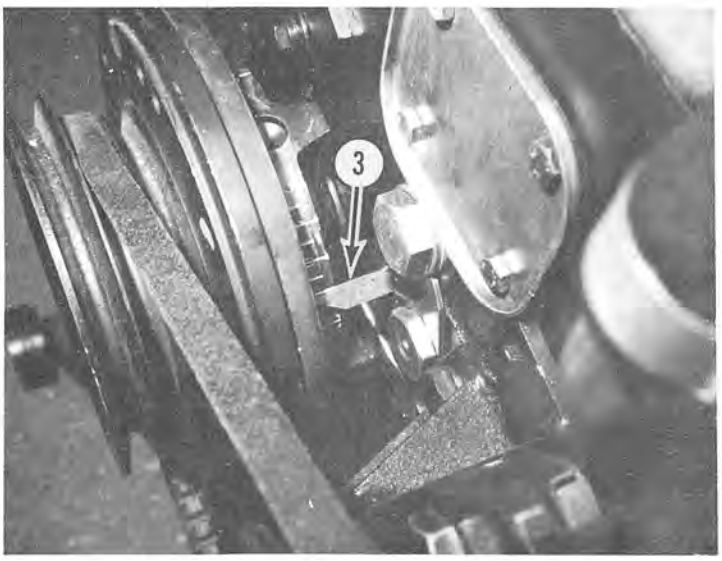
OLD VERSION

Arrow #3:
Old version
of pointer.



The modifications described were necessary due to the installation of a new type oil pressure pump needed on cars equipped with a load levelling device. This new oil pressure pump had to be installed in a manner which would have obstructed the view of the pointing timer in the old version (see picture above). Therefore, changes were necessary in both the timing pointer and the counter-weight.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 87	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	03	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Replacement Short Blocks

On page 2 of this article please find a chart specifying all short blocks available for the 1968 Phase II passenger car models.

Please note that all short blocks come with a V-belt pulley suitable only for cars without air pollution control systems. For this reason the correct pulley should be removed from the defective short block and installed on the new short block.

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SHORT BLOCK ASSEMBLIES

Model		Short Block Assembly	Pulley Delivered with Short Block for Cars Without Air Pollution Control Systems	Pulley for Cars With Air Pollution Control Systems	Note
220/8	Standard Transmission	115 010 00 50	615 032 00 04	615 030 01 68	
220/8	Automatic Transmission	115 010 01 50	615 032 00 04	615 030 01 68	
220 D/8	Standard Transmission	615 010 01 50	615 032 00 04	615 030 01 68	
220 D/8	Automatic Transmission	615 010 02 50	615 032 00 04	615 030 01 68	
250/8	Standard Transmission	114 010 00 50	108 030 03 13	* 180 466 07 15	
250/8	Automatic Transmission	114 010 01 50	108 030 03 13	* 180 466 07 15	
230/8	Standard Transmission	180 010 12 50	127 200 05 05	* 180 466 07 15	
230/8	Automatic Transmission	180 010 13 50	127 200 05 05	* 180 466 07 15	
280 S/8	Standard Transmission	130 010 00 50	108 030 03 03	* 108 466 04 15	
280 S/8	Automatic Transmission	130 010 01 50	108 030 03 03	* 108 466 04 15	

* To be mounted additionally on top of the vibration damper on these models - Part No. 108 030 03 03 or Part No. 127 200 05 05

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Article No.	File	Group	Application
68	SERVICE INFORMATION	03	PASSENGER CARS

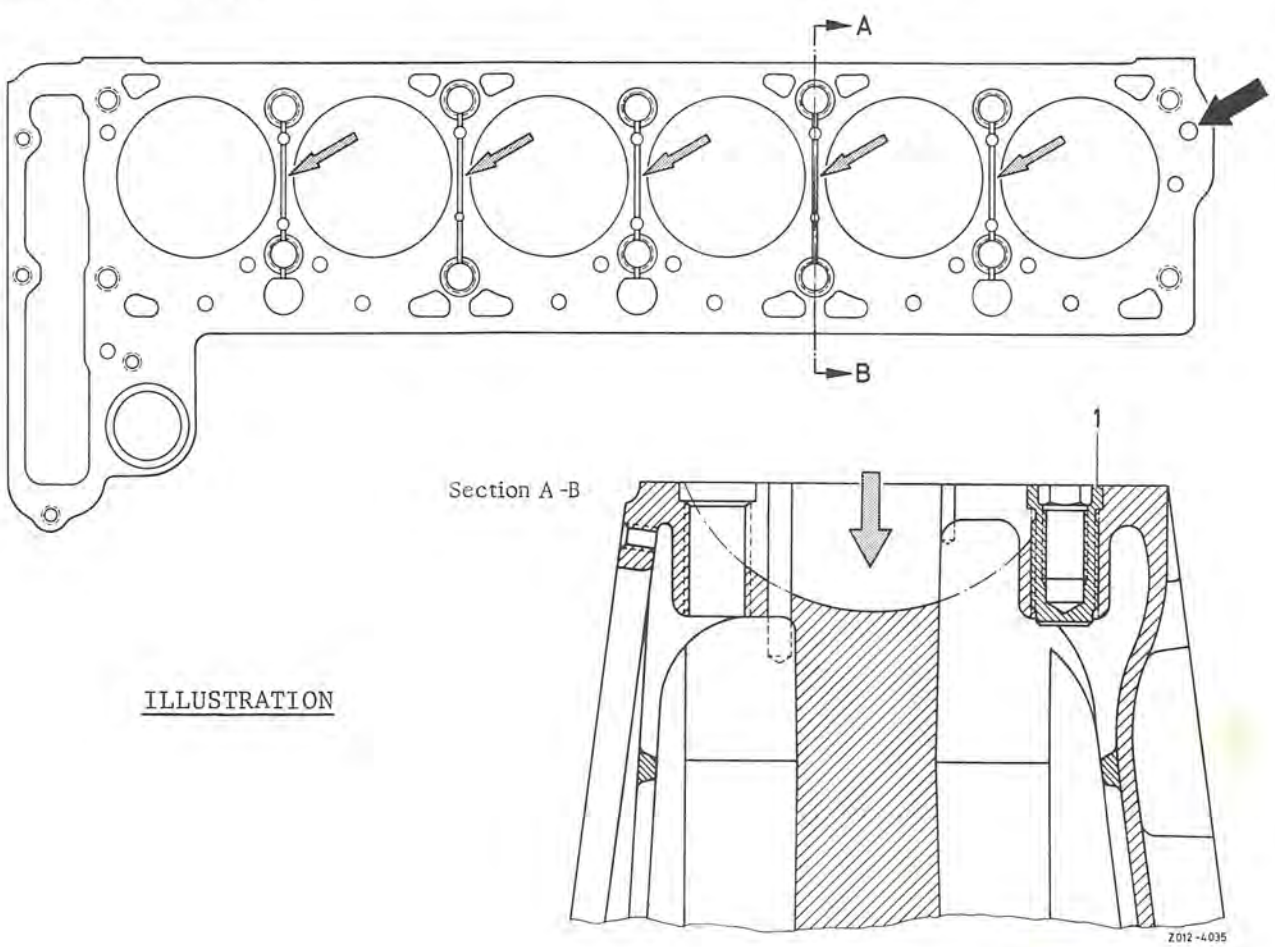
FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CRANKCASE ASSEMBLY COOLING GROOVES -- MODEL 280 SL/8

Service Information MB-T 197, Gr. 01, August 1970 contained information pertaining to exchanging of cylinder head bolts on the above mentioned model. Additional information is contained herein.

Engines as of numbers 12-010809 and 10-006149 on, were modified whereby deeper crankcase assembly cooling grooves were machined to achieve more favorable combustion chamber cooling (Illustration).



ILLUSTRATION

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These cooling grooves extend into the tapped cylinder head crankcase bolt holes. Therefore, the holes must be lined with a threaded bushing, hex. socket, size 12 mm (Illustration, Item 1, Section A-B). This will result in the first thread being approximately 13/64 in. (5 mm) lower than on engines without the cooling groove modification. Cylinder head bolts which secure the cylinder head mounting brackets have been lengthened from 4 1/8 in. (105 mm) to 4 21/64 in. (110 mm). All other cylinder head bolts remain unchanged. In conjunction with this modification, a new head gasket, Part No. 130 016 30 20, must be installed.

NOTE: THE ABOVE MENTIONED HEAD GASKET IS ONLY FOR USE ON ENGINES WITH THE DEEPER GROOVES. CARS AFFECTED BY THE MODIFICATION OUTLINED IN S.I. MB-T 197 DO NOT REQUIRE HEAD GASKET REPLACEMENT AS INSTALLATION OF LONGER BOLTS WAS ACCOMPLISHED WITHOUT REMOVAL OF CYLINDER HEAD.

Three complete versions are now available from our parts depots. However, the block assemblies with pistons, Part No. 130 010 05 06 and 130 010 07 06, will be discontinued and replaced with Part No. 130 010 09 06, which includes the cylinder head gasket, Part No. 130 016 30 20.

BLOCK ASSEMBLY	WITH GASKET	ENGINE END NO. MAY BE USED	
		FROM	TO
130 010 05 06	130 016 21 20	10-006148	12-010808
130 010 07 06	130 016 24 20	10-007373	12-013745
130 010 09 06	130 016 30 20	10-007374	12-013746

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In addition, the short blocks, first and second version of 1970, will be replaced with the third version, to include the latest type cylinder head gasket.

SHORT BLOCK PART NO.		ENGINE END NO. USE FROM	ENGINE END NO. USE TO
First Version:	130 010 14 50	10-004597	10-006148
	130 010 15 50	12-007230	12-010808
Second Version:	130 010 19 50	10-006149	10-007373
	130 010 20 50	12-010809	12-013745
Third Version:	130 010 23 50	10-007374	-----
	130 010 24 50	12-013746	-----

The first and second versions of the afore mentioned blocks should no longer be re-ordered. The head gaskets, cylinder head gasket kits and engine gasket kits will remain as valid replacement parts.

PARTS REQUIRED

DESCRIPTION	PART NUMBER
Engine block with pistons	130 010 09 06
Cylinder head gasket	130 016 30 20
Gasket kit, engine	130 586 24 90
Gasket kit, cylinder head	130 586 25 90
Cylinder head bolt, M 12 x 110	000912 012031

The above mentioned parts may be ordered from your Mercedes-Benz Parts Depot.

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Article No.	File	Group	Application
133	SERVICE INFORMATION	05	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: INSTALLATION OF STOP BUSHING IN THE CHAIN TENSIONERS -- MODELS 280 SE/9 3.5 CP./CV. AND 300 SEL/9 3.5

Chain tensioners on the above mentioned engines have been modified with a stop bushing, Part No. 116 052 05 50, in production (3, Illustration 1). New version chain tensioners may be identified by yellow markings on the flange.

PRODUCTION CUT-OFF:

MODEL	FROM CHASSIS END NO.
280 SE/9 3.5 Cp./Cv.	002215
300 SEL/9 3.5	002546

All vehicles with engine end numbers prior to those listed above should have this stop bushing subsequently installed during the next service.

To facilitate installation, a sheet metal mounting plate 12 x 3/4 x 3/16 in. (300 x 20 x 2 mm) must be fabricated. This plate must be flattened on the front side so as to allow a fit between the spring coils.

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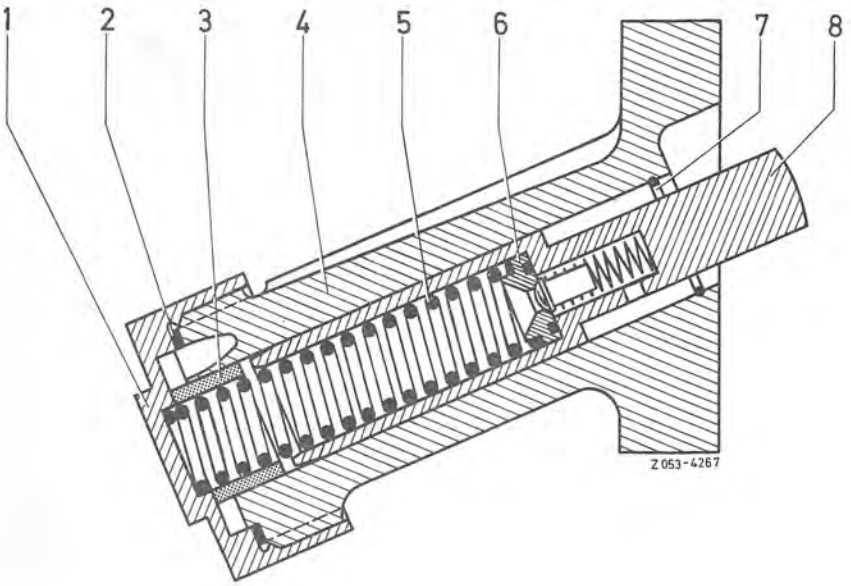

ILLUSTRATION 1

Hydraulic chain tensioner

1. Lock nut
2. Gasket
3. Stop bushing
4. Housing
5. Pressure spring
6. Vacuum valve
7. Snap ring
8. Pressure bolt.

INSTALLATION INSTRUCTIONS

1. Disconnect battery positive lead.

2. Remove windshield washer container. (only on Model 300 SEL/9 3.5)

3. Loosen the retaining bolt on the right side chain tensioner, and push the battery cable clamp to the side. RETIGHTEN BOLT to prevent the chain tensioner housing from slipping and damaging the gasket!

4. Loosen lock nut on the chain tensioner until the mounting plate fits between the last spring coil and rests on the retaining strap (See illustration 2). Depress the spring and remove the locking nut. Brace the spring on the shock absorber bracket (See illustration 3).

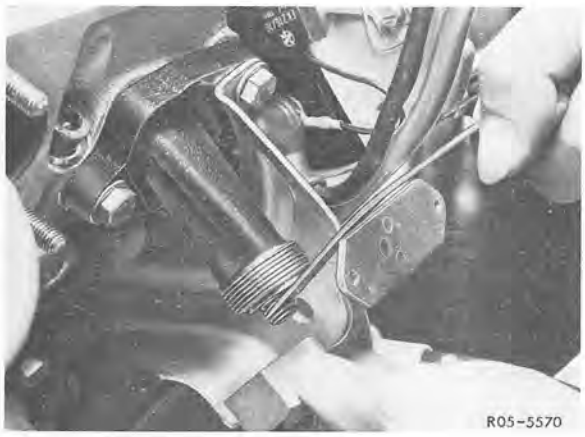

ILLUSTRATION 2

ILLUSTRATION 3

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CAUTION: UNDER NO CIRCUMSTANCES ALLOW THE CHAIN TENSIONER SPRING TO EXTEND TO FULL LENGTH. SHOULD THIS OCCUR, THE PRESSURE VALVE, WHICH CONTAINS OTHER PARTS, (6, ILLUSTRATION 1) WOULD FALL APART AND RENDER THE CHAIN TENSIONER INOPERABLE.

5. To install the stop bushing, depress the spring using the mounting plate and brace it on the shock absorber bracket. Mount the mounting plate behind the stop bushing, depress the spring, install the lock nut and tighten.

   NOTE: ENSURE THE LOCKING NUT GASKET RING IS PROPERLY SEATED (2, ILLUSTRATION 1).

6. Re-align battery cable bracket and tighten. (On Model 300 SEL/9 3.5, re-install windshield washer container).

7. Re-connect battery.

8. Paint a yellow dot on the chain tensioner flange.

9. Start engine and check chain tensioner for leakage.

Warranty claims for 1.9 hours may be submitted to Mercedes-Benz of North America, Inc., 158 Linwood Plaza, Fort Lee, New Jersey 07024; Attn: Warranty Claims Department.

Parts may be ordered from our Mercedes-Benz Parts Depots.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

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No. 28	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 05	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: VALVE MECHANISM -- MODELS 220/8 TO 300 SEL/8 (EXCEPT DIESEL MODELS)

The thrust piece on our passenger cars has been modified (Item 2b, Illustration 2). Simultaneously, the valve spring retainers and rocker arms had to be modified also.

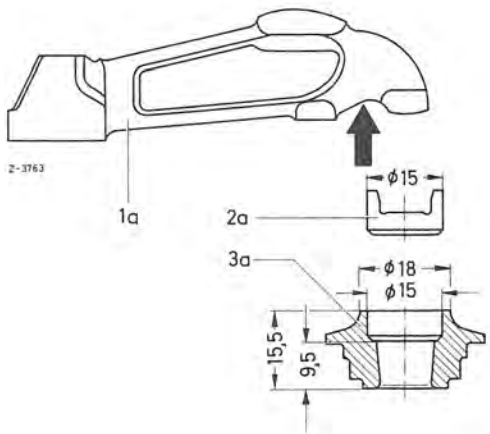

ILLUSTRATION 1

PREVIOUS VERSION

1a. Rocker arm,
Part No. 108 055 01 01
2a. Thrust piece,
Part No. 180 053 19 52
3a. Valve spring retainer,
Part No. 121 053 04 25

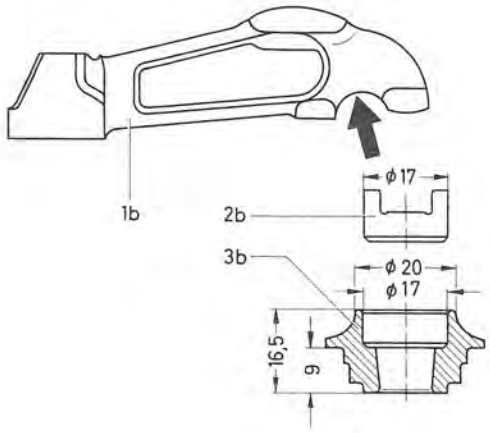

ILLUSTRATION 2

PRESENT VERSION

1b. Rocker arm,
Part No. 114 055 00 01
2b. Thrust piece,
Part No. 130 053 03 53
3b. Valve spring retainer
Part No. 130 053 00 25

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SERIAL NUMBER CUT-OFF

MODEL	FROM CHASSIS END NO.
220/8	043 289
250/8 Cp.	000 001
280 S/8	043 125
280 SE/8, 280 SEL/8	044 055
280 SE/8 Cp.	004 325
280 SL/8	014 230
300 SEL/8	002 475

From these Chassis End Numbers, valve spring retainers, Part No. 130 053 00 25 (previously 121 053 04 25) and thrust piece, Part No. 130 053 03 53 (previously 180 053 19 52) can be installed with the new rocker arm Part No. 114 055 00 01. However, under no circumstances can the new parts be installed with the previous rocker arm, Part No. 108 055 01 01. On account of the smaller recess behind the thrust area (see arrows in Illustrations 1 and 2) this rocker arm would rest on the valve retainer edge. Thus, the valve cone halves might be knocked off.

NOTE: THE NEW ROCKER ARM, ITEM 1B, CAN BE USED INSTEAD OF THE PREVIOUS ROCKER ARM, ITEM 1A.

When ordering spare parts from your local Mercedes-Benz Parts Depots, the new rocker arm, Part No. 114 055 00 01 will be supplied after the supply of the previous rocker arm has been exhausted.

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MBSI #28, Gr. 05

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 107	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 05	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: VALVE MECHANISM -- MODEL 600

Changes were made on the valve mechanism of the M 100 engines as used in model 600 as of chassis end No. 000 838. Besides other changes, valve retainers with larger lugs are now installed (refer to Illustration 2).

Illustration 1

New Condition

former version

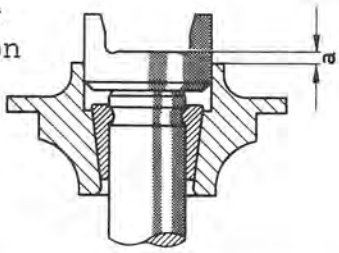
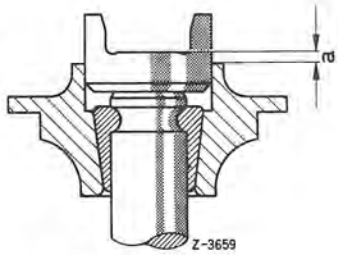


Illustration 2

New Condition

present version dimension a = .03 - .06 in. (0.8 - 1.5 mm)



With the former version retainers, there was a possibility that the valve be pulled through the retainers. In the new condition the projection of the thrust piece (dimension a, Illustration 1) over the valve spring ring (2) should be .03 - .06 in. (0.8 - 1.5 mm). If this dimension shrinks to zero (dimension b, Illustration 3), the rocker arm and thrust piece must be removed in order to check whether the valve retainers are sheared. In such a case the valve stem and the upper edge of the valve retainers are almost at the same level (see arrow, Illustration 3).

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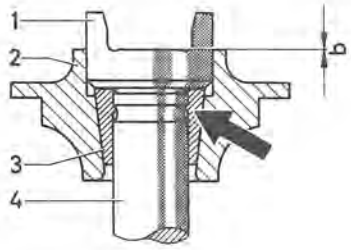

Illustration 3

Sheared valve retainers
1. Thrust piece
2. Valve spring ring
3. Valve retainers
4. Valve

In case of excessive valve clearance, modified valve retainers should be installed along with a general modernization of the cylinder heads.

A modernization should also be made in case a thrust piece with reduced height as compared to the height of the original thrust piece (9 mm = 3.5 in.) would become necessary prior to the removal of the cylinder heads. It is advisable to check, however, whether the modernization has already been made. This can be checked with the spare part number embossed in the valve stem.

The following parts are required for the modification:

Quantity	Part Name	Part No.	
8	Intake valve	100 053 04 01	
8	Exhaust valve	100 053 04 05	
16	Valve spring ring	100 053 03 25	
32	Valve retainer	115 053 00 26	
8	Rotocap with lugs (for intake valve)	000 053 03 35	
8	Rotocap with lugs (for exhaust valve)	000 053 04 35	
8	Valve seal, inlet	000 053 08 58	
8	Valve seal, exhaust	000 053 15 58	+
8	Valve guide, exhaust	100 050 27 24	
8	Valve guide, intake	000 050 08 24	

+) Caution:

The valve seal, exhaust, part No. 000 053 15 58, should only be installed together with the valve guide, exhaust, part No. 100 050 27 24.

A check for sheared retainers must be made when performing work according to Service plan No. 17 (E Chart 48,000 miles - 80,00 km), within the scope of work, item No. 753 (adjustment of valves). If the mentioned mileage has already been exceeded, this should be checked at the next inspection. It is also recommended to check this if loud valve noises are noticed before the vehicles have reached the specified mileage in spite of correctly adjusted valve clearances.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 5	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 05	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Rocker Arm Mounting -- Models 220/8, 250/8, 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8

The rocker arm mounting in the engines of the above mentioned models was recently modified in production.

The new version consists of a modified ball pin holder, part no. 130 055 01 74 and ball pin, part no. 130 055 01 21.

NOTE: For parts availability, check last page of this bulletin!

As a result of this modification, the following points should be observed when carrying out repairs on the rocker arm mounting.

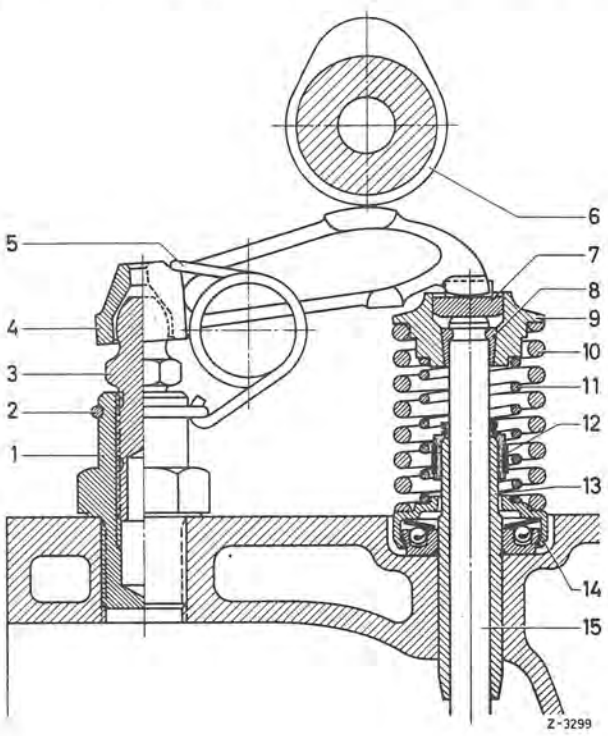

Illustration 1

1. Threaded ball pin holder
3. Ball pin
7. Valve lifter

(over)

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I. Characteristic Features

a. Threaded Ball Pin Holder

Previous version - part no. 130 055 00 74 - from collar to upper edge: .98" (25 mm)

New version - part no. 130 055 01 74 - from collar to upper edge: .94 (24 mm)

(See dimension "b" in illustration 2.)

b. Ball Pin

Previous version - part no. 100 055 00 21 - total length: 1.91" (48.5 mm)

New version - part no. 130 055 01 21 - total length: 2.03" (51.5 mm)

(See dimension "c" in illustration 3.)

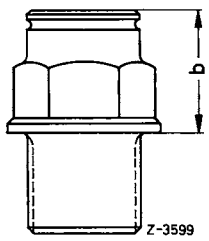

Illustration 2

Dimension "b" .94" (24 mm)

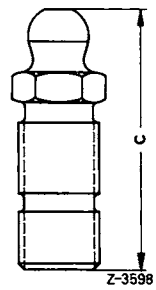

Illustration 3

Dimension "c" 2.03" (51.5 mm)

II. Points To Observe In Case of Repair Work

The new ball pin may be installed into the previous version ball pin holder (provided the latter does not require replacement). On the other hand, new ball pin holders may only be used together with the new ball pins.

Under no circumstances may the previous ball pins be combined with the new ball pin holders. The previous ball pins, which are shorter, would not rest deeply enough in the new ball pin holders, thus preventing the specified adjustment torque of 14.5 - 25.3 ft. lbs. (2.0 - 3.5 kpm) from being reached.

NOTE: When installing a new ball pin and setting the valve clearance, the adjustment torque must be checked with the aid of a torque wrench.

If the specified torque cannot be reached even with the new ball pin holders, because the ball pin must be unscrewed too far, then a .08" (2 mm) thick washer (made in your workshop) can be added to the base of the ball pin holder (3, illustration 4).

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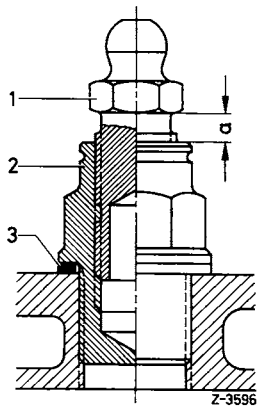

Illustration 4

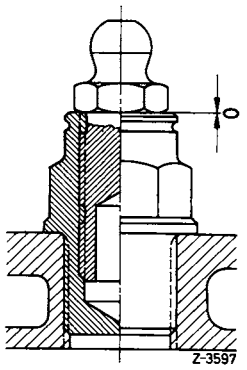

Illustration 5

1. Ball pin
2. Ball pin holder
3. .08" (2 mm) washer (self-made)

Under certain circumstances, the ball pin can sit flush in the ball pin holder (as shown in illustration 5) so that the specified valve clearance cannot be achieved. In this case the fault can be eliminated by replacing the valve lifter (7, illustration 1).

NOTE: In production, valve lifters of .18" (4.5 mm) thickness are used. However, they are also available in thicknesses of .14" (3.5 mm) and .10" (2.5 mm). For part numbers, please refer to the Spare Parts catalog.

If the prescribed adjustment torque cannot be reached in the normal manner, even though the ball pin has not been unscrewed too far out of the ball pin holder, new ball pin holders and ball pins must be installed.

The parts mentioned in this article are available from your Mercedes-Benz parts depot.

NOTE: The ball pin, part no. 130 055 01 21 is available from our parts depots as a separate item. The ball pin holder, part no. 130 055 01 74, however, is NOT available individually, but ONLY together with a ball pin under part no. 130 050 02 74.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 121	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	05	Passenger Cars

Fort Lee, July 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Camshafts -- Present Production Models

The following camshafts are being installed in series production on our current production models:

Model	Engine Design Designation	Camshaft Part Number	Code Number*
220/8	115.920	121 051 61 01	61
230/8	180.954	180 051 08 35	08
250/8	114.920	180 051 08 35	08
280 S/8	130.920	180 051 08 35	08
280 SE/8	130.980	180 051 08 35	08
280 SL/8	130.983	180 051 08 35	08
300 SEL/8	130.981	180 051 08 35	08
300 SEL/8 6.3	100.981	100 051 16 01 (left)	16
		100 051 17 01 (right)	17
600	100.980	100 051 16 01 (left)	16
		100 051 17 01 (right)	17

* Stamped on side of camshaft.

The camshafts are available for replacement from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	29	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	05	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of OM 615 Engine Components Into the OM 621 Engine

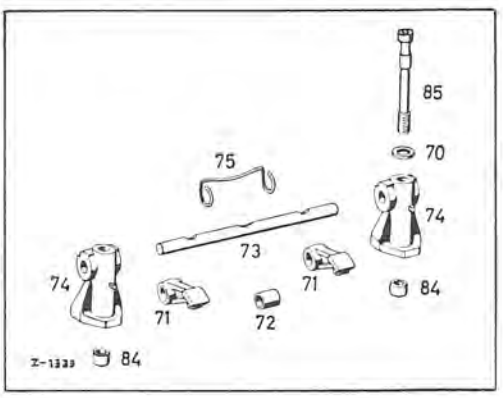
Various improved components developed for the OM 615 diesel engine (220 D/8) may be subsequently installed, in case of repair work, on the OM 621 engine. The relevent spare parts are described herein as follows:

1. Injection timer with the cam track for the vacuum pump on the primary side. The improved vibrational qualities of this injection timer will considerably reduce the possibility of diesel knocking which occurs under partial load and also reduce the wear on chain and slide rails.

2. Lower chain guides located between the crankshaft gear and the injection timer. These longer and reinforced chain guides are more durable (as described in Service Information No. 30, Group 05, of August 1968).

3. Camshaft with .71" (18 mm) wide cams and .79" (20 mm) wide rocker arms. This parts combination is less sensitive during the break-in period and more wear-resistant. It should always be selected when the camshaft and the rocker arms are to be replaced.

   The .79" (20 mm) wide rocker arms require the rocker arm mounting assembly of the OM 615 (consisting of 4 rocker arm pedestals, 2 rocker shafts and 4 clamps).



70. Washer
71. Rocker arm (for inlet and exhaust)
72. Rocker arm bushing
73. Rocker arm shaft
74. Rocker arm pedestal
75. Clamp
84. Fitting sleeve
85. Stretch screw

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4. If the engine to be repaired has been in service for a long period, we particularly recommend the installation of stronger valve springs (as used on OM 615). Normally, the old springs will presumably show a loss of tension or the valves will be seated deeper due to previous valve reconditioning which consequently lessens the valve spring tension.

Technically it is possible to combine the OM 615 camshaft with the .63" (16 mm) wide rocker arms of the OM 621. If, apart from the camshaft, only one or two rocker arms are to be replaced, it is recommended that the failed rocker arms be replaced by OM 621 rocker arms. This will be more economical than using OM 615 rocker arms, because with those, not only the rocker arm mounting assembly, but also the rocker arms, even if still in good condition, must be replaced.

Caution!

Upon the installation of a new camshaft, the valve timing must always be checked and, if necessary, corrected by using Woodruff keys and/or by shifting the chain by one notch on the camshaft gear (see Service Manual - Passenger Cars, starting 1968, W 114/115, job no. 00-9).

PARTS LIST

	Part Number
Injection timer	615 070 00 45
Lower slide rail, outer	615 050 01 16
Lower slide rail, inner	621 050 07 16
Camshaft	621 051 18 01
Rocker arm	615 050 01 33
Rocker arm pedestal	615 055 01 10
Rocker shaft	615 055 00 05
Clamp	615 055 00 93
Valve spring	180 053 06 20

These parts are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 118	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	05	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Roto Caps for the Exhaust Valves -- Model 230/8 (M 114)

To ensure the rotation of the exhaust valves on the engine of the above mentioned model, roto caps are being installed during series production as of February 1969.

These roto caps (part no. 000 053 13 35) should be subsequently installed when doing repair work on the exhaust valves of engines (equipped with a Saginaw Air Pump) not originally equipped with roto caps.

The installation procedure is described in the Workshop Manual - Passenger Cars, Starting January 1968 - W 114/115, under job no. 05-2 and 05-3.

NOTE: When removing valve retainers and springs, be sure to have the piston of the corresponding cylinder in TDC position and the combustion chamber under sufficient air pressure (minimum: 70 psi) so that the valves cannot drop down into the cylinders.

A warranty claim for parts may be submitted in case of warranty.

The roto caps can be ordered under part no. 000 053 13 35 from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 58	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	05	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Intake Valves

With the introduction of 1968/II models 220/8, 230/8 and 250/8, new intake valves with armored valve seats are being used. These new valves are interchangeable with the intake valves of earlier models and may be subsequently installed in cases of excessive wear. They should only be installed in sets.

Part numbers of the new valves, which are the only ones available through the Mercedes-Benz parts depots from now on are as follows:

Model	New Intake Valves	Former Version Intake Valves
200, 220/8	115 053 01 01	121 053 04 01
230, 230 S, 230/8, 250/8	130 053 00 01	108 053 00 01

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	76	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	05	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Timing Chain Noises -- Model 220/8

In the case of customer complaints about chain noises on the above mentioned model, first the condition of the chain tensioner and the tensioning rail should be checked. In addition, the distance from the upper surface of the cylinder head to the top edge of the oil well web should be measured. On the latest production series, this distance ("H") should be 1.42" $^{+.003}$" (36 $^{+1}$ mm) (see illustration 1). If, however, this distance measures 1.81" (46 mm) or 2.01" (51 mm), the web is too low thus causing oil to spill over when driving on bumpy roads, making turns or braking quickly. The chain tensioner might then suck in air and the chain would no longer be sufficiently tightened.

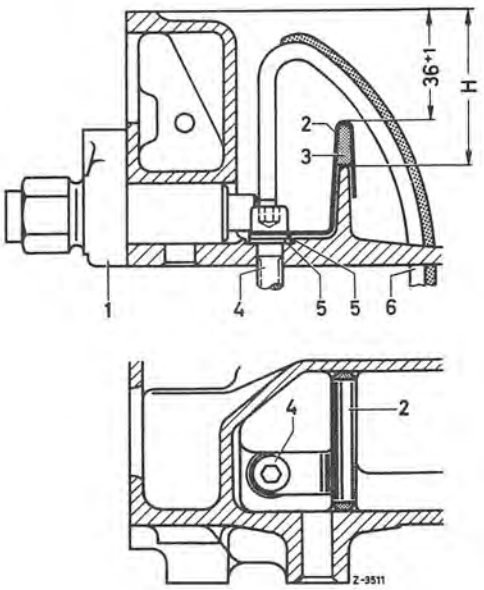

Illustration 1

1. Chain tensioner
2. Extention
3. Rubber insert
4. Hex head screw
5. 2 Washers
6. Tensioning rail

H = 1.81" or 2.01"
(46 mm or 51 mm)
36 + 1 = 1.42 $^{+.003}$ inches

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The web may be raised to the correct height as installed in production now.

Parts Required

Item No. (illustration 1)	Qty.	Part	Part No. or DIN Designation	Note
2	1	Extension	115 016 00 41	
3	*1	Rubber Insert	115 987 00 46	*if H=1.81"
	*2			*if H=2.01"
4	1	Hex socket screw M 8 x 22	000912 008053	
5	2	Washer .33" (8.4mm)	000433 008403	

Procedure

1. Turn crankshaft by the crankshaft dampener fastening bolt in the direction of rotation of the engine (clockwise) until piston #1 (first cylinder) is at TDC compression stroke. Then turn on to position the recess in the notched dampener (1) exactly over the pivot pin (4) (illustration 2).

   NOTE: In this position, the camshaft woodroff key points upward and cannot fall off when removing the camshaft gear.

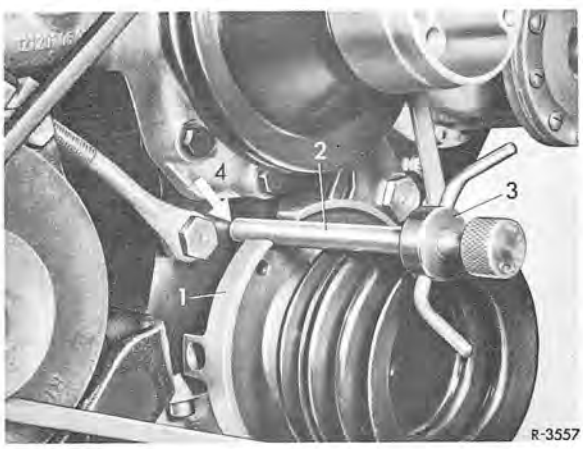

Illustration 2

1. Notched crankshaft dampener
2. Pipe
3. Puller with threaded bolt
4. Pivot pin for tensioning rail

(continued)

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2. Using a suction gun, draw out the oil from the oil well and push chain tensioner back to the stop position.

3. Mark the position of the timing chain and the camshaft gear. Unscrew the mounting screw for the camshaft gear. Pull off camshaft gear with chain placing the chain into the chain case.

4. Pull out the pivot pin (4) with the puller (3) and remove tensioning rail from the top of the cylinder head (illustration 2).

   NOTE: As auxiliary tools for the puller (3) a .5" x .4" x 4.9" (12 x 10 x 125 mm) pipe and a threaded bolt, M 6 x 100 mm (.6" = 15 mm thread on either end) have to be made in your workshop. Unscrew the short threaded bolt in the puller and replace it with the threaded bolt of 3.9" (100 mm) length. For pulling out the pivot pin (4) place the pipe (2) over the threaded bolt (illustration 2).

5. Place rubber insert (3) on the web. Then cover rubber insert with extension (2) and tighten on the cylinder head by means of a hex head screw (4) (illustration 1).

   NOTE: -Be sure to use a new hex head screw of .87" length (22 mm) part no. 000 912 00 80 11 instead of the old screw which measures .79" length (20 mm).

   -Two washers (5) should be installed between the cylinder head and the extension in order to provide adequate support for the extension.

   -If the "H" dimension (illustration 1) equals 1.81" (46 mm) <u>one</u> rubber insert (3) should be installed. The rubber insert is tapered. Therefore, be sure the wide edge rests on top of the web so that the narrow edge fits smoothly into the extension.

   -If the "H" dimension equals 2.01" (51 mm) a second rubber insert which must be cut in halves lengthwise will be required. Place the half with the flat edge on the top of the first rubber insert.

6. Align extension . Fill the oil well with gasoline and check for leaks.

7. Extend the recess on the tensioning rail by approximately .09" (2.5 mm). After reinstalling the tensioning rail check for free movement between the tensioning rail and the hex socket screw (see illustration 3).

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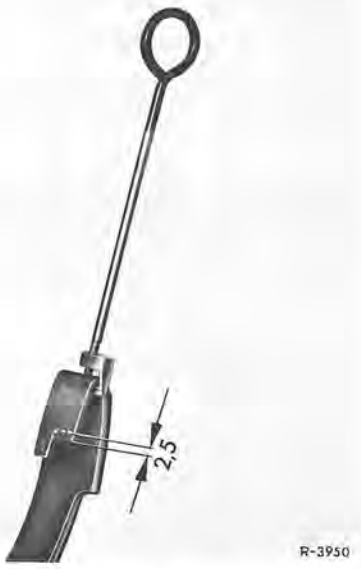

Illustration 3

2.5 mm = .09"

8. Insert the tensioning rail in the cylinder head so that its mounting bore points to the pivot pin bore. Attach pivot pin to threaded bolt of puller, apply sealing compound to the outer end of the pivot pin, and drive the pin into the crankcase bore and the tensioning rail.

   NOTE: In order to enable the tensioning rail to engage with the pivot pin, a .24" (6 mm) rod must be placed between the tensioning rail and the crankcase when driving the pivot pin in. The tensioning rail can be inserted with the selfmade tool described in the "NOTE" in item 4.

9. Slide camshaft gear with the chain onto the camshaft making sure they are aligned according to their respective positions previously marked.

10. Remove the gasoline completely from the oil well and fill it with oil and then bleed the chain tensioner.

11. Put the cylinder head cover back in place and make sure that the cylinder head cover gasket is seated properly.

12. Start the engine and check cylinder head cover for oil leakage.

A warranty claim for parts plus 1.8 hours labor may be submited for the preceding job.

The above mentioned parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	30	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	05	Passenger Cars

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Chain Guides Between Crankshaft Drive Gear and Injection Timer -- Models 190 DC and 200 D

Longer and reinforced versions of the chain guides (13 and 14, illustration 1), are now installed in series production. They may also be subsequently installed during repairs.

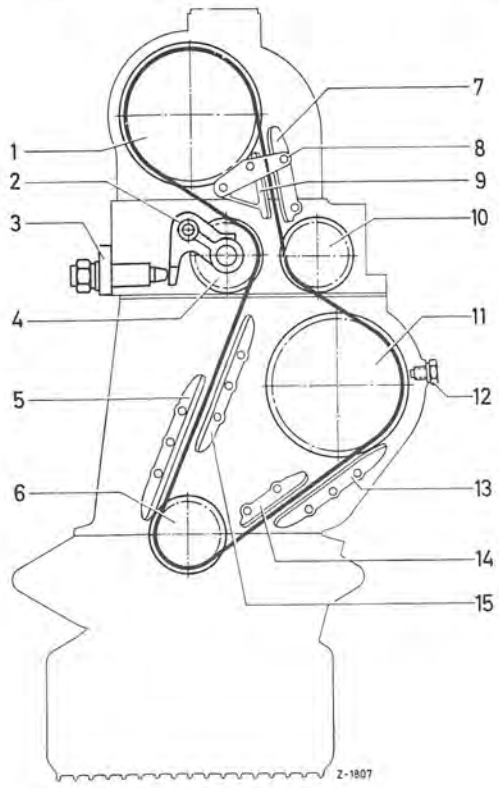

Illustration 1
Chain Drive

1. Camshaft gear
2. Chain tensioner gear bearing with pivot pin
3. Chain tensioner
4. Chain tensioner gear
5. Slide rail, outer
6. Crankshaft gear
7. Slide rail, outer
8. Bracket for slide rail
9. Slide rail, inner
10. Intermediate gear
11. Injection Timer gear
12. Locking screw
13. Slide rail, outer
14. Slide rail, inner
15. Slide rail, inner

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Model 200 D	Installation started as of engine end No.	Slide rail part No.
Standard Transmission Automatic Transmission	106047 007144	180 050 14 16 (13, illustration 1)
Standard Transmission Automatic Transmission	122680 008048	621 050 07 16 (14, illustration 1)

We recommend installation of the longer, reinforced chain guides in engines up to those listed above, after 36,000 miles (60,000 km) have been covered or during repairs performed on the engine. This is a preventive measure which the customer should have carried out in his own interest, to avoid any subsequent damage in case of failure. The installation time is 4.6 hours.

There are two different working procedures to be followed during the installation of the new chain guides:

A. If the counter-weight on the front crankshaft end is loose.

In this case, the counter-weight must be removed according to the following procedure:

1. Disconnect and remove: radiator, intake and pressure lines on vacuum pump, and vacuum pump (or cover on 190 DC).

2. Dismount fan and belt pulley.

3. Remove counter-weight with belt pulley.

B. If the counter-weight on the front crankshaft end is tight:

In this case, proceed as follows:

1. Disconnect and remove: radiator, intake and pressure lines on vacuum pump, and vacuum pump.

2. Dismount fan and belt pulley.

3. Loosen mounting screw for the counter-weight and remove belt pulley.

4. Prepare one washer according to the dimensions in illustration 2. (These dimensions correspond to the size of the belt pulley). The washer must be installed and tightened temporarily, while the belt pulley is dismounted.

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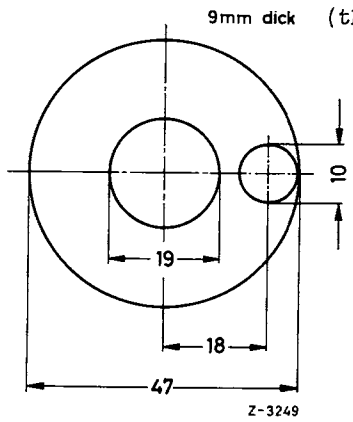

mm	inches
9	.35
10	.39
18	.71
19	.75
47	1.85
Thickness:	.35

Illustration 2

5. Increase the diameter of the bore in the counter-weight from .31 inches (8 mm) to .59 inches (15 mm). The subsequent unbalance in the counter-weight should be made up by an additional bore on the opposite side located on the same radius as the .59 inch (15 mm), but displaced by 180°. This bore should have a diameter of .39 inches (10 mm) and a depth of .16 inches (4 mm).

From this point, proceed for both work procedures "A" and "B" as follows:

1. Remove cylinder head cover with chain guides (7 and 9, illustration 1). Loosen mounting screw for the camshaft gear and unscrew Polystop nut on the injection timer.

2. Turn crankshaft until the drilled .59 inch (15 mm) bore in the counter-weight coincides with the lower chain guide pin. In this position, punchmark the chain position on the chain gear of the injection timer three (3) times at one level by punching the chain gear, chain, and cylinder crankcase. To prevent the chain position from changing, secure the chain on the camshaft gear with wire. Punchmark the spacer shim between the camshaft gear and the first camshaft bearing.

   NOTE: If the injection timer must be disassembled, it is advisable to punchmark the position of the segment flange, with the chain wheel in relation to the segment plate with lifting camshaft.

3. Carefully remove locking nut on the chain tensioner. Remove pressure pin and spring together with the ball cage, ball, and cylindrical pin from the chain tensioner housing.

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4. Unscrew mounting screw for camshaft gear. Pull off camshaft gear with chain but leave the spacer shim on the camshaft. Place the other parts in the chain case.

5. Unscrew securing screw (12, illustration 1) for the chain drive, and with puller, Part No. 187 589 07 33 00. (illustration 3), remove the upper pivot pin of the outer slide rail (13, illustration 1).

6. Insert a sheet-metal or cardboard strip (7.87" x 2.76" = 200 x 70 mm), which should be bent to follow the curve of the injection timer chain gear in such a way between the chain gear and chain, that the chain is lifted from the teeth of the gear (11, illustration 1). Remove injection timer with bushing and shim from the shaft. Remove the sheet-metal or cardboard strip.

   NOTE: Be sure not to turn the crankshaft or camshaft after removing the injection timer.

7. With the puller, extract lower pin of the outer slide rail (13, illustration 1) and remove slide rail.

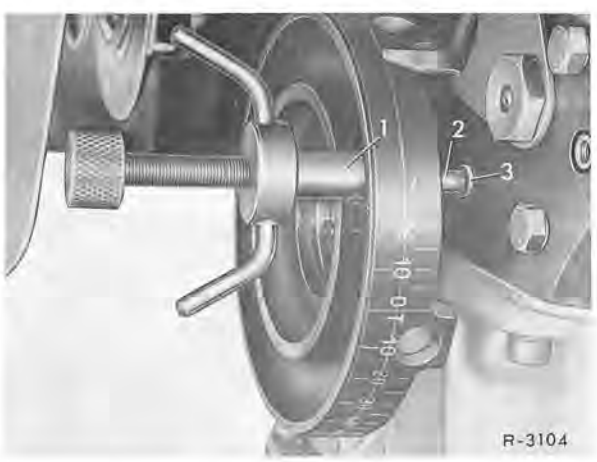

Illustration 3

1. Pulling device (Part No. 187 589 07 33 00)
2. Threaded bolt of puller
3. Lower pin of inner slide rail (14, illustration 1)

8. With the puller, also remove pin of the inner slide rail (14, illustration 1). Also see illustration 3.

   NOTE: In order to remove this pin, a .39 inch (10 mm) diameter washer, should be inserted between the puller (illustration 3), and the counter-weight. The washer takes up the roundness in the counter-weight, so that the puller may rest flush.

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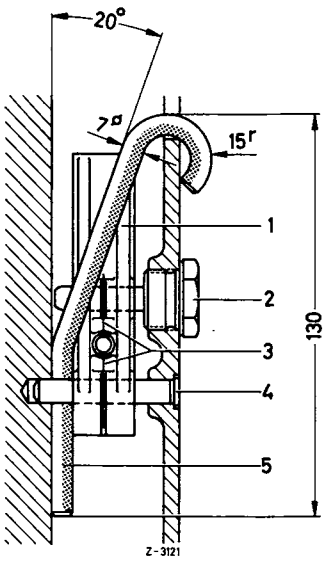
9. Unscrew locking screw (2, illustration 4) with upper pivot pin for the slide rail (14, illustration 1). Remove timing pointer and slide rail (14, illustration 1).



mm	inches
7	.28
15	.59
130	5.12

Illustration 4

1. Slide rail
2. Locking screw with upper pivot pin for slide rail
3. Securing wire in slide rail for pivot pin
4. Pivot pin
5. Retaining bracket for sliding rail
   (To be made in your workshop - see "NOTE" below)

NOTE: For the installation of the slide rails (13 and 14, illustration 1), you should make up the retaining bracket (5, illustration 4) according to the above illustration. The retaining bracket prevents the slide rails from contacting the cylinder crankcase wall when driving in the pivot pins.

10. Installation of Inner Slide Rail (14, illustration 1)

Insert upper pivot (2, illustration 4) into slide rail. Screw in locking screw with the timing pointer using a new seal ring. Insert retaining bracket (5, illustration 4) between the cylinder crankcase and slide rail and hook into the housing wall as shown. Tighten locking screw (2, illustration 4). Cover the outer end of the lower pivot pin (4, illustration 4) with sealing compound. Screw the pin into one hex head M 6x60 screw. Insert it into the crankcase through the .59 inch (15 mm) bore in the counter-weight, and insert it into the slide rail and drive it in using the hex head screw. Be sure that the securing wire on the slide rail engages in the pivot pin. Subsequently, the hex head screw and the retaining bracket (5, illustration 4) should be removed.

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11. Installation of Outer Slide Rail (13, illustration 1)

    Cover the outer end of the lower pivot pin with sealing compound and insert into cylinder crankcase and slide rail. Insert retaining bracket (5, illustration 4) between slide rail and housing wall, and drive in lower pivot pin. Remove retaining bracket.

12. While paying special attention to the punchmarks, slide shim and bushing on the intermediate gear shaft and to facilitate the insertion of the injection timer, push the chain outwards using the previously prepared sheet-metal or cardboard strip.

13. Slide camshaft gear with the chain onto the camshaft, thereby observing the spacer shim between the camshaft and camshaft gear. With a timing chain lengthened too much, the timing chain tensioner arm could rest against the oil pocket well in the cylinder head, thus indicating that the chain must be replaced.

14. Check whether the punchmarks coincide on camshaft gear/chain, first camshaft bearing/spacer shim, and injection timer/chain. Be sure the punchmarks are correctly aligned.

15. Tighten locking screw (12, illustration 1) for the chain with the new seal ring. Cover the outer end of the upper pin for the outer slide rail (13, illustration 1) with sealing compound, then drive the slide rail in.

16. Insert pressure pin with spring, ball cage, ball, and the cylindrical pin into the chain tensioner housing.

    Tighten locking nut. Be sure to refill the oil pocket in the cylinder head and bleed chain tensioner.

    NOTE: If chain noises occur in the engine, a stronger pressure spring (Part No. 621 993 06 01) should be installed into the chain tensioner. Be sure to check that the new chain is being tightened correctly by the chain tensioner.

17. Tighten camshaft gear by means of mounting screw. Tighten intermediate gear with a new Polystop nut and washer (50.63 ft. lbs. = 7 mkp). Reinstall vacuum pump (or cover on 190 DC).

18. Install crankshaft pulley and tighten the mounting screw with a torque of 130.19 ft. lbs. (18 mkp).

The necessary parts are available through your Mercedes-Benz parts depot.

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Article No.	File	Group	Application
MB-T 234	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: THROTTLE VALVE ASSEMBLY STANDARDIZATION, MODELS 180DC, 190D, 190DB, 190DC, 200D/8 and 220D/8.

In order to simplify spare parts ordering and stockage, throttle valve assemblies for the above referenced models are now only available in three versions. These versions, for the various models are available in two repair sets and must be ordered separately.

MODEL	OLD VERSION THROTTLE VALVE WITH THROTTLE LEVER	NEW VERSION THROTTLE VALVE WITHOUT THROTTLE LEVER	THROTTLE VALVE REPAIR SET
180DC, 190D, 190DB 190DC, to engine end No. 003323 (1st Version)	621 070 24 28	621 070 32 28	621 586 00 07
190DC beginning engine end No. 003324 with "ram" type intake manifold (2nd Version) 200D, 200D/8	621 070 29 28	615 070 05 28	615 586 01 07
220D/8	615 070 02 28	615 070 06 28	615 586 01 07

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New version throttle valve assemblies are not provided with a crankcase housing vent connection. Therefore, the crankcase vent system requires modification when installing the second version throttle assembly on all Model 190Dc engines and 200D engines ("ram" type intake manifold) with engine end numbers up to 621.918 10 098977 and 621.918 12 006729 respectively.

The model 190Dc crankcase ventilation system consists of a vent line between the throttle valve assembly and valve cover. In addition, the crankcase dip stick is equipped with an air filter (open ventilation system).

However, the model 200D system is comprised of a vent line between the clean air side of the oil bath air cleaner and the engine valve cover. This system is not provided an air filter on the dipstick, is a closed vent system, and prevents crankcase fumes from entering the atmosphere. Model 200D vent systems (beginning with the above mentioned engine numbers) have been designed to allow a slight drop in the vent line between the valve cover and oil bath air cleaner.

Procedures for this modification (Model 200D) are as follows:

1. Remove vent line between valve cover and oil bath air filter.
2. Remove vent connection (fitting) from valve cover.
3. Install new vent connection (part no. 621 997 09 72) in valve cover.
4. Install rubber elbow on valve cover vent fitting and secure with hose clamp.
5. Slip the new vent line into the elbow and connect line at the air filter.

Parts required:

Quantity	Nomenclature	Part Number
1	Fitting	621 997 09 72
1	Rubber Elbow	121 094 02 91
1	Hose Clamp ASR26/9X0.45	900269 026100
1	Vent line (Polymid, Black)	621 018 02 82

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Procedures for the installation of this modification on automobiles equipped with 190Dc engines are as follows:

1. Remove dipstick, locking plug and air filter from the dipstick guide housing. In place of the air filter, install a section of rubber hose (1 11/16" long, 7/8" outer diameter, 13/16" inner diameter) on the dipstick guide housing. Replace locking plug and dipstick.

2. Remove the old version vent line routed between the valve cover and throttle valve assembly. Plug the hole on the throttle valve assembly by means of a stop-screw (part no. 007604 014100) with gasket (part no. 007603 014400). Remove the old fitting from the valve cover and install the new one (part no. 621 997 09 72).

3. Remove upper section of the oil bath air filter and remove lower portion from the vehicle. Drill a 19/32" (14mm) hole 11/16" (17mm) from the spring lock and 1 31/32" (50mm) from the upper lip. Apply a suitable sealer to the fitting threads. Using 2 1/4" machined hex-shaped nuts (part no. 000936 014010) and 2 spring washers (part no. 000137 014203), one each inner side and outer side, install and secure the fitting.

4. Install the lower portion of the filter in the vehicle, replenish oil, replace top section and connect the new vent line at the rubber elbow and air filter.

Parts required:

Quantity	Nomenclature	Part Number
1	Vent line	621 018 02 82
1	Fitting (Oil Bath Air Cleaner)	621 997 08 72
1	Fitting (Valve Cover)	621 997 09 72

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
MB-T 226	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CARBURETOR ADJUSTMENT -- 6 CYLINDER ENGINES

For clarification, we would like to point out that the only mixture adjustment provided on all Mercedes-Benz carburetors, USA version, is the idle adjustment. No carburetor adjustments are provided in the partial and full load ranges.

The advantage of this design is to maintain a correct adjustment of the carburetors as any adjustment other than in the idle range could result in non-conformance with existing exhaust emission requirements. Modifications performed on the carburetors which affect the air/fuel mixture are prohibited by law.

Please inform all personnel in your shop about the content of this Service Information.

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Article No.	File	Group	Application
159	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MECHANICAL FUEL INJECTION PUMP MODIFICATIONS MODELS 280 SE/8, 280 SEL/8, 280 SE/8 CP/CV. AND 280 SL/8 (USA VERSION)

Fuel injection pumps with modified three-dimensional cams have been installed on the above-referenced vehicles (USA Version), in production. The Bosch pump designation PES 6 KL 70 B 120 R 24Y has not been changed, however, the new governor identification number is EP/RLA 1/45R. This pump may be ordered under part number 130 070 17 01.

Production cutoff numbers are as follows:

MODELS	ENGINE END NO.
280 SE/8, 280 SE/8 Cp/cv 280 SEL/8	130 980-10-022058 130 980-12-049815
280 SL/8	130 983-10-007195 130 983-12-013292

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REVISED ADJUSTMENT DATA:

Idle RPM	700 - 850 RPM
Exhaust Gas Values	1.5 to 3.5% CO

ADDITIONAL MODIFICATIONS:

1. The idle increase vacuum regulator on the throttle must be removed after installation of the new version pump. The open hose connection should be closed with a plug.

2. When the new version pump is installed on vehicles with automatic transmissions having engine end numbers prior to those listed on page one, the connecting rod, part number 130 070 18 75 must be replaced with the new version, part number 130 070 10 75.

Upon depletion of the pump, part number 130 070 11 01, (old version) stocks, only pump, part number 130 070 17 01, (new version) will be available for models 280 SE/SEL Sedan, Cp/Cv. and 280 SL.

NOTE: INJECTION PUMP, PART NUMBER 130 070 11 01, REMAINS VALID FOR MODEL 300 SEL (WITH 2.8L ENGINE), ENGINE TYPE 130.981.

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
155	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FUEL INJECTION PUMP -- MODELS 280 SE/8 TO 300 SEL/8

When installing a replacement fuel injection pump on the above mentioned models, the oil line from the engine to the injection pump must also be replaced on vehicles with chassis end numbers prior to those listed below:

MODEL	TO CHASSIS END NO.
280 SE/8	072142
280 SEL/8	
280 SE/8 Cpe/Cv.	005059
280 SL/8	021569
300 SEL/8	002519

The new version oil line, Part No. 130 180 05 27 may be ordered from our Mercedes-Benz Parts Depot.

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Article No.	File	Group	Application
136	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, FEBRUARY, 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: IDLE SHUT-OFF VALVE/ZENITH CARBURETOR -- MODELS 250/8 2.8, 250/8 CP. AND 280 S/8 1971 AMERICAN VERSION

Two idle shut-off valves are installed on six cylinder, USA Version, 1971 model year carburetor engines in production, one per carburetor.

PRODUCTION CUT-OFF:

MODEL	ENGINE MODEL	AS OF ENGINE END NUMBER STANDARD TRANSMISSION	AUTOMATIC TRANSMISSION
250/8 Sedan 250/8 Cp.	(130.923)	000239	003175
280 S/8	(130.920)	029542	028450

These idle shut-off valves are located in each carburetor throttle body. Due to the location of the idle speed fuel ducts, the throttle valve body and float housing were modified. The idle shut-off valves are energized via fuse number 4 (terminal 15/54) and remain open as long as the ignition is switched on. When the ignition is switched off, the valves are de-energized and seal the idle speed fuel ducts in the throttle body.

To test the idle cut-off valves, disconnect and reconnect the single pin connectors individually with the ignition switched on. The noise caused by the valve opening must be audible.

NOTE: SHUT-OFF VALVE MALFUNCTION PRODUCES THE SAME CHARACTERISTICS AS A "PLUGGED" CARBURETOR IDLE JET.

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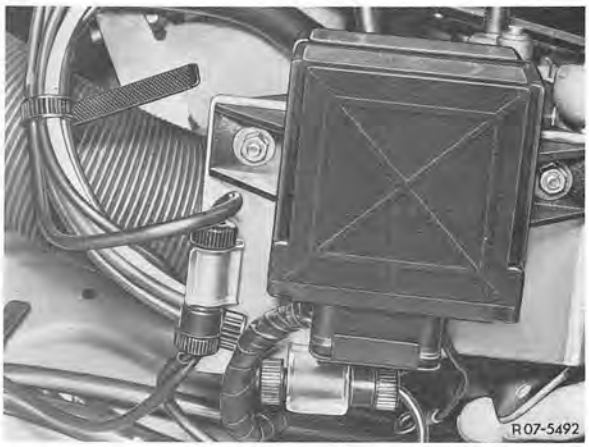

ILLUSTRATION 1

Model 250/8 Sedan (114.011)
Model 250/8 Cp. (114.023)

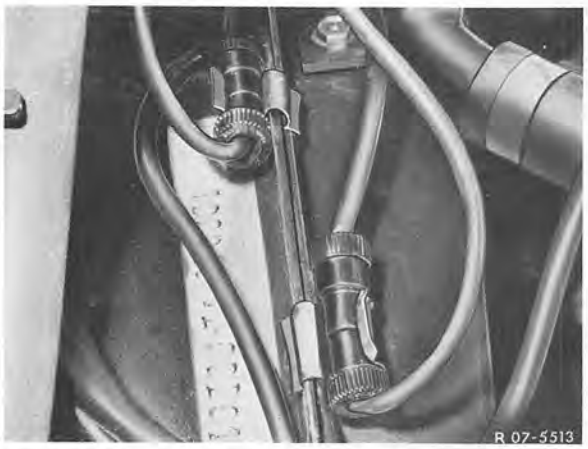

ILLUSTRATION 2

Model 280 S/8

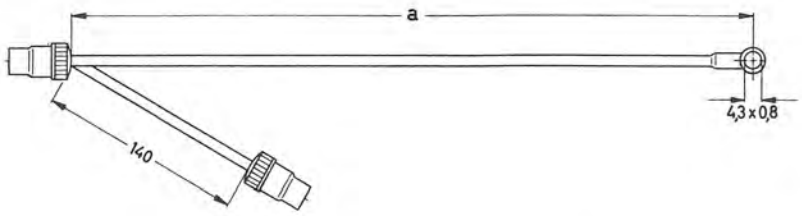

ILLUSTRATION 3

Models 250/8 Sedan (114.011) Models 250/8 Cp. (114.023)	a=72 in. (1800 mm)
Models 280 S/8	a=100 in.(2500 mm)

Upon depletion of existing stocks, only carburetors with idle shut-off valves will be available as replacement parts for all affected 1971 models and 1970 models 250/8 Cp. and 280S/8. On model year 1970 automobiles, however, carburetor versions may be intermixed.

For subsequent installation in 1970 automobiles, connect cable to fuse number 4 at the main fuse box. Route the cable along the main cable harness and connect fuel shut-off valves. Use spring clips to attach the single pin connections to the engine speed relay bracket (Illustration 1) on Models 250/8 2.8 and 250/8 Cp. Attach connections to the body side member on Model 280 S/8.

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NOTE: THE CABLE HARNESS MAY ALSO BE FABRICATED LOCALLY (ILLUSTRATION 3).

A time allowance of .5 hours is authorized for subsequent installation of a prefabricated cable harness. For installation of a cable harness fabricated in the workshop, an additional 18 minutes is allowed.

PARTS REQUIRED:

250/8 Sedan (114.011) 250/8 Cp. (114.023)	280 S/8	DESCRIPTION	PART NUMBER	
6 ft. 7 in.	9 ft. 11 in.	Cable, 16 Gauge		+)
6 ft. 7 in.	9 ft. 11 in.	Insulation conduit		+)
1		Cable clip		+)
2		Single-pin coupling		+)
2		Spring clips	002 988 48 78	
1		Cable harness prefabricated	114 540 14 09	
	1	Cable harness prefabricated	108 540 49 09	
2		Solenoid cut-off valve	000 072 02 17	

+) Only for the fabrication of the cable harness in your own workshop.

NOTE: TO PREVENT CARBURETOR IDLE SHUT-OFF VALVE MOISTURE PENETRATION, SEAL THE SHUT-OFF VALVE OUTER ENDS WITH A SEALANT WHICH REMAINS PLIABLE.

The above mentioned parts are available from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
123	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ZENITH CARBURETORS -- MODELS 250/8, 250/8 CP AND 280 S/8

A. CONTROL LINKAGE

A new version carburetor control linkage has been installed on the above mentioned models in production.

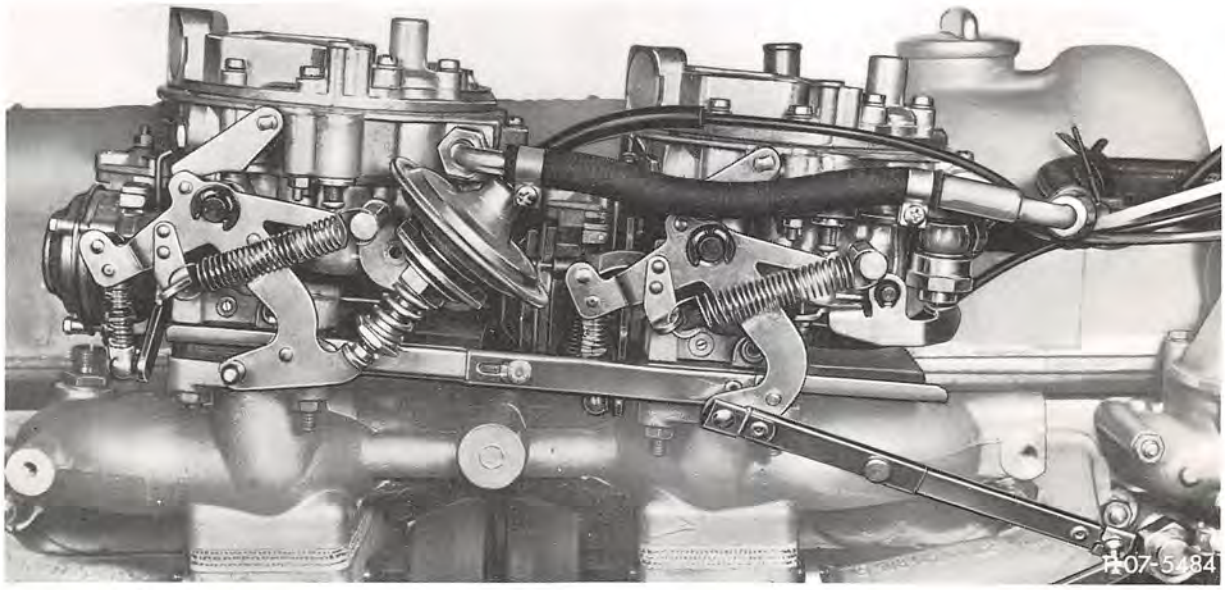

ILLUSTRATION 1

Control linkage

NOTE: CONNECTING LINKAGE HAS BEEN CURVED IN PRODUCTION TO FACILITATE CLEARANCE. DO NOT ATTEMPT TO STRAIGHTEN!

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PRODUCTION CUT-OFF:

MODEL	WITH STANDARD TRANSMISSION FROM CHASSIS END NUMBER	WITH AUTOMATIC TRANSMISSION FROM CHASSIS END NUMBER
250/8 Sedan (2.5)	045730	045559
250/8 Cp. (114.023)	001925	001876
280 S/8	051594	051531

NOTE: THE NEW VERSION LINKAGE HAS BEEN INSTALLED ON MODEL 250/8 2.8 (114.011) SINCE THE BEGINNING OF PRODUCTION.

The control linkage (Illustration 1) may only be detached at the ball socket connections during dissassembly. For reassembly, apply pressure to the ball joint ends at the control linkage sockets. In addition, the support (Illustration 2) must be assembled with light pre-tensioning so that it rests firmly on the throttle lever. This prevents control linkage "tilt".

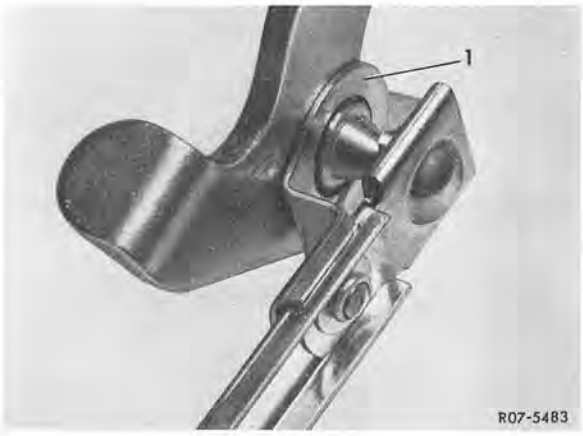

ILLUSTRATION 2

1. Support

B. ACTUATING LEVER

Actuating levers with polyamide bushings are also installed in production. This bushing must be lubricated with oil every 6,000 miles when performing D & E Services, as with the previous version.

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NOTE: LUBRICATE THESE BUSHINGS AFTER CLEANING THE ENGINE!

The modified actuating lever may be ordered in kit form with pivot pin and polymide bushings (Illustration 3).

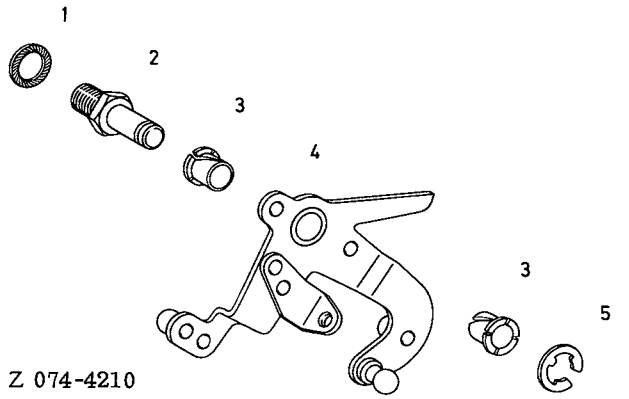

ILLUSTRATION 3

1. Lock washer
2. Pivot pin
3. Polyamide bushings
4. Actuating lever
5. Lock ring

C. PARTS INFORMATION

DESCRIPTION	PART NUMBER AUTO. TRANSMISSION	STAND. TRANSMISSION
Control linkage		
Connection rod	000 070 03 75	
Thrust rod	000 070 01 75	000 070 02 75
Actuating Lever		
Set for front carburetor	000 586 84 07	
Set for rear carburetor	000 586 85 07	

A time allowance of 1.2 hours for subsequent installation of the actuating lever and control linkage, to include the idle adjustment device has been provided.

Required parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
114	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SELF-LOCKING NUT/FUEL INJECTION PUMP CENTRIFUGAL TIMING DEVICE -- MODEL 220 D/8

The bonded self-locking nut on the fuel injection pump centrifugal timing device (Model 220 D/8) has loosened on some engines (See arrow, Illustration 1).

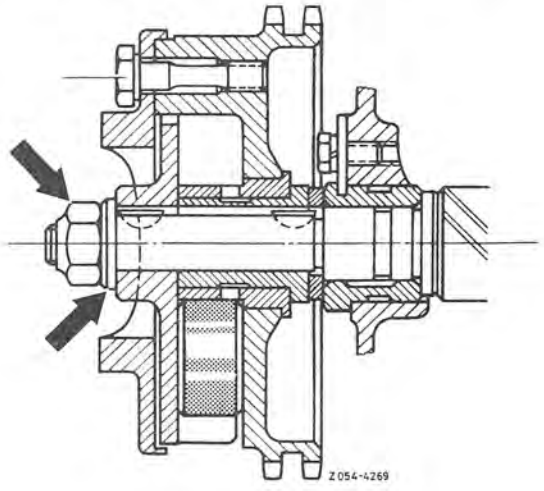

ILLUSTRATION 1

Signs indicating a loose nut:

1. Rattling noise at the injection timer
2. Irregular, jerky idling

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To check the correct torque value of the self-locking nut, the vacuum pump must first be removed. If the torque value is 29 ft. lbs. (4 kpm) or higher, it is correct, but must be re-tightened to 51 ft. lbs. (7 kpm). Should the torque value be less than 29 ft. lbs. (4 kpm), the washer between the nut and timing device must be checked for friction marks or damage which would indicate a probable seizing condition (See Illustration 2).

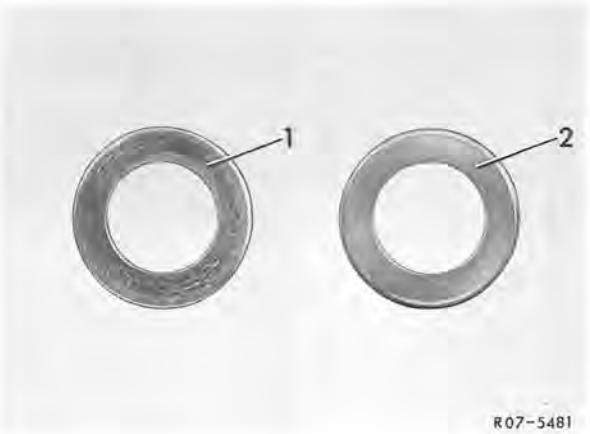

ILLUSTRATION 2

1. Damaged washer
2. New washer

In the event of excessive washer wear, the timing device must be removed and inspected (Service Manual - Passenger Cars Starting August 1959, Volume 1, Job. No. 07-27 to 29). Damaged parts should be replaced.

When re-installing the injection timing device, the new high-polished galvanized self-locking nut, Part No. 913002 014001, should be used, and torqued to 51 ft. lbs. (7 kpm).

NOTE: OIL THREAD AND CONTACT SURFACES BEFORE INSTALLATION.

Required parts may be ordered from our Mercedes-Benz Parts Depots.

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No. 92	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 07	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FUEL RETURN LINE AND CONTROL LINKAGE -- MODEL 220 D/8

On the above mentioned model, the fuel return lines (to the filter) used to be metallic pipes screwed into the nozzles. Starting with Engine No. 107 672 on vehicles with standard transmissions and Engine No. 011 324 on vehicles with automatic transmissions, plugged hoses are used. The installation of these hoses is less complicated and less extensive. Extra care should be taken when installing the modified nozzle holder.

The new nozzle holder, upper part (1) has two small tubes onto which the fuel hoses are to be connected. The hoses lead from injection nozzle to injection nozzle. On the most rearward nozzle, the unused tube is plugged up by means of a rubber cap (10).

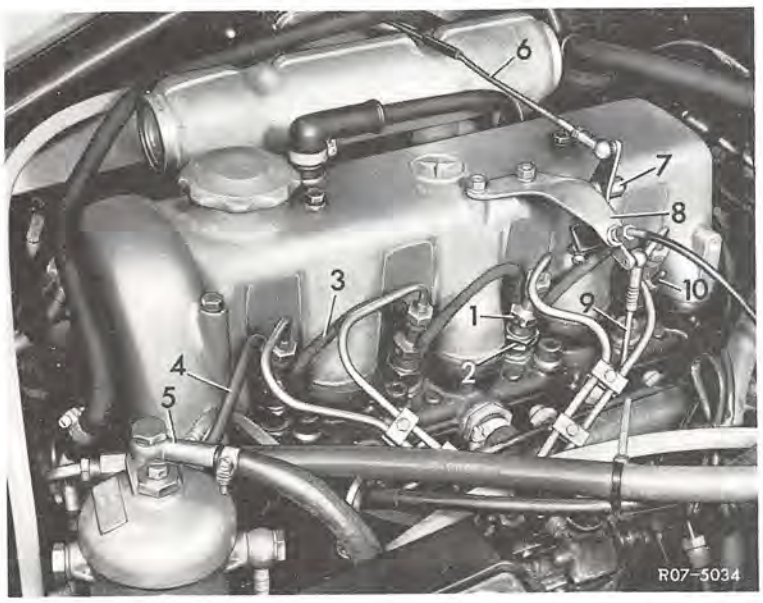

ILLUSTRATION 1

1. Nozzle holder - body (upper part)
2. Nozzle-holder - (lower part)
3. Fuel hose
4. Fuel hose
5. Fuel line
6. Connecting rod with bell cranks
7. Linkage lever
8. Bracket
9. Connecting rod with bell cranks
10. Rubber cap

(over)

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In order to prevent the linkage lever (7) from touching the new fuel hoses, the bracket (8) and control linkage were modified before the changeover to connecting hoses was made. This entered production with Engine No. 102 447 on vehicles with standard transmissions and Engine No. 010 771 on vehicles with automatic transmissions.

The new connecting rod (6) with bell cranks located between the lever (7) and the mixture controller is 12 31/64 in. (317 mm) long. The previous length was 12 13/64 in. (310 mm). The new connecting rod with bell cranks located between the lever (7) and the injection pump is 8 55/64 in. (225 mm) long. The previous length was 8 1/16 in. (205 mm).

NOTE: WHEN TIMING THE ENGINE, THE MODIFIED LENGTH OF THE CONNECTING RODS SHOULD BE TAKEN INTO CONSIDERATION. THE NEW FUEL RETURN LINES MAY ONLY BE INSTALLED TOGETHER WITH THE NEW BRACKET (8), THE LEVER (7) AND THE CONNECTING RODS (6 AND 9).

INSTALLATION INSTRUCTIONS

1. When loosening and tightening the injection lines on the nozzle holder (upper part), the wrench should be used in a horizontal position. If applied in an oblique position, the tubes may bend or break.

2. For removal and installation of the new nozzle holder, the socket wrench, Part No. 000589 610900 in the previous version may not be used. The inside diameter (I.D.) of these socket wrenches is too small (they are also tapered). During assembly, the connector tubes may be bent making it impossible to slip on the fuel hoses.

   When straightening the tubes, they may crack, may leak and possibly break. With a hollow socket wrench a trouble-free installation is not possible either.

   Until a modified tool is available, the existing socket wrenches manufactured by Stahlwille and Heyco must be reworked in accordance with the drawing (Illustration 2).

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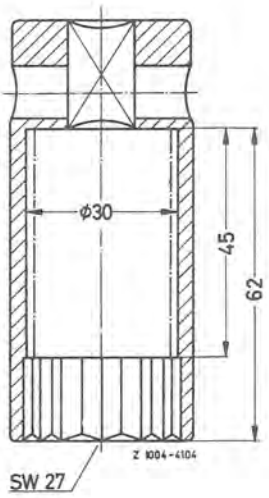

ILLUSTRATION 2

30 mm dia. = 1 3/16 in. dia.
45 mm = 1 49/64 in.
62 mm = 2 7/16 in.

(SCALE 2:1)

The socket wrenches manufactured by Hazet and Dowidat may not be reworked due to their shape. Therefore, these tools may not be used for this work anymore.

The modified tool will be available shortly and may be ordered under Part No. 000589 610999 from our Mercedes-Benz Parts Depots.

3. In order to prevent tilting of the socket wrench, a "T" handle torque wrench has to be used.

4. The rubber cap (10) has to be removed before removal or installation of the fourth injection nozzle.

   Until availability of the new rubber cap, Part No. 000 987 09 45, the rubber cap, Part No. 000 987 08 45, must be renewed at installation.

   The new rubber cap can be identified by means of the two adjoining blind holes.

5. When disassembling the nozzle holder, its upper part has to be held in the vice by means of the chuck jaws, Part No. 636589 013100 (Illustration 3).

ILLUSTRATION 3

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Under no circumstances can a hollow socket wrench be used. When using such a tool the tubes may bend or break when re-straightened.

PARTS REQUIRED

ILLUSTRATION 1 ITEM NO.	DESCRIPTION	PART NUMBER
1	Nozzle holder, upper part	001 017 22 21
	Nozzle holder, complete with nozzle	001 017 05 21
2	Nozzle holder, lower part (connecting nut)	000 017 10 16
3	Fuel hose	615 476 00 26
4	Fuel hose	615 476 01 26
5	Fuel line	615 070 20 32
6	Connecting rod with bell cranks	615 070 12 75
7	Linkage lever	615 070 04 22
8	Bracket	615 070 03 24
9	Connecting rod with bell cranks	615 070 11 75
10	Rubber cap	000 987 08 45

NOTE: Item Nos. 1 to 6 and Item No. 10 are installed in vehicles equipped with standard transmissions starting with Engine No. 107 672 and with automatic transmissions from Engine No. 011 324 on.

Item Nos. 7, 8 and 9 are installed in vehicles with standard transmissions starting with Engine No. 102 447 and with automatic transmissions from engine No. 010 771 on.

All parts mentioned herein will be available from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
62	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MECHANICAL GASOLINE INJECTION SYSTEM MODIFICATIONS MODELS 280 SE/8, 280 SL/8 AND 300 SEL/8

This Service Information will explain modifications to the mechanical gasoline injection system and electric fuel pumps installed on our 6-cylinder engines.

MODIFICATIONS ON MECHANICAL GASOLINE INJECTION SYSTEM

A. INJECTION PUMPS

The original 2.8 liter injection engines were equipped with the 6-plunger injection pump, R20Y, which has been modified twice since introduction.

PRODUCTION CUT-OFF

MODEL	AS OF CHASSIS END NUMBER	
	R22Y (1ST MODIFICATION STAGE)*	R24Y (2ND MODIFICATION STAGE)**
280 SE/8	036081	048202
280 SE/8/C	003549	004520
280 SL/8	011948	015247
300 SEL/8	002221	002514

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LIST OF INJECTION PUMPS INSTALLED

MODEL (USA VERSION)	BOSCH PART NUMBER	DB PART NUMBER
280 SE/8	PES 6KL70B120 R20Y	130 070 01 01
280 SL/8	PES 6KL70B120 R22Y	130 070 11 01
300 SEL/8	PES 6KL70B120 R24Y	

Injection pump R22Y will be discontinued when present stocks are exhausted. The R20Y injection pump installed in cars with USA specifications (Model Year 68/69) will remain available, since a special 3-dimensional cam is installed.

* FIRST MODIFICATION STAGE

Injection pump, Bosch type R22Y.

1. Starting Device:

   The starting solenoid on the injection pump has been omitted and the starting valve fuel flow rate in the intake manifold increased. As before, the thermo-time switch is actuated at a cooling water temperature below +35° C (95° F). Maximum actuation time: 12 seconds at cooling water temperatures below -20° C (4° F).

2. Mounting Bracket:

   The injection pump rear mounting bracket has been simplified. As a temporary measure, new injection pumps have been installed with two-sectional brackets, as before.

3. Fuel Relief Valve:

   The relief valve in the fuel return line-ferrule of the injection pump is not provided with a vent hole in the valve retainer due to the by-pass system of the new fuel pump. If the by-pass system is not connected, a relief valve with vent hole must be installed (See Illustration).

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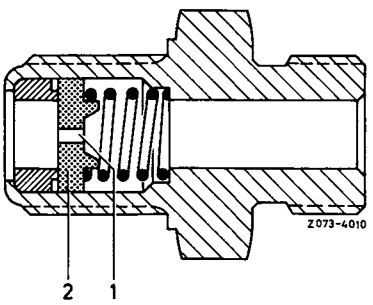

ILLUSTRATION

Relief valve

1. Vent hole
2. Valve retainer

4. Ball Pressure Valves:

The new ball pressure valves, Bosch Part No. 0 417 412 001, DB Part No. 000 074 17 15, are quieter at idle speed. The previous ball pressure valves, Bosch Part No. 0 417 412 000, DB Part No. 000 074 16 15, will no longer be supplied when stocks are exhausted.

** SECOND MODIFICATION STAGE

Injection pumps, Bosch, R24Y.

1. The notch adjustment for the full-load setting in the control rod end was improved.

2. Hex. head governor plug was replaced by a flange.

3. Threaded hole in the control rod was omitted.

4. Guide tube for full-load setting was omitted.

B. NEW INTAKE MANIFOLD

The intake manifold, Part No. 130 140 07 01, is now the same for all 6-cylinder injection engines and has been pre-installed on engines as listed below:

280 SE C/C.....Stand. Trans. from Engine End No. 013333
Auto. Trans. from Engine End No. 029612

280 SE Sedan.....Stand. Trans. from Engine End No. 014608
Auto. Trans. from Engine End No. 030020

300 SEL.....Stand. Trans. from Engine End No. 000337
Auto. Trans. from Engine End No. 002170

280 SL.....Stand. Trans. from Engine End No. 005136
Auto. Trans. from Engine End No. 008389

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Differences from previous versions are:

1. Smaller hole in the starting valve.
2. Modified vacuum connection for the brake booster.
3. The automatic transmission oil filler pipe bracket has been modified.
4. New angular ring fitting for the idle air control (Part No. 114 070 05 95).

C. NEW STARTING VALVE

The new starting valve, Bosch Part No. 0 437 900 009, DB Part No. 000 071 30 37, has a smaller hole in the suction pipe. In addition, it differs from the previous valve (Bosch EP/EV 2/4) by its increased fuel flow rate.

D. NEW MIXTURE CONTROLLER

The mixture controller vacuum connection for the vacuum cell on the ignition distributor was changed. Mixture controller, Part No. 000 140 73 53, is applicable for the USA Version, Model Year 1970.

E. ENGINE CONTROL SHAFT AND PUSH ROD

With the installation of the new intake manifold, the control shaft bearing bracket, the control shaft and the push rod from the mixture controller to the control shaft were modified.

NOTE: THE INSTALLATION OF THE MODIFIED INTAKE MANIFOLD, STARTING VALVE, MIXTURE CONTROLLER AND ENGINE CONTROL WAS INTRODUCED TOGETHER WITH THE MODIFICATION OF THE INJECTION PUMP TYPE R22Y.

F. REFERENCES FOR REPAIR WORK

Engines and all component parts of the gasoline injection system should usually be replaced by identical parts carrying same type designation.

1. Installation of a New Intake Manifold

When installing the new intake manifold, Part No. 130 140 07 01, the following modifications are required:

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a) Install starting valve, Bosch designation 0 437 900 009, DB Part No. 000 071 30 37, with increased flow rate.
b) Disconnect starting solenoid on the injection pump and insulate both wires.
c) Modify vacuum hose for the brake booster (depending upon the connection, use reducing plug, Part No. 915007 010004, if necessary. Re-bend vacuum line so that the vacuum hose may be properly installed).
d) Install new oil filler neck for the automatic transmission for Models 280 SE/8 and 300 SEL/8 - Part No. 108 270 06 84, for Model 280 SL/8 - Part No. 113 270 04 84.
e) Modify constant-speed solenoid for increased RPM.

NOTE: IN VEHICLES WITH AUTOMATIC TRANSMISSIONS WITH 2-PLANETARY GEAR SETS, THE SOLENOID FOR CONSTANT ENGINE SPEED AND THE CONTROL LEVERS SHOULD BE TAKEN FROM THE PREVIOUS ENGINE.

IN VEHICLES WITH AUTOMATIC 3-PLANETARY GEAR SET TRANSMISSIONS, CONSTANT SPEED REGULATION IS NO LONGER REQUIRED. THE NEW TRANSMISSION IS PROVIDED WITH A NEW PRESSURE DAMPER.

f) Install new control shaft bearing bracket, Part No. 129 070 03 24, control shaft, Part No. 130 070 02 23, and push rod, Part No. 130 070 10 75, and adjust.
g) VEHICLES WITH AIR CONDITIONING UNIT ONLY:

In addition to the jobs described above, mount the angular ring fitting for the idle air control which was previously on the rear of the oil intake manifold, to the new intake manifold, Part No. 130 140 07 01. Close the opposite hole of the idling air duct with plug, Part No. 000906 018001.

NOTE: THE ANGULAR RING FITTING, PART NO. 114 070 05 95, CURRENTLY INSTALLED ON THE FRONT PART OF THE INTAKE MANIFOLD IN THIS SERIES, MAY ALSO BE USED.

2. Exchange of Mixture Controller

Depending on version, modify the installation of the vacuum hose from the mixture controller to the vacuum cell on the ignition distributor.

When installing a new fuel injection pump, make sure that the oil supply line delivers oil to the fuel injection pump and that the fuel injection pump with filler cap and dipstick, (earlier version) are being filled up with oil before installation.

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No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
39	SERVICE INFORMATION	07	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ELECTRONIC FUEL INJECTION TEST PROCEDURE WITHOUT BOSCH TESTER EFAW 228 -- MODELS 280 SE/9 3.5 AND 300 SEL/9 3.5

As you might know, the Bosch Tester EFAW 228 was developed for testing the electronically controlled injection system in Models 280 SE/9 3.5 and 300 SEL/9 3.5.

We have worked out the enclosed test program for the M 116 engine of the above mentioned cars, to enable workshops to make a safe diagnosis until the Bosch Tester EFAW 228 is available.

The following instruments are required: one pressure gauge (range 0-43.0 P.S.I. (0-3.0 atu)), one 12 V test lamp, one ohmmeter (range 0-100,000Ω) and one voltmeter (range 0-16 V). The latter is contained in any major engine tester.

Testing with the tester EFAW 228 is simpler and should be preferred for this reason. The enclosed test program, however, allows for equally thorough testing if trained personnel spend a little more time and work carefully. The simple tools shown at the end of the test program greatly facilitate the test, and should be made in your shop.

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ATTACHMENTS

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SERVICE AND TEST INSTRUCTIONS FOR ELECTRONICALLY CONTROLLED GASOLINE INJECTION 3.5 LITER ENGINE M 116

The present test method has been developed to provide the means for a reliable diagnosis for the workshops where the Bosch Tester EFAW 228 is not available.

Checking with the EFAW 228 Tester is much simpler and should obviously be preferred. Testing according to the present instructions is as reliable but requires more time and careful completion by skilled personnel.

Required measuring instruments: a pressure gauge (0-43 P.S.I. (0-3.0 atu)), an ohmmeter (0-100,000Ω), a voltmeter (0-16 V) and a test lamp (12 V). The latter is included in each engine tester of larger size.

The auxiliary tools shown on the final pages facilitate the completion of the work and should definitely be acquired.

SERVICE INSTRUCTIONS

1. Never disconnect battery while engine is running.

   Do not use a quick charger as starting aid to start the engine.

2. Do not remove the line connector with ignition switched on.

   Observe proper position of plugs with respect to sockets.

3. Check all fuel line clamps for tight seat and the lines for leaks.

4. Replace fuel fine-mesh filter and air cleaner at additional air valve after a mileage of 24,000 miles or earlier, if required.

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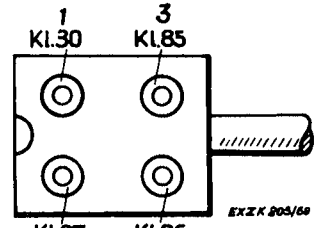
TESTING INSTRUCTIONS

CAUTION: Prior to testing the injection system, make sure that the ignition and the mechanical condition of the engine are acceptable.

SWITCH OFF IGNITION, REMOVE CONTROL UNIT AND REMOVE LINE CONNECTOR FROM CONTROL UNIT

MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES.
Voltmeter about 16 V	Control unit voltage supply:	At control unit plug a) terminals 16 and 11 b) terminals 24 and 11	Switch on ignition	11-12.5 V	No voltage indicated on voltmeter Main relay not energized: Test voltage main relay terminal 86. If no voltage is indicated, check fuse no. 4 in fuse box. Interruption of current: Test voltage at main relay terminal 87. If voltage is "0", test relay terminal 30/51. Test leads 16 and/or 24 between main relay and control unit. Test ground wire on body. Voltage reading below 11 V Too high a resistance in leads 11, 16 and/or 24 or at the relay contacts (replace main relay).
Voltmeter about 16 V	Voltage at terminal 50 of starter solenoid	At control unit plug terminals 18 and 11	Briefly actuate starter	9.5-12 V	No voltage indicated on voltmeter, but starter revolves Interruption of line between starter terminal 50 and control unit; check lead 18 to control unit and terminal 18. No voltage indicated on voltmeter, starter does not revolve Ignition starter switch defective, line interrupted. Voltage below 9.5 V Battery discharged; too high a voltage drop in lead connecting ignition starter switch and starter solenoid terminal 50.



Coupling plug for main and pump relay
KL = terminal

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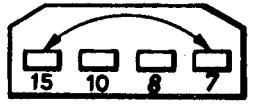
MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES.
Ohmmeter 0-100,000 Ω	Resistance between pressure sensor windings and ground	At plug of control unit terminal 7 and 11 terminal 8 and 11	" ∞ "	Resistance "0" Feed line or pressure sensor shorted to ground; remove plug from pressure sensor. If " ∞ " is indicated, replace pressure sensor. If "0" continues to be indicated, leads 7, 8, 10 or 15 could be grounded. Then replace cable harness. Resistance below " ∞ ", but not "0" Insulation damaged (a remedy is listed above)
Ohmmeter 0-1000 Ω	Resistance of pressure sensor primary winding	At control unit plug terminals 7 and 15  7 and 15 primary winding, 8 and 10 secondary winding	about 90 Ω	Resistance considerably below rated value Insulation defective; remove plug from pressure sensor; if " ∞ " is indicated, replace pressure sensor. Resistance "0" Short circuit in primary winding. Remove plug from pressure sensor. If " ∞ " is indicated, replace pressure sensor. Resistance considerable above rated value High contact resistance; check plug and lines for corrosion and interruptions. Resistance " ∞ " Interruption. Bridge at plug as indicated in Illustration. If "0" is indicated, replace pressure sensor, if " ∞ " is indicated, check leads.
Ohmmeter 0-1000 Ω	Resistance of pressure sensor secondary winding	At control unit plug terminals 8 and 10	about 350 Ω	Same causes and remedies as noted in "Resistance of Pressure Sensor Primary Winding". With resistance " ∞ ", bridge both inside terminals 8 and 10 on socket.

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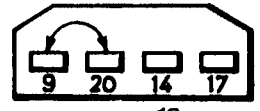
MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED;	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES.
Ohmmeter 0-1000 Ω	Functioning of trip contacts in distributor	At plug of control unit : Engine M 116 a) terminal 12 and 21 b) terminal 12 and 22 c) terminal 12 and 13 d) terminal 12 and 14	Rotate distributor by briefly actuating starter	Both measurements alternately indicate resistance "0" and " ∞ "	If the needle of the instrument is not oscillating during the starting operation or remains in the position " ∞ " or "0", check connections 12, 21, 22 or 12, 21, 22, 13, 14 on contact insert. If connections and cable lines to control unit are in order, replace trigger contacts.
Ohmmeter 0-1000 Ω	Functioning of contact for no-feed position of throttle valve switch	At plug of control unit : Engine M 116 terminal 12 and 17	Throttle valve in idling position  or 12	"0"	Resistance " ∞ " Throttle valve switch maladjusted or feed line interrupted. Check adjustment. Remove plug and bridge terminals (see Fig.). If " ∞ " is still indicated, replace cable harness. Otherwise replace throttle valve switch.
			Throttle valve slightly opened, for approx. 1°	" ∞ "	Resistance "0" Throttle valve switch maladjusted or short circuit in feed line. Remove plug. If "0" continues to be indicated, replace cable harness. Otherwise adjust or replace throttle valve switch.
Ohmmeter 0-1000 Ω	Functioning of throttle valve switch acceleration enrichment	At plug of control unit : Engine M 116 a) terminal 12 and 20 b) terminal 12 and 9	Slowly depress accelerator	When performing measurements a) and b), indicator oscillates 10 times each between "0" and " ∞ "	Readings "0" or " ∞ " (indicator not oscillating) Throttle valve switch defective. Replace. When releasing pressure on accelerator, instrument indicator must remain in position " ∞ ". Should the indicator oscillate between "0" and " ∞ ", throttle valve switch is faulty and must be replaced.

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MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED POSSIBLE CAUSES AND REMEDIES.
Ohmmeter 0-1000 Ω	Resistance of intake air temperature sensor	At control unit plug Engine M 116 terminal 1 and 11	300 Ω at 68° F intake air temperature 640 Ω at 32° F 400 Ω at 50° F 300 Ω at 68° F 210 Ω at 86° F 150 Ω at 104° F NOTE: Resistance drops at higher temperatures.	Reading " ∞ " Interruption. Remove plug and bridge terminals. If "0" is indicated, replace temperature sensor, otherwise exchange cable harness. Reading "0" Short circuit. Pull off plug; if reading remains the same, cable harness is faulty. If " ∞ " is indicated, replace temperature sensor.
Ohmmeter 0-10,000 Ω	Resistance of coolant temperature sensor	At control unit plug terminals 11 and 23	325 Ω at 176° F cooling water temperature 5.9 KΩ at 32° F 2.5 KΩ at 68° F 1,2 KΩ at 104° F 600 Ω at 140° F 325 Ω at 176° F 190 Ω at 212° F	Refer to temperature feeler for intake air. Rated value applies to 176° F cooling water temperature.

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MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES.
Ohmmeter 0-10 Ω	Resistance of injection valve windings including feeder lines	At control unit plug Engine M 116 a) terminal 3 and 11 valve 1 and 5 b) terminal 4 and 11 valve 4 and 8 c) terminal 5 and 11 valve 3 and 6 d) terminal 6 and 11 valve 2 and 7	When measuring acc. to a) and b) or a) to d) always pull one valve plug on electr. injection valve, so that only one valve is measured each time.	2.4 Ω at 68° F	Resistance "0" Short circuit in feeder line or at valve. Pull out plug of corresponding valve; if " ∞ " is indicated, replace valve, otherwise exchange cable harness. Resistance " ∞ " Interruption in feed line or valve coil. Bridge contacts on valve plug. Cable harness is defective. If " ∞ " is indicated, valve is faulty, if "0" is indicated. Resistance above 3 Ground connection of valve has faulty contact on frame side member or engine.

MBSI 39, Gr. 07, 8/70

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SWITCH OFF IGNITION, CONNECT CONTROL UNIT

MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED	READING (RATED VALUE)	RATED VALUE NOT REACHED POSSIBLE CAUSES AND REMEDIES.
Pressure gauge 0-42 PSI	Pressure in fuel lines	At injection valve 1 fuel line branch-off to cold start valve	Switch on ignition	28.4 PSI	No pressure build-up (pump will not start) Connect voltmeter to feed pump terminals. Switch on and off ignition frequently and read off voltage. (Voltage applied for about 1 sec. only). 12 V indicated Replace faulty pump. "0" is indicated Test and listen whether pump relay is being energized. If relay does energize: Check fuse No. 4 in fuse box of M 116. Check line from pump relay terminal 87 to pump connection or from pump connection to ground. If lines are in order, replace pump relay. If relay does not energize: Interruption of lines connecting main relay terminal 87 to pump relay terminal 86 or pump relay terminal 85 to line 19. (control unit.) If lines are in order, replace pump relay.
			Start engine, idle speed	28.4 ± 0.7 PSI	Pressure exceeds or drops below 28.4 PSI Pressure regulator maladjusted, readjust. If setting cannot be corrected, pressure regulator is defective and must be replaced.

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MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES
Pressure gauge 0-42 PSI	Tightness of fuel system (at pressure side)	At injection valve 1 fuel line branch-off to cold start valve	Switch on ignition	28.4 PSI Then pressure must not visibly decrease in approx. 1/2 minute	Pressure drops immediately below 17 PSI

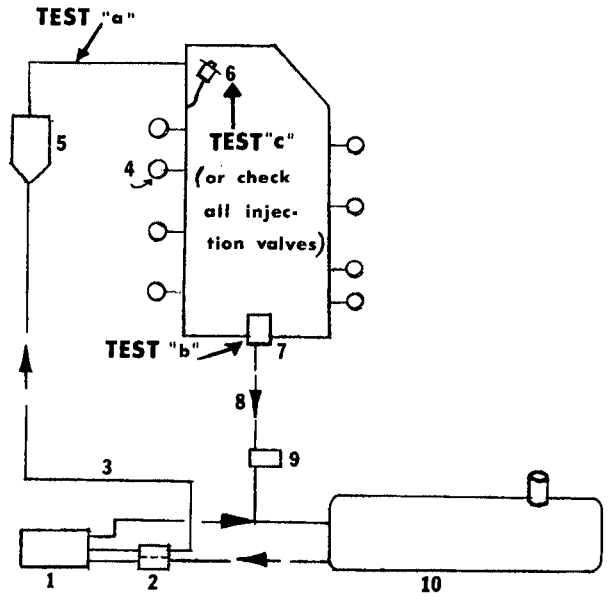
1. Leak in pressure line system, visually check for leaking hose connections.
2. By-pass valve of feed pump, of pressure regulator, of injection valves or of cold start valve leaking. To find out which of the four components are leaking:

a) On the M 116 engine, shut off the fuel pressure line between fine filter and injection valves with a clamp while operating the fuel pump. Shut off feed pump.
If the pressure holds now, the feed pump is defective and must be replaced.
If the pressure does not hold:

b) Test pressure regulator. Pull return hose on pressure regulator immediately after stopping delivery pump. If fuel emerges, replace pressure regulator.
If no fuel emerges and the pressure continues to drop:

c) Based on the spark plug appearance ascertain whether the injection valves or the cold start valve are leaking. Deviations of the spark plug appearance indicate leaking injection valves whereas evenly dark colored plugs indicate a leaking start valve. Determine exactly by removing the injection valves, leaving them connected to the pressure system, with the fuel pump operating. The valve tip may become wet, however, not more than 2 drops of fuel per minute should leak out.

M116 Fuel Delivery Circuit



1. Fuel feed pump
2. Damper unit
3. Fuel pressure line
4. Injection valve
5. Fuel filter
6. Starter valve
7. Fuel pressure regulator
8. Fuel return line
9. Diaphragm type damper
10. Fuel tank

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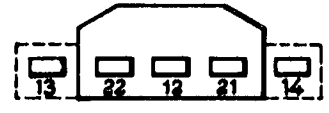
MEASURING INSTRUMENT MEASURING RANGE	TO BE MEASURED:	WHERE TO CONNECT THE MEASURING INSTRUMENT	TO BE ACTUATED:	READING (RATED VALUE)	RATED VALUE NOT REACHED. POSSIBLE CAUSES AND REMEDIES.
Pressure gauge 0-42 PSI	Functioning of cold start valve	At injection valve 1 fuel line branch-off to cold start valve	Remove plug from cold start valve. Connect battery positive and negative terminals to cold start valve	Cold start valve injects, pressure indicated on gauge drops. It is also possible to simply listen whether the cold start valve is energized.	Pressure does not drop Check cold start valve. Winding resistance equals 4.2 Ω at 68° F. Replace cold start valve, if "0" or " ∞ " is indicated.
12 V test light	Functioning of thermo time switch	At plug for cold start valve	Briefly actuate starter	If coolant temperature is below 95° F, the test light must light	Test light does not light Check fuse no. 4 and test lines between cold start valve and relay and between relay and thermo time switch. If fuse and lines are in order, connect thermo time switch terminal "W" to ground. If test light does light, the thermo time switch is faulty and must be replaced. If light does not light, the relay is defective and should be replaced.
				With coolant temperatures above 95° F, the test light should not light	Test light does light Lead from relay terminal 85 to "W" on thermo time switch is shorted to ground. If line is in order, replace defective thermo time switch.
Voltmeter 4 V	Variations of trip contacts in distributor	With the aid of needleshaped probes on trip contact plug terminals at distributor. (Plug remains inserted.) Engine M 116 a) terminal 12 and 13 b) terminal 12 and 14 c) terminal 12 and 21 d) terminal 12 and 22	Run engine at 2000 RPM. Reconnect voltmeter, changing over from connection patterns a) to b), or a) b) c) d).  EXZK 285/69 [a) b) c) d) = Engine M 116]	Needle of instrument oscillates to a mean value. When changing from a) to b) or a) b) c) d), the deviation should not exceed 0.4 V maximum of mean value.	With higher deviations replace trip contact assembly in distributor.

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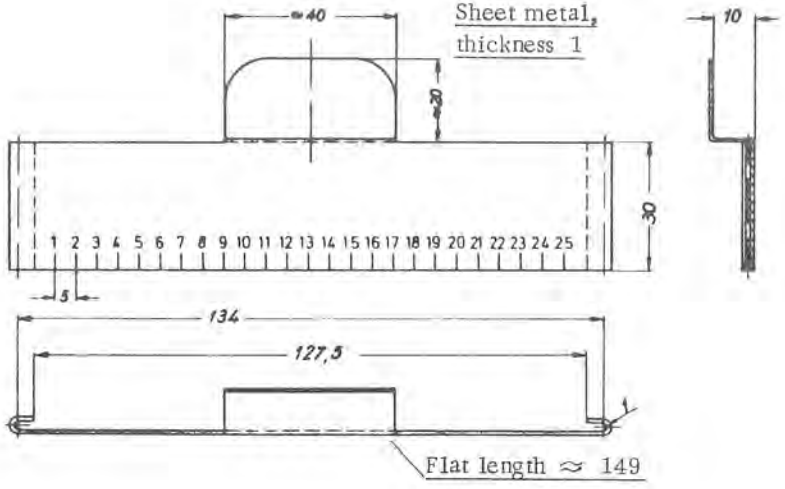
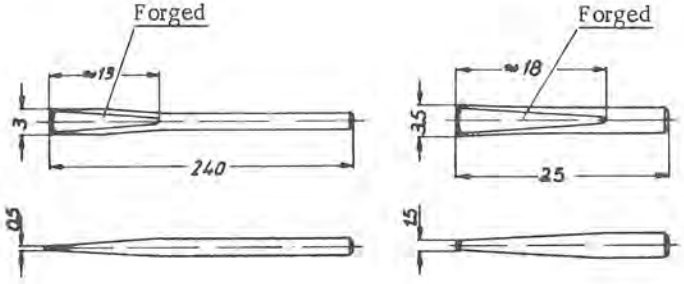
Insertion plate for control unit line connector



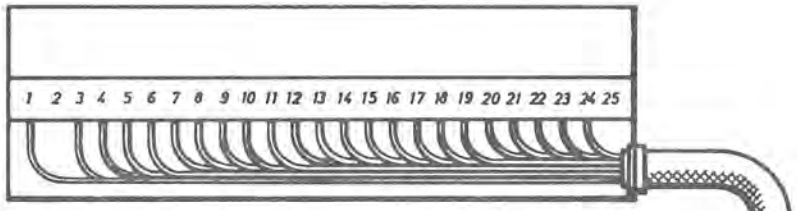
Needle-shaped collectors



Welding rod diam. 2

Welding rod diam. 3

EXZK 282/69



EXZK 285/69

IN.	MM	IN.	MM
.02 in.	0.5 mm	.71 in.	18.0 mm
.04 in.	1.0 mm	.79 in.	20.0 mm
.06 in.	1.5 mm	.98 in.	25.0 mm
.08 in.	2.0 mm	1.18 in.	30.0 mm
.12 in.	3.0 mm	1.58 in.	40.0 mm
.14 in.	3.5 mm	5.02 in.	127.5 mm
.20 in.	5.0 mm	5.28 in.	134.0 mm
.40 in.	10.0 mm	5.86 in.	149.0 mm
.51 in.	13.0 mm	9.45 in.	240.0 mm

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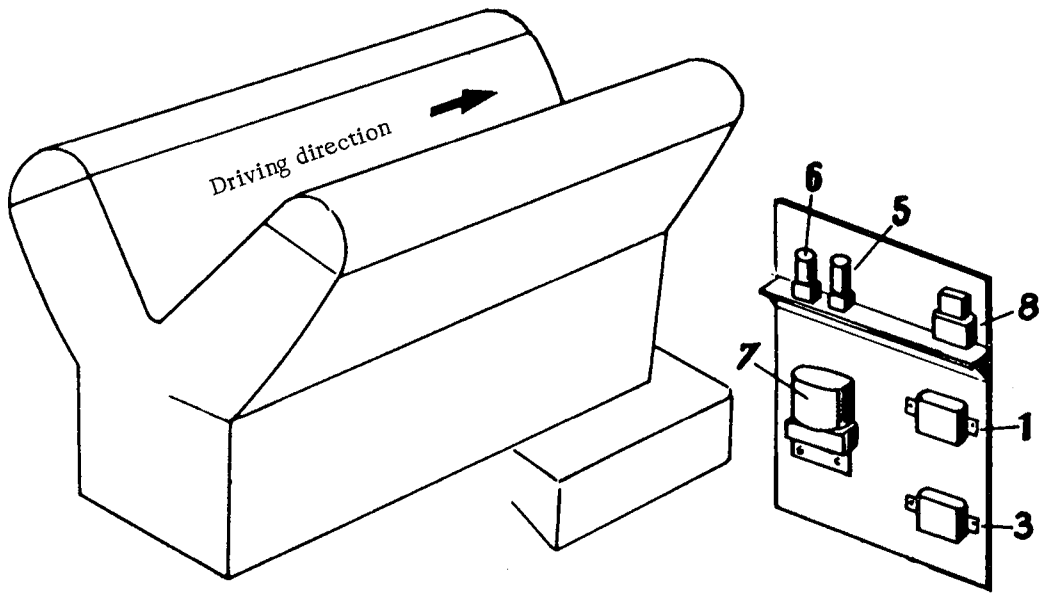
Relay Layout 280 SE/9 3.5 and 300 SEL/9 3.5 (Engine Type M116)



EXZK 221/70

1. Main relay
3. Pump relay
5. Cold start relay
6. Supplementary fan relay
7. Regulator (generator)
8. Cable connector

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 191	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 07	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CHECK CHART FOR FUEL INJECTION SYSTEM (6-CYLINDER ENGINES), MBNA FORM #469

With this Service Information we introduce a check chart for the fuel injection system which is to be used anytime a fuel injection pump is exchanged under warranty or is undergoing adjustment work during the warranty period. A check chart must be attached to every warranty claim submitted on fuel injection pump replacements or major adjustments.

549-8390

The purpose of this check chart is to aid you in diagnosing the condition accurately and to enable you to decide whether the fuel injection pump can be adjusted or needs to be replaced. A maximum time of 2.0 hours, Operation Number 07-425 of the Time Guide, is allowed and covers the performance of all items on the check chart. However, this maximum time will not always be required. Therefore, the individual items actually performed may only be entered on the warranty claim.

The above step had to be taken in view of the fact that a survey indicated that a large percentage of fuel injection pumps returned under warranty have been exchanged unnecessarily and could have been adjusted successfully.

A sample of the above mentioned check chart is attached and your supply should be ordered from our Home Office Technical Service Department. It is available free of charge.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

PGH:NBJ

ATTACHMENT

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MERCEDES-BENZ

CHECK-CHART FOR FUEL INJECTION SYSTEM (6-CYLINDER ENGINES)

Service

ENGINE TEST	SPECIFICATIONS OR REFERENCES	CONDITIONS FOUND	CORRECTIONS MADE	TIME REQUIRED
1) **Battery Condition**	Load test or battery hydrometer test	full low	.... yes .... no	0.1 hour
2) **Ignition Voltage (check at coil terminal 15)**	For values, see Test Manual	normal abnormal	.... yes .... no	0.1 hour
3) **Suppressor Resistance**	For values, see Test Manual	normal abnormal	.... yes .... no	0.2 hour
4) **Starting Solenoid (check with test light)**	Service Information No. 63, Group 07, February 1967	correct incorrect	.... yes .... no	0.1 hour
5) **Cold Start Valve (check with test light)**	Service Information No. 63, Group 07, February 1967	correct incorrect	.... yes .... no	0.1 hour
6) **Thermo Time-Switch (95°F, 35°C) (check with test light)**	Service Information No. 63, Group 07, February 1967	correct incorrect	.... yes .... no	0.1 hour
7) **Operating Relay**	Service Information No. 63, Group 07, February 1967	correct incorrect	.... yes .... no	0.1 hour
8) **Fuel Shut-Off Solenoid for proper function**	Check with test light	correct incorrect	.... yes .... no	0.1 hour
9) **Check air filter on fuel injection pump (idle increase)**		normal abnormal	.... yes .... no	0.1 hour
10) **Spark Plugs — Observe color for indication of mixture, check spark plug condition and gap — replace if required.**	Gap .020"—0.5 mm. For correct spark plugs, see Spark Plug Table, March 1969 and March 1970	normal abnormal	.... yes .... no	0.3 hour
11) **Compression Test**	Normal, 155-165 PSI Minimum, 130 PSI Maximum variation, 20 PSI	normal low	.... yes .... no	0.2 hour
12) **Fuel Injection Pump Linkage, basic adjustment with pin**	Workshop Manual Job No. 00-16	correct incorrect	.... yes .... no	0.1 hour
13) **Check rack for easy movement**	Service Information No. 90, Group 07, January 1969	correct sticking	.... yes .... no	0.2 hour
14) **Fuel Feed Pump, pressure or capacity test (replace fuel filter if required)**	Workshop Manual 00-14/2-3	correct incorrect	.... yes .... no	0.1 hour
15) **Condition of distributor points and dwell angle**	Service Information MB-T 53 Group 07, May 1968 and MB-T 32, Group 15, June 1970	abnormal normal	.... yes .... no	0.1 hour
16) **Ignition Timing and Change-Over (vacuum and centrifugal timing control)**	Specifications Chart "Model Year 1970 Passenger Cars U.S.A." book Ignition timing .....P. 49 Changeover .....Pp. 15-27	correct incorrect	.... yes .... no	0.2 hour
17) **Additional Warm-Up Air Control (check during engine warm-up)**	With filter removed, observe shut-off point, 150°-155°F approx.	correct incorrect	.... yes .... no	0.1 hour
18) **Check Idle Speed and mixture**	"Model Year 1970 Passenger Cars U.S.A." book and Service Information MB-T 53, Group 07, May 1968	correct incorrect	.... yes .... no	0.2 hour
19) **Fuel mixture at partial load and full load (during road test or on dynamometer)**	"Model Year 1970 Passenger Cars U.S.A." book and Service Information MB-T 53, Group 07, May 1968	correct incorrect	.... yes .... no	0.4 hour
NOTE: IF A CONDITION EXISTS THAT NO FUEL DELIVERY OF ONE ELEMENT IS BEING NOTICED, CHECK PRESSURE, CHECK VALVE (REPLACE CHECK VALVE IF REQUIRED)	Service Information No. 125, Group 07, February 1968			

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 169	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	07	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATION OF STROMBERG CARBURETOR -- MODEL 220/8

The Stromberg carburetor is equipped with a damper which acts as an accelerator pump, i.e. when the throttle (4, Illustration 1) is suddenly opened, the piston (21) would normally be raised by the increased vacuum applied on the top of the rubber diaphram (22). The damper (23) prevents a sudden lifting of the piston and thereby provides for a momentary enrichment of the fuel-air mixture due to an increased vacuum at the fuel nozzle needle (9).

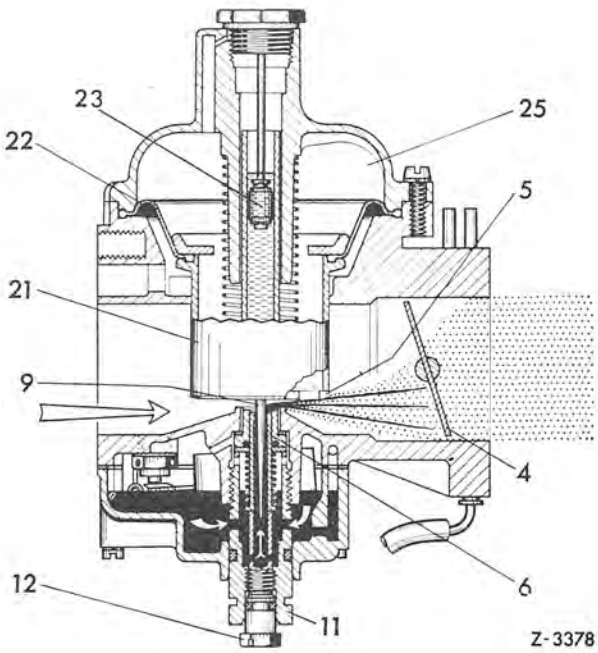

Illustration 1

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In order to assure a more sufficient oil supply for the damper, an oil reservoir (Illustration 2) is now installed in production on top of the carburetor cover.

Illustration 2

This oil reservoir may also be subsequently installed by replacing the previous damper with the oil reservoir which has a damper attached to it.

The oil reservoir should be completely filled with Automatic Transmission Fluid. Please disregard all other information stipulating the use of engine oil at prevailing temperatures above +4° F. Use Automatic Transmission Fluid (ATF) only.

The Part No. for the oil reservoir is: 000 070 01 68, and it may be ordered through our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 99	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 07	Passenger Cars

Fort Lee, January 1970

TO OUR MERCEDES-BENZ DEALERS

Subject: Zenith Carburetors -- Models 250/8, 250/8 Cp, 280 S/8 - 1970 Models

On the above mentioned models, the rear carburetor automatic choke is now controlled by a temperature switch in the cooling water circuit. This improves the driving characteristics during the warm-up period.

Installation

Model	Chassis End Number
250/8	028579
280 S/8	032017

1. Starting at a coolant temperature of 149° F (65° C) in the cylinder head or at the temperature gauge in the instrument panel, the temperature switch (3), (Illustration 2, page 2) located at the left-hand side of the crankcase, grounds terminal 85 of the relay (1). With the relay contacts closed, the electrical heating coil (2) in the rear carburetor choke cover will start to heat only when this cooling water temperature is reached.

2. The bi-metallic choke spring of the rear carburetor is now made softer. This prevents the mixture from being too rich at part throttle at coolant temperatures below 131° F (55° C). The new choke cover, part No. 000 071 11 28, is identified by figure "18".

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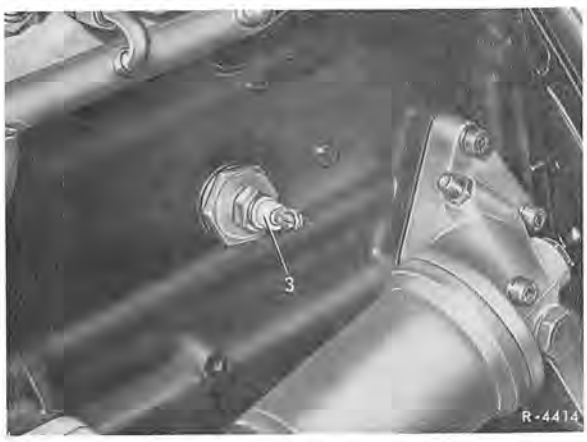

Illustration 1

3. Temperature switch
(part No. 003 545 06 24)

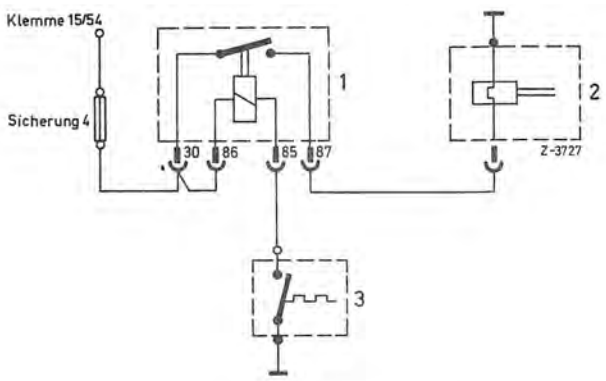

Illustration 2

1. Operating contact relay
2. Electrical heating coil in the choke cover
3. Temperature switch

Klemme = Terminal
Sicherung = Fuse

NOTE: Temporary choke covers with softer bi-metallic springs have been installed bearing the previous identification number 6.

Service Advice

The rear carburetor choke cover is adjusted to the alignment mark in the plant. It need not be readjusted. The forward carburetor choke cover, however, has to be reset to the alignment mark after 3,000 miles (5,000 km), as has always been done up to now.

The adjustment screw in the automatic choke for the fast idle speed of the rear carburetor will no longer be installed. This means that fast idle at cold start conditions will now be controlled by the forward carburetor only.

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On this carburetor version the pre-throttle gap is adjusted to .079 ± .004 in. (2.0 ± 0.1 mm) at production.

NOTE: During service, the pre-throttle gap should be adjusted to .079 - .087 in. (2.0 - 2.2 mm) on all vehicles with exhaust emission control. This includes all previous engines whose automatic choke is not controlled through a temperature switch.

Please inform all personnel concerned and correct records accordingly.

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Service Department

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 148	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of the Crankcase Ventilation System -- Model 300 SEL/8 6.3

In order to eliminate a possible freezing condition of the throttle valve in the mixture controller of this fuel injection engine during cold weather operation, some model 300 SEL/8 6.3 vehicles are to be modified by subsequent installation of a heated mixture controller.

This new mixture controller has an integral water jacket and is heated by the cooling water. The vehicles affected bear the chassis end numbers given below and must be modified in accordance with the work instructions described herein.

Chassis End Numbers:

006 - 009 - 010 - 014 - 019 - 031 - 041 - 043 - 058

059 - 063 - 085 - 088 - 093 - 109 - 110 - 112 - 119

124 - 130 - 137 - 145 - 164 - 166 - 173 - 176 - 178

201 - 217 - 225 - 261 - 267 - 271 - 274 - 283 - 294

309 - 318 - 319 - 349 - 353 - 354 - 358 - 359 - 363

369 - 370 - 374 - 377 - 387 - 388 - 399 - 400 - 405

459 - 462 - 463 - 467 - 468 - 469 - 470 - 471 - 473

487 - 495 - 511

All cars with higher chassis end numbers are production-equipped with the heated mixture controller.

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REQUIRED IMMEDIATELY ON

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WORK INSTRUCTIONS

A. Disassembly

1. Partially drain cooling water. Save any water containing additives for reuse.

2. Disconnect vacuum line to brake booster at intake manifold.

3. Remove upper part of air filter with intermediate piece and suction scoop.

4. Remove connecting pipes and hoses of crankcase ventilation.

5. Disconnect vacuum line and electric wires at idle switch on mixture controller. Unhook return spring and throttle actuating rod.

6. Remove mixture controller. Do not damage gasket and holder bracket of return spring, since they have to be reinstalled (illustration 4).

7. Disconnect and remove rubber hose between left intake manifold and adaptor for vacuum lines.

8. Disconnect: - electric wire and supplementary air line at left side starting valve and injection pump

   - fuel supply lines on both starting valves (Close up connections with plastic cap.)

9. Remove fuel injection lines from left side nozzles and at injection pump. (Close up connections with plastic cap.)

10. Unhook accelerator linkage at control shaft.

11. Disconnect and remove hot water return hose from thermostat of fuel injection pump.

12. Remove fuel line from fuel damper to injection pump.

13. Disconnect fuel lines to starter valves at fuel damper.

14. Unscrew left intake manifold hex nuts and remove manifold in an upward angular direction while pushing off bracket (1a, illustration 1) of the heater water return pipe with a screwdriver from stud at rear of intake manifold. Cover up intake openings at cylinder head.

15. Remove rubber hose from water pipe elbow.

    Remove water pipe elbow and gasket from cylinder head. If gasket sticks to cylinder head, loosen with a scraper and clean surface.

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16. Disconnect water hoses from heater water return pipe. Remove pipe and water hose from heat exchanger outlet.

B. Installation of the Water Heated Mixture Controller

1. Attach water return hose (3)(from thermostat of injection pump) to new heater water return pipe (1) and fasten with a hose clamp (see illustration 1).

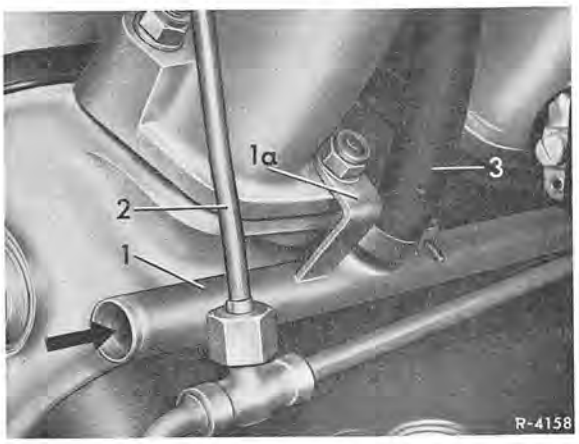

Illustration 1

1. Heater water return pipe
1a. Bracket for heater water return pipe.
2. Fuel supply line
3. Water return hose (from thermostat of fuel injection pump)

2. Install new heater water return pipe and tighten at water pump connection (2, illustration 2).

Illustration 2

1. Hot water return pipe
2. Connecting hose (return)
3. Water pump
4. Fuel line
5. Vacuum chamber for ignition advance
6. Vacuum line

3. Install new water pipe elbow (1) and new connecting hose (2) (illustration 3).

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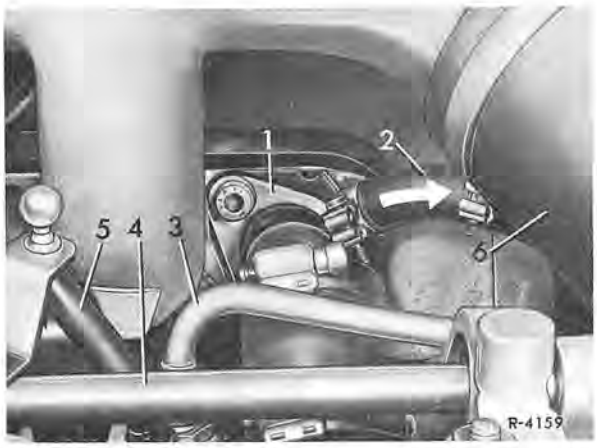

Illustration 3

1. Water pipe elbow
2. Connecting hose
3. Fuel line
4. Accelerator linkage control shaft
5. Fuel injection line
6. Intake manifold hose connection

Arrow indicates direction of water flow.

4. Reinstall left intake manifold.

   Attach bracket (1a) for heater water return pipe (1) onto stud (illustration 1).

5. Connect fuel lines at both starting valves (intake manifolds), at fuel damper.

6. Install new molded hose, part no. 108 831 01 94, connecting heat exchanger outlet with hot water return pipe.

   IMPORTANT! This hose is too long and has to be cut at each end to insure a proper fit. Attach hose clamps on each side and tighten.

7. Tighten intake manifold.

8. Connect fuel injection lines and fuel lines leading from fuel damper to injection pump.

9. Connect rubber hoses between left and right hand intake manifold with adaptor.

10. Connect hose to thermostat of injection pump and vacuum line leading to brake booster.

11. Fasten electric wires and supplementary air pipe at left starting valve. Fasten fuel supply lines on both starting valves. Connect supplementary air line to injection pump.

12. Install new mixture controller. Do not insert lower left hex nut yet.

    Do not forget to install gasket (3) and bracket for return spring (see illustration 4).

13. Before installation, the hot water feed pipe (5) has to be placed in position so that it fits exactly to each connection. If this is not possible, the water pipe has to be bent to ensure proper fit (illustration 4).

    When installing hose clamps at mixture controller, make sure there is a clearance of at least 13/32 in. (10 mm) to fan. Position as shown in illustration 4 .

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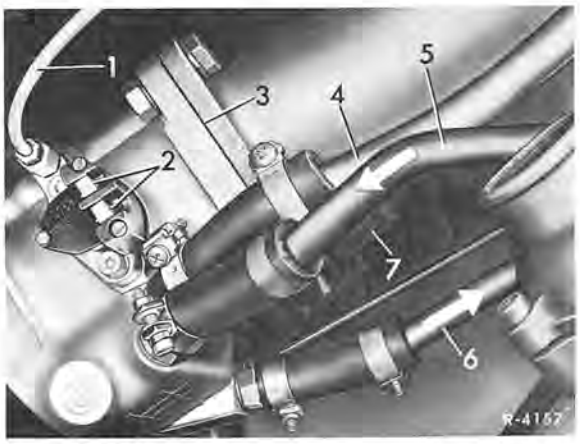

Illustration 4

1. Vacuum line
2. Connecting terminals
3. Gasket
4. Crankcase ventilation
5. Hot water feed pipe
6. Hot water return pipe
7. Supplementary air pipe

14. Fasten air connecting pipe and crankcase ventilation pipe with attachment parts to mixture controller.

15. Hot water return pipe (6, illustration 4) has to be shortened on mixture controller side by 1-1/2 in. (40 mm). Before tightening of hose clamps, position pipe in such a way that there is ample clearance to the accelerator linkage when throttle is in approximately 3/4 open position. Install pipe.

    NOTE: Make sure that none of the newly installed pipes interfere at any place. If required, install left-over water hose over pipes.

16. Connect vacuum line and electric wire for idle switch.

17. Reinstall intermediate piece with upper part of air filter and suction scoop.

18. Refill radiator, run engine and check for water leakage.

NOTE: During test run, leave off radiator cap to speed up venting (air escape).

20. Check idle switch and adjust if necessary.

21. In case engine does not run satisfactorily, co-ordination of accelerator linkage and idle speed has to be adjusted.

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PARTS REQUIRED

Quantity	Description	Illus. No./ Position	Part Number
1	Mixture Controller	4	000 140 65 53
1	Pipe Elbow	3/1	100 200 01 18
1	Heater Water Return Pipe	1/1	100 500 03 72
1	Water Return Pipe	4/6	100 506 03 60
1	Water Feed Pipe	4/5	100 506 04 60
1	Molded Hose	---	108 831 01 94
1	Gasket .02 in. thick (o,5 mm)	---	071511 030008
8	Hose Clamp	---	900269 019101
2	Hose Clamp	---	900269 025101
1	Rubber Hose 19 5/8 in. long (o,5 m)	---	900271 012024

The above mentioned parts may be ordered through your Mercedes-Benz parts depot.

For each car modified a warranty claim ("M-B Dealer Claim for Credit" - form 403) for parts plus 8 hours labor may be submitted.

The National Traffic and Motor Vehicle Safety Act of 1966 prohibits the retail sale of vehicles with known deficiencies; therefore, in addition to licensed vehicles, all cars in transit and dealer inventory must be modified in accordance with these instructions.

Your warranty claims on vehicles being modified with the heated mixture controller, as well as those vehicles in stock must be accompanied by a signed repair order certifying that the modification has been performed.

NOTE: Additional stickers are available on request from the Home Office Technical Service Department.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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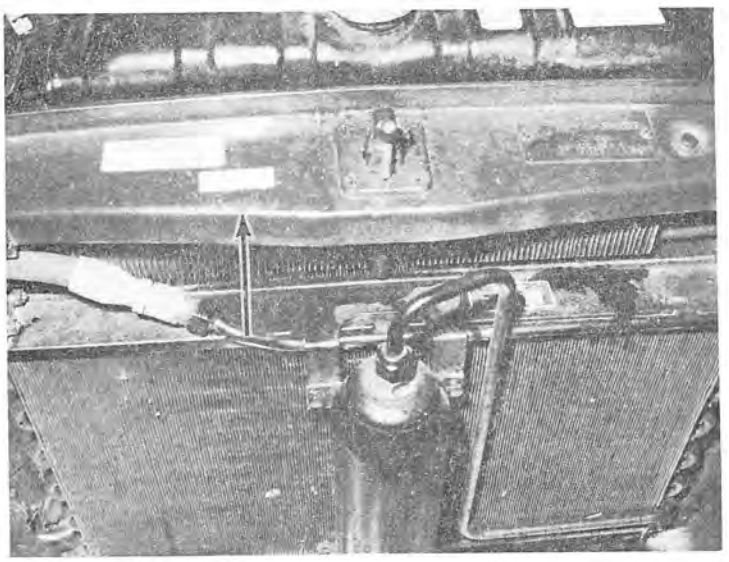
APPLICATION OF THE STICKER (SEE ARROW IN PICTURE) FOR THE CRANKCASE VENTILATION SYSTEM MODIFICATION CAMPAIGN -- MODEL 300 SEL/8 6.3



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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 31	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 07	Passenger Cars

Fort Lee, November 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Zenith Carburetor -- Models 230/8 250/8 and 280 S/8

The above mentioned models are equipped with the following modifications since some time:

I. Second Return Spring

The carburetors are equipped with an additional return spring (2) in order to achieve a faster return to idle position (illustration 1). Because of this second return spring, the previously used return spring (5, illustration 1) and the connecting link lever (20) for progressive control on the engine housing (illustration 2) had to be modified during production, to retain ease of control.

The new and softer return spring (5) must only be used on carburetors equipped with the second return spring (2) (illustration 1). Therefore, in case of replacement, always be sure to check whether or not the carburetor is equipped with a second return spring. Return springs can be distinguished by their wire diameters as follows:

Return spring on carburetor with second return spring: wire diameter .035" (0.9 mm) (soft spring)	Part Number 000 071 15 15
Return spring on carburetor without second return spring: wire diameter .039" (1.0 mm) (hard spring)	Part Number 000 071 12 15

NOTE: It is also possible to find out which spring is harder or softer by pulling on them.

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The modified connecting link lever, however, can be used on carburetors with or without the second return spring.

Carburetors equipped with the second return spring and the carburetor cover (described in section II) are being introduced during production at different times, depending upon the carburetor version. This may result in carburetors with or without the second return spring being installed into the same type models.

The second return spring may be subsequently installed as follows:

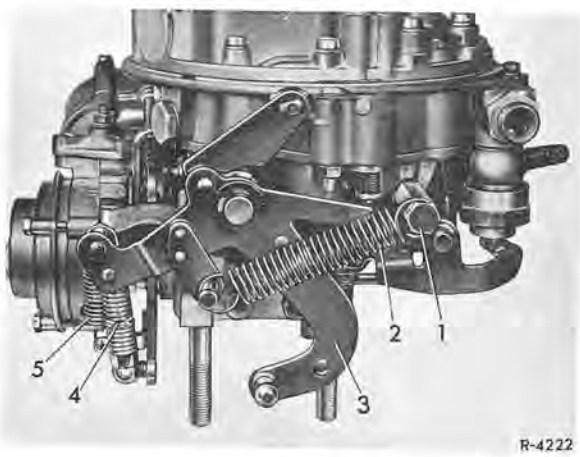

Illustration 1

1. Hex head screw
2. Return spring for actuating lever
3. Actuating lever
4. Idle speed adjusting screw
5. Return spring

1. Replace the actuating lever (3, illustration 1).

   Attention! Grease must be used when installing the new actuating lever.

2. Replace the return spring (5, illustration 1).

3. Screw in the hex head screw (1) and install the actuating lever return spring (2) (illustration 1).

   This hex head screw replaces the upper mounting screw of the vacuum control unit on the rear carburetor. On front and rear carburetors without a vacuum control unit, the hex head screw replaces the plug screw.

4. Replace the connecting link lever (20, illustration 2) on the support bracket.

   NOTE: When installing the modified connecting link lever, use two Polyamid (plastic)bushings.

   Attention!

   To prevent corrosion of the pivot pin, be sure to use grease when installing the connecting link lever with the Polyamid bushings.

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The modified version connecting link lever is not required on vehicles of model series W 114 with automatic transmission as they have no progressive control.

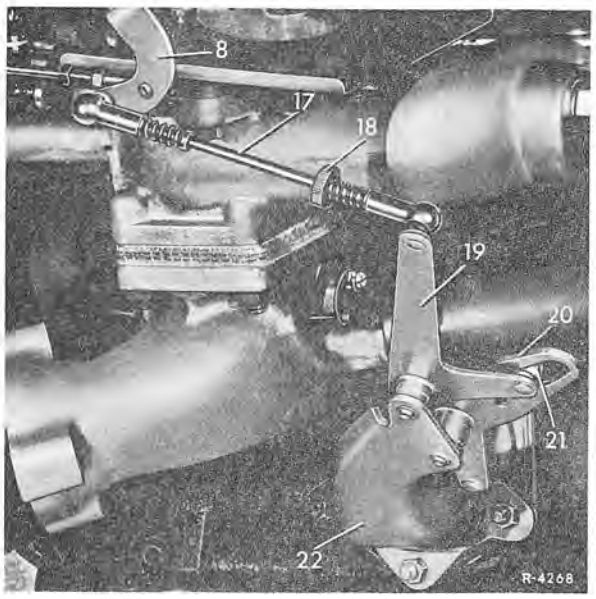

Illustration 2

20. Connecting link lever

5. Adjust the control linkage and the idle speed (see Workshop Manual - Passenger Cars starting 1968 - W 114/115).

Required Parts

Quantity	Description	Part Number
1	Actuating lever for front carburetor	000 071 22 31
1	Actuating lever for rear carburetor	000 071 23 31
2	Actuating lever return spring	000 071 16 15
2	Return spring	000 071 15 15
2	Hex head screw	000 071 09 74
1	Connecting link lever	180 070 34 21
2	Polyamid plastic bushing	115 072 00 50

Working Time: Approximately 1.3 hours

This product modification may not be charged against warranty when subsequently installed.

II. New Version Carburetor Cover

The carburetor cover has been modified in order to enclose the automatic choke control rod (5, illustration 4) from the top, to protect it from moisture and dirt. This cover, together with the second return spring, entered production as described on page 2, paragraph 2, of this article.

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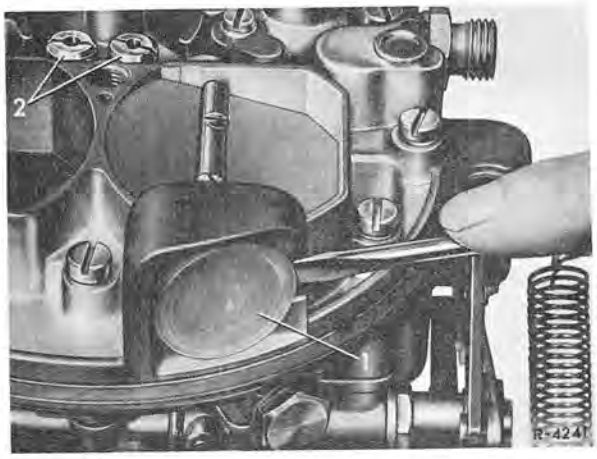

Illustration 3

1. Locking cap, part no. 000 988 10 35
2. Extended air correction jets

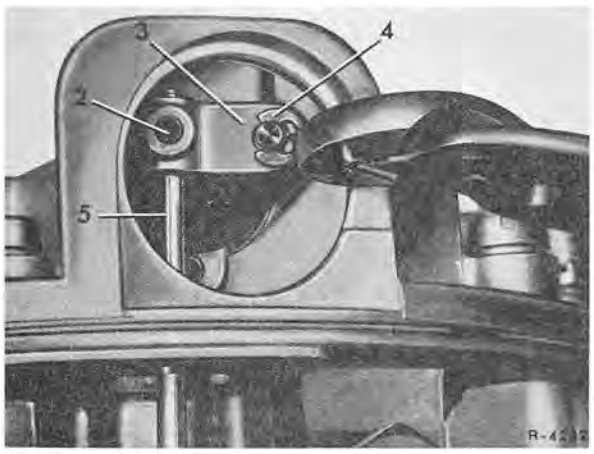

Illustration 4

2. Hex socket screw
3. Control link
4. Retaining ring, part no. 006799 002302
5. Automatic choke control rod

When removing the new version carburetor cover, observe the following instructions:

First pry off the locking cap (1) with a screwdriver, as shown in illustration 3. Then, pull off the retaining ring (4), disconnect the automatic choke control rod (5) and press downwards (illustrations 3 and 4).

NOTE: Do not remove the hex socket screw (2, illustration 4) since otherwise the entire choke linkage will have to be adjusted again after reinstallation.

The current version of the "Synchro-Test" device used for synchronizing Zenith carburetors does not fit the new version carburetor cover. Therefore, an adapter, part number 000 589 33 23 00, and the Synchro-tester, part number 000 589 12 23 00, for Solex carburetors must be used for synchronizing Zenith carburetors.

III. Extended Air Correction Jets

Extended air correction jets (2) are being installed during series production on models 230/8, 250/8, 250 S and 280 S/8 (see illustration 3).

(continued)

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Orders for the adapter (part no. 000 589 33 23 00) and the Synchro-tester (part no. 000 589 12 23 00), should be placed with the Parts Depot, 400 Alfred Avenue, Teaneck, New Jersey 07666, by submitting a spare parts order form and stating the description and complete tool number. Forms should be clearly marked with "Special Tool Order" and should contain special tools only. (In Canada, submit order to MB-C, Toronto.)

All parts mentioned in this article are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 126	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

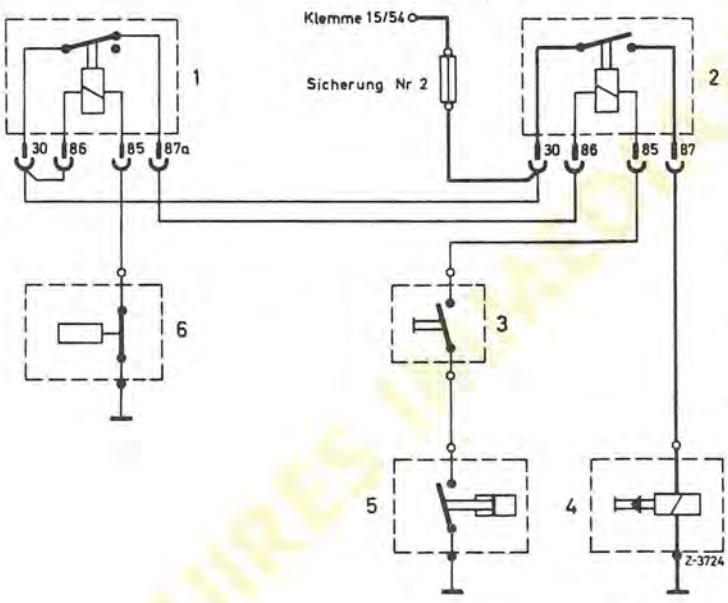
Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Intermediate Version of Exhaust Emission Control System -- Models 280 SE/8, 280 SE/8 Cp/Conv. and 300 SEL/8

A. Introduction

With the introduction of the new automatic transmission, the exhaust emission control system had to be modified. The necessary fuel shut-off of the solenoid switch on the injection pump during coasting is now controlled dependent on the speed of the car by means of an oil pressure switch mounted on the transmission. It will not work at cooling water temperatures below +62° F (17° C).



Item	Mounted At:
1. Alternating Relay no. 1	left of radiator
2. Operating Relay no. 2	left of radiator
3. Micro-switch	firewall
4. "Stop solenoid" switch	injection pump
5. Oil pressure switch	transmission
6. Temperature switch	engine block

Klemme = Terminal

Sicherung = Fuse

Illustration 1

B. How It Works:

The stop solenoid switch is activated via the operating relay no. 2 from terminal no. 87. The relay is located between the radiator and the wheel housing on the left side. This relay is governed by 2 switches in series:

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a) by a micro-switch (3) located on the firewall which is activated by the accelerator linkage and which is closed with the intake throttle closed.

b) by an oil pressure switch (5) mounted on the transmission rear cover. This switch is controlled by the transmission governor pressure (12.8 psi or 0.9 kg/cm2) and is closed at speeds beyond 15 mph (24 km/h).

Only with both of these switches closed, terminal 85 of relay no. 2 will be connected to ground.

At cooling water temperatures below 62° F, the complete system will be blocked by the temperature switch (6) working over the alternating relay no. 1 which is also located to the left of the radiator. The 62° F temperature switch is screwed into the engine block above the oil filter.

C. Testing the System

Connect test lamp to "stop solenoid" on injection pump and ground. Accelerate vehicle in any gear to approximately 25 mph during which time the test lamp may not light up. Then, release gas pedal, letting vehicle coast. Test lamp must now light up above 15 mph, and must go out below 15 mph.

D. Testing Sequence for the Individual Switches

1. 62° F Temperature Switch:

Remove plug from relay no. 1 and connect test lamp to terminals no. 30 and 85. Test lamp must light up below 62° F.

2. Micro-Switch at Gas Linkage Rod

Connect oil pressure switch terminal to ground. Remove 4-prong plug from relay no. 2 and connect test lamp to terminals 85 (wires are brown/white) and 30 (red/black). Switch on ignition.

When actuating gas linkage, lamp should go out. Now, remove ground cable from oil pressure switch.

Adjusting Micro-Switch

Adjust with adjustment screw in such a way that lamp goes out when actuating linkage before throttle in mixture controller moves.

3. Oil Pressure Switch

Remove plug from relay no. 2 and connect test lamp to terminals no. 30 and 85.

Accelerate car to approximately 25 mph, then release gas pedal. Test lamp must light while coasting above 15 mph.

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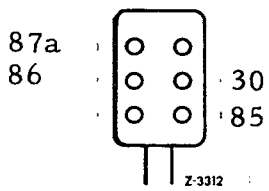
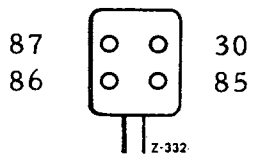


Plug for
Relay no. 1



Plug for
Relay no. 2

Illustration 2

Parts Required	Part Number
Oil pressure switch	002 542 09 17
Temperature switch 62°F (17°C)	003 545 13 24
Threaded fitting	114 997 01 72
Alternating Relay no. 1	000 542 59 19
Operating Relay no. 2	000 542 58 19
Additional wiring harness	108 540 29 09
Micro-switch	000 545 53 14
Actuating lever for micro-switch for models:	
280 SE/8, 300 SEL/8 -	108 300 06 20
280 SE/8 Cp/Conv. -	111 300 26 20
Mounting bracket for micro-switch for models:	
280 SE/8, 300 SEL/8 -	108 545 15 40
280 SE/8 Cp/Conv. -	111 545 08 40
Stop solenoid on injection pump	000 074 08 88

The above mentioned parts are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 112	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 07	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: New Two-Stage Starting Solenoid -- Model 600

As of chassis end number 000 989, an injection pump featuring a two-stage starting solenoid, part no. 100 070 05 01 (Bosch designation: PES 8 KL 75/120 L17 Z) is being installed during series production on the model 600.

A. Functioning of the Cold Start System with the Two-Stage Starting Solenoid:

The first stage of the starting solenoid (9, illustration 1) on the injection pump is operated during the entire starting period.

When the cooling water temperature is below 41° F (+ 5° C), the second stage of the starting solenoid (9) is additionally energized by the closed 41°F thermo time switch (7) and the relay (1). The injection time increases with decreasing temperature to approximately 12 seconds at -4°F (-20°C) (illustration 1).

At temperatures below 95° F (+ 35° C), the starting fuel valves (6) on the intake manifolds are operated by the closed 95° thermo time switch (8) and the relay (2). The injection time increases with decreasing temperature to approximately 12 seconds at -4° F (illustration 1).

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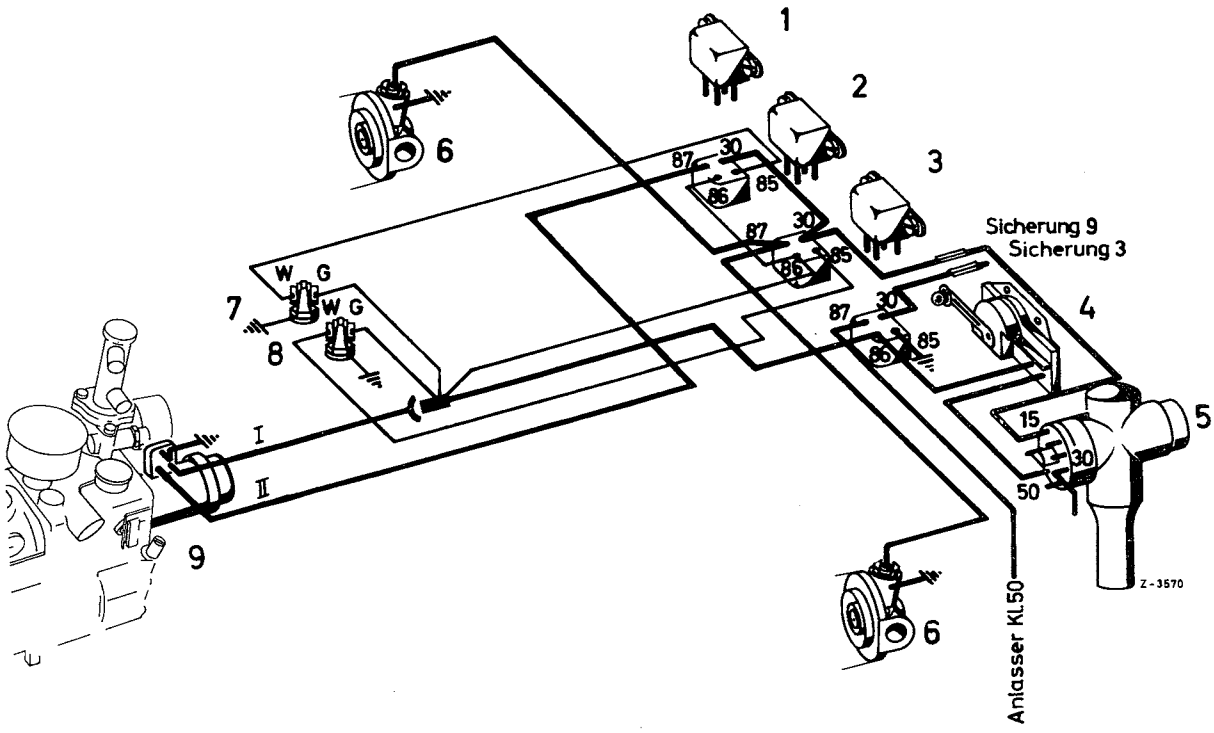

Illustration 1

Electrical Wiring Diagram of the Cold Start System

1. Relay, second stage
2. Relay, starting fuel valves
3. Relay, starter (Anlasser) KL 50
4. Starter lock-out switch
5. Ignition starter switch
6. Starting fuel valves
7. Thermo time switch 41° F (2nd stage)
8. Thermo time switch 95° F (starting fuel valves)
9. Two-stage starting solenoid

Sicherung = Fuse
Anlasser = Starter

NOTE: Illustration 1 shows the wiring diagram of the new version as installed in series production. For subsequent installation of the two-stage starting solenoid, stages I and II are connected via relays (see illustration 5).

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B. Testing of the Two-Stage Starting System

1. Pull off the plug connection from the two-stage solenoid of the injection pump so that a test lamp can be connected to the contact of stage I or stage II (illustration 2).

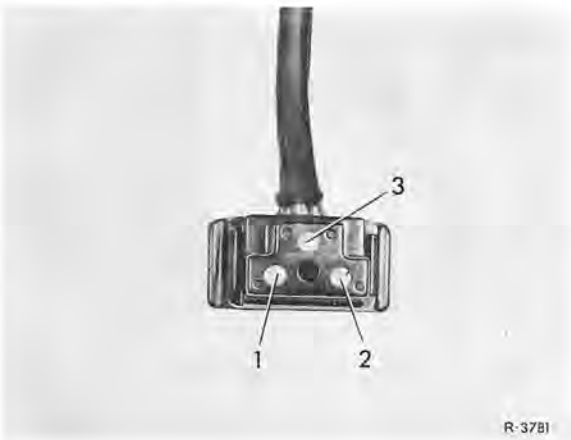

Illustration 2

1. Connection - stage I
2. Connection - stage II
3. Connection - ground

2. Disconnect ignition cable from the ignition coil.

Testing of Stage I

3. Connect test lamp to contact (1, illustration 2) of stage I. When operating the starter, the test lamp should light up during the entire starting period.

Testing of Stage II

4. Stage II as well as the thermo time switch (7) can only be tested at a coolant temperature below 41° F (+ 5° C).

   For this purpose connect the test lamp to the contact of stage II. When operating the starter, the test lamp should light up for up to 12 seconds according to the coolant temperature.

   NOTE: If the test lamp lights up at a coolant temperature of more than 41° F, the 41° F thermo time switch has a short and should be replaced.

   At higher temperatures only the electric wires and the relay (1, illustration 1) can be tested. For this purpose, connect terminal W at 41° F thermo time switch to ground and connect test lamp to contact of stage II. When the starter is operated, the test lamp must light up during the entire period of starting.

5. Check the starting fuel valves. Connect a test lamp to both valves. When operating the starter at coolant temperatures below + 95° F, the test lamps must light up for up to 12 seconds according to the respective coolant temperature.

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NOTE: If the test lamp lights up at a coolant temperature of more than 95° F, the 95° F thermo time switch (8, illustration 1) has a short and must be replaced.

C. Replacement of Engine and/or Injection Pump

If an injection pump with the single stage starting solenoid is replaced with an injection pump featuring the two-stage starting solenoid, the vehicle must be converted according to the following instructions numbered 1 through 14.

When installing an engine featuring a two-stage starting solenoid into a vehicle previously equipped with an engine with a single stage starting solenoid, the vehicle must be converted according to the following instructions numbered 1,2 and 7 through 14.

NOTE: When ordering replacement engines, only those featuring the two-stage starting solenoid will be delivered.

Installation and Conversion Instructions

Parts Required:

Quantity	Description	Part No. or DIN Designation	
1	Engine cable harness	109 540 03 09	1)
1	Additional cable harness	100 540 09 09	
1	Relay	000 542 58 19	
2	Sheet metal screw	007981 003230	
1	Thermo time switch	001 545 92 24	1)
1	Hex head screw	000933 005030	1)
1	Lock washer	000127 005203	1)
2	Seal ring (8 x 11,5)	007603 008100	1)
1	Hollow screw	915011 002102	1)
1	Oil pressure line	100 180 12 27	1)
1	Mounting clamp	071434 004122	1)
6	Plastic clamp	000 997 24 90	1)

1) Not required for engines which are already equipped with the two-stage starting solenoid.

Procedure

1. Disconnect ground cable from battery.

2. Replace engine and/or injection pump (see Workshop Manual, Model 600, job no. 00-1 or 07-9).

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NOTE: The oil check valve which up to now has been fitted on the rear of the injection pump housing is no longer installed. In case of replacement, if an injection pump without an oil check valve is installed in a car which previously had an injection pump with an oil check valve, the valve from the removed pump must either be reused or a longer oil pressure line must be installed.

3. Remove the engine cable harness. To do so, disconnect the following electrical connections:

   a. Idle switch from venturi control unit
   b. Ignition coil, terminal 1 (revolution counter)
   c. Resistor of ignition coil (input)
   d. Starting fuel valves at the intake pipes
   e. Thermo switch and thermo time switch
   f. Starting solenoid at the injection pump.

4. Turn the radiator cap and "blow-off" excess pressure. Then retighten cap.

5. Remove the 95°F thermo switch (single prong connection) and replace with a 95°F thermo time switch (part no. 001 545 92 24).

6. Install a new cable harness. The two prong cable connection (marked by red adhesive tape) must be connected to the 41° F thermo time switch.

7. Remove the time-delay relay and replace with a contact relay (1). To do so, extend the relay bracket (2) by approximately 1.18" (30 mm) (illustration 3).

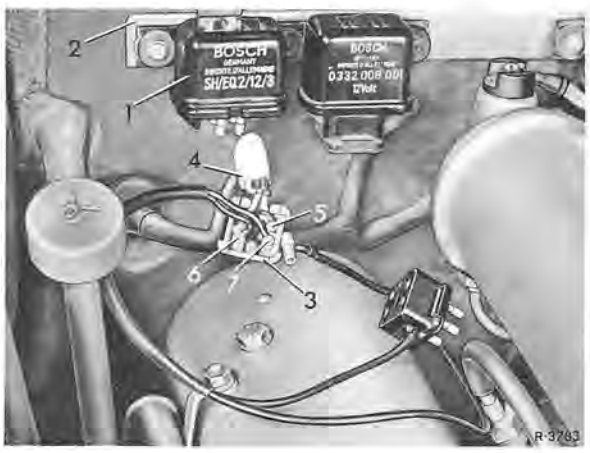

Illustration 3

1. Contact relay
2. Relay bracket
3. Plug connection
4. Contact bushing (insulated)
5. Terminal 85
6. Terminal 86

8. Open the plug of the time-delay relay, remove the contact bushing of terminal 85 and insulate (illustrations 3 and 4).

9. Remove the contact bushing of terminal 86 (6) and insert into the guide bore of terminal 85 (5) (illustrations 3 and 4).

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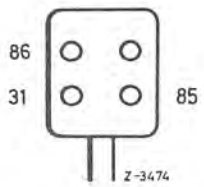

Illustration 4
Plug, front view

10. Insert the contact bushings of the additional cable harness into the two guide bores which are now free.

11. Close the plug (3) and attach to the contact relay (1) (illustration 5).

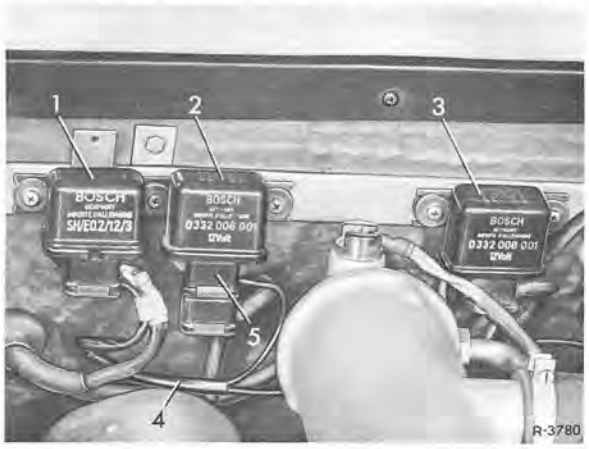

Illustration 5

1. Relay, stage II
2. Relay, stage I
3. Relay, starting fuel valves
4. Additional cable harness
5. Intermediate plug

12. Connect the intermediate plug (5) of the additional cable harness (4) to the contact relay (2) (illustration 5).

13. Open the plug (1) of the engine plug connection. Then insert the contact bushing (2) of the additional cable harness into the guide bore (illustration 6).

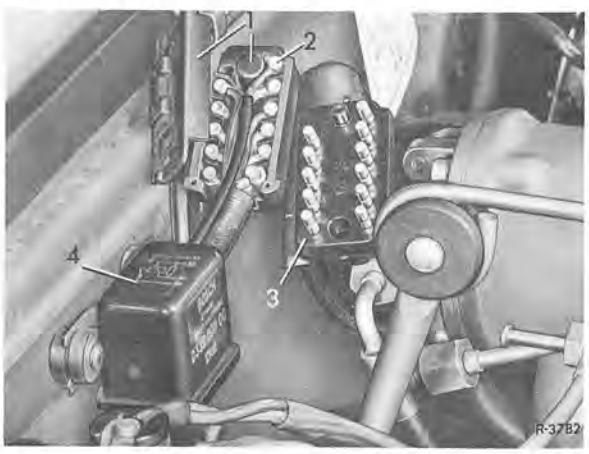

Illustration 6

1. Engine plug connection
2. Contact bushing
3. Plug on engine cable harness
4. Relay, starting fuel valves

14. Connect the engine cable harness and check the complete cold start system for proper functioning.

The required parts are available from your Mercedes-Benz parts depot.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	133	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS

Fort Lee, January 1969

Subject: Air Filter Mounting on Zenith Carburetors -- Models 230/8, 250/8, 280 S/8 and 1968 250 S

On the above models, the air filter is mounted directly on top of the carburetor covers of the Zenith carburetors.

If the mounting screws of the air filter are tightened too firmly, they might contact the center cylindrical screws of the carburetor covers. In the process of removing the air filter, the two center cylindrical screws of the carburetor cover mounting will also become unscrewed.

To correct this condition, please note the following:

1. After each removal of the air filter, check the two center cylindrical screws of the carburetor cover to be certain they are tight and, if necessary, retighten.

2. If the mounting screws were pushed in and show burrs, level these protrusions before remounting the air filter, in order to avoid turning of the cylindrical screws of the carburetor cover while performing this operation.

3. It is important to remember that the mounting screws of the air filter must only be slightly tightened - torque to approximately 6 ft. lbs. (or 0.8 mkp).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner File Classeur Archivador	Gruppe Group Groupe Grupo	
90	Service Information	07	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Steps to Take After Prolonged Storage of Gasoline Injection Pumps

When gasoline injection pumps are stored for a considerable length of time, the pump elements are subject to a "gumming" condition so that the control rod is rendered inoperative.

Since there is no way of knowing the exact length of time the injection pumps have been stored, the control rod of a replacement pump should always be checked for ease of movement and, if necessary, be freed up prior to the installation.

To check the control rod, follow this procedure:

1. Remove the cover cap of the control rod.
2. Screw an M 5 screw into the control rod and check it for ease of movement.
3. If the control rod is difficult to move, pour clean gasoline into the return or feed pipe connection of the suction chamber and allow the gasoline to act upon the pump elements for a short time.
4. Turn the camshaft at the drive pinion and at the same time, move the control rod to and fro until it can be operated easily.
5. Unscrew the M 5 screw and replace the cover cap.

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II. Bolts for Flywheel or Driven Plate on Models as of January 1968

Standard Transmission

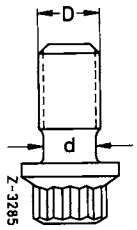

Illustration 4

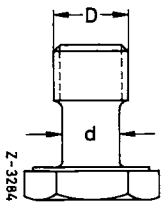

Illustration 5

Automatic Transmission

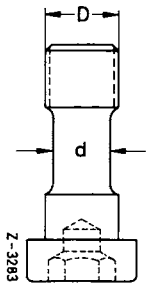

Illustration 6

Part No.	615 032 05 71	621 032 00 71	108 032 01 71	108 990 03 19	108 990 04 19
Thread Diameter	M 10 x 1	M 10 x 1	M 12 x 1	M 10 x 1	M 12 x 1
Diameter "d" of Stretch Bolt When New	.33" -.01" (8.5 $^{-0.2}$ mm)	.31" -.01" (8.0 $^{-0.2}$ mm)	.36" -.01" (9.2 $^{-0.2}$ mm)	.31" -.01" (7.7 $^{-0.2}$ mm)	.36" -.01" (9.2 $^{-0.2}$ mm)
Minimum Diameter 1)	.31" (8.1 mm)	.30" (7.6 mm)	.34" (8.8 mm)	.29" (7.3 mm)	.34" (8.8 mm)
Installed in Engines of Models:	220/8 220 D/8	230/8	250/8 280 S/8 280 SE/8 280 SE/8 Cp/Cv. 300 SEL/8 280 SL/8	220/8 220 D/8 230/8	250/8 280 S/8 280 SE/8 280 SE/8 Cp/Cv. 300 SEL/8 280 SEL/8

1) When the minimum diameter has been reached, the bolts must no longer be used.

Tightening the Flywheel Bolts

Model	220/8, 220 D/8 and 230/8	250/8, 280 S/8, 280 SE/8, 280 SE/8 Cp/Cv., 280 SL/8, and 300 SEL/8
Pre-tightening Torque	21.70 + 7.23 ft. lbs. (3 + 1 mkp)	
Turning Angle 1)	60° + 10°	90° + 10°

1) The turning angle must never fall short of the prescribed value. However, no harm will result if the value is slightly exceeded.

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NOTE: In the 4-cylinder engines, the flywheel is fastened to the crankshaft by 12 bolts without being positioned by a dowel pin. The flywheel and crankshaft are balanced together as a single unit. The flywheel must positively be refitted in the same position with respect to the crankshaft as it had originally. Therefore, both the crankshaft and the flywheel are marked with either an "0" or a notch or a red dot depending on the type of transmission and the production series. Before the flywheel is removed a check should be made on whether this marking is actually present; if not, the marking must now be made before the two parts are separated.

In the 6-cylinder engines the flywheel is fitted with 6 bolts and a dowel pin.

If a new flywheel is installed it must be statically balanced in accordance with the used one.

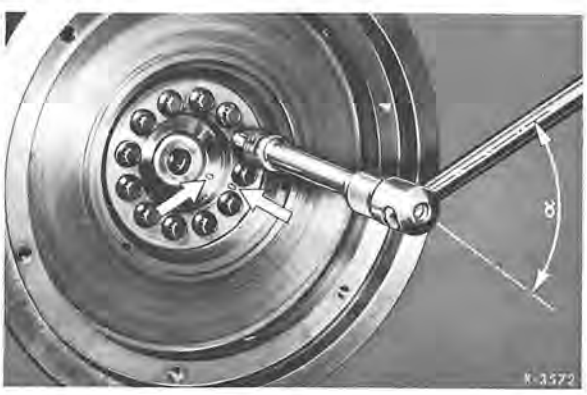

Illustration 7

If bolts which are to be tightened with a pre-tightening torque and finally tightened according to the turning angle are not properly tightened, damage will inevitably result. For this reason it is imperative that your personnel are informed in detail of the contents of this Service Information.

The required parts are available through your Mercedes-Benz parts depot.

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that the new bolts are of the same type as the ones originally installed on that particular engine. At a later date the connecting rods of replacement engines will be fitted with the new bolts which are to be tightened according to the turning angle. Therefore, in the future, prior to tightening the connecting rod bolts of any engine, be sure to determine whether the respective bolts are to be tightened according to the turning angle and/or just the tightening torque.

EXCEPTION: On the engines of models 280 SL/8 and 300 SEL/8, the presently used connecting rod bolts (illustration 2) must be tightened according to the turning angle. The turning angles are identical to those on other six cylinder engines. Angular tightening has been introduced as of the following engine end numbers:

Model	Engine End No.
280 SL/8	000 001
300 SEL/8 - standard transmission	000 012
300 SEL/8 - automatic transmission	000 121

When measuring and evaluating the "stretch section" diameter of stretch bolts presently used in these engines, the following should be noted:

If the connecting rod bolt projecting from the connecting rod after the cap has been removed has not been stretched (stretch section diameter of a new stretch bolt should be not less than .35" $^{-.003}$" (9.0 $^{-0.1}$ mm), knock out the bolt and measure the stretch section diameter which is normally covered by the connecting rod. If a minimum diameter of .31" (7.8 mm) has been reached in this section, the bolt cannot be used again.

This procedure applies to the bolts presently used in models 280 SL/8 and 300 SEL/8. After introduction of the newly developed bolts for these engines, the evaluation should be made according to the instructions given for all other models on the previous page.

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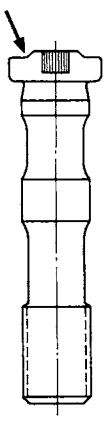
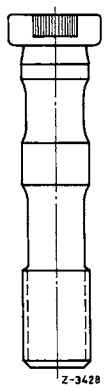
Distinctive Features, Dimensions, Tightening Torques and Turning Angles of Connecting Rod Bolts

A. Distinctive Features

	Prescribed Torque Reading	Prescribed Angular Tightening	Note
4-Cylinder Engines			Differing in stretch section diameter
"Stretch section" diameter of stretch bolt (when new)	.34" -.003" (8.8 -0.1 mm)	.33" -.003" (8.4 -0.1 mm)	
6-Cylinder Engines 1)	 .35" -.003" (9.0 -0.1 mm) Illustration 2	 .35" -.003" (9.0 -0.1 mm) Illustration 3	Differing in bolt head

1) On engines of models 280 SL/8 and 300 SEL/8 tighten according to the turning angle (see "EXCEPTION" on page 3).

B. Dimensions, Tightening Torques and Turning Angles

Connecting Rod Bolts for Angular Tightening	6-Cylinder Engines	4-Cylinder Engines
Part Number	108 038 02 71 2)	615 038 02 71 2)
Thread	M 11 x 1	M 10 x 1
Diameter (when new)	.35" -.003" (9.0 -0.1 mm)	.33" -.003" (8.4 -0.1 mm)
Minimum Diameter 1)	.31" (7.8 mm)	.29" (7.2 mm)
Pre-tightening Torque	15.98 ft. lbs. (2.5 mkp)	
Turning Angle	180° - 20°	

1) When the minimum diameter has been reached, the bolts must no longer be used.
2) Stretch bolts for angular tightening will be available as replacement parts in the near future.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 103a	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

This Service Information supersedes Service Information MB-T 103, Group 07, of December 1968 (adjustment values corrected).

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Model 230/8 Without Saginaw Air Pump

The engine of model 230/8 (as of chassis end number 018 018) is no longer equipped with a Saginaw Air Pump which was previously used for the exhaust emission control system.

For this reason, as of the above chassis end number, some of the maintenance service jobs specified for the exhaust emission control system on this model are no longer necessary. However, all other maintenance jobs remain valid and unchanged with the exception of those described herein.

1. The exhaust gas figure at idling speed on cars with automatic transmission, selector lever in "P" or "N" should now be 1.5 - 2.5% CO.

2. The idle compensator (5, illustration 1) on the rear Zenith carburetor is governed by an electrical relay in relation to the engine speed and by a magnetic valve in such a way that the vacuum valve holds the throttle valve slightly open during "push" operation at engine speeds above 1800 rpm's. Accordingly, the adjustment of the idle compensator has been changed as follows:

   a. With the engine shut off, unscrew the hex head screw (9) at the idle compensator until the actuating lever (10) opens the vent valve (3) by .04 in. (1 mm).

   b. Adjustment of the Compression Spring (7)

      Automatic Transmission:

      With selector lever in "drive" position, adjust the pressure of the compression spring (7) by means of the knurled nut (8) so that the resulting idle speed is 650 to 700 rpm's.

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With the selector lever in "N" or "P", check to see that the actuating lever (10) contacts the idle stop screw (1). If, instead, the actuating lever rests against the hex head screw (9), the pressure of the compression spring (7) should be reduced by turning the knurled nut (8) counter-clockwise.

Standard Transmission
(Do not operate additional power consumers such as air conditioning, etc.)

During idling, adjust the compression spring (7) by means of the knurled nut (8) so that a clearance of approximately .004 in. (0.1 mm) exists between the hex head screw (9) and the actuating lever (10).

c. During idling, and with the engine warm, remove the vacuum hose (4). The idle speed now should not exceed 1750 rpm's. If necessary, adjust with the hex head screw (9).

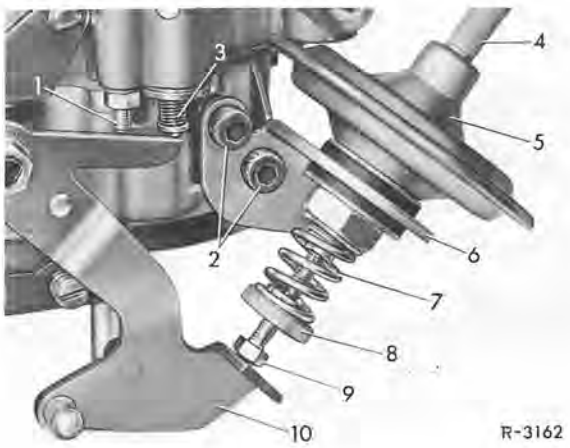

Illustration 1

1. Idle stop screw
2. Allen head screw
3. Vent valve
4. Vacuum hose
5. Idle compensator
6. Bracket
7. Compression spring
8. Knurled nut
9. Hex head screw
10. Actuating lever

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 105	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Oil Check Valve -- 6-Cylinder Injection Engines

We refer to our Service Information No. 125, Group 07, of February 1968, in which we explained (section D, page 5) that on all six-plunger injection pumps, the oil check valve located on the back of the pump housing is no longer installed.

For this reason, when replacing injection pumps, it is imperative that you adhere to one of the following:

a) either the oil check valve of the old pump is transferred to the new one,

b) or, an extended oil pressure line must be installed.

Parts List: Pressure Oil Line

Type	Description	Part Number
250 SE	1 pressure oil line	129 180 07 20
	1 bracket 1 hex head screw 1 hex head screw 1 clamp	127 180 01 40 000912 008058 000127 005203 071434 004122
300 SEB	1 pressure oil line	189 180 21 27
300 SE Cpe./Conv. 300 SEL	1 pressure oil line	189 180 20 27

If this is not done, the engine oil will be pumped out of the open oil line and the injection pump will cease due to lack of lubrication.

The required parts are available from your M-B parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 99	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 07	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Solex Carburetor 38 PDSI -- Model 220/8

Occasionally, on model 220/8, after turning off the ignition, an "after-run" of the engine may be encountered.

To prevent this from occurring, an electrical idle fuel cut-off valve can be subsequently installed according to the following installation instructions:

Installation of Cut-Off Valve

1. Remove idle fuel jet on each carburetor.
2. Replace both idle fuel jets with the new cut-off valves.
3. Attach electrical wire plug connection to both valves. Then, route the wire along the wiring harness on the fire wall and through the holding straps to the fuse box.
4. Loosen the fuse box to gain access to the wiring lugs and connect the wire to terminal #3 located on the consumer side.
5. Reinstall fuse box.

Function of New Cut-Off Valve

When the ignition is switched on, the needle valve is lifted from its seat allowing fuel to flow through the idle fuel jet nozzle. When the ignition is turned off, the electrical current to the cut-off valve is interrupted and the needle valve is forced to return to its seat by means of a pressure spring, making it impossible for fuel to flow through the idle jet nozzles.

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For the preceding installation, the following parts are required:

2 Cut-Off Valves with Idle Jets	-	Part No. 000 072 00 17
1 Wiring Harness	-	Part No. 110 540 28 09

These parts are available from your Mercedes-Benz parts depot.

The time allowance for the installation of these parts is 0.3 hours.

The cut-off valves and wiring harness are standard equipment as of the following engine end numbers:

Model 220/8 -	standard transmission	- 005 012
	automatic transmission	- 001 207

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No.	69	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Fuel Line Noises -- Model 220 D/8

Should knocking or rattling noises be experienced (coming from the floor panel of the car), a test drive should be made to determine if these noises are caused by the fuel line knocking or rattling.

In order to make an accurate diagnosis, the noise must be audible while the car is being driven. Checks carried out with the engine running while the car is stationary do not simulate actual driving conditions and therefore should only be employed for a noise rating if the noise is excessively loud. (A slight residual noise audible after actuating the accelerator pedal while the vehicle is stationary cannot be entirely avoided.)

If it is established that the noises are the result of the fuel line knocking or rattling, they can be eliminated by following the instructions described below:

Parts Required	Part Number
Pressure Spring (soft version)	000 091 06 19
Seal Ring (between fuel feed pump housing and screw plug)	002 997 65 40

Procedure

1. Unscrew the screw plug of the fuel feed pump housing and remove the pressure spring for the plunger.

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2. Remove seal ring.

3. Apply grease to the new seal ring and press it into the recess of the fuel feed pump housing.

4. Insert new pressure spring (soft version).

5. Re-insert screw plug and tighten.

6. Run the engine to check the fuel line and fuel feed pump for leakage.

As of the following chassis end numbers, the soft version pressure spring is being installed in the fuel feed pump during production.

Model		Chassis End No.
	Standard Transmission	015428
	Automatic Transmission	001656
220 D/8	Standard Transmission (with level adjustment)	000025
	Automatic Transmission (with level adjustment)	000005

The required parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 141	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 07	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Modified Gasket for INAT Carburetors -- Types 230, 230 S, and 250 S

A modified carburetor gasket is now being installed between the plate block and ball housing in INAT carburetors.

The previous version gasket is not cut out as much at the location of the float arm and may swell in that area. Consequently, at a low float level, the float arm can contact the swollen gasket, and as a result, the swollen gasket may prevent the needle valve from opening fully.

In case of complaints, a modified version gasket, which is available under part No. 000 071 38 80 through the M-B parts depots, should be installed. However, your supply of previous version gaskets should be modified in accordance with illustration 1 and used up first, before a supply of the new version is ordered.

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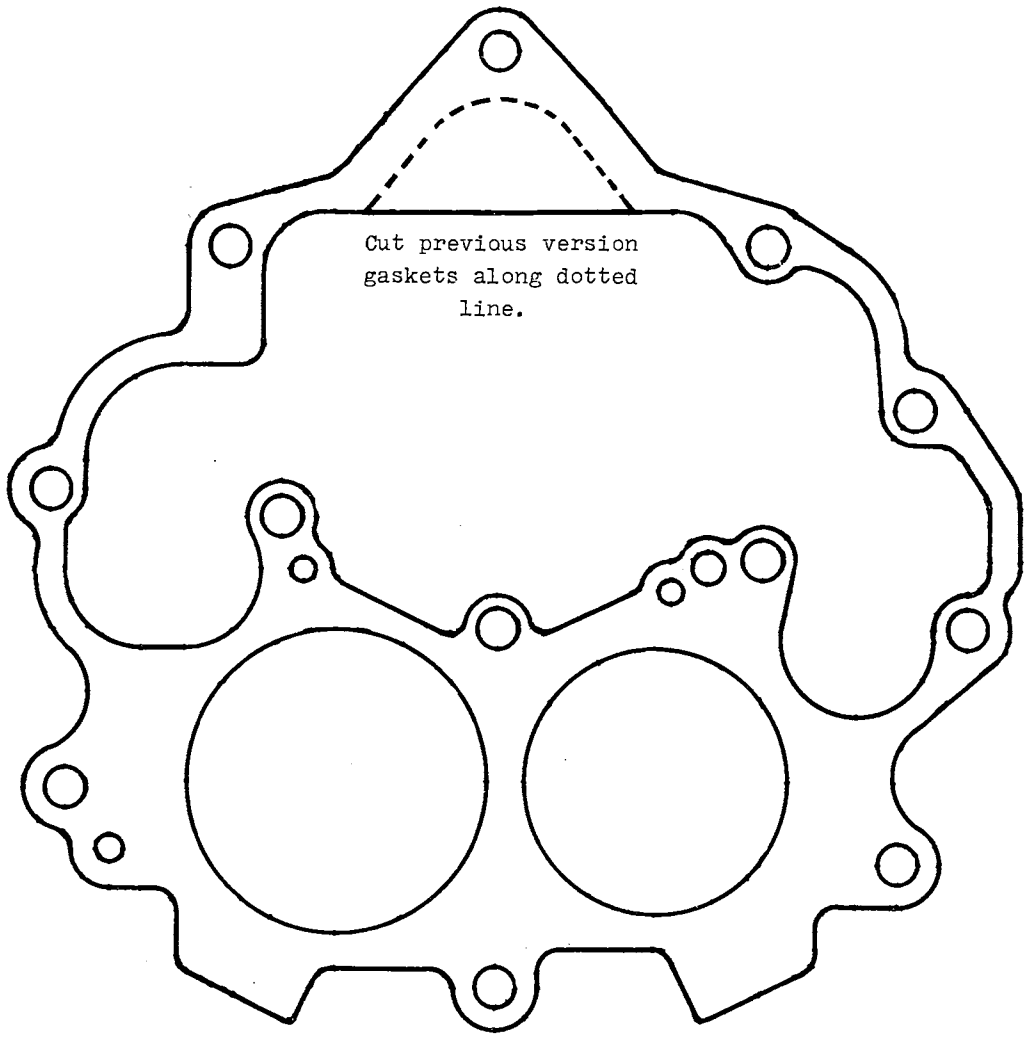

Illustration 1

Previous Version Gasket

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 61	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	07	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: By-passing Series Resistor for Ignition Coil -- All 6-Cylinder Models

To further improve the starting behavior of 6-cylinder models at low outside temperatures or periods of high humidity, an additional relay can be installed between the ignition coil and series resistor, enabling the series resistor to be by-passed during cranking of the engine and the ignition coil to utilize the maximum available battery voltage.

The relay should be mounted in such a way that the wires reach both the ignition coil and series resistor. Mounting locations on the various models are as follows:

Models	Mounting Location for Relay
230, 230 S, 250 S, and 280 S	on left fender skirt between ignition coil and series resistor
230/8 and 250/8	on relay bracket
250 SE, 280 SE/SEL, and 300 SEb/SEL, including Coupe/Convertibles	between ignition coil and battery frame on fender skirt
230 SL, 250 SL, and 280 SL	above and behind plastic block used to position hood rod on fender skirt

CAUTION

Make sure the rod does not interfere with the relay when closing the hood. Route wires to ignition coil and series resistor under hood rod in front of plastic block.

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Required parts

Quantity	Description	Part Number
1	Relay	000 542 58 19
1	Wiring harness	700 542 51 99

The above parts are available through the M-B parts depots.

Installation procedure

1. Connect wiring harness (plug connection to relay).
2. Mount relay with two sheet metal screws (see page 1 for correct mounting location).
3. Connect shortest (ground) wire to one of the mounting screws.
4. Connect long wire to starter solenoid small terminal #50.
5. Connect two remaining wires as follows: one to resistor input terminal and the other to ignition coil terminal #15 (positive).

Checking procedure

1. Connect positive lead of voltmeter to ignition coil terminal #15 (positive).
2. Connect negative lead to battery negative terminal.
3. Turn on ignition and take voltage reading.
4. Crank engine with starter. The voltage should increase during cranking of engine.

The above work requires 0.5 hours of labor.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 9	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 07	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Adjustment of Fuel Injection Pumps on Gasoline Engines with Exhaust Gas Analyzers

With Service Information No. MB-T 25, Group 07, of August 1967, we included the booklet, "Exhaust Emission Control Systems Passenger Cars — U.S.A. Version", which included the procedure and specifications for adjusting injection pumps by means of exhaust gas analyzers at various loads. Service Information No. MB-T 31, Group 07, of October 1967, gave you up-dated specifications sheets. In addition to performance and exhaust gas values, the specification sheets also include the respective vacuum values.

These vacuum values are especially necessary for adjusting injection pumps by means of exhaust gas analyzers which work according to the heat conductivity principle. These indicate lean exhaust gas values; i.e., values above 83%, more and more inaccurately and ultimately indicate richer values again as the mixture becomes still more lean. It could therefore occur that although the mixture of an engine has become extremely lean, these analyzers indicate richer values. The vacuum in the intake manifold must be measured at the same time in order to establish control whether the measuring point is correct or not.

If the vacuum breaks down and the engine coughs, even though the exhaust gas values are apparently correct, the engine mixture is far too lean and must be considerably enriched in the partial load range.

Analyzers on which the indicated value is compared to zero indicate without controlling the vacuum whether the engine is adjusted too lean. It is recommended, however, that the vacuum be checked in this method of adjustment also, as it provides information on the condition and adjustment of the valves.

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Article No.	File	Group	Application
MB-T 217	SERVICE INFORMATION	09/11	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FLAME ARRESTER SCREENS, VEHICLES EQUIPPED WITH 3.5 L ENGINES

Flame arrester screens which prevent the effects of backfiring during cold starts are now installed in production as of the following chassis end numbers:

MODEL	CHASSIS END NUMBER
280 SE/9 3.5 Cp/Cv	002504
300 SEL/9 3.5	003109

It is recommended that this flame arrester screen, Part Number 000 018 33 60 be installed during servicing on those vehicles in which it is not installed.

NOTE: THIS FLAME ARRESTER SCREEN SHOULD BE CHECKED EVERY 6,000 MILES FOR CLEANLINESS. IF CLOGGED, IT MAY BE CLEANED BY WASHING THE SCREEN IN SOLVENT AND BLOWING COMPRESSED AIR INTO THE LONG END OF THE HOSE.

INSTALLATION INSTRUCTIONS:

1. Remove air filter.
2. Remove hose (right side, driving direction air cleaner to valve cover).
3. Insert flame arrester screen (long end first) into valve cover vent hole.
4. Reassemble.

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WARRANTY CLAIMS

A warranty claim for parts plus 0.1 hours labor for each vehicle may be submitted.

Required parts may be ordered from our Mercedes-Benz Parts Depots.

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MB-T 217, Gr. 09/11

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Article No.	File	Group	Application
MB-T 199	SERVICE INFORMATION	09	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: INTRODUCTION - NEW ELECTRIC FUEL PUMP - ALL FUEL INJECTED MODELS, EXCEPT 3.5 L VERSIONS

A. GENERAL INFORMATION

The new pump has been installed in production models as indicated in the following table:

MODEL	FROM CHASSIS END NO.
280 SL	010241
280 SE	030631
280 SEL	030488
280 SE/8 Cp/Cv	002971
300 SEL 2.8	001937
300 SEL/8 6.3	002194

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The new pump incorporates a by-pass system (Part No. 001 091 52 01). This by-pass system prevents vapor bubbles originating in the fuel tank from entering the entire fuel system. Vapor bubbles are forced back into the fuel tank by way of the by-pass connection (2) and via the fuel hose (2) which is connected with the return line by a Tee-fitting (Illustrations 1 and 4).

As a temporary measure, the new fuel pumps were installed without the by-pass connection to the fuel tank. The by-pass connection on the fuel pump was plugged.

Before installing the new fuel pump, remove the by-pass connection plug (2). Make sure the leads are properly connected to the terminals. The positive lead is identified by "black/red", the negative lead "brown".

The fuel pump terminals are identified as follows:

positive terminal.....red plastic plate (4)

ground terminal.....brown plastic plate (5)

In addition, terminals are marked plus and minus.

Exchanging the positive and negative wires reverses the sense of rotation. The fuel pump then fails to feed.

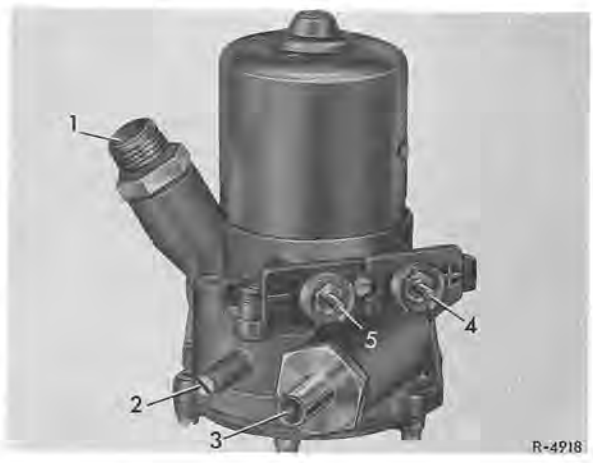

ILLUSTRATION 1

Fuel Pump

1. Fuel pressure connection
2. By-pass connection, plugged
3. Fuel suction connection
4. Plus terminal
5. Ground terminal

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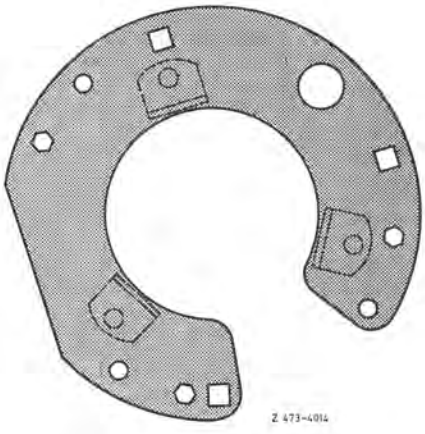

ILLUSTRATION 2

Mounting Plate

Models 220 SEB to 300 SEL/8 6.3

Model 600

Models 230 SL, 250 SL, 280 SL/8

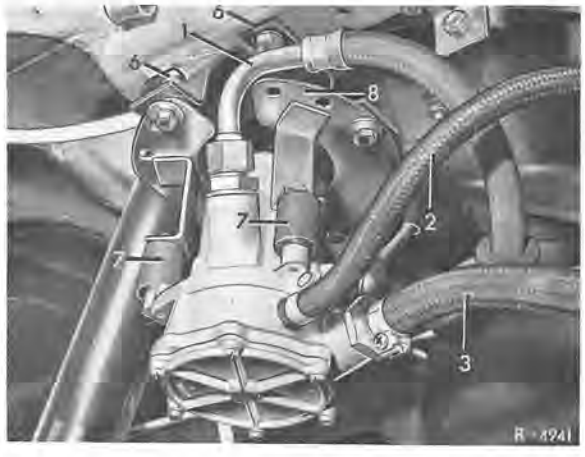

ILLUSTRATION 3

1. Fuel pressure line
2. Fuel by-pass
3. Fuel suction line
6. Bracket
7. Rubber spacers
8. Mounting plate

B. SUPPLEMENTARY INSTALLATION OF THE NEW FUEL PUMP

The previous fuel pump (large design) is no longer manufactured. A universal mounting plate, Part No. 108 470 02 81 (Illustration 2) was developed to facilitate the mounting of the new fuel pump in Models 220 SEB, 230 SL, 250 SE, 250 SL, 280 SE/8, 280 SL/8, 300 SE, 300 SEB, 300 SEL, 300 SEL/8, 300 SEL/8 6.3 and 600. The holes of the universal mounting plate match on all models.

INSTALLATION INSTRUCTIONS

1. Remove the previous fuel pump with rubber spacers.

NOTE: THE BRACKETS (6) REMAIN BOLTED TO THE FRAME FLOOR (ILLUSTRATION 3)

2. Mount new rubber spacers (7) to fuel pump.

3. Fasten mounting plate (8) to fuel pump.

4. Fasten mounting plate (8) with the fuel pump to bracket (6), using the holes provided for the respective model (Illustration 3).

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5. Shorten fuel return hose to approximately 15 29/32 in. (150 mm) measured from the fuel tank. Insert Tee-fitting, Part No. 114 476 01 25. Shorten hose, if necessary.

6. Install a hose from the by-pass connection on the fuel pump to the Tee-fitting (remove plug).

7. Connect suction line and pressure line to the fuel pump. Secure all hose ends by means of hose clamps.

NOTE: PREVENT THE SUCTION LINE FROM SAGGING. SHORTEN, IF NECESSARY.

8. Insert a rubber grommet into the large hole of the mounting plate (8). Insert the wires and connect. Be sure that the poles are properly connected.

9. Remove relief valve from the injection pump. Check whether a valve without vent hole is installed. If this is not the case, install a valve without vent hole (refer to Section D)

10. Check fuel pump and all fuel lines for leaks.

PARTS REQUIRED

QTY.	DESCRIPTION	PART NUMBER
1	Fuel pump	001 091 52 01
3	Rubber stop	114 328 05 81
3	Nut	000934 005004
3	Lock washer	000127 005203
1	Mounting plate	108 470 02 81
3	Hex. head screw	000933 006016
1	Rubber grommet	000 997 22 81
3	Lock washer	000127 006203
1	Fuel hose, linear meters	110 476 03 26
2	Hose clamp	114 995 01 35
1	Tee-fitting	114 476 01 25

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C. FUEL RELIEF VALVE IN THE INJECTION PUMP

The injection pump relief valve may not have a vent hole when installed in conjunction with the new fuel pump. Therefore, the relief valve should be checked when exchanging an injection pump or an electric fuel pump.

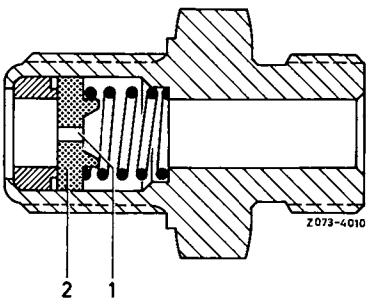

ILLUSTRATION 4

Relief Valve

1. Vent hole
2. Valve plate

When checking and replacing the relief valve the following should be observed:

New fuel pump with connected by-pass system, (relief valve without vent hole):

Relief valve for:

six-plunger injection pumps, Part No. 000 074 22 84

eight-plunger injection pumps, Part No. 000 074 21 84

Previous fuel pump or new fuel pump without connected by-pass system (relief valve with vent hole):

Relief valve for:

six-plunger injection pumps, Part No. 000 074 18 84

eight-plunger injection pumps, Part No. 000 074 19 84

D. FUEL RETURN LINE, MODEL 600

The fuel return line (sedan, Part No. 100 470 10 70, Pullman Sedan and Landaulet, Part No. 100 470 11 70) is supplied only as a divided line with Tee-fitting (for the by-pass connection to the fuel pump). If a fuel pump without by-pass connection is installed in the vehicle, omit the Tee-fitting. The two ends of the fuel line are to be connected with a fuel hose and secured by means of hose clamps.

The parts listed in this Service Information may be ordered from your local Mercedes-Benz Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 167	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 09/11	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FLAME ARRESTER SCREEN IN RUBBER CONNECTOR BETWEEN VALVE COVER AND AIR FILTER

A flame arrester screen is now installed in production as of the following chassis end numbers:

Model	Chassis End Number
250/8	039 282
250/8 Cp.	023 849
280 S/8	043 342

NOTE: DURING SERVICING, THIS FLAME ARRESTER SCREEN SHOULD BE CHECKED EVERY 6,000 MILES FOR CLEANLINESS. IF CLOGGED, IT MUST BE CLEANED BY WASHING IT IN A SOLVENT AND BY BLOWING COMPRESSED AIR INTO THE LONG END OF THE HOSE.

To protect the engine, it is recommended that this flame arrester, part No. 114 010 00 70, be installed during servicing in those vehicles not equipped with it.

The purpose of this screen is to prevent the effects of backfiring during cold starts, which may occur occasionally.

(over)

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WORK INSTRUCTIONS:

Disconnect the rubber elbow between the valve cover and the air filter and replace it with the new version elbow with a flame arrester screen installed. Parts are available from your Mercedes-Benz parts depot.

A warranty claim for each car may be submitted for parts plus 0.1 hours of labor.

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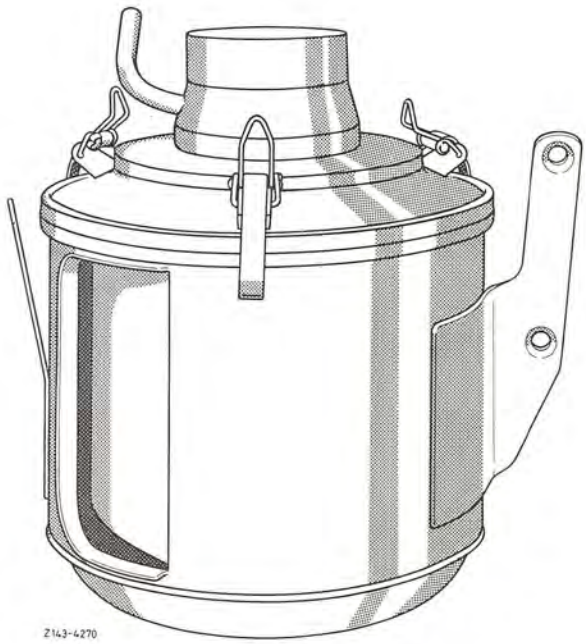
Article No.	File	Group	Application
146	SERVICE INFORMATION	09/11	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR FILTER WITHOUT AIR INTAKE PIPE -- MODELS 250SE, 280SE/8, 280SEL/8, 280SE/8 Cp/Cv AND 300SEL/8.

A new version air filter without an air intake pipe has been installed in production on the above mentioned models, beginning with Chassis End Number 064030 (see Illustration). The new version filter receives air from the engine compartment rather than from the vehicle exterior.



ILLUSTRATION

Air filter with air inlet on top of filter housing.

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This new version filter may be subsequently installed on the aforementioned models, with the following limitations:

1. MODEL 250SE

   Installation is possible only when an identation for the new version filter is built in on the right side fender well.

2. MODEL 280SE/8 Cp/Cv

   Installation is possible only on vehicles with the front end styling change beginning with Chassis End Number 003545.

PARTS REQUIRED

MODEL	PART NUMBER
250SE, 280SE/8, 280SEL/8 Sedan, 300SEL/8	007 094 20 02
280SE/8 Cp/Cv	007 094 26 02

Parts may be ordered from our Mercedes-Benz Parts Depots.

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MBSI 146, Gr. 09/11

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 111	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 09/11	PASSENGER CARS

FORT LEE, DECEMBER 1969

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR FILTER -- MODELS 230/8 - 250/8, 250 S, 280 S/8

In order to limit the length of engagement of the air filter fastening screws (1) in the carburetors, they are recently equipped with a collar nut (2) in the above mentioned models. Possible damage of the center cylindrical screws of the carburetor covers are herewith prevented. This was described in our Service Information #133, Group 07, of January 1969.

Illustration 1

1. Fastening screw
2. Collar nut

Dimension "a" = .51 + .04 in. (13 + 1 mm)

The collar nuts should be mounted in such a way that the hexagon head points toward the filter cover and the dimension "a" should be .51 + .04 in. (13 + 1 mm). (See illustration)

Initially, the filter manufacturer mounted the collar nuts occasionally with the hexagon toward the carburetor. This causes the choke flaps of the carburetor to rest against the hexagon of the collar nut and prevent their complete closing. While this may cause starting difficulties, it does not influence the safety of driving.

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Please check all affected cars coming in for service whether the collar nut is in the correct position . The following vehicles may be involved:

Model	Chassis End Number
230/8	024490 - 034762
250/8	024330 - 032027
250/8 Cp.	000085 - 001686
250 S	074470 - 074678
280 S/8	022526 - 032561

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 127	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 09/11	Passenger Cars

Fort Lee, January 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Seal Ring for Fuel Filter Element on Fuel Injection Engines

Installation of an improved seal ring for the fuel filter element began in production recently as standard equipment on cars with fuel injection engines. In case of repairs, only this improved seal ring may be used on fuel injection engines.

Any of the previous-version seal rings, part No. 000 477 09 80, in your stock should be used for the fuel filter on diesel-engine cars only.

In the future, only the improved seal ring, part No. 000 477 33 80, will be available as a spare part for both diesel and fuel injection engines.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 57	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	09	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Crankcase Ventilation System -- Types 200 D and 220 D/8

On types 200 D and 220 D/8 only, a plastic breather tube may be used in case of cold weather difficulties with the crankcase ventilation system.

The breather tube is available under part No. 129 016 01 30 through the M-B parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 111	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 14	PASSENGER CARS

Fort Lee, April 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of the Crankcase Emission By-Pass Hose

It has been found that leaks at the crankcase emission by-pass hose, between the air cleaner housing and the intake manifold, will allow water (moisture) to form in the air cleaner, which can ultimately result in water entering into the carburetor.

It is therefore very important that this by-pass hose is installed over the entire length of the metal pipe extensions at the intake manifold and the air cleaner housing.

To ensure its proper installation, the by-pass hose is to be connected first to the air cleaner housing and then slipped fully over the intake manifold pipe extension during the installation of the air cleaner.

Please inform your shop personnel of this very important procedure, which must be adhered to every time the air cleaner is reinstalled on a car.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 37	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	14	Passenger Cars

Fort Lee, November 1967

This Service Information supersedes and cancels Service Information No. 53, Group 14, August 1967, "Exhaust Manifold -- Type 200"

TO OUR MERCEDES-BENZ DEALERS

Subject: Exhaust Manifold -- Type 200

Recently, you received Service Information No. 53, Group 14, August 1967, "Exhaust Manifold -- Type 200", which pointed out that the design of the heater flap assembly (heat riser valve) has been changed and that only the new design was being furnished as a spare part. The article included a workshop procedure for modifying existing heater flap assemblies to the new version when repairs on the components are necessary.

The matter has since been reexamined, and a different procedure is now prescribed for repair of the heat riser valve. We recommend replacing the exhaust manifold in its entirety, rather than reworking any of the existing components. The new part No. for Type 200 exhaust manifold is 121 140 20 11, and it includes the complete heat riser valve assembly. This approach to the repair is less costly than the previously prescribed modification because although the parts cost is greater, the labor required is less.

Part No. 121 140 20 11 is available from your local Mercedes-Benz parts depot.

In the case of warranty repairs, submit form 403, "M-B Dealer Claim for Credit", for parts plus 2.2 hours labor.

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Article No.	File	Group	Application
MB-T 281	SERVICE INFORMATION	15	PASSENGER CARS

June, 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NICKEL-PLATED DISTRIBUTOR POINTS-ALL GASOLINE ENGINES

Distributor points installed in all Mercedes-Benz gasoline engines are now nickel plated instead of platinum plated. New version points have been installed in production since mid-January for 4 and 6 cylinder engines and since March on 8 cylinder engines.

These new points are less sensitive to "pitting" and "coating" conditions, therefore they need not be replaced as frequently.

Nickel-plated points have no visible copper layer beneath the plating of the fixed contact (since it is hidden under the nickel layer) as with conventional points and are therefore easily identifiable.

Part numbers remain unchanged, however the following parts listing is provided for your information.

MODEL	ENGINE MODEL	PART NO.
220/8 280SE/8 300SEL/8 280SL	115 920 130 980 130 981 130 983	26 000 158 22 90
280S 250/8 (2.8) 250/8 (2.5)	130 920 130 923 114 920	26 000 158 23 90
All 3.5 lit. models	M 116 A11	26 000 158 25 90
All 6.3 lit. models	M 100 A11	26 000 158 26 90

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NOTE: Presently only a limited supply of these points is available. Therefore, parts depots may be required to substitute with previous version points.

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Article No.	File	Group	Application
153	SERVICE INFORMATION	15	PASSENGER CARS

Fort Lee, March 1971

TO OUR MERCEDES - BENZ DEALERS

SUBJECT: IGNITION COIL AND SERIES RESISTANCE.
MODELS 300 SEL/8-6.3 AND 600

The above referenced models equipped with conventional coil ignition systems, have experienced both ignition coil and ballast resistor changes. These changes provide an additional reserve voltage of 2KV and supply higher ignition voltage during starting.

PRODUCTION CUTOFF:

Model	Chassis End No.
300 SEL/8-6.3	005387
600	001803

SPECIFICATIONS:

IGNITION COIL: Primary resistance - 1.2 to 1.6 ohms at 68°F (20°C)

BALLAST RESISTOR: Resistance - 1.8 ± 0.05 ohms at 68°F (20°C)

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PARTS INFORMATION

Nomenclature	Part Number	Identification
Ignition coil	000 158 27 03	red sticker on coil housing (previously yellow)
Ballast Resistor	000 158 17 45	number "1.8" stamped on red anodized clamp.

Parts may be ordered from our Mercedes Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 185	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

FORT LEE, JUNE 1970

SEP - 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SPARK PLUGS FOR PASSENGER CAR MODELS/NEW SPARK PLUG TABLE

From now on, all of our gasoline engines will be equipped with surface discharge spark plugs of the Beru and Bosch makes. No functional differences exist between these two brands. They differ only in the color of the insulator and their sealing.

1. FUNCTION

When the engine is cold, the spark jumps between the center electrode and the ground electrode (See Illustration 1).

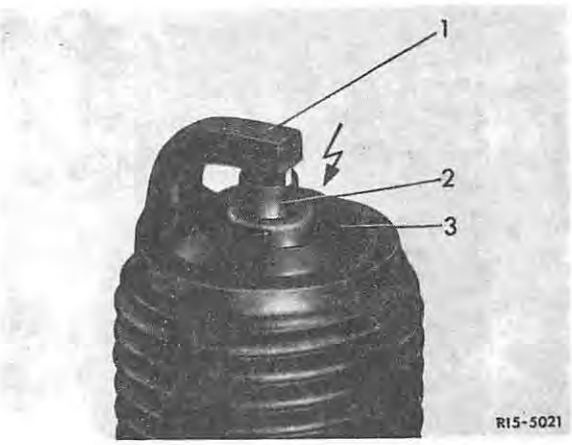

ILLUSTRATION 1

1. Ground electrode
2. Center electrode
3. Ground electrode ring

Spark jumping to ground electrode

As soon as deposits start to accumulate on the isolator with the engine warming up, the demand for voltage between center electrode and ground electrode ring will be smaller than the one between center and ground electrode. This causes the spark to jump over to the ground electrode ring.

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ILLUSTRATION 2

1. Ground electrode
2. Center electrode
3. Ground electrode ring

Spark jumping to ground electrode ring

When driving, the spark always alternates between the center electrode and various places of the ring electrode, wherever the voltage demand is lowest. The spark discharge, in normal driving, occurs on a ring surface, thus reducing burning of the electrodes.

2. ADVANTAGES OF SURFACE DISCHARGE PLUGS

A. Reduced burning of electrodes and therefore longer life.

B. Improved cold start properties of the engine. Reduced burning of electrodes causes the demand for voltage to rise more slowly.

The surface discharge plugs are more costly than the conventional spark plugs, however, the outlined advantages compensate for the higher cost. We therefore recommend to install surface discharge plugs whenever replacement is required.

3. TYPES

The Bosch surface discharge plugs have already been used for some time (for example: WG 235 T 28). The new improved version has a spark position which extends further into the cumbustion chamber. The top electrode can be adjusted more easily.

The design of the Beru surface discharge plugs is very similar.

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RECOMMENDED PLUGS:

A. Carburetor engines
Bosch: WG 190 T/30 Part No. 001 159 68 03
For Fast Driving:
Bosch: WG 215 T/30 Part No. 001 159 67 03

B. 6 cylinder fuel injection engines
Bosch: WG 215 T/30 Part No. 001 159 67 03
For Fast Driving:
Bosch: WG 235 T/30 Part No. 001 159 69 03

C. 8 cylinder fuel injection engines
Bosch: WG 175 T/30 Part No. 001 159 63 03
For Fast Driving:
Bosch: WG 215 T/30 Part No. 001 159 67 03

Bosch and Beru plugs will be factory installed. For replacement purposes, our depots will stock Bosch plugs only.

The proper electrode gaps are as follows:

A.	Carburetor engines	.024 in. (.6 mm)
B.	6 cylinder injection engines	.020 in. (.5 mm)
C.	8 cylinder injection engines	.020 in. (.5 mm)

4. PREVIOUS SPARK PLUGS

All previous spark plugs may be installed according to their heat value rating.

5. INSTALLATION

The new type of spark plugs are installed as of the following chassis end numbers:

A. CARBURETOR ENGINES

MODEL	CHASSIS END NO.
220/8	N/AV.
250/8	040 849
250/8 Cp.	001 150
280 S/8	045 501

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B. 6 AND 8 CYLINDER INJECTION ENGINES

MODEL	CHASSIS END NO.
280 SE/8, SEL/8	048 368
280 SE/8 Cp/Cv	004 530
280 SL/8	015 273
300 SEL/8	002 517

8 cylinder engine cut-offs not available.

The tightening torque for the spark plugs is 21.7 to 25.3 ft. lbs. (3.0 to 3.5 kpm). Please observe these values.

Do not over-tighten plugs, especially with a warm engine - they might be hard to remove later. Do not under-tighten either - this might reduce the heat conductivity via the seal ring.

Some spark plugs have the same type identification; they differ in the gap of their electrodes. The gap is indicated only on the package of the spark plug.

6. APPROVED SPARK PLUGS

The spark plugs approved by us are listed in our chart "Spark Plugs - Passenger Cars", Edition: March, 1970.

Attached please find one copy of this chart. Additional copies may be ordered free of charge from the Technical Literature Department, MBNA Service Division.

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ATTACHMENT

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No.	MB-T 181	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	15	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

This Service Information supersedes MB-T 157, Group 00 of February 1970.

SUBJECT: LOCATION AND COLOR-CODING OF TEMPERATURE SWITCHES ON 1969 AND 1970 MODEL YEAR PASSENGER CARS

It has been brought to our attention that some apparant confusion exists in the field regarding the location of the temperature switches used on engines of the above mentioned cars. Reference is also made to Service Information No. 99, Group 07, dated January 1970, and the blue Service Booklet "Model Year 1970, Passenger Cars U.S. Version", page 11.

On late 1969 model year cars the temperature switch 149° F (65° C) which controls the operation of the rear carburetor choke (six cylinder carburetor engine) was located on the left-hand side of the crankcase as explained in Service Information No. 99. Starting with the 1970 model year cars, this same switch, (green colored band), has been relocated to the rear part of the cylinder head (after cylinder No. 6). On page 11 of the 1970 Model Year Booklet, this switch (Illustrations 11 and 12, item 23), is shown on the front, left-hand side of the cylinder head where the sensor of the instrument cluster temperature gauge is actually located. The 63°F (17°C) temperature switch which has a yellow colored band is located between cylinders 5 and 6.

When the cooling water temperature gauge indicates overheating on tourist delivery vehicles, the temperature switch 149° F (65° C), and the sensor for the coolant temperature gauge have to be exchanged. This applies to six-cylinder carburetor engines only and to tourist delivery vehicles which have a production date before October, 1969. This exchange should be automatically performed during regular maintenance service.

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SUMMARY OF TEMPERATURE SWITCHES - PRESENT PRODUCTION

Following is a summary of temperature switches used on our present engines along with the color coding:

4 CYLINDER CARBURETOR ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover)

6 CYLINDER CARBURETOR ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover, throttle valve lifting and auxiliary electric fan on cars equipped with air conditioning)

149°F (65°C) - located at left rear of cylinder head after No. 6 cylinder. (controls operation of rear carburetor automatic choke)

63°F (17°C) - located between Nos. 5 and 6 cylinders. (controls ignition changeover and throttle valve lift)

6 CYLINDER INJECTION ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover and auxiliary electric fan on cars equipped with air conditioning)

63°F (17°C) - located in cylinder block. (controls ignition changeover)

95°F (35°C) - located in left rear cylinder head after No. 6 cylinder. (controls the fuel starting valve on intake manifold)

6.3 LITER V8 ENGINE

212°F (100°C) - located in thermostat housing. (controls auxiliary electric fan on cars equipped with air conditioning)

* 63°F (17°C) (controls fuel shut-off)

* 95°F (35°C) Thermo-time switch (controls starting valve on intake manifold)

* 41°F (5°C) Thermo-time switch (controls second stage of starting magnet on injection pump)

* NOTE: ALL THREE SWITCHES ARE LOCATED IN INSIDE REAR OF RIGHT CYLINDER HEAD.

(over)

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COLOR-CODING:

Temperature Switch	Part Number	Color Code
212° F (100° C)	003 545 24 24	Black
149° F (65° C)	003 545 22 24	Green
95° F (35° C)	001 545 92 24	None
63° F (17° C)	003 545 13 24	Yellow
41° F (5° C)	001 545 15 24	None

NOTE: ALL SWITCHES ARE MARKED WITH THE OPERATING TEMPERATURE (C°) ON THE HOUSING OF THE SWITCH.

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Article No.	File	Group	Application
MB-T 281	SERVICE INFORMATION	15	PASSENGER CARS

June, 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NICKEL-PLATED DISTRIBUTOR POINTS-ALL GASOLINE ENGINES

Distributor points installed in all Mercedes-Benz gasoline engines are now nickel plated instead of platinum plated. New version points have been installed in production since mid-January for 4 and 6 cylinder engines and since March on 8 cylinder engines.

These new points are less sensitive to "pitting" and "coating" conditions, therefore they need not be replaced as frequently.

Nickel-plated points have no visible copper layer beneath the plating of the fixed contact (since it is hidden under the nickel layer) as with conventional points and are therefore easily identifiable.

Part numbers remain unchanged, however the following parts listing is provided for your information.

MODEL	ENGINE MODEL	PART NO.
220/8 280SE/8 300SEL/8 280SL	115 920 130 980 130 981 130 983	26 000 158 22 90
280S 250/8 (2.8) 250/8 (2.5)	130 920 130 923 114 920	26 000 158 23 90
All 3.5 lit. models	M 116 A11	26 000 158 25 90
All 6.3 lit. models	M 100 A11	26 000 158 26 90

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NOTE: Presently only a limited supply of these points is available. Therefore, parts depots may be required to substitute with previous version points.

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Article No.	File	Group	Application
153	SERVICE INFORMATION	15	PASSENGER CARS

Fort Lee, March 1971

TO OUR MERCEDES - BENZ DEALERS

SUBJECT: IGNITION COIL AND SERIES RESISTANCE.
MODELS 300 SEL/8-6.3 AND 600

The above referenced models equipped with conventional coil ignition systems, have experienced both ignition coil and ballast resistor changes. These changes provide an additional reserve voltage of 2KV and supply higher ignition voltage during starting.

PRODUCTION CUTOFF:

Model	Chassis End No.
300 SEL/8-6.3	005387
600	001803

SPECIFICATIONS:

IGNITION COIL: Primary resistance - 1.2 to 1.6 ohms at 68°F (20°C)

BALLAST RESISTOR: Resistance - 1.8 ± 0.05 ohms at 68°F (20°C)

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PARTS INFORMATION

Nomenclature	Part Number	Identification
Ignition coil	000 158 27 03	red sticker on coil housing (previously yellow)
Ballast Resistor	000 158 17 45	number "1.8" stamped on red anodized clamp.

Parts may be ordered from our Mercedes Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 185	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

FORT LEE, JUNE 1970

SEP - 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SPARK PLUGS FOR PASSENGER CAR MODELS/NEW SPARK PLUG TABLE

From now on, all of our gasoline engines will be equipped with surface discharge spark plugs of the Beru and Bosch makes. No functional differences exist between these two brands. They differ only in the color of the insulator and their sealing.

1. FUNCTION

When the engine is cold, the spark jumps between the center electrode and the ground electrode (See Illustration 1).

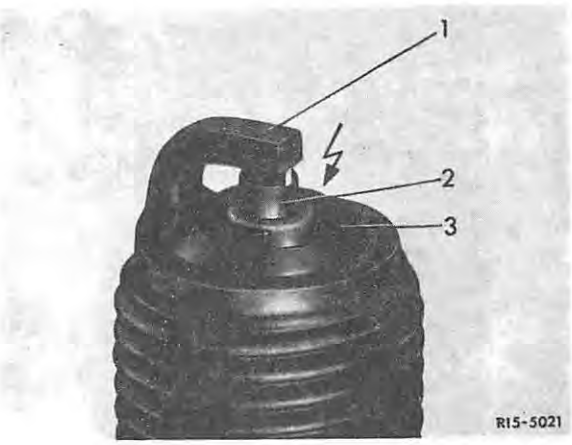

ILLUSTRATION 1

1. Ground electrode
2. Center electrode
3. Ground electrode ring

Spark jumping to ground electrode

As soon as deposits start to accumulate on the isolator with the engine warming up, the demand for voltage between center electrode and ground electrode ring will be smaller than the one between center and ground electrode. This causes the spark to jump over to the ground electrode ring.

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ILLUSTRATION 2

1. Ground electrode
2. Center electrode
3. Ground electrode ring

Spark jumping to ground electrode ring

When driving, the spark always alternates between the center electrode and various places of the ring electrode, wherever the voltage demand is lowest. The spark discharge, in normal driving, occurs on a ring surface, thus reducing burning of the electrodes.

2. ADVANTAGES OF SURFACE DISCHARGE PLUGS

A. Reduced burning of electrodes and therefore longer life.

B. Improved cold start properties of the engine. Reduced burning of electrodes causes the demand for voltage to rise more slowly.

The surface discharge plugs are more costly than the conventional spark plugs, however, the outlined advantages compensate for the higher cost. We therefore recommend to install surface discharge plugs whenever replacement is required.

3. TYPES

The Bosch surface discharge plugs have already been used for some time (for example: WG 235 T 28). The new improved version has a spark position which extends further into the cumbustion chamber. The top electrode can be adjusted more easily.

The design of the Beru surface discharge plugs is very similar.

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RECOMMENDED PLUGS:

A. Carburetor engines
Bosch: WG 190 T/30 Part No. 001 159 68 03
For Fast Driving:
Bosch: WG 215 T/30 Part No. 001 159 67 03

B. 6 cylinder fuel injection engines
Bosch: WG 215 T/30 Part No. 001 159 67 03
For Fast Driving:
Bosch: WG 235 T/30 Part No. 001 159 69 03

C. 8 cylinder fuel injection engines
Bosch: WG 175 T/30 Part No. 001 159 63 03
For Fast Driving:
Bosch: WG 215 T/30 Part No. 001 159 67 03

Bosch and Beru plugs will be factory installed. For replacement purposes, our depots will stock Bosch plugs only.

The proper electrode gaps are as follows:

A.	Carburetor engines	.024 in. (.6 mm)
B.	6 cylinder injection engines	.020 in. (.5 mm)
C.	8 cylinder injection engines	.020 in. (.5 mm)

4. PREVIOUS SPARK PLUGS

All previous spark plugs may be installed according to their heat value rating.

5. INSTALLATION

The new type of spark plugs are installed as of the following chassis end numbers:

A. CARBURETOR ENGINES

MODEL	CHASSIS END NO.
220/8	N/AV.
250/8	040 849
250/8 Cp.	001 150
280 S/8	045 501

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B. 6 AND 8 CYLINDER INJECTION ENGINES

MODEL	CHASSIS END NO.
280 SE/8, SEL/8	048 368
280 SE/8 Cp/Cv	004 530
280 SL/8	015 273
300 SEL/8	002 517

8 cylinder engine cut-offs not available.

The tightening torque for the spark plugs is 21.7 to 25.3 ft. lbs. (3.0 to 3.5 kpm). Please observe these values.

Do not over-tighten plugs, especially with a warm engine - they might be hard to remove later. Do not under-tighten either - this might reduce the heat conductivity via the seal ring.

Some spark plugs have the same type identification; they differ in the gap of their electrodes. The gap is indicated only on the package of the spark plug.

6. APPROVED SPARK PLUGS

The spark plugs approved by us are listed in our chart "Spark Plugs - Passenger Cars", Edition: March, 1970.

Attached please find one copy of this chart. Additional copies may be ordered free of charge from the Technical Literature Department, MBNA Service Division.

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ATTACHMENT

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No.	MB-T 181	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	15	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

This Service Information supersedes MB-T 157, Group 00 of February 1970.

SUBJECT: LOCATION AND COLOR-CODING OF TEMPERATURE SWITCHES ON 1969 AND 1970 MODEL YEAR PASSENGER CARS

It has been brought to our attention that some apparant confusion exists in the field regarding the location of the temperature switches used on engines of the above mentioned cars. Reference is also made to Service Information No. 99, Group 07, dated January 1970, and the blue Service Booklet "Model Year 1970, Passenger Cars U.S. Version", page 11.

On late 1969 model year cars the temperature switch 149° F (65° C) which controls the operation of the rear carburetor choke (six cylinder carburetor engine) was located on the left-hand side of the crankcase as explained in Service Information No. 99. Starting with the 1970 model year cars, this same switch, (green colored band), has been relocated to the rear part of the cylinder head (after cylinder No. 6). On page 11 of the 1970 Model Year Booklet, this switch (Illustrations 11 and 12, item 23), is shown on the front, left-hand side of the cylinder head where the sensor of the instrument cluster temperature gauge is actually located. The 63°F (17°C) temperature switch which has a yellow colored band is located between cylinders 5 and 6.

When the cooling water temperature gauge indicates overheating on tourist delivery vehicles, the temperature switch 149° F (65° C), and the sensor for the coolant temperature gauge have to be exchanged. This applies to six-cylinder carburetor engines only and to tourist delivery vehicles which have a production date before October, 1969. This exchange should be automatically performed during regular maintenance service.

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SUMMARY OF TEMPERATURE SWITCHES - PRESENT PRODUCTION

Following is a summary of temperature switches used on our present engines along with the color coding:

4 CYLINDER CARBURETOR ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover)

6 CYLINDER CARBURETOR ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover, throttle valve lifting and auxiliary electric fan on cars equipped with air conditioning)

149°F (65°C) - located at left rear of cylinder head after No. 6 cylinder. (controls operation of rear carburetor automatic choke)

63°F (17°C) - located between Nos. 5 and 6 cylinders. (controls ignition changeover and throttle valve lift)

6 CYLINDER INJECTION ENGINE

212°F (100°C) - located in thermostat housing. (controls ignition changeover and auxiliary electric fan on cars equipped with air conditioning)

63°F (17°C) - located in cylinder block. (controls ignition changeover)

95°F (35°C) - located in left rear cylinder head after No. 6 cylinder. (controls the fuel starting valve on intake manifold)

6.3 LITER V8 ENGINE

212°F (100°C) - located in thermostat housing. (controls auxiliary electric fan on cars equipped with air conditioning)

* 63°F (17°C) (controls fuel shut-off)

* 95°F (35°C) Thermo-time switch (controls starting valve on intake manifold)

* 41°F (5°C) Thermo-time switch (controls second stage of starting magnet on injection pump)

* NOTE: ALL THREE SWITCHES ARE LOCATED IN INSIDE REAR OF RIGHT CYLINDER HEAD.

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COLOR-CODING:

Temperature Switch	Part Number	Color Code
212° F (100° C)	003 545 24 24	Black
149° F (65° C)	003 545 22 24	Green
95° F (35° C)	001 545 92 24	None
63° F (17° C)	003 545 13 24	Yellow
41° F (5° C)	001 545 15 24	None

NOTE: ALL SWITCHES ARE MARKED WITH THE OPERATING TEMPERATURE (C°) ON THE HOUSING OF THE SWITCH.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 32	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

FORT LEE, JUNE 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TRANSISTORIZED IGNITION SYSTEM, 1970 PASSENGER CAR ENGINES

This will give you basic information with regard to the operation of the transistorized ignition system as used in our 1970 Passenger Car Models.

IGNITION TIMING

A different dwell angle setting has to be used on vehicles equipped with transistorized ignition systems than with previous systems. This is primarily due to the reduced wear of the contact points as a result of lower electrical power transfer. The influence of mechanical wear of the cam rider (fiber block) during break-in outweighs the wear of the contacts which leads to a widening of the dwell angle. In isolated cases, the dwell angle can widen so much, that the contacts will not open sufficiently.

In order to compensate for this initial widening of the dwell angle, the points have to be set to a smaller dwell angle when installing new points. The new dwell angle setting is used in production since early January 1970. All cars with this setting can be recognized by a blue paint dot on the vacuum advance unit of the ignition distributor.

This setting is to be checked and/or readjusted according to the values in the following chart, on all vehicles equipped with transistorized ignition systems.

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		DWELL ANGLE SETTING
MODEL	NEW SETTING	TEST VALUE AFTER ABOUT 600 MILES (A SERVICE)
220/8	47 ± 2°	50 ± 3°
250/8 Sedan 250/8 Cp. 280 S/8 280 SE/8 280 SL/8 300 SEL/8	30 ± 2°	33 ± 3°
300 SEL/9 3.5 280 SE/9 3.5	27 ± 2°	30 ± 3°

The dwell angle should only be reset when performing Service Schedule A, and only if the measured dwell angle is bigger than the above test value.

We have noticed that sometimes the ignition points may be covered with a film on vehicles equipped with transistorized ignition systems. The self-cleaning effect of the points is minimal with transistorized systems because of the very low current transfer through the points.

The build-up of the film may lead to various malfunctions, for instance, failure of the ignition timing to change over to advance timing, engine missing at high RPM's or preventing the engine from starting. If any of these conditions are encountered, the accumulated film on the distributor points should be cleaned off with a soft cloth (do not use a mechanical device for cleaning such as a file or emery cloth). At the same time, the dwell angle should be checked and readjusted, if necessary.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 4	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

Fort Lee, April 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Alternator with Screw-On Type Electric Terminals on Replacement Engines

On some of our replacement engines, in certain cases, the alternators are equipped with screw-on type electric terminals instead of plugs.

When installing a replacement engine of this type into a vehicle with the plug-in type terminal, the following modifications are necessary:

1. Disconnect the negative ground cable from the battery.

2. Cut off the cable strand near the plug connection of the alternator.

3. Strip the insulating tube by 4.7" (120 mm). When doing so, be sure that the insulation on the three cables is not damaged.

4. Trim .20" (5 mm) off from the cable ends and solder the cable terminals, part no. 900261 005000. Then, slide the protective rubber hose over each cable terminal.

   NOTE: The cable terminal on the black colored cable (terminal DF) must be trimmed by .20" (5 mm) on the side.

5. Slide the protective rubber caps over the cable terminals and connect cables on the alternator as follows:

Color	-	Red/Blue	-	Terminal D+
Color	-	Black	-	Terminal DF
Color	-	Brown	-	Terminal D-

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6. Pull the protective rubber caps over the connections.

Parts Required

Quantity	Part	Part Number
3	Cable terminal	900261 005000
3	Protective rubber hose	000 997 04 81
3	Protective rubber cap	000 546 02 35

The parts required for this job are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 107A	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

Fort Lee, March 1969

This Service Information supersedes Service Information MB-T 107, Group 15, of February 1969.

Changes: Chassis end numbers corrected and engine end numbers added.

TO OUR MERCEDES-BENZ DEALERS

Subject: Starter Motor with 1.4 HP -- Models 220/8 through 300 SEL/8 (with exception of 220 D/8)

Beginning with the engine end numbers and chassis end numbers listed below, a 1.4 HP starter motor, with an additional cable terminal #16, which is connected to the coil side of the ballast resistor, has entered series production on the above mentioned models. (The previous starters had 0.8 HP or 1.4 HP without terminal #16.)

With this starter motor the ballast resistor is by-passed during cranking so that the ignition coil receives the maximum battery voltage.

MODEL		ENGINE END NO.	CHASSIS END NO.
220/8	Standard Transmission	018 986	023 076
220/8	Automatic Transmission	004 371	
230/8	Standard Transmission	014 692	021 960
230/8	Automatic Transmission	007 138	
250/8	Standard Transmission	012 495	022 580
250/8	Automatic Transmission	006 916	
280 S/8	Standard Transmission	010 245	020 702
280 S/8	Automatic Transmission	009 574	
280 SE/8	Standard Transmission	007 505	020 500
280 SE/8	Automatic Transmission	015 209	
280 SL/8	Standard Transmission	002 795	007 005
280 SL/8	Automatic Transmission	004 417	
300 SEL/8	Standard Transmission	000 182	001 380
300 SEL/8	Automatic Transmission	0C1 254	
280 SE/8 Cp/Cv.	Standard Transmission	007 505	002 025
280 SE/8 Cp/Cv.	Automatic Transmission	015 209	

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NOTE: The 0.8 HP and the 1.4 HP starter motors installed prior to the aforementioned chassis and engine end numbers require a by-pass relay to obtain maximum battery voltage on the ignition coil during cranking. (Also see Service Information MB-T 61, Group 07, of April 1968 and Service Information No. 116, Group 00, of December 1968.)

1. Any 1.4 HP starters installed as original equipment may only be replaced by a 1.4 HP starter of either the early or late version. (If the early type 1.4 starter replaces the starter with terminal # 16, a by-pass relay has to be installed.)

2. Any previously made cars of the aforementioned models plus models 230 SL and 250 SL may easily be subsequently equipped with this new starter as follows:

   a) Cars that are not yet equipped with a series resistor by-pass relay: install new 1.4 HP starter and connect its terminal #16 with the ignition coil terminal #15 using a no. 16 gauge wire (.05" Ø or 1.5 mm^2).

   b) On cars that are already equipped with a series resistor by-pass relay: do not connect terminal # 16 of the starter, but insulate it.

This installation will not be accepted under warranty (except in case of starter motor failure within the warranty period).

Parts needed for subsequent installation:

1 starter - part no. 001 151 77 01

Model 220/8:	1 bracket	part no. 115 150 01 73
	1 bracket	part no. 115 142 01 40
	1 Allen head screw	part no. 000912 012059
	1 hex nut	part no. 000934 006006
	2 spring washers	part no. 000137 006203
Models 230/8 250/8:	1 hex head screw	part no. 000931 012137
Models 280 S/8, 280 SE/8, 250 S, 250 SE, 230 SL:	1 hex nut	part no. 000934 012008
Models 280 SL/8 300 SEL/8:	1 bracket	part no. 130 151 01 25
	1 hex nut	part no. 000934 006006
	1 spring washer	part no. 000137 006203
	2 special combination screws	part no. 914020 006002
Additionally for Model 280 SL/8:	1 hex nut	part no. 000934 012008
Additionally for Model 300 SEL/8:	1 hex head screw	part no. 000931 012137

All parts may be obtained from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 93	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 15	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS

Fort Lee, December 1968

Subject: Ignition Distributor Rotor for Passenger Car Models 1968

On model 220/8 new ignition distributors with aluminum housings have been installed since the start of production. This version has a cylindrical rotor seat and a rotor drive shaft with a diameter of 0.562" (14.27). Because of the greater diameter (as opposed to previously used distributors) be sure to use only the distributor rotor, part no. 000 158 21 31 (Bosch no. 1 234 332 109) on model 220/8 for replacement installations.

For all models equipped with distributors with a cast-iron distributor housing, a conical rotor seat, and a 0.513" (13.02 mm) Ø* rotor drive shaft, only the distributor rotor, part no. 000 158 20 31 (Bosch no. 1 234 332 088) can be used.

In this connection, please refer to Service Information No. 3, Group 15, of May 1968.

*This measurement was listed incorrectly on page 2, item #2 of the above mentioned Service Information. It was subsequently changed (to above measurement) in the "CORRECTION" note published with issue MBNA 8/68.

IMPORTANT !

By using force, the distributor rotor, part no. 000 158 20 31 can also be fitted on the rotor drive shaft of the distributor with aluminum housing. As a result, the rotor will have an irregular contact with the carbon pin of the distributor cap so that an exact firing timing is no longer obtained.

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On the other hand, if the distributor rotor, part no. 000 158 21 31, was to be fitted in the distributor with a cast-iron housing, the rotor would not be seated firmly on the distributor shaft, thus causing it to wobble considerably in its seat, leading to premature damage.

Therefore, when replacing distributor rotors, be sure you order and install the correct version specified for a particular model.

The parts required are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 81	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	15	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Protective Cover for the Distributor on 4 and 6 Cylinder Engines (except 3.0 litre engines)

To avoid accumulation of moisture in the distributor cap possibly caused by splashing water, a protective cover is now available for the above mentioned models.

This protective cover is installed in series production on top of the distributor cap with the ignition cables routed through the opening in the cover extension.

However, for subsequent installation, a longer ignition wire (25.19" = 640 mm) to the ignition coil is to be used and is available from your M-B parts depot under part no. 130 150 09 18. Depending on the position of the distributor on the different engines, this ignition wire might have to be shortened.

On fuel injection engines be sure that the ignition cables are routed underneath the fuel injection tubes. (See illustration 1.)

On model 300 SEL/8 a modification of the hose between the air suspension pump and the anti-freeze container will be required as follows:

The portion of the hose connected to the rear fitting of the anti-freeze container has to be removed and connected to the front fitting.

In making this change be sure to take the plug from the front fitting, which must be removed in order to accommodate the new connection, and use it to seal the rear fitting.

Furthermore, shorten the hose to 9-5/8 inches (245 mm) to insure clearance to the protective distributor cover.

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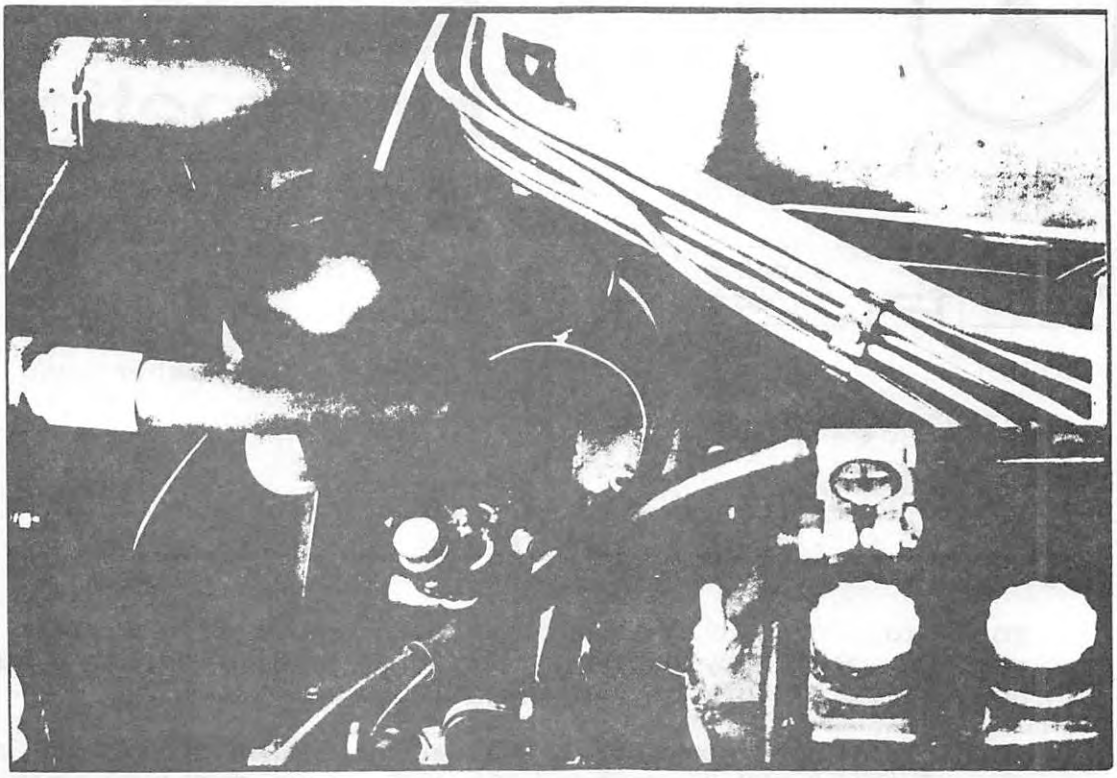

Illustration 1

The protective cover for the distributor cap is available from your parts depot under part number 000 158 06 85. As of the following chassis end numbers, this protective cover is being installed during production:

Model	Chassis End No.
220/8	006031
230/8	005732
250/8	009989
250 S	072885
280 S/8	011292
280 SE/8	010137
280 SE/8 Cp/Conv.	000986
280 SL/8	001663
300 SEL/8	000557

This product improvement may be installed on cars prior to these chassis end numbers but is not subject to reimbursement under warranty.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 3	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo 15	Passenger Cars

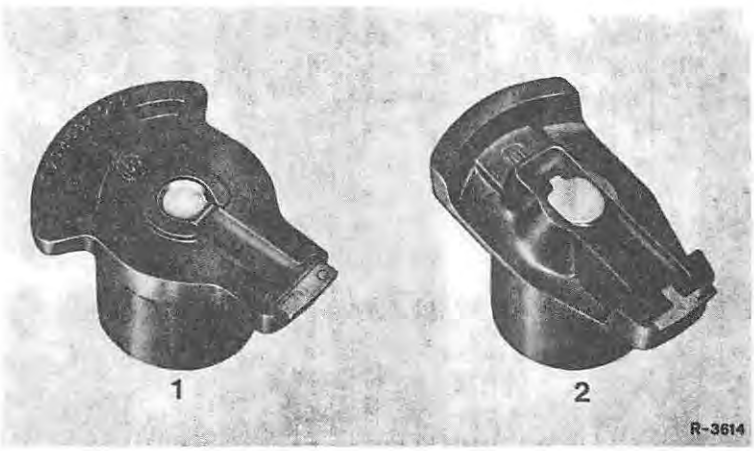
Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Ignition Distributor Cap and Ignition Distributor Rotor

Since October 1967, all cars have been equipped with new ignition distributor caps which are made of polyester and sprayed on the inside with a special coating. These modifications contribute considerably to improved starting of the engine under adverse conditions like the formation of condensation water inside the distributor caps, which sometimes can cause cross-firing.

With the employment of the new ignition distributor caps, new distributor rotors (2, illustration) also became valid for all models. The new distributor rotors are made of polyester insulating material and have polycarbonate resistor suppressors.



Ignition Distributor Rotors

1. Previous version, part No. 000 158 15 31
2. Present version, part No. 000 158 20 31

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The new ignition distributor caps and distributor rotors may be subsequently installed. They are available through the M-B parts depots under the following part numbers.

Description	Part Number	Models
Ignition distributor cap	000 158 18 02 [1]	190 c and 200
	000 158 16 02 [1]	220 b - 250 SE
	000 158 17 02 [1]	300 SE - 300 SEL
	000 158 19 02 [1]	600
Ignition distributor rotor	000 158 20 31	200 - 250 SE [2]
	000 158 21 31	220/8 [3]

1) The part numbers of the ignition distributor caps have not been changed, since the new versions can be easily recognized by their bright inner surfaces.

2) To be used on all 6-cylinder and 4-cylinder models equipped with: a cast-iron distributor housing, a conical rotor seat, and a 0.473" (12.02 mm) ø rotor drive shaft.

3) To be used only with new distributors with aluminum housings, cylindrical rotor seats, and 0.562" (14.27 mm) ø rotor drive shafts.

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C O R R E C T I O N

Re: Service Information No. 3, Group 15, dated May 1968, "Ignition Distributor Cap and Ignition Distributor Rotor"

In the above article, which was published in Service Information Issue MBNA 6/68, the measurement of the diameter of the rotor drive shaft was listed incorrectly. (See page 2, item #2.) Instead of 0.473" (12.02 mm) Ø, the diameter should read 0.513" (13.02 mm) Ø.

Please change your copies accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 143	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 15	PASSENGER CARS

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Type 600 --
I. Measurement and Adjustment of Dwell Angle and Contact Breaker Point Gap
II. Adjustment of Ignition Point

All adjustment work on the ignition system of the Type 600 should be performed in accordance with the following procedures, which encompass and supplement those provided in the Workshop Manual, Type 600.

I. Measurement and Adjustment of Dwell Angle and Contact Breaker Point Gap

A. Measurement of dwell angle and/or contact breaker point gap

1. Individually check the dwell angle of each set of contact breaker points (A and B, illustration 1). (While testing one set, put the other out of action by inserting a fiber plate.) Set the dwell angle measuring device to position "4 cylinders" and check the dwell angle at cranking speed.

   For the adjustment value, see the Workshop Manual, Type 600, Job No. 00-0.

2. Check the dwell angle of both sets of contact breaker points together. Set the dwell angle measuring device to position "8 cylinders" and operate the engine at 4,000 rpm. The dwell angle may then drop by 3°.

   Do not alter the dwell angle with the contact breaker points in motion. If the dwell angle is less than 32°, replace the contact breaker point sets (see section B).

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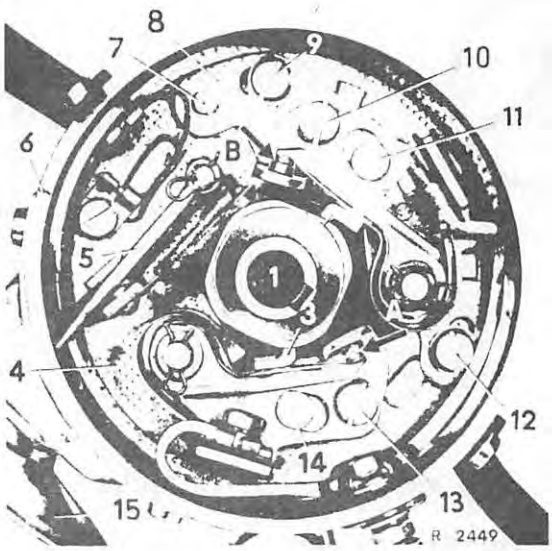
Illustration 1

Double Breaker Arm Distributor with 2 Contact Breaker Point Sets



A. Contact breaker point set (points open)
B. Contact breaker point set (points closed)
1. Distributor shaft with 4 cams
2, 3. Slide for movable breaker arm
4. Base plate with contact breaker point set A
5. Draw rod for vacuum advance
6. Mark for cylinder 1
7. Adjusting cam-head bolt (for correcting ignition interval between both contact breaker point sets)
8. Intermediate plate (adjustable on base plate) with contact breaker point set B
9, 12. Fastening screw of intermediate plate (with contact breaker point set B)
10, 13. Fastening screw of contact breaker point set
11, 14. Adjusting cam-head screw for contact breaker point gap and/or dwell angle adjustment
15. Vacuum cell with diaphragm

B. Replacement of contact breaker point sets and adjustment of dwell angle and/or contact breaker point gap

Removal

1. Remove distributor plate and distributor rotor.

2. Remove contact breaker point sets (A and B). To do so, remove cotter pins from the bearing posts and unscrew fastening screws (10 and 13) and screw for cable terminal 1. Then, remove both contact breaker point sets from the bearing posts and remove cable. (See illustration 1.)

Installation

3. Install new contact breaker point sets in reverse order of removal procedure.

   When installing new sets, make sure that the contact breaker points are parallel to each other when closed; i.e., the points of each set must be in complete contact.

   To prevent excessive wear of the slides (2 and 3), the lubrication felt for the distributor shaft should be moistened with oil (illustration 1).

4. Adjust gap of each contact breaker point set. To do so, loosen fastening screw (13) for set A and fastening screw (10) for set B. Then, by turning the cam-head screws (11 and 14), adjust gap of each set to

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approximately 0.012 - 0.016 in. (0.3 - 0.4 mm), and tighten fastening screws (10 and 13).

5. See section A for procedure for measuring dwell angle.

6. Correct dwell angle and/or contact breaker point gap. To do so, repeat measurement procedure according to section A and adjustment procedure according to section B, item 4, as often as necessary until the dwell angle of each set is correct and they are identical. If the dwell angle is too small, decrease the contact breaker point gap; if it is too large, increase the gap. For the adjustment value, see the Workshop Manual, Type 600, Job No. 00-0. Adjust the dwell angles as close to the upper tolerance limit as possible.

II. Adjustment of Ignition Point

1. Disconnect the vacuum line from the distributor. With a stroboscopic light, check ignition at cylinder 1. Operate engine at 3000 rpm and check ignition point at vibration damper. (For adjustment value, see the Workshop Manual, Type 600, Job No. 00-0.) If necessary, turn the distributor until the specified value is reached.

2. Check ignition interval between both contact breaker point sets. To do so,check ignition point of cylinder 5.

   If the measurement does not correspond with the value specified in the Workshop Manual, Type 600, Job No. 00-0, the ignition interval must be corrected as follows:

   Reset intermediate plate (8) and/or contact breaker point sets A and B with respect to each other. To do so, loosen fastening screws (9) and (12). Then, by turning cam-head bolt (7), reset the intermediate plate (8) and/or contact breaker point set B away from or toward set A (see illustration 1).

   If the intermediate plate (8) is reset, the dwell angle must be corrected in accordance with section I A.

   Varying the dwell angle results in a variation of the ignition interval; therefore, coordinate the dwell angle adjustment and the ignition interval until you achieve the specified adjustment values.

   Note: Preferably, the adjustment of the two contact breaker point sets to the specified ignition interval of 90° should be performed on an ignition test stand.

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Before making any adjustments, be sure to check the ignition distributor for sources of trouble, such as worn slides (2 and 3), excessive radial clearance of the distributor shaft (1), or a loose base plate (4), etc., and, if any are present, remedy them (see illustration 1).

3. Checking start and range of vacuum control

a. Start of vacuum control

The vacuum control movement of the ignition distributor should start at the specified engine speed, without load (see Workshop Manual, Type 600, Job No. 00-0); i.e., the vacuum control should not begin before the throttle valve begins to open. During idling, the throttle valve should be completely closed.

The point at which vacuum control movement starts can be adjusted by loosening or tightening the adjusting screw at the vacuum cell (15, illustration 1).

b. Range of vacuum control

The range of control of the ignition distributor, without load, should be measured at an engine speed of 3000 rpm (for specified values, see Workshop Manual, Type 600, Job No. 00-0). The range of control can be increased by backing out the nut on the draw rod (5) which connects the diaphragm in the vacuum cell (15) to the base plate (4) or decreased by turning this nut in (see illustration 1).

If engine pinging is noticeable within a speed range of 1500 to 2500 rpm when using a fuel with an octane rating lower than 96 (research method), the ignition point must be reset toward retard and adapted to the fuel being used.

The following rule applies in such cases: 1 octane rating number (research method) corresponds to approximately 1 crankshaft degree.

Resetting by one stroke mark at the graduated scale of the ignition distributor bearing results in a change of the ignition point of 2 crankshaft degrees.

The ignition point may not be retarded by more than 8°; i.e., to 18° before TDC at 3000 rpm. When fuel of the specified octane number is available again, the ignition point must be fully advanced to 26°.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 60	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 15	Passenger Cars

Fort Lee, January 1967

TO ALL MERCEDES-BENZ DEALERS

Subject: Wiring Connection for Alternator

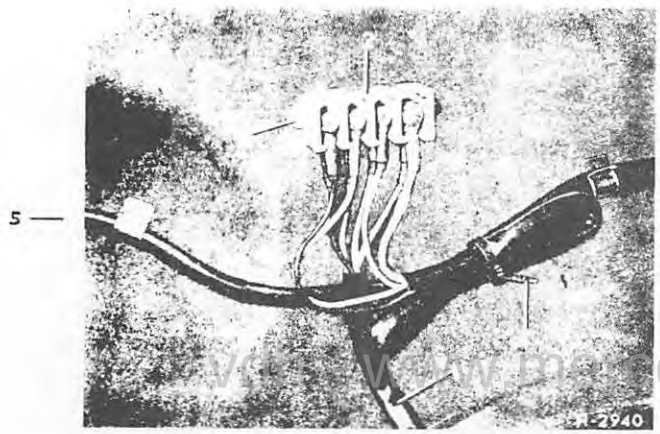
The later 1967 model cars have a non-interchangeable alternator with a three-pole pin plug installed in production, and the wiring harness is equipped with a coupling for this type of plug. The Parts Depots supply alternators either with the cable-shoe connection or the new three-pole pin plug connection. Therefore, when you have to replace an alternator and order it through your Parts Depot, be sure that you give the car engine number, to eliminate errors. For a subsequent installation of an alternator with the new plug connection and a wiring harness with cable-shoe connection, the following parts and operations are required:

I. VEHICLE TYPES 200, 200 D, 230, 230 S and 250 S (left and right-hand drive); 250 SE and 250 Coupe/Convertible (right-hand drive).

Parts Required	Part No.
Wiring harness	108 540 09 09
Wiring connector	000 546 83 41
2 sheet-metal screws M 4.2 x 16	007981 004221
Suspension loop	000 997 24 90

Working Procedure

A. Loop wires from the main wiring harness to the alternator along the main harness, and fix same with a tension clamp to the main harness (see illustration).



1. Wiring harness
2. Wiring connector
3. Sheet-metal screw
4. Tension clamp and suspension loop
5. Main wiring harness

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(over)

B. Mount wiring connector to right wheel housing. Connect wires according to color coding (see illustration).

II. VEHICLE TYPES 250 SE and 250 SE Coupe and Convertible (left-hand drive).

Parts Required	Part No.
Wiring harness	108 540 07 09
Bracket for wiring connector	108 545 05 40
Wiring connector	000 546 83 41
2 Hex. head screws M 8 x 15 DIN 933-8 G	000933 008016
2 Lock washers B 8 DIN 127	000127 008203
4 Washers 8.4 DIN 125	000125 008407
2 Sheet-metal screws M 4.2 x 16	007981 004221

Working Procedure

A. Fasten wiring connector to bracket (hex. head screw M 4 x 12).

B. Mount bracket with connector on right longitudinal member of the frame to the existing free 8 mm (5/16") diameter holes.

C. Connect wires according to color coding.

Note:

The 8 mm diameter holes on the right longitudinal member of the frame are provided for mounting the air filter on the 200 D. They are unused in all other passenger car types.

III. VEHICLE TYPES 230 SL (left and right-hand drive).

Parts Required	Part No.
Wiring harness	108 540 07 09
Bracket for wiring connector	113 545 03 40
Wiring connector	000 546 83 41
2 Sheet-metal screws M 4.2 x 16	007981 004221

Working Procedure

A. Mount bracket with connector vertically below fastening screw of the right signal horn.

B. Connect wires according to color coding.

IV. VEHICLE TYPE 600

Disconnect shoes from the wires D+, DF, and D-, and solder them to the coupling according to the color coding as follows:

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Parts Required	Part No.
Coupling	003 545 00 28

Working Procedure

A. Solder red-blue wire to clamp D+.

B. Solder black wire to clamp DF.

C. Solder brown wire to clamp D-.

The required parts are available from the Mercedes-Benz Parts Depots.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 55	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 15	Passenger Cars/ Trucks

This Service Information renders invalid:
Service Information No. 21, File Service Information Group 15, of May 1966

Fort Lee, January 1967

TO ALL MERCEDES-BENZ DEALERS

Subject: Alternator

Since the introduction of our new models in August 1965, the alternator is installed in all passenger cars except the 300 SEb/Cpe./Conv./SEL and also in the commercial vehicles LP 608/810/1013/1213 and O 302.

The alternator is completely different from the direct-current generator used up to now. This necessitates several precautionary measures for the maintenance and repair of the electrical system, which we point out as follows:

1. As long as the engine is running, neither the battery terminal cables nor the connecting cables of the alternator nor the plug of the regulator can be removed. Otherwise the diodes may be destroyed due to inductive voltage peaks.

2. Do not make the mistake of towing a stalled vehicle to start the engine without having the battery connected.

3. The alternator must not and need not be polarized. Pre-excitation is ensured as soon as the two-watt discharge indicator light in the vehicle is lit.

4. The positive and negative cables of the alternator, regulator, starter, or battery must by no means be interchanged.

5. Be careful with quick-charging devices!
While re-charging the battery with a quick-charging device, battery cables have to be removed from the terminals. If, in exceptional cases, the quick-charging device is used as a starting aid and the battery cables are not removed, the charger must be switched off before removing the charger cables. Otherwise, a very high voltage will be induced due to the sudden load decrease, and the diodes will be destroyed at once.

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Attention !

First turn down the charging current to 0 amperes with regulator switch, and then switch off charging device.

The diodes can also be destroyed by a bad contact between battery and terminal if a starting aid is used. Moreover, they are endangered if a quick-charging device or an additional battery is incorrectly connected with the vehicle battery.

6. The regulator terminals or the alternator must not be short-circuited. Neither can the positive cables be connected to ground.

7. Alternator irregularities are usually indicated by the discharge indicator lamp on the instrument panel.

   Accurate determination of the trouble is possible only on a suitable test stand with the alternator removed from the car or with suitable test device (volt-ampere tester with load resistance) when the alternator is still in the car. Precise instructions for the latter method are given in the Test Manual, part I.

   As a makeshift, the alternator and regulator can be checked in the car with a voltmeter as follows:

   Connect voltmeter to alternator terminals B+ and D-, and accelerate engine speed to about 2200 rpm. With and without any load on the alternator (headlamps and wiper motor on), the regulator voltage must show the following values:

   (Note: On models where the alternator terminals are inaccessable from the top, attach voltmeter from bottom by lifting car on hoist.)

Passenger Cars

Regulator Type (Bosch designation)	Regulator Voltage	Part No.
0 190 600 001 RS/ADN 1/14/1	13.5.....14.2 Volts	001 154 51 06* (1st version)
0 190 600 004 ADN 1/14 V	13.9.....14.8 Volts	001 154 68 06 (2nd version)

* The 2nd version regulator, plus a required flat plug, part No. 001 545 72 28, will be supplied when the 1st version regulator is ordered.

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Commercial Vehicles

Regulator Type (Bosch designation)	Regulator Voltage	Part No.
0 190 601 003 RS 5/1 B 22a LP 608, 810, 1013, 1213	13.9 - 14.8 Volts	001 154 69 06
0 192 033 001 RS 7/1 F 7a 0 302	27.6 - 28 Volts	001 154 70 06

If, under load, the regulating voltage does not lie within the specified limits, the voltage must be measured between the terminals D+ and D-. If the difference in voltage between the two measurements is less than 0.5 volt, replace the regulator. If the difference exceeds 0.5 volt, the alternator is defective, provided, however, that all cable connections are in order.

Determination of Malfunction without Measuring Device

If the discharge indicator light on the dashboard glows constantly or flashes while the engine is running, you can easily check whether the voltage regulator is at fault. Disconnect the regulator and connect a new one. If the indicator light then goes out, the old regulator is to be replaced; if the light stays on, the alternator must be replaced.

While carrying out the measurements, be sure that the ambient temperature at the regulator is approx. 20° C (70°F), and the battery should be charged to at least 60%.

Please inform your service personnel fully about the contents of this information.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 98	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 18	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Removal of Lower Part of Oil Filter Housing On Cars With Power Steering But Without Engine Oil Cooler -- Model 220/8

On model 220/8 with power steering, the rear mounting screw is being installed on the support of the power steering pump with 5 wave washers since some time. (See arrow in illustrations 1 and 2.)

INSTALLATION

Model	As Of Chassis End Number
220/8	025 115

With this modification, the distance between the rear mounting screw and the oil filter base has been reduced. In some cases, difficulties during removal of the oil filter base may occur.

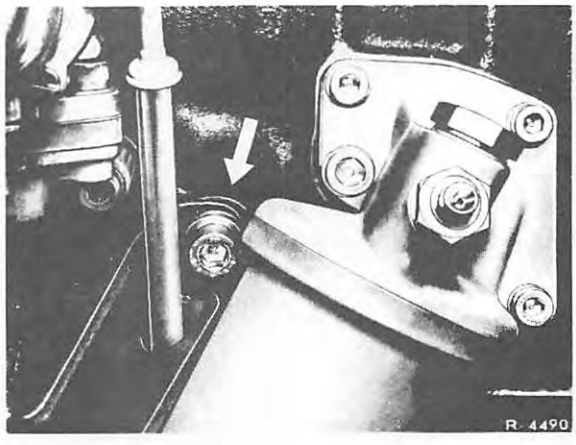

Illustration 1

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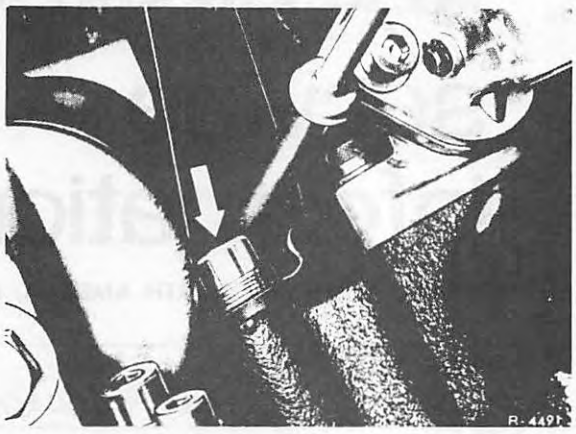

Illustration 2

If the oil filter base cannot be removed, loosen the four oil filter mounting screws and press the oil filter to the right rear as far as possible. Then, retighten the four mounting screws.

If the oil filter base still cannot be removed, remove the rear mounting screw from the power steering pump support and remove one wave washer. Reinstall mounting screw with the remaining four wave washers and torque of 43 ft. lbs. (6.0 kpm).

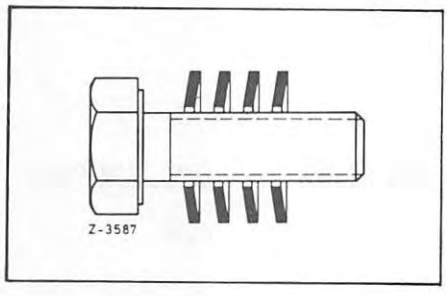

Illustration 3

NOTE: The four remaining wave washers should not be removed. When re-mounting, be sure that the rounded surface faces the head of the screw as shown in illustration 3.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	33	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	18	Passenger Cars

Fort Lee, May 1969

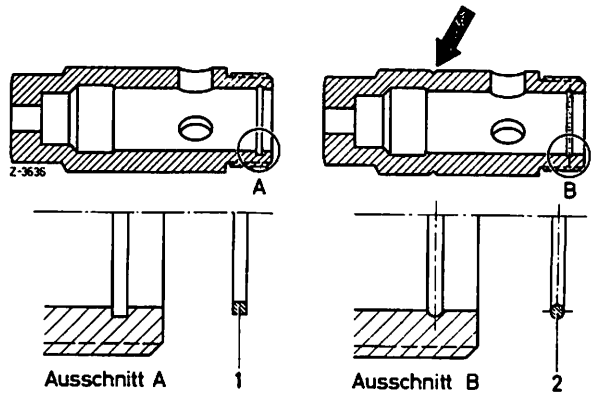
TO OUR MERCEDES-BENZ DEALERS

Subject: Oil Relief Valve -- Models 250/8, 250 Coupe, 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8

In addition to the oil pressure relief valve in the main oil channel (71.1 psi (5 at), the above mentioned models are equipped with an additional relief valve on the oil pump (opening pressure 170.6 psi or 12 at).

For identification purposes (the exterior of both relief valves are identical), the relief valve on the oil pump has been marked with the number "12" (previously with a yellow dot) on the surface of the hex head.

The lock ring 12 x 1 (part no. 000472 012000) on both oil relief valves has been replaced by a wire retaining ring C 12, part no. 073123 012300 (see illustration).



Ausschnitt = Section

It is not possible to replace the lock ring (1) with the wire retaining ring (2) or vice-versa. Relief valves with retaining rings can be identified by a groove (see arrow in illustration).

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Relief Valve	Identification	Part No.
71.1 psi (5 at)	without groove	127 180 00 15
	with groove	114 180 02 15
170.6 psi (12 at)	without groove	114 180 00 15
	with groove	114 180 01 15

The relief valves are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 101	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 18	Passenger Cars

Fort Lee, November 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Drive for Oil Pump, Distributor, and Injection Pump - Passenger Cars

For some time now, nitrided drive and intermediate gear shafts (for the oil pump, ignition distributor, and injection pump, if any) have been installed in passenger cars with gasoline engines. These shafts have a better resistance to wear and a higher surface quality.

Nitrided shafts are also being supplied by our Spare Parts Department now. The construction of the nitrided shafts is the same as that of the earlier shafts of the four- and six-cylinder engines; for differentiation, the nitrided shafts have a 1 mm-wide recess (see arrows, illustrations 1 - 5).

In case of repairs, please note that the nitrided shafts must only be installed as sets, both in engines which have already been equipped with nitrided shafts and in engines which were equipped with shafts of the earlier design. If the shafts are not installed as sets, new damage will result after a short mileage because of the different running pattern and different resistance to wear.

Shaft Sets

Types:	Part No. of Set:	Consisting of:
190 C, 200, 220 b/Sb, 230, 230 S, 250 S	180 050 05 06	illustrations 1 & 2
220 SEb, 250 SE, 250 SE Cpe./Conv.[1]	621 050 04 06	illustrations 3 & 4
220 SEb Cpe./Conv., 230 SL, 250 SE Cpe./Conv.[2], 250 SL	621 050 05 06	illustrations 3 & 5

1) with transistorized revolution counter
2) with mechanical revolution counter

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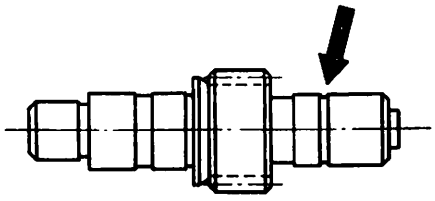

Illustration 1
Intermediate gear shaft:
Types 190 c, 200, 220 b,
220 Sb, 230, 230 S,
250 S

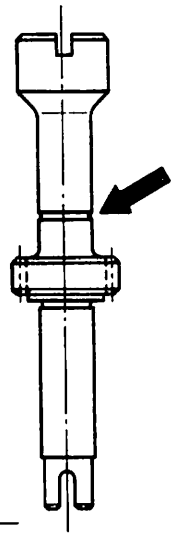

Illustration 2
Drive shaft for oil pump and ignition distributor: Types 190 C, 200, 220 b, 220 Sb, 230, 230 S, 250 S

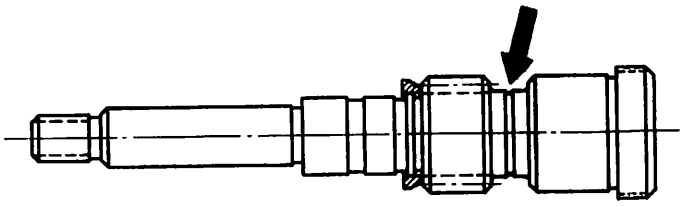

Illustration 3
Intermediate gear shaft:
Types 220 SEb, 220 SEb Cpe./Conv., 230 SL, 250 SE, 250 SE Cpe./Conv., 250 SL

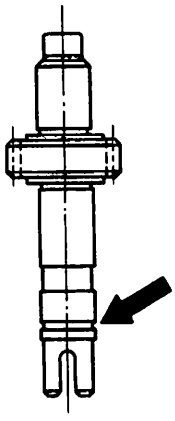

Illustration 4
Drive shaft for oil pump: Types 220 SEb and 250 SE, as well as type 250 SE Cpe./Conv. with transistorized revolution counter

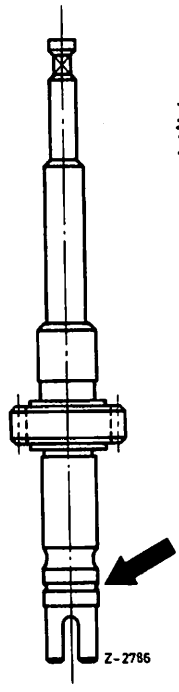

Illustration 5
Drive shaft for oil pump: Types 220 SEb Cpe./Conv., 250 SE Cpe./Conv., 230 SL and 250 SL with mechanical revolution counter

Nitrided worm-gear shafts are not available for diesel-engine cars. Shafts without annular recesses must be used as before.

The shaft sets may be ordered under the specified part numbers through your M-B Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	73	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	18	Passenger Cars

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Oil Filters for Passenger Cars

A) Break-in filter elements

When leaving the factory, the engines of our passenger cars are equipped with break-in filter elements. These are fine-pored paper filter cartridges which will remove even the smallest particles of dirt from the new engines. During the first oil change ("A" Service Inspection), the break-in elements should be replaced with regular filter elements.

On overhauled engines or if, for example, short blocks or new cylinder blocks are installed, break-in filter elements should, of course, also be used up to the first oil change.

The following break-in filter elements are recommended for the respective passenger car models:

Type	Filter	Break-in filter element part number
190 c - 300 SEL	Full-flow filter	000 184 42 25
190 Dc, 600	Combined full-flow and partial-flow filter	000 184 56 25
200 D	Combined full-flow and partial-flow filter	000 184 84 25

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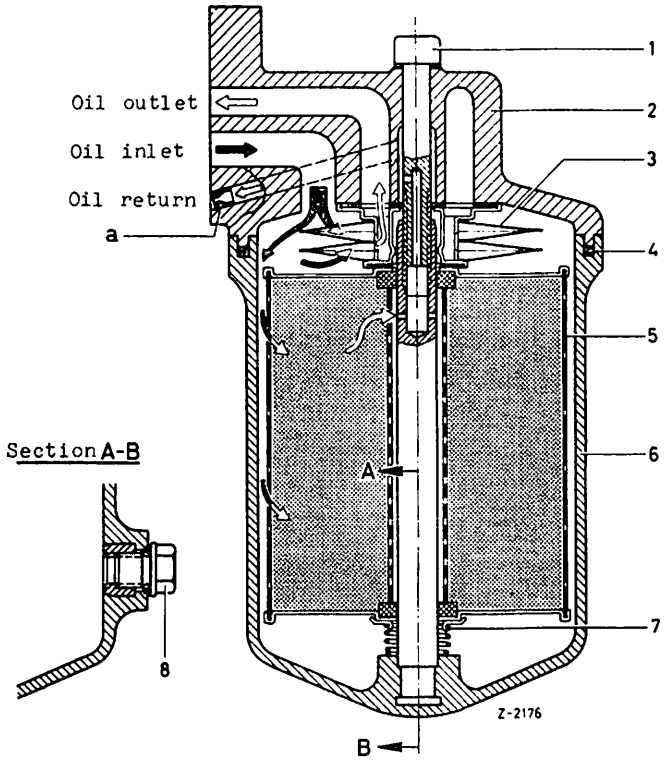
B) Pressure spring on combined full-flow and partial-flow filter

As shown in the illustration below, the pressure spring (7) in the combined full-flow and partial-flow filter of types 190 Dc, 200 D, and 600 presses both filter elements against the upper part of the filter (2) after the lower part of the filter (6) is tightened.

If this pressure spring with spring retainer (7) is not installed after the partial-flow filter element is replaced, the full-flow filter element (3) will not be pressed against the upper part of the filter (2); as a result, the engine oil will not be forced through the full-flow filter or the partial-flow filter and will return to the oil circuit without being cleaned. Consequently, the engine will be subjected to increased wear and tear, and in addition, bearing damage may result.

Therefore, when replacing the oil filter elements, care should be taken to see that the lower part of the oil filter (6) is equipped with the pressure spring (7) before the oil filter elements are replaced.



1. Fillister-head screw for mounting oil filter lower part
2. Oil filter upper part
3. Full-flow filter element
4. Rubber seal
5. Partial-flow filter element
6. Oil filter lower part
7. Pressure spring with spring retainer
8. Oil drain screw

a - By-pass bore

Please make sure your service personnel are aware of the contents of this Service Information and particularly refer personnel concerned with oil changes to the fact that the pressure spring on the combined full-flow and partial-flow filter must by no means be omitted.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 175	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 20	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ANTIFREEZE

In reference to the present controversy over the qualification of an antifreeze coolant containing anti-leak additives (Du Pont's Zerex), we would like to caution you to use only those antifreeze products which are recommended for use in Mercedes-Benz cars. These products are shown in the manual of recommended fuels and lubricants (Betriebsstoff-Vorschriften) on page 325.

Following is an excerpt of recommended antifreeze coolants which are available on the American and Canadian markets:

Caltex Antifreeze
Chevron Antifreeze
Esso Antifreeze
Gulf Antifreeze and Summer Coolant
Mobil Permazone Antifreeze
Prestone Antifreeze
Shell Antifreeze
Sinclair Antifreeze
Texaco Antifreeze
Vavoline Antifreeze

In the event that additional antifreeze coolants are approved in the future, they will be listed in supplements to the "Fuels and Lubricants Manual".

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 82	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 20	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Removal of Coolant Thermostats

It has come to our attention, that, especially in hot weather, thermostats are being removed from the cooling system since it is believed that this helps to improve the cooling effect.

The removal of the thermostat leads to an impairment of the cooling capabilities. An uncontrolled portion of the cooling water now flows within the short cycle. It directly flows through the engine and does not return through the radiator.

This may cause overheating of the engine.

For this reason, thermostats should not be removed. Please advise your customers accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	58	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	20	Passenger Cars

Fort Lee, August 1969

TO ALL MERCEDES-BENZ DEALERS

Subject: Cooling Water Thermostat

It has been brought to our attention that particularly when the ambient temperatures are consistently high, the thermostat is removed from the coolant water circulation in order to improve the cooling efficiency.

However, the removal of the cooling water thermostat makes the cooling system less efficient since a part of the coolant water flows straight back into the engine through the by-pass hose and no longer into the radiator. This situation may result in an over-heated engine.

For this reason, engines must not be operated without the thermostat. Please advise your customers accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 131	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	20	Passenger Cars

Fort Lee, July 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Year Around Anti-Freeze

Presently, all of our cars, as delivered from the VDC's, are equipped with anti-freeze. This engine coolant does not have to be drained during the summer months unless extreme operating and climatic conditions exist such as towing a trailer, extreme ambient temperatures in connection with the operation of the air conditioner, etc. In other words, only if the engine overheats consistently (needle approaches red line on temperature gauge) should the anti-freeze be replaced by clear water and a rust inhibitor.

We would also like to point out that the anti-freeze should be changed once a year since the anti-freeze and rust inhibitor lose their effectiveness if left in the engine for periods longer than one year.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 123	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 20	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Fan Noise -- Models 230/8 and 250/8

On models 230/8 and 250/8, in order to reduce the fan noise, a six-blade fan and a longer control pin to raise the engagement temperature of the viscous fan coupling (part no. 000 200 04 22) are now being installed during series production.

The engagement temperature of the viscous fan coupling is determined by the length of the control pin and the air temperature at the bi-metal spring. This new control pin is approximately 0.008 - 0.012 inches (0.2 - 0.3 mm) longer than the previously installed pin. Therefore, this modification will raise the engagement temperature by approximately 15° F to 20° F.

NOTE: The previous viscous fan coupling, part no. 000 200 03 22, with the shorter (previously installed) pin will be delivered as a spare part until the stock is depleted. Therefore, upon receipt of this previous version be sure to install a longer control pin.

Since both modifications did not enter production simultaneously, the starting chassis end numbers for the individual modifications are listed below:

a) The longer control pin entered production as of:

Model	Chassis End No.
230/8	020 026
250/8	020 867

b) The new six-blade fan entered production as of:

Model	Chassis End No.
230/8	027 979
250/8	026 928

In case of customer complaints regarding fan noises when driving at "highway" speeds, the above modification(s) may be subsequently installed in accordance with the following:

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The modification listed under "a" went into production first, therefore:

- up to the chassis end numbers listed under "a", both the new six-blade fan and the longer control pin can be subsequently installed.

- on vehicles with chassis end numbers from 020 026 (230/8) and 020 867 (250/8) up to the respective chassis end numbers stated under "b", only the new six-blade fan should be installed (as the control pin has already entered production as indicated under "a").

PARTS LIST

Six-blade fan - part no. 108 205 10 06

Control pin kit - part no. 700 200 03 99 (if required, see above)

INSTALLATION PROCEDURE - Six-Blade Fan

1. Drain the radiator until the coolant level is below the thermostat housing.

2. Disconnect the upper radiator hose from the radiator and the thermostat housing.

3. Remove the four (4) hex head screws that hold the shroud to the radiator and remove shroud.

   NOTE: On cars equipped with air conditioning units, loosen bolt for the idler eccentric and the air conditioning drive belt.

4. Remove the four (4) hex head screws that hold the fan blade assembly and the viscous fan coupling to the water pump. Then, remove the viscous coupling with fan.

5. On the workbench, remove the four (4) hex head screws that hold the 8-blade fan to the viscous coupling. Using these screws, install the new six-blade fan.

INSTALLATION PROCEDURE - Control Pin

6. Remove the bi-metal spring at the front face of the viscous coupling by pushing the thermostat spring slightly down (DO NOT BEND SPRING) and sliding the spring over to the side with the open slot. This will release it from the holding bracket.

7. Remove the now exposed control pin from the viscous fan coupling and measure its length with a micrometer.

8. Select a control pin (from the kit) which is 0.008 to 0.012 inches longer than the pin removed from the viscous fan coupling.

(continued)

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9. Place the new longer pin, with the de-burred end into the viscous fan coupling and reinstall the bi-metal spring.

   NOTE: The bi-metal spring has to be installed right-side-up, so that the words "This Side Up" are readable after installation.

10. Reinstall the viscous fan coupling.

11. Refill the radiator with coolant, warm up the engine and check the cooling system for water leaks.

A claim for parts plus 1.3 hours labor for the installation of the six-blade fan plus an additional 5 minutes for the installation of the longer control pin may be submitted for the preceding modifications on models 230/8 and 250/8 with or without air conditioning.

The parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 82	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 20	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Cooling Water Thermostat

In Service Information No. 21, Group 20, of April 1968, we pointed out that the cooling water thermostat is frequently unjustifiably removed and replaced. Upon examination of returned thermostats it has been shown that 60% of those returned were in perfect condition.

Therefore, in the case of customer complaints, the cooling water thermostat should be thoroughly inspected (as described below) to prevent any unnecessary removal.

- If the sealing plate has uniform contact all around, it can be assumed that the amount of water leaking through the thermostat is too insufficient to cause the temperature level of the cooling water to deviate.

- If it is found that the thermostat is being prevented from closing due to accumulations of metal chips or other particles, in most cases, after cleaning, the thermostat can be used again.

However, if it is found that the cooling system contains dirt particles, the entire cooling system should be flushed. To do so, remove all hose connections, including the cooling water thermostat, from the engine. Then flush out the engine with clear water under high pressure via the core plugs located on the side of the cylinder crankcase.

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Article No.	File	Group	Application
38	Service Information	20	Passenger Cars

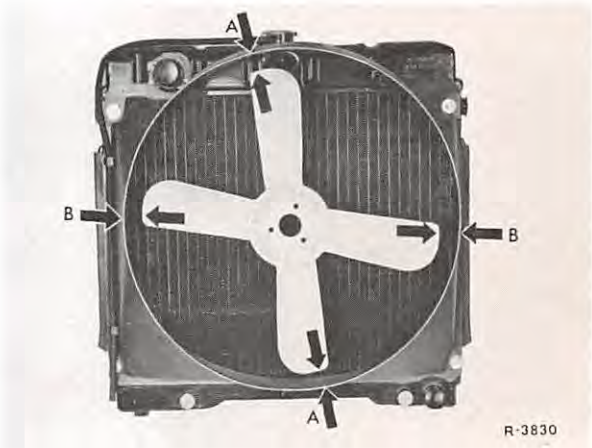
Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Radiator Shroud -- Models 220/8 through 250/8

Models 220/8 through 250/8 are equipped with a radiator shroud which closely surrounds the fan (see illustration). To prevent the fan from hitting the shroud - through movements of the engine - the shroud must be carefully adjusted to the values given in the following table. If it is adjusted to smaller values, damage to the radiator shroud may result.

MODEL	DIMENSION A	DIMENSION B
220/8 220 D/8	1 in. (25 mm)	.8 in. (20 mm)
230/8 250/8	1 in. (25 mm)	.6 in. (15 mm)



The attachment holes on the shroud are made in such a way that there is ample room for both horizontal and vertical adjustments.

The adjustment of the radiator shroud must be checked and, if necessary, corrected during the next service inspection or prior to delivery on all cars with chassis serial end numbers below those listed here:

220/8	-	1050	230/8	-	1605
220 D/8	-	3151	250/8	-	4802

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No. 21	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 20	PASSENGER CARS

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Cooling Water Thermostat

The cooling water thermostats used on M-B engines have opening and closing temperatures which guarantee that the engine operating temperatures remain within the permissible range.

Deviations from prescribed temperatures - which can be determined by the cooling water temperature gauge - may be caused by various malfunctions of the cooling system, other than a faulty thermostat. Therefore, in such cases, a check should be made first of all of the following possible malfunctions, since only the elimination of the actual cause will lead to a permanent remedy.

- Inaccurate gauge
- Leaky cooling system
- Faulty water pump
- Contaminated radiator block
- Worn, or poor tension of, water pump and fan V-belts
- Formation of scale on, or faulty, thermostat

In cases of deviations from prescribed operating temperatures, the cooling water thermostat is frequently replaced. Upon examination, however, most of the returned thermostats are found to be in perfect condition. We would therefore like to ask you once again to determine the actual cause in such cases and to replace the thermostat only if the cooling system is found to be in good order.

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No.	MB-T 38	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 20	Passenger Cars

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Three-Groove Water Pump Pulley -- Type 250 SL

Starting with engine serial end number 003452, a new three-groove water pump pulley, part No. 129 205 03 10 (early version) or 129 205 04 10 (later version), was introduced into series production. This new pulley can easily be identified by its grey color.

The mounting flange on the new pulley is 0.098 in. (2.5 mm) thicker than the flange on the previous version; therefore, a new spacer, part No. 129 205 01 26, which is 0.098 in. (2.5 mm) shorter than the original spacer must be installed with the new pulley.

When installing an air-conditioning unit in a 250 SL with a serial end number below 003452, the original three-groove water pump pulley (black color) must be removed and the new pulley and spacer installed in its place. The new type pulley and spacer are included in the special kit, part No. 700 831 12 99, which is used for installing an air-conditioning unit in the 250 SL (see Service Information No. MB-T 15, Group 83, of May 1967).

Pulleys of the previous version, part No. 129 205 00 10, may be used up as replacement parts on 250 SL's not equipped with air conditioning and may be installed on cars with standard transmission from chassis serial end No. 002 219 and on cars with automatic transmission from chassis serial end No. 002 354. Do not install any of the previous version pulleys on 250 SL's with serial end numbers below the ones given.

When ordering a replacement pulley for a type 250 SL, specify if the car is equipped with air conditioning to ensure delivery of the proper pulley.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 116	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 20	Passenger Cars

Fort Lee, December 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Viscous Fan Coupling

The secondary member of the viscous fan coupling is seated in a single-row needle bearing on its drive shaft. This seating arrangement results, necessarily, in a tilting play of the secondary member, which can be measured at the tip of the fan blade by moving it back and forth when the engine is cold. The maximum permissible play, as measured at the tip of the blade, is 0.1 in. (2.5 mm).

Since this is generally not well-known, as is evidenced by the frequent replacement of perfect fan couplings, we would like to point out that a viscous fan coupling should only be replaced if the tilting play of its secondary member exceeds 0.1 in. (2.5 mm).

Costs arising from the unjustified removal of a fan coupling will not be refunded in the future.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 115	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 20	Passenger Cars

Fort Lee, November 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: V-belts - Passenger Cars

Upon investigating reports about premature failure of V-belts, we usually find that the belts involved are not approved by us for use in M-B cars. Examinations usually show unpermissible elongation, premature cracking, and/or loosening of the cloth cover.

The V-belts approved by us are of the particularly low-stretch type and will not show early failure symptoms such as those mentioned above. For this reason, we would like to remind you once again to make sure that only M-B-approved parts are used in M-B cars.

The only way you can be sure of receiving V-belts which are "Mercedes-Benz Original Spare Parts" and which will meet all requirements is by ordering them through your M-B Parts Depot. Part numbers for approved V-belts are listed in our spare parts catalogs.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 83	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 20	Passenger Cars

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Radiator Mounting - Types 200/200 D and 190 c/190 Dc

In the above types, up to now the radiator has been mounted between the left and right air deflectors in the cowl with two or three hexagon-head screws on either side.

To achieve better elasticity of the radiator mounting in the cowl on types 200 and 200 D, the two upper elongated holes for fastening the radiator on the left and right sides have been lowered 60 mm (2.362 in.). The new radiator, part No. 110 500 16 03, with the modified mounting holes is being installed in the types 200 and 200 D from the following chassis end numbers, respectively:

Type 200 - from chassis end No. 184881

Type 200 D - from chassis end No. 344932

After the stock of the previous version radiator, part No. 110 500 08 03, is exhausted, only the new version radiator will be available as a replacement part.

When replacing a radiator of the previous version with the new version, one additional elongated hole (B of drawing) must be drilled into each air deflector to accomodate the modified mounting holes - see drawing.

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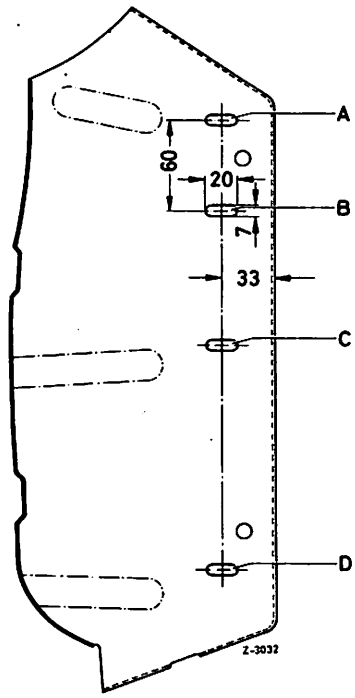
Standard radiator mounting:	Type:
A, C and D	190 c, 190 Dc
A and D	200 up to chassis end No. 184880 200 D up to chassis end No. 344931
B and D	200 from chassis end No. 184881 200 D from chassis end No. 344932



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No. 18	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 20	Passenger Cars

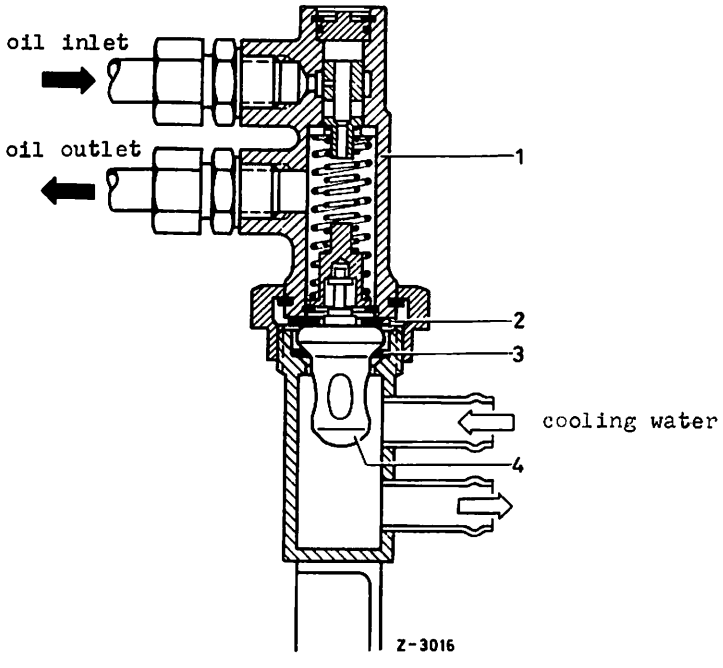
This Service Information renders invalid: Service Information No. 68, Group 20, of October 1965

Fort Lee, April 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Hydraulic Fan Coupling

Types 300 SE passenger cars with air conditioning units and all type 600 vehicles are equipped with a thermostatically-operated control valve for the hydraulic fan coupling (illustration 1).



1. Control valve
2. Gasket
3. Gasket
4. Thermostat

Illustration 1

In cases where the temperature of the cooling water rises above 95°C (200°F) and no irregularity can be found in the engine cooling system, the fan coupling or control valve (1) must be tested to determine if it is functioning properly. To test the valve, the forces acting upon the fan blade should be measured with a tension spring scale under various operating conditions as follows.

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Testing the fan coupling

1. Place a rubber ring (O-ring) around the end (see Table 1, "Lever Arm on Fan") of a fan blade and connect tension spring scale at right angles to fan blade. Be sure to hold the scale in line with the plane of the fan (not toward the front, not toward the rear, but in line with the plane of the fan). See illustration 2.

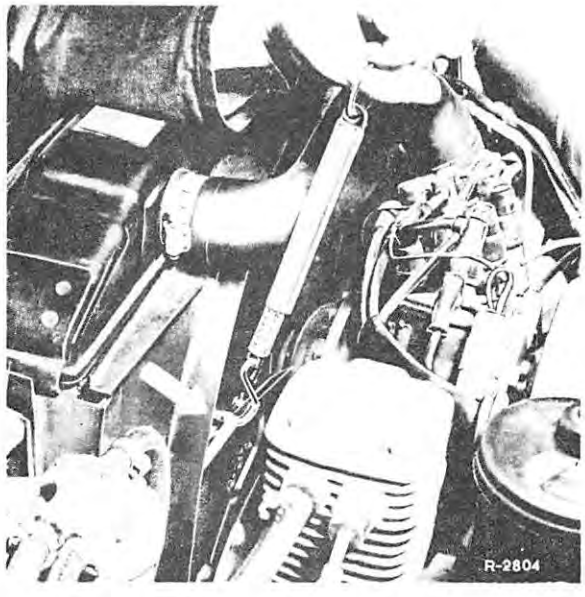

Illustration 2

2. Bring engine to test speed and compare test values (see Table 1).

Table 1. Test Values

Type	Engine Speed* (rpm)	Water Temperature - °C (°F)	Lever Arm on Fan- mm(in.)	Load on Tension Spring Scale - kp (pounds)
600	3000	102(216) 91-93(196-200) below 70(158)	239(9.4094)	5.0(11.025) 2.0(4.410) min. 0.3(0.662)
300 SE	3000	102(216) 91-93(196-200) below 70 (158)	230(9.0551)	min. 3.5(7.718) 1.00 - 2.95 (2.205 - 6.505) min. 0.2(0.441)

* Higher readings obtained at these speeds influence the cooling efficiency of the system more favorably.

3. If the test values are not reached, proceed as follows:

   a. Remove control valve (1 of illustration 3).

      Note: Whenever the control valve or the thermostat is removed or replaced, the gaskets (2 and 4 of illustration 3) must also be replaced. If the gaskets are not replaced, the old gaskets may no longer seal perfectly, and engine oil may penetrate into the water circuit.

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1. Control valve
2. Sealing ring, part no. 189 997 01 40
3. Thermostat
4. Sealing ring, part no. 007603 016102
5. Cooling water pipe

Illustration 3

b. Determine control valve version according to Table 2.

1) If control valve version no. 1 was installed, replace it with either control valve version no. 2 or no. 3 with the reinforced tension spring, since version no. 1 is no longer being used.

If you replace version no. 1 with version no. 3, the new pressure oil line, part no. 100 180 11 27, should be installed at the same time.

2) If control valve version no. 2 or no. 3 was installed, replace it with an identical,new control valve.

Table 2. Control Valve Version Numbers

No.	Part No.	Note:	Identification Marking
1	100 993 76 01	---	---
2	100 200 00 31	reinforced control spring	white spot
3	100 200 01 31	mount reinforced control spring and control valve only with pressure oil line, part no. 100 180 11 27	two white spots

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The function of control valve version no. 3 is the same as that of control valve version no. 2, with the exception that the upper union of version no. 3 has a thread of M 16 x 1.5 mm. The thread of the lower union (M 14 x 1.5 mm) remains unchanged. The threaded connections are different sizes so that errors will be avoided when connecting the lines.

If a new control valve does not correct the problem, the thermostat (3 of illustration 3) should be replaced (see note of step 3a and illustration 3).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. S 12	Ordner File Classeur Archivador Special Versions	Gruppe Group Groupe Grupo 20	Passenger Cars

Fort Lee, January 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Subsequent Installation of Viscous Fan Coupling -- Types 200, 200 D, 230, and 230 S

If an air-conditioning unit is subsequently installed in any of the above types, the installation of a viscous fan coupling is imperative. And, to install the viscous fan coupling, the water pump and its pulley have to be replaced with shorter versions and the 4-blade fan has to be replaced with a 6-blade fan.

Note: The viscous fan coupling may not be subsequently installed in type 200 prior to chassis end No. 140597 or in type 200 D prior to chassis end No. 272854.

Contrary to the hydraulic fan coupling, the viscous fan coupling is not connected to the engine oil circuit. When starting the engine (cold start), the fan rotates at a higher speed for approximately 1 to 3 minutes until the fluid has passed from the working chamber (14) back into the storage chamber (13) - see illustration 1. Then the fan coupling disengages and causes the fan speed to decrease to approximately 25-30% of drive speed. The cooling capacity of the engine is thus reduced so that the engine quickly reaches its operating temperature under load. As the radiator temperature rises, the fan coupling is engaged via the bimetallic strip (8), which is located at the front side of the fan coupling; i.e., as the radiator temperature increases, the fan speed also increases but will not exceed 3,500 rpm.

Installation of the Viscous Fan Coupling

1. Drain cooling water. Then remove radiator.

2. Remove fan and complete water pump.

3. Screw new water pump (1) to water pump housing, using a new gasket (not included in required parts list) - see illustration 2/3.

   Important!

   If water pump housing is mounted with hex-head bolts of quality 8 G, remount it with hex-head bolts of quality 10 K.

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4. Attach fan (7) to viscous fan coupling (3) with spring washers (8) and hex-head screws (9), and tighten hex-head screws with a torque of 14.5 ft. lbs. (2 mkp).

5. Attach viscous fan coupling, together with fan and pulley, (2) to water pump with hex-head collar screws (4) - tightening torque: 14.5 ft. lbs. (2 mkp).

   On type 230 S, also install hub ring (5) and centering bushing (6) between pulley and viscous fan coupling (see illustration 3).

6. Reinstall radiator, replenish cooling water, and pressure-test cooling system.

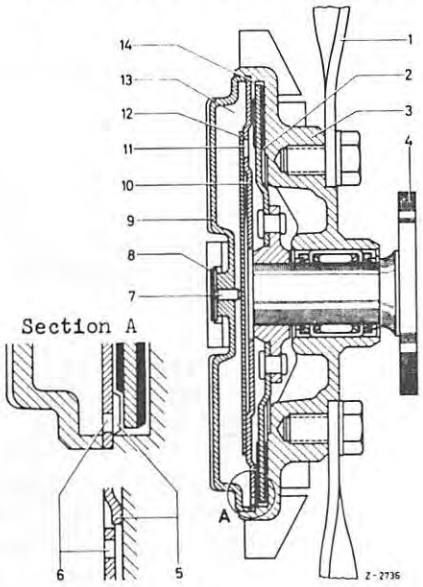

Illustration 1

Section of Viscous Fan Coupling

1. Fan
2. Drive member (primary)
3. Coupling member (secondary)
4. Drive shaft with flange
5. Oil scraper lug
6. Return flow bore
7. Thrust pin
8. Bimetallic strip
9. Cover (secondary member)
10. Spacer washer
11. Feed bore
12. Valve lever
13. Storage chamber
14. Working chamber

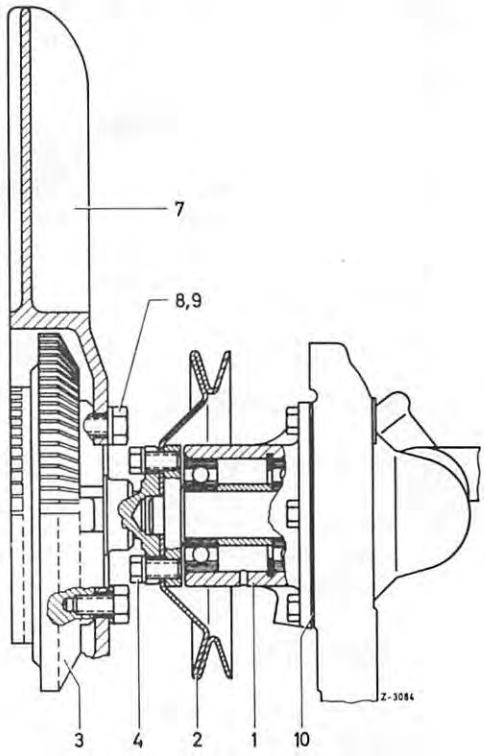

Illustration 2

Viscous Fan Coupling -
Types 200, 200 D, and 230

1. Water pump
2. Pulley
3. Viscous fan coupling
4. Hex-head collar screw
7. Fan
8. Washer
9. Hex-head screw

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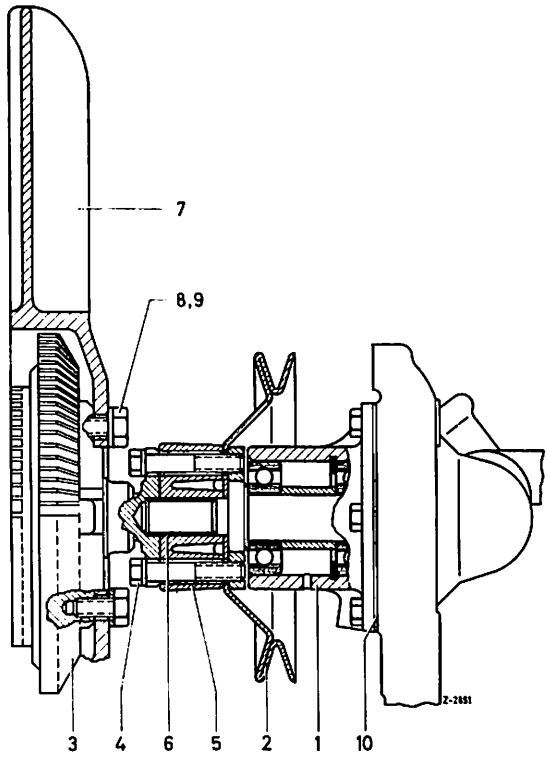
Illustration 3

Viscous Fan Coupling -
Type 230 S

1. Water pump
2. Pulley
3. Viscous fan coupling
4. Hex-head collar screw
5. Hub ring
6. Centering bushing
7. Fan
8. Spring washer
9. Hex-head screw



Checking the Viscous Fan Coupling in the Car

As mentioned at the beginning of this information, immediately after cold starting the car, the fan will rotate at a higher speed for approximately 1 to 3 minutes until the fluid has passed from the working chamber back into the storage chamber. Then the fan coupling disengages, and the fan speed decreases to approximately 25-30% of drive speed.

If the engine is run for a short period of time and turned off while still cold, you should be able to turn the fan by hand with just a slight amount of force. Then the coupling is fully disengaged. The coupling is fully engaged when the cooling air discharged from the radiator reaches a minimum temperature of approximately 144° F (62° C).

Transport and Storage of Viscous Fan Coupling

Viscous fan couplings must be transported and stored in a vertical position. If they are stored in any other position, fluctuations in atmospheric pressure and changes in temperature may cause small quantities of oil to seep through the bearing or thrust pin underneath the bimetallic strip.

With the fan shaft in horizontal position, the oil fills only part of the lower half of the coupling during operation and does not reach the bearing seals or thrust pin.

Repair of Viscous Fan Coupling

Viscous fan couplings cannot be repaired. Defective units must be replaced.

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Required Parts

Item	Qty.	Description	Part No. or DIN Designation 200, 200 D, 230	230 S
1	1	Water pump	121 200 08 20	
2	1	Pulley	121 205 03 10	
3	1	Viscous fan coupling	000 200 03 22	
4	4	Hex-head collar screw M 8 x 14	900170 008011	-
	4	Hex-head screw M 8 x 40	-	900170 008012
5	1	Hub ring	-	108 205 00 26
6	1	Centering hub	-	108 205 00 50
7	1	Fan	108 205 01 06 1)	
	1	Fan	180 205 15 06 2)	
8	4	Spring washer B 8	000137 008202	
9	4	Hex-head screw M 8 x 18	000933 008028	

1) For types 200, 200 D, and 230 S
2) For type 230

The required parts may be ordered through your Mercedes-Benz Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 128	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 22-24	PASSENGER CARS

Fort Lee, February 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR ENGINE MOUNT -- MODELS 220 D/8 to 220/8 (MODEL SERIES W 115)

The four-cylinder models are now equipped with a modified rear engine mount starting with the following chassis end numbers:

MODEL	CHASSIS END NUMBER
220 D/8	088 328
220/8	038 642

The new engine mount may also be installed in case of complaints about knocking noises on the rear engine mount when driving on poor roads or when starting or stopping the diesel engine.

PARTS REQUIRED

QUANTITY	DESCRIPTION	PART NUMBER
1	Rubber mount	115 240 21 18
1	Retainer	115 240 03 40
1	Nut	115 242 03 72
1	Allen head screw	000912 008054

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The spring washer and shim, fitted below the allen head screw of the old rubber mount, may be reused. Tighten screw to 25.3 ft. lbs. (3.5 kpm).

NOTE: THIS ENGINE MOUNT MAY ALSO BE INSTALLED IN MODELS 230/8 TO 250/8 CP., IF JUSTIFIED COMPLAINTS EXIST ABOUT NOISES ON THE REAR ENGINE MOUNT. IT SHOULD BE POINTED OUT, HOWEVER, THAT DRIVING MAY BECOME A LITTLE LESS COMFORTABLE (ROUGHER ENGINE SUSPENSION) IF SUCH MOUNTS ARE INSTALLED IN THESE MODELS.

The required parts may be ordered through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 85	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 22-24	Passenger Cars

Fort Lee, November 1968

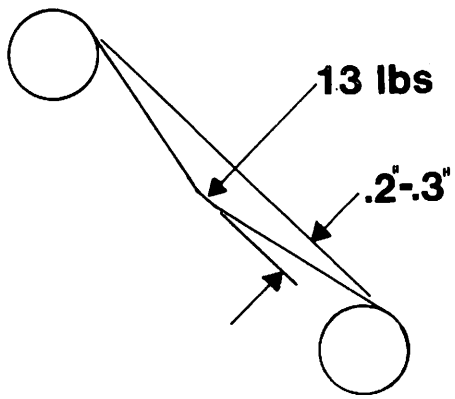
TO OUR MERCEDES-BENZ DEALERS

Subject: V-Belt Drive -- Model 600

In Service Information No. 4, Group 22-24, of March 1968, you were informed that beginning with engine end no. 001 006, model 600 would be equipped with a seven-groove belt pulley on the crankshaft instead of the five-groove one which had been used. We also advised you that as part of this modification, 60° wide-angle V-belts would be installed for the left and right alternators instead of the previous narrow V-belts.

The 60° wide-angle V-belts (called Polyflex V-belts) are more susceptible to slipping than the conventional type V-belts. Therefore, strict attention must be paid to achieve the correct tension of the V-belt as prescribed below:

Tighten so that under a force of 13 lbs. a depression of .2 to .3 inches is achieved (previously .3 to .4 inches). (See illustration below.)



After replacing a V-belt, take a test drive. Then immediately retighten the belt.

NOTE: New V-belts expand most of all in the initial part of service. Therefore, they must be checked and retightened, if necessary, after covering approximately 300 to 600 miles (500 to 1,000 km).

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Special care should be taken to ensure that no oil spills on the Ployflex V-belts during installation, repair work or under regular driving conditions. Any indication of an oil leak in the engine compartment which might spill on the V-belt must, therefore, be taken care of and eliminated immediately.

The Polyflex 60° wide-angle V-belts are available from your Mercedes-Benz parts depot under the following part numbers:

(As seen in driving direction)

For right alternator - part no. 001 997 29 92

For left alternator - part no. 001 997 30 92

NOTE: The Polyflex V-belts may not be used in engines equipped with the previously used five-groove belt pulley.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 4	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 22-24	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Belt Drive Modification on Type 600

A. Seven-Groove Belt Drive Adopted

Beginning with engine end No. 001006, the Type 600 is equipped with a seven-groove belt pulley on the crankshaft instead of the five-groove one which has been used. One new V-belt will be applied to the air compressor, and, on vehicles equipped with air conditioner, one new V-belt will be applied to the refrigerant compressor, making a total of two belts for operating each of these devices. From the crankshaft to the air compressor, the dual-belt drive is without a tightener idler pulley, but the dual-belt drive of the refrigerant compressor has a dual inside tightener idler pulley. As part of this modification, 60° wide-angle V-belts will be installed for the left and right alternators instead of the previous narrow V-belts.

A subsequent conversion from a five-groove to a seven-groove pulley is not possible for technical reasons.

The arrangement and descriptive data for the seven V-belts is as follows:

ARRANGEMENT OF V-BELTS (FROM FRONT TO REAR)

V-Belt	Path	Version	Dimension	Part Number
"a" (60° wide-angle V-belt)	From crankshaft to left alternator		7 M 950	001 997 30 92
"b"	From crankshaft to comfort-system hydraulic pump and water pump	standard	DA 12.5 x 1025	000 997 70 92
		USA	DA 12.5 x 1050	000 997 96 92
"c" (2 belts)	From crankshaft to air compressor via water pump	standard	DA 12.5 x 1500	001 997 32 92
		USA	DA 12.5 x 1525	001 997 33 92

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ARRANGEMENT OF V-BELTS (FROM FRONT TO REAR) (CONT.)

V-Belt	Path	Version	Dimension	Part Number
"d" (2 belts)	From crankshaft to air conditioner refrigerant compressor via water pump	standard	DA 12.5 x 1600	001 997 34 92
		USA	DA 12.5 x 1625	001 997 35 92
"e" (60° wide-angle V-belt)	From crankshaft to right alternator		7 M 800	001 997 29 92

B. Replacing V-Belts and Checking and Adjusting Tension

A regular check-up of the V-belts for tension and condition (wear) is indispensable for satisfactory service life. In order to prevent damage to the individual power consumers, slack or damaged V-belts should be replaced without delay.

It must be noted that if, for instance, only the rear V-belt "e" is to be replaced, the front V-belts "d" to "a" must also be removed for this operation. (When installing the V-belts, start with "e" and mount V-belt "a" last.) Therefore, if individual V-belts have to be replaced after an extended operating time, we recommend replacing the remaining V-belts at the same time.

V-belts of a dual-belt drive may not be replaced individually; they must be replaced in pairs. This enables an equally divided "pull" between the two.

All V-belts are to be tightened on the unit(s) they drive. The V-belts "d" are to be initially tightened by positioning the air conditioner refrigerant compressor to the outside. Then apply the dual inside tightener idler pulley and retighten the belts.

New V-belts expand most of all in the initial part of service. Therefore, they must be retightened after they have covered 600 miles (approx. 1,000 km).

SPECIFICATIONS FOR V-BELT TIGHTENING

	V-Belt "a" and "e"	V-Belt "b" and "c"	V-Belt "d"
Tighten so the depth of indentation or depression by vertical pressure (or pull) of 13½ lbs. (6 kp) on the V-belt by a spring scale is:	.35 to .43 inches (9 to 11 mm)	.24 to .28 inches (6 to 7 mm)	.47 to .59 inches (12 to 15 mm)

The prescribed torque for tightening the nut which fastens the belt pulley to the crankshaft is 283 to 296 ft.-lbs. (40 ± 1 mkp).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 108	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 25	Passenger Cars

Fort Lee, December 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Standard Clutch -- Types 200 to 300 SE

When complaints are received concerning "stiffness of the clutch", "sticking of the clutch", and "squeaking of the clutch", the following are most likely the causes and remedies:

A. Stiff or Sticking Clutch

Causes	Remedies
a. Sticking of pistons in clutch master or slave cylinder	Check cylinder walls of clutch master and slave cylinders. If only shiny spots are apparent, it is sufficient to grease cylinder wall and piston with blue Teves Vaseline. However, if a cylinder and piston are found to be scored, that cylinder must be replaced.
In Types 250 S to 300 SE, clutch pedal sticking may also be caused by the throttle in the pressure hose at the line connection.	In this case, the throttle bore in the pressure hose may be enlarged to a maximum diameter of 0.118" (3 mm). (After boring, carefully clean metal chips from the hose.)
b. Scoring or seizing of throw-out bearing on the guide neck of the transmission front cover	To counteract seizing, tempered (nitrided) transmission covers have been installed for some time in production according to the following table. The tempered cover bears part No. 111 260 08 21 and is distinguished by its dull-gray surface. Old non-tempered covers can be replaced with the new version in case of complaint on the types shown in the table.
	Even if a tempered cover is in-

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Causes	Remedies
	stalled, slight sticking of the throw-out bearing may occur sometimes, due to the rough surface of the guide neck caused by tempering, plus lack of lubrication. To remedy this, lightly polish the guide neck and then grease it carefully. The Molykote grease "Longterm II" has proved to be the best lubricant for this purpose. If this grease is not available, a good high-melting-point grease like Kenlube M 621 may be used. Pure Molykote paste "G" or similar lubricants are not suited for these lubrication points as they have a tendency to dry up. In addition to the above, it is advisable to polish and grease the curved bearing surface of the throw-out fork.

INTRODUCTION OF TEMPERED (NITRIDED) TRANSMISSION COVERS
ON M-B TYPES IN PRODUCTION

TYPE	CHASSIS END NO.	TYPE	CHASSIS END NO.	TYPE	CHASSIS END NO.
200	169670	230 S	090017	250 SE Cpe./Conv.	085890
200 D	307078	250 S	012050	230 SL	016458
230	019564	250 SE	009099	250 SL	000001

c. Sticking caused by the clutch itself; i.e., sticking of pressure plate lugs in cover plate openings (on the four-cylinder types)	There is no reason for replacing the clutch when the pressure plate lugs are sticking in the openings of the cover plate. The sticking points may be easily found when the clutch is disassembled and may be removed by means of a file. After subsequent careful lubrication of all its moving parts, the clutch will be fully serviceable again (use Molykote "Longterm II" or high-melting-point grease Kenlube M 621). To perform these operations, it is advisable to simulate operation by stressing the clutch in a press or drilling machine (see also Workshop Manual Passenger Car Models Starting August 1959, job No. 25-1, page 25-1/2). Disassembly of the clutch for freeing it up is unnecessary.

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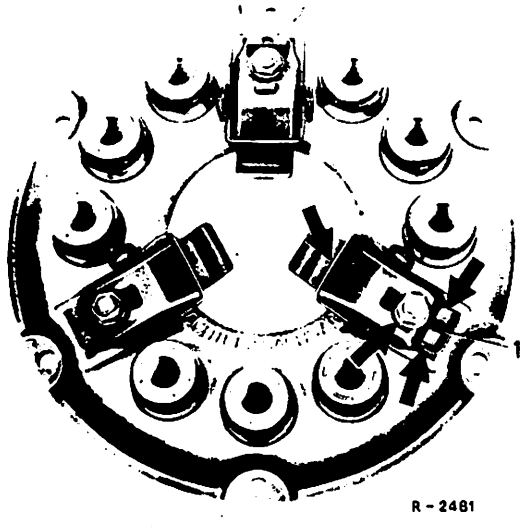
(continued)

Causes	Remedies
	Note: Generally, in case of complaints concerning clutch pedal sticking, the adjusting dimension of the upper dead-center spring in the pedal linkage can be increased from 2.64" (67 mm) to a maximum of 2.83" (72 mm).

B. Squeaking of the Clutch

Cause	Remedies
Dry friction between pressure plate lugs and cover plate openings	Remove clutch, stress it in a press to simulate operation, and carefully lubricate all moving parts, especially the pressure plate lugs and their cover plate openings. (See arrows in the illustration.) Use a viscous, high-melting-point grease like Molykote "Longterm II" or Kenlube M 621. Pure molybdenum disulphide lubricants are not suitable for these points.



1. Guide lug

In most cases, the parts concerned in the above-listed complaints need not be replaced. The complaints may be solved easily by reconditioning and especially by the lubrication described. (For the same reasons listed above, new parts may stick and squeak and require the same remedies listed above. Therefore, please exchange parts only when necessary.)

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Article No.	File	Group	Application
94	SERVICE INFORMATION	25	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FLEX-PLATE SPACERS - AUTOMATIC TRANSMISSIONS MODELS 280 SE/9 3.5 AND 300 SEL/9 3.5

Future replacement engines for the above referenced models (with automatic transmissions) will be supplied without flex-plate. Therefore, it must be transferred from the old engine to the replacement engine.

Special attention must be provided during flex-plate re-installation, to ensure that subject spacers are properly located on the flex-plate (See Illustration).

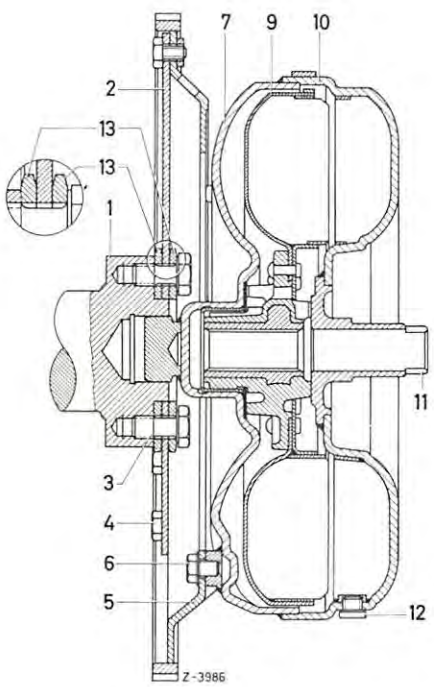

ILLUSTRATION
Hydraulic Coupling

1. Crankshaft
2. Flex-plate
3. Expansion bolts
4. Hex. Hd. Bolts
5. Starter ring gear
6. Hex. hd. bolt
7. Coupling housing
9. Secondary member
10. Primary member
11. Driving pin
12. Drain plug
13. Spacers

CAUTION: IMPROPER SPACER INSTALLATION MAY RESULT IN EXTENSIVE TRANSMISSION DAMAGE.

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No.	MB-T 52	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	25	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Procedure for Bleeding Hydraulic Clutch Actuating System

The hydraulic clutch actuating system can be bled by pumping the brake pedal in accordance with the following procedure:

1. Remove caps from brake and clutch fluid reservoirs.
2. Connect a hose to bleeder screw on front disc-brake caliper.
3. Open bleeder screw and pump the brakes (to fill hose with hydraulic fluid).
4. When hose is filled, connect it to bleeder screw on clutch slave cylinder. Open bleeder screw, check fluid level in reservoir, and pump the brakes.
5. Check system for escaping air bubbles.
6. Keep checking fluid level in brake fluid reservoir.
7. When no more air bubbles show in the clutch fluid reservoir, close bleeder screw on clutch cylinder.
8. Then close bleeder screw on brake cylinder.
9. Test clutch and clutch pedal for proper operation. If the pedal "is low" and feels spongy, repeat steps 1 through 9.
10. Remove hose, check fluid levels, and replenish, if necessary. Then replace caps on brake and clutch reservoirs.

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MB-T No. 164	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo 26	PASSENGER CARS

Fort Lee, January 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATION -- MODELS 250 Cp., 280 S/8, 280 SE/8, 300 SEL/8

Modifications entered production as of the following chassis end numbers:

MODEL	CHASSIS END NUMBER
280 S/8	027 623
280 SE/8 Sedan	028 986
280 SEL/8 Sedan	029 326
280 SE/8 Cp/Conv	002 764
300 SEL/8	001 859
250 Cp	from start of production

4-SPEED MANUAL TRANSMISSION G 76/27

Transmission G 72, previously installed in models 280 S/8, 280 SE/8 and 300 SEL/8, was replaced by the new 4-speed transmission G 76/27. It corresponds basically to the laterally shifted transmission G 76/18 of the 114/115 series:

> countershaft design transmission with four lock-synchromesh forward gears and one sliding type reverse gear.

In order to transmit the higher input torque, the transmission has been made stronger and larger. The housing and shafts are .89 in. (22.5 mm) longer than those of the G 76/18 transmission in addition to the wider gears.

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The constant gear ratio between input shaft and countershaft deviates slightly from that of transmission G 76/18. The number of teeth of the individual main shaft and countershaft gears and the ratio of the gear pairs are equal. Consequently the actual gear ratios differ slightly from those of transmission G 76/18. The enclosed table gives a comparison of the gear ratios and the number of teeth of the 4-speed manual transmissions G 72, G 76/27 and G 76/18.

Synchronization

The synchronization is similar to that of transmission G 76/18. Due to the higher load imposed during synchronization on the G 76/27, the synchromesh elements of the 1st and 2nd gear have been made larger than those of the 3rd and 4th gears. The synchronizer rings for the 1st and 2nd, as well as for the 3rd and 4th gears, are similar to those of the G 76/18. The synchronizer drum for the 3rd and 4th gears is also similar, however, the synchronizer drum for the 1st and 2nd gear does not comply with that of G 76/18.

Gear Shifting

Contrary to the G 72 transmission, the gears are changed by means of a triple-rod gear shift. The shift rods are connected to the transmission shift levers on the laterally positioned transmission cover. The shift levers transmit the shifting movement via the shift yokes positioned inside the casing to both of the two forward gear shift sleeves and the reverse gear shifting finger.

The steering column and floor gear shifts have been modified due to the different gear shift design in the G 76/27.

On the steering column, the gear shift arrangement and shape of the guide levers on the intermediate lever support have been modified. In addition to this, the gear shift lever must be pulled out prior to shifting the reverse gear in order to overcome the reverse gear lock (see Illustrations 1 and 2).

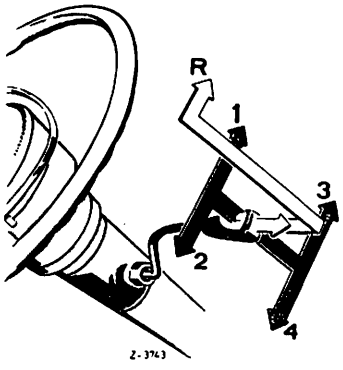

ILLUSTRATION 1

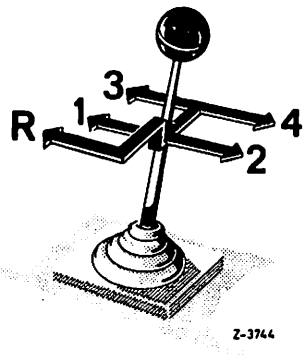

ILLUSTRATION 2

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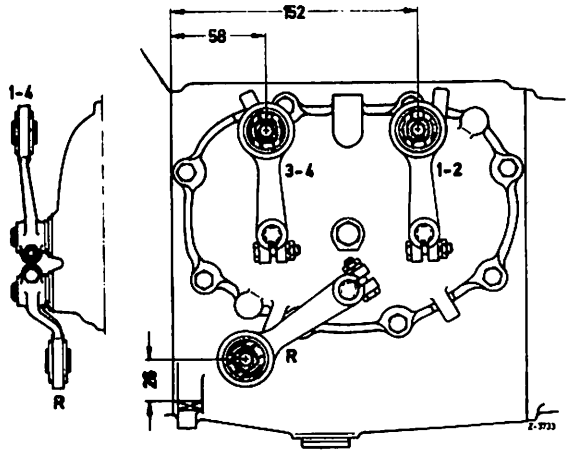
Adjustment Instructions

With the exception of the gear shift lever adjustment values, adjustment data for the elimination of shifting faults on the steering column and floor gear shifts described in Workshop Manual W 114/115, Job. No. 26-10 are applicable.

Proper adjustment of the steering column and the floor gear shift levers can be seen in illustrations 3 and 4. The side views on the left side of these illustrations show the correct offset position of the levers.

On models 280 S/8 through 300 SEL/8 with steering column gear shift, the length of the shift rods can be adjusted variably. Therefore it is considerably more precise and simple. Illustration 5 shows how this adjustment is made.



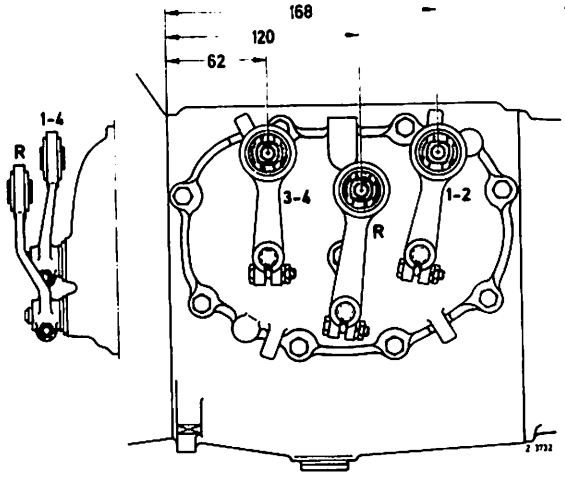


ILLUSTRATION 3

Position of Levers on Steering Column Gear Shift

inches	mm
1.02	26
2.28	58
5.98	152

ILLUSTRATION 4

Position of Levers on Floor Gear Shift

inches	mm
2.45	62
4.72	120
6.61	168

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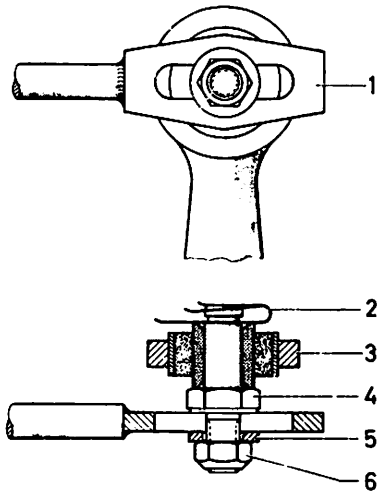

ILLUSTRATION 5

Stepless Shift Rod Adjustment On
Steering Column Gear Shift

1. Shift rod with oblong hole
2. Retaining Clip
3. Shift lever on transmission
4. Adjustment screw
5. Washer
6. Adjustment nut

TABLE OF COMPARISON: GEAR RATIOS AND NUMBER OF TEETH ON TRANSMISSIONS G 72, G 76/27 AND G 76/18

	Transmission Installed In Model	1st Gear $i = \frac{Z_2}{Z_1}$		2nd Gear $i = \frac{Z_2}{Z_1}$		3rd Gear $i = \frac{Z_2}{Z_1}$		4th Gear	Reverse Gear $i = \frac{Z_2}{Z_1}$			Constant $i = \frac{Z_2}{Z_1}$	
G 72	280 S/8, 280 SE/8 300 SEL/8 up to April 1969	4,05	33 14	2,23	35 27	1,40	31 38	1	3,58	25 12	(17)	1,72	43 25
G 76/27	280 S/8, 280 SE/8 300 SEL/8 as of April 1969	3,96	33 13	2,34	39 26	1,43	34 37	1	3,72	31 13	(17)	1,56	39 25
G 76/18	220 D/8, 220/8, 230/8, 250/8 Sedan since beginning of production - Jan. 1968, 250/8 Coupe - since beginning of production 1969	3,90	33 13	2,30	39 26	1,41	34 37	1	3,66	31 13	(17)	1,54	43 28

(17) = Number of teeth of reverse idler gear

The respective gear ratios result from the ratio of the number of teeth multiplied by the constant.

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No.	Ordner / File / Classeur / Archivador		Gruppe / Group / Groupe / Grupo	
43	Service Information		26	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

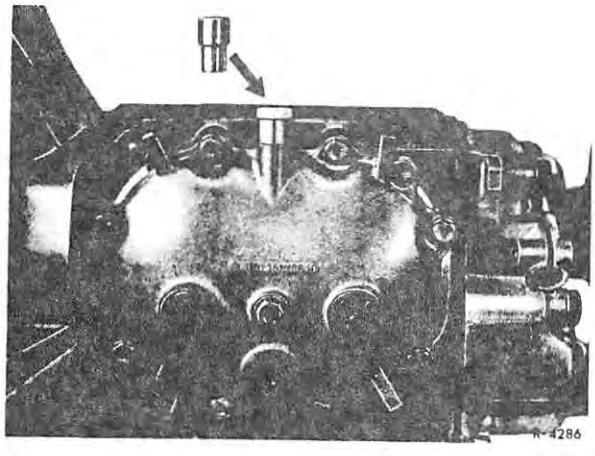
Subject: Water Entering Into The Transmission -- Models 220/8 through 250/8 with Standard Transmission

Vehicles of the above mentioned types with standard transmission, which are frequently subjected to automatic car washes, are subject to water penetrating the breather and settling in the transmission.

In order to prevent this condition, a ½" (12.5 mm) extension tube is being installed underneath the breather at the side shift cover in series production.

Therefore, during transmission repair work, or when performing service and maintenance jobs, the breather should be subsequently raised by installing this extension tube as follows:

First remove the breather. Then by using an appropriate amount of force, insert the extension tube, part number 115 261 00 53, into the shift cover. Reinstall the breather by pushing it into the extension (see illustration).



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The extension tube is available from your Mercedes-Benz parts depot under part number 115 261 00 53.

The installation of the extension tube can be performed during any service inspection without submitting a claim due to the insignificant time required.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 26	Order File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 26	Passenger Cars

Fort Lee, April 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Clutch Housing for Standard Transmission Exchange-Types:300 SE Series

As a spare part, the standard transmission for the Types 300 SE series, like all other standard transmissions, is supplied with the clutch housing attached. The clutch housing, however, serves only as a protective cover for the transmission during shipment and storage to prevent dislocation of the gears.

When installing the new transmission, the clutch housing originally installed and adapted to the engine must by all means be used again, since, in contrast to other types with the cylindrical centering arrangement, the clutch housing of the Types 300 SE series is centered by means of dowel pins on the engine.

In view of the above, the clutch housing attached to the new transmission for the Types 300 SE series must be removed and discarded.

If the clutch housing must also be replaced, it is essential that the new clutch housing be properly centered, with the engine removed from the car. The necessary replacement and centering instructions are described under Job No. 26-1/5 through 1/8 in "Workshop Manual Passenger Car Models starting August 1959" and "Service Manual Maintenance, Tuning, Unit Replacement Passenger Cars starting August 1959."

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Article No.	File	Group	Application
MB-T 219	SERVICE INFORMATION	26/27	PASSENGER CARS

FORT LEE, FEBRUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW FLOOR SHIFT LEVER

A new floor shift lever for both standard and automatic transmissions has been installed in production.

Listed below are the beginning production chassis end numbers:

MODEL	STAND. TRANS.	AUTO. TRANS.
220/8 (115.010)	063735	063819
220 D/8 (115.110)	160105	160285
250/8 2.8 (114.011)	002164	002175
250/8 Cp. (114.023)	003181	003186
280 S/8 (108.016)	065599	066058
280 SE/SEL (108.018/019)	071795	071884
300 SEL/9 3.5 (109.056)	003804	003759
300 SEL/8 6.3 (109.018)	--	005256
280 SE/9 Cp/Cv. (111.026/027)	002965	002942

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Previous version shift levers and related parts will be available only until the existing stock is depleted.

Parts information for subsequent installation or replacement is listed below and all items may be ordered from our M-B Parts Depots. The new shift levers are not colorbound material.

PREVIOUS VERSION PART NUMBER	NEW PART NUMBER QTY.	ITEM	PART NUMBER
Standard Transmission			
115 267 04 01 115 267 05 01 115 267 06 01	Order: 1	Lever	115 260 09 39
	together with: 1 1 1 1 1	Knob Bushing Boot Nut Pin	115 260 00 40 115 268 09 50 115 267 04 97 070616 010003 007346 004010
115 260 04 39	Order: 1	Lever	115 260 09 39
	together with: 1 1 1	Knob Boot Nut	115 260 00 40 115 267 04 97 070616 010003
115 267 07 01	Order: 1	Lever	115 260 08 39
	together with: 1 1 1 1 1	Knob Bushing Boot Nut Pin	115 260 00 40 115 268 09 50 115 267 04 97 070616 010003 007346 004010
115 260 05 39	Order: 1	Lever	115 260 08 39
	together with: 1 1 1	Knob Boot Nut	115 260 00 40 115 267 04 97 070616 010003

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PREVIOUS VERSION PART NUMBER	NEW PART NUMBER QTY.	ITEM	PART NUMBER
Automatic Transmission			
	Order:		
115 260 01 39	1	Lever	115 260 03 40
	together with:		
	1	Handle	115 260 12 53
	1	Nut	070616 010003
	1	Boot	115 267 05 97

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ATTACHMENT

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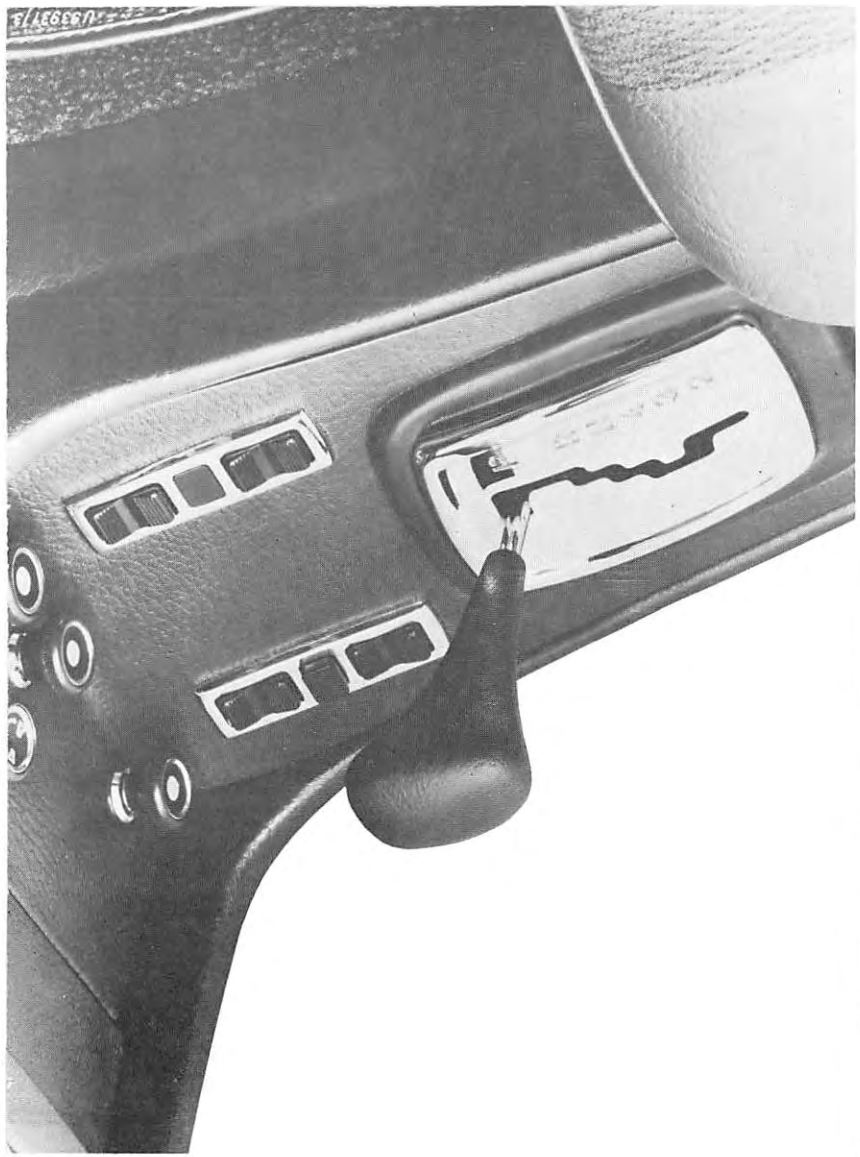

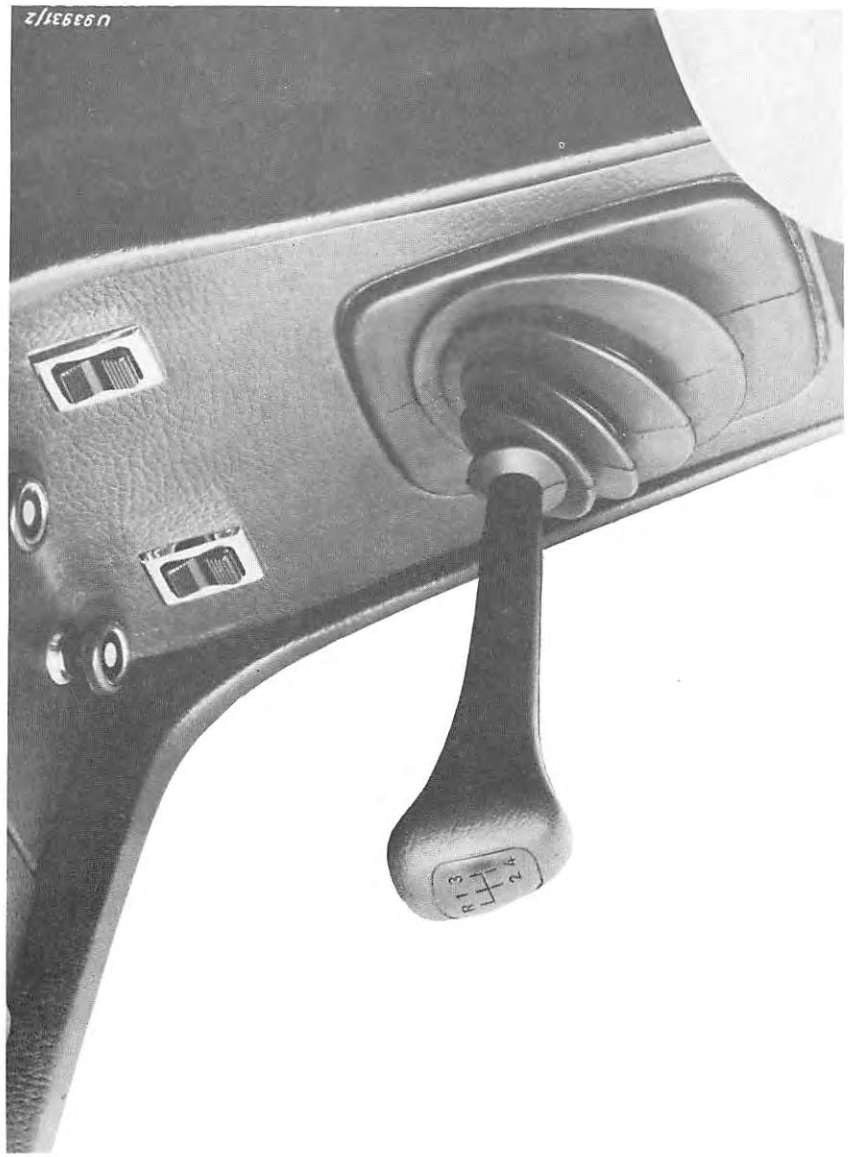

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Daimler-Benz AG / Export-Service

No. S 4	Ordner / File / Classeur / Archivador Special Versions	Gruppe / Group / Groupe / Grupo 26	Passenger Cars

Stuttgart-Untertürkheim, January 1966

To all Mercedes-Benz Agencies

Re: Center floor shift (mechanical transmission)

Type 190 C/DC 220 B/SB/SEB 200 200 D 230 230 S 250 S/SE 300 SEB/SEL

If the center floor shift is to be installed subsequently the transmission has to be removed and the transmission housing cover be replaced. A section must also be cut out of the tunnel.

Jobs to be carried out

1. Remove covering and heating channel on front tunnel and tray with adaptor between seats and the two front seats and unscrew the shift lever.

   Note:

   If the customer insists on the shifting tube and the bearing body being removed completely, the open holes in the jacket tube, top, and in the cover plate, bottom, have to be sealed off completely.

2. Remove transmission (for details see Workshop Manual Passenger Car Types as of August, 1959, Job No, 26-1).

3. Unscrew the 4 and/or 6 hex.-head bolts at the transmission housing cover and remove the cover.

4. Unscrew reversing light switch and turn into the new transmission housing cover (1) with a new seal ring and tighten same.

5. Clean the dividing area of the transmission housing and subsequently apply sealing coumpound. Place new gasket (2) on to transmission housing and apply sealing coumpound, too.

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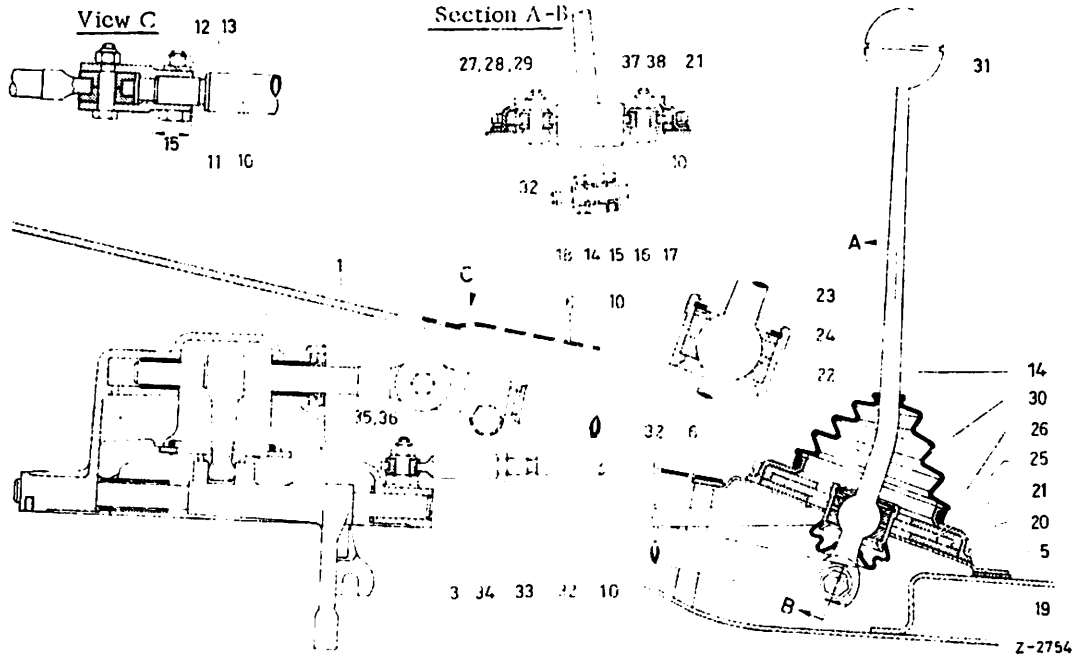

Illustration 1

1 Transmission housing cover
3 Bearing pin
5 Cover plate, rear
6 Cover plate, front
10 Shifting tube
11 Hex.-head bolt
12 Lock washer
13 Hex. nut
14 Shift lever
15 Sleeve
16 Washer
17 Hex.-head bolt
18 Hex. nut
19 Sleeve, bottom
20 Bearing cover, bottom
21 Shift lever support
22 Ball race
[illegible] Lock washer
24 Locking ring
25 Bearing cover, top
26 Cover plate
[illegible] Hex.-head bolt
[illegible] Lock washer
[illegible] Washer
30 Sleeve, top
31 Gearshift lever knob
[illegible] Thrust rod
[illegible] Hex. nut
[illegible] Tie rod end
35 Washer
36 Hex. nut
37 Washer
38 Hex. nut

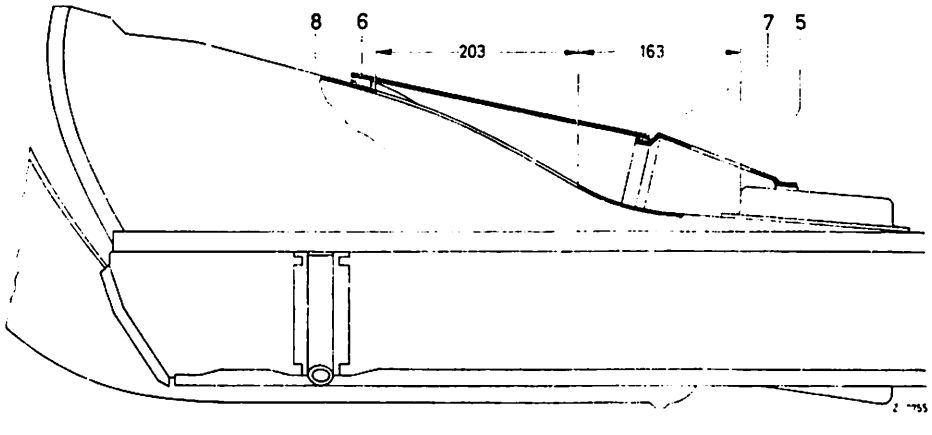

Figure 2

5 Cover plate, rear
6 Cover plate, front
7 Sealing frame
8 Sealing frame

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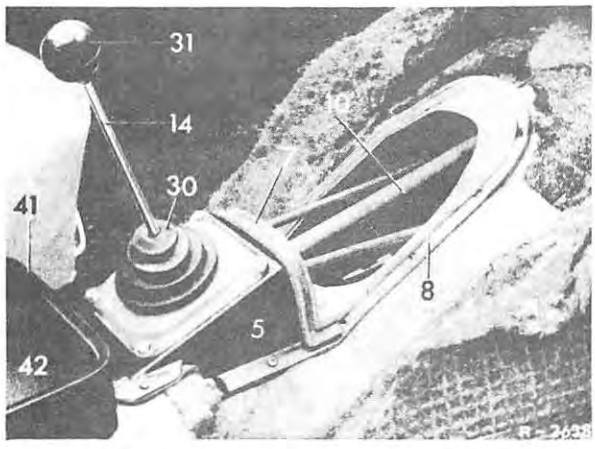

Figure 3

5 Cover plate, rear
7 Sealing frame
8 Sealing frame
10 Shifting tube
14 Shift lever
30 Sleeve, top
31 Lever knob
41 Tray
42 Adaptor in tray

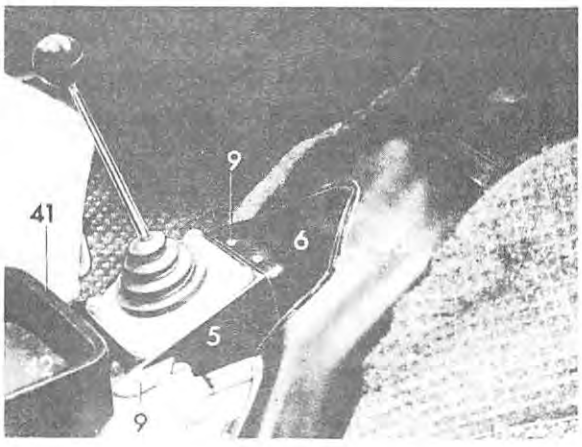

Figure 5

5 Cover plate, rear
6 Cover plate, front
9 Lens-head plate screw
40 Heater channel
41 Adaptor
42 Adaptor in tray

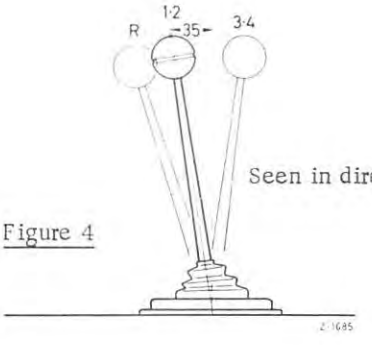

Figure 4

6. Place shifting forks in the transmission housing cover into idling position, the intermediate lever for the reverse gear into resting position and the sliding sleeves of the synchronizer bodies into idling position.

7. Insert transmission housing cover (1) and bolt same down with the respective hex.-head bolts and lock washers as well as with the bearing pins (3) and the hex.-head bolt (4) (figure 1).

8. Remove felt of tunnel, front. Now mark center of tunnel and a distance of 163 mm from cross beam below the driver seat up to the tunnel cut-out, (figure 2).

9. Mark cut-out in the tunnel according to the cut-out pattern and cut same out (figure 3).

10. Reinstall transmission (see Workshop Manual Passenger Car Types as of August, 1959, Job No. 26-1).

11. Apply grease, Part No. 000 989 49 51, or vaseline (no oil) to both ball races (22), inside and outside. Then fit a ball race into the shift lever support (21). Insert shift lever (14) into shift lever support, push on second ball race (22) place lock washer on same (23) and secure by means of

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locking ring (24) (figure 1).

12. Grease sleeve (19) with vaseline at the inside and push same on to the shift lever support from below over the shift lever (14) (figure 1).

13. Connect shift lever (14) and shifting tube (10), using items 15 to 18 (figure 1).

14. Place bearing cover bottom (20), the shift lever support (21) with shift lever, the bearing cover, top (25), the cover plate (26) in position and secure by means of hex. head bolts (27), lock washers (28) and washers (29) at cover plate (5) (figure 1).

15. Insert thrust rods (32) into shift lever support and secure by means of hex. nuts (38) and washers (37).

16. Place gearshifting shaft in transmission housing cover (2) against the stop for the reverse gear, and engage 2nd gear by pressing in the gearshifting shaft.

17. Bring shift lever (14) into shifting level of the 1st and 2nd gear (see figure 4) and insert shifting tube (10) into the serration of the fork head.

Note:
The serration of the shifting tube (10) should be at least 15 mm deep in the fork head (figure 1), view C.

18. Insert hex. head bolt (11) into fork head and screw and tighten hex. nut (13) with lock washer (12) (figure 1).

19. Screw cover plate (5) to tunnel by means of lens head sheet metal screws (9) (figure 1).

Note:
In case there is now a gap between cover plate (5) and cross member below the front seats it should be closed by inserting felt.

20. Screw hex. nut (33) and tie rod end (34) on to thrust rod (32) and push on to bearing pins (3) (figure 1).

21. Check shifting mechanism. Engage all gears for this purpose and check whether engagement is correct. The shifting lever must on no account touch the shift lever support since the gear concerned may then jump out.

If the shift lever touches a gear at the shift lever support when engaging a gear the 2 thrust rods (32) should be adjusted in length (figure 1). For this purpose remove bearing pins (3) and turn tie rod end (34) constantly until the bolts of the thrust rods in the shift lever support lie in the center of the cover plate (26).

22. Place one washer (35) each on the bearing pins (3) and screw on and tighten the hex. nuts (36) (figure 1).

23. Position sealing frame (7 and 8) on tunnel and on the cover plate (5) respectively. Now place cover plate, front (6) in position and secure by means of lens head plate screws (9) (figures 3 and 5).

24. Install new heater channel (40) and secure same (figure 5).

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25. Mount sleeve (30) and lever knob (31) (figures 1 and 3).

26. For types 220 SB, 220 SEB, 250 S, 250 SE, 300 SEB and 300 SEL cut a hole with 86 mm dia. out of the carpet for the tunnel and insert rubber grommet (39).

27. Place antisqueak (43) and carpet (44) on the tunnel.

28. Screw new tray (41) with adaptor (42) to tunnel. Now re-install the 2 front seats (figure 5).

Range of delivery

Item	Qty.	Denomination	Part No. or DIN designation		
			190 C, 190 DC, 200 200 D, 230		220 B, 220 SB 220 SEB, 230 S 250 S, 250 SE 300 SEB, 300 SEL
1	1	Transmission housing cover	113 260 01 14		111 260 12 14
2	1	Gasket		111 261 01 79	
3	2	Bearing pin		111 268 10 74	
4	1	Hex.-head bolt M 8x55 DIN 931-8 G		000 931 008 227	
x 5	1	Cover plate, rear		111 680 50 36	
x 6	1	Cover plate, front		111 683 51 36	
x 7	1	Sealing frame		111 683 53 98	
x 8	1	Sealing frame		111 680 50 73	
x 9	20	Lens-head plate screw B 4,2x13 DIN 7981		007 981 004 219	
10	1	Shifting tube	110 260 07 82 [2]		111 260 22 82 [1] [3]
				110 260 08 82 [4]	
11	1	Hex.-head bolt M 8x32 DIN 931-8 G		000 931 008 172	
12	1	Lock washer B 8 DIN 127		000 127 008 203	
13	1	Hex. nut M 8 DIN 934-6 S		000 934 008 013	
14	1	Shift lever		111 268 03 24	
15	4	Sleeve		198 268 01 50	
16	2	Washer		111 990 35 40	
17	1	Hex.-head bolt		111 990 10 01	
18	1	Hex. nut		001 990 01 51	

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Range of delivery (continued)

Item	Qty.	Denomination	Part No. or DIN designation	
			190 C, 190 DC, 200 200 D, 230	220 B, 220 SB 220 SEB, 230 S 250 S, 250 SE 300 SEB, 300 SEL
19	1	Sleeve, bottom	111 268 07 97	
20	1	Bearing cover, bottom	111 268 09 34	
21	1	Shift lever support	111 260 05 95	
22	2	Ball race	111 267 00 86	
23	1	Spring washer	198 990 00 48	
24	1	Locking ring	000 994 70 41	
25	1	Bearing cover, top	111 268 08 34	
26	1	Cover plate	111 268 03 98	
27	4	Hex.-head bolt M 6x18 DIN 933-8 G	000 933 006 077	
28	4	Spring washer B 6 DIN 137	000 137 006 203	
29	4	Washer	111 268 01 76	
30	1	Sleeve, top	111 268 04 97	
31	1	Shift lever support	111 268 02 42	
32	2	Thrust rod	110 260 03 89 [2] 110 260 05 89 [5]	108 260 01 89 [1] [3] 108 260 03 89 [6]
33	2	Hex. nut M 10 DIN 70616-5 S	070 616 010 004	
34	2	Tie rod end	111 260 04 53	
35	4	Washer	111 990 37 40	
36	2	Hex. nut M 7	001 990 01 51	
37	2	Washer 7,4 DIN 125-St	001 125 007 404	
38	2	Hex. nut M 6 DIN 985-5 S	000 985 006 000	
x 39	1	Rubber grommet	111 997 10 81 [7]	
x 40	1	Heater channel	111 830 50 45	
x 41	1	Tray	112 840 01 74 [9] 110 840 01 74 [10]	
x 42	1	Adaptor in tray	112 840 03 75	
x 43	1	Antisqueak on tunnel, front	11: 682 50 07	
x 44	1	Carpet on tunnel, front	111 680 10 45 [8] left hand drive vehicle 111 680 23 45 [11]	
	1	Carpet on tunnel, front	111 680 11 45 [8] right hand drive vehicle 111 680 24 45 [11]	

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1) For Types 220 B, 220 SB, 220 SEB

2) For Types 190 C, 190 DC, 200, 200 D

3) For Types 230 S, 250 S, 250 SE

4) For Types 230, 300 SEB, 300 SEL

5) For Type 230

6) For Types 300 SEB and 300 SEL

7) Only for Types 220 SB, 220 SEB, 250 S, 250 SE, 300 SEB, 300 SEL

8) Only for Types 190 C, 190 DC, 220 B

9) For Types 190 C, 190 DC, 220 B, 220 SB, 220 SEB

10) For Types 200, 200 D, 230, 230 S, 250 S, 250 SE, 300 SEB, 300 SEL

11) Only for Types 200, 200 D, 230, 230 S

The parts, items 1 to 4 and 10 to 38, required for the subsequent installation are obtainable via your distributors from our Department ET/VI X of the Stuttgart-Untertürkheim Plant while as items 5 to 9 and 39 to 44 marked by an x should be ordered from our Department ET/VI X, Sindelfingen Plant, stating the part No. and that of the interior appointments and the chassis No. respectively of the vehicle concerned.

Enclosure

Daimler-Benz Aktiengesellschaft

ppa. Pfeiffer ppa. Mauthe

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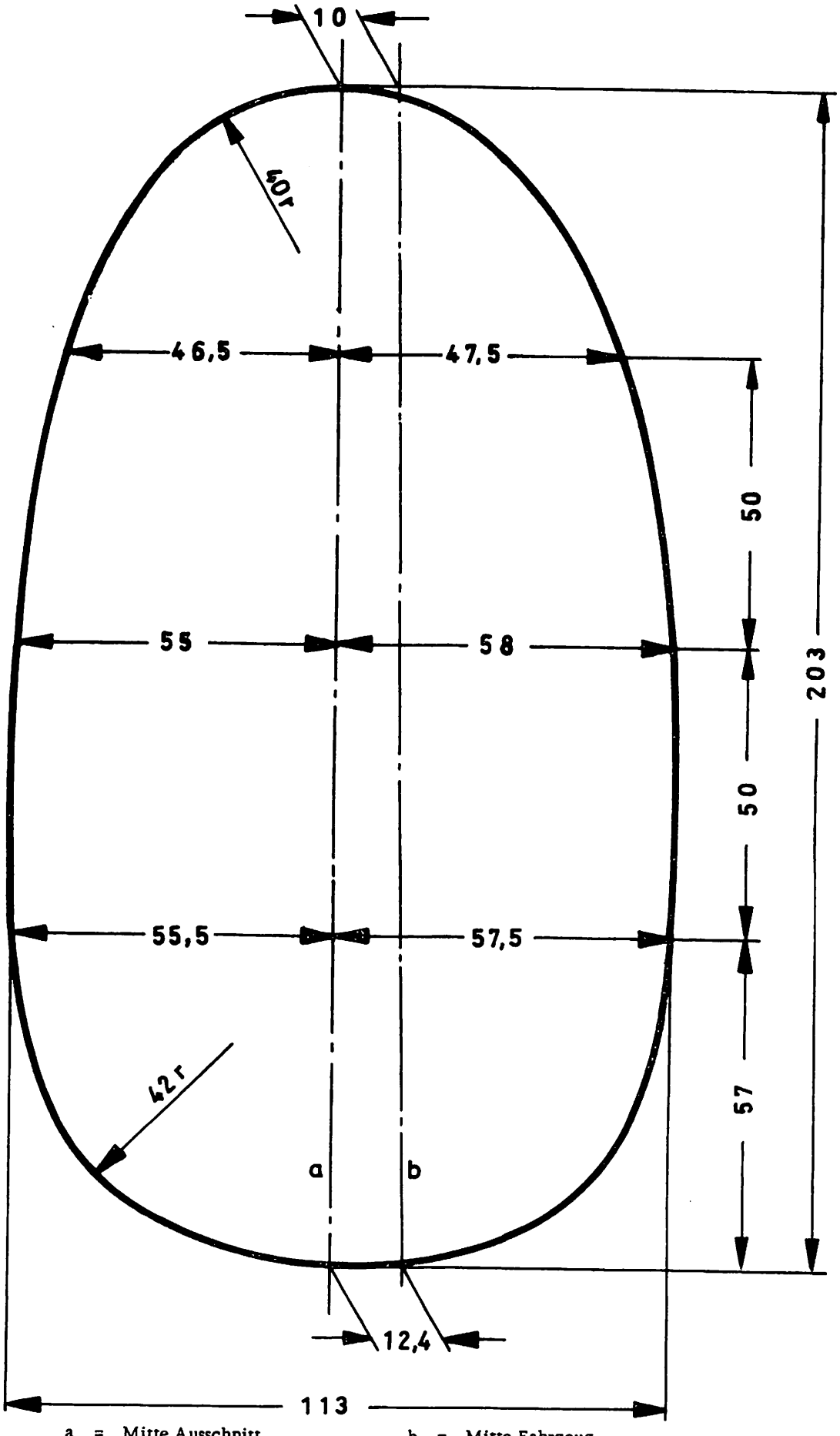
Schablone für Ausschnitt im Getriebetunnel bei Umbau auf Mittelschaltung

Template for Cutout in Transmission Hump
Gabarit pour la découpure du tunnel de transmission - Conversion au changement de vitesses au plancher
Plantilla para el corte en túnel del cambio al trasladar a éste la palanca de cambios



a = Mitte Ausschnitt	b = Mitte Fahrzeug
a = centre, cut out	b = centre of vehicle
a = centre de la découpure	b = centre du véhicule
a = centro del recorte	b = centro del coche

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Article No.	File	Group	Application
MB-T 314	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ PASSENGER CAR DEALERS

SUBJECT: AUTOMATIC TRANSMISSION MODELS:

K4A 025 — 190 C through 280SE up to late 1969 and 280SL to end of production

K4C 025 — 220/8, 220D/8, 230/8, 250/8, 250C/8, 280S/SE/SEL-2.8, 300 SEL/8-2.8

K4A 040 — 300 SEL/9-3.5
280 SE/9-3.5 Coupe/Convertible

K4B 050 — 300 SEL/8-6.3, 600

A) Installation of Fluid Coupling
B) Repair of Primary Pump and Front Transmission Cover

A) Installation of Fluid Coupling

We have repeatedly noticed damage to the primary pump after the installation of an engine or transmission. The drive fingers of the primary pump may be squeezed off, or the bronze bushings are damaged by scuffing, when the insertion of the fluid coupling into the transmission case is not done with the required care.

For this reason we would like to point out, once again, that the transmission should be mounted upright when the fluid coupling is installed, and that the coupling should be carefully lowered from above (see Figure 1).

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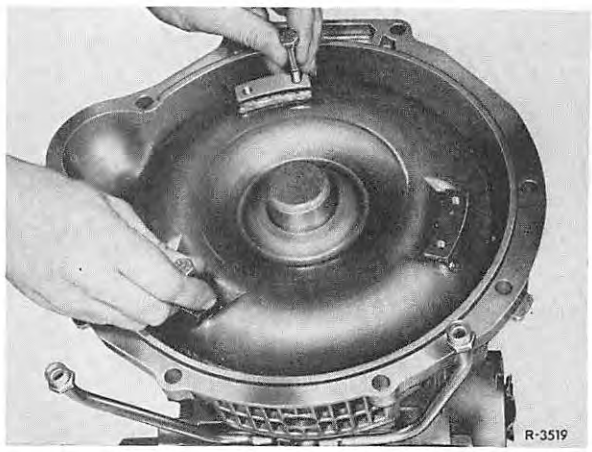

Figure 1

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To prevent damage it is necessary to check the alignment of the fluid coupling at this time. With the coupling correctly installed, the dimension K (Figures 2 and 3) must be greater than 4 mm, and the oil drain plug on the fluid coupling should be displaced toward the rear, in relation to the bore in the coupling housing.

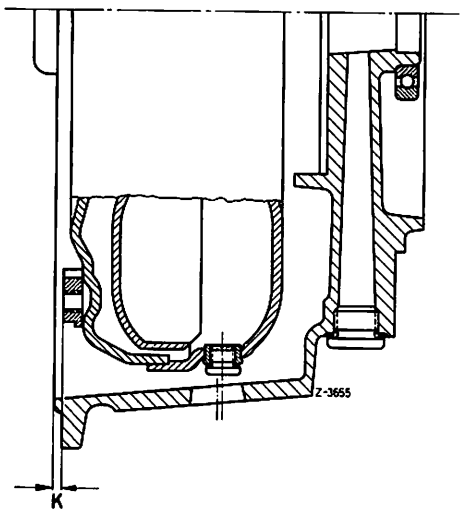

Figure 2

Transmission K4A 025

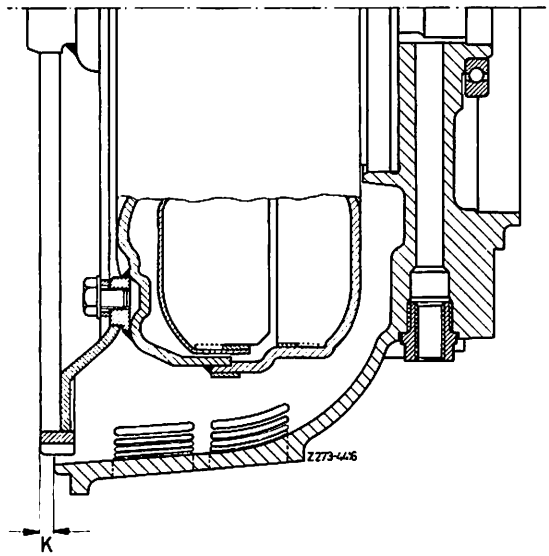

Figure 3

Transmission K4A 040

The alignment check must be repeated before the mounting bolts of the transmission are tightened.

B) Repair of Primary Pump and Front Transmission Case Cover

The bronze bushings in the primary pump housing and in the front transmission case cover are replaceable. The replacement parts are to be bored out to the dimensions given in Figures 4 and 5, after installation.

Note: The bushing in the front transmission case cover cannot be replaced in models K4C 025 and K4A 040.

Should the facilities to bore the replacement bushings to the specified dimensions not be available, it is recommended that the complete primary pump and/or the front transmission case cover be replaced.

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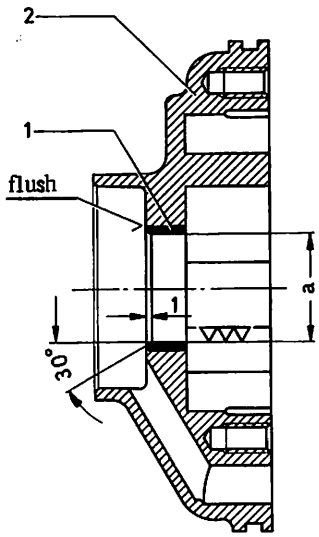

Figure 4

1 Bushing in primary pump housing
2 Primary pump housing

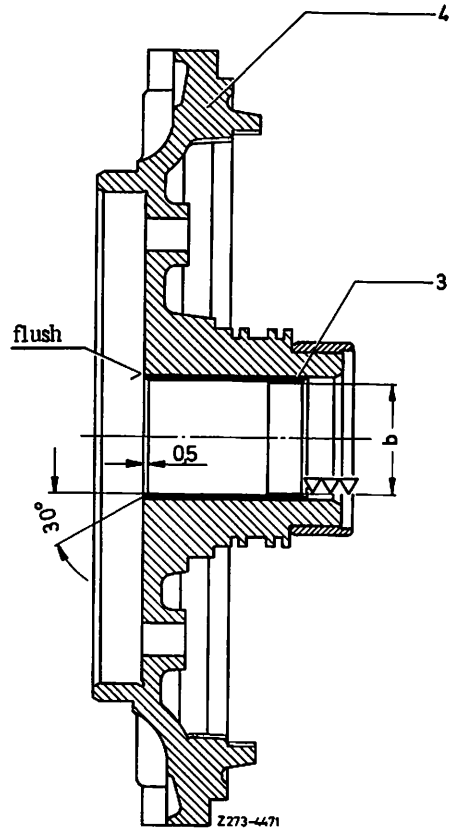

Figure 5

3 Bushing in front transmission case cover
4 Front transmission case cover

Transmission model	Primary Pump Bushing	Finished diameter "a"
K4A 025	112 277 43 50	28 mm + 0.025 + 0.015
K4C 025	-"-	-"-
K4A 040	-"-	-"-
K4B 050	112 277 28 50	32 mm + 0.050 + 0.040

Front transmission case cover bushing	Finished diameter "b"
112 271 05 50	29.5 mm ± 0.02
Bushing in front transmission case cover cannot be replaced	
112 271 05 50	29.5 mm ± 0.02

The above parts may be ordered from your Mercedes-Benz Parts Depot.

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Article No.	File	Group	Application
MB-T 313	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AUTOMATIC TRANSMISSION K4A 040

Models 300 SEL/9-3.5 280 SE/9-3.5 cp/cv

A) Thrust Body, Brake Band B2

When the brake band B2 is engaged, the pressure pin between brake band and thrust body is set to a slightly sloping position. It can then happen that the guide collar of the pressure pin in the thrust body partly breaks off. This does not result in any interruption in the function of the transmission unit. The broken-off part can only fall into the oil pan (arrow, figure 1) from which it must be removed. The transmission need not therefore be removed.

NOTE: When the transmission oil pan is being installed, care must be taken that a torque of 0.7 kpm (5 ft.lb) is adhered to, for the 4 hex. hd. bolts. A higher torque will result in the oil pan being distorted: it becomes leaky and can no longer be used.

As a remedy, a modified pressure pin (3) is now being installed, where the guide collar in the thrust body can no longer break loose. In the case of repair work, the new pressure pin must be installed.

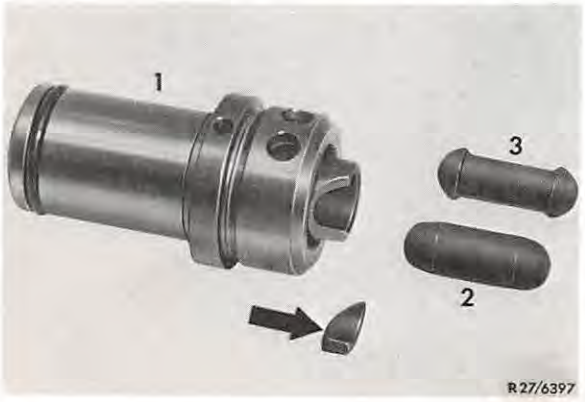

Figure 1

1 Thrust body
2 Pressure pin in previous version
3 Pressure pin in new version

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Part Numbers	Length	Part No.
Pressure pin	22 mm	109 277 01 75
Pressure pin	23 mm	109 277 02 75
Pressure pin	24 mm	109 277 03 75
Pressure pin	25 mm	109 277 04 75
Pressure pin	26 mm	109 277 05 75

B) Leak in Modulator Housing

High transmission fluid consumption and leaks may occasionally occur, caused by a burst diaphragm in the modulator. This trouble normally occurs after work has been done on modulator unit during disconnecting or reconnecting the vacuum line. If, during disconnecting or connecting vacuum line, the hexagon on the vacuum unit (SW 14) is not counterheld, the vacuum diaphragm will burst, causing it to leak; it will also suck oil into engine and result in poor performance of the engine and transmission shifting points.

We therefore strongly advise that great care should be taken during any disconnecting, connecting, removing and replacing of the modulator housing. When connecting and disconnecting the vacuum line, the hexagon (SW 14) intended for this purpose must be counterheld at the vacuum cell. For removing and replacing the modulator housing to the transmission, it is imperative to use the open end wrench (SW 22).

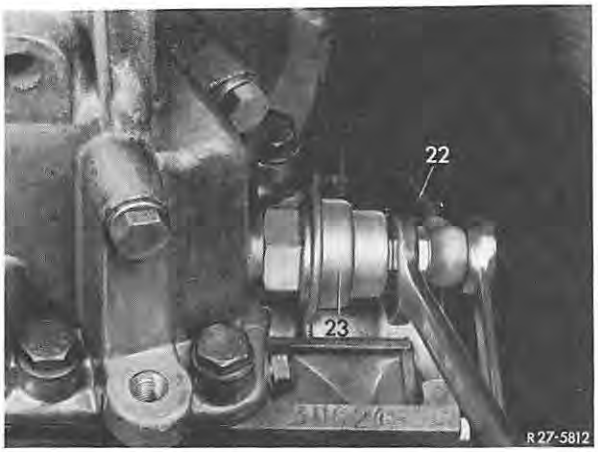

Figure 2

22 Vacuum line
23 Vacuum cell (Modulator)

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During R & R of transmission or engine units, care must be taken that the modulator is not bumped against any object, as it could cause similar problems as mentioned above.

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Article No.	File	Group	Application
MB-T 240	SERVICE INFORMATION	27	PASSENGER CARS

This Service Information supersedes Service Information No. 20, Group 27, of May 1969 and No. 17, Group 27, of May 1970.

FORT LEE, APRIL 1971

TO OUR MERCEDES BENZ DEALERS

SUBJECT: AUTOMATIC TRANSMISSION BREATHER CAP, MODELS 220D/8, 220/8, 250/8, 250/8 Cp., 280S/8, 280SE/8, 280SE/8 Cp/Cv, 280SE/9 - 3.5 AND 300SEL/9 - 3.5

Earlier publications have been provided informing you of the new version transmission breather caps designed to eliminate the possibility of water penetration through the cap into the transmission. This new breather cap has been modified to provide an improved seal around the transmission breather cap fitting.

Both service informations emphasized the importance of installing the new breather cap during servicing. However, inspection of transmissions returned for warranty claims has revealed that in many instances this new version cap had not been installed. Therefore, future warranty claims will not be accepted if existing damage indicates that the automatic transmission in question was not equipped with the new version breather cap.

The new breather cap (part no. 115 250 00 57) may be easily installed via the engine compartment by "slipping" it over the transmission breather cap fitting at the transmission front. (For proper installation positioning see illustration).

NOTE: When replacing the cap on six cylinder models, the two rear spark plug connectors must be removed to provide access to the breather fitting.

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The automatic transmission fluid must be changed (to include draining the fluid coupling) if the slightest indication of water is apparent in the transmission (fluid has cloudy, milky appearance).

Illustration

Breather Cap
Installation
Position

In addition, if a substantial accumulation of water is evident (drops of water on the dipstick or foamy fluid condition) the oil filter inside the transmission must be replaced.

Should the oil filter require replacement, a warranty claim for 1.0 hour plus parts may be submitted.

The new version breather cap (part no. 115 250 00 57) may be ordered from our Mercedes Benz Parts Depots.

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Article No.	File	Group	Application
MB-T 232	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FLEX-PLATE TO HYDRAULIC COUPLING CONNECTION, MODELS 220D/8 TO 300SEL/9 3.5 WITH AUTOMATIC TRANSMISSIONS.

Hex-head bolts of improved quality are now being used to connect the flex-plate to the hydraulic coupling on the above mentioned models. The galvanized washers which are installed in conjunction with the bolts remain unaltered however.

Production cutoff numbers are as follows:

MODEL	BEGINNING WITH CHASSIS END NO.	MODEL	BEGINNING WITH CHASSIS END NO.
220D/8	163420	280S/8	067410
220/8	065140	280SE/8, 280SEL/8	073420
250/8	055660	280SL/8	021940
250/8 (114.011)	002560	280SE/8 Cp/Cv	005073
250/8 Cp (114.023)	003339	280SE/9 Cp/Cv 3.5	003140
		300SEL/9 3.5	004157

In the event repairs must be performed on the above mentioned models, only the new quality hex-head bolts, 000933 008219 (M8 x 12) must be installed.

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Torque Values:

MODELS	TORQUE VALUE
220D/8 to 280SE/8 Cp/Cv	30 ft. lbs. (4.2 kpm)
280SE/9-3.5 Cp/Cv and 300SEL/9-3.5	29 ft. lbs. (4.0 kpm)

This modification is of an important nature, therefore Service Personnel should be informed accordingly.

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
162	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AUTOMATIC TRANSMISSION VACUUM CELLS (TRANSMISSION MODELS K4C 025 AND K4A 040) MODELS 220/8 TO 300 SEL/9 3.5

In some cases, the pressure pin between the vacuum cell and the modulating control valve malfunctions by working its way into the vacuum cell. This condition alters the modulating pressure, may afford for transmission damage and can be identified by increasingly longer and/or softer shift patterns.

A vacuum cell with an adhesively attached pressure pin (part number 000 270 01 79), has been installed in production to remedy this condition (Illustration 1, item 12).

Production cutoff numbers are as follows:

MODEL	AS OF CHASSIS END NO.	MODEL	AS OF CHASSIS END NO.
220/8	056617	280S/8	057820
250/8	050181	280SE/8)) 280SEL/8)	063406
250/8 Cp. (114.023)	002510	280SE/9 3.5 Cp/Cv	001715
		300 SEL/9 3.5	002012

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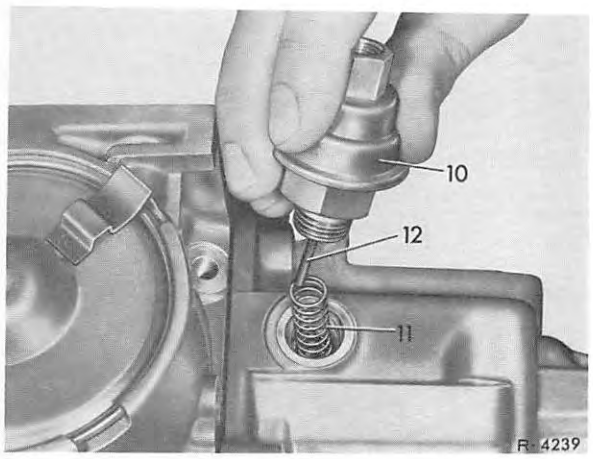

ILLUSTRATION 1

10. Vacuum Cell
11. Base Pressure Spring
12. Pressure Pin

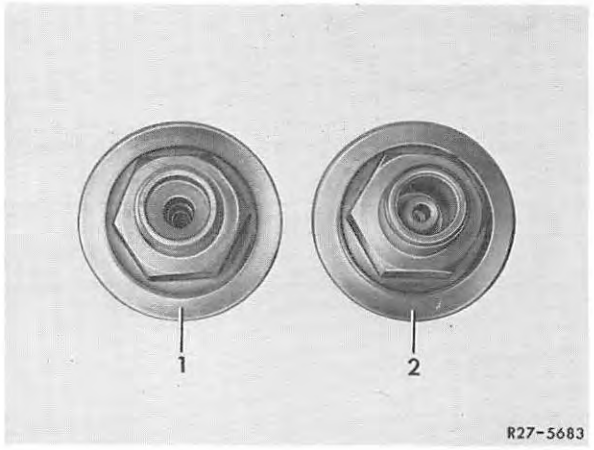

ILLUSTRATION 2

1. Previous Version
2. Current Version

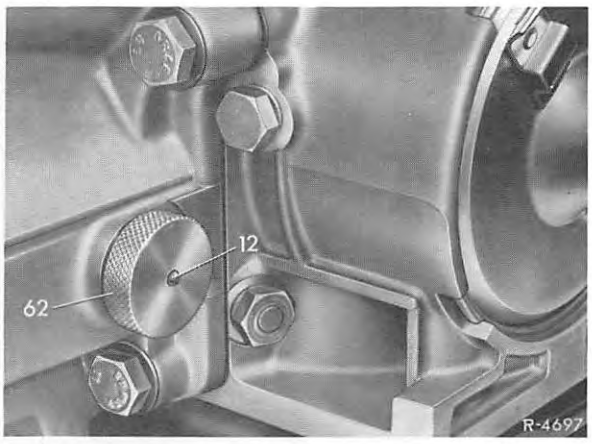

ILLUSTRATION 3

12. Pressure Pin
62. Measuring Device
(115 589 11 21 00)

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The new vacuum cell is similiar to the previous version, however, the pressure pin receiving bore is smaller (Illustration 2). The modification also deletes the base pressure spring between the vacuum cell and modulator control valve (Illustration 1, Item 11).

To compensate for the base pressure spring, the new vacuum cell full load spring has been reinforced. As the new version vacuum cell is supplied without the pressure pin, it must be ordered separately and subsequently installed (adhesively).

NOTE: PRESSURE PIN LENGTH MUST BE DETERMINED, UTILIZING THE MEASURING DEVICE, PART NUMBER 115 589 11 21 00.

WORK INSTRUCTIONS:

1. Determine the length of the pressure pin with the measuring device. Turn the measuring device into the stop and press the control valve back by means of the pressure pin, (Illustration 3, Item 12). The pressure pin must be flush with the measuring device's surface.

2. Spray the pressure pin (determined by measurement) and the vacuum cell bore with "Omnifit-rapid Aktivator" and allow to dry.

3. Lightly coat the "working" end of the pressure pin, (3/8" in length), with Omnifit-rapid red M and insert pin into vacuum cell bore up to the stop.

   CAUTION: USE ONLY "OMNIFIT-RAPID M RED" WHICH DRIES IN ONE TO TWO MINUTES.

4. Install vacuum cell (after hardening period) and set modulating pressure.

NOTE: WHEN INSTALLING THE NEW VACUUM CELL, ENSURE THAT THE MODULATING PRESSURE CONTROL VALVE BASE PRESSURE SPRING IS NOT INSTALLED. SHOULD IT BE INSTALLED, FAILURE MAY RESULT.

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PARTS INFORMATION:

NOMENCLATURE		PART NUMBER
Vacuum Cell		
Pressure Pin 1.561"Lg.	(39.65 mm)	000 270 01 79
Pressure Pin 1.580"Lg.	(40.15 mm)	115 277 29 75
Pressure Pin 1.600"Lg.	(40.65 mm)	115 277 30 75
Omnifit, Rapid Red M		002 989 23 71

A flat rate of 1.2 hours has been determined for vacuum cell installation and modulation pressure adjustment. An additional 0.3 hours is authorized for the removal and reinstallation of the tunnel cover panels on Models 280 SE/8 Cv. and 280 SE/9 3.5 Cv.

Parts may be ordered from our Mercedes-Benz parts depots.

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Article No.	File	Group	Application
MB-T 294	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SPARE PARTS FOR VALVE BODIES OF AUTOMATIC TRANSMISSIONS

As soon as present stock is depleted, our Parts Depot will no longer handle individual sliding valves or springs for the valve bodies. They are only going to be supplied as a complete assembly; or lower, middle and upper sub-assemblies.

The parts necessary for joining the sub-assemblies, such as distributor plate, intermediate plates, gaskets, ball-checks and poppet valves, will still be available. Parts may be ordered from your Mercedes-Benz Depot.

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Article No.	File	Group	Application
MB-T 230	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AUTOMATIC TRANSMISSION VALVE BODY GASKET (MODEL K4C 025), MODELS 220D/8 TO 300SEL/8 (2.8 Liter).

The model K4C 025 transmission will not function properly if the gasket between the transmission case and valve body is damaged. A damaged gasket may be detected by one or more of the following conditions:

a. Starting or shifting slippage (excessively smooth shift).

b. Insufficient operating or modulation pressure.

c. Excessive primary pump noise in upper speed range.

d. Noisy secondary pump operation (knocking noise when driving).

e. Excessive shift delay between gear selection and engagement of the respective brake band.

If the above mentioned conditions are detected early, either by the customer or service personnel, extensive transmission damage may be avoided by replacing the defective gasket immediately. It is therefore recommended that during servicing, vehicles be checked for extremely smooth shifts during test drives. Since gasket wear is dependent upon age and mileage factors, vehicles should be checked thoroughly after 24,000 miles (40,000 km).

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To alleviate this problem, the improved gasket which has been available in the USA for some time, and is also installed in production must be used. Production cutoff chassis end numbers are as follows:

MODEL	AS OF CHASSIS END NO.	AS OF TRANSMISSION END NO.
220/8	037250	12572
220D/8	085100	10172
250/8 Sedan	033450	31421
250/8 Cp (114.023)	000197	172
250/8 Sedan (114.011)	From beginning of production	
280S/8	035830	
280SE/8	036270	1912
300SEL/8	002280	

Should the before mentioned conditions occur on vehicles with chassis end numbers prior to those listed above, the new gasket part number 115 277 15 80 (graphite coated on one side) must be installed. Gasket replacement instructions are provided in Workshop Manual, Model Series 108 - 115, Job Number 27-8. Time required for replacing the gasket is 2.2 hours.

NOTE: If it is not possible to exchange the gasket, replace the complete valve body and torque the mounting bolts to 9.5 ft. lbs. (1.3 mkp).

The new version gasket may be ordered from our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
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No.	Ordner File Classeur Archivador	Gruppe Group Groupe Grupo	
70	SERVICE INFORMATION	27	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: A) ENLARGED OIL PAN/ K4A 040 AUTOMATIC TRANSMISSION
B) OIL CAPACITIES/AUTOMATIC TRANSMISSION -- MODELS 280 SE/9 3.5 AND 300 SEL/9 3.5

A) ENLARGED OIL PAN

The K4A 040 automatic transmission has been fitted with a deeper oil pan which increases the oil capacity by 1/2 quart (0.4 ltr.).

PRODUCTION CUT-OFF:

MODEL	FROM CHASSIS END NO.
280 SE/9 3.5	000829
300 SEL/9 3.5	001051

In the future, new and factory replacement transmissions will be supplied with the new oil pan.

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NOTE: WHEN INSTALLING THE NEW OIL PAN, A NEW OIL FILLER PIPE MUST ALSO BE INSTALLED. HOWEVER, THE DIPSTICK NEED NOT BE EXCHANGED.

In order to maintain the same distance from the oil pan bottom and oil filter inlet, a modified filter and longer screws, with spacer sleeves, must be installed.

PARTS REQUIRED

Qty.	Description	Part Number
1	Oil pan	115 270 01 12
1	Filter	109 277 01 95
2	Spacer sleeve	109 277 02 53
2	Screw	AM 5 x 35 DIN 84-4.8
1	Oil filler pipe	109 270 09 84

Should customer complaints be registered regarding transmission fluid leaking through the breather after high speed operation, the enlarged oil pan should be installed.

B) OIL CAPACITIES

Oil Pan Design	Initial Filling	Oil Change
Flat oil pan	6 3/4 qts. (6.4 ltr.)	5 3/4 qts. (5.4 ltr.)
Deeper oil pan	7 1/4 qts. (6.8 ltr.)	6 1/8 qts. (5.8 ltr.)

NOTE: THE ABOVE FIGURES ARE FOR INFORMATION ONLY. ENSURE THAT THE OIL LEVEL DOES NOT EXCEED THE UPPER MARK ON THE DIPSTICK WITH ENGINE RUNNING AND A WARM TRANSMISSION. EXCESS OIL MUST BE DRAINED.

All parts mentioned herein, are available from our Mercedes-Benz Spare Parts Depots.

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No. 46	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 27	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODULATOR PRESSURE ADJUSTMENT IN AUTOMATIC TRANSMISSION -- MODELS 220 D/8 TO 250/8 CP., 280 S/8 TO 300 SEL/8 WITH 3-PLANETARY GEAR SET TRANSMISSION K4C 025 AND IN MODELS 280 SE/9 3.5 AND 300 SEL/9 3.5 WITH 3-PLANETARY GEAR SET TRANSMISSION K4A 040

It has come to our attention that warranty claims are often submitted for jobs entitled, "Modulator Pressure Adjustment". Because of these frequent claims, the modulator pressure in a number of transmissions has been checked and it was found that the pressure is very precisely set and that no corrections were needed.

We assume that in many cases, the job "Checking and Adjustment of Modulator Pressure" appears on the warranty claim, but that in fact, only the modulator pressure has been checked.

A modulator pressure adjustment should only be made if:

a. incorrect settings have been discovered when taking measurements,

b the rear transmission cover had to be removed while jobs have been carried out, or,

c. the vacuum cell (modulator) has been replaced.

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WORK INSTRUCTIONS

CHECK-UP OR ADJUSTMENT OF MODULATOR PRESSURE (ONLY TO BE DONE WHEN TRANSMISSION FLUID HAS OPERATING TEMPERATURE)

1. Connect test pressure gauge (0-85 PSI) to test connection.

2. Disconnect vacuum line on vacuum cell (modulator); hold hexagon when loosening hollow screw so that it does not twist.

3. Start engine in selector lever position "P" and accelerate to approximately 3,000 RPM, during which the maximum pressure value should be attained (gasoline engines).

4. If the modulator pressure deviates, make corrections at adjusting screw in vacuum cell (modulator).

   Note that one turn of the adjusting screw changes the pressure by approximately 3 PSI.

NOTE: ITEM "2" DOES NOT APPLY TO DIESEL VEHICLES, SINCH SUCH VEHICLES HAVE NO VACUUM-CONTROLLED MODULATOR. MAXIMUM MODULATOR PRESSURE FOR DIESEL VEHICLES: 40 PSI.

If upon completion of the above test method, the shifting with gasoline engines still seems to be rather rough, the modulator pressure can be checked and adjusted as follows:

With the vacuum line connected, apply full throttle in 4th gear at approximately 30 MPH (50 km/h). Hold this speed with brake pedal. The following values may not be exceeded:

Carburetor engines.....51 - 52 PSI

Injection engines.....52 - 53 PSI

Warranty claims for the labor allowances stated in the Service Operation TIME GUIDE for checking and adjusting the modulator pressure with a pressure gauge may be submitted (Operation No. 27-770).

Please inform your staff that the measured modulator pressure is to be indicated on all warranty reports in the future. Any claims without these indications will be denied.

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No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
55	Service Information	27	Passenger Cars

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

Ref.: Starter Lock-Out Switch on Automatic Transmission
Types 220D/8 to 300 SEL/9-3.5

We have been informed that on various occasions the automatic transmission has been replaced because of a defective starter lock-out switch.

There is no justification for replacing the transmission because of such a fault. The starter lock-out switch can be replaced quite easily with the transmission in place. On the previous versions of the shift lever the rear transmission cover must be removed (see Service Manual 114/115, Job No. 27-8). On the new version with removeable shift lever, this is no longer necessary.

If the engine will not start with the lever in position "N" or "P", this fault is not necessarily caused by the starter lock-out switch. On transmissions with removeable shift lever there exists another possibility: On the transmission housing there is a small cast protrusion on the lug of the joint face. It is possible that the starter lock-out switch may come into contact with this lug when being screwed on and thus be forced out of line with the shift lever. The result is that the operation of the starter lock-out switch is made so difficult that the claws of the follower may be sheared off. In this case it is not sufficient to replace the follower; the lug must also be reworked with a file.

To do this the following jobs are necessary:

1. Remove shift lever (1) from the shaft (4) by loosening the clamping bolt (6).

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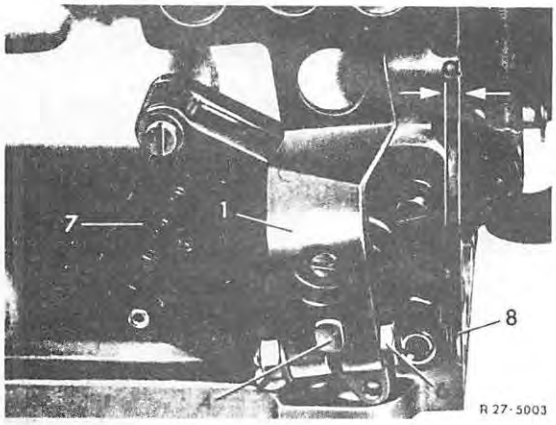

Figure 1

1 Shift lever
4 Shaft
6 Clamping bolt
7 Starter lock-out switch
8 Lug

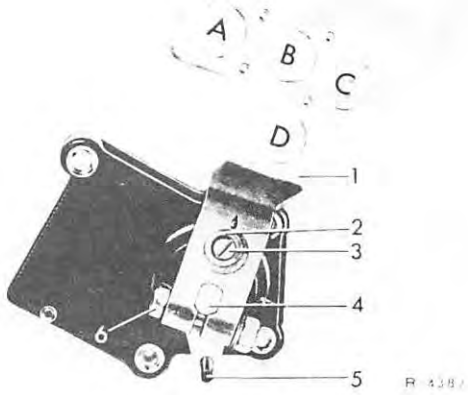

Figure 2

1 Shift lever
2 Washer
3 Adjustment screw
4 Shaft
5 Dowel pin, part no. 115 589 18 63 00
6 Clamping bolt

2. Unscrew starter lock-out switch (7) from the transmission.

3. File down the lug (8) on the side of the starter lock-out switch until the lug width is 2 mm (measurement a) (figure 1).

4. Re-mount starter lock-out switch and shift lever.

After assembly the starter lock-out switch must be re-adjusted:
Tighten clamping bolt (6) before adjusting. With shift lever (1) in position "N" loosen adjustment screw (3). Insert dowel pin (5) through the follower into the locating hole on the switch housing, then tighten adjustment screw (3) and remove dowel pin (figure 2).

Note:
Be careful when tightening the adjustment screw (3)! Tightening torque 0.18 mkp!

Reworking of the lug can be done with the transmission installed. The rear transmission cover need not be removed.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
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No. MB-T 188	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 27	PASSENGER CARS

FORT LEE, JUNE 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CHECK CHART FOR AUTOMATIC TRANSMISSIONS, TYPE K4C 025 (3-PLANETARY GEAR SETS) - FORM MBNA 468

With this Service Information we introduce a "Check Chart for Automatic Transmissions" (Form MBNA 468) which is to be used and filled out any time a transmission is exchanged under warranty or is undergoing repair work during the warranty period. The check chart must be completed and attached to every warranty claim submitted on automatic transmissions, repairs and/or replacements from now on.

The purpose of this check chart is to aid you in diagnosing the condition of a transmission accurately and to enable you to decide whether the transmission can be repaired or needs to be replaced. A maximum time of 1.6 hours, operation number 27-010, is allowed and covers the performance of all items on the check chart. However, this maximum time will not always be required. Therefore, please use your own judgement in determining the extent of the work necessary.

As an additional aid, the Automatic Transmission Diagnosis Guide (disc) has been recently mailed to you. We hope that this will be of further help to you in diagnosing the condition of a transmission properly.

Furthermore, we have just started automatic transmission training courses for overhauling and repair operations and hope that every dealer will participate by sending a qualified mechanic to these courses. At this time he will receive two books covering service and repairs of the automatic transmission. These books are only given to students who are participating in this automatic transmission course.

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At this time we wish to emphasize again that only the recommended and released automatic transmission fluids are being used as outlined in Service Information No. MB-T 182, Group 27, of May, 1970.

Failure to adhere to these directions may in some cases cause premature transmission failure.

This check chart is introduced in view of the fact that a survey indicated that a large percentage of transmissions returned under warranty have been exchanged unnecessarily and could have been repaired sucessfully.

All necessary parts for repairs and/or overhauls are available through our Mercedes-Benz Parts Depots.

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CHECK-CHARTS FOR AUTOMATIC TRANSMISSIONS
Type K 4 C 025 (Three Planetary Gear Sets)

Service

A. PRELIMINARY CHECKS
Max. Time: 0.2 hrs.

1) Transmission Fluid Level:
Full_____ Overfilled_____ Low_____

2) Oil Appearance:
Clean_____ Cloudy_____ Burned_____

3) Engine Idle Speed:
As Received_____ Set To_____

4) Adjustment of Control Pressure Linkage:
For proper adjustment, refer to Workshop Manual, Series W 114/115, Group 27-3.
Adjustment Correct_____ Adjusted_____

B. MODULATOR PRESSURE TEST
in Third and Fourth Gears
(vacuum connected)
Max. Time: 0.5 hrs.

Maximum (on acceleration):
Actual PSI_____ Set to 54 PSI_____

Minimum (on deceleration only):
Actual PSI_____ Set to 8 to 10 PSI_____

NOTE: Model 220 D/8 remains constant at 40 P.S.I.

FOR ADDITIONAL DETAILED DIAGNOSTIC TIPS AND ADJUSTMENT PROCEDURE, PLEASE REFER TO THE DIAGNOSIS GUIDE, MBNA FORM NO. 400 AND WORKSHOP MANUAL, GROUP 27.

C. ROAD TEST
Max. Time: 0.4 hrs.

Drive car through all shift points in each range observing any malfunctions of transmission performance. Mark actual conditions on performance chart.

a) Starter Lock-Out Operation:
Proper Function_____
Improper Function_____
Park_____ Reverse_____ Neutral_____
4th Gear_____ 3rd Gear_____
2nd Gear_____

b) Check Selectro Lever Adjustment and Indicator:
For proper adjustment, refer to Workshop Manual, Series W 114/115, Group 27-3.
Adjustment Correct_____ Adjusted_____

ROAD TEST : Check shift points

	SELECTOR LEVER POSITION	GEAR CHANGE	LIGHT THROTTLE Spec. mph	LIGHT THROTTLE Act. mph	FULL THROTTLE Spec. mph	FULL THROTTLE Act. mph	KICKDOWN Spec. mph	KICKDOWN Act. mph
6-Cylinder	4	Up 1-2	6	....	16	....	16	....
		2-3	17	....	32	....	32	....
		3-4	24	....	75	....	75	....
		Down 4-3	18	....	29	....	68	....
		3-2	12	....	12	....	27	....
		2-1	3	....	3	....	11	....
220/8	4	Up 1-2	6	....	15	....	15	....
		2-3	16	....	32	....	32	....
		3-4	23	....	72	....	72	....
		Down 4-3	17	....	28	....	65	....
		3-2	12	....	12	....	26	....
		2-1	3	....	3	....	11	....
220 D/8	4	Up 1-2	6	....	14	....	14	....
		2-3	18	....	30	....	29	....
		3-4	24	....	55	....	55	....
		Down 4-3	18	....	27	....	50	....
		3-2	13	....	13	....	26	....
		2-1	3	....	3	....	10	....
6-Cylinder	3	Up 1-2	6	....	16	....	16	....
		2-3	21	....	46	....	46	....
		Down 3-2	17	....	21	....	39	....
		2-1	3	....	3	....	11	....
220/8	3	Up 1-2	6	....	15	....	15	....
		2-3	20	....	43	....	43	....
		Down 3-2	17	....	20	....	37	....
		2-1	3	....	3	....	11	....
220 D/8	3	Up 1-2	6	....	14	....	14	....
		2-3	20	....	33	....	33	....
		Down 3-2	15	....	16	....	27	....
		2-1	3	....	3	....	10	....
6-Cylinder	2	Up 1-2	23	....	23	....	23	....
		Down 2-1	3	....	11	....	19	....
220/8	2	Up 1-2	22	....	22	....	22	....
		Down 2-1	3	....	11	....	18	....
220 D/8	2	Up 1-2	20	....	20	....	20	....
		Down 2-1	3	....	10	....	17	....

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CHECK-CHARTS FOR AUTOMATIC TRANSMISSIONS – Type K 4 C 025 (Three Planetary Gear Sets)

D. OIL PRESSURE TEST IN P.S.I.

Max. Time: 0.5 hrs.

For proper testing and adjustment, refer to Workshop Manual, Series W 114/115, Group 27-5.

1. WORKING PRESSURE

PRESSURE		220/8 W 115	220 D/8 W 115 D	280 S/8 280 SE/8 250/8 Cp. 230/8 250/8 W 114/108	ACTUAL PRESSURE
1st and "R" Gear	Base PSI Max. PSI	89 ∓ 4 169 ∓ 6	81 ∓ 4 131 ∓ 6	98 ∓ 4 187 ∓ 6	_____ _____
Pos. 2 2nd gear	Base PSI	89 ∓ 4	81 ∓ 4	89 ∓ 4	_____
2nd, 3rd, 4th Gear	Base PSI Max. PSI	44 ∓ 3 82 ∓ 6	41 ∓ 3 64 ∓ 6	44 ∓ 3 91 ∓ 6	_____ _____

Working Pressure **Cannot** Be Adjusted

2. GOVERNOR PRESSURE

MPH	220 D/8	220/8 230/8 250/8	ACTUAL PRESSURE
0	0	0	_____
12	10 + 2 PSI	10 + 2 PSI	_____
25	23 + 3 PSI	23 + 3 PSI	_____
37	34 + 3 PSI	33 + 3 PSI	_____
56	51 + 3 PSI	47 + 3 PSI*	_____
75	———	65 + 4 PSI*	_____

Governor Pressure **Cannot** Be Adjusted. *Only under full load

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
33	Service Information	27	Passenger Cars

FORT LEE, MAY 1970

TO OUR MERCEDES-BENZ DEALERS

Ref.: Adjustment of Control Pressure Rod
of the Automatic Transmission on Type 220/8
Featuring a 175 CDT Stromberg Automatic Choke
(USA Version)

With the installation of the automatic choke on type 220/8, USA version, the following must be observed when adjusting the control pressure rod for the automatic transmission.

During adjusting, it is essential that the throttle valve lever of the carburetor rests against the idle stop. For these reasons it is necessary to pay attention to the following points with cold engine when it is not running:

1. The connection rod (1) on the carburetor between the throttle valve shaft (2) and automatic choke (3) must be unhooked (figure 1).

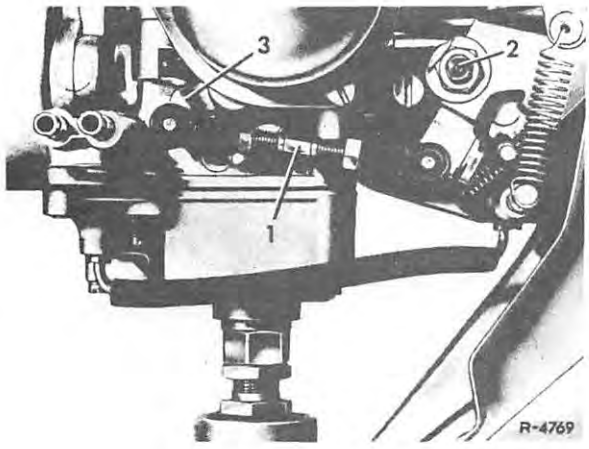

Figure 1

1 Connection rod
2 Throttle valve shaft
3 Lever of automatic choke

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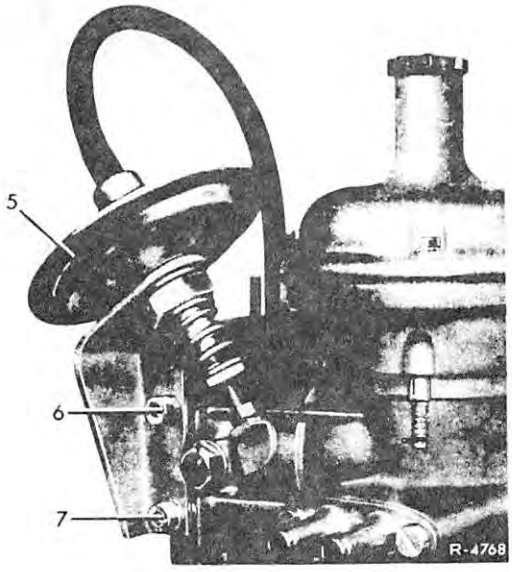

Figure 2

5 Speed governor
6 Hex. head socket screw
7 Hex. head socket screw

2. After removing the hex. head socket screw (6) and loosening the hex. head socket screw (7) the speed governor (5) must be swiveled backwards (figure 2).

   After doing this, the adjustment can be carried out as described in the Workshop Manual, Series 114/115, page 27-3/4.

3. Subsequently, the speed governor should be remounted to the carburetor.

   Note:
   It is also possible to adjust the control pressure rod with running and heated-up engines. In this case, the jobs need not to be carried out as mentioned under points 1 and 2.

   During adjusting, strict care must be taken that the throttle valve lever rests against the idle stop. The throttle valve may under no circumstances be lifted by the speed governor or the automatic choke.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T -172	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 27	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AUTOMATIC TRANSMISSION DIAGNOSIS GUIDE
FORM MBNA 400 (1-70)

Turn the wheel...find the solution...FAST!

A sample copy of a new diagnosis guide is enclosed herewith which was designed as a ready reference for technicians in diagnosing malfunctions in Mercedes-Benz automatic transmissions.

A work tool which can save minutes, even hours of valuable time often spent on diagnoses, the guide features twenty-five common problems with probable causes for each. The technician simply turns the wheel to the particular problem involved, notes the "key" letter(s) shown through the cutout, and reads the possible solution from those listed in the center.

The back of the diagnosis guide contains pertinent information and testing procedures for performing primarily check-ups, road tests and pressure tests.

As you can see from the models listed, this guide covers the 3-planetary gear set transmission K4C 025, as used in models 220/8 through 250/8 since the start of production, and models 280 S/8 through 300 SEL/8, which are equipped with this transmission as of April, 1969.

We think this diagnosis guide will be an invaluable aid for your workshop by saving time and frustration due to inaccurate diagnosis which can cause delays in repair work. This automatic transmission diagnosis guide is available to all dealers and may be ordered from our Technical Service Department at a price of $1.00 each. We hope you will order a supply and that the guide will prove to be a helpful, timesaving work tool.

MERCEDES-BENZ OF NORTH AMERICA, INC.
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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 166	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo 27	PASSENGER CARS

Fort Lee, February 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATION -- MODELS 250 Cp., 280 S/8, 280 SE/8, 300 SEL/8

Modifications entered production as of the following chassis end numbers:

MODEL	CHASSIS END NUMBER
280 S/8	027 623
280 SE/8 Sedan	028 986
280 SEL/8 Sedan	029 326
280 SE/8 Cp/Conv	002 764
300 SEL/8	001 859
250 Cp	from start of production

AUTOMATIC TRANSMISSION

The automatic transmission previously installed in the above mentioned models has been replaced by the new 3-planetary gear set transmission K 4 C 025, part No. 108 270 11 01. With the exception of a few modifications this transmission is of the same basic design as that installed in model series W 114/115. The individual part No. for the transmission in the 250 Coupe (Model 114.023) is 114 270 07 01.

There is a better graduation of the ratios in comparison to the 2-planetary gear set transmission:

	3-Planetary Gear Set Transmission	2-Planetary Gear Set Transmission
1st Gear	3.98	3.98
2nd Gear	2.39	2.59
3rd Gear	1.46	1.58
4th Gear	1.00	1.00
Reverse	5.47	4.15

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NOTE: THE AUTOMATIC TRANSMISSION FLUIDS ALREADY APPROVED FOR MODELS OF SERIES W 114/115 ARE ALSO TO BE USED FOR THE NEW AUTOMATIC M-B TRANSMISSION K 4 C 025 (SEE FUELS, LUBRICANTS MANUAL, PAGE 236.4).

A modified valve body assembly, part No. 108 270 00 07, has been installed due to the higher engine output.

Support flange K 1 and piston K 2 have been modified. The new spacer shims have been attached to the oil supply sleeve K1 and K2; clutch K 2 has been equipped with new reinforced externally toothed discs.

On the rear transmission cover, an oil pressure switch controlled by governor pressure has been installed on vehicles with fuel injection engines.

The idle speed increase on injection engines is eliminated because a shift thrust damper has been provided on the new transmission. Thus, the shifting percussion is reduced and the sudden drop of idle speed prevented when the selector lever is shifted into driving gear.

The idle speed is to be adjusted at 700 RPM with the selector lever shifted into driving position.

Modulator and governor pressure adjustment values correspond to those of series W 114/115 (diesel model excepted). Only the working pressure varies as follows:

			PSI
WORKING PRESSURE IN PSI	1st GEAR AND REVERSE	BASIC PRESSURE	100
		MAXIMUM PRESSURE	205
	2nd to 4th GEAR	BASIC PRESSURE	50
		MAXIMUM PRESSURE	100

The selector lever is of a new design. It can be removed from the shaft, thus enabling the starter lock-out switch to be exchanged without removing the rear transmission cover. The new version of the selector lever has to be adjusted. This can be done by means of the selector lever adjustment screw.

Adjustment of Starter Lock-Out and Back-up Light Switches

Detach shift rod from ball end and shift selector lever on the transmission to position "N" (clamping bolt connecting the lever with the shaft has to be tightened before adjustment).

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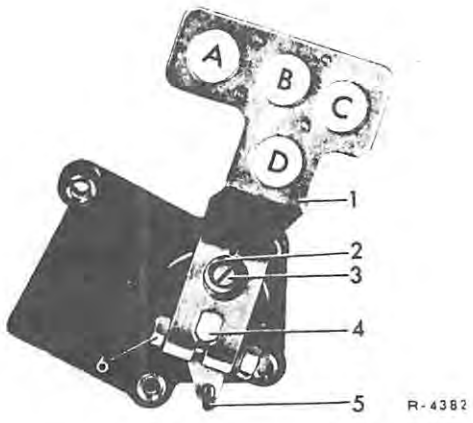

ILLUSTRATION

A. Left-hand drive floor gear shift W 108/109/111/114/115

B. Left-hand drive steering column gear shift W 114/115

C. (For right-hand drive only!)

D. Left-hand drive steering column gear shift W 108/109/111

1. Selector lever
2. Washer
3. Adjustment screw
4. Shaft
5. Dowel pin
6. Clamping bolt
7. Follower

Loosen adjustment screw and insert dowel pin, part No. 115 589 186 300, through the follower into the locating hole of the switch housing. Tighten adjustment screw and remove dowel pin. Shift selector lever inside car to position "N" and connect shift rod free of tension. Finally check whether engine can be started with selector lever in position "P" and "N".

Adjustment of Control Pressure Linkage

During the adjustment, the vehicle must rest on its wheels. The control pressure linkage is to be adjusted in idle position, that is, the accelerator pedal and throttle valve have to be in contact with the idle stop and the push rod is to be extended.

Adjustment on Model 280 S/8 Is Similar to Models 230/8, 250/8

Disengage connecting rod to rear carburetor. (With engine cold, eliminate first the automatic choke mechanism by opening the choke throttle.) Simultaneously actuate the throttle linkage briefly. Detach control pressure linkage at ball joint and push control pressure lever to idle stop.

Loosen both clamping bolts of supplementary lever and turn adjusting lever against the intermediate lever until the ball socket can be pressed on the ball joint tension-free. Then tighten clamping bolts.

Adjustment on Models 280 SE/8 and 300 SEL/8

Disengage control pressure linkage at the ball and push control pressure lever to idle stop. Adjust ball joint so that it can be pressed on the ball tension-free.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	75	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 27	PASSENGER CARS

FORT LEE, FEBRUARY 1970

This information supersedes Service Information No. 35, Group 27, dated June 1968.

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: VALVE BODY -- MODELS 220 D/8 - 250/8 (FROM START OF SERIES) AND 280 S/8 - 300 SEL/8 (AS OF APRIL 1969)

MODIFICATION: MODELS 280 S/8 - 300 SEL/8 ADDED
CONTENTS ENLARGED

The above mentioned models are equipped with a new Mercedes-Benz automatic transmission, type K 4C 025 as of the start of production of models W 114/115 and as of April 1969 on models W 108/109. Various valve body assembly versions, which are listed on the following page, have been installed in this new transmission.

The part numbers of the various versions have been marked on the bottom of the valve body assemblies (oil distributor plate).

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Model	Transmission Part No. on Identification Plate	Part No. of Valve Body Assembly	Oil Tubes	Installed as Transmission (End) No.
220/8	115 270 0201	115 270 0607 +	Elastic	
		115 270 1407 ++	Rigid	0030
		115 270 2007 +++	Rigid	8440
220 D/8	115 270 0401	115 270 0907 +	Elastic	
		115 270 1507 ++	Rigid	0028
		115 270 2107 +++	Rigid	7454
230/8, 250/8 250 C/8	114 270 0101 Replaced by: 114 270 0301	114 270 007 +	Elastic	
		114 270 0207 ++	Rigid	1191
		114 270 0407 +++	Rigid	20128
280 S/8, 280 SE/8 280 SE/8 cp/conv 300 SEL/8 (USA Version)	108 270 1101	108 270 0007 +++	Rigid	1

\+ First Version
++ Second Version
+++ Third Version

As a spare part, only the third version of the valve body assembly is available from our Parts Depots.

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NOTE: WHEN CONVERTING FROM FIRST TO SECOND OR TO THIRD VERSION RESPECTIVELY, RIGID OIL TUBES, PART NO. 115 270 02 68, HAVE TO BE USED. USE A RUBBER GASKET WITH THE OIL TUBE, PART NO. 115 277 2150.

Added to this Service Information is a revised set of working instructions for the dis-assembly and re-assembly of the valve body assemblies. The attached hydraulic diagram should help you to locate the respective slides and valves.

WORK INSTRUCTIONS FOR DISASSEMBLY AND REASSEMBLY

A. DISASSEMBLY

1. Remove 10 of the 12 valve body assembly screws.

2. Turn over valve body assembly and place it on a bench so that the 11th and 12th screws hang over the edge of the bench and can be easily removed.

   Holding the three parts of the valve body assembly firmly together (the inside springs tend to separate them), turn valve body assembly right side up.

3. Remove top section of valve body assembly together with the small intermediate steel plate. Remove intermediate plate.

   Remove two one-way .28 in. (7 mm) diameter balls of the one-way throttle valves K1 and K2 (No.'s 27 and 31), together with the .22 in. (5.5 mm) diameter ball and spring of the modulator pressure relief valve (No. 34) from the valve body assembly-upper part (Illustration 6).

4. Remove all four .22 in. (5.5 mm) diameter balls (No.'s 10, 17, 22, 26, Illustration 4) from the lower part of valve body assembly. Then lift off lower section from lower intermediate steel plate. The following items remain on the large intermediate plate:

   - Two more .22 in. (5.5 mm) diameter balls (No.'s 11, 16, Illustration 2).

   - Primary pump - check valve (24, Illustration 3).

   - Pin for shut-off check valve 2, (15, Illustration 4).

5. Lift large intermediate steel plate off oil distributor plate (Illustration 1).

   The following items will remain in the oil distributor plate (Illustration 1):

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- Lubricating pressure valve (No. 37)
- Throttle valve for release side B-2 (No. 41)
- Throttle valve for engaging side B-3 (No. 38)
- Two .22 in. (5.5 mm) diameter balls (No.'s 39 and 40)

Check if the above mentioned items are properly located, as shown in Illustration 1.

NOTE: THE THREE PARTS OF THE VALVE BODY ASSEMBLY CONTAIN A TOTAL OF ELEVEN BALLS:

a. NINE .22 IN. (5.5 MM) DIAMETER BALLS.

b. TWO .28 IN. (7.0 MM) DIAMETER BALLS.

B. PRE-ASSEMBLY CHECK-OUT

Valve Body Assembly -- Upper Part

1. Align this part according to hydraulic diagram (as reference point use accumulator No. 36 for B1-K1-K2).

2. Sliding valves and pistons may be taken out after retaining clamps and/or cover of accumulator No. 36 have been removed.

NOTE: PLACE SLIDING VALVES AND PISTONS, TOGETHER WITH SPRINGS, ACCORDING TO THEIR INSTALLED POSITION ON A CLEAN WORK BENCH.

3. Clean valve body assembly and be sure that when reassembling, the valves and pistons function easily.

Valve Body Assembly -- Lower Part

1. Align this part according to hydraulic diagram (as reference point use sleeve No. 1, protruding from valve body).

2. Carefully remove sliding valves and pistons after having removed the side covers.

NOTE: PLACE SLIDING VALVES AND PISTONS, TOGETHER WITH SPRINGS, ACCORDING TO THEIR INSTALLED POSITION ON A CLEAN WORK BENCH.

3. Clean valve body assembly, (make sure that valves and pistons slide easily when reassembling).

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Oil Distributor Plate

No sliding valves are located in the oil distributor plate.

NOTE: THOROUGH CLEANLINESS MUST BE OBSERVED THROUGHOUT ENTIRE PRE-ASSEMBLY CHECK. WE SUGGEST THAT THE WORK IS DONE ON AN UNDERLAYER OF LINOLEUM OR SIMILAR.

Balls and valves are numbered in accordance with the hydraulic diagram.

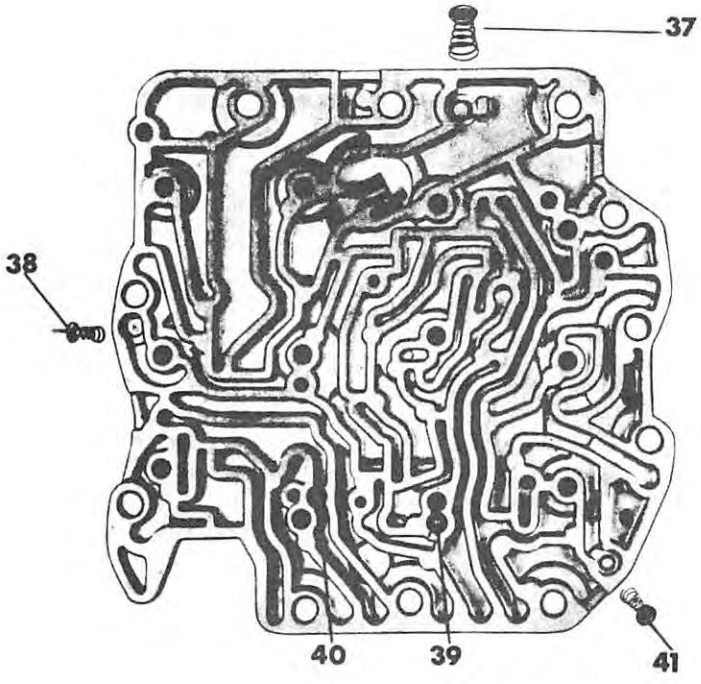

ILLUSTRATION 1

Oil Distributor Plate

37. Lubrication pressure valve. Valves and governor parts -- rear transmission cover
38. One-way throttle valve B3
39. .20 in. (5 mm) diameter two-way ball valve
40. .20 in. (5 mm) diameter two-way ball valve
41. One-way throttle valve, release side B2

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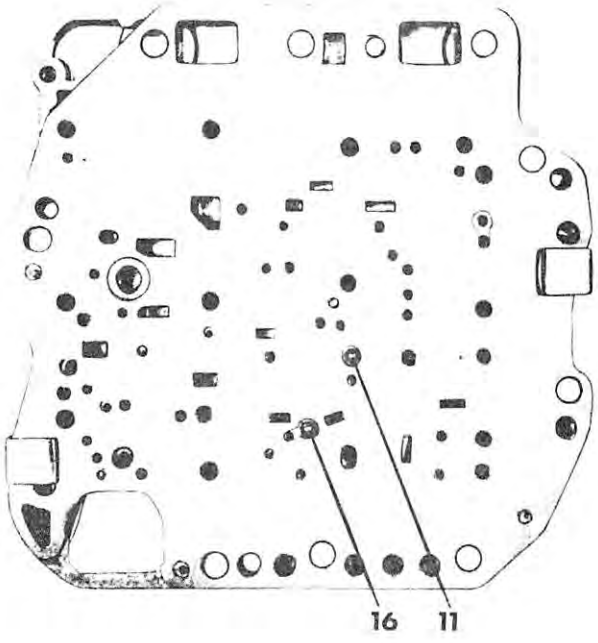

ILLUSTRATION 2

Intermediate Plate of Oil Distributor Plate

11. .22 in. (5.5 mm) diameter two-way ball valve
16. .22 in. (5.5 mm) diameter ball check valve

Place intermediate plate onto oil distributor plate when assembling.

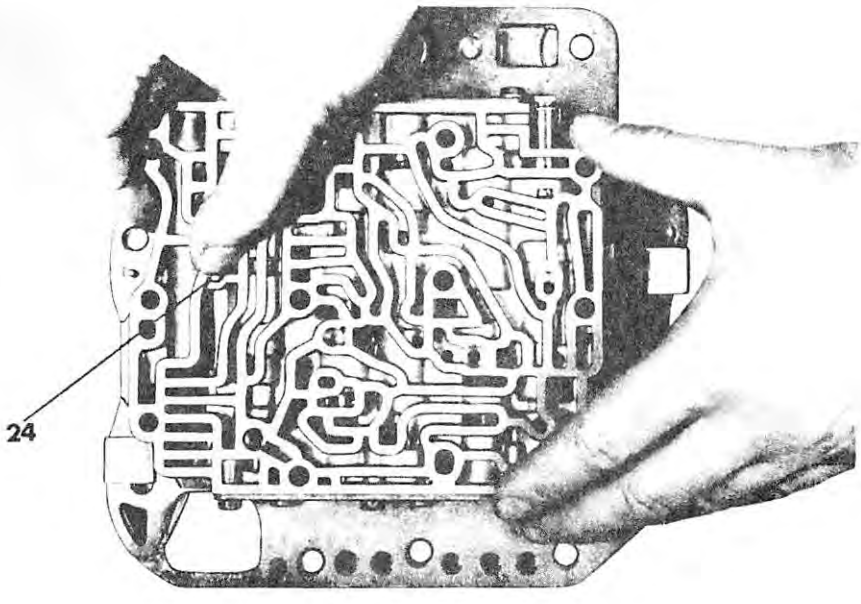

ILLUSTRATION 3

Valve body assembly - lower part

24. Primary pump check valve

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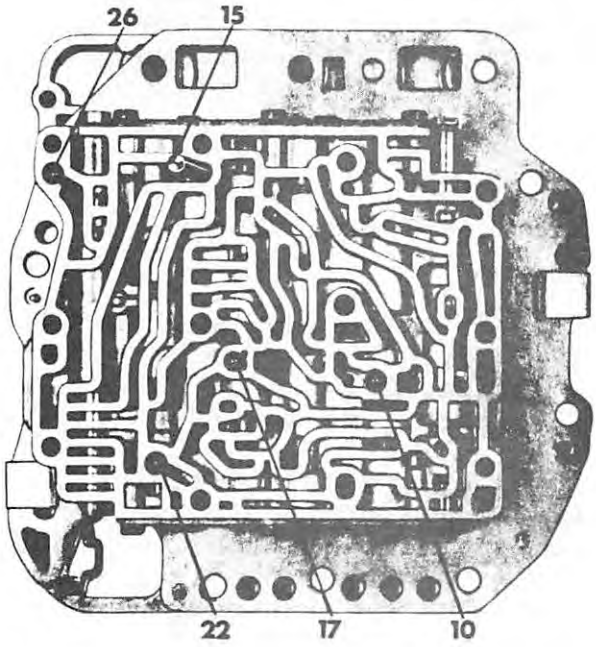

ILLUSTRATION 4

Valve Body Assembly - Lower Part

10. .22 in. (5.5 mm) diameter two-way ball valve
15. Pin down shift (for braking) from 4th to 3rd gear
17. .22 in. (5.5 mm) diameter three-way throttle ball valve
22. .22 in. (5.5 mm) diameter two-way ball valve
26. .22 in. (5.5 mm) diameter two-way ball valve

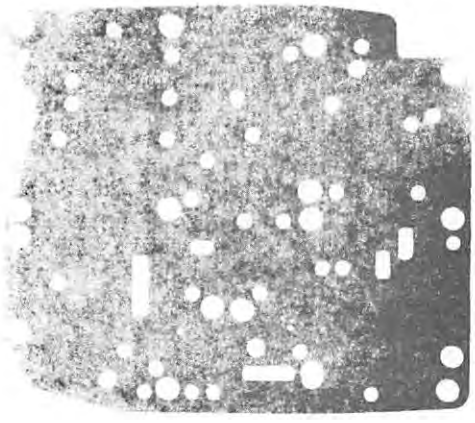

ILLUSTRATION 5

Intermediate Plate
(valve body assembly)

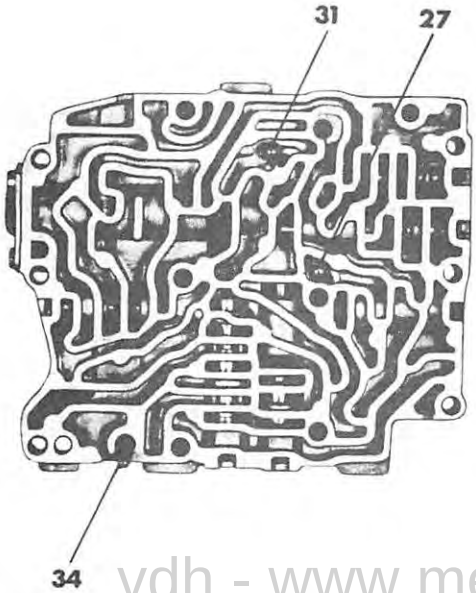

ILLUSTRATION 6

Valve Body Assembly - Upper Part

27. .28 in. (7 mm) diameter one-way throttle valve K1
31. .28 in. (7 mm) diameter one-way throttle valve K2
34. Modulating pressure relief valve
56.8 - 63.9 PSI
(4.0 - 4.5 ATM)

(over)

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On assembly, position lower part of valve body onto intermediate plate of oil distributor plate. Then place intermediate plate of valve body assembly onto valve body assembly -- upper part. Turn over and place onto valve body assembly -- lower part.

C. REASSEMBLY

1. Install following items on the oil distributor plate (Illustration 1).

   - Two .22 in. (5.5 mm) diameter balls (No.'s 40 and 41)
   - Lubricating pressure valve (No. 37)
   - One-way throttle valve B-3 (No. 38)
   - One-way throttle valve, release side B-2 (No. 41)

2. Carefully mount intermediate plate on oil distributor plate. Place gasket on intermediate plate. Use two self manufactured spring clips (Illustration 7). Position intermediate plate with gasket on oil distributor plate (Illustration 2). Observe correct position of valves, as shown in Illustration 1.

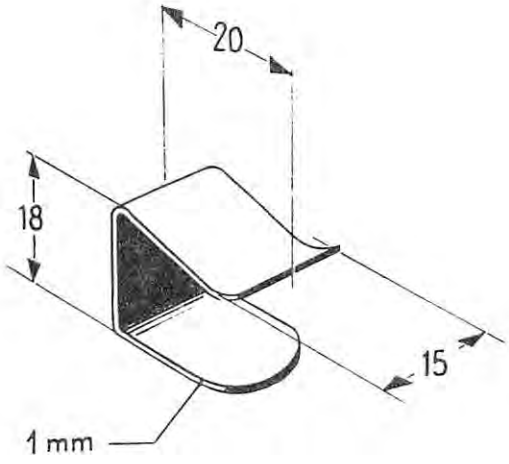

ILLUSTRATION 7

Spring Clip

1 mm = .04 in.
15 mm = .59 in.
18 mm = .71 in.
20 mm = .79 in.

3. Place two .22 in. (5.5 mm) diameter balls (No.'s 11 and 16) on intermediate plate (Illustration 2).

4. Insert from below the primary pump check valve with spring (No. 24) into valve body assembly -- lower part. Tilt protruding valve stem by exerting side pressure.

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5. Carefully install valve body assembly -- lower part onto pre-assembled intermediate plate from above (Illustration 2).

6. Insert following items on the valve body assembly -- lower part (Illustration 4).

   - Four .20 in. (5.0 mm) diameter balls (No.'s 10, 17, 22 and 26).
   - Down-shift pin (for braking from fourth to third gear (No. 15)).

7. Insert following items into valve body assembly -- upper part (Illustration 6):

   - Two .28 in. (7 mm) diameter balls (No.'s 27 and 31).
   - One .22 in. (5.5 mm) diameter ball (No. 34) together with spring underneath them.

8. Place valve body intermediate plate (Illustration 5) at valve body assembly -- upper part. Position both items on valve body assembly -- lower part.

9. Tighten screws evenly with a torque of 5.07 - 5.79 ft. lbs. (0.7 - 0.8 kpm).

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ENCLOSURE

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 103	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 27	Passenger Cars

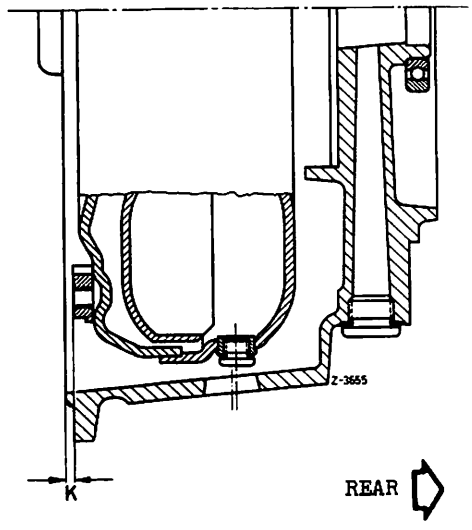
Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of Fluid Clutch of 3 Planetary Gear Set Transmission in Models 220 D/8 to 250/8 (from beginning of series) and 280 S/8 to 300 SEL/8 (from April 1969)

During assembly of the automatic transmission, it often occurs that the drive fingers of the primary pumps are sheared off. This occurs when the fluid clutch is not properly positioned and its drive fingers do not engage with those of the primary pump. To prevent further damages of this kind, an assurance measurement should be performed after the fluid clutch has been installed.

If the clutch is properly positioned, measurement K (see illustration) should be greater than .16 in. (4 mm) and the oil drain plug on the fluid clutch must be offset towards the rear from the center of the hole in the clutch housing.



This check must be repeated prior to tightening the automatic transmission fastening screws.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	19	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	27	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS

Fort Lee, June 1969

Subject: Automatic Transmission - Models 220/8 through 250/8

A. Knocking Noise in the Automatic Transmission

The secondary pump of this transmission only operates when the vehicle is towed or pushed without the engine running. Under this condition, it produces a clearly audible rhythmic knocking noise because the pump plunger contacts the actuating cam.

If, however, the secondary pump starts to operate and produce this knocking noise during driving (with the engine running), a malfunction of this pump (which will not result in damage to the transmission) is present. The repair procedure is as follows:

Remove rear engine support and check the pressure relief valve of the secondary pump. Unscrew the plug (2) from the rear transmission cover (1), take off the pressure spring (3) and the glass ball (4). Visually inspect the glass ball and replace, if damaged. Smooth out the seat of the glass ball in the rear transmission cover prior to reassembly of the pressure relief valve. For this purpose, lightly tap a steel ball .39" Ø (10 mm Ø) against the seat. When install- the spring (3), make sure it is properly positioned on the glass ball (part no. 114 991 00 29).

NOTE: If ball seat is damaged beyond repair, change rear transmission cover assembly.

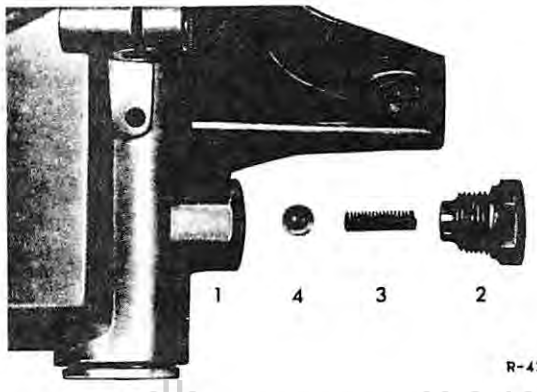

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Illustration 1
Pressure Relief Valve
of Secondary Pump

1. Rear transmission cover
2. Pressure relief valve plug
3. Pressure spring
4. Glass ball

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B. With the vehicle parked and the engine idling, if the selector lever cannot be shifted from position "N" to position "R", proceed as follows:

Connect the pressure gauge to the governor pressure test connection. If governor pressure is indicated with the vehicle at a stand-still and the engine idling, the centrifugal governor needs to be changed. If no governor pressure is indicated, the rear transmission cover, part no. 115 270 12 11, must be replaced.

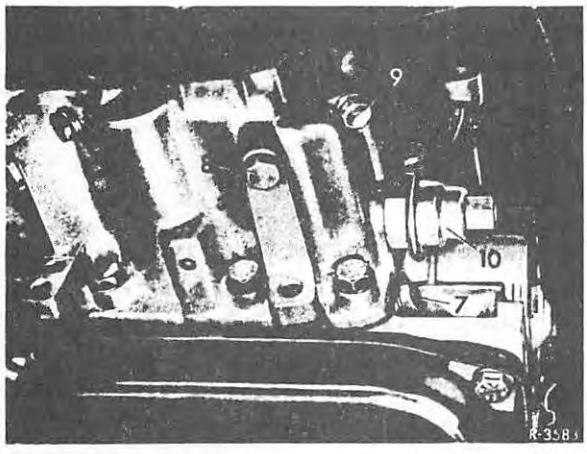

Illustration 2

9. Governor pressure test connection

The parts mentioned are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 77	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	27	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Hydraulic Oil Pressure Noise -- Models 250/8, 280 S/8, and 280 SE/8.

On the above mentioned models you may occasionally encounter a hydraulic oil pressure noise. This noise comes from the oil pressure lines and hoses which connect the engine to the oil cooler. If observed during repair work or in the case of customer complaints, this condition can be corrected by installing different oil pressure lines and hoses.

Listed below are the parts required for the various models.

Model 250/8	Part No.
2 fittings for oil filter	915006 010002
2 seal rings	007603 018100
1 oil pressure line (inlet)	114 180 06 27
1 oil pressure hose (inlet)	114 180 02 82
1 oil pressure hose (return)	114 187 10 82
1 oil line (return)	114 180 07 27

Model 280 S/8	Part No.
2 fittings for oil filter	915006 010002
2 seal rings	007603 018100
1 oil pressure line (inlet)	114 180 06 27
1 oil pressure hose (inlet)	130 180 01 82
1 oil pressure hose (return)	114 187 10 82
1 oil line (return)	114 180 07 27

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Model 280 SE/8	Part No.
2 fittings for oil filter	915006 010002
2 seal rings	007603 018100
1 oil pressure line (inlet)	114 180 06 27
1 oil pressure hose (inlet)	130 180 01 82
1 oil pressure hose (return)	130 187 03 82
1 oil line (return)	130 180 01 27

These new oil pressure lines have already been installed during production in models listed below as of the following chassis end numbers:

Model		Chassis End No.
250/8	Standard Transmission	003549
	Automatic Transmission	002260
280 S/8	Standard Transmission	000115
	Automatic Transmission	000065
280 SE/8	Standard Transmission	001261
	Automatic Transmission	002038

On model 250/8, as of the following chassis end numbers, the engine oil cooler has been eliminated.

Standard Transmission	006625
Automatic Transmission	004676

The time required for this job is 2.5 hours on models 250/8 and 280 S/8, and 3 hours on model 280 SE/8.

The necessary parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 63	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 27	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Automatic Transmission Protective Cover -- Models 200 - 230

On the above models, the protective cover, part No. 111 492 03 30, which is mounted on the lower right section of the automatic transmission is subject to vibrations which may cause it to snap in half at the corner section of the transmission.

This cover has thus been replaced by a modified cover, part No. 111 492 04 30, together with a new bracket, part No. 110 490 06 44.

Only the modified cover and bracket, both of which are available through the M-B parts depots, should be used as replacement parts.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 34	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 27	PASSENGER CARS

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Tow-Starting of Cars with Automatic Transmission -- Models 220/8 through 250/8

The regulation dealing with tow-starting of cars with automatic transmission has been modified as follows for models 220/8 through 250/8:

As usual, the car must be towed with the selector lever in neutral (position "N"). When a speed of approximately 30 mph (50 km/h) is attained, the selector lever must be put into position "2".

Important!

Do not accelerate until the engine starts to turn, since power is only transmitted from the transmission to the engine when the accelerator pedal is in idling position.

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Article No.	File	Group	Application
13	Service Information	27	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Subsequent Installation of Illuminated Gear Shift Quadrant in Cars with Automatic Transmission and Floor-Mounted Selector Lever -- Models 200, 200 D, 230, 230 S, 250 S, and 250 SE

On cars with automatic transmission, the selector lever position is indicated as follows:

a) with steering column selector lever - by an illuminated position indicator in the instrument cluster

b) with floor-mounted selector lever - by its position in the sawtooth slot of the gear shift quadrant.

Illuminated gear shift quadrants have recently been introduced as standard equipment and may be subsequently installed in accordance with the following procedure.

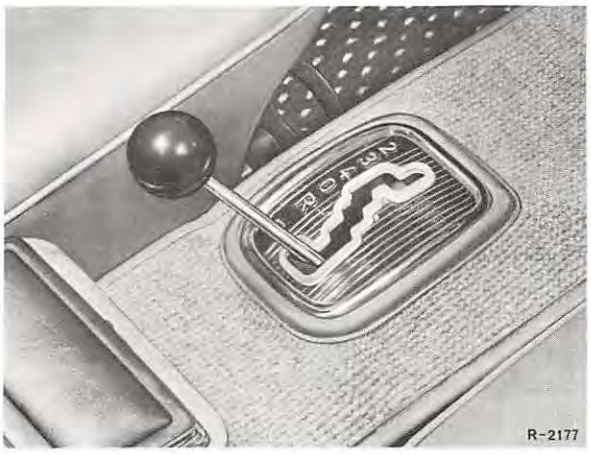

Illustration 1

Floor-Mounted Selector Lever

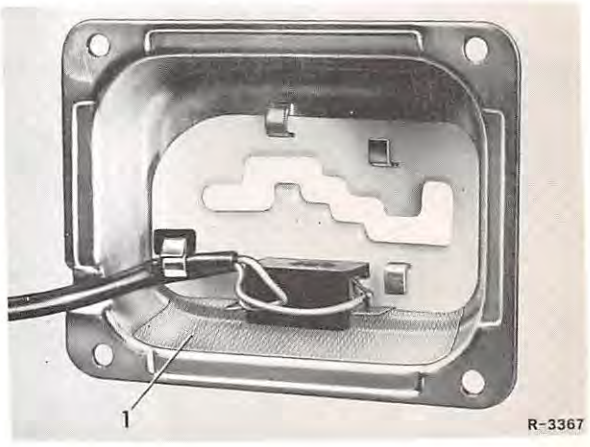

Illustration 2

Illuminated Gear Shift Quadrant (rear side)

1. Adhesive tape

Installation Procedure

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1. Disconnect ground cable from battery.

2. Remove right and left cover paneling beneath dashboard and also front tunnel covering and tray.

3. Remove selector lever knob and unscrew guide plate.

4. Lift up rubber sleeve between gear shift quadrant and supporting plate and remove foam rubber from sleeve in area where gear shift quadrant electrical system will be installed (see illustration 1).

5. Apply adhesive tape (linen tape) to gear shift quadrant socket as shown in illustration 2, item 1.

   Note: It is important that the adhesive tape be installed as indicated because it will prevent the illuminated gear position from being reflected in the windshield.

6. Install illuminated gear shift quadrant, part No. 111 260 00 28.

7. Lay cable harness along tunnel and main cable harness below dashboard to fuse box and connect it to fuse No. 7 and ground cable connector.

8. Check electrical system for proper functioning.

9. Reinstall right and left cover paneling beneath dashboard and tunnel covering and tray between seats.

Time requirement for above installation: 1.5 hours

The illuminated gear shift quadrant, including cable harness, may be ordered under part No. 111 260 00 28 through the M-B parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 45	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 27	Passenger Cars

Fort Lee, January 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Oil Seal Ring on Front Shaft of Automatic Transmission

We are still receiving Technical Product Reports (form MBNA 401) indicating that the oil seal ring on the front shaft of the automatic transmission is being replaced when an oil leak occurs at that location. See illustration 27-10/86, page 27-10/22 of the Workshop Manual Passenger Car Models starting August 1959.

This seal ring should not be replaced because the surface finish and tolerances of the seal groove are so critical that, in case of replacement, the new ring will wear very rapidly, thus causing the oil leak to recur. To permanently eliminate leaks at the location of this seal ring, the transmission must be replaced by a new one.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 56	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 27	Passenger Cars

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Replacement and Maintenance Instructions for Automatic Transmission with Oil Filter

I. General

In Service Information No. 17, Group 27, dated April 1966, we informed you of tests being made with a full-flow oil filter in the automatic transmission. This oil filter, which is installed in place of the oil strainer in the valve body assembly, is now being installed in series production as follows:

Type	Introduction into Series Production Chassis End. No.	Trans. No.	Installation before Series Production Transmission Nos.
200	167109	012567	010771 - 011093
200 D	299270	010536	008461 - 008919
230	019175	004316	002861 - 003105
230 S	094902	049156	047301 - 047485
230 SL	018124	023011	006751 - 009935
250 SL	000001	023011	- -
250 S	023033	023011	006751 - 009935
250 SE	019847	023011	006751 - 009935
250 SE/C	087103	023011	006751 - 009935
300 SEb	001629	010581	008721 - 008952
300 SEL	001068	010581	008721 - 008952
300 SE/C	009546	010581	008721 - 008952

II. Repair/Replacement

Transmissions equipped with these oil filters are stamped with the identification mark "F" on the transmission type plate, behind the transmission No. Transmissions which were previously equipped with this filter and which are not stamped with an "F" should be subsequently marked.

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Since, depending on the type transmission, the flat rates and oil-change intervals differ, we recommend replacing transmissions only with identical type transmissions. If this is not possible, a modification note should be made in the customer's file. In this regard, we would like to emphasize again that the oil filter cannot be installed in place of the oil strainer.

Part numbers for the new valve body assembly which can be installed in transmissions with oil filters or transmissions with oil strainers are listed below. The valve body assemblies are delivered without an oil filter or strainer. Depending on the type transmission, they should be equipped during installation with the oil strainer, part No. 112 277 02 95, or the oil filter, part No. 112 277 03 95.

Type	Valve Body Assembly Part Number
190 c, 200	110 270 17 07
190 Dc, 200 D	110 270 16 07
230, 230 S	111 270 05 07
230 SL, 250 S/SE/SL	113 270 03 07
300 SE/SEb/SEL, 300 SE Cpe./Conv.	112 270 23 07

III. Oil-Change Intervals

When transmissions have an oil filter, the oil and the oil filter must be changed after 50,000 km (30,000 mi.). An additional oil change (without changing the filter) must be made between regular oil changes, i.e. after every 25,000 km (15,000 mi.), on vehicles operating under unfavorable or extreme conditions, i.e. predominantly city or mountain driving, driving with a trailer, operating as a taxi, etc.

IV. Flat Rates

The service work and the flat rates differ for vehicles with an oil filter in the transmission. The following values must be added to or deducted from each lubrication job of the respective services:

a) Normal driving conditions

D Service No.	11	50,000 km(30,000 mi.)	+65 min.
	31	150,000 km(90,000 mi.)	+65 min.

Service work included:
Change of oil, removal and installation of oil sump, change of filter.

E Service No.	5	20,000 km(12,000 mi.)	-30 min.
	9	40,000 km(24,000 mi.)	-30 min.
	13	60,000 km(36,000 mi.)	-30 min.
	17	80,000 km(48,000 mi.)	-30 min.
	25	120,000 km(72,000 mi.)	-30 min.
	29	140,000 km(84,000 mi.)	-30 min.

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E Service No. 33 160,000 km(96,000 mi.) -30 min.
37 180,000 km(112,000 mi.) -30 min.
No oil change in the automatic transmission is required during this service work.

E Service No. 21 100,000 km(60,000 mi.) +35 min.
41 200,000 km(134,000 mi.) +35 min.
Service work included:
Removal and installation of oil sump, change of filter.

b) Unfavorable or extreme driving conditions

In case of unfavorable or extreme driving conditions, the intermediate oil changes have been set for the C Service, Nos. 6, 16, 26, and 36.

C Service No. 6 25,000 km(15,000 mi.) +30 min.
16 75,000 km(45,000 mi.) +30 min.
26 125,000 km(75,000 mi.) +30 min.
36 175,000 km(105,000 mi.) +30 min.
Service work included:
Change of oil, without change of filter.

This Service Information invalidates our instructions to change the oil at least once a year in cars with automatic transmission (with or without oil filter).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 40	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 27	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Pressure Test Connections on the Automatic Transmission

On the automatic transmissions of all types, the pressure test connections for the primary and secondary pumps have recently been omitted; in addition, on the transmissions of types 200 through 230 S, the pressure test connection for brake band B 3 (and clutch K 3) has also been omitted. See Table 1 for the respective transmission numbers from which this change was initiated.

These alterations will not prevent you from checking automatic transmissions for proper functioning at your workshop. The operating pressures of the primary and secondary pumps can be measured at the test connections for brake bands and clutches, respectively.

Table 1

No pressure test connection for:

Type	Primary pump from transmission no.	Secondary pump from transmission no.	B3/K3 from transmission no.
200	12 944	11 799	13 351
200 D	11 164	9 705	11 779
230	4 848	3 676	5 408
230 S	49 354	48 253	50 520
230 SL 250 S 250 SE 250 SE Cpe./ Conv.	34 425	15 886	---
300 SEb 300 SEL 300 SE Cpe./ Conv.	10 718	9 766	---
600	1 061	831	---

NOTE: For your convenience, we are attaching a modulating and operating pressure chart and a shift point chart for "E" and "A" version automatic transmissions. We

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suggest that you file the soft copy with this Service Information and put the hard copy on your technical bulletin board. In this connection, we also wish to direct your attention to Service Information No. 35, Group 27, dated May 1965.

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Attachments

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MODULATING & OPERATING PRESSURES
FOR "E" & "A" VERSION AUTOMATIC TRANSMISSIONS

"E" - standardized version

"A" - modified version for 4-cylinder types

		230 SL, 250 SE, 250 S from Chassis No. 3651	300 SE, 300 SEb, 300 SEL	220 b/Sb/SEb, 230 230 S, 250 S up to Chassis No. 3650	190 c, 200	190 Dc	190 Dc from transmission No. 1467, 200 D
MODULATING PRESSURE (PSI)	Idle	8.5	8.5	8.5	8.5	12.8	12.8
	Full Throttle	41	41	41	41	38-41	38-41
	Kick-down	62.5	62.5	62.5	1st&2nd gear 62-65; 3rd & 4th 54	1st&2nd gear 61-64; 3rd & 4th 57	61-64
(K 2) BASIC CLUTCH PRESSURE (PSI)	1st & 2nd GEAR	36.9	45.5	36.9	36.9	44	44
(B 1 & B 2) BASIC BAND PRESSURE (PSI)		57	57	57	57	57	64
MAXIMUM PRESSURE (PSI)		125	135	110.7	92.3	79.5	Clutch: 79.5 Band: 115
(K 1 & K 2) BASIC CLUTCH PRESSURE (PSI)	3rd & 4th GEAR	21.3	25.5	21.3	21.3	25.5	25.5
(B 2) BASIC BAND PRESSURE (PSI)		28.4	28.4	28.4	28.4	57	36.9
MAXIMUM PRESSURE (PSI)		71	76.7	64	54	Clutch: 45.5 Band: 57	Clutch: 45.5 Band: 65.3
BASIC PRESSURE (PSI)	REVERSE	81	93.7	81	81	119.3	64
MAXIMUM PRESSURE (PSI)		207.3	221.5	187.4	161.9	171.8	115 to 127.8

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SHIFT POINTS FOR "E" & "A" VERSION AUTOMATIC TRANSMISSIONS

THROTTLE POSITION	GEAR CHANGE	190 c, 200, 200 b/Sb/ SEb, 230, 230 S, 300 SE, 250 S up to Chassis Serial No. 3650		230 SL, 300 SE-EH[1]; 250 SE & 300 SEb/SEL[2], 250 S from Chassis Serial No. 3651		190 Dc - 200 D	
		UP	DOWN	UP	DOWN	UP	DOWN
		M.P.H.	M.P.H.	M.P.H.	M.P.H.	M.P.H.	M.P.H.
1 Partial	2-3	16	11	16	11	17	14
2 Partial	3-4	25	19	28	19	25	19
3 Full	2-3	25	11	28	11	30 (25*)	14
4 Full	3-4	62	19	75	19	47 (53*)	19
5 Kick-down	2-3	36	19	47	19	30 (34*)	19
6 Kick-down	3-4	62	53	75	65	47 (53*)	41 (47*)
1 Kick-down	1-2	16	6-7	16	6-7	17	6-7
2 Full	2-3	36	11	47	11	30 (34*)	14
3 Kick-down	2-3	36	29	47	40	30 (34*)	23 (27*)
1 Partial	1-2	9	6	9	6	9	6
2 Full	1-2	25	6	28	6	17	6
3 Kick-down	1-2	25	19	28	19	17	14

* - M.P.H. for 190 Dc second version from Transmission No. 1467 and 200 D.

TOP SPEED THROTTLE POS. 3

190C, 220b/Sb/SEb, 300SE, 300 SEb/SEL-	71 MPH
200, 230, 230 S-	67 MPH
230SL, 300 SE-EH-	81 MPH
250S/SE-	75 MPH
190Dc - 200D-	53 MPH

TOP SPEED THROTTLE POS. 2

190C, 220b/Sb/SEb, 300SE, 300 SEb/SEL-	43 MPH
200, 230, 230 S-	43 MPH
230SL, 300 SE-EH-	47 MPH
250S/SE-	50 MPH
190Dc - 200D-	34 MPH

1) 300 SE-EH - 300 SE engine with increased horsepower.

2) Speeds are approximately 4% lower for types 250 SE, 300 SEb/SEL with standard axle ratio of 3.92, and speeds are approximately 5% higher for types 300 SEb/SEL with rear axle ratio of 3.96.

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Article No.	File	Group	Application
MB-T 24	Service Information	27	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Automatic Transmission Modulator Pressure

The modulating pressure is very important for proper operation of the automatic transmission, as it controls the operating pressure for the clutches and bands. Therefore, correct adjustment is of vital importance.

Adjusting the modulating pressure too low could result in serious damage to the clutches and bands within a short period of time.

Under no circumstances should a low-pressure adjustment be made to soften the shifting points of the various gears!

For the proper pressure readings, refer to Service Information No. 40, Group 27, dated August 1967.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 2	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 27	Passenger Cars

Fort Lee, February 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Hydraulic Clutch of Types
230, 230 S, 230 SL, 250 S, and 250 SE

From the beginning of production, the Types 200 and 200 D with automatic transmission have had a hydraulic clutch mounted to the flywheel with six screws instead of four as formerly. This innovation has now been introduced in production on Types 230, 230 S, 230 SL, 250 S, and 250 SE. The chassis serial end numbers involved are indicated in the chart on page 2 of this information.

In case of repairs, it is important to note that when replacing crankshafts and clutches, those of the six-screw version must be replaced by parts of the six-screw version and those of the four-screw version by parts of the four-screw version. The two versions are not interchangeable. Consult the table on page 2 for correct part numbers.

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Type (Both Left-Hand and Right-Hand Drive)	Chassis Serial End Numbers Involved	PART NUMBERS					
		Crankshaft with Flywheel & Bearings		Clutch		Screws	
		6 holes	4 holes	6 screws	4 screws	6 holes	4 holes
230	017649 and upward, except 017767. Also installed in 017272, 017281, 017286, 017369, 017461, 017609, 017610, 017611, and 017614 through 017647	127 030 69 01	---	111 250 15 02	---	000933 008030	---
	up through 017648, except 017272, 017281, 017286, 017369, 017461, 017609, 017610, 017611, and 017614 through 017647. Also installed in 017767.	---	180 030 81 01	---	111 250 16 02	---	000912 008047
230 S	093862 and upward	127 030 69 01	---	111 250 15 02	---	000933 008030	---
	up through 093861	---	180 030 81 01	---	111 250 16 02	---	000912 008047
230 SL	017880 and upward	127 030 71 01	---	111 250 15 02	---	000933 008030	---
	up through 017879	---	127 030 44 01	---	111 250 16 02	---	000912 008047
250 S	013006 and upward, plus 012768 through 012910	108 030 43 01	---	111 250 15 02	---	000933 008030	---
	up through 013005, except 012768 through 012910	---	108 030 25 01	---	111 250 16 02	---	000912 008047
250 SE Sedan	010300 and upward, plus 009942 through 010015	108 030 43 01	---	111 250 15 02	---	000933 008030	---
	up through 010299, except 009942 through 010015	---	108 030 25 01	---	111 250 16 02	---	000912 008047
250 SE Cpe./Conv.	086010 and upward	108 030 43 01	---	111 250 15 02	---	000933 008030	---
	up through 086009	---	108 030 25 01	---	111 250 16 02	---	000912 008047

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Daimler-Benz AG / Export-Service

No. 5	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo 27	Passenger Cars

Stuttgart-Untertürkheim, January 1961

To all Mercedes-Benz Agencies

Re: Up and down stroke solenoid of automatic DB transmission

The up and down stroke solenoid of the automatic transmission is equipped with a damping washer made of plastic. If the air humidity is extremely high it may happen that the damping washer swells and jams the plunger of the solenoid in its idling position. Thus the modulating pressure transmitter is in idling position, too. When depressing the accelerator pedal the up and down stroke solenoid is seized in idling position, the modulating pressure and working pressure remain at their lowest values, the servo members slip and are damaged within very short time.

If the plunger starts to get jammed this can be recognized as follows:

Drive vehicle in 4th speed without depressing the accelerator pedal (in the overrun) and then depress accelerator pedal slightly. If the shifting members in the transmission slip for a short time, fuse 3 should be removed from the fuse box with the middle-class cars and fuse 11 with Type 600. Then repeat procedure as carried out before. If no slipping is noticed now, the up and down stroke solenoid has doubtlessly become jammed in its idling position.

Attention!

Since the defect of the up and down stroke solenoid may only appear intermittently, this test should be carried out several times.

After having replaced the up and down stroke solenoid, the modulating pressure is to be checked and readjusted, if necessary. The modulating pressure transmitter is to be marked with a green dot.

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The solenoids installed as standard parts now have been changed. The former plastic damping washer has been replaced by a damping washer made of brass. The new up and down stroke solenoids are marked with the letter "C" in front of the serial number. The part number 000 304 02 90 remains unchanged.

Since the former version ("A" and "B") of the up and down stroke solenoid must no longer be installed, any parts still kept on stock are to be returned to the respective distributors, who will submit the old parts together with their parts still on stock to our Department ET/VEX of the Untertürkheim Plant for replacement or crediting.

With these instructions we want to assist you in finding this hidden defect. This Service Information is, therefore, first of all intended to help those people who are directly engaged in establishing a diagnosis.

Daimler-Benz Aktiengesellschaft

s/ppa. Pfeiffer s/ppa. Mauthe

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Daimler-Benz AG / Export-Service

No. 70	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 27	PASSENGER CARS

Stuttgart-Untertürkheim, October, 1965

To all Daimler-Benz Agencies

Re: Oils released for the automatic transmission of Type 600

For a particular reason we should like to point out once again that so far only the gear oils listed below have been released for use in the automatic transmission of Type 600:

Caltex-Texamatic-Fluid AQ 1800A

Texaco-Texamatic-Fluid AQ 1735A

Veedol ATF Type A, Suffix A Special

We would urgently ask you to use only these oils for Type 600 since otherwise a failure of the transmission might be the result. Naturally the above gear oils have also been released for use in the automatic transmissions of our remaining models and may be used for these without hesitation.

Daimler-Benz Aktiengesellschaft

s/ppa. Pfeiffer s/ppa. Mauthe

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 26	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 27	PASSENGER CARS

Stuttgart-Untertürkheim, June 1964

To all Daimler-Benz Agencies

Re.: *Standard Automatic Transmissions for Types 190c, 220b, Sb, and SEb*

In our Service Information No. 1, Group 27, of January 1964 we mentioned that the production of the standard automatic transmissions for Types 190c, 220b, Sb, and SEb would be started at a later date. The series production of these standard transmissions has now been taken up.

Also with regard to these transmissions, you will have to take care that in case of repairs a particular sleeve shift box may be used only for the respective type of transmission. In no case the standard transmission may be fitted with a sleeve shift box of a previous transmission version or vice versa, as this would damage the transmission. To distinguish this transmission, it has been marked "E" behind the type designation on the type plate (see Figure 1 in Service Information No. 1 of January 1964) as well as behind the designation of the appertaining sleeve shift box.

The part numbers of the individual sleeve shift boxes and the respective designations etched into the front wall are listed in the table below.

Type	Sleeve shift box for standard autom. transmission part No. / designation	Sleeve shift box for the previous transmission version part No. / designation
190c	110 270 06 07/W 110 E	110 270 00 07/110
190 Dc	110 270 09 07/W 110 D	-
220b) 220 Sb) 220 SEb)	111 270 02 07/W 111 E	112 270 08 07/111-112
300 SE	112 270 19 07/W 112 E	112 270 08 07/111-112
230 SL	113 270 00 07/W 113	-

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s/ppa. Pfeiffer *s/ppa. Mauthe*

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Daimler-Benz AG Export-Service

No 13 Service Information Group 27 Passenger Cars

Stuttgart-Untertürkheim, March 1964

To all Daimler-Benz Agencies

Re.: Automatic DB-Transmission in Type 190 Dc

Since the beginning of this year, Type 190 Dc, too, has been supplied with automatic DB-transmission, upon special request. As of transmission No. 1 the "standard automatic transmission" has been installed, the mechanical system of which is identical with the transmissions of the other passenger cars (see Service Information No. 1, Group 27, of January 1964). Only the hydraulic components are different:

1. The sleeve shift box for the adjustment of the oil pressures to the engine torques of Type 190 Dc.

2. The regulator, because of the different shifting points.

3. The modulating pressure transmitter, as the transmission cannot be controlled by the vacuum of the Diesel engine.

The automatic DB transmission of Type 190 Dc is controlled by the travel of the accelerator pedal which is connected with the modulating pressure transmitter (8) at the angle lever (2) via the control rod (5) (see Figure 1). In this way, the movement of the accelerator pedal is transmitted direct to the modulating pressure transmitter, and the electrical control is omitted. That means there are no up and down solenoid, idling switch, or electrical kickdown control. If necessary, only the adjustment of the control rod has to be checked and corrected.

The shifting points of the automatic DB transmission of Type 190 Dc have been specified in the following table, the speeds stated being approximate values only.

Figure and Table see pages 2 and 3

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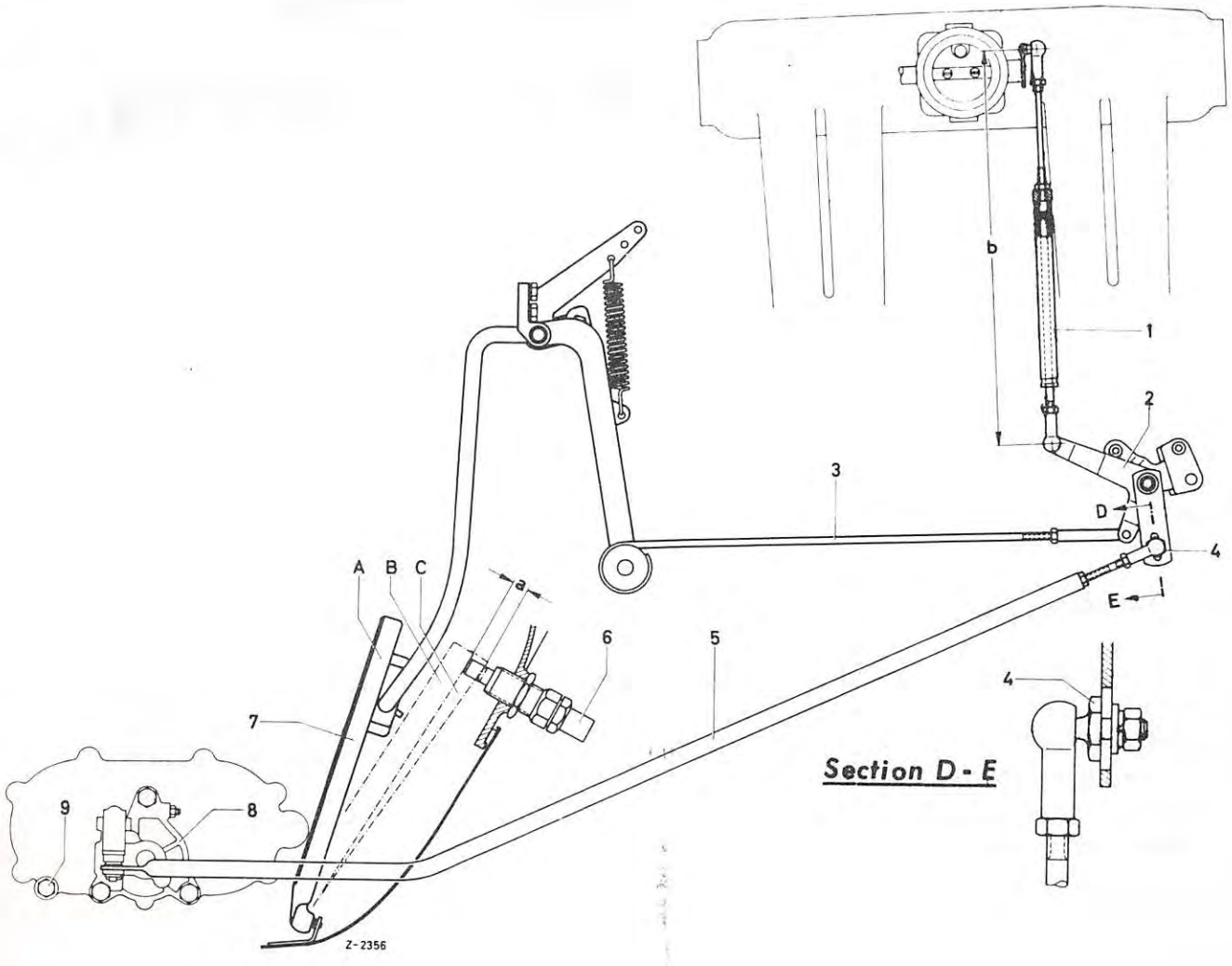

Figure 1

1 *spring-loaded intermediate rod*
2 *angle lever*
3 *push rod*
4 *ball head*
5 *control rod*
6 *spring stop (pedal gear-change)*
7 *accelerator pedal*
8 *modulating pressure transmitter*
9 *measuring connection for modulating pressure*

Position of the accelerator pedal

A *idling speed*
B *full throttle*
C *kickdown*

a *travel for kickdown*

b *length of spring-loaded intermediate rod, not extended*

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Shifting		1st/2nd gear		2nd/3rd gear		3rd/4th gear	
	changing	up	down	up	down	up	down
position of the selector lever	position of the accelerator pedal	speed in km/h					
4	reduced throttle	-	-	28	23	40	30
	full throttle	-	-	47	23	77	30
	kickdown	28	10-18	47	30	77	68
3	reduced throttle	-		28	23		
	full throttle			47	23	-	-
	kickdown	28	10 18	47	40		-
2	reduced throttle	15	10	-	-	-	-
	full throttle	12-18	10-12	-	-	-	-
	kickdown	28	23	-	-	-	-

Checking and adjusting the control linkage

a) Basic adjustment

The manual throttle control is to be put fully at idling speed. The spring-loaded connection rod (1) must be b = 298 mm long. Disconnect the control rod (5) leading to the modulating pressure transmitter (8) at the angle lever (2) and check whether the ball socket (4) fits to the ball head free of tension (Figure 1). If when pressing on the ball socket, the mixture control valve opens, the rod is too long; if the lever at the modulating pressure transmitter is lifted from its neutral stop, the rod is too short. In that case, the correct length of the control rod should be adjusted at the threaded fitting at the side of the rod with the ball socket; it must never be adjusted at the side of the modulating pressure transmitter.

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b) Adjusting the control linkage while the engine is running

With the engine running the modulating pressure can be measured by means of a pressure gauge and the linkage be adjusted accordingly. The procedure is as follows:

A pressure gauge must be connected to the measuring connection for the modulating pressure (9). Then start the engine, step on the foot brake, put the selector lever to one of the driving positions and run the engine at full throttle. (Attention! The engine should be run at full throttle for short periods only to avoid an overheating of the hydraulic clutch and prevent damage to the engine). The accelerator pedal must just touch the spring stop. The modulating pressure should then be 2.8 to 2.9 kg/cm^2.

If the pressure is too high the lever arm of the adjustable ball head (4) has to be shortened in the oblong hole of the angle lever or elongated in the reserve case (Figure 1).

During the driving test with the pressure gauge connected the modulating pressure must be checked once more. The pressures must be as follows:

At idling speed	0.9 to 1.0 kg/cm^2
At full throttle	2.9 kg/cm^2
At kickdown	4.0 kg/cm^2

c) Adjusting the control linkage by means of the calibrated disc while the engine is at a stop

The method of adjustment described below is in any case to be preferred to an adjustment while the engine is running as described under b). The calibrated disc with indicator, part No. 110 589 00 21 00 (Figure 2), which is required for this method, is, however, not yet available at the moment. You will be informed about the possibilities of delivery by separate mail.

After fitting the calibrated disc and the indicator (see Figure 2) the adjustment is to be carried out as follows:

With closed mixture control valve and the lever at the modulating pressure transmitter at neutral the indicator must be set to point to the zero mark of the calibrated disc. Step on the accelerator pedal (7) to full throttle until it just touches the spring stop (6) (Figure 1, position B). When doing so the spring-loaded connecting rod (1) may be extended by approximately 1 mm. The mix-

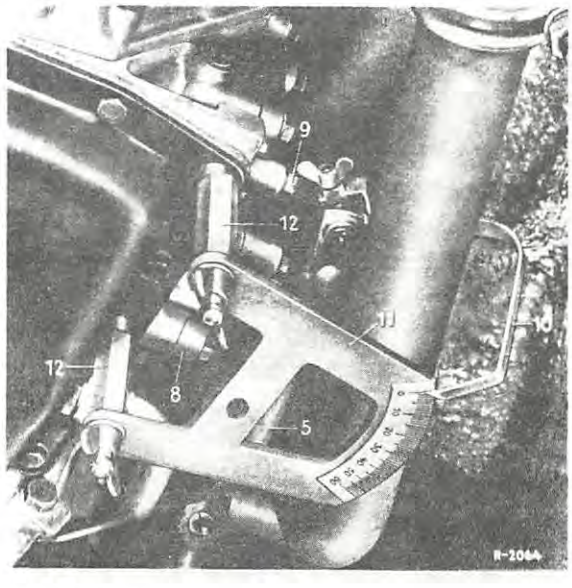

Figure 2

5 control rod
8 modulating pressure transmitter
9 measuring connection for modulating pressure
10 indicator
11 calibrated disc
12 threaded bolt

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ture control valve must be opened completely. The angle range of the lever at the modulating pressure transmitter should then be 39° - 0.5°. If the angle range is too large, the lever arm of the adjustable ball head (4) must be shortened in the oblong hole of the angle lever (2) or elongated in the reserve case (Figure 1).

In conclusion, we would point out that after carrying out any jobs at the mixture control valve or at the intake pipe and after adjusting the idling speed the entire adjustment of the control linkage has to be checked.

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s/ppa. Pfeiffer s/ppa. Mauthe

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 1	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 27	Passenger Cars

Stuttgart-Untertürkheim, January 1964

To all Daimler-Benz Agencies

Re.: Automatic DB Transmission as Standard Transmission

While up to now, depending on vehicle model, various embodiments of the automatic DB transmission were used for our passenger car models, we have by now developed the "standard transmission". With the exception of the front gear housing cover, which has no oil cooler connections with four-cylinder engines, the said transmission now fits with its mechanical portion into all passenger car models of our present production; that is, to those models which have an automatic transmission. Only in the hydraulic portion (shift sleeve housing, regulator and modulating pressure transmitter), the standard transmissions are fitted to the requirements of the respective vehicle model; this is the explanation for the varying part numbers of the individual transmissions. For the 300 SE models, the standard transmission is available already as from transmission No. 5208 (part No. 112 270 09 01); the same goes for models 230 SL and 190 Dc as from transmission No. 1 (part No. 113 270 01 01 or 110 270 05 01, respectively). The other models will follow suit shortly.

The essential differences in the standard transmission as compared with the various automatic transmissions supplied in the past are as follows:

a) Three-legged flange and output shaft profile the same as for the mechanical transmission; this makes the transmission 7 mm longer than before.

b) Number of clutch plates changed.

c) Piston of plate clutch K 2 enlarged, piston return springs changed and their number increased.

d) Brake band thrust bearing with enlarged flow cross section.

e) For vehicles with gasoline engine: Cap of modulating pressure transmitter with larger I.D. (300 SE: 28 mm dia., other models: 26.5 mm dia.); stronger diaphragm spring (modulating basic pressure: 0.6 kg/cm² against 0.9 kg/cm² previously).

f) Shift sleeve housing with additional sleeves to improve quality of shifting when changing from 2nd to 3rd gear.

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654 00 001 00 b 566 200 17772

Exchange of shift sleeve housing

If the shift sleeve housing is ever exchanged, be sure not to confuse the transmission type and transmission number (Figure 1). Absolutely never attach a shift sleeve housing of a former transmission type to the standard transmission or vice-versa, since this will inevitably destroy the transmission. To show the difference between the old automatic transmission and the new one model 300 SE carries both behind the type designation on the rating plate (refer to arrow in Figure 1), and also behind the designation of the pertinent shift sleeve housing the letter "E".

Figure 1

The part number for the individual shift sleeve housings and the pertinent designations etched-in at the face end, are shown on the following chart:

Type	Shift sleeve housing for standard transmission Part No./Designation	Shift sleeve housing for former transmission Part No./Designation
190c	–	110 270 00 07 / 110
190 Dc	110 270 09 07 / 110 D	–
220b) 220 Sb) 220 SEb)	–	112 270 08 07 / 111/112
300 SE	112 270 19 07 / 112 E	112 270 08 07 / 111/112
230 SL	113 270 00 07 / 113	–

Exchange of transmission for model 300 SE

If on a model 300 SE with standard wheel base the old transmission is exchanged against a standard transmission, there may be difficulties as the result of the difference in length between the two transmissions (refer to page 1, item a), since the two fastening holes of the universal shaft intermediate bearing bracket may no longer be adequate for tension-free assembly. In such a case the fastening holes must be filed larger as required, though not in excess of an additional 4 mm (refer to "a" in Figure 2).

On a refinished bearing bracket a galvanized washer 8.4 DIN 125 should be added and screwed-on at the two holes.

If 4 mm are insufficient, the front universal shaft should be exchanged against

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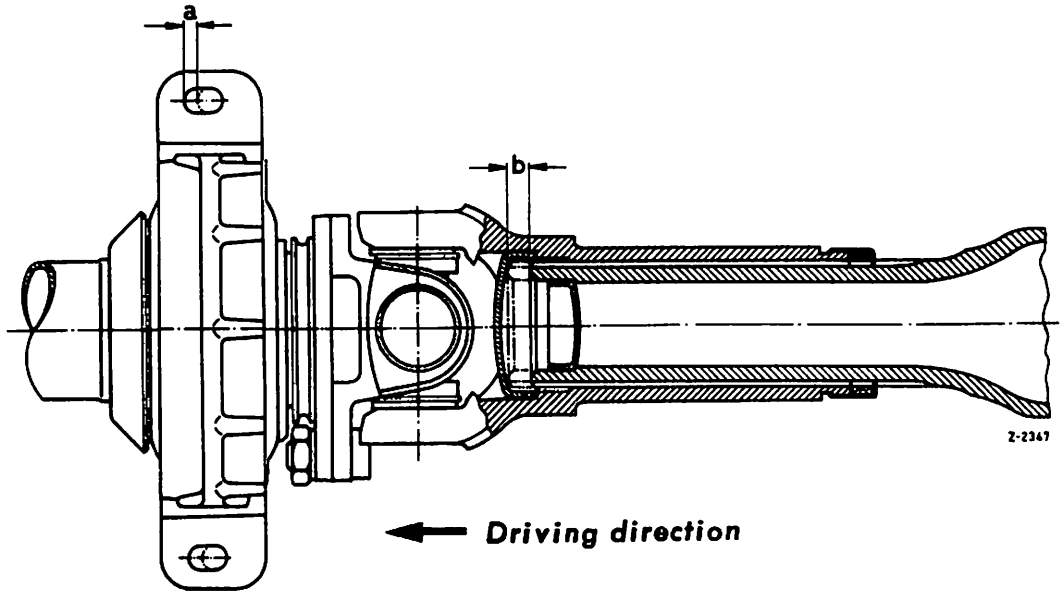

Figure 2

a shorter one under part No. 111 410 15 01 (will be replaced in the current year against part No. 111 410 14 01 with service-free intermediate bearing). If it is shown from the beginning that enlarging of the hole by filing will be insufficient, the shorter universal shaft must be used right away without any refinish.

With the vehicle rear jacked-up - with rear axles in retaining strap - there should still be at least 5 mm slide reserve left in the slide piece (refer to "b" in Figure 2). In combination with shorter front universal shaft the said reserve will be definitely available. If the minimum dimension "b" is not available with a refinished bearing bracket, the shorter front universal shaft should also be used. There are no difficulties in model 300 SE long, because the universal shaft is already made shorter during production.

In closing, please note that the 3 washers added at the three-legged flange of the former automatic transmission are not required for the standard transmission, since the new three-legged flange is longer by the thickness of one washer. (Driving direction).

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 29	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 27	Passenger Cars

Stuttgart-Untertürkheim, May 1963

To all Daimler-Benz Agencies

Re.: Automatic DB Transmission - Brief Inspection Instructions

Owing to the constantly increasing number of vehicles with automatic DB transmission in our export countries it is necessary that our small and medium-sized agencies, too, should be absolutely familiar with the servicing peculiarities of the automatic DB transmission in order to be able to render expert service.

The relative technical literature has already been published with the introductory print about the automatic DB transmission and with Supplement 16 to the Workshop Manual, Passenger Car Types, as of August 1959.

All distributors who service a sufficiently large number of vehicles to justify the setting up of facilities for a partial overhaul of automatic transmissions and who are in a position to do so due to their workshop and staff situation have been supplied with the following written particulars for manufacturing their own equipment:

a) Test stand for automatic DB transmissions for operational tests in connection with and engine test stand (12 pressure gauges, speedometer and revolution counter).

b) Testing device for automatic DB transmissions for operational test during road operation (8 pressure gauges).

c) Special tools for carrying out partial overhauls on automatic DB transmissions.

Furthermore, the staff of these repair stations have been informed of the technical side of repairs on automatic transmissions by means of special training courses.

In order to enable all workshop to obtain unobjectionable results when checking automatic DB transmissions we now recommend that a test device be manufactured by yourselves which consists of 3 pressure gauges (see sketch). Besides a basic check-up this test device also permits measuring of the most important hydraulic pressures and has the advantage, furthermore, of requiring comparatively simply means for its manufacture only and keeping the testing costs low.

Thus the smaller service stations, too, are in a position to obtain unobjecionable inspection results and to avoid an unnecessary exchange of units.

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The basic check-up includes the following important hydraulic pressures:

1. Modulating pressure
2. Stepped pressure
3. Working pressure of primary pump

A check-up of this kind can also be carried out by means of a commercial pressure gauge with an indicating range of 0 to 20 kg/cm^2 although this procedure is rather uneconomical as regards the time factor since the pressure gauge has to be connected successively to the various control points on the transmission.

In order to facilitate reading and ajusting of the modulating pressure the pressure gauge for the modulating pressure should have an indicating range of 0 to 6 kg/cm^2.

Enclosures
Sketch
Brief Inspection Instructions

With some experience and basic knowlege about the automatic DB trans - mission the tests outlined in the inspection instructions will show if a complaint can be remedied by adjustments or perhaps an exchange of the shift sleeve box or if an exchange of the complete transmission is necessary.

In case the check-up indicates that the complete transmission has to be removed it has to be forwarded to the respective repair station for repair. As regards detailed information in this respect we would ask our dealers to contact their competent distributors.

Daimler-Benz Aktiengesellschaft
s./ppa. Mauthe s./i.V. Buesser

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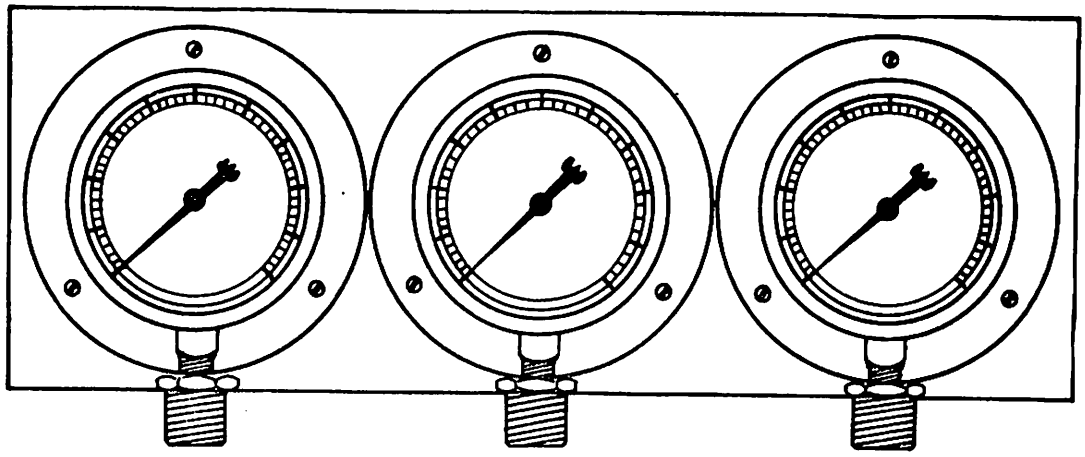
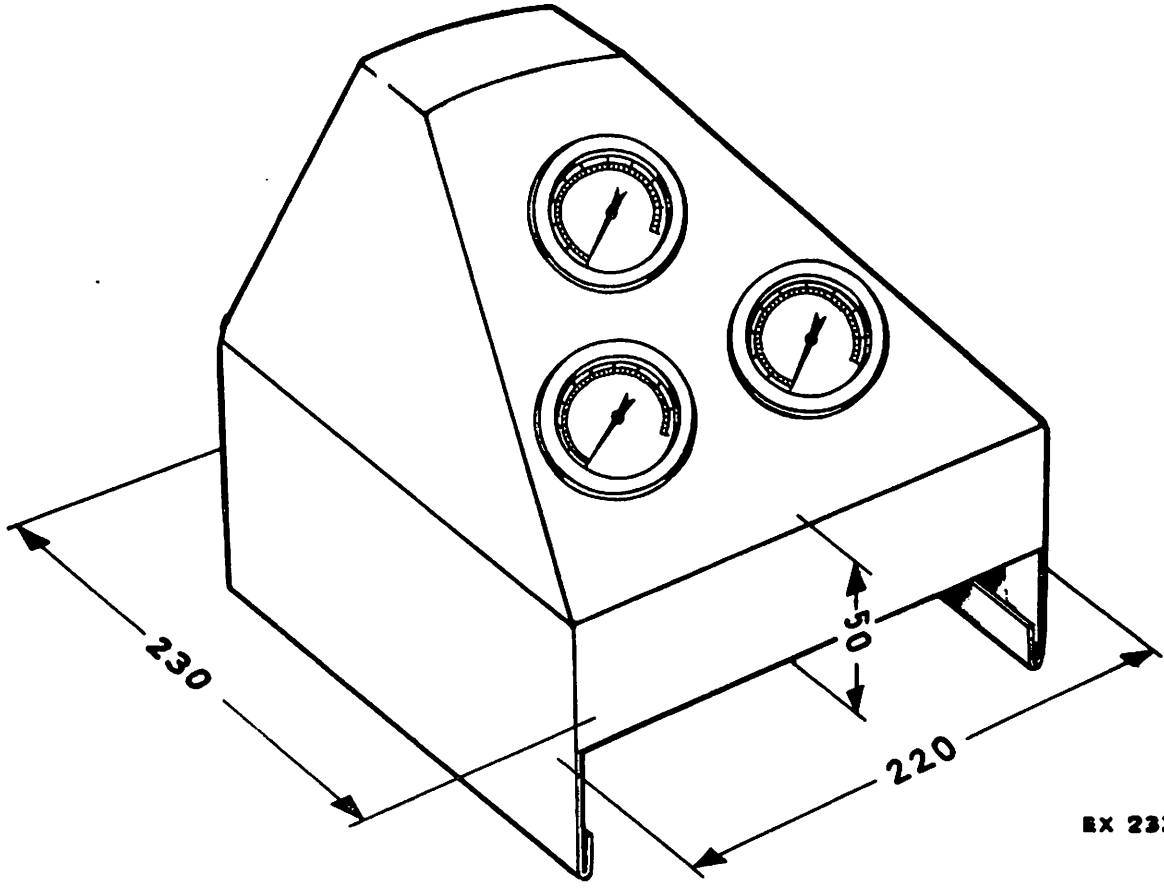


EX 234/63

Optional



EX 233/63

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Brief Inspection Instructions for Automatic DB Transmission

On principle, the following basic check-up has to be carried out prior to every operational test since the source of irregularities very often can be traced down to incorrect adjustment of the shifting or control linkage, or the like.

1. Basic check-up

a) Oil level inspection:

(see introductory print "Automatic DB Transmission", page 18, or Workshop Manual, Passenger Car Types 1959, Volume II, 27-2/1).

Note:
In case the oil level inspection shows that the oil has a deep black colour and smells burnt the transmission has to be removed. These symptoms indicate damage to the clutches and brake bands.

b) Adjustment of the shifting linkage:

(see introductory print "Automatic DB Transmission" page 28, or Workshop Manual, Passenger Car Types, August 1959, Volume II, 27-4/1).

c) Throttle or control linkage:

(see Workshop Manual, Passenger Car Types, August 1959, Volume I, 00-16/1).

d) Idling adjustment:

(see Workshop Manual, Passenger Car Types, August 1959, Volume I, 00-16/9 or introductory print "Automatic DB Transmission", page 29-32).

e) Check solenoid for maintaining the speed constant (if installed) (see Workshop Manual, Passenger Car Types, August 1959, Volume I, 00-16/11 or introductory print "Automatic DB Transmission" page 31-32).

f) Check kickdown and release switch (idling switch) as well as the up and down stroke solenoid:

When effecting this check-up observe the linkage of the up and down stroke solenoid and pay attention to the following points:

1. When switching on the ignition the linkage moves towards the rear.
2. When tapping the gas pedal the linkage moves into its center position (slightly towards the front).
3. When actuating the kickdown switch the linkage moves forward (in direction of the engine).

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g) Adjustment of kickdown switch:

The kickdown switch is adjusted correctly if with full throttle position of the gas pedal (kickdown switch not actuated) the throttle flap lever is located approx. 4-5 mm in front of the full load stop on the throttle valve or carburator, resp..

The adjustment can be corrected by unscrewing or screwing in the kickdown switch after loosening the counter nut on the cover plate of the casing.

In case irregularities cannot be eliminated by the checking and adjusting measures outlined above it is almost certain that the cause lies in the transmission itself.

2. Checking the hydraulic pressures: (see table page 4)

a) Connecting the testing device for checking the transmission in the car:

1. Put on protective covers as far as necessary. Remove tunnel covering and lid on right side of tunnel and put on the testing device.

   Clean the transmission in order to prevent any danger of fouling when connecting the connection hoses.

2. Connect the connection hoses of the pressure gauges to the control points on the transmission (see ill. page 5).

3. Heat up engine and transmission to operating temperature and carry out oil level check.

b) Modulating pressure:

Prior to checking all pressure the modulating pressure has to be checked and set, if necessary, with the engine running (idling speed), the hand brake pulled and the selector lever in position "P".

1. Checking the modulating pressure with closed vacuum line

Idling speed:	(gas pedal in idling position) basic pressure: 0.9 - 1.0 kg/cm^2
Full throttle:	(tap gas pedal slightly) maximum pressure: 2.9 kg/cm^2
Kickdown:	(tap gas pedal slightly with right foot and actuate kickdown switch with toes of left foot) kickdown modulating pressure: 4.4 - 4.6 kg/cm^2

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2. Adjustment of modulating pressure (ref. to Workshop Manual, Job No. 27-4).

Basic pressure without vacuum. By adjusting the linkage on the up and down stroke solenoid. (Battery voltage at up and down strole solenoid, minimum voltage 10.8 V).

Maximum pressure without vacuum. Adjust setscrew on modulating pressure transmitter. One turn equals a change in pressure of approx. 0.15 kg/cm^2. Afterwards the setscrew has to be secured again.

Kickdown modulating pressure without vacuum. Adjust linkage on up and down stroke solenoid. (Battery voltage at up and down stroke solenoid, minimum voltage 10.8 V). The adjustment has to be effected hand in hand with the adjustment of the basic pressure.

c) Stepped pressure:

The values mentioned in the table have to be regarded as approximate values which suffice for an operational test. In case of no stepped pressure indication or if the stepped pressure jumps indicate extremely deviating values the transmission has to be exchanged.

d) Working pressure, primary pump:

The values given in the table refer to the controls for the working pressure or the condition of the primary pump, resp..

If the values stated are not obtained the sleeve shift boy should be exchanged. In case the exchange does not prove successful, damage to the primary pump is very likely and the transmission should be exchanged completely.

f) Leak test:

After completion of the check-up all connection hoses are closed. All locking and hollow screws have to be provided with the new seals.

With hot transmission (gear oil temperature: 80 - 100° C) an over all leak test is now carried out on the transmission, i.e., on all parting lines and control points. A special test is carried out with the oil seal on the neck of the hydraulic clutch. At speeds at around 4 - 5000 r.p.m. a white paper is held into the cooling air steaming out of the hydraulic clutch. With the aid of the paper one can see if oil is spattered which would indicate leaks at the hydraulic clutch and especially at the oil seal.

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In conclusion we would like to point out once more that operational safety can be guaranteed only when executing all jobs on the automatic DB transmission with utmost cleanliness.

Test values (hydraulic pressures)

MODULATED PRESSURE

Modulating pressure	kg/cm^2	
Basic pressure Max. pressure Kickdown modulating pressure	0.9 - 1.0 2.9 4.4 - 4.6	

STEPPED PRESSURE

	Pressure jump when				Pressure test when	
	Shifting up		Shifting down			
Stepped pressure kg/cm^2	Speed km/h	corresponds to a universal shaft speed of r.p.m.	Speed km/h	corresponds to a universal shaft speed of r.p.m.	Speed km/h	corresponds to a universal shaft speed of r.p.m.
3.4 ± 0.1	25	880	18	630	20	700
6.9 ± 0.1	40	1400	30	1050	32	1120
6.9 ± 0.1 x)	58	2040	46	1610	48	1680
10.5 $\pm^{0.5}_{0.1}$	100	3420	85	2900	90	3080

Note:
The speed values and numbers of revolutions mentioned are approximate values.
x) in selector lever position "3".

WORKING PRESSURE PRIMARY PUMP

Selector lever position	Engine speed	Modulating pressure	Primary pump pressure 220b/Sb/SEb/SEb/C 300 SE/SE/C	Primary pump pressure 190c	Remarks
"P" or "O"	Idling	0.9 - 1.0 2.9	3 3.3	3 - 3.3	
"4", "3" or 2	Idling	0.9 - 1.0	4.0 - 4.4	4.0 - 4.4	
	Idling	2.9	8.2 - 9.5	7 - 8	Measured with stopped car (Vacuum line closed)
"R"	Idling	0.9 - 1.0 2.9	5 7	5 7	

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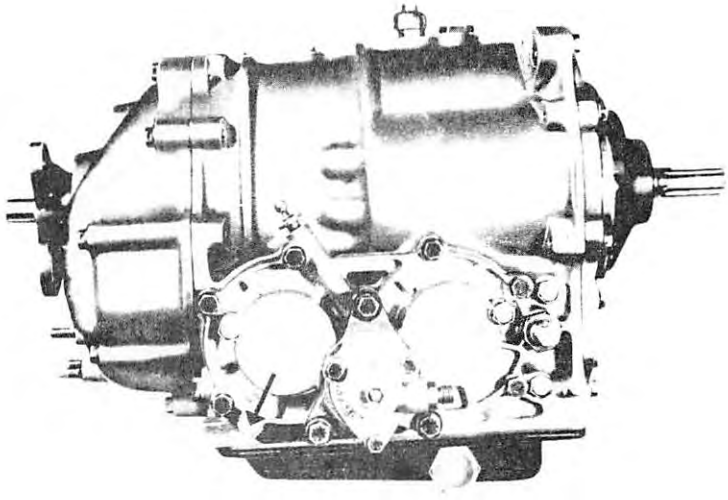
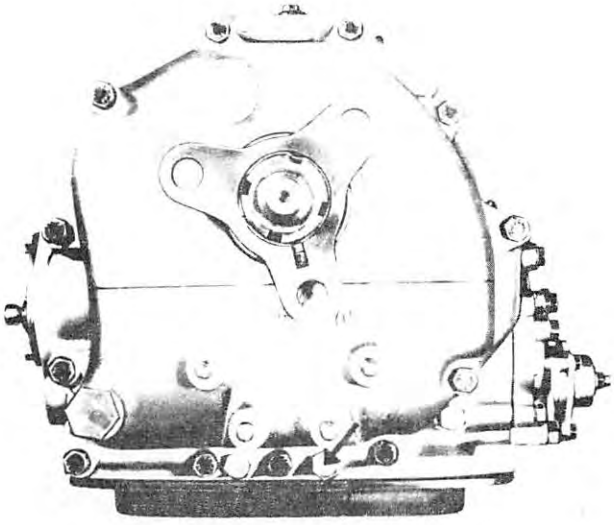
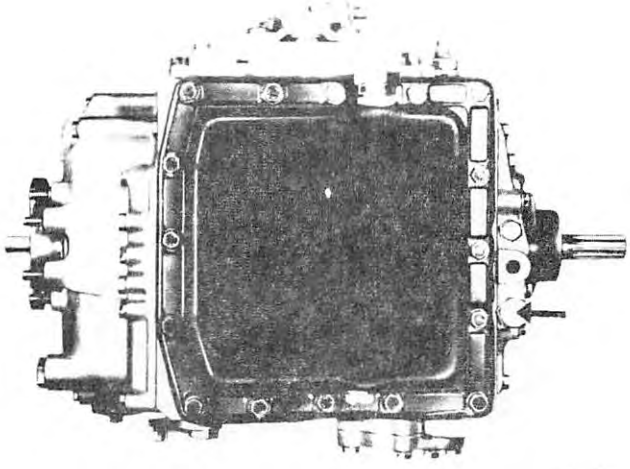


chips
Relay
3.5

Modulating pressure



Stepped pressure



Primary pump

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 143	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 29	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ACCELERATOR LINKAGE BELL CRANKS AND BUSHINGS

The following list contains all link levers and their part numbers for the various models. In case of replacement, only these latest bell cranks should be installed. Our parts depots carry only the new bell cranks and bushings in stock.

The bell cranks will be delivered without plastic bushings. This requires that always two bushings, part No. 115 072 00 50, have to be ordered with each individual bell crank.

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APPLICATION	DESCRIPTION	PART NUMBER
190 DC,200 D 200/8, 220 D/8	Bell Crank	615 070 03 22
200 D/8, 220 D/8	Bell Crank	615 070 02 22
200 D/8, 220 D/8	Bell Crank	615 070 01 22
200	Choke Arm	121 070 16 21
200	Bell Crank	121 070 21 22
200/8, 220/8	Choke Arm	115 070 00 21
200/8, 220/8	Rocker Arm	115 070 03 22
220/8 Air-pollution 69	Intermediate Arm	115 070 04 21
220/8 Air pollution 69	Rocker Arm	121 070 16 21
220/8 Air pollution 69	Bell Crank	121 070 21 22
200/8, 220/8 Air Conditioning	Rocker Arm	115 070 04 22
200/8, 220/8 Air Conditioning	Choke Arm	115 070 02 21
200/8, 220/8	Intermediate Arm	115 070 05 21
230, 230S, 230/8 220 Sb, 280 S/8 250 S	Rocker Arm	180 070 34 21
230, 230S, 230/8, 220 Sb, 250S, 280 S/8	Bell Crank	180 070 32 22
230 SL, 250 SE, 250 SEC, 250 SL, 280 SE/8, 280 SL/8, 300 SEL/8	Rocker Arm	130 070 00 22
230 SL, 250 SE, 250 SEC, 250 SL, 280 SE/8, 280 SL/8, 300 SEL/8	Choke Arm	130 070 02 21
280 SE/8, 280 SL/8, 300 SEL/8 automatic transmission	Choke Arm	130 070 01 22
230 SL, 280 SE/8, 300 SEL/8, 280 SL/8	Bell Crank	127 070 20 22

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Bell cranks for the individual models, as well as the plastic bushings, part No. 115 072 00 50, may be ordered from our Mercedes-Benz parts depots.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 24	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 29/30	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Accelerator Linkage -- Model 300 SEL/8 6.3

As of chassis end number 000 203 (except on chassis end no. 000 206) on model 300 SEL/8 6.3, a new version engine control shaft (10, illustration 2) is being installed during production. This version replaces the former version engine control rod (1) which extended from the injection pump control shaft (2) to the fire wall control shaft (illustrations 1 and 2).

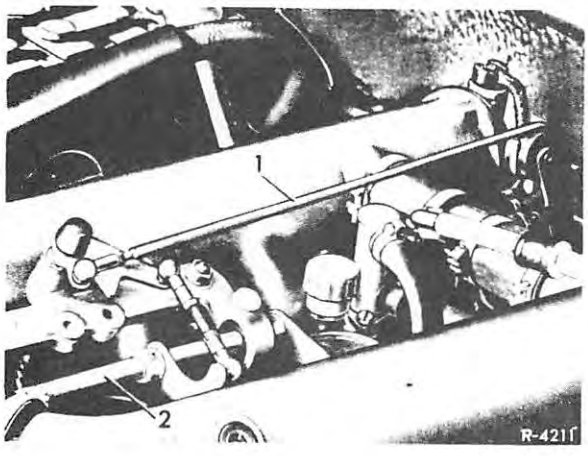

Illustration 1
Control Assembly - 1st Version
1. Engine control rod
2. Injection pump control shaft

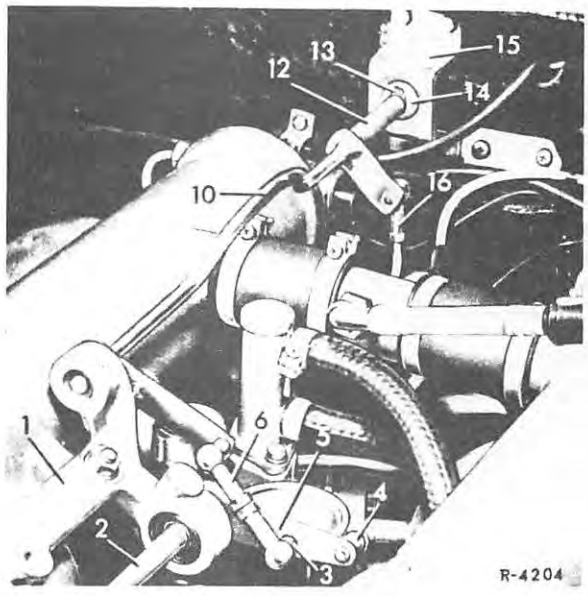

Illustration 2
Control Assembly - 2nd Version
1. Support bracket - engine side
2. Injection pump control shaft
3. Ball pin
4. Control rod
5. Control lever
6. Control rod
10. Engine control shaft
12. Pressure spring
13. Bearing bushing
14. Ball mount
15. Support bracket - fire wall side
16. Control rod

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As of chassis end number 000 999, the lever arrangement at the engine control shaft was modified in production in order to achieve a less progressive accelerator control and thereby metering the lower engine speed range more precisely.

This last modification can be subsequently installed on earlier cars - <u>but only on vehicles equipped with the new version engine control shaft assembly (illustrations 2 and 3).</u>

INSTALLATION PROCEDURE

Parts Required:	Quantity	Part	Part Number
	1	Engine control shaft	109 300 13 20
	1	Spacer ring	109 301 00 51
	1	Ball pin	071803 008101
	1	Hex nut	000934 005004
	1	Spring washer	000137 005201

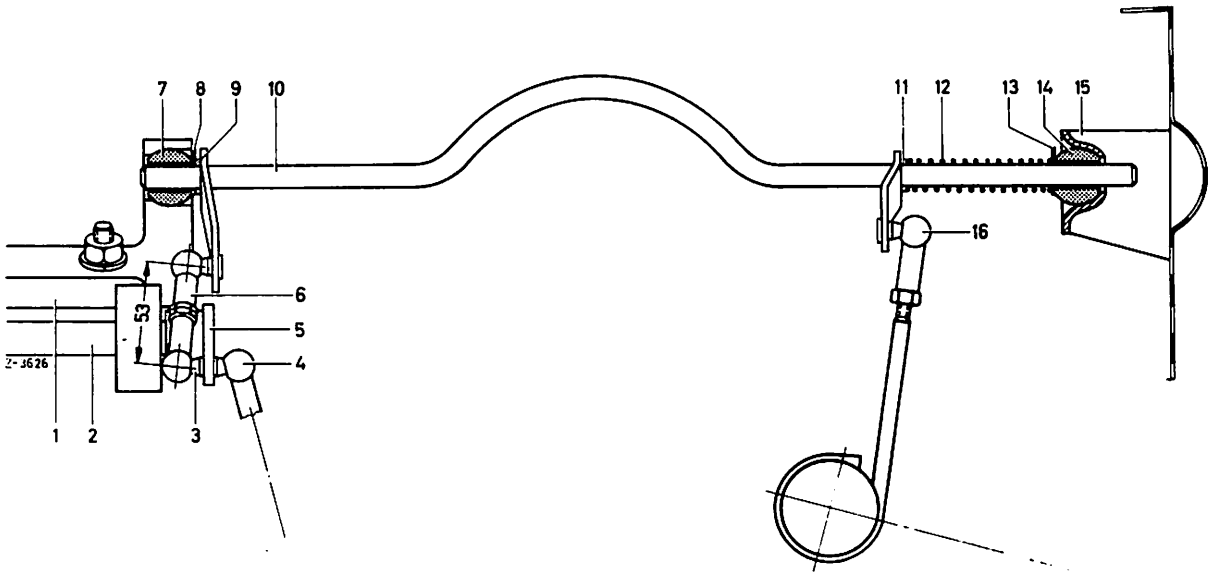

Illustration 3

1. Support bracket
2. Injection pump control shaft
3. Ball pin
4. Control rod
5. Control lever
6. Control rod
7. Ball mount
8. Bearing bushing
9. Spacer ring
10. Engine control shaft
11. Spacer ring
12. Pressure spring
13. Bearing bushing
14. Ball mount
15. Support bracket
16. Control rod

53 mm = 2.09"

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(continued)

1. Remove the support bracket (1) and then remove the injection pump control shaft (2) and the engine control shaft (10) (illustration 3).

   When removing the engine control shaft, do not lose the spacer ring (9), ball mounts (7 and 14) and the pressure spring (12), as they must be reinstalled at a later time.

2. Remove the control rod (16, illustration 3) between the engine control shaft and the fire wall control shaft, bend it in accordance with illustration 4, adjust the length to approximately 4.14" (105 mm). Reinstall the control rod.

3. The ball pin (3) on the control lever (5) of the injection pump control shaft has to be repositioned (illustration 3). To do so, file down the old riveted ball pin and knock it out. Then, drill a new .2" Ø (5 mm Ø) hole into the control lever in accordance with illustration 5 and screw in the new "screw-type" ball pin according to illustration 3.

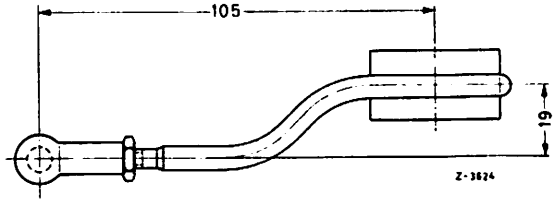

Illustration 4
Control Rod (16)

mm	inches
19	.75
105	4.14

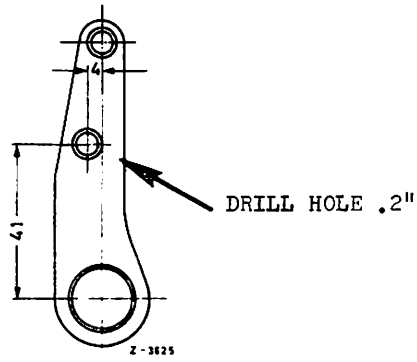

Illustration 5
Control Lever

mm	inches
4	.16
41	1.61

4. Reinstall the injection pump control shaft (2) together with the new engine control shaft (10) part no. 109 300 13 20, as follows:

   Slide new spacer ring (11), pressure spring (12), ball mount (14) with bearing bushing (13) onto the rear section of the new version control shaft. Onto the front section, slide the spacer ring (9) and the ball mount (7) with the bearing bushing (8). Insert the rear section of the new control shaft first into the support bracket (15) at the fire wall, and then the front section into the support bracket (1) of the injection pump control shaft. Then position the injection pump control shaft and secure (illustration 3).

   NOTE: Prior to installation, apply "Molykote BR2-S" lubricant (which can be purchased through your local Dow-Corning distributor - see Service Information MB-T 125, Group 00, June 1969) to the bearing seats on the new engine control shaft, as well as to the ball sockets on the control rods.

5. Adjust the control rod (6) between the engine control shaft and the injection pump control shaft to a length of approximately 2.09" (53 mm) (illustration 3).

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(over)

6. Push accelerator pedal to "kick-down" position, at which point there must exist a clearance of approximately .04" (1 mm) between the throttle lever and the full-load stop on the venturi control unit. If necessary, loosen the hex head screw (7) and readjust the control shaft at the fire wall (illustration 6).

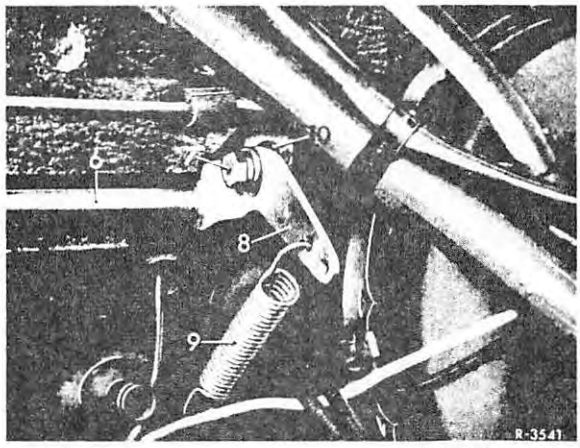

Illustration 6

6. Fire wall side control shaft
7. Hex head screw
8. Control lever
9. Return spring
10. Accelerator pedal lever

Only in the case of a customer's complaint, a claim for 1.5 hours labor may be submitted for the preceding job.

The required parts are available from your Mercedes-Benz parts depot.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 128	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 29/30	Passenger Cars

Fort Lee, April 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: A. Accelerator Pedal -- Models 220/8 through 250/8 (W 114/115)
B. Spring-loaded Control Linkage -- Models 220/8 and 220 D/8

A. Accelerator Pedal - Models 220/8 through 250/8

1. Removal of Accelerator Pedal

On vehicles of model series W 114/115, a fastening clip is used to secure the accelerator pedal to the bracket (3, illustration 1). Therefore, when removing the accelerator pedal a special device for removing this clip must be used in order to prevent the pedal mounting from being damaged. The clip removal device is available under part no. 715 589 00 63 00.

To dismount the pedal, first remove the clip from the bracket (3) by means of the above mentioned device (2). Then the pedal can be taken off in an upward direction.

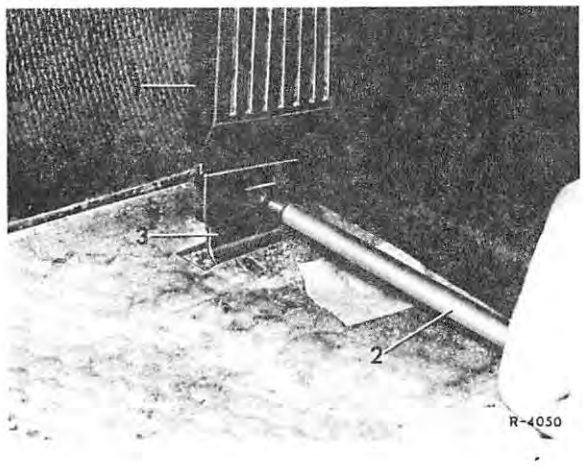

Illustration 1

1. Accelerator pedal
2. Special device for removing the clip
3. Bracket

(over)

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2. Ordering Parts for the Accelerator Pedal

The joint (part no. 115 301 00 22), the insert (part no. 115 301 00 83) and the pedal lining (part no. 115 301 03 82) are available as individual units for replacement purposes (also see Spare Parts List - W 114/115). For this reason if one of the units has been damaged, do not replace the complete accelerator, but only the part concerned.

B. Spring-loaded Control Linkage - Models 220/8 and 220 D/8

On models 220/8 and 220 D/8, as of the following chassis end numbers, a spring-loaded control linkage is now standard equipment, installed between the control rod at the fire wall and the relay lever on the engine.

Model	Chassis End No.
220/8	011 887
220 D/8	026 096

If customers complain of accelerator pedal vibrations on vehicles with chassis end numbers prior to those listed above, the spring-loaded control linkage can be subsequently installed and may be ordered as follows:

Model	Type of Transmission	Part No.
220/8	Standard Transmission	115 300 24 15
220/8	Automatic Transmission	115 300 25 15
220 D/8	Standard or Automatic Transmission	115 300 20 15

The required parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 37	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 29/30	Passenger Cars

Stuttgart-Untertürkheim, May 1965

To all Daimler-Benz Agencies

Re.: Bleeding the hydraulic clutch control of our passenger cars with inner master cylinder

Up to the present the hydraulic clutch controls with inner clutch master cylinders could be bleeded satisfactorily only by means of bleeder equipment. In order to render bleeding possible even without such equipment, inner clutch master cylinders with bleeder screws are mounted into the passenger cars as of the following chassis end numbers:

Type	Left-hand Drive	Right-hand Drive
190 C	102774	106951
190 DC	170162	178311
220 B	064179	065185
220 SB	142292	148344
220 SEB/Lim.	072575	074452
220 SEB/Cp/Ca	072854	074524
230 SL	008513	009858

For reasons of construction the bleeder screw (item 14, illustrations 1 and 2) is installed in such a way that the bore opens directly in front of the seal lip of the primary sleeve (item 5, illustration 1, item 7, illustration 2) into the pressure space.

As the primary sleeve closes the breather bore immediately, the remaining air in the unit cannot be removed by stepping on the clutch pedal several times. Bleeding the unit by means of the static pressure difference has to be conducted as follows:

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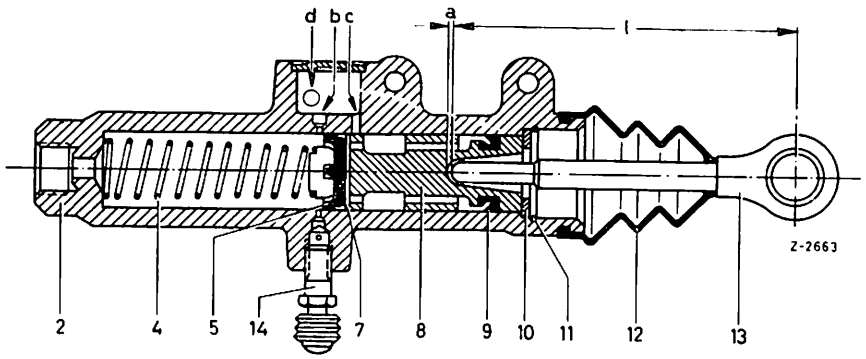

Figure 1

Inner master cylinder of Type 190 C and 190 DC - 2nd Version

2 Housing
4 Pressure spring
5 Primary sleeve
7 Filler washer
8 Piston
9 Secondary sleeve
10 Stop plate
11 Lock ring
12 Protective cap
13 Piston rod
14 Bleeder screw

a = Play between piston and piston rod
b = Compensating bore
c = Filler bore
d = Supply bore from expansion tank
l = Length of piston rods

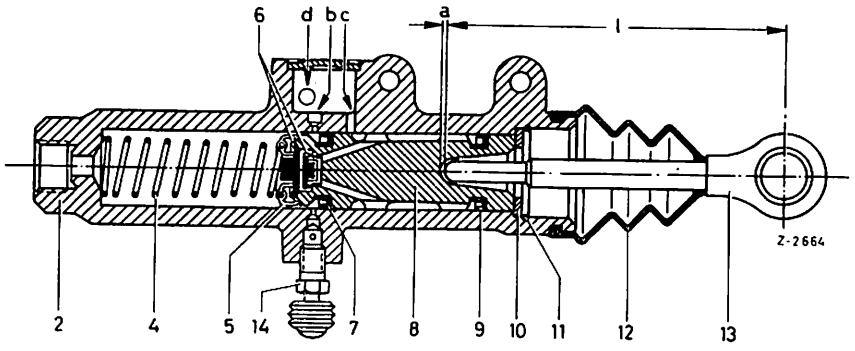

Figure 2

Inner master cylinder of Types 220 B/SB/SEB and 230 SL - 2nd Version

2 Housing
4 Pressure spring
5 Cap
6 Valve
7 Primary sleeve
8 Piston
9 Secondary sleeve
10 Stop plate
11 Lock ring
12 Protective cap
13 Piston rod
14 Bleeder screw

a = Play between piston and piston rod
b = Compensating bore
c = Filler bore
d = Supply bore from expansion tank
l = Length of piston rod

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1. Refill expansion tank with new brake fluid.

2. Open bleeder screw at the master cylinder until bubble-free brake fluid is emitted.

3. Open bleeder screw at the slave cylinder, too, until bubble-free brake fluid is emitted.

4. Rapidly depress clutch pedal several times when bleeder screws are closed. Hereby the air between the primary and secondary sleeve is removed via the compensating bore.

5. Refill expansion tank.

Naturally, the hydraulic clutch control can be bleeded by means of the traditional bleeder equipment (please see workshop manual, passenger cars, as of August 1959, Job No. 29-5).

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 42	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 29/30	Passenger Cars

Stuttgart-Untertürkheim, August 1964

To all Daimler-Benz Agencies

Re.: Complaints about transmissions caused by incorrect adjustment of clutch actuation systems

We found that many complaints concerning the mechanical transmission, such as bad synchronization of the individual gears and difficulties when engaging the reverse gear, can be traced back to the pedal assembly and the hydraulic clutch actuation system. In Service Information No. 2, Group 25, of January 1964, we have been stressing the necessity of carrying out check-ups of the pedal assembly and the master and slave cylinders. These check-ups are of a vital importance for the functioning of the clutch and, consequently, the transmission. Moreover, we have been insisting on various occasions that the floor mats should be cut out under the pedals.

We would, therefore, ask you once more to instruct the staff of your workshops to carry out the following check-ups in case of complaints about the clutch or transmission at all events:

1. Check travel of clutch pedal (minimum travel 163 mm). If the travel is less than 163 mm, carry out the jobs described in Service Information No. 2, Group 25.

   Floor mats may in no case reach as far as under the pedals.

2. Check release travel of slave cylinder. With a pedal travel of 163 mm the lift must amount to at least 23 mm. If the value obtained lies below this figure, check master and slave cylinder for leaks.

3. Check clearance between piston rod and the piston of the master cylinder. Specified value: 0,1 to 0,2 mm.

4. Check dead travel between the push rod of the slave cylinder and the release fork. The dead travel must amount to 4 mm.

In the future we shall not accept guarantee claims for damage caused through the non-observance of the instructions for the adjustment of the clutch.

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service information

Daimler-Benz AG / Export-Service

No.	S 8	Ordner File Classeur Archivador	Special Versions	Gruppe Group Groupe Grupo	32	Passenger Cars

Stuttgart-Untertürkheim, May 1963

To all Daimler-Benz Agencies

Re.: Additional air cushioning
Types 190c, 190 Dc, 220b, 220 Sb, 220 SEb

The additional air cushioning prevents sagging of the rear end of the car when it is entirely occupied and the luggage compartment fully loaded or in case of trailer operation with heavy tow bar load.

Installation of the additional air cushioning does not impair the driving properties if the specified pressures in the bellows are maintained, i.e., 8 kg/cm^2 with heavy load on the rear axle and 1 kg/cm^2 with normal and light vehicle load. The additional air cushioning acts in the same way as the compensating spring, i.e. only in case of parallel action of both rear wheel springs or if only one spring is in action. There is no response in case of opposed action of the springs as, for instance, in a curve, so that the inherent steering properties of the car are not affected.

In case the car is frequently operated with heavy rear axle load we would advise you to replace the left and right grooved ball bearing on the rear axle shaft by a barrel-shaped roller bearing, Part No. 000 981 05 06, which, for instance, is included in the standard equipment of the station wagons and ambulance cars of type 190c and 190 Dc. (For details see Workshop Manual, Passenger Car Types, as of August 1959, Volume II, Job No. 35-3, page 35-0/8). This conversion is not necessary, of course, if the car is operated with heavy loads and trailer only from time to time, e.g., during a holiday trip.

EXTENT OF WORK

1. Jack up rear end of car, insert spring tightener 111 589 00 31 and tighten the

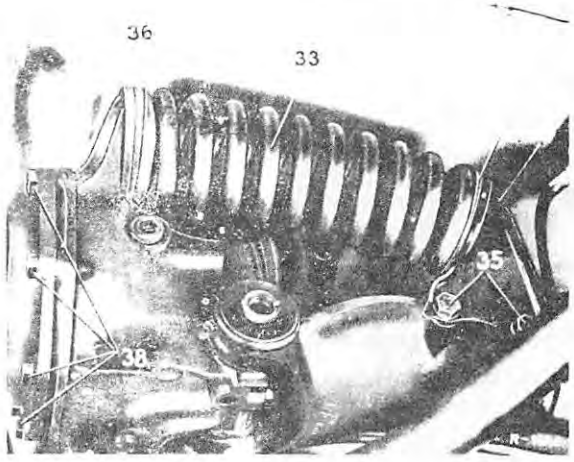

Fig. 1

33 compensating spring
34 support
35 hex. hd. screw
36 rubber ring, left
37 rubber ring, right
38 hex. hd. screw

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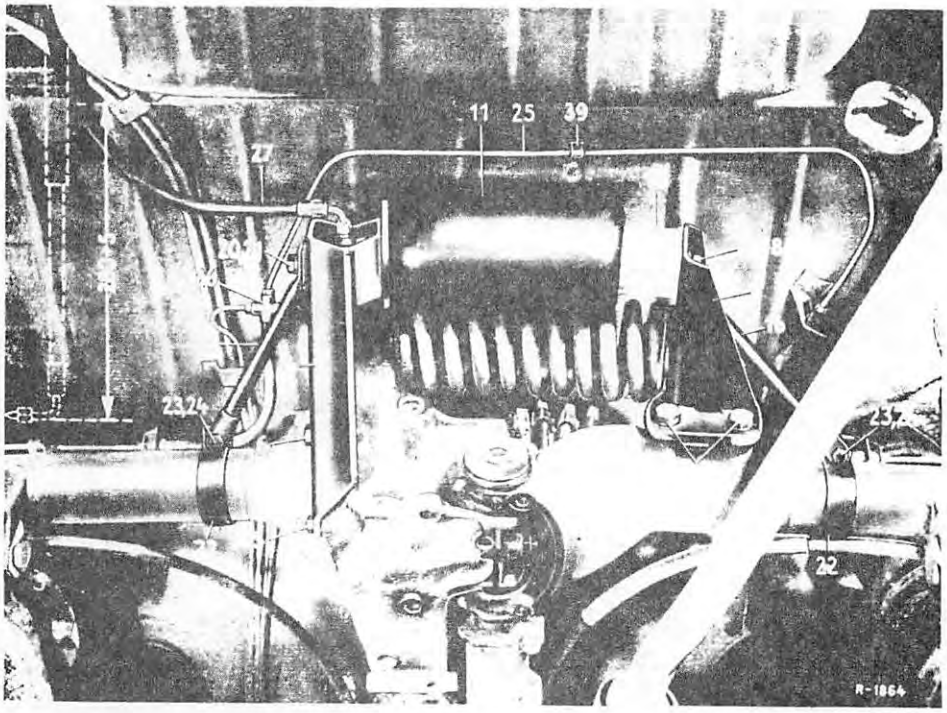

Fig. 2

1 support, right
2 hex.-hd. screw
3 lock washer
4 support, left
5 hex.-hd. screw
6 hex.-hd. screw
11 bellows
12 piston
16 strut, right
17 hex.-hd. screw
18 lock washer
19 strut, left
20 hex.-hd. screw
21 lock washer
22 clamp
23 hex.-hd. screw
24 hexagon nut
25 brake line
26 distributor
27 filler hose
39 clip

compensating spring (33) until the support (34) on the right axle tube is relieved from load (Fig. 1).

2. Unscrew support (34) and remove compensating spring.

3. Remove distributor, rear, left, and brake line - from rear distributor to right brake hose holder - and install distributor (26) and longer brake line (25) instead. For securing the clip (39) drill a hole of 6.2mm dia. into the frame floor at a distance of approx. 35 mm behind the existing mounting hole (Fig. 2).

4. Bleed brake system and carry out leak test.

5. Screw on support (1) first with inner hex.-hd. screw (2) and lock washer (3) and swing support slightly outward (Fig. 2). Insert pre-tensioned compensating spring, swing support (1) inwards and then screw in outer hex.-hd. screw (2) with lock washer (3). Then tighten both hex.-hd. screws with a torque of approx. 12 mkg. Loosen spring tightener and remove it. Take care that the compensating spring is properly seated between the rubber rings (36 and 37) (Fig. 1). Lower rear of car again.

6. Remove 5 hex.-hd. screws (38) from flange of the left axle tube (fig. 1). Screw support (4) with bellows already mounted to the flange of the left axle

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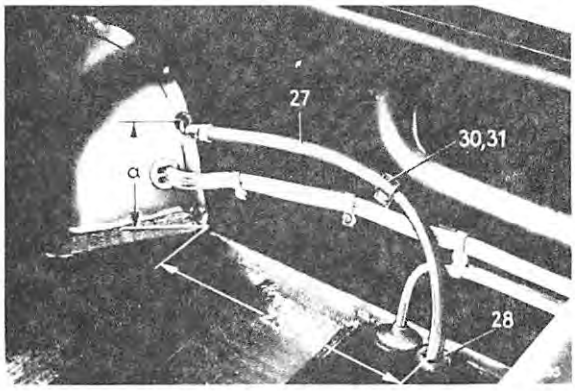

Fig. 3

27 filler hose
28 rubber grommet
30 Mounting clamp
31 oval-head sheet-metal screw

a = 115 mm for types 190c and 190 Dc,
125 mm for types 220b, 220 Sb
and 220 SEb

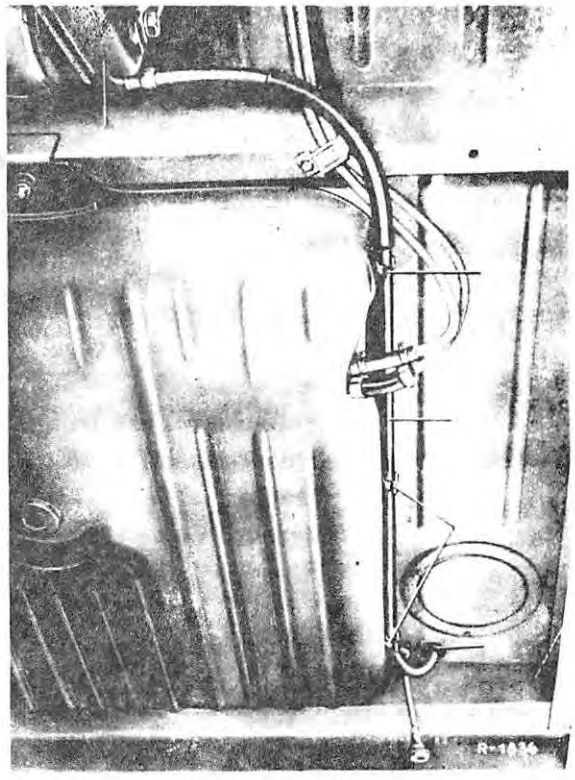

Fig. 4

4 support, left
27 filler hose
28 rubber grommet
29 clip

tube by means of the hex.-hd. screws (5 and 6) and tighten the hex.-hd. screws with a torque of approx. 5 mkg (Fig. 2 and 8).

7. Bend clamps (22) acc. to axle tube diameter and put them on the left and right axle tube (Fig. 2 and 8).

8. Screw strut, left, (19) to the support (4) by means of hex.-hd. screw (2) and lock washer (21). Then screw the other end of the strut to the clamp (22), using the parts items 23 and 24 (Fig. 2 and 8).

9. Screw strut, right, (16) and piston (12) to support (1) by means of parts items 17 and 18, holding the piston (12) firmly in order to avoid distortion of the rubber bellows. Then secure the other end of the strut on the clamp (22) using parts items 23 and 24.

Important!
Take care of correct mounting of the struts (16 and 19) to the clamps (22)! For details see fig. 8, view A.

10. Bore a hole of 20 mm dia. into the luggage compartment floor at a distance of 230 mm from edge of the protective cover of the filler neck and insert rubber grommet (28) (Fig. 3).

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11. Bore a hole of 8 mm dia. into the protective cover of the filler neck at a distance of 115 or 125 mm, resp., from the luggage compartment floor (Fig. 3).

12. Connect filler hose (27) to intermediate piece (7); route it along the fuel tank through rubber grommet (28) into the protective cover of the filler neck and screw it in (Fig. 2, 4 and 5).

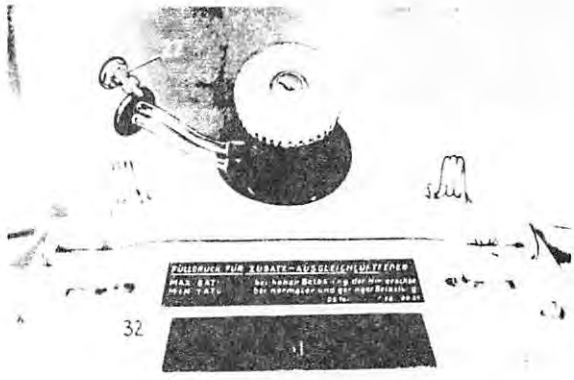
Important!
The filler hose should be routed from the fuel tank to the intermediate piece in a sufficiently large loop. Prior to connecting it to the intermediate piece it is necessary, therefore, to check the distance (280 + 5 mm), between the fuel tank and the filler hose connection with stretched hose (Fig. 2).

13. Mount the filler hose to the fuel tank and the rear center piece by means of parts items 29 to 31 (Fig. 3 and 4).

Note:
With vehicles where the fuel lines are still connected to the front of the fuel tank the fuel lines should be bent slightly downwards in order to prevent chafing of the filler hose (27).

14. Glue instruction plate indicating pressure (32) to flap of filler cap, inside, above tire pressure table (Fig. 5).

15. Pump up bellows to 8 kg/cm^2 and carry out leak test on complete unit by means of soap water.



FULLDRUCK FÜR ZUSATZ-AUSGLEICHLUFTFEDER	
MAX 8 ATÜ	bei hoher Belastung der Hinterachse
MIN 1 ATÜ	bei normaler und geringer Belastung

Z-2174

Max.: 8 kg/cm^2 with heavy load on rear axle
Min.: 1 kg/cm^2 with normal and light load
DB Part No. 110 584 00 21

Fig. 5

27 Filler hose
32 Instruction plate

REMOVING, REPLACING AND INSTALLING BELLOWS

Removal

16. Manufacture puller (41) in your own workshop according to fig. 6.

17. Bleed bellows. Pull bellows away from the sealing cone of the left support by means of the puller (Fig. 7).

18. Unscrew hex.-hd. screw (17) on right support (1) and remove bellows with piston (12) (Fig. 8).

Replacement

19. Remove bellows from piston after loosening hex.-hd. screw (14). Mount new bellows.

Installation

20. Mount piston (12) together with strut (16) on support (1).

21. Cover sealing surface of bellows and

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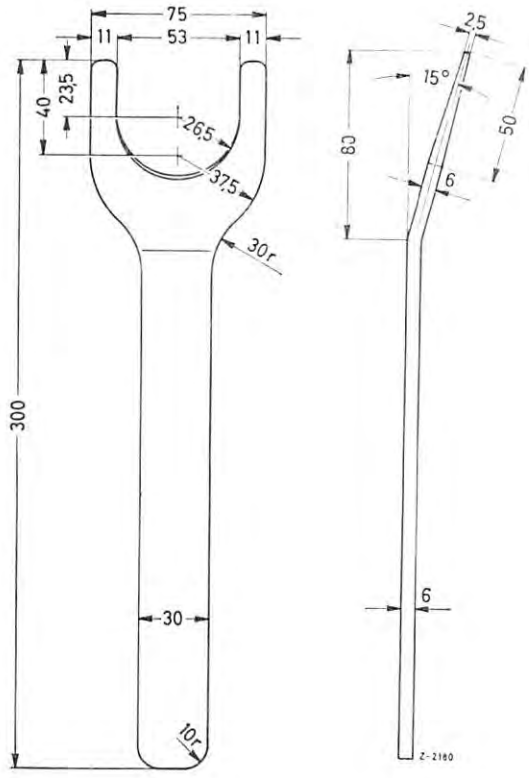

Fig. 6

puller 41

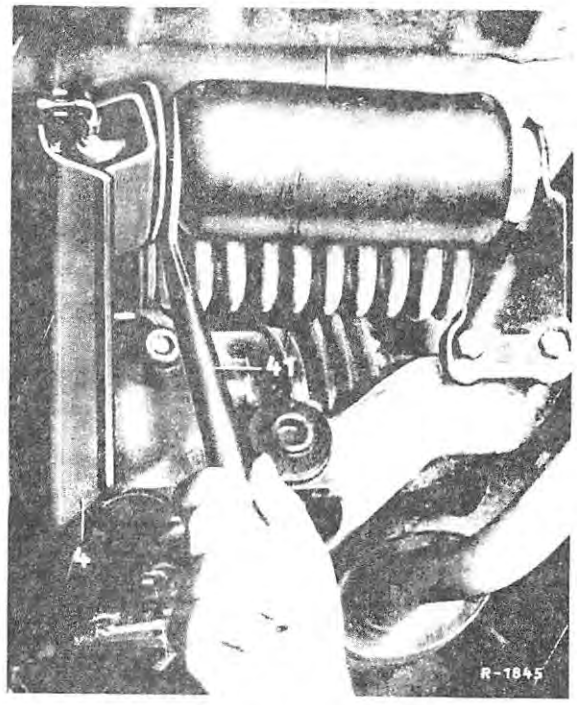

Fig. 7

4 bracket, left
11 bellows
41 puller

sealing cone on support (4) with soap water or glycerin. Then push bellows on sealing cone and simultaneously fill in air through filler hose (27). In this way the bellows are filled and slide over the sealing cone by themselves.

22. Pump up bellows to 8 kg/cm^2 and carry out leak test on complete unit by means of soap water.

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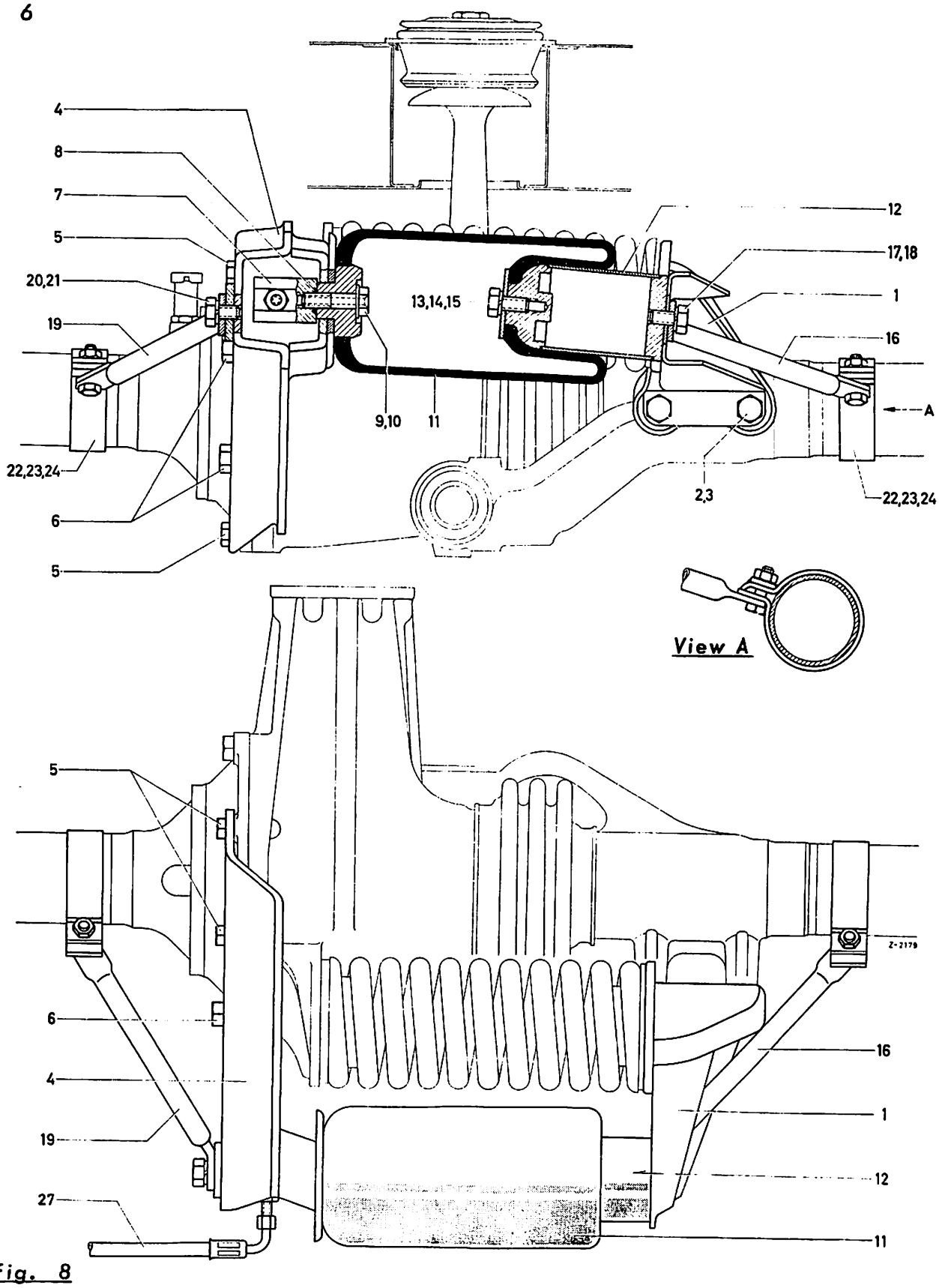

Fig. 8

1 support, right
2 hex.-hd. screw
3 lock washer
4 support, left
5 hex.-hd. screw
6 hex.-hd. screw
7 intermediate piece
8 O-ring
9 hollow screw
10 spring washer
11 bellows
12 piston
13 shim
14 hex.-hd. screw
15 lock washer
16 strut, right
17 hex.-hd. screw
18 lock washer
19 strut, left
20 hex.-hd. screw
21 lock washer
22 clamp
23 hex.-hd. screw
24 hexagon nut
27 filler hose

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DELIVERY RANGE

Item	Qnty.	Denomination	Part No. or DIN Designation
1	1	Support, right	111 320 08 43
2	2	Hex.-hd. screw	110 990 10 01 12 K
3	2	Lock washer	B 12 DIN 127
4	1	Support, left	111 320 09 43
5	3	Hex.-hd. screw	M 8 x 25 DIN 931 - 10 K
6	2	Hex.-hd. screw	M 10 x 23 DIN 931 - 10 K
7	1	Intermediate piece	—
8	1	O-ring	004 997 03 45
9	1	Hollow screw	111 990 02 63
10	1	Spring washer	B 12 DIN 137
11	1	Bellows	111 329 00 02
12	1	Piston	111 320 12 18
13	1	Shim	111 329 01 76
14	1	Hex.-hd. screw	M 10 x 20 DIN 933 - 8 G
15	1	Lock washer	B 10 DIN 127
16	1	Strut, right, 250 mm long	111 329 00 47
17	1	Hex.-hd. screw	M 10 x 18 DIN 933 - 8 G
18	1	Lock washer	B 10 DIN 127
19	1	Strut, left, 220 mm long	111 329 02 47
20	1	Hex.-hd. screw	M 12 x 1,5 x 15 DIN 961 - 8 G
21	1	Lock washer	B 12 DIN 127
22	2	Clamp	111 320 00 74
23	2	Hex.-hd. screw	M 8 x 28 DIN 931 - 8 G
24	2	Hexagon nut	M 8 DIN 934 - 5 S
25	1	Brake line	110 420 32 23
26	1	Distributor	000 428 36 24 1)
27	1	Filler hose	005 997 50 81
28	1	Rubber grommet	000 997 27 81
29	3	Clip	110 988 07 78
30	1	Mounting clamp	1 x 10 DIN 72 571
31	1	Oval-head sheet-metal screw	B 4,8 x 16 DIN 7981
32	1	Instruction plate	110 584 00 21

1) Instead of the listed distributor the distributor 000 428 38 24 (with 4 connections) should be installed into vehicles with Hydrakup connection. Since this part is not included in the range of delivery it has to be obtained separately from our department ET-VEX, Stuttgart-Untertürkheim Plant, by stating the Part No.

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The parts required for subsequent installation may be obtained from our Department ET-VEX, Stuttgart-Untertürkheim Plant, through the usual channels by stating the No. of the total delivery range 111 320 00 99.

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service information

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Article No.	File	Group	Application
MB-T 220	SERVICE INFORMATION	32	PASSENGER CARS

June, 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR SUSPENSION SYSTEM -- ALL MODELS SO EQUIPPED, EXCEPT MODEL 600

---CORRECTION---

Please correct your copy of Service Information Number MB-T 220, Group 32 of May, 1971 to read under paragraph I-d (first page) as follows:

Valve connections are marked as follows:

(A) Exhaust
(B) Bellows
(E) Air Intake

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MERCEDES-BENZ

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Article No.	File	Group	Application
MB-T 220	SERVICE INFORMATION	32	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR SUSPENSION SYSTEM -- ALL MODELS SO EQUIPPED, EXCEPT MODEL 600.

This service information contains test sequence data and general information pertinent to Mercedes-Benz air suspension systems.

I. GENERAL INFORMATION

a. The alcohol jar should be kept 2/3 full all year around. Use denatured ("rubbing") alcohol.

b. High pressure fittings are provided with "O" ring seals. Pressure lines should not be disconnected when high system air pressure exists as these "O" rings will be damaged.

c. Adjusting front control arm position and rear camber to specifications by lengthening or shortening leveling valve rods will automatically bring the vehicle to the correct riding level.

NOTE: CHECKS AND ADJUSTMENTS, BOTH FRONT AND REAR, MUST BE ACCOMPLISHED ON TURN TABLES OR SLIDE PLATES.

d. Valve connections are marked as follows:

(A) Exhaust
(B) Intake
(C) Bellows

e. When the car is raised by means of a floor jack, the master control should be placed in the EXHAUST LOCK-OUT POSITION. Always lower the car slowly to prevent leveling valve damage.

(over)

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II. TEST SEQUENCE (CAR ON ALL FOUR WHEELS)

a. Compressor performance test:

1. Drain air pressure at reservoir tank.
2. Connect pressure gauge to filler valve at reservoir.
3. Run engine at 2,000 RPM.
4. Measure the time required for the pressure to rise from 170 psi (12 atu) to 198 psi (14 atu). Maximum allowable time is 1 minute and 30 seconds.

b. Maximum operating pressure check:

1. Run engine at 2,000 RPM until pressure stabilizes.
2. The maximum pressure should be 240-255 psi (17-18 atu) at the compressor by-pass hole. If the pressure is incorrect, remove compressor head and check valve plate and by-pass port.

c. Drain valve/filler valve check at reservoir:

1. Apply bubble water to reservoir valve stem and check for bubbles. A hose may be connected to the valve stem and the opposite end placed in a container filled with water (glass jar, cup). No bubbles should appear.

d. Reservoir non-return valve check:

1. Remove rubber line between the compressor and alcohol jar.

2. Apply bubble water to exposed fitting at the compressor or use the hose/water container method. No bubbles should appear. If bubbles exist, the non-return valve leaks and should be replaced.

e. Leakage check/pressure reducing valve diaphragm:

1. Apply bubble water around reducing valve cover plate on main regulator valve. (Refer to pg. 32-18/1 in "Service Manual" passenger cars starting August 1959).

2. If bubbles exist, replace the rubber diaphragm.

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3. For diaphragm part number information consult parts lists print numbers 10170 and 10130, group 32.

NOTE: DIAPHRAGM LEAKAGE DOES NOT NECESSITATE MAIN REGULATOR VALVE ASSEMBLY REPLACEMENT.

f. Internal leakage check:

1. Place adjustment handle (under instrument panel) in normal position.

2. Disconnect rubber exhaust line between main regulator valve and alcohol jar (at alcohol jar). Place hose end in water container.

3. No bubbles should appear. However, if bubbles appear, one of the three leveling valves is leaking internally.

4. To determine which valve is leaking, remove the exhaust line at a leveling valve (indicated by "A") and put bubble water on the valve outlet. The valve which produces bubbles is defective (internal leakage) and requires replacement. Valve check sequence is: 1st - Rear leveling valve, 2nd - Left front leveling valve, 3rd - Right front leveling valve.

g. External leakage check:

1. Apply bubble water to main regulator valve and all fittings. Check for bubbles indicating extreme leakage.

2. Apply bubble water to each leveling valve. Check for bubbles.

3. Apply bubble water to bellows. Should bubbles appear, remove it and test in water tank.

NOTE: BELLOWS PRESSURE NOT TO EXCEED 40 PSI!

h. Main regulator valve check (lock position):

1. Place control lever to normal position.
2. Remove rubber exhaust line between regulator valve and alcohol jar (at jar). Place hose end in water container.

(over)

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3. Lift fender and release. A large amount of air bubbles should appear.

4. Place main regulator valve control lever to lock (center) position.

NOTE: SYSTEM SHOULD NOT LOSE MORE THAN 14 PSI (1 ATU) IN A 24 HOUR PERIOD WITH THE CONTROL LEVER IN THE LOCKED POSITION.

5. Lift fender and release. If main regulator valve is functioning properly, no bubbles should appear.

NOTE: IF THE CAR IS STORED OR PARKED FOR EXTENDED PERIODS, PLACE THE CONTROL HANDLE IN THE LOCK (CENTER) POSITION. THIS WILL PREVENT POSSIBLE MINOR INTERNAL LEAKAGE FROM BY-PASSING THE MAIN REGULATOR VALVE WHICH WOULD ALLOW THE CAR TO SINK.

i. Irregular leveling/rear or sides:

1. Should the vehicle "hang" low in the rear, the rear leveling valve should be checked for internal and external leakage, (the bellows for external leakage) as outlined paragraphs f and g.

2. If the automobile leans to the right or left side, the respective front leveling valve (left or right) must be checked for external and internal leakage (the bellows for external leakage) as outlined in paragraphs f and g.

NOTE: SOAPY WATER, OR LIQUID USED FOR BLOWING BUBBLES MAY BE USED AS BUBBLE WATER.

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Article No.	File	Group	Application
109	SERVICE INFORMATION	32	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: HUMMING NOISE/AUTOMATIC LEVELLING CONTROL MODEL 220 D/8

Model 220 D/8 with automatic levelling control may deliver humming noises, originating from the oil pressure pump. To remedy this problem, a high pressure flexible hose with an improved noise damper has been installed during production, since January 1970.

PRODUCTION CUT-OFF:

MODEL	CHASSIS END NO.
220 D/8	110756

CAUTION: THE HIGH PRESSURE FLEXIBLE HOSE DAMPER ONLY WORKS WHEN THE FLOW IS IN THE PROPER DIRECTION. FLOW DIRECTION IS INDICATED BY AN EMBOSSED ARROW STAMPED ON THE REAR FITTING.

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INSTALLATION INSTRUCTIONS

1. The new high pressure hose is 21 5/8 in. (535 mm) longer than the previous hose and must be connected directly to the center pressure line. The pressure line presently located behind the high pressure flexible hose must be removed (See Illustration 1).

   NOTE: SPECIAL ATTENTION MUST BE GIVEN TO THE DIRECTION OF FLOW!

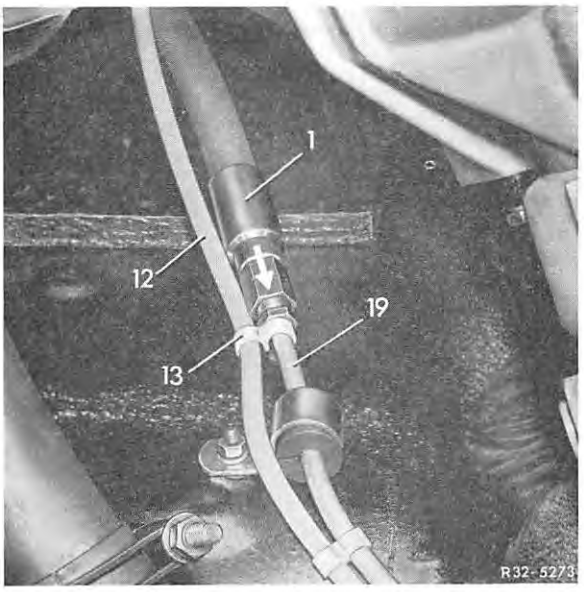

ILLUSTRATION 1

1. High-pressure flexible hose
12. Return-flow line
13. Clamp
19. Center pressure line

2. Secure the high-pressure flexible hose and lug (2, Illustration 2) with clamps (7 and 8) to the right cowl strut, ensuring the correct hose position. Secure the return-flow line to the high pressure flexible hose with straps (5).

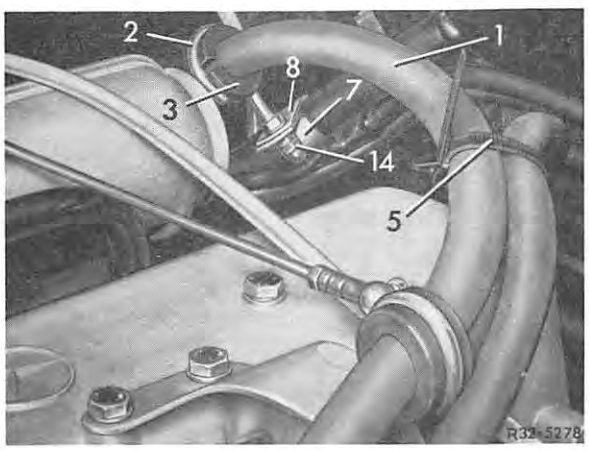

ILLUSTRATION 2

1. Flexible hose
2. Lug
3. Damper ring
5. Fixing strap
7. Fixing clamp, bottom
8. Fixing clamp, top
14. Cap nut

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3. Drill a 1/4 in. hole (6.5 mm) in the bearing support (9, Illustrations 3 and 4).

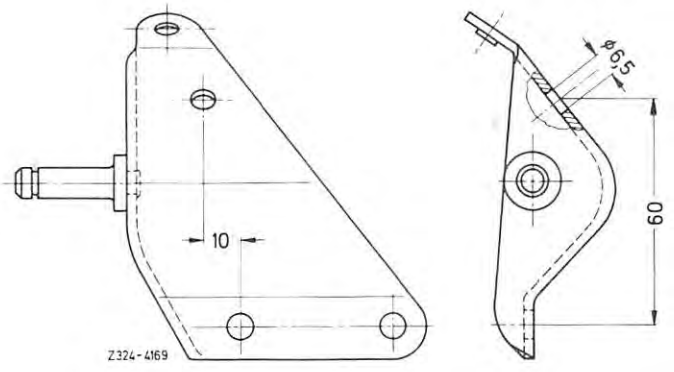

ILLUSTRATION 3

10 mm = .4 in.
60 mm = 2.4 in.
6.5 mm = 1/4 in.

4. Connect flexible hose with lug (2, Illustration 2) to bearing support.

5. Slide over rubber ring (4, Illustration 4). Connect flexible hose to front pressure line and secure with clamp (6).

ILLUSTRATION 4

1. High-pressure flexible hose
2. Lug
3. Damper ring
4. Rubber ring
5. Fixing strap
6. Clamp
9. Bearing support

6. Secure suction line with straps (5, Illustration 4) to flexible hose. Re-locate rubber ring (4) in such a manner as to prevent rubbing against the injection lines.

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The following parts are required for conversion:

ITEM	QTY.	DESCRIPTION	PART NO. OR DIN DESIGNATION
1	1	High-pressure flexible hose	115 997 21 82
2	2	Retaining lugs	115 320 04 43
3	2	Damper rings	115 328 06 81
4	1	Rubber ring	115 466 00 82
5	4	Fixing straps	001 997 42 90
	2	Hexagon nuts M6	000934 006013
	2	Lock washers B6	912004 006100

The parts required may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
102	SERVICE INFORMATION	32	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR AXLE SHOCK ABSORBER/HYDROPNEUMATIC LEVELING SUSPENSION UNIT NOISES AND LEAKS -- MODELS 220 D/8 THROUGH 250/8 (MODEL SERIES W 114/115)

In several instances, level control devices and shock absorbers returned as defective, have proven to be serviceable. Your attention is invited to Workshop Manual, Group 32, which contains detailed explanations pertaining to diagnosis, causes and remedies for correcting encountered problems.

This Service Information will reiterate the most important points, in order to provide service personnel with sufficient guidance for troubleshooting these systems.

A) RATTLING NOISES

Suspension point alignment should be checked (see Workshop Manual, Series 114/115, Group 32-4/2). To check and correct the alignment, the rear of the vehicle should be loaded until the position of the semi-trailing arms correspond to the prescribed data +1/4 in. to +5/8 in. (+5 mm to +15 mm). If suspension point alignment is incorrect, exchange the shock absorbers or compensators only if misalignment has been apparent for some time or leaks are clearly evident.

B) LEAKS

Oil film on the shock absorbers and compensator rods is a design feature and is necessary for piston rod lubrication outside the piston rod seal. Suspension point alignment is an important factor for piston rod seal operation. Should leakage occur, correct alignment must be ensured.

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1. LEVEL CONTROL DEVICES:

Greater stress is placed on load compensators than on shocks. Therefore, the oil discharge allowed for in design, is larger. An oil film on the inside of the rubber dust boot is normal. Should customer complaints be received regarding control device leaks, the following points must be checked in sequence before replacement is accomplished.

a. Is the oil consumption above the permissible quantity?

Maximum oil consumption over 3,000 miles (5,000 km) should not exceed 12.1 cubic inches (200 cm^3). This corresponds to approximately 1/2 in. (13 mm) on the reservoir dipstick.

b. Are any hose connections leaking?

If traces of oil are found, a new solid copper sealing washer should be installed on the banjo bolt and the bolt torqued to 18.5 ft. lbs. (2.5 kpm).

c. Are one or more level control devices leaking?

Excessive leaks can be recognized when the vehicle is parked and several drops form under the level control device. Should this be the case, check and correct the alignment of both suspension points. Replacement of level controllers is only necessary if it is apparent that they have been misaligned for some time. When in doubt, check for oil leakage again.

2. SHOCK ABSORBERS

A minimal fluid loss does not hinder shock absorber operation. When troubleshooting, it must be remembered that Bilstein piston rod protrusion increases with loss of fluid, whereas it decerases with the F & S shock absorbers (see Workshop Manual 114/115, Job. 32-4).

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Warranty claims adjustment will only be valid when it is determined that the following values have been exceeded:

BILSTEIN SHOCK ABSORBERS:

Front.....piston rod protrusion greater than:
11/16 in. ± 1/16 in. (18 ± 2 mm)

Rear.....piston rod protrusion greater than:
3/8 in. ± 1/16 in. (10 ± 2 mm)

F & S SHOCK ABSORBERS

Front.....piston rod protrusion less than:
1/2 in. ± 1/16 in. (12 ± 2 mm)

Rear.....piston rod protrusion less than:
3 15/16 in. ± 1/16 in. (103 ± 2 mm)

NOTE: THE VALUES MENTIONED HEREIN APPLY ONLY TO WARRANTY CLAIMS.

Values in the Workshop Manual 114/115, Job 32-0, Section D, apply to shock absorbers which have been in use for more than 6,000 miles (10,000 km).

These instructions must be utilized in the event of customer complaints regarding noise and leaks. In the future, careful consideration will be taken before honoring warranty claims for these items.

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Article No.	File	Group	Application
82	SERVICE INFORMATION	32	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR SUSPENSION SWITCH WARNING LIGHT -- MODELS 300 SEL/9 3.5 AND 300 SEL/8 6.3

In heavily congested, slow city traffic, the air compressor capacity may not always be sufficient to meet the consumption required by the air suspension unit. This will result in a slight pressure drop, causing the warning indicator to light. However, air supply is sufficient to continue the air suspension operation.

To prevent this occurence, the electrical pressure switch "trip point" has been reduced.

PRODUCTION CUT-OFF

MODEL	AS OF CHASSIS END NUMBER
300 SEL/9 3.5	001290
300 SEL/8 6.3	004255

This modified pressure switch may be utilized on all Model Series W109 and 112 vehicles. Pressure switches with the previous "trip" value should be used on vehicles with 6-cylinder engines until the supply is exhausted.

NOTE: "TRIP" VALUES ARE INDICATED ON THE RESPECTIVE SWITCHES.

Until modified switches are available, "trip point" adjustment should be attempted by "backing off" the switch hollow contact pin adjustment screw slightly.

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ELECTRICAL PRESSURE SWITCH TEST VALUES

	PREVIOUS VERSION	PRESENT VERSION
Part Number		000 545 69 11
Trip point (at dropping pressure)	114 ± 7 psi (8 ± 0.5 kg/cm^2)	100 ± 14 psi (7 + 1 kg/cm^2)
Cut-off point (at increasing pressure)	max. 21 psi above trip point (1.5 kg/cm^2)	

The above mentioned part is available at your Mercedes-Benz Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 21	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 32	Passenger Cars

FORT LEE, MAY 1970

TO OUR MERCEDES-BENZ DEALERS

Ref.: Vehicle Level, Rear Axle

Types 200 D/8 to 250/8 Cp. (Series W 114/115)

The suspension of our passenger cars is laid out for a luggage compartment load of approx. 100 kg. This figure is, of course, only applicable provided the permissible rear axle load is not exceeded.

In this connection it must be taken into consideration that it is not only the nominal trunk compartment load which acts on the rear axle but that the rear overhang provides a momentum which acts as an additional rear axle load. The front axle is at the same time relieved by the same amount. The same effect is noticed during trailer operation. The vertically acting trailer towbar load - which, as you know, is not to exceed 40 to 60 kg - represents a much higher effective load due to leverage since it acts on the extreme end of the car with a lever arm of approx. 120 cm.

In both cases the rear end of the car sags noticeably. This is, however, not a peculiarity of our vehicles but is found in cars of other make as well. Our firm is, however, in a position to offer a rear axle level control system for cars which are operated under such extreme conditions.

The subsequent installation of the level control is comparatively costly, which may discourage many customers from having such a system installed. As far as vehicles with standard suspension are concerned, we can offer our customers the following alternative for subsequent installation :

The standard rear springs can be replaced by the harder spring version, part no. 115 324 22 04, by which the sagging of the rear end of the car under high rear axle loads is reduced. When such an exchange is effected

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the torsion bar on the rear axle must be removed, however, in order not to impair the road performanc of the car. The customer must be charged for these jobs.

Naturally such a conversion is no real equivalent to level control but only constitutes a compromise, particularly so as it impairs the driving properties. We would therefore recommend again that in the case of vehicles which are operated under high rear axle loads use should be made of the advantages offered by the level control.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 151	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS Fort Lee, November 1969

Subject: Replacement of Rear Shock Absorbers

We have reasons to assume that replacements of rear shock absorbers are being performed without prior evaluation of any malfunction.

Please be advised that it is not permissible to replace shock absorbers for a slight outer leakage and without a close examination.

The oil reserve of a shock may be examined by checking for the maximum permissible piston rod extrusion (measurement "a") before the shock absorber is replaced. The "a" values may be found as follows:

Workshop Manual, Passenger Car Models starting August 1959, Volume 2, p.32-0/16

Service Manual Passenger Cars starting 1968, W114/115, Volume 1, p.32-0/8 and p.32-0/9

We kindly ask you to advise your Service Personnel to strictly follow these informations.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 145	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

This Service Information supersedes Service Information No. 109, Group 32, of April 1969.

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Approved Hydraulic Oils for the Self-Adjusting Leveling Device on the Rear Axle -- Models 220/8 through 250/8 (W 114/115)

The only approved hydraulic oils to be used for the self-adjusting leveling device on the rear axle of the above mentioned models are "Gasolin 1010" and "Shell Aero Fluid 4".

"Gasolin 1010" is supplied in 3 ltr. (.8 gal.) cans, and is available from your Mercedes-Benz parts depot under part number 000 989 31 01.

"Shell Aero Fluid 4" is available at U.S. airports and in airplane maintenance shops.

NOTE: Using other brands of hydraulic oil is <u>not</u> permitted, as it may cause the leveling device to become faulty.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 138	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Removal of Auxiliary Rubber Buffers -- Models 300 SEL/8 6.3 and 600 (W 109/100)

The rubber buffers (shipping blocks), which the factory installs on the front and rear axles of the above models prior to shipping, are for the purpose of retaining the car at the desired level in case a leak occurs in the air suspension during shipment which would ordinarily cause the level of the car to drop if buffers were not installed for supports. These buffers, however, must be removed in your workshop before the car is released to the customer.

With the rubber buffers installed, a vehicle must only be driven at moderate speeds (and at speeds compatible with existing road conditions). In addition, the vehicle will give a rough, bumpy ride if the buffers are not removed.

Following are instructions for removal of the front and rear rubber buffers. Please be sure your technicians perform this important pre-delivery service on 300 SEL/8 6.3 and 600 models before releasing the car to the customer.

REMOVAL OF AUXILIARY RUBBER BUFFERS - MODEL 300 SEL/8 6.3

1. Set air suspension lever to "central position" (in middle between "N" and "H"), and put the transmission selector lever to "P".

2. Jack up car in a manner which allows the axles to be in a fully suspended position.

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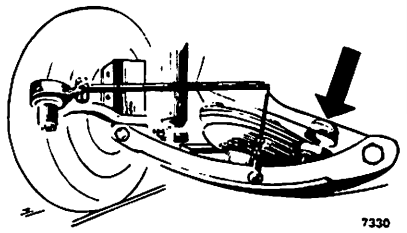
3. Front Axle - Model 300 SEL/8 6.3

   a. Remove front wheels.

   b. Remove the 4 front rubber buffers from the lower wishbones of the front axle (arrow, illustration 1).

   c. Replace front wheels.



Front axle

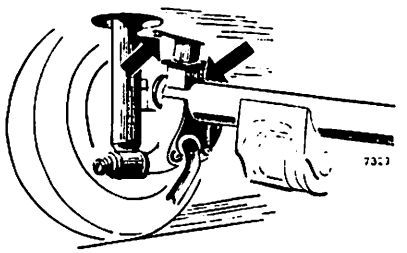
ILLUSTRATION 1

4. Rear Axle - Model 300 SEL/8 6.3

   a. Remove rear wheels.

   b. Loosen and remove the outer fastening screw at the side of each wheel. (This single screw holds both the standard rubber buffer and the auxiliary rubber buffer in place.) Remove only the auxiliary rubber buffer on each wheel (arrow, illustration 2).

   c. Replace the outer fastening screw over each standard rubber buffer and carefully tighten.



Rear axle

ILLUSTRATION 2

5. Set the air suspension to "N" after all auxiliary buffers have been removed.

REMOVAL OF AUXILIARY RUBBER BUFFERS - MODEL 600

1. Set air suspension lever to "central position" (in middle between "N" and "H"), and set the transmission selector lever to "P".

2. Jack up car in a manner which allows the axles to be in a fully suspended position.

3. Front Axle - Model 600:

   a. Remove front wheels.

   b. Remove hex nut (1b) and lift off the rubber buffer (1c) from the mounting rod (1a) (illustration 3).

   c. Remove mounting rod (1a) by pushing rod down through the mounting sleeve on the front axle.

   d. Replace front wheels.

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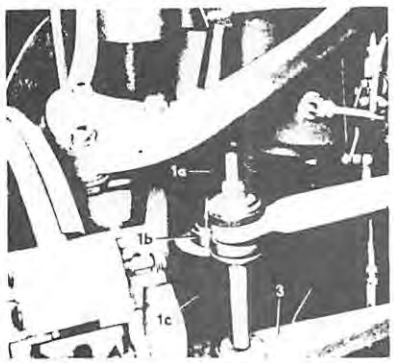


Front axle with rubber buffer installed

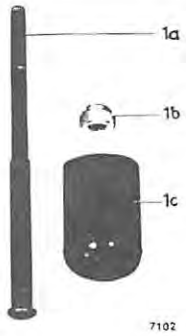


ILLUSTRATION 3

1a. Mounting Rod

1b. Hex Nut

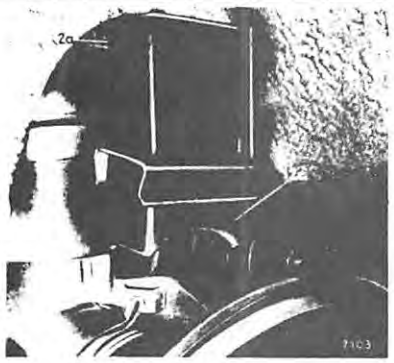
1c. Rubber Buffer

4. Rear Axle - Model 600:

a. Remove rear wheels

b. Loosen Allen head screw (2b) and remove entire unit, consisting of: rubber buffer (2c) and the support (2a) from both the left and right sides of the rear axle (illustration 4).

c. Replace rear wheels.



Rear axle with rubber buffer installed

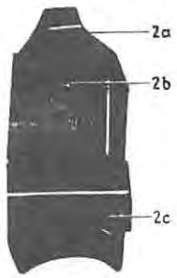


ILLUSTRATION 4

2a. Support

2b. Allen Head Screw

2c. Rubber Buffer

IMPORTANT!

Do not discard the rubber buffers you remove from the vehicle. These should be given to the customer to be used in case a problem should develop with the air suspension of the front or rear axle.

In case of a defect, it may be sufficient to install a buffer only on one side of the front axle. At the rear axle, however, buffers must always be installed on both sides.

To install the rubber buffers, simply reverse the procedure outlined for removal.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 97	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Connecting Rods for Level Control Valves on Vehicles with an Air Suspension System

The ball joints of connecting rods for the level control valves are subject to various levels of stress and wear. This, of course, depends basically on the type of protective sealing used on the ball joints and also the various conditions under which the vehicle is driven.

In order to prevent any malfunctioning of the air suspension system by the above mentioned parts, especially on vehicles with a relatively high mileage, the ball joints, should be re-lubricated or if necessary, replaced when carrying out inspections after 30,000 miles (50,000 km) according to sheet "D" of the Service and Maintenance Work Sheets.

NOTE: On model 600, these jobs must be carried out at every second "E" inspection (after every 24,000 miles or 40,000 km).

We recommend using "Molykote BR2-S" grease (manufactured by and available from the Dow Corning Corporation, of Midland, Michigan) for lubricating the ball joints.

NOTE: The time required for carrying out the above mentioned job is already included in the flat rates for the individual inspections. Therefore, customers may only be charged according to the current prices for the various maintenance service schedules.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 91	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 32	PASSENGER CARS

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Shock Absorbers. Make: FICHTEL & SACHS -- Models 220/8 through 250/8 (W 114/115)

Since some time, FICHTEL & SACHS shock absorbers are used in series production in addition to the BILSTEIN shock absorbers which were used exclusively before. Shock absorbers with standard, as well as with stiff operation are being used.

With regard to adjustment values, both makes are equal and, in case of repairs, can be replaced by either of the two makes.

However, care should be exercised so that standard shock absorbers (one red line), are not replaced by any with stiff operation (two red lines).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 39	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

Fort Lee, December 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Loss of Air from Air Suspension -- Types 300 SE Sedan/Cpe./Conv., 300 SEL, and 600

When a complaint is received about loss of air from the air suspension system (especially overnight), the workshop usually replaces the respective height regulator valve. While this may remedy the situation (for the reason stated later in this article), this replacement is in many cases unnecessary and in fact does not repair the real cause of the air loss.

In many cases, the air loss is due to the check valve in the height regulator valve remaining open as the result of a small leak somewhere ahead in the air system. Experience has shown that these small leaks occur mostly in the condensation drain valve of the air supply tank.

The following is what happens in such a case: While the vehicle is parked overnight, the air pressure in the pressure tank decreases gradually (due to the slight leak). In addition, the air in the bellows cools down, thereby lowering the vehicle. This opens the leveling valve to the "air required" position. However, because of the small air leak, the air pressure in the supply tank is lower than that in the bellows, so the air in the bellows escapes back into the tank. This is possible because the check valve closes only when there is relatively high air pressure against it.

The reason that a replacement of the leveling valve may correct the overnight air loss in some instances is that the required air pressure for controlling the check valve varies within the tolerances from valve to valve. However, for the true solution of the problem, it is important to check for air leaks and, if necessary, repair them prior to the replacement of leveling valves.

Test procedures for detecting air leaks are described in job Nos. 32-12, 32-14, 32-16, and 32-19 in the Workshop Manual Passenger Car Models Starting August 1959 and in job No. 32-11 in the Workshop Manual, Type 600. When checking for air leaks, apply liquid soap (bubble soap). Under no circumstances use air conditioning Freon.

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A leak in the condensation drain valve of the air supply tank can be corrected by cleaning this valve. In addition, the air tank should also be cleaned. Procedures for draining the air supply tank are described in job Nos. 32-10 and 32-12 in the Workshop Manual Passenger Car Models Starting August 1959 and job No. 32-11 in the Workshop Manual, Type 600. The removal of the air tank is described in job No. 32-16 in the Workshop Manual Passenger Car Models Starting August 1959.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 44	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 32	Passenger Cars

This Service Information supersedes: Service Information No. 5, Group 32, dated Feb. 1967

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Test Procedure for Hydropneumatic Compensating Spring (BOGE Suspension Unit)

To evaluate whether a hydropneumatic compensating spring is functioning properly, perform the following checks in the order presented.

A. Rear wheel camber, car in curb weight condition (see 1963 Technical Data Booklet, page 380)

Nominal rear wheel camber values

Cars with standard suspension:	0° + $1^{\circ}30'$ / - $30'$
Cars with heavy-duty suspension for bad road conditions:	$0^{\circ}30'$ + $1^{\circ}30'$
Police radio patrol cars, station wagons, ambulances:	$0^{\circ}30'$ + $1^{\circ}30'$ / - $30'$

Check

1. Jack up rear of vehicle for approximately 15 seconds; make sure rear wheels clear floor.
2. Place rear wheels on turntables, or move car back and forth until wheels resume their normal camber position.
3. Measure rear wheel camber. Test value: average between left and right wheel cambers.

Corrective action, if necessary

1. Install thicker rubber spacers for rear springs. (Rubber mounting part No. 110 325 02 85 = highest stage.)
2. Place spring retainers in higher notch position. (Position "1" = highest stage.)
3. If necessary, install longer rear springs (see table 1, "Rear Springs for Vehicles with Hydropneumatic Compensating Spring," footnote 4, 6, or 9, depending on suspension.

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B. Rear wheel camber with 220-pound test load (vehicle construction height)

Nominal rear wheel camber values

Cars with standard suspension: $-0^{\circ}45' \pm 0^{\circ}30'$

Cars with heavy-duty suspension for bad road conditions, police radio patrol cars, station wagons, ambulances: $+0^{\circ}30' \pm 1^{\circ}$

Check

1. Load luggage compartment of vehicle with approximately 220 pounds.
2. Bounce rear of vehicle approximately 40 times, or drive vehicle over a bumpy road a distance of approximately one mile.
3. Measure rear wheel camber. Test value: average between left and right wheel cambers.

Corrective action, if necessary

If the rear wheel camber on cars with standard suspension is lower than $-1^{\circ}15'$, add a 3 mm (.1181 inch)-thick special washer (12), part No. 108 326 00 76, to the right ball joint (10) of the hydropneumatic compensating spring (see illustration 2). Achievable camber increase is approximately $0^{\circ}30'$. Secure thread of ball-head bolt with Loctite CVV.

Normally, this correction is only necessary for compensating springs of the first version , which have a left ball joint of 60.5 mm (2.3837 in.) in length (dimension "a" of illustration 1 is 2.5 mm). No additional washer is necessary for compensating springs of the second version, which have a left ball joint of 63.5 mm (2.5 in.) in length (dimension "a" of illustration 1 is 5.5 mm). The level of a vehicle with a compensating spring of the first version can also be raised by installing a left ball joint of 63.5 mm, instead of an additional washer.

The special washer must by no means be added to compensating springs which have a left ball joint of 66.5 mm (2.6201 in.) in length (higher vehicle level); otherwise, the movement of the compensating spring would be unduly limited, and consequently, the unit could be damaged.

C. Functional test with 440-pound test load in trunk

Nominal rear wheel camber value

Up to $1^{\circ}15'$ less than measurement taken with vehicle in design position (220-pound test load); see section B.

Check

1. Load luggage compartment of vehicle with approximately 440 pounds.

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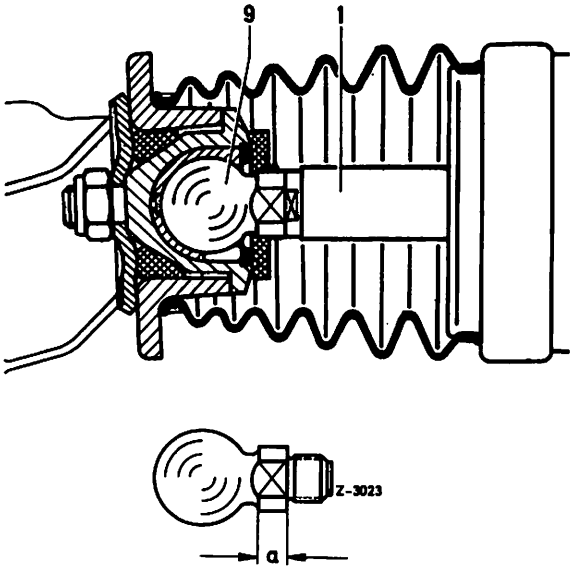

Illustration 1

1. Piston rod
9. Left ball joint

Collar length "a" of left ball pin:
2.5 mm (.0984 in.) - normal ball pin of first version
5.5 mm (.2165 in.) - normal ball pin of present design (second version)
8.5 mm (.3346 in.) - longer version ball pin

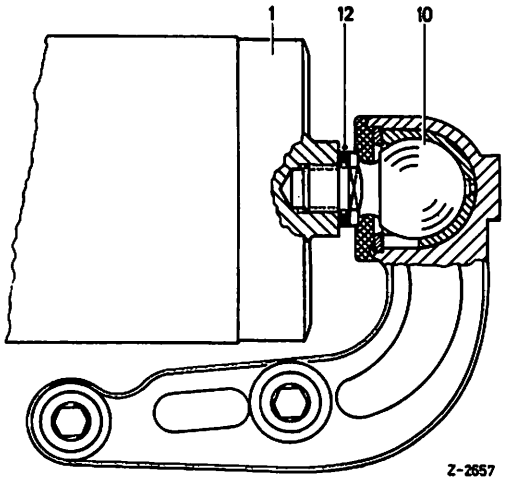

Illustration 2

1. Hydropneumatic compensating spring
10. Right ball joint
12. 3 mm-thick special washer

2. Bounce rear of car approximately 80 times, or drive car over a bumpy road a distance of two miles.

(If the compensating spring has already been pumped under a luggage compartment load of 220 lb. (see section B), it will be sufficient to bounce the rear of the car approximately 40 times or to drive it over a bumpy road a distance of 1 mile.)

3. Measure rear wheel camber. Test value: average between left and right wheel cambers.

If the difference between the camber value measurement attained under the 440-lb. load and the camber value attained under the 220-pound test load (see section B) is less than $1^{o}15'$, the pumping capacity of the unit is satisfactory. If the difference is greater than $1^{o}15'$, the pumping capacity is insufficient.

Corrective action, if necessary

Replace hydropneumatic compensating spring.

D. Leak test.

Following the functional test (Section C), let the vehicle stand on turntables with the same 440-lb. test load in the luggage compartment.

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The rear wheel camber must not decrease more than 2° within two hours.

To avoid incorrect diagnoses, which have frequently occurred, it is particularly important that you circulate this Service Information among your service personnel and also review it during your next regular shop meeting.

Hydropneumatic compensating springs replaced on a warranty basis must be stored completely assembled, including all pertinent installation parts.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

2 attachments

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Table 1

Rear Springs for Vehicles with Hydropneumatic Compensating Springs

Type	Rear Spring Part No.
Cars with standard suspension	
190 c/Dc	110 324 30 04[4]
200, 200 D, 230, 230 S, 220 b/Sb/SEb, 250 S/SE, 300 SEb	108 324 02 04[1] [5]
Cars with heavy-duty suspension	
190 c/Dc, 200, 200 D, 230, 230 S, 220 b/Sb/SEb	110 324 12 04[6]
220 SEb Cpe./Conv., 250 S/SE, 300 SEb	110 324 32 04[7]
Police radio patrol cars	
190 c/Dc, 200, 200 D, 230, 230 S, 220 b/Sb/SEb	110 324 32 04[8]
250 S/SE	110 324 21 04
Station Wagons	
190 c/Dc	110 324 28 04[2]
200, 200 D	110 324 32 04[9]
230, 230 S	110 324 21 04[10]
Ambulances	
190 c/Dc, 200, 200 D, 230, 230 S, 220 b/Sb	110 324 21 04[3]

1) Up to the chassis end numbers listed below, rear spring part No. 110 324 30 04 has been installed as a standard:

Type 200 - up to chassis end No. 160397
Type 200 D - up to chassis end No. 285596
Type 230 - up to chassis end No. 016337
Type 230 S - up to chassis end No. 091432

Up to the chassis end numbers listed below, rear spring part No. 108 324 01 04 has been installed as a standard:

Type 250 S - up to chassis end No. 008776
Type 250 SE - up to chassis end No. 006179
Type 250 SE Cpe./Conv. - up to chassis end No. 085417
Type 300 SEb - up to chassis end No. 000762

2) Heavy-duty version of the rear springs (together with the torsion bar for the front axle of 24.5 mm (.9653 in.) Ø) can be converted to the present version.

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3) Up to the chassis end numbers listed below, rear spring part No. 110 324 32 04 has been installed as a standard:

   Type 200 - up to chassis end No. 154870
   Type 200 D - up to chassis end No. 272900
   Type 230 - up to chassis end No. 013575

4) If longer springs are required, replace with rear spring part No. 108 324 02 04.

5) Replacement for rear spring part No. 110 324 30 04 if longer springs are required.

6) If longer springs are required, replace with rear spring part No. 110 324 32 04.

7) Replacement for rear spring part No. 110 324 12 04 if longer rear springs are required.

8) Formerly part No. 110 324 12 04.

9) If longer springs are required, replace with rear spring part No. 110 324 21 04.

10) Replacement for rear spring part No. 110 324 32 04 if longer rear springs are required.

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Table 2. Hydropneumatic Compensating Spring

Hydropneumatic compensating spring					Applicable left ball joint		
With ball joints, Part Number [1]	Length "L"[5] mm (in.)	Without ball joints, Part Number	Color identification	Gas filling pressure atu (p.s.i.)	Part Number	Length "l"[5] mm (in.)	Identification[2]
111 320 01 99	368 (14.488)[3] 371 (14.606)[4]	000 320 00 13	none	60 (853.20)	000 329 01 30	60.5(2.384)	none
					000 329 06 30	63.5(2.500)	red
111 320 02 99	374 (14.724)				000 329 02 30	66.5(2.620)	white
111 320 03 99	368 (14.488)[3] 371 (14.606)[4]	000 320 04 13	1 longitudinal green stroke	75 (1066.50)	000 329 01 30	60.5(2.384)	none
					000 329 06 30	63.5(2.500)	red
111 320 04 99	374 (14.724)				000 329 02 30	66.5(2.620)	white

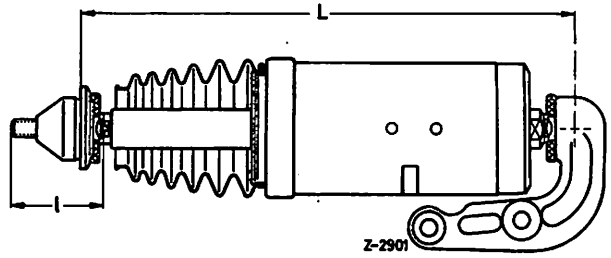
1) Total range of delivery with installation parts.

2) Color spot on front of threaded piece.

3) First version.

4) Present design (second version).

5) See illustration.



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Hydropneumatische Ausgleichfeder

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Hydropneumatic compensating spring

Part Number [1]	Type	Suspension
111 320 01 99	190 c/Dc, 200, 200 D, 220 b/Sb/SEb Sedan, 230, 230 S	Standard (normal vehicle level)
111 320 02 99		Heavy-duty for bad road conditions; police radio patrol cars (higher vehicle level)
111 320 03 99	220 SEb Cpe./Conv., 250 S/SE, 300 SEb	Standard (normal vehicle level)
111 320 04 99		Heavy-duty for bad road conditions; police radio patrol cars (higher vehicle level)
111 320 04 99	190 c/DC, 220 b/Sb, 200, 200 D, 230, 230 S	Station wagons and ambulances (higher vehicle level)

1) Total range of delivery with installation parts.

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 53	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Gruppo	32	Passenger Cars

Stuttgart-Untertürkheim, September 1963

To all Daimler-Benz Agencies

Re.: Air cushioning of type 300 Se

Of late fresh air is no longer drawn in by the air compressor via the intake muffler of the engine, but via a separate air filter (1). This modification was made in order to avoid that the rubber parts of the valves are exposed to fuel vapours drawn in from the intake pipe and through the engine ventilation at the mixture controller. The new air filter is immediately screwed into the valve housing of the anti-freeze device (Figure 1).

With the installation of the air filter it became necessary to alter the position of the bracket of the anti-freeze device at the cowl of the 300 Se sedans. This modification has been carried through already as of Chassis End No. 003569. However, it was not necessary to alter the position of the bracket on the 300 SE Convertibles and Coupés.

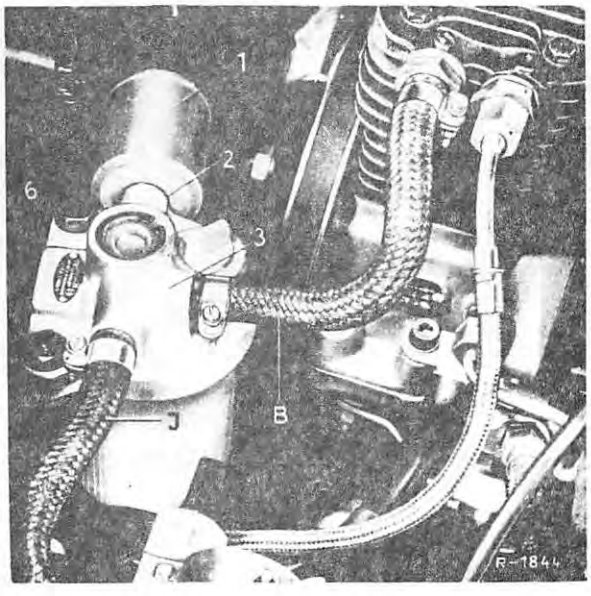

Figure 1

1 air filter
2 rubber seal ring
3 anti-freeze device
6 bracket on cowl

B suction line, anti-freeze device, air compressor

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The following models have been equipped in the series with a separate air filter.

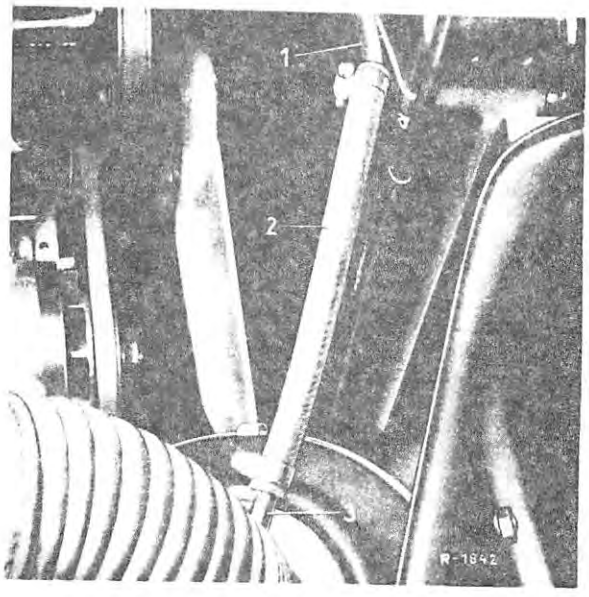
Type 300 SE Sedan	*as of Chassis End No. 004375*
Type 300 SE Convertible and Coupé	*as of Chassis End No. 004379*

Subsequent installation of the separate air filter

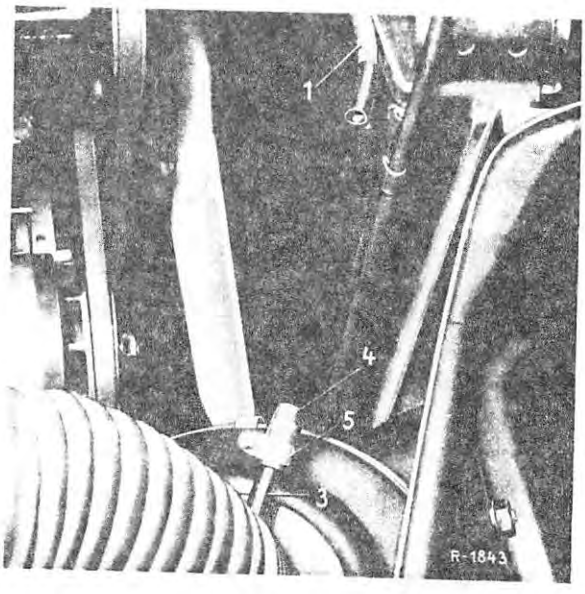
In future the separate air filter has to be installed subsequently in those vehicles which show signs of damage at the valve unit or at the level control valve. Further we suggest the subsequent installation of this air filter in vehicles which are mainly operated in countries with tropical climate or which are frequently driven on overseas trips in countries with a hot climate or with a high degree of humidity of the air.

The subsequent installation has to be carried out in the following way:

1. Disconnect the old hose (2) from the engine intake muffler. Put a rubber cap (4) on the nipple instead and fix it with a hose clip (5) (Figure 2).



Previous version



Present version

Figure 2

1 *pipe line at radiator core*
2 *hose*
3 *nipple at intake muffler*
4 *rubber cap*
5 *hose clip*

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2. Disassemble anti-freeze device. For this purpose, remove container (1) and unscrew screw plug (7), dismount valve housing completely: remove intake valve (5), blowoff valve (6) and nozzle (8) (see Workshop Manual Passenger Cars of August 1959, Job No. 32-17, Illustration 32-10/12).

3. Compress nipple of hitherto used suction pipe in vise and withdraw it from valve housing while turning the latter.

4. Cut a thread M 12 x 1,5 of 14 mm depth into valve housing. Then bore threaded hole at 120° to a diameter of 14 mm (Figure 3).

5. Blow out carefully with compressed air and reassemble valve housing whereby you should be particularly careful to mount the valves properly (see Figure 32-10/12 in Workshop Manual). The three balls at the blowoff valve should be embedded with grease in the plastic ring. Replace nozzle (8) at intake valve (hitherto size 075) by a new nozzle, size 0100.

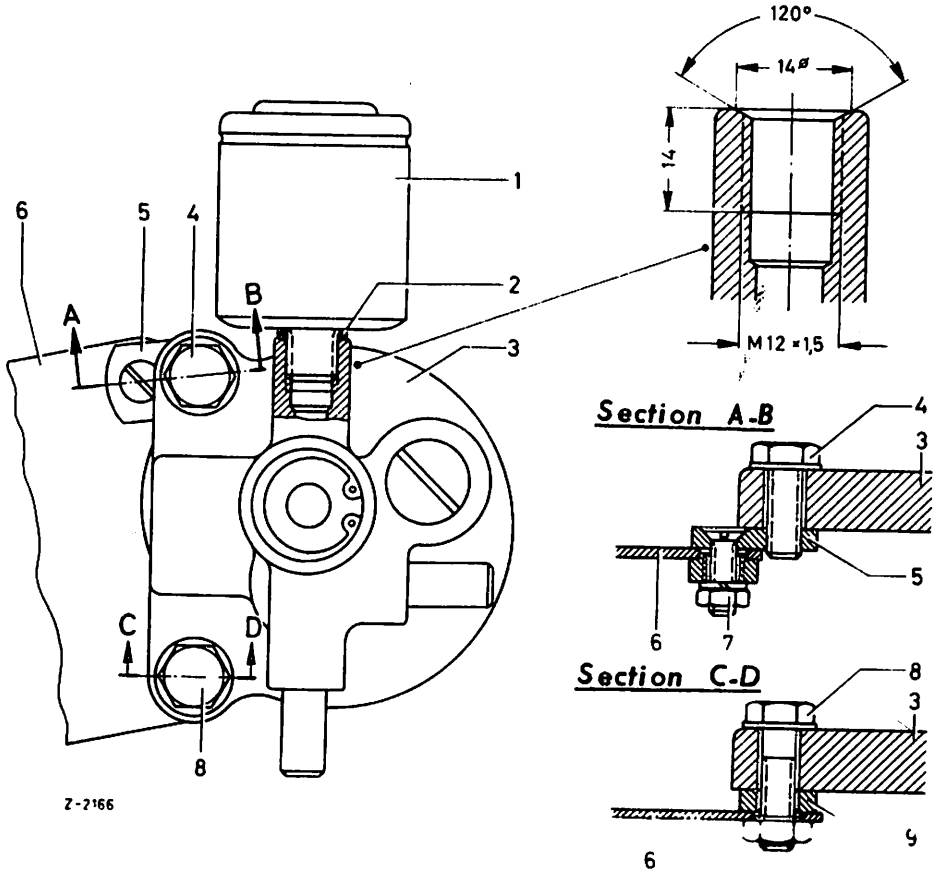

Figure 3

1 air filter
2 rubber seal ring
3 anti-freeze device
4 hex. hd. screw M 8 x 20 with lock washer
5 washer
6 bracket at cowl
7 counter-sunk screw with nut and lock washer
8 hex. hd. screw M 8 x 28 with lock washer
9 washer

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6. Screw air filter with rubber seal ring into anti-freeze device and tighten by hand.

7. Install anti-freeze device. For this purpose, insert in the 300 SE Sedans up to Chassis End No. 003568 the two special washers (5) and (9) between bracket and anti-freeze device (Figure 3).

Note:
By means of these special washers, the anti-freeze device is brought into the same position as with the bracket now installed in series production. This makes any modifications of the bracket itself superfluous.

For the subsequent installation of the separate air filter, the following parts are required:

Quantity	Part	Part No. or DIN Designation	Remarks
1	air filter	000 327 02 91	with rubber seal ring
1	Solex main nozzle size 0100	000 071 50 35	for intake valve of anti-freeze device
1	cap	110 987 02 45	for locking nipple at engine intake muffler
1	hose clip	A SR 14/9x0, 45 N 288a	
1	washer	112 327 00 76	additional parts for fastening anti-freeze device (only required for Type 300 SE Sedan up to Chassis End No. 003568)
1	washer	112 990 08 40	
1	hex. hd. screw	M 8x20 DIN 933-8G	
1	hex. hd. screw	M 8x28 DIN 931-8G	
1	counter-sunk screw	AM 6x20 DIN 63 - 4 S	
1	hexagon nut	M 6 DIN 934 - 5 S	
1	lock washer	B 6 DIN 127	

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 125	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 33	PASSENGER CARS

FORT LEE, MARCH 1970

This Service Information supersedes Service Information No. 38, Group 32, of June 1969.

MODIFICATIONS: Various items revised, summary added.

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NOISES IN THE FRONT AXLE -- MODELS 220 D/8 THROUGH 250/8 CP. (MODEL SERIES 114/115)

Service Information No. 38, Group 32, of June 1969 contained information on how to eliminate noises occurring on the front axle. In the meantime, new aspects appeared; for instance, the steering idler arm may be another source of noise.

A summary explaining the various causes of noise and measures to eliminate them are included in this Service Information.

1. Knocking noises which occur mainly when driving around curves (possibly appearing only once).

   CAUSE: The retaining brackets of the torsion bar mounting at the floor frame are insufficiently tight.

   REMEDY: Tighten the hex. head screws of the retaining brackets to: 14.5 ft. lbs. to 18.1 ft. lbs. (2 to 2.5 kpm).

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2. Clicking noises when turning steering right or left, usually just before or after reaching full lock position.

CAUSE: This noise generally originates in the steering arm mounting at the steering knuckle.

REMEDY: The thread and shaft of the hex. head screws for securing the steering arm to the steering knuckle, as well as the contact surface, should be treated with "Omnifit Type 80, red", part No. 002 989 09 71. The hex. head screws must be tightened and secured to a torque of 58 ft. lbs (8 kpm).

IMPORTANT!

TIGHTEN THE STEERING ARM HEX. HEAD SCREWS TO PRESCRIBED TORQUE IMMEDIATELY AFTER TREATING WITH OMNIFIT. THIS ENSURES SWIFT HARDENING OF THE ADHESIVE.

3. Knocking noises which occur at full steering lock position with simultaneous bouncing of the car.

CAUSE: While the steering knuckle and the steering arm are moving up and down, the stop of the steering arm is in contact with the stop bracket of the lower A-arm. Thus, during a full lock turn, the control arm thrust surface may become worn.

REMEDY: A protective steel cap, part No. 115 332 03 60, is available for the A-arm stop bracket, which prevents the thrust surface from becoming worn and also reduces the contact noise.

IMPORTANT!

THE AVAILABILITY OF THE PROTECTIVE CAP IS LIMITED, THEREFORE, REQUESTS SHOULD BE MADE ONLY IN URGENT CASES.

4. Cracking or growling noises when steering is turned to left or right-hand side.

(For checking, disengage tie rods and move steering idler arm by hand).

CAUSE: Mounting of steering idler arm. The tightening torque applied to the hexagon nut is either too high or the rubber bearing was mounted in dry condition.

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REMEDY: Lubricate the bushings of the rubber bearings with Molykote BR2-S grease. It may be obtained through your local Dow Corning Distributor. Finally, tighten the self-locking hexagon nut with a torque of 87 ft. lbs. (12 kpm).

5. Buzzing noises in rapid succession which, for example, occur when driving on bad roads.

CAUSE: Contact of a front spring to the front axle support.

REMEDY: Harder version of rubber spacers (previously 60° Shore hardness, now 70° Shore hardness) are now being installed in series production to prevent the front spring from hitting the front axle support.

Additionally, the shape of the spring retainers on the front axle support has been modified.

ENTERED INTO PRODUCTION:

MODEL	Harder Type Rubber Spacers As Of Chassis End No.	Modified Front Axle Support As of Chassis End No.
220 D/8	013 940	051 140
220/8	005 582	023 690
230/8	005 386	022 380
250/8	009 517	022 836
250/8 Cp.,	since start of production	since start of production

In case of repair, only the harder version rubber spacers should be used. In case the springs hit the front axle support, the upper contact surface of the new rubber spacers must be beveled. (See Illustration.) In extreme cases, the beveling angle may be doubled.

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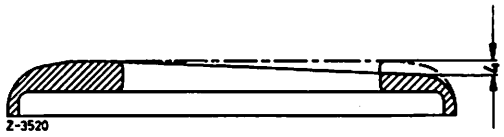

ILLUSTRATION

4 mm = 0.160 in.
(5/32 in.)

The beveled rubber spacers should be positioned and mounted in such a way that the highest point, as seen in the driving direction, faces to the rear of the car. To facilitate the installation, the rubber spacer should be previously fitted to the spring at three points, using masking tape. Prior to removing the front springs, the position of the eccentric cams relative to the front axle support should be marked on the mounting of the lower A-arm.

If the special tool, part No. 115 589 03 63 00, which is required to remove and install the front springs is not available, a spring tensioner, part No. 186 589 04 31 00 may be used.

RUBBER SPACERS FOR THE FRONT SPRINGS

Height	Part No. - 1st Version 60° Shore Hardness 1)	Part No. - 2nd Version 70° Shore Hardness 1)	Part No. - 3rd Version 70° Shore Hardness (new design)
.32 in. (8 mm)	115 321 22 84	115 321 27 84	115 321 32 84
.51 in. (13 mm)	115 321 23 84	115 321 28 84	115 321 33 84
.71 in. (18 mm)	115 321 24 84	115 321 29 84	115 321 34 84
.91 in. (23 mm)	115 321 25 84	115 321 30 84	115 321 35 84

1) Only rubber spacers of the 3rd Version will be delivered as spare parts.

The required parts are available from our Mercedes-Benz parts depots.

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In case of warranty, a claim for parts plus 2.0 hours labor for replacing both rubber spacers and 0.4 hours for modifying both rubber spacers may be submitted for the preceding job.

SUMMARY:

Causes of Noises and Corrective Measures on the Front Axle of Models 220 D/8 to 250/8 Cp. (Model Series 114/115)

Noises on the Front Axle (Appearance, Cause, Diagnosis)	Corrective Measure
Knocking noises occuring mainly when driving winding roads, in most cases appearing only once.	Carefully tighten hex. head screws of torsion bar retaining clips (tightening torque 14.5 - 18.1 ft. lbs. (2.0 - 2.5 kpm)).
Clicking noises when turning the steering to the left and right-hand side, mostly prior to and after reaching lock. (Noise at fastening point between steering arm and steering knuckle.	Apply "Omnifit Type 80, red" to threads and shanks of hex. head screws, as well as to contact surface. Screws are used to mount steering arms to axle neck. Carefully tighten hex. head screws with a torque of 58 ft. lbs. (8 kpm). Tighten hex. head screws of steering arm to maximum torque immediately after "Omnifit" was applied. This ensures fast drying of the adhesive.
Knocking noise occuring when the steering is turned to lock and the suspension moves up or down simultaneously.	A protective cap, made from spring steel, is fitted to the stop bracket of the lower A-arm. The cap prevents the contact surface from being worn and therefore, diminishes the contact noises. Part No. of the protective cap is 115 332 03 60.
Cracking or growling noises when steering is turned to left or right-hand side. For checking disengage tie rods and move steering idler arm by hand.	If the steering idler arm is barely moving, check and correct tightening torque of hex. nut (87 ft. lbs. (12 kpm)). If noises are not eliminated, lubricate bushings of rubber bearings with Molykote BR2-S grease.

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	Finally, tighen self-locking hex. nut with a torque of 87 ft. lbs. (12 kpm).
Buzzing noises in rapid succession, occurring when driving on bad roads. Front springs hit the front axle support.	Harder rubber spacers (previously 60° Shore, now 70° Shore) are now being installed in series production. Rubber spacers for front springs of harder version to be installed. In addition, bevel upper bearing surface of rubber spacers.
Grinding noises occurring when driving sharp bends are caused when the brake disc is brushing against the brake pads.	Adjust wheel bearing clearance.

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 155	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	33	PASSENGER CARS

FORT LEE, FEBRUARY 1970

This Service Information supersedes Service Information No. 108, Group 33, of January 1969.

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: LOWER A-FRAME TIGHTENING TORQUE - SERVICE MAINTENANCE -- MODEL SERIES W 108/109/111/113

According to the service booklet as of September 1969, a check of the tightening torque of the lower A-arm mounting bolts (job no. 922) must be performed at the:

"A" INSPECTION - AT 180 TO 600 MILES
FIRST "D" INSPECTION - AT 6000 MILES
ALL "E" INSPECTIONS - EVERY 12,000 MILES

TIGHTENING TORQUE: 94 FT. LBS. (13 KPM)

MODELS AFFECTED:
280 S/8
280 SE/8
280 SE/8 CP./CONV.
280 SL/8
300 SEL/8
300 SEL/8 6.3

We would like to call your attention to the first "D" inspection at 6000 miles which previously did not specify this operation. This inspection must be performed during the first "D" service on all specified models as required.

In case of repairs, only bolts and nuts which are phosphate-coated (colored black) may be used for replacement as follows:

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HEX HEAD BOLTS -- PART NO. 111 990 07 01 or
108 990 08 01

HEX HEAD NUTS -- PART NO. 000934 012013

10 G QUALITY (previously 8 G quality)

Replacement bolts are to be installed from the top which will facilitate easier access to the nuts from below.

The labor allowance required to perform this check is contained in the flat rates for the Service Schedules. No additional labor may be charged.

The present edition of the Service Booklet already contains job no. 922 in the various Service Schedules. Newly revised Service Maintenance Work Sheets will also contain this job.

The above mentioned parts are available from your Mercedes-Benz parts depot.

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SERVICE DEPARTMENT

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 110	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 33	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Front Axle Wheel Bearing Clearance -- Models 220 D/8 to 600

During the break-in period, the prescribed adjustment of the wheel bearing clearance needs to be carried out in the course of the work performed according to Chart D, Service No. 3 (6,000 miles = 10,000 km). We would like to remind you of this directive.

This is necessary because the front axle wheel bearing clearance increases during the break-in period. If not readjusted properly, the clearance between the inner bearing race and the axle spindle will increase. A later adjustment of the wheel bearings will then be impossible.

The wheel bearing clearance must always be adjusted to specifications: for safety reasons it must by no means be too tight!

If the tapered roller bearings have been replaced during repair work on the front axle, these regulations concerning the adjustment apply accordingly.

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Service Department

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	23	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	33	Passenger Cars

Fort Lee, July 1969

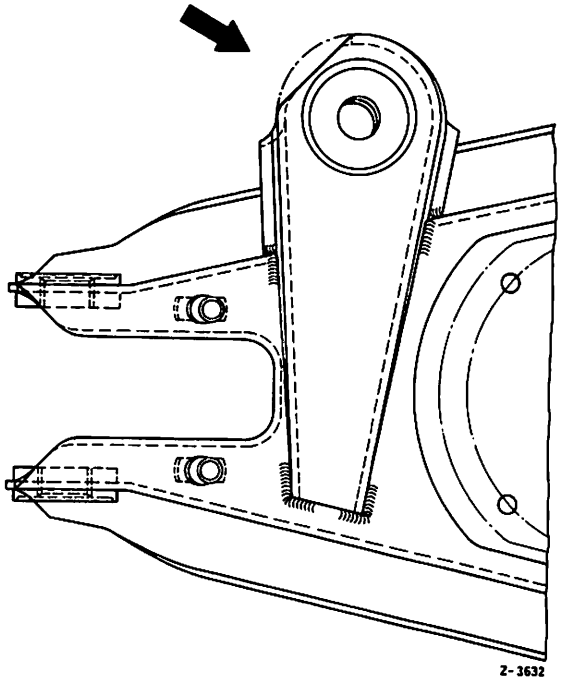
TO OUR MERCEDES-BENZ DEALERS

Subject: Front Axle Lower A-Arms -- Models 300 SEL/8 and 300 SEL/8 6.3

Since the beginning of production of model 300 SEL/8 6.3, the eyelet for the mounting of the torsion bar was moved by .24" (6 mm) towards the center of the car (as compared to model 300 SEL/8) in order to provide sufficient room for the 6 1/2 J x 14 H wheel rims employed on model 300 SEL/8 6.3

These same version A-arms were also introduced in production on the 300 SEL/8 as of chassis end number 000 457.

In order to further increase the clearance for the rims, these A-arms were later equipped with a chamfered eye (as shown in illustration below).



Illustration

Chamfered Eye on the Torsion Bar Mounting

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This modification entered production as of chassis end number 000 826 or model 300 SEL/8 6.3, whereas it was gradually introduced on the 300 SEL/8 so that a specific chassis end number cannot be quoted.

Only the latest version A-arms with both modifications are available from our spare parts depots under the old part number, that is - 109 330 00 07 A-arm left side and part number 109 330 01 07 A-arm right side.

In case of repairs, these A-arms may only be installed on both sides at the same time on model 300 SEL/8 up to chassis end number 000 456. In addition, they may also be installed in models 300 SE (W 112) and 300 SEL (W 109).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	70	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 33	Passenger Cars

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Sealing Rings for Front Wheel Bearings

Various radial sealing rings are available for the front axle versions of our passenger cars.

So that you will know which sealing ring is applicable for which front axle version, we are attaching a list of the available sealing rings and the types and front axle version for which each is applicable.

Please note that the sealing ring without the additional dust lip, part No. 002 997 82 46, is only valid for front axles with drum brakes and tapered roller bearings with inch measurements. This sealing ring should never be used on vehicles with disc brakes.

The radial sealing rings may be ordered under the respective part numbers through your Mercedes-Benz Parts Depot.

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Attachment

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Sealing Rings for Front Wheel Bearings

Sealing Ring Part Number	Measurements mm (inches)	Type	Chassis End No.	Front Axle Version
000 997 18 46	45 x 65 x 10 (1.772 x 2.559 x .394)	180 b, 190 b	-	Drum brake DIN tapered roller bearing
		180 c	up to 029415	
		180 Db, 190 Db	-	
		180 Dc	up to 024676	
		220 b	up to 023660	
		220 Sb	up to 049856	
		220 SEb Sedan	up to 016975	
002 997 82 46[1)]	45 x 62 x 10 (1.772 x 2.441 x .394)	180 c	from 029416	Drum brake Inch tapered roller bearing
		180 Dc	from 024677	
		190 c	up to 064105	
		190 Dc	up to 099641	
		220 b	from 023661 to 048976	
		220 Sb	from 049857 to 070637	
		220 SEb Sedan	from 016976 to 026840	
003 997 93 46[2)]	45 x 62 x 10 x 7 (1.772 x 2.441 x .394 x .276)	190 c	from 064106	Disc brake Inch tapered roller bearing
		190 Dc	from 099642	
		220 b	from 048977	
		220 Sb	from 070638	
		220 SEb Sedan	from 026841	
		200, 200 D		
		230, 230 S		
		220 SEb Cpe./Conv.		
		250 S, 250 SE, 230 SL, 250 SL		
		300 SE, 300 SEb		
		300 SEL		

1) Sealing ring without an additional dust lip (not for vehicles with disc brakes).

2) Sealing ring with an additional dust lip.

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Article No.	File	Group	Application
130	SERVICE INFORMATION	35	PASSENGER CARS

This Service Information supersedes Service Information No. 130, Group 35, of April 1969.

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CAUSES AND REMEDIES/REAR AXLE CLICKING NOISES MODELS 220D/8 TO 300SEL/8 6.3

Rear axle clicking noises may be audible during stop-start acceleration or when changing load. This noise is caused by drive train spline tooth backlash which cannot be completely solved due to manufacturing and assembly reasons. Parts and/or assembly replacement is also not always the solution to this condition.

To remedy this condition, Omnifit, (Type 80, red M and Type 250, violet M) a high pressure resistant plastic material which "sets" to a certain degree and retains elasticity, but does not solidify has been recommended for use. Many dealers have been using Omnifit for some time with excellent results.

This Service Information will provide instructions for the use of Omnifit and lists both causes and remedies for diagonal swing axles, single joint swing axles, and manual transmissions. Information for the Model 300SEL/8 6.3 is also included.

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I. GENERAL INFORMATION:

The following points must be observed when using Omnifit:

1. Use Omnifit only as prescribed by Mercedes-Benz.
2. Clean all parts with trichloroethylene or thinner before using Omnifit.
3. Apply Omnifit Activator (contained in Omnifit package) to all parts requiring treatment. This reduces the setting time.
4. After applying any type Omnifit, reassemble parts immediately, tighten all nuts and bolts to prescribed torque. Subsequent tightening will impair the setting procedures.
5. Observe setting times (approximately 30 minutes (minimum).
6. Replenish oil only after the setting process is completed.
7. Avoid applying stress until the setting process is completed.

II. DIAGONAL SWING AXLE -- MODELS 220D/8 TO 250/8 CP. (MODEL SERIES 114/115)

1. Rear axle flange splines/outer constant velocity joint.

   Problem: Excessive play, rear axle flange outer constant velocity joint.

   Diagnosis: Loosen central screw on the rear axle shaft flange (Service Manual 114/115, Job. No. 35/2, Illustration 35-2/1). The noise should no longer occur under rapid acceleration.

   NOTE: CHECK LEFT AND RIGHT AXLES INDIVIDUALLY FOR CLICKING NOISE.

   Remedy: Remove excessive play by applying Omnifit, Type 80, red.

   a. Press constant velocity joint out of rear axle shaft flange (Service Manual 114/115, Job No. 35/2).

   b. Clean splines from oil and dry with compressed air.

   c. Coat splines with Omnifit Activator and allow to dry.

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d. Apply Omnifit Type 80, red M to splines, starting at the front side and approximately 7/16 in. (10mm) rearwards.

e. Mount rear axle shaft and tighten central screw to the prescribed torque (Service Manual 114/115, Job No. 35-0).

f. Allow Omnifit to set.

NOTE: FLAT RATE TIME ALLOWANCE FOR HALF AXLES: 0.8 HOURS EACH.

2. Universal Joint Flange/Drive Pinion Splines

Problem: Rear axle drive pinion universal joint flange radial play.

Diagnosis: Loosen right and left central screws. Clicking noises are still audible when starting or changing load.

Remedy: Smooth out play between universal joint flange and drive pinion with Omnifit, Type 80 Red M.

a. Drain differential oil.

b. Disconnect propeller shaft from flange (Service Manual 114/115, Job No. 41-1).

c. Mark the universal joint flange on the side facing the pinion, to ensure correct realignment when reassembling.

NOTE: BEFORE LOOSENING THE SELF-LOCKING NUT, MEASURE THE TOTAL REAR AXLE DIFFERENTIAL ROTATION TORQUE AND MAKE A NOTE OF IT.

Remove universal joint flange from the pinion.

d. Apply Omnifit Type 80, red M to parts, as before.

e. Insert the universal joint flange, align with markings, and tighten the self-locking nut until the total rotation torque is the same as before.

f. Allow Omnifit to set.

g. Replenish oil.

NOTE: FLAT RATE TIME ALLOWANCE: 2.3 HOURS.

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III. SINGLE JOINT SWING AXLE -- MODELS 280S/8 TO 300SEL/8 6.3

Single joint swing axle change - in - load clicking noises may occur in two locations:

1. Slip joint right rear axle side gear splines.

2. Universal joint flange drive pinion splines.

NOTE: DIAGNOSIS MUST BE ACCOMPLISHED CAREFULLY AS THE WORK INVOLVED FOR LOCATION, IS FAR GREATER THAN FOR LOCATION 2.

Diagnosis: Position vehicle over pit, ignition off. Engage gear or place in "P" position for automatic transmission. Move the vehicle backwards and forwards quickly. If the clicking noise cannot be located, remedy for location 2 should be used first.

Remedy/Location 1: Remove excessive slip joint play using Omnifit Type 80 red M.

a. Remove rear axle.

b. Remove slip joint from right rear axle side gear (Service Manual, August 1959, Volume 2, Job No. 35-7). Clean and dry off with compressed air.

c. Apply Omnifit Activator to splines, allow to dry.

d. Apply Omnifit Type 80, red M, and reassemble.

e. Apply Omnifit to 3 or 4 screw threads at the tension bolt.

f. After Omnifit sets, replenish oil.

NOTE: FLAT RATE TIME ALLOWANCE: SINGLE PIPE EXHAUST - 6.2 HOURS

DUAL PIPE EXHAUST - 6.5 HOURS

Remedy/Location 2: Remove universal joint/drive pinion spline play with Omnifit, Type 80 red M.

a. Drain differential oil.

b. Mark the universal joint flange on the side facing the pinion to ensure correct realignment when reassembling.

c. Disconnect propeller shaft from flange.

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NOTE: BEFORE LOOSENING THE SELF-LOCKING NUT, MEASURE THE TOTAL REAR AXLE DIFFERENTIAL ROTATION TORQUE AND MAKE A NOTE OF IT.

Remove universal joint flange from the pinion.

d. Clean splines and dry with compressed air.

e. Apply Omnifit Activator and allow to dry.

f. Apply Omnifit Type 80, red M, to universal joint splines. Insert flange, align with markings.

g. Use a new self-tightening nut and tighten until the total rotation torque is the same as before.

h. Allow to set, replenish oil.

NOTE: FLAT RATE TIME ALLOWANCE: 2.2 HOURS.

IV. MODEL 300SEL/9 3.5 AND 300SEL/8 6.3 HINTS:

In addition to the probable causes already mentioned, clicking noises on the 300SEL/8 6.3 may occur at the propeller shaft/ rear axle flange during change of load.

NOTE: DUE TO THE HIGHER TORQUE ON MODEL 300SEL/8 6.3, OMNIFIT TYPE 250, VIOLET M, MUST BE USED FOR CLICKING NOISE ELIMINATION. HOWEVER, SLIP JOINTS MAY ONLY BE TREATED WITH OMNIFIT, TYPE 80, RED M, TO PREVENT POSSIBLE PROB LEMS DURING DISASSEMBLY.

Problem: Insure correct pressfit connection between propeller shaft and drive pinion.

Remedy: Increase friction by using Omnifit.

a. Disconnect propeller shaft at the rear axle.

b. Clean both flange surfaces and bolts, apply Activator and allow to dry.

c. Apply Omnifit Type 250, violet M, to flange surfaces and bolts.

d. Assemble the flange connections and allow Omnifit to set.

NOTE: FLAT RATE TIME ALLOWANCE: 1.1 HOURS.
IF IN CONJUNCTION WITH EITHER STEP IN SECTION III - 0.3 HOURS.

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V. MANUAL TRANSMISSIONS - MODELS G 72, G 76/18 AND G 76/27

Transmission types are installed on vehicles models as listed below:

VEHICLE MODEL	TRANSMISSION TYPE
200, 200D, 230, 230S, 250S, 250SE, 300SEb, 300SEL, 230SL, 250SL, 300SE/C 280SL, 280S/8, 280SE/8, 300SEL up to May 1969 production.	G72
220, 220D, 230/8, 250/8, 250/8 Cp	G76/18
280S/8, 280SE/8, 300SEL/8 beginning May 1969 production.	G76/27

Clicking noises caused by four speed manual transmissions may be eliminated by using Omnifit.

1. Countershaft Gear Wheels.

   Problem: Constant-mesh gear and 3rd gear have insufficient fit to the countershaft causing them to "knock" against the woodruff key when changing load.

   Diagnosis: Rapidly move the vehicle (warmed up) forwards over an inspection pit, first engaging 2nd and then 3rd gear. A hard metallic knock may be audible and can be located by placing your hand on the transmission.

   Remedy: Secure the constant-mesh and 3rd gear to the countershaft with Omnifit Type 80, red M. A new woodruff key must be installed!

   a. Disassemble transmission (Workshop Manual Type 190, Job No. 26-4/10 to 26-4/20).

   b. Remove constant and 3rd gear from countershaft.

   c. Clean gears and countershaft.

   d. Apply Activator to gears, countershaft and woodruff key, allow to dry.

   e. Apply Omnifit Type 80, red M, place gears on shaft.

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f. Reassemble transmission.

NOTE: CHECK MODEL G 72 TRANSMISSION TO ENSURE LOCKING RING FITS COUNTERSHAFT GROOVE.

g. Allow Omnifit to set, replenish transmission oil.

2. Problem: Play in the three-arm flange/transmission mainshaft.

Diagnosis: Remove propeller shaft at the transmission flange. Slightly loosen grooved nut on the three-arm flange. Engage gear, and move flange left to right by hand. Excessive play should be apparent.

Remedy: Remove excess play in the three-arm flange on the transmission mainshaft with Omnifit, Type 80, red M.

NOTE: TO ACCOMPLISH THIS STEP, THE MODEL G 72 TRANSMISSION MUST BE REMOVED. TRANSMISSION MODELS OF THE G 76 SERIES (LATERALLY SHIFTED TRANSMISSIONS) NEED NOT BE REMOVED. THE REAR TRANSMISSION HOUSING COVER SHOULD BE REMOVED ON BOTH MODELS.

1. Clean flange and shaft splines. Apply Omnifit Activator and allow to dry.

2. Apply Omnifit Type 80, red M, replace transmission cover and re-install flange. Using a new nut, tighten to 108 ft. lbs. (15 kpm) torque.

NOTE: RE-INSTALL PROPELLER SHAFT ONLY AFTER OMNIFIT HAS HARDENED.

When diagnosing transmission noises, allowances for normal assembly tolerances such as gear backlash, end play and synchronizer ring oscillation, which produces noise, must be taken under consideration.

When installing propeller shafts, ensure correct alignment and installation. Shafts improperly installed may be out of alignment (in a bind) which would result in noises.

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Omnifit may be ordered from our Mercedes-Benz Parts Depots under the following Part Numbers:

Omnifit Type 80, red M: 002 989 09 71

Omnifit Type 250, violet M: 002 989 21 71

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Article No.	File	Group	Application
142	SERVICE INFORMATION	35	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR BRAKE LINE REROUTING, MODELS 220D/8 TO 250/8 CP.

A production change which incorporates rerouting of rear wheel brake lines on models 220D/8 to 250/8 Cp. has been made. Production cut-off numbers are as follows:

PRODUCTION CUT-OFF

MODEL	AS OF CHASSIS END NO.
220D/8	161008
220/8	064095
250/8 2.8 (114.011)	002313
250/8 Cp.	003228

The new version brake line is routed along the floor frame to the rear axle.

Should it be necessary to remove or install a rear axle housing with both axle shafts, or an axle shaft on a vehicle with the brake line routing modification, the following instructions should be followed:

To enable the removal of the rear axle shaft, the brake caliper must first be removed. To do this, loosen the two hexagon bolts (Illustration 1, Item 6) and hang the caliper on the floor frame or torsion bar with a piece of wire.

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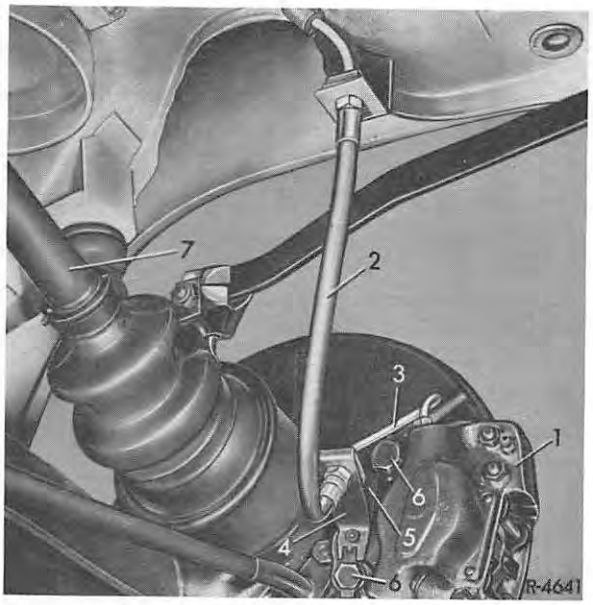


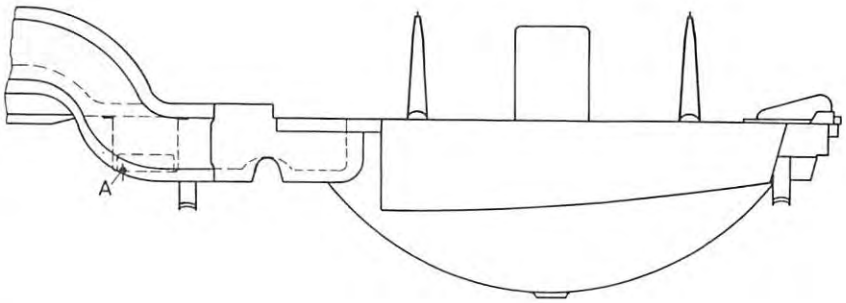
ILLUSTRATION 1

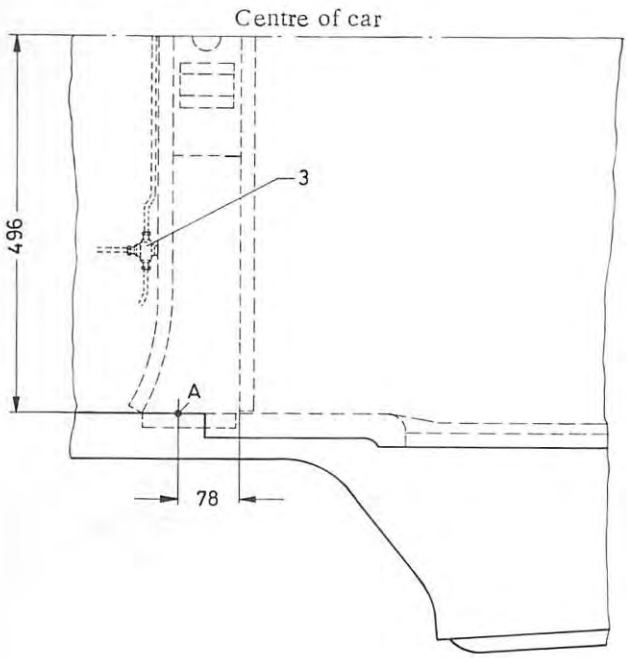
1. Brake Caliper
2. Brake Hose
3. Brake Line
4. Brake Hose Bracket
5. Locking Plate
6. Hexagon Bolt
7. Rear Axle Shaft

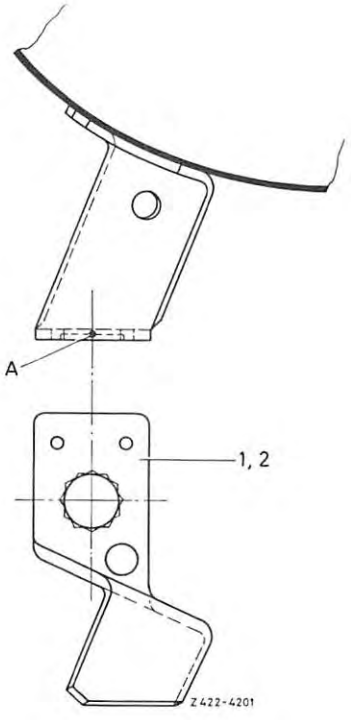
ILLUSTRATION 2 (Below)

A Mounting point for brake hose bracket

1. Brake Hose Bracket, left
2. Brake Hose Bracket, right
3. Three-way Connection







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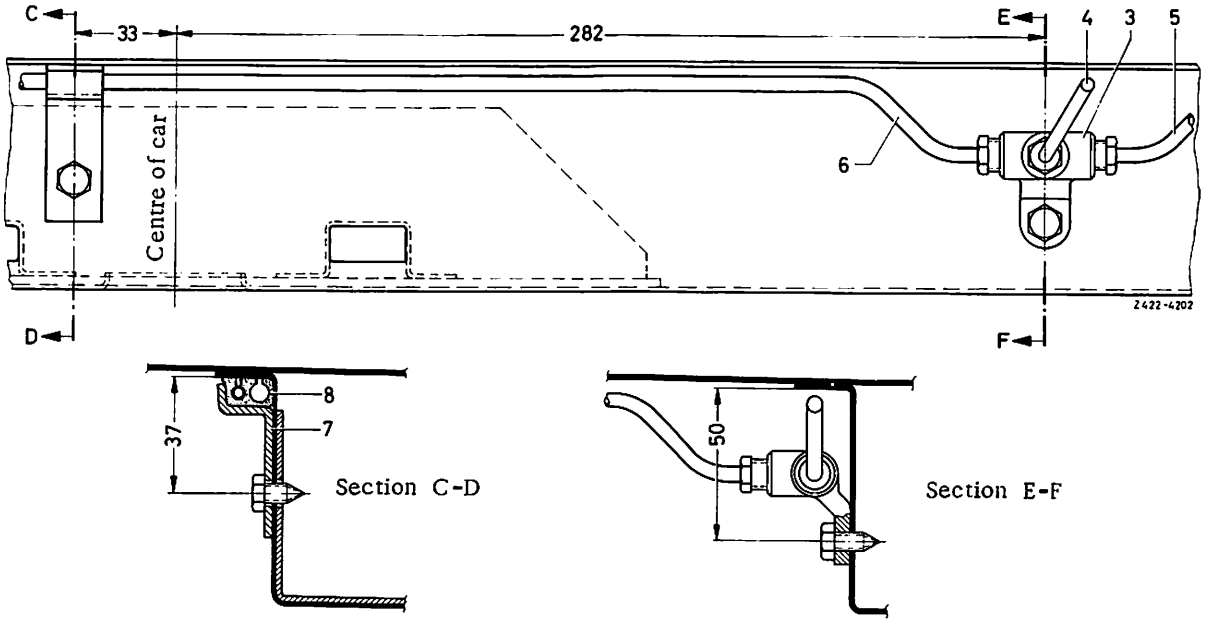

ILLUSTRATION 3

3.	Three-way Connection	6.	Brake Line, right
4.	Brake Line	7.	Clamp
5.	Brake Line, left	8.	Rubber grommet

NOTE: THE BRAKE HOSE OR BRAKE LINE UNION NUT NEED NOT BE REMOVED, THEREFORE BLEEDING OF THE SYSTEM IS NOT REQUIRED LATER ON.

When the above mentioned step has been accomplished, rear axle removal and installation may be performed in the usual way. Prior to reinstallation of the brake caliper, the locking plate (5) must be detached from the brake hose bracket (4) and replaced with a new one. Ensure that the brake hose bracket is mounted to the locking plate correctly and tighten hexagon bolts (6) to 61 ft. lbs. (8.5 kpm). Secure hex bolts (6) with locking plate.

CAUTION: ENSURE THAT STRESS IS NOT APPLIED TO BRAKE HOSES WHEN PERFORMING REAR AXLE REPAIRS.

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Rear axle "A" frames have been slightly modified. When installation of the modified "A" frame is accomplished on a vehicle with a chassis end number prior to those listed on page 1, rerouting of the brake lines is necessary.

INSTRUCTIONS ARE AS FOLLOWS:

1. Mark mounting point (A) for brake hose bracket. (Illustration 2 & 3, Item 1,2). Weld brackets in place.

2. Mark hole for three-way connection, drill hole, mount connection (Illustration 2 & 3, Item 3).

3. Install brake lines and hoses. Ensure proper positioning (brake line from master cylinder to the three-way connection should be routed along the fuel lines).

4. Bleed and leak test brake system.

PARTS REQUIRED

THE ITEMS APPLICABLE TO THIS MODIFICATION, FROM CHASSIS NUMBER AS LISTED ON PAGE 1 ARE AS FOLLOWS:

ITEM	QUANTITY	PART	PART NO.
1	1	Brake hose bracket, left	115 611 03 14
2	1	Brake hose bracket, right	115 611 04 14
3	1	Three-way connection	000 428 42 24
	1	Sheet-metal screw	007976 006204
4	1	Brake line	115 420 20 28 LL

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PARTS REQUIRED (Con't)

ITEM	QUANTITY	PART	PART NO.
5	1	Brake line, left	115 420 24 28
6	1	Brake line, right	115 420 25 28
7	1	Clamp	115 428 00 41
8	1	Rubber grommet	111 476 00 81
	1	Sheet-metal screw	007976 006203
	3	Rubber grommet	110 476 00 84
	2	Brake hose	001 428 14 35
	1	Brake line, left	115 420 18 28
	1	Brake line, right	115 420 19 28
	1	Brake hose bracket, left	115 428 17 40
	1	Brake hose bracket, right	115 428 18 40
	2	Locking plate	115 423 02 73
	1	Bolt M 6 x 10 DIN 933-88	000933 006074
	1	Spring washer B 6 DIN 137	000137 006203

Parts may be ordered from our MB Parts Depots.

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Article No.	File	Group	Application
117	SERVICE INFORMATION	35	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: HYDRAULIC LOAD COMPENSATOR THRUST ARM BUSHINGS

Rattling noises originating in the rear axle area, on the models listed below, may be caused by the rear thrust arm rubber bushings on the axle tubes. These bushings tend to lose elasticity and "flatten" out over a period of time.

Beginning in December 1969, harder rubber bushings have been installed in production.

PRODUCTION CUT-OFF:

MODEL	CHASSIS END NO.
280 S/8	045667
280 SE/8, 280 SEL/8	047706
280 SE/8 Cp./Cv.	004501
280 SL/8 [1]	015020
280 SE/9 3.5	000001

1) Installed for uniformity.

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NOTE: SHOULD BUSHING REPLACEMENT BE REQUIRED, INSTALL ONLY THE RUBBER BUSHING, PART NO. 110 352 18 65, (70 SHORE).

The present rubber bushings, Part No. 111 352 10 65, (57 Shore) may be used on vehicles equipped with the steel compensating spring.

NOTE: VEHICLES EQUIPPED WITH AIR SUSPENSION DO NOT REQUIRE THIS MODIFICATION.

Warranty claims may be submitted for 3.2 hours labor (Job. No. 35-451, Page 107, Service Operation Time Guide).

Required parts may be ordered from our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
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No. 67	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 35	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: LUBRICATION OF ANTI-DIVE DEVICE ON REAR AXLE -- MODELS 300 SE, 300 SEL, (W112) AND 300 SEL/8, 300 SEL/9 3.5 AND 300 SEL/8 6.3, (ALL WITH AIR SUSPENSION).

Please be advised that rumbling noises from the rear of the car may originate from the brake support torque arm of the anti-dive device which probably is worn out to a certain extent due to improper lubrication. This device is subject to high stress and must be lubricated at every service schedule and/or more often in case of heavy duty operation. In case it is not sufficiently lubricated, severe damage might result.

We urge you to inform all personnel concerned to lubricate the two special lubrication points of this device on either side of the rear axle on all cars of model series W112 and W109.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 84	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 35	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR AXLE MODEL SERIES W 114/115 -- MODELS 220 D/8 TO 250 C/8

In production, a modified seal on the rear axle shaft and/or rear axle shaft flange is being installed.

A. SEAL, REAR AXLE SHAFT/REAR AXLE CENTER PIECE

The oil return pattern on the inner three-arm flange of the rear axle has been omitted. It is replaced by a seal ring with oil return pattern. The seal ring on the left hand side bears a red mark on its face (part no. 005 997 29 46). The right hand seal ring is marked green (part no. 005 997 30 46).

The production change is effective as follows:

Model	Chassis End No.	Model	Chassis End No.
220 D/8	068 538	250/8	028 282
220/8	030 885	250/8 Cp.	000 708

B. EXTERNAL SEAL RING FOR THE WHEEL BEARING

The grease return pattern on the rear axle shaft flange has been omitted. In its place, a seal ring with an oil return pattern is now installed. The seal ring for the left hand side is colored red on the outside (part no. 005 997 23 46), and the right hand seal ring is colored green (part no. 005 997 24 46).

Production changed as follows:

Model	Chassis End No.	Model	Chassis End No.
220 D/8	052 706	250/8	023 193
220/8	024 172	250/8 Cp.	000 001

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In case of repair, it is mandatory that at least one oil return pattern is provided at the respective area to be sealed. Either a seal ring with a return pattern or a shaft and/or flange with oil return pattern must be installed. Seal ring with oil return pattern and shaft and/or flange with oil return pattern may be combined.

Only oil seal rings of the new type will be delivered from our Spare Parts Department.

Any supplies of the old seal rings may be used up provided the above instructions are followed. For the time being, rear axle shafts and rear axle shaft flanges are supplied as spare parts with oil return pattern.

Should you receive complaints about oil leaks in the above mentioned places, please inform your zone office immediately giving all vehicle data. This should be done independently, whether a warranty claim is submitted or not.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 77	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 35	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Attachment of the Rear Axle Housing Mounting To the Rear Axle Support -- Models 220/8 through 250/8 (W 114/115)

The method of attaching the rear axle housing mounting to the rear axle support has been changed for production reasons. The self-locking screw (1) used previously is now replaced by a stud (5) with a self-locking nut (6) and washer (7). This eliminates the washers which were previously welded on the top and the bottom of each mounting bolt flange of the rear axle support (4), (illustrations 1 and 2).

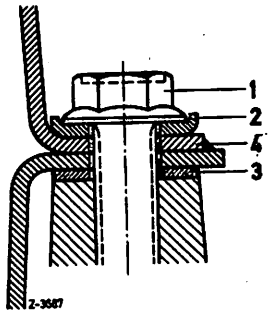

Illustration 1

Attachment used up to Chassis End Numbers given below.

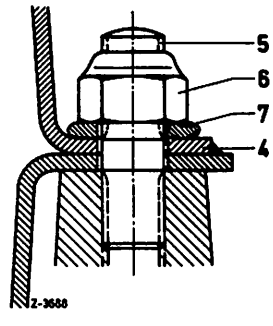

Illustration 2

Attachment used as of Chassis End Numbers given below.

This modification becomes effective as of the following chassis end numbers:

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Model	Chassis End No.
220 D/8	060 121
220/8	027 507
230/8	026 125
250/8	025 562
250 C	000 152

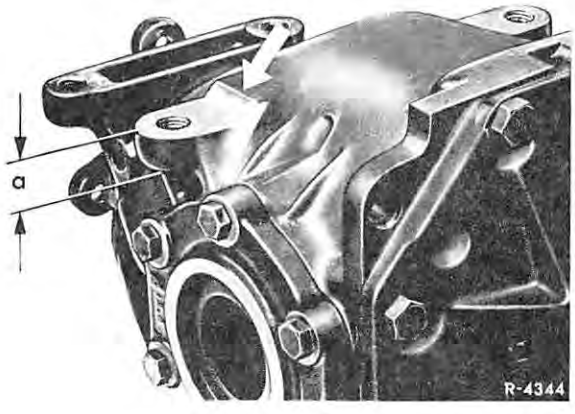
Since the parts concerned can only be interchanged under certain conditions, care should be taken to observe the following points when performing repairs:

1. The rear axle support with the welded-on washers, used up to now, under part number 115 350 05 08, is replaced by a rear axle support without washers, part number 115 350 08 08.

2. The rear axle support, part no. 115 350 05 08 (previous version) was only used with self-locking screws, part no. 115 990 26 01. The rear axle support, part no. 115 350 08 08 (new version) may only be used for installation together with studs, part no. 115 351 00 70, washers, part no. 115 352 05 76, and self-locking nuts, part no. 913001 012000.

3. The rear axle housing mounting surface has been raised by .08" (2 mm) to .71" (18 mm) (previously .63" or 16 mm) - see dimension "a" in illustration 3.

NOTE: When installing a rear axle support of the modified design together with an old rear axle housing, make sure that the rear axle housing touches the rear axle support only at the mounting surfaces. If required, the rear axle housing has to be reworked (see arrow, illustration 3).



"a" = .71" (18 mm)

Illustration 3

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(continued)

4. All parts depots will supply the rear axle housing without studs which, therefore, must be screwed into a housing being reassembled. (Refer to item 2).

Rear axle supports and rear axle housings may be combined as follows:

a) A rear axle support, part no. 115 350 08 08, can be combined with a new rear axle housing - mounting surface .71" (18 mm) high.

b) A rear axle support, part no. 115 350 08 08 can be combined with an old rear axle housing - mounting surface .63" (16 mm) high - provided the rear axle housing touches the rear axle support only at the mounting surfaces, as described under "NOTE" on page 2. (See illustration 3.)

In cases a) and b) only studs, part no. 115 351 00 70 - washers, part no. 115 352 05 76 - and self-locking nuts, part no. 913001 012000 may be used.

Tightening Torque Specifications:

Self-locking screws or nuts for attachment of the rear axle housing to the rear axle support:

65 to 76 ft. lbs. (9 to 10.5 kpm)

Studs in the rear axle housing:

29 to 43 ft. lbs. (4 to 6 kpm)

These torque values must be reached.

The parts mentioned are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	40	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	35	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Pinion and Ring Gear For The Rear Axles of Our Passenger Cars

As you know, matched pinion and ring gears are marked with the same serial numbers. In addition to this, the required setting of the gears in relation to each other has, up to now, been indicated on the pinion gear shaft as well as on the ring gear.

This setting (deviation from the basic adjustment) will, in the future, only be indicated on the front face of the drive pinion cone on all pinion and ring gear assemblies for passenger cars.

You are requested to bring this modification to the attention of your workshop personnel.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 32	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 35	Passenger Cars

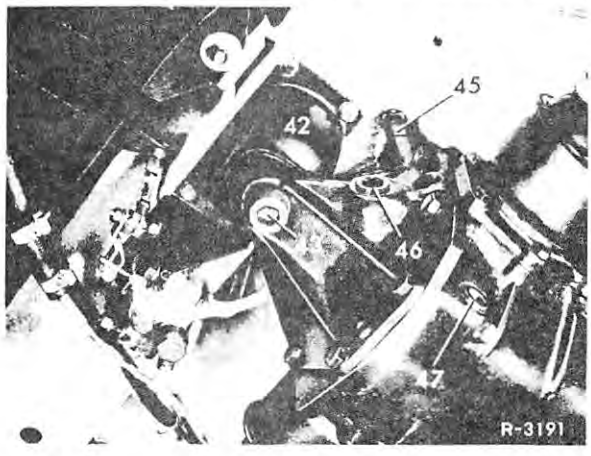
This Service Information supersedes Service Information No. 141, Group 35, of February 1969.

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Axle Suspension -- Models 220/8 through 250/8 (W 114/115)

On vehicles of the above mentioned types, the rear rubber mount (42) is fastened to the cover of the rear axle housing by means of a hex socket bolt (43) (illustration).



42. Rear rubber mount
43. Hex socket bolt

Please note that the tightening torque of this bolt (43) must, from now on, be checked and adjusted during both the "A" and "B" Service and Maintenance inspections.

NOTE: The "A" and "B" Service and Maintenance worksheets have been revised (samples enclosed) and include inspection of the rear axle suspension under Job No. 977. Pads of the revised "A" and "B" worksheets may be ordered in the usual manner.

The tightening torque for the hex socket bolt (43) is 101 ± 14 ft. lbs. (14 ± 2 kpm).

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Enclosure

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 30	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 35	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

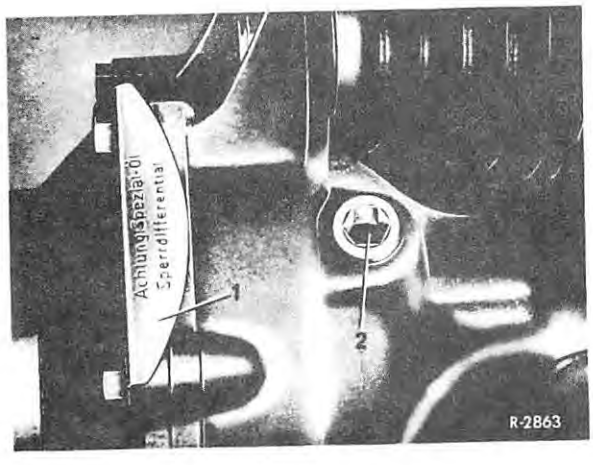
Subject: Differential Gear with Limited Slip

As of chassis end number 001202, model 300 SEL/8 6.3 is being equipped in series production with a differential gear with limited slip. Similar to model series W 108/109, this rear axle can be identified by a plate on the outside of the differential gear box stating:

"Achtung Spezial-Oel, Sperrdifferential"

(Translation:)

"Caution Special Oil, Limited Slip Differential"



1. Plate on Differential Gear Box

In all rear axles with limited slip differential, only the special oil "Veedol Multigear Limited Slip Special" part no. 000 583 08 04 can be used (available from all Mercedes-Benz parts depots in 2.5 liter cans (.66 gallons).

On the following models, the differential gear with limited slip is either installed as standard equipment or can be ordered as an option:

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Model	Differential Gear with Limited Slip	Plate on Differential Gear Box
300 SE, 300 SE Cp/Cv. (up to August 1965) 600	Standard Equipment	No
300 SEL/8 6.3 (up to chassis end no. 001201)	Not Installed	No
300 SEL/8 6.3 (as of chassis end no. 001202)	Standard Equipment	Yes
250 S, 250 SE, 250 SL, 300 SEB, 300 SEL, 300 SE Cp/Cv. (as of August 1965) 280 S/8, 280 SE/8, 280 SL/8, 300 SEL/8	Optional Equipment	Yes

The complete axle assembly for model 300 SEL/8 6.3 as of chassis end number 001202 is available under part no. 109 350 03 00 and the half axle with differential under part no. 109 350 01 03.

The above mentioned parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 59	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 35	PASSENGER CARS

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Diagonal Pivot Swing Axle -- Models 220/8 through 250/8 (W 114/115)

On the above mentioned models, the rear axle center section, as well as the right or left rear axle shafts can be removed and replaced individually, in the case of repair work.

The detailed procedures for these jobs are described in the Service Manual, Passenger Cars as of 1968, series W 114/115, under job No. 35-1/1 through 35-1/3. Should repair work be necessary, it is imperative that you further observe the following instructions carefully.

Rear Axle Shafts (right and left)

The constant velocity joints of the rear axle shafts are surrounded by a protective sleeve (20, illustration 1) and a stop sleeve (18, illustration 1). When removing or reassembling the rear axle shaft assembly (illustration 1), be sure not to let the joints flex too much, as that will cause an indentation in the stop sleeve within the range of the rubber boot (14,-see arrows, illustration 1). This, in turn, will cause damage to the rubber boots from the inside (14, illustration 1), which is not always visible from the outside. The damage may subsequently cause leaks or even complete destruction of the constant velocity joints.

Since these joints may not be disassembled, any repair work on them would necessitate the replacement of the entire rear axle shaft, which, of course, would become an expensive repair job.

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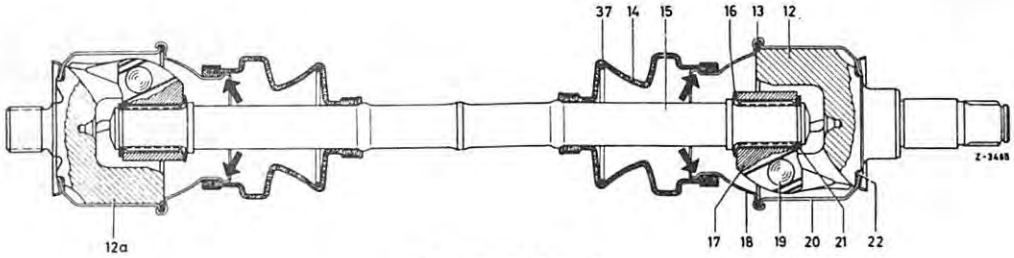

Illustration 1

12. Inner jaw
12a. Outer jaw
13. Seal ring
14. Rubber boot
15. Rear axle shaft
16. Cup spring
17. Hub
18. Stop sleeve
19. Ball
20. Protective sleeve
21. Locking ring
22. Seal ring
37. Tension ring for rubber boot

Rear Axle Center Section

Upon receipt of a rear axle center section, ordered from your Mercedes-Benz parts depot, please note that it does not come with a vent (45, illustration 2). The tapped hole provided for the vent is sealed by a screw. Therefore, when replacing the rear axle center section, the vent from the old sleeve must be unscrewed and fitted into the new rear axle center section.

NOTE: Failure to replace the screw with the vent (as described above) will quickly cause leaks in the center section of the rear axle.

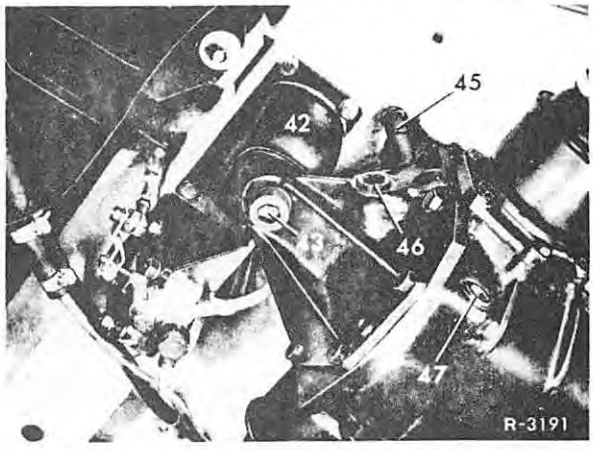

Illustration 2

42. Rubber mounting
43. Hex socket screw
45. Vent
46. Screw plug for filler opening
47. Screw plug for drain opening

It is, of course, of extreme importance that your workshop personnel be aware of these facts.

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8. Assemble and install the rear axle.

The flat rate is 7.4 hours on vehicles with a single pipe exhaust system and includes all of the mounting jobs on the vehicle. The flat rate is 7.8 hours on vehicles with a double-pipe exhaust system.

"Omnifit Type 80, red" is available in combi-packages containing 50 cm^3, including the activator. The contents of the package is sufficient for several rear axle applications.

The above item may be ordered from your Mercedes-Benz parts depot under part no. 700 350 00 99.

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No. MB-T 16	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 35	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Axle Ratios - Type 250 SL

The 250 SL is equipped with the following rear axle ratios:

Up to chassis end No. 002441 (standard and automatic trans.) : 1 : 4.08 or 1 : 3.92

From chassis end No. 002442 (standard and automatic trans.) : 1 : 4.08

Generally, the early production 250 SL's with automatic transmission are equipped with a rear axle ratio of 1 : 3.92, and the early production 250 SL's with standard transmission are equipped with a rear axle ratio of 1 : 4.08; however, there are some exceptions.

For that reason, when ordering rear axle parts for 250 SL's up to chassis end Number 002441, it is mandatory that the rear axle ratio shown on the differential housing, next to the rear axle serial number, be included in the parts order.

Part numbers for both rear axle ratios are:

A) Rear axle ratio 1 : 4.08

Complete axle	108 350 00 00
Half axle	108 350 00 03
Speedometer	004 542 57 06

B) Rear axle ratio 1 : 3.92

Complete axle	113 350 07 00
Half axle	111 350 00 03
Speedometer	004 542 58 06

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No. 20	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 35	Passenger Cars

Fort Lee, April 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Axle Suspension of Types 230 and 230 S

For repairs involving removal and installation of the rear axles of Types 230 and 230 S, it must be observed that upon the introduction of these types, the rear axle was lowered by 6 mm to prevent the propeller shaft from striking the tunnel end when the car is accelerated quickly. The following vehicles are concerned:

Type 230: chassis end Nos. 000001 through 011097
Type 230 S: chassis end Nos. 069693 through 085204

This was done by inserting a 6-mm-thick ring (7, illustration 1) between the support of the rear axle suspension (4) and the rubber mounting (3), correspondingly changing the tightening plate (6), and extending the hex-head screw (5).

When the rear axle is replaced on cars within this serial number range, one must remember to use these same components, of course.

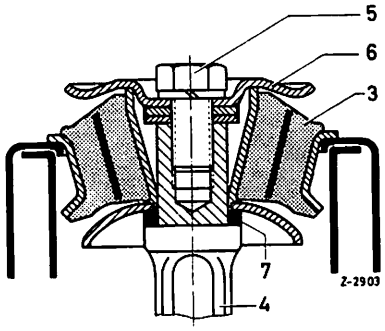

Illustration 1

3. Rubber mounting
4. Support for rear axle suspension
5. Extended hex-head screw
6. Tightening plate
7. Ring, 6 mm thick

In cars after the above-listed serial number ranges, the tunnel was redesigned, so that the spacer ring and associated special components are not needed. (See illustration 2)

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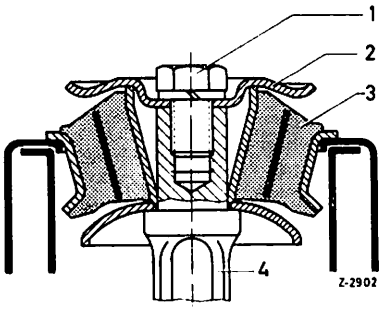

Illustration 2

1. Hex-head screw
2. Tightening plate
3. Rubber mounting
4. Support for rear axle suspension

The part numbers involved for the two versions of installation are shown in table 1.

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TABLE 1. REAR AXLE SUSPENSION

Type 230. Chassis End Nos. 000001 through 011097
Type 230 S. Chassis End Nos. 069693 through 085204

Type	Hex-Head Screw Part No./DIN Designation (See 5, Illustration 1.)	Tightening Plate Part No. (See 6, Illustration 1.)	Ring, (6 mm Thick) Part No. (See 7, Illustration 1.)
230 sedan without hydropneumatic compensating spring	000961 016009 (M 16 x 1.5 x 35)	110 350 00 67	110 351 00 51
230 sedan with hydropneumatic compensating spring			
230 station wagon		110 350 01 67	
230 ambulance			
230 S sedan		110 350 00 67	

Type 230. Beginning with Chassis End No. 011098
Type 230 S. Beginning with Chassis End No. 085205

Type	Hex-Head Screw Part No./DIN Designation (See 1, Illustration 2.)	Tightening Plate Part No. (See 2, Illustration 2.)	Ring (See Illustration 2.)
230 sedan without hydropneumatic compensating spring	000961 016004 (M 16 x 1.5 x 28)	110 351 00 45	no ring needed
230 sedan with hydropneumatic compensating spring			
230 station wagon		112 351 02 45	
230 ambulance			
230 S sedan		110 351 00 45	

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Daimler-Benz AG / Export-Service

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
33	Service Information	35	Passenger Cars

Stuttgart-Untertürkheim, June 1963

To all Daimler-Benz Agencies

Re.: Rear Axle of Types 300 SE

Since February of this year a rear axle reduction ratio of 1 : 3,92 (12 : 47 teeth) is used for types 300 SE instead of the ratio of 1 : 4,1 (10 : 41 teeth) hitherto used. The figures indicating the respective ratio are embossed in the rear part of the rear axle housing.

Types 300 SE are provided with the new rear axle reduction ratio of 1 : 3,92 in series production as of chassis end number 003483, a few fore-runners excepted.

Rear axles with a reduction ratio of 1 : 4,1 are no longer available. For replacement of rear axles with this reduction ratio as well as for those with a reduction ratio of 1 : 4,08 rear axles with a reduction ratio of 1 : 4,08 are still available at present. The latter may, however, not be used as a replacement for rear axles with a reduction ratio of 1 : 3,92. Once the rear axles with a reduction ratio of 1 : 4,08 have been used up, our Spare Parts Department, Untertürkheim, will only supply parts with a reduction ratio of 1 : 3,92.

Rear axle complete with strut
Part No. 112 350 13 00

Differential complete with crown wheel and pinion
Part No. 112 350 05 23

Crown wheel and pinion
Part No. 112 350 02 39

If a rear axle or parts with a reduction ratio of 1 : 3,92 are installed subsequently, the speedometer has to be adjusted, too. Otherwise it will show incorrect readings. Adjustment of the speedometer may be effected at any VDO station. The time required amounts to approx. 1 to 2 labour hours depending on the type of instrument. When changing the reduction ratio from 1 : 4,1 to 1 : 4,08, it is not necessary to adjust the speedometer.

If the old rear axle housing remains with the vehicle, care should be taken to remove the old figures indicating the reduction ratio and to emboss the new ones in the housing.

On this occasion we should like to point out that with a reduction ratio of 1 : 3,92 there is practically no increase in the maximum speed. For this reason we would ask you to dissuade your customers from a subsequent conversion if the latter is only intended to bring about an increase in speed.

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Daimler-Benz AG / Export-Service

No. 22	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 40	PASSENGER CARS

Stuttgart-Untertürkheim, May 1964

To all Daimler-Benz Agencies

Re.: Michelin X Tyres for Types 190c, Dc, 220b, Sb, and 220 SEb Sedan and Coupé

General Remarks:

In addition to Michelin-X Tyres 6.40 - 13 (7.00 - 13) which have been manufactured for years we now release size 7.25 - 13, which has been taken up in the manufacturing programme. This means that from now on Michelin-X Tyres are available for our types 190c and 190 Dc as well as for our recent 220 Sedans and the 220 SEb Coupé. The tyre pressures are the same for both tyres. The following data apply to our present type programme:

Type	Michelin X Size	Tyre pressure in kg/cm² cold front/rear	Tyre pressure in kg/cm² warm front/rear
190c, 190 Dc	6.40-13 (7.00-13)+)	1.9 2.3	2.2 2.7
220b, 220 Sb 220 SEb Sedan 220 SEb Coupé	7.25-13		

+) *As with the usual tyres size 7.25-13 may be used as well.*

Whereas, upon special request, Types 190c and 190 Dc can be supplied ex works equipped with Michelin-X 6.40-13 (700-13), the 220 models stated can only be equipped with Michelin-X 7.25-13 subsequently.

Michelin-X has not been released for the SEb Convertible as well as the 300 SE models, as for these types we cannot renounce the volume of size 7.50-13. Nor do we consider these tyres suitable for Type 230 SL. For the time being any

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other types of radial ply tyres are not available for the 190, 220, and 300 SE models.

Please Note

When Michelin-X Tyres are used, please note that Michelin-X Tyres have to be mounted to all wheels; combinations with other tyres are not admissible. Further we would point out that the air pressures for these tyres are different from those of the traditional type of tyres. Therefore a small tyre pressure plate is supplied with each set of Michelin-X Tyres, which can be stuck to the inside of the cover for the filler neck.

We also want to mention that as with all radial ply tyres the tread surface, especially at the shoulders, shows a sensitive reaction to the driving method. It is therefore advisable to exchange the wheels more frequently from the front to the rear and vice versa, e.g. every 4,500 to 5,000 km.

Properties

As compared with conventional tyres, Michelin-X - like all radial ply tyres with radial carcass - offers some remarkable advantages. In the first place, due to the tread stabilization (only slight rolling friction), these tyres are particularly resistant to wear and ensure a certain fuel economy. Moreover, at speeds above 80 km/h they compensate a considerable degree of unevenness on poor roads, they are further insensitive to longitudinal joints on the autobahn and tracks, they take turnings without undue noise and have a high side stability with relatively narrow oblique angles.

Besides these advantages, however, there are also disadvantages. For instance, when rolling over poor roads at speeds below 80 km/h, Michelin-X Tyres are rather loud; when driving over big cobbles at speeds below 60 km/h this noise may even increase to a drone. Moreover with Diesel engines the ride may be slightly jerky at constant and low speeds. In addition these tyres react more sensitively to side wind and their straight roll on wavy road surfaces is not so good. In turnings the vehicle rolls and wavers more strongly round the longitudinal axis, and when a turning is taken too fast and the vehicle veers off the course, this will happen suddenly and cannot easily be checked.

This comparison will enable you to inform those customers interested in the subject of the advantages as well as the disadvantages of these tyres in an unprejudiced way so that every customer will be in a position to decide himself whether for his requirements the advantages of the Michelin-X Tyres, in particular their economy, outweigh the disadvantages to such an extent that he is willing to put up with the latter.

Trailer Operation

According to Service Information No. 34, Group 32, of June 1963, it is known that the admissible rear axle load (and consequently the permissible total weight) may be increased to 1050 kg with Types 190c and 190 Dc and to 1120 kg with Types 220b, 220 Sb, and 220 SEb, if the vehicle draws a trailer and an additional air cushioning is installed. So far this did not apply in connection with Michelin-X Tyres.

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In the meantime the Michelin Tyre manufacturers have extended the limits for the load capacity correspondingly so that the increase in the load now also applies to vehicles equipped with Michelin-X Tyres. The air pressure in the tyres of the rear axle must be 2.5 kg/cm^2 (cold).

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Article No.	File	Group	Application
21	Service Information	40	Passenger Cars

This Service Information invalidates Service Information No. 14, Group 40, of February 1965.

Fort Lee, April 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Rotating the Tires on Passenger Cars

Even with correct wheel alignment and correct tire pressure, the operational wear on front and rear tires will differ. This occurrence is not peculiar to the Mercedes-Benz; it happens with all automobiles. But the characteristics of wear do depend on the kind of driving. At high speeds on the highway, wear on the front tire shoulders is high, whereas on the rear tires the center of the tread will wear more. In city driving, more wear occurs on the front tires than the rear, but it will be relatively uniform.

Because of these differences, the tire manufacturers recommend rotating the tires periodically. Changing tires from front to rear or vice versa (keeping the same direction of revolution always) compensates for these differences and makes possible a longer service life for a set of four tires.

For our passenger cars, rotation of tires every 5000 km (3000 miles), at each of the regular service and maintenance cycles, is sufficient under normal driving conditions. Under conditions involving predominantly city driving, sporty driving, or predominantly fast highway driving, we recommend rotation every 2,500 km (1,500 miles).

Winter tires with spikes generally have to be rotated from front to rear every 2,500 km (1,500 miles), maintaining the same running direction. It is especially important with spiked tires to always maintain the same direction of revolution for a particular tire, as the spikes might otherwise become broken loose from the tire.

While on the subject of increasing tire life, we wish to point out that service life of tires depends not only on operating conditions and driving habits, but mainly on correct tire pressure. The tire pressures should be corrected after

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each rotation job. Please note that the prescribed tire pressures are minimum for normal conditions and low load; they give the most comfortable ride. However, they are intended for predominantly city driving. The higher pressures recommended for heavier loads can of course be used when driving with lighter loads. They do result in better tire "road behavior" and minimal tire wear, but increased tire noise.

Please discuss the importance of on-schedule tire rotation with your customers.

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Daimler-Benz AG / Export-Service

No. 59	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 40	Passenger Cars

Stuttgart-Untertürkheim, October 1964

To all Daimler-Benz Agencies

Re.: Tyres with spikes on test stands

This winter, too, a large number of vehicles will again be equipped with tyres with spikes. We would, therefore, give you today some instructions for the use of such tyres on test stands.

1. Functional test stand

When testing vehicles with spikes tyres on the functional test stand the limitation of the maximum speed must be observed even more strictly than on the road, for on the test stand the kneading is much intenser and the spikes would heat up unduly. On functional test stands, therefore, the speed of vehicles equipped with spikes tyres should not exceed a maximum of 100 km/h and this speed must not be maintained for more than one minute at the most. This instruction is absolutely binding. The duration of the entire running test, including acceleration, must be limited to 1 1/2 minutes when the tyres with spikes are used.

The surface wear which the spikes cause on the rollers of the functional test stand is only moderate and will in the course of the tests gradually become less. With regard to the thickness of the material of the rollers it can be said that they can be used over several winters without being renewed. In case they show excessive wear this can be cured by a metal spraying process.

2. Roller-type brake test stand

On roller-type brake test stands tyres with spikes can be used without hesitation. Care must be taken, however, that the wheels are not blocked, i.e. as soon as the sliding limit is reached the brakes must be released at once. The point at which the sliding limit is reached can be determined either from the respective indicator or from the characteristic running noise.

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3. Performance test stand

Tyres with spikes must not be used for performance tests on the performance test stand; wheels with normal tyres have to be used instead. In view of the importance of these tests the additional time required appears reasonable.

Daimler-Benz Aktiengesellschaft

s/ppa. Pfeiffer s/ppa. Mauthe

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 11	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 40	Passenger Cars

Fort Lee, May 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: New Measuring Sheet for Wheel Alignment

A new "Measuring Sheet for Wheel Alignment" (4/67 version) has been printed to record measurements during wheel alignment. It matches the format of the sheet "Adjusting Values for Measuring of Vehicles", in part II of the TEST MANUAL. (Part II is "Instructions and Adjusting Values for the Measuring of Vehicles".)

A pad of ten forms accompanies this information. Please file the forms in part II of your TEST MANUAL so they will be readily accessible for wheel alignment tests.

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Service Department

Enclosure

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 20	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Ply Rating of Tires

Because of recent requests for an explanation of the principles of ply rating of tires and also because of recent action by the Federal Trade Commission, we wish to present a clarification on this subject.

First of all, ply rating (PR) is the international index of tire strength. Originally, the strength of a tire was based on the number of actual plies of cotton cording. However, as cording of higher strength (nylon, rayon, steel) is being used today, the "ply rating" number is no longer identical with the actual number of plies, and with today's materials, the actual number of plies has become meaningless as evidence of the strength of tires. For that reason, the actual ply number is no longer used by the factory for tire designation. Only the ply rating number is used.

No Industry-Wide Standard

However, an important but confusing fact in the ply rating matter is that there is no industry-wide standard for ply rating. Each manufacturer has his own system of computing "ply rating". As a result, the terminology used in advertising and sales promotion has had a tendency to confuse and deceive the public. This has been recognized by the Federal Trade Commission, and that organization has issued a Tire Advertising and Labeling Guide which was adopted on July 5, 1966, and which became effective February 19, 1967.

Rules in Effect

As a result, the following rules are now in effect:

a. It is now improper to use any statement or depiction which suggests that tires possess more plies than they actually do. For example, phrases such as "Super 6" or "Deluxe 8" in referring to tires of less than six or eight plies, respectively, should not be used.

b. As stated already, the actual number of plies in a tire is not necessarily the index of strength, performance, or quality. The composite of amount and

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type of fabric and the tire design determines ultimate strength, performance, or quality. Therefore, a certain tire with a stated actual number of plies may really be inferior in strength, quality, and performance to another tire of less actual ply count. The FTC guide says it is now improper to represent that any given tire is superior to another solely because it has more plies than the other.

c. The type of cord material is not necessarily the index of ultimate quality, performance, or strength. This would depend upon the denier and quantity of material used, as well as other construction aspects of the tire. It is now improper to represent a tire as being superior to others simply because it has a particular kind of cord material that the others do not have. And, related to this subject is the fact that in terminology, the cord material must refer just to the cord, not to the tire. For example, it is improper to say "Nylon tire", but proper to say "Nylon cord tire".

More Rules Becoming Effective

Becoming effective on August 1, 1967, is another section of the aforementioned guide. Recognizing that each manufacturer has his own system of computing ply rating, and therefore a product of one manufacturer with stated ply rating is not necessarily of the same strength as another manufacturer's product with the identical rating, it states that the expression "ply rated" or "ply rating" or similar language should not be used unless the claim is based on actual tests. These tests must be technically performed, and the results must be recorded in writing and available for inspection.

The guide states further that when ply rating is stated on the tire itself, it must be accompanied by the actual ply count, in the same size letters. In addition, there must be a tag or label attached to the tire or its packaging and remaining until sale to the consumer, which says (1) there is no industry-wide definition of ply rating and (2) what is the basis of comparison for the claimed rating. A typical example of compliance with item 2 would be for a manufacturer to say "two-ply tire, four-ply rating means this two-ply tire is equivalent to our current or most recent four-ply nylon cord tire". [Ed. Note — In other words, ply rating is simply a comparison of a tire with another tire by the same manufacturer.]

When ply rating is used in advertising or sales promotional materials, in addition to the disclosure of actual ply count as indicated above, it must be accompanied by the disclosure (1) that there is no industry-wide definition of ply rating and (2) the basis of comparison for the claimed rating; for example, "two-ply tire, four-ply rating means this two-ply tire is equivalent to our current or most recent four-ply nylon cord tire".

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 19	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, June 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Radial-Ply Tires for Mercedes-Benz Passenger Cars

The driving characteristics of a car depend greatly upon its tires. Mercedes-Benz cars use conventional tires and radial-ply tires and semi-radial-ply tires. The choice between conventional and radial types depends upon the personal needs of the driver (when radial tires are released for a given type).

Conventional Tires

With conventional tires (illustration 1), the cords of the tire carcass run at a rather upright angle, as shown, from bead to bead. The permissible maximum speed for a tire is determined mainly by the angle of cords and the carcass material. On standard conventional tires for speeds up to 150 km/h (94 mph), rayon cords are generally used. Racing or "super tires", for speeds up to 175 km/h (109 mph) and over 175 km/h respectively, have nylon cords. These cords run at a more upright angle with respect to the tire center line.

Conventional Tire

Konventioneller Reifen

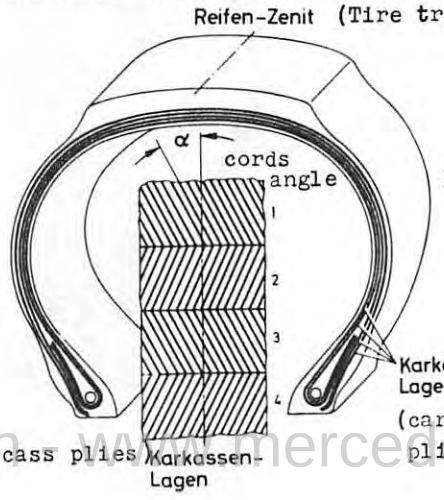

Illustration I

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The classic radial-ply tire is the Michelin-X (illustration 2). Its carcass consists of two plies, the rayon cords of which run at a very flat angle; i.e., almost radially from bead to bead. On top of these is the so-called "brace" which in this brand consists of three superimposed layers of steel wire fabric. Because of this construction, the tread is very firm. However, because of its soft walls, this tire has sufficient flexibility for acceptable driving comfort. A variation is the Michelin-XAs, shown in illustration 2a.

Michelin-X Tire with Radial Carcass

Michelin-X-Reifen mit radialer Karkasse

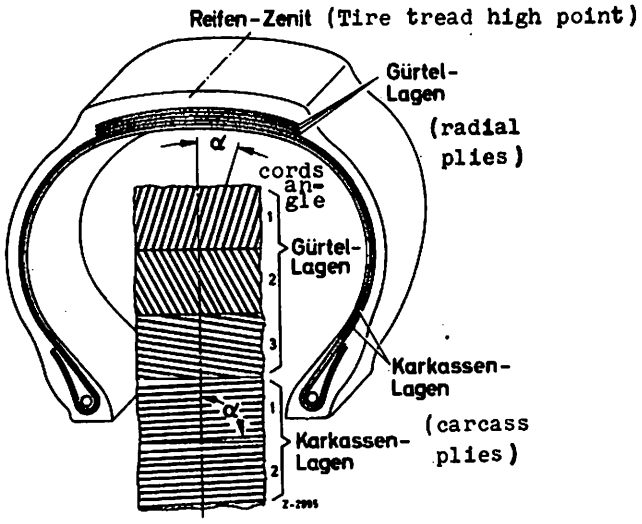

Illustration 2

Michelin-XAs Tire with Radial Carcass

Michelin-XAs-Reifen mit radialer Karkasse

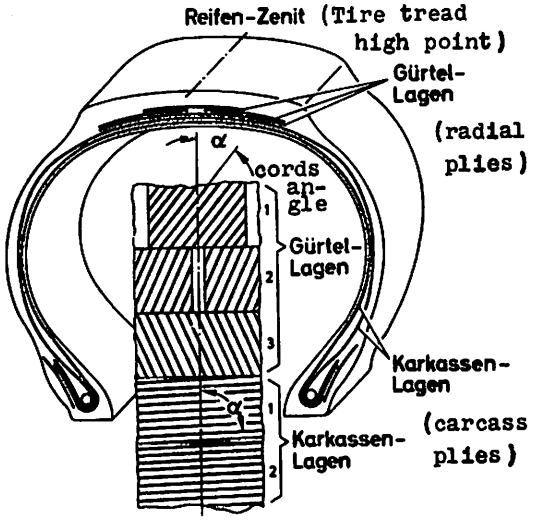

Illustration 2a

Semi-Radial-Ply Tires

However, in order to obtain a more comfortable radial-ply tire and to achieve smoother transitions at marginal ranges when driving on sharp curves, the "semi-radial-ply tire" (radial-ply tire with semi-radial carcass) has been developed (Illustration 3). It is applicable just to certain of the Mercedes-Benz cars, because it requires 14" wheels. The tires CONTINENTAL Radial, DUNLOP Sp, and FIRESTONE P 110, in the size of 185 HR 14, belong to this group. The nylon carcass (two plies) is enclosed by a rayon brace having four plies. The driving characteristics of these tires are mid-way between those of the conventional tires and those of the radial-ply tires with radial carcasses.

Semi-Radial-Ply Tire

Gürtelreifen mit halbradialer Karkasse

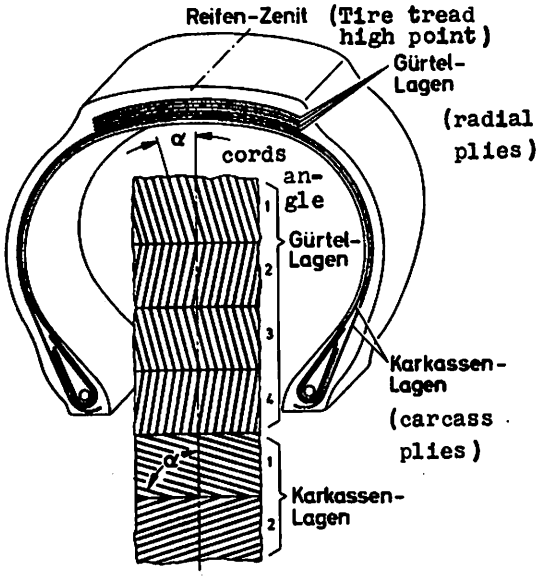

Illustration 3

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 67	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 40	PASSENGER CARS

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Vibration of Vehicles at High Speeds

Following are possible causes of vibrations in passenger cars and instructions for locating such vibrations, as well as test values and remedies.

1. Unbalance or excessive out-of-round of the wheels

Experience has shown that at speeds between 135 and 155 km/h (85 - 95 mph) even a slight unbalance or out-of-round of one wheel may cause vibration. Radial-ply tires are considerably more susceptible to vibration than conventional tires.

With regard to conventional tires, however, it must be considered that the absorbing capability of the super sports tires of the super low profile version used on the types 250 S, 250 SE, 300 SEb, and 300 SEL is slightly less than that of the sports tires of the low profile version used on the types 220 b, 220 Sb, 220 SEb, and 230 S.

If, additionally, the steering wheel feels unsteady within the range of the vibration, this is a good indication that at least one front wheel is causing the vibration.

Checking the car:

The car should be equipped with a set of good (test) wheels and driven at the critical stages first. If there is no vibration with the test wheels, the wheels belonging to the car should be mounted one at a time on the front left side, so that the wheel or wheels causing the vibration can be determined. Three conventional test tires and one radial-ply tire can be combined for the test drives. Subsequently, the wheels causing the vibration should be tested for unbalance and out-of-round.

Important!

Before checking the wheels for out-of-round, the car should be driven at higher speeds for a distance of at least 10 km (6 mi.) to warm up the tires.

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Jack up the car immediately to avoid flat spots, and remove the wheels which are to be checked. The wheels should only be transported in a horizontal position.

To measure the out-of-round, mount the wheel on a balancing machine, and check it at the middle of the tread. To test the wobbling of the disc wheel, dismantle the tire, and measure the out-of-round at the contact surface of the tire.

Disc wheel

Permissible out-of-round: 1.0 mm (.039 in.)
Eccentricity: 0.25 mm (.010 in.)
Unevenness: ±0.25 mm (.010 in.)

Tires	Conventional	Radial-ply
Permissible out-of-round:	1.2 mm (.047 in.)	1.0 mm (.039 in.)
Permissible unbalance:	10 g (.353 oz.)	10 g (.353 oz.)

If the tolerances of the disc wheel and those of the tire coincide unfavorably when mounting a tire, excessive out-of-round may result. In such cases, turn the tire on the rim to a more favorable position.

2. Wobbling of the wheel mounting

Likewise, excessive vertical or lateral deviation of the rear axle shafts or of the front wheel hubs may cause vibration.

Checking the car:

Front axle: permissible vertical deviation at disc wheel centering - 0.03 mm (.0012 in.)

permissible lateral deviation on the outside face of the flange - 0.03 mm (.0012 in.)

Rear axle: permissible vertical deviation at disc wheel centering - 0.10 mm (.0039 in.)

permissible lateral deviation on the outside face of the flange - 0.12 mm (.0047 in.)

3. Shock absorbers

Shock absorbers with defects or greatly decreased efficiency can also cause vibration, since they can no longer sufficiently dampen high-frequency wheel vibrations.

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4. Incorrect tire pressure

If the tire pressure is too high, it will reduce the absorbing capability of the tires and produce a hard ride. Adjust tire pressure according to instructions for "fast driving" - see Tire Pressure Table.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	103	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	40	Passenger Cars

Fort Lee, November 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Mounting of Disc Wheels - Passenger Cars

The spherical collar bolts used for mounting disc wheels on passenger cars must be tightened to the specified torques: 116-123 ft. lbs. (16-17 mkp) for the type 600, and 65-72 ft. lbs. (9-10 mkp) for all other types.

It is important that the tightness of the wheel bolts be checked on cold wheels. The bolts should never be retightened when the wheels are warm, e.g., from heavy breaking.

Over-tightened bolts sometimes cannot be loosened again with the combination wrench supplied with the car due to the lever arm being too short.

After each installation of disc wheels on a car, the torque of the mountings must, of course, be checked after 300 to 600 mi. (500 to 1000 km).

If impact wrenches are used in your workshop for tightening wheel bolts, their torque settings should be checked regularly. Moreover, we consider it necessary to check the tightness of all bolts after using such a wrench.

Please inform your service personnel accordingly, with particular emphasis on the last point.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 119	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, December 1967

TO OUR MERCEDES-BENZ DEALERS

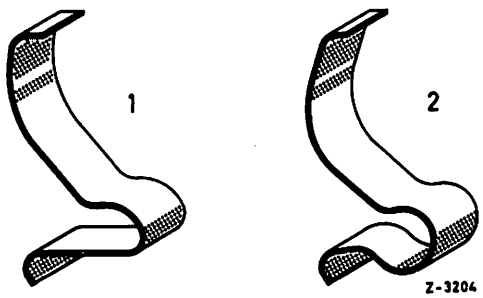
Subject: Mounting of Hub Caps and Chrome Wheel Rings on 14" Wheels

A. Hub Caps

On the 14" wheels used at present, each hub cap is held on the wheel by three "lump-type" lugs on the circumference of the raised surface which surrounds the mounting hole circle. As compared with the previous method, this type of attachment has the advantage of not requiring the slight turning of hub caps after installation to prevent possible noise.

When the hub caps are fitted, care should be taken to assure that they are seated in the grooves at the bases of the three lugs and that they are installed under maximum possible tension. To achieve this, each cap is first located on two lugs and then turned in such a way that its diameter is smallest at the third lug, which is still free. In this position, the maximum tension is obtained. Be sure each hub cap is completely sprung over all three lugs during installation. If these instructions are observed, the attachment on the wheels will be secure.

B. Ornamental Wheel Rings



1. Previous retaining spring
2. New retaining spring

Improved retaining springs have been developed for the chrome wheel rings (part No. 113 400 06 25) used on 14" wheels. (See illustration.)

In case of complaint, the existing springs may be replaced by the new type, but replace them in complete sets only.

The improved retaining springs

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have been given the same part number as the previous springs (113 401 06 28) and are being supplied by your local Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 131	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

This Service Information supersedes: Service Information No. 27, Group 40, dated June 1966.

Fort Lee, December 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Wheel Rims for Mercedes-Benz Passenger Cars

Attached is a revised, up-to-date list of wheel rims which are suitable for our passenger cars. This list supersedes the list which was furnished with Service Information No. 27, Group 40, dated June 1966.

Do not use combinations of wheel rims other than those specified in the attached list. Incorrect combinations could result in damages or even chafing of the brake hoses.

The wheel rims listed in the attachment may be ordered through your M-B Parts Depot.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Attachment

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APPROVED WHEEL RIMS — PASSENGER CARS

SIZE:	WHEEL RIM PART NUMBER:	CENTERING:	TYPE:	REMARKS:
Standard Design				
5 JK x 13-B	110 400 07 02 [1]	L	220 b/Sb/SEb Sedan	up to July 1960
	111 400 02 02 [1]	L	190 c/Dc/SL, 220 b/Sb/SEb Sedan/Coupe	up to August 1963
	110 400 11 02	M	190 c/Dc, 220 b/Sb/SEb Sedan/Coupe	as from August 1963
			200, 200 D, 230, 230 S	as from beginning of series
5½ JK x 13-B	112 400 01 02 [1]	L	220 SEb Conv., 300 SE Sedan/Coupe/Conv. [2]	up to August 1963
	112 400 02 02	M	220 SEb Conv. [2]	as from August 1963
			300 SE Sedan/Coupe/Conv.	as from August 1963 to August 1965 (chassis end No. 008907)
5½ J x 14-H	113 400 00 06 [1]	M	230 SL [3]	up to chassis end No. 005498
	113 400 03 06			substitute for 113 400 00 06
	113 400 01 06 [1]			as from chassis end No. 005499 to 014063
6 J x 14-H				as from chassis end No. 014064; substitute for 113 400 01 06
	108 400 00 02		250 S/SE, 300 SEb, 300 SEL, 250 SL [4]	as from beginning of series
			300 SE Coupe/Conv.	as from chassis end No. 008908
6½ K x 15-H	100 400 05 02	M	600	as from beginning of series
Special Version 15" Wheels (for poor road conditions, station wagons and ambulances, police radic cars and sedans with long wheel bases) [6]				
5 K x 15-A	186 400 17 02 [1]	L	190 c/Dc, 220 b/Sb/SEb	as from August 1963
5 J x 15-B	110 400 10 02	M	190 c/Dc, 200, 200 D, 220 b/Sb/SEb, 230, 230 S, 250 S, 250 SE, 300 SEb [7][8]	as from August 1963 for passenger cars, station wagons, police cars, & sedans with long wheel bases; as from August 1963 to August 1965 for ambulances

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SIZE:	WHEEL RIM PART NUMBER:	CENTERING:	TYPE:	REMARKS:
Special Version 15" Wheels (cont.)				
5½ J x 15-H	110 400 13 02	M	200, 200 D, 230, 230 S	as from August 1965 for ambulances with radial-ply tires Michelin 185-15 X or 185-15 XAS

1) These previous version wheel rims are no longer available as spare parts.

2) The use of wheel rim 5 JK x 13-B is not permissible.

3) Combination of wheel rims 5½ J x 14-H, part numbers 113 400 00 06 and 113 400 03 06, or 6 J x 14-H, part numbers 113 400 01 06 and 108 400 00 02, on one vehicle is permissible (difference in shape of rim). Wheel rims of different sizes, i.e., 5½ J x 14-H and 6 J x 14-H, may by no means be combined on one vehicle, however. A change from wheel rim 5½ J x 14-H to 6 J x 14-H is only possible if the lower control arms of the front axle are replaced. (Control arms of present design have already been installed during series production as from chassis end No. 005452.)

4) Use of 13" or other 14" wheel rims is not permissible.

5) On wheel rims 5 K x 15-A, spherical collar nuts with outer diameters of 26 mm are used. When converting to wheel rims 5 J x 15-B or 6½ J x 15-H, standard spherical collar nuts with a 23 mm outer diameter should be used. Under no circumstances may wheel rims 5 K x 15-A be mounted on vehicles with middle centering, since no spherical collar nuts are available for them.

6) On types 300 SE, 300 SE Cpe./Conv., and 300 SEL with air suspension, the use of 15" wheels is not permissible.

7) Michelin radial-ply tires 185-15 XAS may be used on wheel rims 5 J x 15-B.

8) When mounting Michelin radial-ply tires 185-15 X on ambulances, wheel rims 5½ J x 15-H should be used.

L = Bolt circle centering
M = Middle centering

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 86	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 40	PASSENGER CARS

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Caster Adjustment -- Model 600

The caster on model 600 should be +2° ± 15'. If the adjustment range of the guide joint (illustration 1) on the steering knuckle is not sufficient to achieve this correct reading, an offset mounting (6, illustration 2) can be installed on the suspension joint at the mounting of the lower control arm.

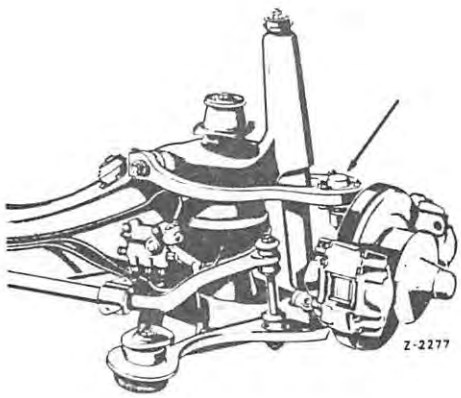

Illustration 1

arrow = guide joint

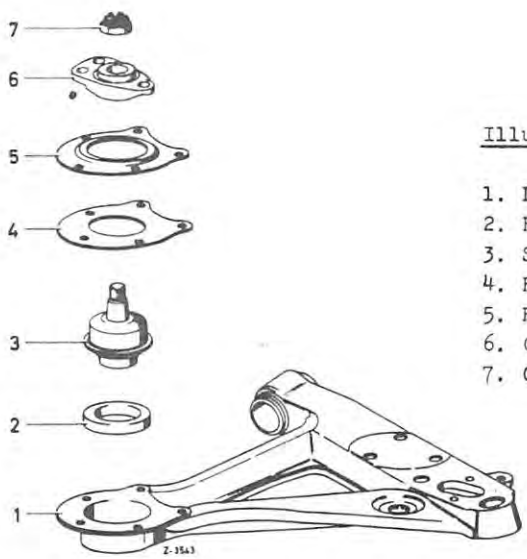

Illustration 2

1. Lower control arm
2. Rubber mounting
3. Suspension joint
4. Retainer
5. Retaining plate for sleeve
6. Offset mounting
7. Castle nut

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As a result of the offset mounting (6, illustration 2), the ball joint center of the lower control arm is moved further forward by .16" (4 mm).

The unit, as shown in illustration 2, can be ordered under part no. 100 333 10 14.

To remove the offset mounting from the ball joint bolt, use pulling device, part no. 100 589 01 33 00, and a retaining wrench, part no. 100 589 11 63 00.

The required parts are available from the Mercedes-Benz parts depot, Chicago, Illinois.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 96a	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

This Service Information supersedes Service Information No. MB-T 96, Group 40, of December 1968.

Fort Lee, January 1969

Additional "NOTE"

TO OUR MERCEDES-BENZ DEALERS

Subject: Snow Tires and Snow Chains -- Model 300 SEL/8 6.3

Snow Tires

This is to advise you that the snow tire, Continental Radial 185 R 14 M + SE has been released for use on the above mentioned model. It can be purchased with or without studs from your local Continental dealer.

Please note that the size of this tire is different from that of the summer tire which is 195 VR 14. However, the load capacity of this tire is still completely sufficient. Also, since the permissible speed not to be exceeded with the snow tire is as low as 80 mph, no VR tire is needed for winter driving.

NOTE: The summer tire is used on the standard equipment rim size 6-1/2 J X 14 HB. The winter tire has to be mounted on a narrower rim with the size 6 J X 14 HB, which is standard equipment on models 280 S/8, 280 SE/8, and 300 SEL/8 2.8.

Snow Chains

The snow chains currently approved for the model 300 SEL/8 are not applicable for model 300 SEL/8 6.3 because of the much higher torque rating of this model's engine. Therefore, stronger snow chains have been developed which are only applicable for model 300 SEL/8 6.3.

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NOTE: Because summer and winter tires (snow tires) have different measurements, two versions of the stronger snow chains have been developed.

Tire Size	RUD Chain No.	Part No.
195 VR 14 (Summer Tire)*	07 730	000 583 67 16
185 R 14 M + SE (Winter Tire)*	07 728	000 583 68 16

*Suggested retail price of snow chains for either version tire: $69.58.

Please note that the new snow chains which can be mounted on the 195 VR 14 summer tires, may occasionally touch the wheel housing when driving around narrow curves.

The chains may be ordered from your M-B parts depot. However, since they are not stocked by the depots, they are subject to special "air order" and are not returnable for credit. Delivery time is approximately 4 weeks.

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MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 122	Service Information	40	Passenger Cars

Fort Lee, January 1970

TO OUR MERCEDES-BENZ DEALERS

Subject: DUNLOP TIRES

Enclosed please find two lists giving the addresses of the

"Division Offices"

and the

"Dealer Managed and Factory Controlled Warehouses"

of the

DUNLOP TIRE AND RUBBER CORPORATION.

The DUNLOP summer tires, which are factory recommended by us for use on all of our present models (with the exception of model 600) and previous models, are specified on the following charts (beginning on next page). We suggest recommending the use of these tires to all of your customers.

The DUNLOP Corporation has informed us that all possible efforts are being made to have the approved tires available in all local warehouses.

The address of your nearest DUNLOP tire dealer may be obtained by contacting any of the Dunlop Division Offices or Factory Controlled Warehouses (see attached lists).

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Attachments

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ORIGINAL EQUIPMENT TIRES

Model	220 D/8	220/8, 230/8	220 D/8 220/8 230/8	250/8	250/8, 250 C	230 SL 250 SL 280 SL/8	250 S, 250 SE 280 S/8, 280 SE/8 300 SEB, 300 SE/C 300 SEL, 300 SEL/8	300 SEL/8 6.3
Tire Size/ Ply Rating[1]	6.95/175 14 4 PR	6.95/175 S 14 4 PR	175 HR 14 *black	6.95/175 H 14 6 PR	175 HR 14 *black	185 HR 14	7.35/185 H 14 6 PR	195 VR 14
Original Equipment Version	tubeless 2) 4) 5)	tubeless 2) 4) 5)	tires with tube[2] (with rubber valve)	tubeless 2) 4) 5)	tires with tube[2] (with rubber valve)	tires with tube 3) 4) 6)	tubeless 2) 4)	tires with tube 3) *black
Tire Version	normal tires	sports tires	radial-ply	super sports tires	radial-ply	radial-ply tires for speeds up to 130 mph	super sports tires	radial-ply tires for speeds exceeding 130 mph
Dunlop Brand	B 77	B 77 RS-Nylon	CB 57 F	B 77 Super-Sport-Nylon	CB 57 F	Sp CB 57	C 41 Super-Sport-Nylon	Sp CB 57

1) Ply Rating (PR) is the international designation for the stability of the carcass. The PR-number does not always correspond to the actual number of fabric plies.
2) Instead of the normal black version, all tires can also be supplied as whitewall tires.
3) Instead of tubes with metal valve, only use tubes with rubber-bodied valve.
4) Only use tires with protective rib on outer sidewall.
5) When fitting tires subsequently, you may also use tires of size 7.35/185 H 14, but only in sets.
6) Available as white side walls only.
*) Available as black side walls upon special request.

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ORIGINAL EQUIPMENT TIRES - OLDER MODELS

Model	190 C, 190 DC 200, 200 D, 230	220 b, 220 Sb, 220 SEb Sedan, 220 SEb Cpe., 230 S	220 SEb Convertible
Tire Size/Ply Rating 1)	7.00 S 13/4 PR 5)	7.25 S 13/4 PR	7.50 S 13/6 PR 7)
Original Equipment Version	tubeless 3)	tubeless 2) 4)	tubeless 2) 3)
Tire Version	sports tires	sports tires	sports tires
Dunlop Brand	B 7 RS Nylon	B 7 RS Nylon 6)	B 7 RS Nylon

1) Ply Rating is the international designation signifying the stability of the carcass.
The PR number does not always correspond to the actual number of fabric plies.
2) In the tire trade also available with tube.
3) Instead of the normal black version, all tires can also be supplied as whitewall tires.
4) Available as white side walls only.
5) When fitting tires subsequently, you may also use tires of size 7.25 S 13.
6) Also approved for use as normal tire 7.25-13 on model 220 b.
7) Instead of sports tires 7.50 S 13 you may also use super sports tires 7.50 H 13.

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SPECIAL VERSION: RADIAL-PLY TIRES AND ASSOCIATED RIMS

MODEL	RIMS	DUNLOP BRAND
Radial-ply tire 175 HR 14[1)]		
220 D/8 220/8 230/8 250/8	5½ J x 14-H (standard)	Dunlop SP CB 57
Radial-ply tires 185 HR 14[1)]		
220 D/8 220/8 230/8 250/8	5½ J x 14-H (standard) or 6 J x 14-H	Dunlop Sp CB 57
250 S, 250 SE 280 S/8, 280 SE/8 300 SEB, 300 SE/C 300 SEL, 300 SEL/8	6 J x 14-H (standard)	

1) Only approved in conjunction with tube.

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DUNLOP DIVISIONS

City	Division Address	Telephone Number
ATLANTA	Dunlop Tire & Rubber Corp. 5256 Peachtree Rd., N.E. Atlanta, Georgia	(404) 457-5254
BUFFALO	Dunlop Tire & Rubber Corp. 1570 Main Street Buffalo, New York	(716) 882-3925
CHICAGO	Dunlop Tire & Rubber Corp. 4334-50 S. Tripp Avenue Chicago, Illinois 60632	(312) 847-6122
CLEVELAND	Dunlop Tire & Rubber Corp. 18200 Brookpark Road Cleveland, Ohio 44135	(216) 267-2715
DALLAS	Dunlop Tire & Rubber Corp. 4720 Alpha Road Dallas, Texas 75234	(214) 239-8126
DENVER	Dunlop Tire & Rubber Corp. Continental Terrace West 2701 Alcott St., Suite 276 Denver, Colorado 80211	(303) 433-8735
KANSAS CITY	Dunlop Tire & Rubber Corp. 1257 Bedford N. Kansas City, Mo. 64116	(816) 421-2144
LOS ANGELES	Dunlop Tire & Rubber Corp. 15120 Marquardt Avenue Santa Fe Springs, Calif. 90670	(213) 921-4381
MEMPHIS	Dunlop Tire & Rubber Corp. 3120 S. Perkins Suite 302-303 Memphis, Tennessee 38118	(901) 362-1024
NEW YORK	Dunlop Tire & Rubber Corp. 60 Triangle Blvd. Carlstadt, New Jersey 07072	(201) 935-0615
PHILADELPHIA	Dunlop Tire & Rubber Corp. 10195 Northeast Avenue Philadelphia, Penna. 19116	(215) 676-7575
SAN FRANCISCO	Dunlop Tire & Rubber Corp. 1333 Lowrie Avenue S. San Francisco, Calif. 94080	(415) 871-7160

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DUNLOP DEALER MANAGED AND FACTORY CONTROLLED WAREHOUSES

ALABAMA

Dunlop Tire & Rubber Corp.
600 S. 24th Street
Birmingham, Alabama 35233

CALIFORNIA

Dunlop Tire & Rubber Corp.
15120 Marquardt Avenue
Santa Fe Springs, Calif. 90670

Dunlop Tire & Rubber Corp.
1333 Lowrie Avenue
S. San Francisco, Calif. 94080

COLORADO

Dunlop Tire & Rubber Corp.
2701 Alcott Street
Denver, Colorado 80211

Dunlop Tire & Rubber Corp.
Federal Blvd @ W. 17th St.
Denver, Colorado 80204

FLORIDA

Dunlop Tire & Rubber Corp.
3070 N.W. 75th Street
Miami, Florida 33147

Dunlop Tire & Rubber Corp.
Cass & Morgan Sts.
Tampa, Florida 33601

GEORGIA

Dunlop Tire & Rubber Corp.
5256 Peachtree Road, N.E.
Atlanta, Georgia 30005

ILLINOIS

Dunlop Tire & Rubber Corp.
4334-50 S. Tripp Avenue
Chicago, Illinois 60632

INDIANA

Dunlop Tire & Rubber Corp.
425 W. New York Street
Indianapolis, Indiana 46202

KENTUCKY

Dunlop Tire & Rubber Corp.
8th & Orchard Streets
Newport, Kentucky

LOUISIANA

Dunlop Tire & Rubber Corp.
231 N. Carrollton Avenue
New Orleans, La. 70119

Dunlop Tire & Rubber Corp.
Highway 90 East
Rayne, La. 70578

MASSACHUSETTS

Dunlop Tire & Rubber Corp.
152 N. Beacon Street
Brighton, Mass. 02135

MICHIGAN

Dunlop Tire & Rubber Corp.
3120 Grand River
Detroit, Michigan 48208

MINNESOTA

Dunlop Tire & Rubber Corp.
156 North Dale
St. Paul, Minnesota 55104

MISSOURI

Dunlop Tire & Rubber Corp.
1257 Bedford
N. Kansas City, Mo. 64116

MONTANA

Dunlop Tire & Rubber Corp.
2301 Montana Avenue
Billings, Montana 59103

NEW JERSEY

Dunlop Tire & Rubber Corp.
60 Triangle Blvd.
Carlstadt, New Jersey 07072

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NEW MEXICO

Dunlop Tire & Rubber Corp.
1815 4th St. N.W.
Albuquerque, New Mexico 87107

NEW YORK

Dunlop Tire & Rubber Corp.
1570 Main Street
Buffalo, New York 14209

Dunlop Tire & Rubber Corp.
42-44 Broadway
Menands-Albany, N.Y. 12204

Dunlop Tire & Rubber Corp.
2230 Whitesboro Street
Utica, New York 13502

NORTH CAROLINA

Dunlop Tire & Rubber Corp.
324 West Lane
Raleigh, N. Car. 27603

OHIO

Dunlop Tire & Rubber Corp.
18200 Brookpark Road
Cleveland, Ohio 44135

OKLAHOMA

Dunlop Tire & Rubber Corp.
127 Sheridan
Oklahoma City, Okla. 13104

OREGON

Dunlop Tire & Rubber Corp.
830 S.E. 3rd Street
Portland, Oregon 97214

PENNSYLVANIA

Dunlop Tire & Rubber Corp.
40th & Derry Streets
Box 2621
Harrisburg, Penna. 17111

Dunlop Tire & Rubber Corp.
10195 Northeast Avenue
Philadelphia, Penna. 19116

PENNSYLVANIA (Con't)

Dunlop Tire & Rubber Corp.
6204 Shakespeare Ave. Ext.
Pittsburgh, Penna. 15206

SOUTH CAROLINA

Dunlop Tire & Rubber Corp.
1001-1005 Gervais Street
Columbia, S. Car. 29201

TENNESSEE

Dunlop Tire & Rubber Corp.
3120 South Perkins
Memphis, Tenn. 38118

Dunlop Tire & Rubber Corp.
2555 South Bellevue
Memphis, Tenn. 38106

TEXAS

Dunlop Tire & Rubber Corp.
1201 N.E. 3rd Street
Amarillo, Texas 79107

Dunlop Tire & Rubber Corp.
4720 Alpha Road
Dallas, Texas

UTAH

Dunlop Tire & Rubber Corp.
52 W. 13th South
Salt Lake City, Utah 84101

VIRGINIA

Dunlop Tire & Rubber Corp.
1404 Belleville Street
Richmond, Virginia 23230

WASHINGTON

Dunlop Tire & Rubber Corp.
4135 Stone Way North
Seattle, Washington 98103

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. MB-T 196	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 40	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FIRESTONE TIRES

A. AIR LEAKAGE IN 6.95 X 14 FIRESTONE - PHOENIX TIRES ON MODELS 220/8 THROUGH 250/8.
B. LIST OF FIRESTONE-PHOENIX DISTRICT OFFICES

A. A problem was recently experienced with air leakage on 6.95 x 14 Firestone-Phoenix O.E. tires installed on Models 220/8 through 250/8 and we would like to quote, hereafter, a Firestone circular letter which was sent to all Firestone-District Service Representatives on June 2, 1970.

"Mercedes-Benz of North America reports scattered complaints of air leakage up to 15,000 miles on above tires - some slow leaks, others so rapid as to deflate the tire in a few miles.

"Some of our dealers and/or stores have blamed the leakage on the German O.E. wheel weights and have tried to correct by substituting U.S. made weights. This is ineffective because the true cause is improper air seal between tire and rim flange.

"Correct initial action in such complaints is to attempt proper seal by inflating the tire to 40 PSI and then reducing to normal recommended operating pressure. In line with Rubber Manufacturers Association warning, initial inflation must not exceed 40 PSI and must be accomplished only with the wheel locked down on tire mounting machine (or in safety cage), extension chuck on air hose and service person standing back away from the tire - not leaning over it.

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"If tire beads do not seat properly at 40 PSI, tire should be completely deflated, removed from wheel and bead seat areas of wheel cleaned if necessary. Tire beads should then be lubricated with Ru-Glyde, tire remounted and another attempt made to seat beads properly at 40 PSI maximum, with all above safety precautions observed. If proper seal still is not achieved, the tire should be adjusted. If replacement is made with another Firestone-Phoenix tire, the replacement tire should be one manufactured no earlier than July 1968.

"You are to advise appropriate dealers and stores of the above and, if necessary, to help them get a replacement tire."

B. We are herewith furnishing you with a listing of all Firestone District Sales Offices throughout the United States. The Firestone Company has asked all of its warehouses to inventory all Firestone tires which are recommended by us and we trust they will render satisfactory service.

DISTRICT	ADDRESS	ZIP CODE	AREA CODE	PHONE NO.
EASTERN DIVISION	R.P. Mucciolo, Mgr. J.G. Thompson, Oper. Mgr.	10023	(212)	586-5317
Albany Whsle.	200 Broadway, Menands	12204	(518)	436-0701
Baltimore Retail	6386 York Road	21212	(301)	377-0010
Baltimore Whsle.	6386 York Road	21212	(301)	377-4300
Boston Whsle.	114 First Avenue, Needham, Mass. *(Box 222 Needham Heights Station, Boston)	02194	(617)	449-0500
Hartford Retail	125 McKee St., E. Hartford, *(Box 8099)	06108	(203)	289-1551
Newark Whsle.	444 Central Avenue	07107	(201)	622-6250
New York Retail	28 West End Avenue at 61st	10023	(212)	757-6200
Philadelphia	1 Decker Square, Room 316, Bala-Cynwyd. Pa.	19004	(215)	835-2811
Pittsburgh Retail	Baum and Negley	15206	(412)	661-2100
Richmond Retail	1306 Jefferson Davis Hwy.	23224	(703)	233-6941
Syracuse Retail	5900 Firestone Drive	13206	(315)	437-2631
CENTRAL DIVISION	H.P. Morr, Mgr. L. Markferding, Oper. Mgr.	44317	(216)	379-6660
Akron Retail	1085 Sweitzer Avenue	44301	(216)	379-7804
Akron Whsle.	1085 Sweitzer Avenue	44301	(216)	379-6130
Buffalo	2240 Harlem Rd., *(Box 202)	14225	(716)	896-8803
Cincinnati	11860 Mosteller Rd., *(Box 41600)	45241	(513)	771-3035
Cleveland Retail	Eastland and Holland Roads, Brookpark *(Box 9897, Cleveland)	44142	(216)	234-2012
Columbus	3500 Indianola Avenue *(Box 3508)	43214	(614)	267-6333
Detroit	4000 Enterprise Drive, Allen Park,Mich. *(Box 70 Allen Park, Mich.)	48101	(313)	274-6500
Grand Rapids	155 Weston St., S.E.	49502	(616)	451-8391
Indianapolis	200 South Missouri Street	46225	(317)	637-5461
Nashville	535 Thompson Lane *(Box 8627)	37211	(615)	255-2671
WESTERN DIVISION	J.T. Darrow, Mgr. R.J. Morrison, Oper. Mgr.	44317	(216)	379-6664
Chicago	2710 West 79th Street	60652	(312)	778-2000
Denver	4300 Brighton Boulevard *(Box 16088)	80216	(303)	222-8676
Des Moines	1775 East Euclid Avenue *(Box 3008 East 14th St. Station)	50316	(515)	265-0395
Fargo	1320 Fifth Avenue, N. *(Box 2485)	58102	(701)	235-7326

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. MB-T 196	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 40	PASSENGER CARS

FORT LEE, AUGUST 1970

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Boston Whsle.	114 First Avenue, Needham, Mass. *(Box 222 Needham Heights Station, Boston)	02194	(617)	449-0500
Hartford Retail	125 McKee St., E. Hartford, *(Box 8099)	06108	(203)	289-1551
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Cincinnati	11860 Mosteller Rd., *(Box 41600)	45241	(513)	771-3035
Cleveland Retail	Eastland and Holland Roads, Brookpark *(Box 9897, Cleveland)	44142	(216)	234-2012
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Detroit	4000 Enterprise Drive, Allen Park,Mich. *(Box 70 Allen Park, Mich.)	48101	(313)	274-6500
Grand Rapids	155 Weston St., S.E.	49502	(616)	451-8391
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Des Moines	1775 East Euclid Avenue *(Box 3008 East 14th St. Station)	50316	(515)	265-0395
Fargo	1320 Fifth Avenue, N. *(Box 2485)	58102	(701)	235-7326

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 212	SERVICE INFORMATION	40	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SEMPERIT BIAS PLY TIRES -- MODELS 220/8, 220 D/8

Semperit bias ply summer tires, size 6.95/175 S14, are now being installed on Models 220/8 and 220 D/8 as standard equipment. Please note that this tire is now approved for use on the above mentioned model. Any warranty claims should not be submitted to MBNA, but instead to local Semperit distributors or Semperit of America, Inc., 157 Ludlow Avenue, Northvale, New Jersey 07647.

On the reverse side is a listing of authorized Semperit wholesale distributors in the United States and Canada. According to the Semperit Company, their tires are sold in over 2,000 stores throughout the United States and Canada.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

JRH:nbj

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WHOLESALE DISTRIBUTORS

Semperit of America, Inc.
151 Ludlow Avenue
Northvale, New Jersey 07647
(201) 768-8340 (212) 279-8956

ANDERSON TIRES, INC.
10921 S. Hooper Avenue
Los Angeles, Calif. 90059
(213) LO 4-5611

ANDERSON TIRES, INC.
1280 N. 10th St.
San Jose, Calif. 95112
(408) 293-6073

ANDERSON TIRES, INC.
1955 First Avenue South
Seattle, Wash. 98134
(206) MA 2-5542

BROADWAY TIRE & RUBBER CO.
555 Hackensack Avenue
No. Hackensack, N.J. 07661
(201) HU 8-6100 (212) WI 7-2605

TIRES INCORPORATED
1200 Bannock
Denver, Colo. 80204
(303) 222-0833

EUROPEAN AUTO PARTS, INC.
1480 So. State Street
Salt Lake City, Utah 84115
(801) 487-7715

PUBLIC SERVICE TIRE CORP.
175 Hempstead Avenue
West Hempstead, N.Y. 11552
(516) 483-8332

PUBLIC SERVICE TIRE CORP.
1244-1250 Bedford Ave.
Brooklyn, N.Y. 11216
(212) 783-3106

SEMPERIT TIRE MIDWEST, INC.
1011 Main Street
Melrose Park, Ill. 60160
(312) 344-1105

SHOFER TIRES, INC.
901 S. Hanover Street
Baltimore, Md. 21230
(301) LE 9-4036

SHUTT TIRE COMPANY
91 N. Beacon Street
Watertown, Mass. 02172
(617) 924-1680

IMPORT MOTOR PARTS CO., INC.
4133 S. Le Jeune Road
Coral Gables, Fla. 33146
(305) 444-6508

FOREIGN CAR PARTS INC.
OF NEW ENGLAND
131 N. Beacon Street
Brighton, Mass. 02135
(617) 254-5000

LAKE CITY OIL CO., INC.
2380 Canal Road
Cleveland, Ohio 44113
(216) 861-0885

RUDI'S AUTOMOTIVE CORP.
5902 W. 34th Street
Houston, Texas 77018
(713) 868-9346

CANADA

SEMPKURT SALES LTD.
215 East 2nd Avenue
Vancouver 10, B.C.
(604) 879-5011

CANADA TIRE CO., LTD.
770 Notre-Dame Street W.
Montreal,3, P.Q.
(514) 861-1611

ASSOCIATED TIRE &
AUTOMOTIVE DISTR.
310 Carlingview Dr.
Rexdale, Ont.
(416) 677-3723

MB-T 212, Gr. 40

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SEMPERIT OF AMERICA, INC.

CABLE ADDRESS:
SEMPERIT NORTHVALE. N.J.
TELEX: 135 448

151 LUDLOW AVENUE
NORTHVALE, NEW JERSEY 07647

TELEPHONE:
N.J. (201) 768-8340
N.Y. (212) 279-8956

IMPORTERS - DISTRIBUTORS

ANDERSON TIRES, INC.
10921 S. Hooper Ave.
Los Angeles, Calif. 90059

(213) 564-5611

ANDERSON TIRES, INC.
1280 N. 10th St.
San Jose, Calif. 95112

(408) 293-6073

ANDERSON TIRES, INC.
1955 First Ave. S.
Seattle, Wash. 98134

(206) 622-5542

BOB BROWN DISTRIB. CO.
302 E. 6th Ave.
Stillwater, Okla. 74074

(405) 372-1853

TIRE TOWN
2407 N. College
Fayetteville, Ark. 72701

(501) 442-4281

BROADWAY TIRE & RUBBER CO.
555 Hackensack Avenue
N. Hackensack, N.J. 07661

(201) 488-6100
(212) 947-2605

TIRES INCORPORATED
1200 Bannock
Denver, Colo. 80204

(303) 222-0833

EUROPEAN AUTO PARTS, INC.
1480 S. State Street
Salt Lake City, Utah 84115

(801) 487-7715

EUROPEAN AUTO PARTS, INC.
3812 Central S.E.
Albuquerque, N.M. 87108

(505) 265-8854

FOREIGN CAR PARTS INC.
OF NEW ENGLAND
131 N. Beacon Street
Brighton, Mass. 02135

(617) 254-5000

IMPORT MOTOR PARTS CO., INC.
4133 S. LeJeune Road
Coral Gables, Fla. 33146

(305) 444-6508

IMPORT MOTOR PTS. CO., INC.
1404 N.W. 36th Street
Miami, Fla. 33142

(305) 633-7434

IMPORT MOTOR PTS. CO., INC.
404 N.E. 2nd Street
Ft. Lauderdale, Fla. 33301

(305) 525-1361

IMPORT MOTOR PTS. CO.,INC.
425 Okeechobee Road
West Palm Beach, Fla. 33401

(305) 833-0893

VITESSE IMPORTED PARTS
1663 First Avenue S.
St. Petersburg, Fla. 33701

(813) 894-4158

VITESSE IMPORTED PARTS
406 N. Dale Mabry Hwy.
Tampa, Fla. 33609

(813) 876-7021

LAKE CITY OIL CO., INC.
2380 Canal Road
Cleveland, Ohio 44113

(216) 861-0885

NU-TRED TIRE CO.
2610 E. Washington
Phoenix, Ariz. 85034

(602) 275-7575

PUBLIC SERVICE TIRE CORP.
175 Hempstead Avenue
West Hempstead, N.Y. 11552

(516) 483-8332

PUBLIC SERVICE TIRE CORP.
1244-1250 Bedford Ave.
Brooklyn, N.Y. 11216

(212) 783-3106

SAAB SOUTHWEST INC.
520 Fountain Parkway
Grand Prairie, Tex. 75050

(817) 261-9114

Revised January 1971

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SEMPERIT OF AMERICA, INC.

CABLE ADDRESS:
SEMPERIT NORTHVALE. N.J.
TELEX: 135 448

151 LUDLOW AVENUE
NORTHVALE, NEW JERSEY 07647

TELEPHONE:
N.J. (201) 768-8340
N.Y. (212) 279-8956

IMPORTERS - DISTRIBUTORS

SEMPERIT TIRE MIDWEST, INC.
1011 Main Street
Melrose Park, Ill. 60160

(312) 344-1105

SHOFER TIRES, INC.
901 S. Hanover St.
Baltimore, Md. 21230

(301) 539-4036

SHOFER/ATLANTIC CORP.
7223 Ambassador Road
Baltimore, Md. 21207

(301) 265-6200

RICHARD T. SHUTT TIRE CO., INC.
206 Dexter Avenue
Watertown, Mass. 02172

(617) 924-1680

WAYNE TIRE CO.
9938 Harper
Detroit, Mich.
48213

(313) 571-2600

FOREIGN CAR PTS. OF ROCHESTER
209 Clinton Avenue N.
Rochester, N.Y. 14604

(716) 546-1830

INDUSTRIAL RUBBER & MECHANICS, INC.
GPO Box 1183
San Juan, Puerto Rico 00936

(809) 783-3248

Area Wholesale Tire Co.
P.O.Box 2723
5620 Airline Hwy.
Baton Rouge, La. 70821

(504) 356-2549

Rudi's Automotive Corp.
5902 W. 34th Street
Houston, Texas 77018

(713) 686-9346

CANADA

CANADA TIRE CO.
770 Notre-Dame St. W.
Montreal, P.Q.

(514) 861-1611

CENTRAL AUTOPAR
1259 Caledonia Road
Toronto 19, Ont.

(416) 787-4956

SEMPKURT SALES LTD.
215 East 2nd Avenue
Vancouver, B.C.

(604) 879-5011

THE ABOVE ARE IMPORTERS - DISTRIBUTORS WHO DISTRIBUTE SEMPERIT TIRES TO OVER 2000 DEALERS THROUGHOUT THE COUNTRY.

Revised January 1971

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
65	SERVICE INFORMATION	40	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: RECOMMENDED RADIAL PLY SUMMER TIRES
MODELS 220 D/8 TO 300 SEL/8 6.3

The importance of good passenger car tires for safety and driving qualities cannot be over-emphasized. Mercedes-Benz conducts extensive tire tests to ensure that only those tires adequate for the load and maximum speed of various models are accepted. In the interest of customer safety, you should therefore advise customers to use only factory recommended tires.

Legal regulations prevent our discouraging customers from using tires other than those specified by the factory. Other tires, however, must meet the required dimensions, and other special requirements, such as speed capacity, minimum size factor, and for conventional tires, the ply rating.

A. MODELS 220 D/8 TO 250/8

MODEL	TIRE SIZE	RECOMMENDED BRANDS
220 D/8 220/8 230/8	175 SR 14	Continental TT 714 Dunlop Sp CB 57 Dunlop Sp 68 (220/8 and 220 D/8 only) Firestone-Phoenix P 110 Fulda P 23
250/8 Sedan 250/8 Cp.	175 HR 14	Dunlop Sp 57 Firestone-Phoenix P 110 Fulda P 23 Veith-Pirelli CN 36 Good Year G800 RIB

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Dunlop tubeless tires, Size 175-14, are approved and have been mounted on production models since February 1970. Should replacement be required, the recommended bias ply tires may be utilized on 220 D/8 to 230/8 models as our standard steel rims have the required "hump" on both shoulders.

B. MODELS 250 S TO 300 SEL/8

MODEL	TIRE SIZE	RECOMMENDED BRANDS
250 S, 250 SE 300 SEb, 300 SEL 280 SE/8, 280 SEL/8, 300 SEL/8, 230 SL, 250 SL, 280 SL/8	185 HR 14	Continental Radial TT 714[1)] Firestone-Phoenix P 110

1) Further development of Continental Radial Ra P 14. Versions should not be mixed.

C. MODELS 280 SE/9 3.5 CP./CV. AND 300 SEL/9 3.5

MODEL	TIRE SIZE	RECOMMENDED BRANDS
280 SE/9 3.5 Cp./Cv. 300 SEL/9 3.5	185 VR 14	Continental Radial TT 714 Firestone-Phoenix P 210

D. MODEL 300 SEL/8 6.3

MODEL	TIRE SIZE	RECOMMENDED BRANDS
300 SEL/8 6.3	195 VR 14 Type 70	Continental Radial TT 714 (black wall only)
	195 VR 14/FR 70 VR 14	Dunlop Sp 57

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IMPORTANT: All tires and rims for the 3.5 and 6.3 liter models are pre-balanced and marked with a green dot. Tires must be mounted as to ensure that the green dots on the tire and rim are aligned. On steel rims, the green dot is located on the bead of the tire rim. Light metal wheels, however, are marked in the center of the rim.

NOTE: THE TIRES FOR THE 300 SEL/8 6.3 ARE A SPECIAL SIZE (SEE CHART ON PREVIOUS PAGE). DUE TO SPECIAL WHEEL HOUSING MEASUREMENTS, OTHER SIZED TIRES SHOULD NOT BE USED. DO NOT USE 195 VR 14 (TOO LARGE) OR FR 70 VR 14 (TOO WIDE) SIZE TIRES! IN ADDITION, DO NOT USE THE 300 SEL/8 6.3 TIRES ON OTHER MODELS, AGAIN DUE TO SPACE REQUIREMENTS.

E. CHANGE-OVER FROM BIAS PLY TO RADIAL PLY TIRES

As a general rule, bias ply tires may be replaced with radial ply tires of a corresponding size, e.g., tire size 185 HR 14 should be used as a replacement for size 7.35/185 H 14 for models 250 S through 300 SEL/8 2.8.

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Article No.	File	Group	Application
MB-T 216	SERVICE INFORMATION	40	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TIRE INTERMIXING

In all probability, many car owners are not aware of the safety hazards involved by "mixing" different types of passenger car tires. This Service Information will provide detailed information which should be useful when advising customers regarding tire purchases.

The availability of numerous designs and sizes magnifies the probabilities that owners will intermix radial and bias ply tires on the same automobile.

This of course is not recommended either by Mercedes-Benz or the U.S. Department of Transportation. Following is an excerpt from a Department of Transportation, National Highway Safety Bureau Publication.

> "The vast number of new tire constructions and sizes available to the American consumer increases the danger of possible intermixing of belted-bias, radial, and bias ply tires on the same vehicle," the Safety Bureau said in its advisory.
>
> "Due to the wide difference in construction of these tires, their performance under similar load, side slip, as well as braking conditions may differ considerably. For these reasons, a vehicle's basic handling characteristics may be seriously affected when tires of different construction are intermixed.
>
> "Intermixing of tires can and often does, change the vehicle handling characteristics from a stable condition to a wandering, fishtailing, unstable condition."
>
> The Bureau said it is issuing the advisory before the start of the winter driving season since

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many motorists will be purchasing deep-tread (snow) tires.

The Bureau stresses the following precautions and these guidelines:

1. When you replace the tires on your car, follow the recommendation of the auto manufacturer in the Owner's Manual or a reputable tire service store or dealer.

2. New tires should be mounted on the rear for better traction and handling.

3. New tires should have a "break-in" period. Limit speed to 60 miles per hour for the first 50 miles.

4. For the highest degree of safety and to obtain the best handling conditions, fit your car with four tires of the same type. DO NOT intermix bias, belted-bias, or radial ply tires.

5. When purchasing deep-tread, winter-type tires (snow treads) for the rear axle of the vehicle, select tires of the same construction (bias, belted-bias, or radial ply) as the tires on the front of the vehicle.

6. NEVER intermix bias, belted-bias, or radial ply tires on the same axle.

7. NEVER intermix radial tires or the new "60 Series" tires with any other tire sizes or types. Use radial or 60 Series tires in complete sets.

8. If it is necessary to intermix dissimilar tires, always mount two tires of the same type on the same axle either on the front or the rear.

In addition to the above information, Mercedes-Benz recommends that the same type tires be mounted on all wheels to maintain design-driving characteristics. For instance, snow tires should be mounted on the front and rear, as the greater percentage of braking power is on the front wheels.

Tire rotation is an important factor for tire preservation. It is advisable to rotate summer tires every 3,000 miles and winter tires every 1,500 miles. Tires should be rotated left front to left rear, right front to right rear, and vice-versa. Tire pressures should always be adjusted after rotation.

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Article No.	File	Group	Application
MB-T 225	SERVICE INFORMATION	40	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TIRE BALANCING -- MODELS 300 SEL/8 6.3 AND 300 SEL/9 3.5

Complaints have been received regarding tire vibrations on Models 300 SEL/8 6.3 and 300 SEL/9 3.5 at speeds between 80 and 90 mph. The following will summarize instructions on how to check and balance these tires in order to reduce vibrations to an acceptable minimum.

Most of the vibrations encountered were due to improper balancing of the tires and do not originate from chassis or suspension sources.

1. Tires must be balanced on a stationary electronic balancing machine (e.g., Hoffmann). It is imperative that the static and dynamic imbalance indicators on the machine be separate. The final tire imbalance may not exceed 1/4 oz., or excessive vibrations will be encountered.

2. Prior to balancing, the tire and wheel must be cleaned and both the radial and lateral circumference dimensional deviation (run out) measured.

   IMPORTANT! BEFORE CHECKING THE WHEELS FOR OUT-OF-ROUND, THE CAR SHOULD BE DRIVEN AT HIGHER SPEEDS FOR A DISTANCE OF AT LEAST 6 MILES TO WARM UP THE TIRES.

   Jack up the car immediately to avoid flat spots, and remove the wheels which are to be checked. The wheels should only be transported in a horizontal position.

   To measure the out-of-round, mount the wheel on a balancing machine, and check it at the middle of the tread. To test the wobbling of the disc wheel, dismantle the tire, and measure the out-of-round at the contact surfact of the tire.

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Disc wheel:

Permissible out-of-round.....1.0 mm (.039 in.)

Eccentricity.....0.25 mm (.010 in.)

Unevenness.....$\pm$0.25 mm (.010 in.)

Tires:

Permissible out-of-round.....1.0 mm (.039 in.)

Permissible unbalance.....6 g (1/4 oz.)

If the tolerances of the disc wheel and those of the tire coincide unfavorably when mounting a tire, excessive out-of-round may result. In such cases, turn the tire on the rim to make sure that the green dots on tire and rim are aligned. Re-check tire and if excessive tolerances still exist, the tire should be remachined on a tire trueing machine.

3. Wobbling of the wheel mounting - Likewise, excessive vertical or lateral deviation of the rear axle shafts or of the front wheel hubs may cause vibration.

Checking the car:

Front axle: permissible vertical deviation at disc wheel centering.....0.03 mm (.0012 in.)

permissible lateral deviation on the outside face of the flange.....0.03 mm (.0012 in.)

Rear axle: permissible vertical deviation at disc wheel centering.....0.10 mm (.0039 in.)

permissible lateral deviation on the outside face of the flange.....0.12 mm (.0047 in.)

4. Wheel balancing should be accomplished as follows:

Secure the wheel to the machine and balance it in the normal manner to zero. Then relocate the wheel by 144° (2 bolt holes) on the machine and check the balance. If there is an imbalance on the second balancing, a more precise balancing should be achieved by slightly relocating the installed weights, or decreasing the weights by half the imbalance amount.

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This procedure should be repeated in every mounting position to attain less than one quarter ounce of imbalance.

NOTE: ENSURE THE WHEEL IS ACCURATELY CENTERED ON THE MACHINE BEFORE BALANCING.

5. After the wheels are mounted on the vehicle, tightened to prescribed values (66 to 72 ft. lbs.), and correctly centered on the hub, the car should be road tested. If vibrations are still existing, the following should be performed:

   Dismount the wheel which is causing the vibration and relocate it by two bolt holes on the disc, tighten to prescribed torque, and road test. If excessive vibrations persist, this procedure should be repeated until vibrations dissipate. Special attention must be taken to ensure the wheel is centered on the hub and tightened to prescribed values (66 to 72 ft. lbs.). Improper mounting and tightening of the wheel may result in up to 1/2 oz. imbalance.

If the above mentioned directions are carefully followed during balancing and tire mounting, excessive tire vibrations should be corrected.

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- N O T I C E -

The attached technical letter from Dunlop Tire Corporation entitled "Disturbances in the Ride of Modern Cars", was originally planned as an attachment to MB-T 225, Group 40, Subject: Tire Balancing -- Models 300 SEL/8 6.3 and 300 SEL/9 3.5.

Due to postal difficulties, however, this was not possible. Therefore, please staple this to the referenced Service Information.

Thank you.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 149	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe 40	Passenger Cars

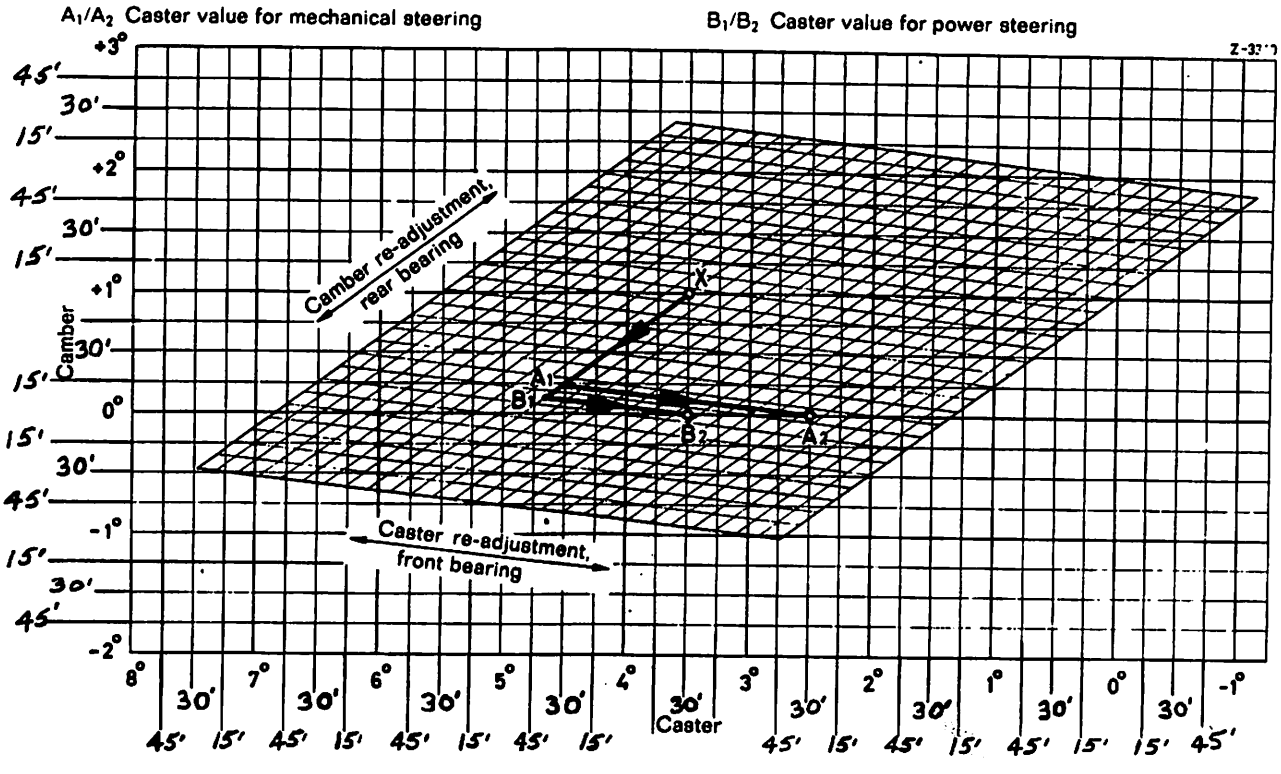
Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Adjustment Diagram for Camber and Caster of Front Wheels -- Models 220/8, 220 D/8, 230/8, and 250/8

It is our understanding that some of your Mercedes-Benz technicians are not familiar with the camber-caster chart. In Service Information #64, Group L, of July 1968, we referred you to this adjustment diagram illustration on page 40 - 3/4 of Service Manual, Passenger Cars as of January 1968, W 114/115.

Figure 40 - 3/9 ADJUSTMENT DIAGRAM — Camber and Caster of Front Wheels Models 220/8, 220 D/8, 230/8, 250/8



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In order to reduce the high number of complaints on premature wear of front tires, we would like to explain with this Service Information the application of the camber-caster chart.

Explanation of Figure 40 - 3/9

The adjustment diagram was completed, as shown in Figure 40 - 3/9, by subdividing the individual degrees into their respective minutes. One degree contains 60 minutes, i.e. in our diagram one horizontal or vertical line represents 15 minutes.

In order to help you to interpret the Camber-Caster adjustment diagram, we would like to explain the example as shown in illustration 1. PLEASE NOTE: The most important feature of the type front axle used on these models is that when the adjustment of either camber or caster is changed, the other is also changed automatically.

For instance: Point X in the sample represents a camber-caster adjustment measured on a car. (+ 1° camber,+ 3°, 30 ' caster).

Point A2 represents the desired adjustment point (+ 0°, 14' camber, +2°, 30' caster).

In order to adjust this car's front axle geometry accordingly, first the camber is adjusted from point X to point A-1, then the caster is adjusted from there to point A-2.

We would like to remind you, at this point, of the adjustment diagram in chart form mounted on a plastic 12" x 17" board distributed to you in July, 1968. This diagram chart, which may be hung on a wall in the vacinity of your wheel adjustment kit, is washable so that the camber and caster adjustment lines can be marked on the diagram with a felt-tip pen and later easily erased.

By the way, point A-2 in the diagram is the adjustment point for cars with standard steering; B-2 for power steering.

We would also like to remind you that the caster adjustment is made at the front bearing of the lower A-Arm, while the camber is adjusted on its rear bearing. While making the adjustment, two people have to be seated on the front seats and one in the rear.

For more details about this particular front axle and the adjustments, please refer to Job No. 40-3 of the Service Manual.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

MB-T No. 147	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, November, 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Standardizing of Radial Ply Tires

The following is a list of radial ply tire designations showing the European metric designations, as well as the new U.S. standardized substitutes.

METRIC	"78 SERIES"	"70 SERIES"
165R13		
	AR78-13	AR70-13
175R13	BR78-13	BR70-13
185R13	CR78-13	CR70-13
	DR78-13	DR70-13
195R13	ER78-13	ER70-13
155R14		AR70-14
165R14	BR78-14	BR70-14
175R14	CR78-14	CR70-14
	DR78-14	DR70-14
185R14	ER78-14	ER70-14
195R14	FR78-14	FR70-14
205R14	GR78-14	GR70-14
215R14	HR78-14	HR70-14
225R14	JR78-14	JR70-14
		KR70-14
		LR 70-14
165R15	BR78-15	
175R15	CR78-15	CR70-15
	DR78-15	DR70-15
185R15	ER78-15	ER70-15
195R15	FR78-15	FR70-15
205R15	GR78-15	GR70-15
215R15	HR78-15	HR70-15
225R15	JR78-15	JR70-15
		KR70-15
235R15	LR78-15	LR70-15

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NOTE: Due to differences in handling characteristics, radial ply tires should not be mixed with conventional bias ply tires on the same vehicle.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 144	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: High Speed Vibrations -- Model 300 SEL/8 6.3

On cars of this model, vibrations may be experienced at speeds of 65 to 85 m.p.h. These vibrations were found to be caused by the radial ply tires and rims.

To reduce these vibrations, the tires and rims should be assembled in such a way that the softest spot on the tire (marked by a green dot) is aligned with the highest spot on the rim (also marked by a green dot-previously a punchmark in the vicinity of the wheel lugs).

The Dunlop Tire & Rubber Corporation has advised us that all Dunlop Radial Ply Tires size 195 VR 14/FR 70 VR 14 will have the green dot where the softest spot on the tire is located.

We also noticed that the tolerance at many of the tire balancing devices at the wheel rim center is too great. (When mounting M-B wheels on a car, they are automatically centered by the center bore in the rim which fits precisely over the hub extension.) Please advise your shop personnel that the wheel should be centered, if so required, with the assistance of a tolerance tape.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 128	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: FIRESTONE AND GOODYEAR TIRES

Enclosed please find 2 lists containing the addresses and telephone numbers of the District Offices of the

GOODYEAR TIRE AND RUBBER COMPANY

and the

FIRESTONE TIRE AND RUBBER COMPANY.

Orders for FIRESTONE and GOODYEAR tires as well as warranty and adjustment claims can be placed through your local FIRESTONE or GOODYEAR tire dealer, the address of whom can be obtained by contacting any of the FIRESTONE or GOODYEAR District Offices on the attached lists.

All FIRESTONE and GOODYEAR tires approved by us for use on our current production models and older models can be found in the "Summer Tires Passenger Cars as of January 1968 - October 1968" edition booklet, print no. KD 00 102 3208, and "Tires for Passenger Cars - November 1967" edition booklet, print no. KD 00 102 3204.

NOTE: In this connection, please refer to Service Information No. 1, Group L, of May 1969.

MERCEDES-BENZ OF NORTH AMERICA, INC.
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Enclosure

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GOODYEAR DISTRICT, AREA AND ZONE SERVICE DEPARTMENTS

Terr #		Address	Managers of Service Depts	Area Code	Phone Number
EASTERN REGION:		1665 Jersey Ave., New Brunswick, N J - #1800			
0100	Albany	Port of Albany 12202	JE Royak	518	463-4184
0200	Baltimore	1201 Mt Royal Ave 21217 (AREA)		301	727-7716
0300	Boston	*Rt 9, Cor Washington St.,Southboro 01772(AREA)	TE Carlson	617	481-0066
0400	Buffalo	*110 E Utica Street 14209	JF Richards	716	883-5729
6200	Cincinnati	3680 East Kemper Road 45241	JE Heiderich	513	771-5850
0500	Cleveland	*Gdyr-Akron - Plant 3, Bldg 114 44316	JC Blankenship	216	794-4520
6300	Columbus	*124 E Spring St (GSS #6324) 43215	RC Raduege	614	221-3535
0700	N Brunswick	*1665 Jersey Ave,POB 2010, N Bruns. 08903(ZONE)	NL Moore	201	297-0600
0800	New York	*32-50 61st St., Woodside,L.I.,N.Y. 11377	JE Mergenhagen	212	932-4494
1000	Pittsburgh	*500 Progress Ave, POB 158, Zelienople,Pa 16063	JH Borden	412	776-3275
1100	Syracuse	4021 New Court Ave,POB 316 Eastwood Sta. 13206	WA Downing	315	463-6636
SOUTHERN REGION:		2755 Piedmont Road, N E, Atlanta, Ga - #1500			
2100	Atlanta	2755 Piedmont Rd, N E, 30305	DR Jones	404	237-4611
2200	Birmingham	506 Tenth St, South 35201	RB Miller	205	322-0574
2300	Charlotte	2700 Nevada Blvd-Arrowood-Southern Industrial Park, POB 15734	JC Arledge	704	588-0500
4100	Dallas	7301 Ambassador Row, POB 6004 75222	SE Brown	214	631-6340
4200	Houston	5544 Armour Drive, POB 1668 77001	AM Emery, Jr	713	923-5541
2400	Jacksonville	829 Haines St, POB 1230 32206	HF Aul	904	354-1471
2900	Knoxville	*Calderwood & Gill Sts (GSS #2929) Alcoa 37701	TJ Ford	615	588-8581
2600	Memphis	*3124 Bellbrook Drive 38116	JA Snider	901	948-3493
2500	Miami	5200 N W 37th Ave 33142	HC Ale	305	633-2642
2700	New Orleans	*300 Edwards Street 70123	WV Moore	504	733-6697
2800	Richmond	Roslyn Industrial Park, W. Roslyn Road Colonial Heights 23834	GW Melville	703	526-4950
4700	San Antonio	631 North W W White Rd, POB 1269 78206	WE Dean	512	333-1217
CENTRAL REGION:		1501 Nicholas Blvd, Elk Grove Village, Ill - #1600			
6000	Chicago	(Same as Region #1600) 60680 (ZONE)	AJ Kowalski	312	625-1500
6400	Des Moines	1600 E Euclid Ave, POB 661 50306	ME Ford	515	265-1411
6500	Detroit	*131 Industrial Parkway, Howell, Mich 48843	EJ Walker	517	546-4236
6600	Fargo	222 Seventh Ave, N., POB 550 58102	WL Davis	701	235-1181
6700	Indianapolis	*627 No. Delaware Ave 46204	JD McBride	317	639-2518
4300	Kansas City	*Highway 24, POB 1628, Topeka 66601	RS Fitzsimmons	913	234-9541
6900	Minneapolis	5100 W 35th St., POB 449 55440	KE Jones	612	927-7381
4400	Oklahoma City	*5720 N W 4th Street 73107	EN Abraham	405	943-8377
4500	Omaha	*1505 Nicholas Street 68102	SW Stebbins	402	345-1054
4600	St Louis	8544 Page Ave 63114	FW Pfeiffer	314	429-4000
WESTERN REGION:		3339 Terminal Annex Station, Los Angeles, Calif - #1900			
8100	Denver	4686 Ivy St, POB 7177 Parkhill Sta 80207	WG Dreher	303	399-1780
9100	El Paso	6936 Commerce Ave, POB 10077 79991	HC Phares	915	778-5421
9200	Los Angeles	6666 E Washington Blvd 90022 (ZONE)	FL Simpson	213	723-3611
8200	Phoenix	*310 N Second Ave. 85003	WJ Tausek	602	252-0629
8400	Portland	2720 N W 35th Ave 97210	FW Pickhard	503	226-2951
8500	Sacramento	141 Commerce Circle, N Sacramento 95815 (AREA)	ER Bergin	916	922-9851
8600	Salt Lake City	46 W Fayette Ave 84101	RE Bowman	801	328-8955
8800	Seattle	614 Sixth Ave., S. - POB 3224 98114	GS Baldwin	206	623-6200
8900	Spokane	North 3808 Sullivan Rd 99216	GE Johnson	509	924-7711

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* Service Department Address - Not District Address
GSS - Goodyear Service Store

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Firestone Tire and Rubber Company

District Offices

District	Address	Area Code	Phone No.
EASTERN DIV. HDQ. -	28 West End Ave. New York, New York 10023	212	586-5317
Albany Wholesale	41 Wolf Road 12205	518	459-1866
Baltimore Retail	6386 York Road 21212	301	459-1866
Baltimore Wholesale	6386 York Road 21212	301	377-4300
Boston Wholesale	114 First Avenue, Needham, Mass. (*Box 222 Needham Heights Station, Boston) 02194	617	449-0500
Hartford Retail	125 McKee St., E.Hartford, (*Box 8099) 06108	203	289-1551
Newark Wholesale	444 Central Avenue 07107	201	622-6250
New York Retail	28 West End Avenue at 61st. 10023	212	757-6200
Philadelphia Retail	1620 South 49th Street 19143	215	727-2600
Philadelphia Whsle.	1 Decker Square, Room 316, Bala-Cynwyd, Pa 19004	215	835-2811
Pittsburgh Retail	Baum and Negley 15206	412	661-2100
Richmond Retail	1306 Jefferson Davis Highway 23224	703	233-6941
Syracuse Retail	5900 Firestone Drive 13206	315	437-2631
CENTRAL DIV. HDQ. -	1200 Firestone Pky., Akron, Ohio 44317	216	379-6660
Akron Wholesale	1085 Sweitzer Avenue 44301	216	379-6130
Buffalo	2240 Harlem Road, (*Box 202) 14225	716	896-8803
Cincinnati Retail	615 Elsinore Place 45202	513	721-6816
Cleveland Retail	Eastland and Holland Roads, Brookpark (*Box 9897, Cleveland) 44142	216	234-2012
Columbus Wholesale	3500 Indianola Avenue (*Box 3508) 43214	614	267-6333
Detroit Retail	4000 Enterprise Drive, Allen Park, Mich. (*Box 70 Allen Park, Mich.) 48101	313	274-6500
Detroit Wholesale	4000 Enterprise Drive, Allen Park, Mich. (*Box 70 Allen Park, Mich.) 48101	313	274-6500
Indianapolis	200 South Missouri Street 46225	317	637-5461
Nashville	535 Thompson Lane (*Box 8627) 37211	615	255-2671
WESTERN DIV. HDQ. -	1200 Firestone Pky., Akron, Ohio 44317	216	379-6664
Chicago	2710 West 79th Street 60652	312	778-2000
Denver	4300 Brighton Boulevard (*Box 16687) 80216	303	222-8676
Des Moines	1775 East Euclid Avenue (*Box 3008 East 14th St. Station) 50316	515	265-0395
Fargo	1320 Fifth Avenue, North (*Box 232) 58102	701	235-7326
Kansas City	2001 Grand Avenue (*Box 618) 64141	816	421-5542
Milwaukee Retail	3400 South Clement Avenue 53207	414	481-5343
Milwaukee Wholesale	3400 South Clement Avenue 53207	414	744-2510
Minneapolis Retail	652 Stinson Boulevard 55413	612	331-4240
Oklahoma City	3223 N. Lincoln Blvd. (*Box 53305 Capitol Station 73105)	405	525-9461
Omaha	6702 "L" Street (*Box 7342) 68117	402	331-5300
St. Louis Retail	5928 N. Lindbergh Blvd., Hazelwood,Mo. 63042	314	731-4222
St. Louis Wholesale	5928 N. Lindbergh Blvd., Hazelwood,Mo. 63042	314	731-4222

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Firestone Tire and Rubber Company

District	Address	Area Code	Phone No.
SOUTHERN DIV. HDQ. -	1200 Firestone Pky., Akron, Ohio 44317	216	379-6667
Atlanta Retail	480 Lindbergh Drive, N.E. (*Box 13365 Station K) 30324	404	237-1531
Atlanta Wholesale	480 Lindbergh Drive, N.E. (*Box 13365 Station K) 30324	404	237-1531
Birmingham Retail	3801 First Ave., North, (*Box 1089) 35201	205	322-4411
Charlotte Retail	4401 Wilkinson Blvd., (*Box 2098) 28201	704	394-1131
Charlotte Whsle.	4401 Wilkinson Blvd., (*Box 2098) 28201	704	399-5691
Dallas Retail	9216 Harry Hines Boulevard (*Box 35827 Airlawn Station) 75235	214	351-9901
Dallas Wholesale	9216 Harry Hines Boulevard (*Box 35827 Airlawn Station) 75235	214	351-9901
Houston	6602 Supply Row, (*Box 9310 Central Park Station) 77011	713	923-1671
Jacksonville Whsle.	116 Lee Street (*Drawer "W", West Bay Annex) 32203	904	354-1414
Memphis Retail	1760 South Third Street (*Box 6006 McKellar Station) 38106	901	948-4441
Memphis Wholesale	1760 South Third Street (*Box 6006 McKellar Station) 38106	901	948-4441
Miami Retail	7350 N.W. 37th Avenue 33147	305	691-8980
New Orleans	5615 Jefferson Hwy., (*Box 23430) 70123	504	733-6814
San Antonio Retail	301 South Flores St., (*Box 9007) 78204	512	227-7375
Tampa Retail	5440 Mariner St., (*Box 18546) 33609	813	872-7895
COAST DIV. HDQ. -	6333 Telegraph Rd. 90022	213	583-4411
HDQ. -	(* Box 60382 Terminal Annex) 90060		
Honolulu	Garden Court Office Building 1210 Auahi St., Suite 216 96814		575-245
Los Angeles Retail	6333 Telegraph Road 90022 (*Box 2038 Terminal Annex) 90054	213	723-6751
Los Angeles Whsle.	6333 Telegraph Road 90022 (*Box 2038 Terminal Annex) 90054	213	722-3351
Phoenix	915 N. 21st Ave., (*Box 6518) 85005	602	258-6536
Portland Retail	18120 N.E. Wilkes Road (*Box 20277) 97220	503	665 8181
Sacramento Whsle.	1811 12th Street (*Box 2311) 95811	916	442-0445
Salt Lake City	175 West Second South St. 84101	801	364-5626
San Francisco Retail	818 Mahler Rd., Burlingame, Cali. 94010	415	697-9096
Seattle Wholesale	400 Baker Blvd. 98188	206	246-4804
FACTORIES			
Akron	1200 Firestone Parkway 44317	216	379-7000
Albany, Ga.	3300 Sylvester Rd. (*Box 1708) 31702	912	436-8861
Cleveland (factory warehouse)	7609 Platt Avenue 44104	216	361-6631
Decatur, Ill.	2500 N. 22nd St. (*Box 1320) 62525	217	428-2141
Des Moines	Second and Hoffman Road (*Box 1295) 50305	515	243-1211
Los Angeles	2525 Firestone Blvd., South Gate, Cali. 90280 (*Box 2037 Terminal Annex) 90054	213	583-4411
Memphis	Firestone Boulevard (*Box 7128) 38107	901	525-3621
Pottstown, Pa.	(*Box 699) 19464	215	326-2000
Salinas, Calif.	340 El Camino Real South (*Box 2059) 93904	408	424-0552

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Firestone Tire and Rubber Company

Government Sales Office

Washington, D.C.	Suite 707-1001 Connecticut Avenue N.W. 20036	202	638-0300

Firestone Home & Auto Supply Warehouses

	ADDRESS	AREA CODE	PHONE NO.
Atlanta	480 Lindbergh Drive,N.E. (*Box 13345 Station K) 30324	404	237-1531
Chicago	2706-40 West 79th Street 60652	312	778-1900
Cleveland (Brookpark)	Eastland & Holland Roads, (*Box 192, Berea,Ohio) 44017	216	234-2792
Dallas	3201 Manor Way, (*Box 35185) 75235	214	352-7581
Denver	4300 Brighton Blvd. (*Box 16687 Stockyard Station)80216	303	244-8635
N.Kansas City	10048 Industrial Blvd., Lenexa Industrial Park	816	888-4300
	Lenexa, Kansas (*Box331,Shawnee Mission,Kansas) 66201	816	888-4343
Los Angeles (Commerce)	6333 Telegraph Road 90022 (*Box 3723 Terminal Annex) 90054	213	723-0481
Memphis	1760 S. Third St., (*Box 6041) 38106	901	948-4447
Philadelphia	1620 South 49th Street, (*Box 5519) 19143	215	727-2274
Portland	18120 N.E. Wilkes Road (*Box 20277) 97220	503	665-9101

Central Operating Offices

Atlanta	480 Lindbergh Drive, N.E., (*Box 13375 Station K) 30324	404	237-1605
Cleveland (Brookpark)	Eastland and Holland Roads, (*Box 352,Berea, Ohio) 44017	216	234-0161
Dallas	3201 Manor Way, (*Box 35185) 75235	214	351-9988
Kansas City	2001 Grand Avenue (*Box 618) 64141	816	842-5977
Los Angeles	2525 Firestone Blvd., South Gate, Cali. 90280 (*Box 2434 Terminal Annex) 90054	213	583-4411
Philadelphia	1620 South 49th Street 19143	215	727-9911

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 49	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 40	Passenger Cars

Fort Lee, July 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Notification of Additionally Released Tires For Models 220/8 through 250/8

In addition to the information contained in the "Summer Tires Passenger Cars as of January 1968" booklet (a copy of which you received with Service Information No. 1, Group L, of May 1969) we wish to advise you of additional summer tires which have been approved by the factory for original and replacement installations.

Brand:	DUNLOP
Models:	220 D/8, 220/8, 230/8
Size:	175 SR 14
Tread Designation:	CB 57 F
Version:	with tube (with rubber valve)

Brand:	UNIROYAL
Models:	220/8, 230/8
Size:	6.95/175 S 14,4 PR
Tread Designation:	55
Version:	tubeless

White-wall tires available by special request

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Brand:	VEITH-PIRELLI
For Models:	220/8, 230/8
Size:	6.95/175 S 14, 4 PR
Tread Designation:	W2
Version:	tubeless

White-wall tires available by special request

Brand:	DUNLOP
For Models:	250/8, 250 C
Size:	175 HR 14
Tread Designation:	CB 57 F
Version:	with tube (with rubber valve)

Brand:	VEITH-PIRELLI
For Models:	250/8, 250 C
Size:	6.95/175 H 14, 6 PR
Tread Designation:	W2
Version:	tubeless

White-wall tires available by special request

Please up-date your records accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 124	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Tire Pressure and Toe-In of Front Wheels -- Models 220/8 through 250/8 (W 114/115)

A. Tire Pressure

Experience has shown that tires of the super low cross-section design, as used on the above mentioned models, are more susceptible to wear when the tire pressure is too low than on tires of other design.

In general, we noted that (especially at gasoline stations), little or no attention is paid to the fact that warm tires require a relatively higher tire pressure setting than the value which is specified for cold tires. If the pressure reading on warm tires is set to the reading valid for cold tires, this results in the tires being operated with insufficient pressure which may lead to premature wear especially on the shoulder sections of the tires.

In order to ensure that the tire pressure is not too low, the values for standard tires on four cylinder models have been increased to 24.0 psi (1.7 kg/cm^2) front, and 28.5 psi (2.0 kg/cm^2) rear, which now corresponds to the valid pressure values for six cylinder models with cold tires and low loads.

A new tire pressure label (color: black) is being glued on the inside of the fuel tank flap during series production on all models of the W 114/115 series with standard tires as of August 20, 1968. This label replaces the previously used dark blue label.

Please be sure to advise your customers and shop personnel of the increased tire pressure.

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It is possible to further reduce tire wear - in particular for city driving with frequent cornering - by adjusting the tire pressures to the "heavy load" specifications shown on the tire pressure label on the fuel filler flap. Since these pressures result in a harder ride, when the car is driven under light load, the decision is to be left to the preference of the individual owner.

B. Toe-In of Front Wheels

The toe-in of the front wheels (with radial ply tires) at test load has been reduced to 0° 25' ± 10' (3 ± 1 mm) (previously: 0° 45' ± 10' or 5 ± 1 mm). This value offers more assurance against the toe-in being adjusted too high, resulting in increased tire wear, especially on the radial ply tires.

When adjusting the toe-in, adjust it to the following values which are most favorable for driving conditions and tire wear.

Tire Type	Toe-In Values at Test Load	Curb Condition
Standard tires	0° 35' (4 mm)	0° 25' (3 mm)
Radial ply tires	0° 25' (3 mm)	0° 20' (2 mm)

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 102	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 40	PASSENGER CARS

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Continental Radial Tires

It has been brought to our attention that the green protective coating on the whitewalls of the Continental Radial tires, in some cases, has been impossible to remove. (On some M-B models these tires are standard equipment.)

We would like to advise you that "Conti Rubber Products Inc." recently released a bulletin regarding this matter to all Continental tire dealers which we quote as follows:

TO ALL CONTINENTAL TIRE DEALERS

"....We have been informed by Mercedes-Benz Dealers that the green protective coating on the whitewalls of some original equipment tires has been impossible to remove. Therefore, we ask you to cooperate with any Mercedes-Benz Dealer in adjusting these tires at 100%.

Just send in claim forms on these tires to our Carteret office and we will issue you a 100% credit for the adjustment.

Please DO NOT DESTROY these tires by cutting off the serial number, but send them freight collect to our nearest warehouse i.e. Carteret, New Orleans or San Francisco...."

If you should encounter this problem with the Continental Radial tires, please contact your local Continental dealer who will handle the matter in accordance with the above mentioned letter.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 29	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 40	Passenger Cars

Fort Lee, June 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Vehicles in Paint Drying Ovens

This Service Information is to remind you that the tires may show so-called "flat spots" when the paintwork is dried in drying ovens.

Mainly tires with nylon carcasses are liable to show flat-spots, but they may also be encountered on tires with rayon carcasses.

For this reason we pointed out long ago that the tires are to be inflated to 4 kg/cm^2 (57 psi) prior to drying the vehicle in the drying oven. It is, however, more favorable to mount old tires on the respective vehicle or to place the vehicle on jack stands while drying, until the unit has cooled off completely.

When flat spots are encountered, the tires must be warmed up by either being driven at high speeds or inflated to 4 kg/cm^2 (57 psi) and placed in the drying oven for 4 hours.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. 61	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 41	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR PROPELLER SHAFT - MODEL 280 SE/8 CONVERTIBLE

The rear tunnel part of the above mentioned model has been modified. The diameter of the rear propeller shaft has simultaneously been enlarged from 2.36 in. to 2.75 in.

PRODUCTION CUT-OFF

CHASSIS END NUMBER	DESCRIPTION	PART NUMBER
Previous version to 003 435	Propeller shaft, rear 2.36 in. diameter	110 410 19 02
New version from 003 436	Propeller shaft, rear 2.75 in. diameter	109 410 02 02

In case of repair, make sure that only the previous propeller shaft of 2.36 in. diameter is installed on cars up to Chassis End Number 003 435.

Parts are available from all Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 165	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 41	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATION -- MODELS 250/8 CP, 280 S/8, 280 SE/8 300 SEL/8

The following modification entered production as of these chassis end numbers:

MODEL	CHASSIS END NUMBER
280 S/8	027 623
280 SE/8 Sedan	028 986
280 SEL/8 Sedan	029 326
280 SE/8 Cp/Conv	002 764
300 SEL/8	001 859
250/8 Cp	from start of production

PROPELLER SHAFT

New propeller shafts have been introduced for the above mentioned models together with the new transmissions. They differ from the previous propeller shafts in as much as:

1. The front propeller shaft is attached to the transmission in the same manner as on models W 114/115. The joint plate has been adapted to suit the higher torque and has been reinforced.

   The new joint plate, part No. 115 411 09 15, is not interchangeable with those of models W 114/115.

2. The front propeller shaft is centered on the transmission the same way as in models W 114/115. When replacing a propeller shaft, the centering sleeve has to be lubricated with approximately 1/4 oz. (6 gr) of special grease, "Mobil-Grease MP", made by Mobil Oil Co.

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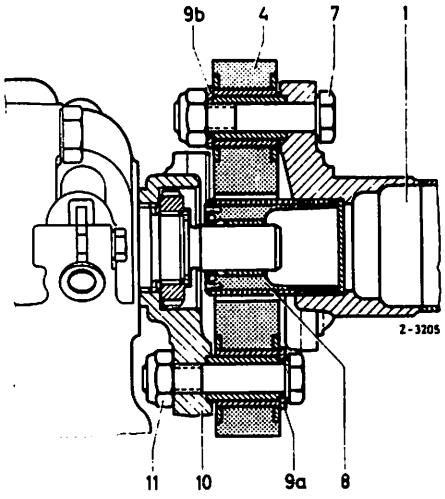
3. A rubber sleeve seals the propeller shaft clamping connection. In case of repair, the spline profile must be coated with long time lubricant. The tightening nuts on these propeller shafts have to be tightened with a torque of 22-29 ft. lbs. (3+1 kpm).



ILLUSTRATION

1. Front propeller shaft
4. Joint plate
7. Hex bolt
8. Centering sleeve
9a,9b. Washer
10. Joint Flange
11. Self-locking nut

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 92	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 41	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Intermediate Drive Shaft Bearing -- Models 220/8 to 250 C/8, (Model Series W 114/115)

Drive shafts with eccentric intermediate bearings are now installed into vehicles of Model Series W 114/115.

Installation:

MODEL	with manual transmission from chassis end No.	with automatic transmission from chassis end No.
220 D/8	082650	082753
220/8	035346	035260
230/8	035922	035878
250/8 Sedan	032719	032690
250 C/8	001780	001810

Only the new drive shaft intermediate bearings will be available from our spare parts depots after the stock of previous bearings, part No. 115 410 03 81, is exhausted. New bearings may also be installed as a remedial measure in case of driveaway vibrations. The new drive shaft intermediate bearings should be installed in such a way that the fold of the rubber mount (7, Illustration 1) points towards the universal joint.

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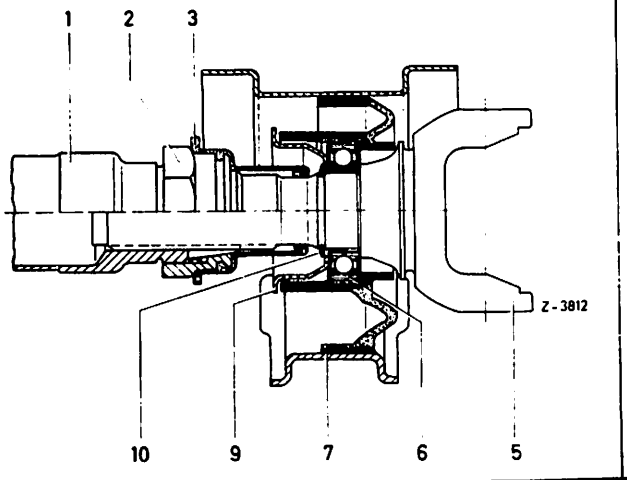

ILLUSTRATION 1

1. Front drive shaft
2. Lock nut
3. Rubber sleeve
5. Universal joint yoke
6. Grooved ball bearing
7. Rubber mount
9. Protection cap
10. Lock ring

The drive shaft bearings differ in Shore hardness as well as in eccentricity. The .24 in. (6 mm) eccentric front drive shaft intermediate bearings vary in their Shore hardness (70 or 80 Shore) and it is important that under no circumstances a .24 in. (6 mm) eccentric bearing with the higher Shore hardness of 80 Shore is installed in the 6-cylinder models. (This is valid for the 4-cylinder models.) The driveaway vibrations would not be properly prevented in the 6-cylinder models by this bearing.

The following bearings are to be used for the various models:

1. 4-Cylinder Models (W 115)

   a. Two-part Drive Shaft

      Intermediate bearing, .24 in. (6 mm) eccentric (80 Shore), part No. 115 410 05 81

   b. Three-part Drive Shaft

      Intermediate bearing, front, .24 in. (6 mm) eccentric (80 Shore), part No. 115 410 05 81

      Intermediate bearing, rear, .12 in. (3 mm) eccentric (80 Shore), part No. 115 410 29 81

2. 6-Cylinder Models (W 114)

   Two-part Drive Shaft

   Intermediate bearing, .24 in. (6 mm) eccentric (70 Shore),part No. 115 410 06 81

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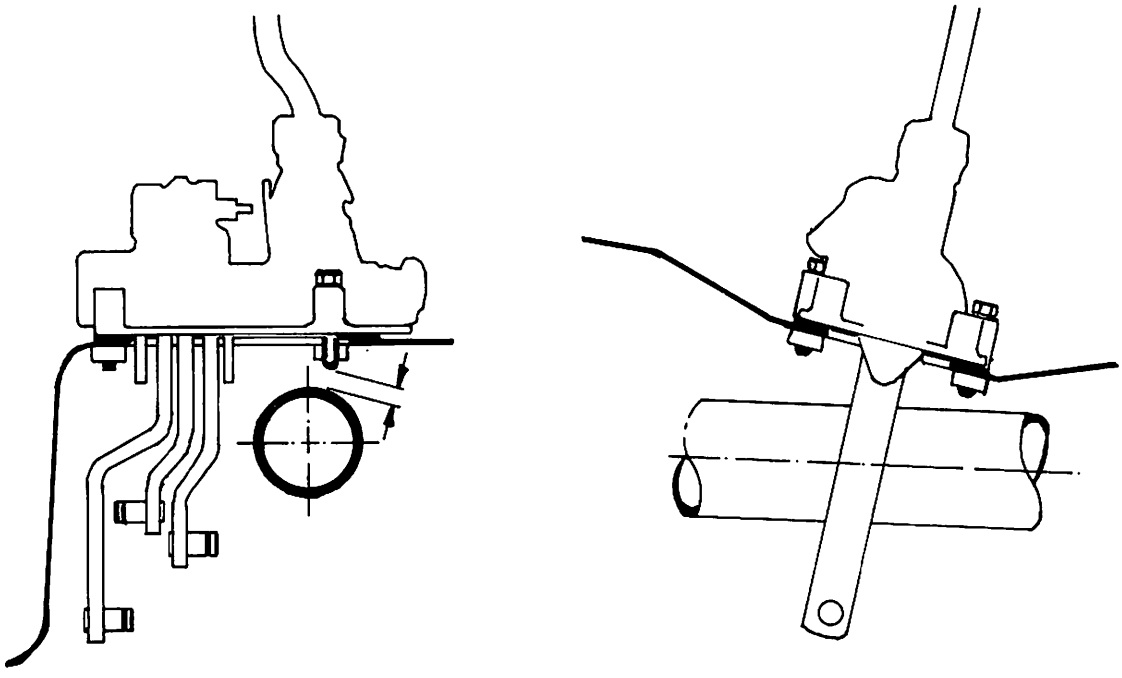
The new eccentric intermediate bearings for the drive shaft may be ordered from your Mercedes-Benz parts depot under their respective part numbers. Part number and shore hardness are marked in the outer ring of the bearing.

CAUTION:

The position of the driveshaft gets changed through the installation of the eccentric driveshaft bearings. The drive shaft is moved upward and closer to the body of the car.

It might be possible therefore that the drive shaft makes contact with the right rear mounting screw of the gear-shift lever support on cars equipped with floor shift (both standard and automatic transmission) when braking. The distance between the drive shaft and this particular screw should be at least 5/16 in. (8 mm). In case it is less, the screw (M6x35) should be removed and replaced be a shorter M6x30 screw - part No. 000 931 060 095. The factory will also use this shorter screw in the future.



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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 85	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 41	PASSENGER CARS

FORT LEE, DECEMBER 1969

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: DRIVESHAFTS WITH CLAMP-TYPE CONNECTIONS

The clamp connections of passenger car propeller shafts (except model 600) are now equipped with rubber boots.

The boots cover the splines and are seated in a groove on the clamping nut. In addition, on propeller shafts with clamp connections, the tightening torque of the front clamping nut has been changed from 145 ft. lbs. (20 kpm) to 22 $^{+7}$ ft. lbs. (3 $^{+1}$ kpm).

When the propeller shaft is assembled, the following should be observed:

1. a. On the two-part propeller shaft, the tightening torque is 22 ft. lbs.

   b. On the three-part propeller shaft, the tightening torque on the front clamp nut is 22 ft. lbs. On the rear: 145 ft. lbs.

2. a. On all propeller shafts with rubber boots on the clamp nut, the splines have to be greased with long life grease, (e.g. Molykote BR2-S Grease). See Service Information MB-T 125, Group 00, June 1969.

   b. On the three-part propeller shaft, only the splines on the front clamp connection need to be greased.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 150	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 41	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Exchange Program on Driveshaft -- Model 280 SE/8 Convertible

Some cars of model 280 SE/8 convertible left the factory with a rear driveshaft of 2.75" (70 mm) diameter. On hard acceleration or bouncing of the car, this driveshaft may touch the driveshaft tunnel causing annoying noises. Therefore, this rear driveshaft has to be replaced by one with a diameter of 2.4" (60 mm) in order to enlarge the clearance.

While this modification does not affect the safe operation of the car, you are herewith asked to check the below list of chassis serial end numbers and inform all of your customers with cars bearing these numbers to bring in their cars for this replacement.

The part number for the replacement driveshaft is 110 410 19 02. A warranty claim may be submitted for the part plus 2.5 hours labor for each car.

All cars with the following chassis serial end number have to be modified:

DOMESTIC DELIVERY

111 025-12-002 873	111 025-12-002 965
" 002 884	" 002 976
" 002 906	" 002 980
" 002 910	" 002 983
" 002 914	" 002 987
" 002 917	" 002 991
" 002 928	" 002 998
" 002 932	" 003 002
" 002 939	" 003 005
" 002 947	" 003 009
" 002 954	" 003 013
" 002 958	" 003 024
" 002 961	" 003 027

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DOMESTIC DELIVERY con't

111 025-12-003 031	111 025-12-003 196
" 003 035	" 003 200
" 003 038	" 003 203
" 003 057	" 003 207
" 003 060	" 003 211
" 003 064	" 003 214
" 003 068	" 003 217
" 003 090	" 003 225
" 003 140	" 003 236
" 003 143	" 003 240
" 003 177	" 003 270
" 003 188	" 003 274
	" 003 321
	" 003 338
	" 003 355

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U.S. TOURIST DELIVERY

111 025-12-002 898	111 025-12-003 097
" 002 936	" 003 108
" 002 994	" 003 131
" 003 020	" 003 151
" 003 049	" 003 159
" 003 042	" 003 184
" 003 071	111 025-10-003 229
" 003 075	" 003 288
" 003 079	" 003 360
" 003 082	

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 260	SERVICE INFORMATION	42/43	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BRAKE SYSTEM, MODELS 280S/8, 280SE/8, AND 280SEL/8.

Since March 1971 vented front discs have been installed on the above mentioned models (108 series) during production.

Production cutoff information is as follows:

MODEL	BEGINNING CHASSIS END NO.
280S/8	075176
280SE/8, 280SEL/8	081819

Repair parts information:

NOMENCLATURE	PART NO.
Brake Disc 3/4" (19mm)	109 420 00 05
Brake Caliper, left	001 421 26 98
Brake Caliper, right	001 421 27 98

Parts may be ordered from our Mercedes-Benz Parts Depots.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 278	Service Department	42/43	Passenger Cars

Fort Lee, May 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: RECALL CAMPAIGN -
BRAKE VACUUM LINE/CHECK VALVE REPLACEMENT --
MODEL 220D/8

Ref: Our Letter to Dealers Dated April 30, 1971

Please be advised that the vacuum line between the brake booster and vacuum pump on models 220D/8, with chassis end numbers 127 205 through 152 518 need not be exchanged unless the vehicle is equipped with vacuum pickup for air conditioning and/or a central locking system.

Upon inspection of these models, if no line/check valve replacement is required, it must be so indicated by making a "check mark" on the modification voucher under item damage code "check only".

The vacuum line between the brake booster and vacuum pump must be exchanged on models 220D/8, with chassis end numbers 152 519 to 157 385, if a pot shaped valve is installed.

The new line with cylindrical check valve part number is 115 800 01 83.

(The vacuum line check valve located between vacuum pump and intake manifold does not have to be exchanged).

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

JRH/gls

REQUIRES IMMEDIATE ATTENTION

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
156	SERVICE INFORMATION	42/43	PASSENGER CARS

Fort Lee, March 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: DISC BRAKES, MODELS 300 SE, 300SL ROADSTER, 300SEL/8-6.3 AND 600

Revised minimum tolerances (thickness) for friction pads and brake discs have been established and are as follows:

1. FRICTION PADS:

MODEL		FRICTION PAD MINIMUM THICKNESS
300 SE - 300 SL ROADSTER	w/Dunlop brake calipers	.33" (8.5mm)
600	Front wheel brake	.35" (9mm)

2. DISC BRAKE, 300 SEL/8-6.3:

Ventilated discs on the rear axle (part number 109 420 00 06), installed up to chassis end number 003548, should have a minimum thickness of .72" (18.4mm).

Please revise your records accordingly.

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Article No.	File	Group	Application
MB-T 214	SERVICE INFORMATION	42	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BRAKE FLUIDS

The Department of Transportation recently issued an article regarding vehicle brake fluids. This article contains valuable information and is quoted as follows:

"A notice warning the public about hazards connected with the improper use of motor vehicle brake fluids has been issued by the Transportation Department.

"The warning, coming only a week after the National Highway Safety Bureau's proposed upgrading of the federal brake fluid safety standard, is considered necessary because many owners, service stations and brake service centers are unaware of the dangers.

"Safety Director Douglas Toms stressed the following precautions:

1. Use only brake fluid recommended by the auto maker. Substituting one with a lower boiling point may cause vapor lock and may harm brake seals and cause brake system failure.

2. Use brake fluid from sealed containers only. If the container is not resealable, throw away the container and the unused portion of fluid. Unsealed containers may accumulate enough dirt and water to cause brake system failure due to vapor lock when stored for as little as four days in a humid environment. Seals and valves are subject to leakage caused by dirt particles and internal components may corrode from small amounts of water in the brake fluid.

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(Quote continued)

3. Clean brake system reservoir cover and surrounding areas thoroughly before removing cover in order to keep out any dirt particles.

4. Eliminate moisture from any pressure bleeding equipment used since this also could cause vapor lock. Install and service all air drying filters at air pressure supply source to prevent moisture contamination of brake fluid. Never reuse brake fluid."

Since contamination may cause rust and interior brake system corrosion, it is recommended that the brake system be drained, flushed, and the brake fluid replaced once a year.

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Article No.	File	Group	Application
122	SERVICE INFORMATION	42/43	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: PARKING BRAKE ADJUSTMENT -- MODELS 220/8 TO 300 SEL/8 6.3

We have found that, contrary to Workshop Manual instructions, parking brakes have been adjusted with the adjusting screw on the adjusting shackle (equalizer). This practice does not allow the brake shoe to ride on the adjusting device in the resting position. Instead it is held by brake cable tension.

The parking brake should be adjusted only with the adjusting device on the brake shoe. The adjusting screw on the adjusting shackle (equalizer) is used to adjust brake cable length in the event of cable replacement.

Please ensure technicians adhere to instructions set forth in pertinent Shop Manuals.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
56	SERVICE INFORMATION	42/43	PASSENGER CARS

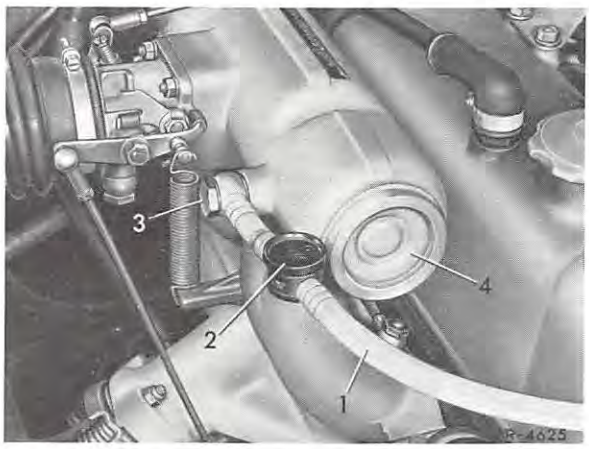
FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: VACUUM LINES ON MODEL 220 D/8

In Model 220 D/8, a check valve (2, Illustration) is now installed into the vacuum line between intake pipe and vacuum pump. The check valve entered production as of Chassis End Number 127 205.

The vacuum line with the check valve may be ordered from our Mercedes-Benz Parts Depots under Part No. 000 435 60 82.



ILLUSTRATION

1. Vacuum line
2. Check valve
3. Hollow screw
4. Intake pipe

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Article No.	File	Group	Application
44	SERVICE INFORMATION	42/43	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BRAKE SYSTEM -- MODELS 280 S/8, 280 SE/8, 280 SEL/8

The vehicles mentioned below are equipped with brake calipers without disc play compensating devices:

MODEL	FROM CHASSIS END NO.	THROUGH CHASSIS END NO.
280 S/8	048 392	049 765
280 SE/8 280 SEL/8	051 832	053 278

CAUTION: In case of rear axle repairs, care should be taken that no barrel-shaped bearings are installed in these vehicles. Use only grooved ball bearings, Part No. 001 981 15 25.

In this connection, we refer you also to Service Information No. 13, Group 42/43, of April 1970.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 13	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 42/43	PASSENGER CARS

FORT LEE, APRIL 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BRAKE SYSTEM -- MODELS 280 S/8 TO 300 SEL/8 6.3

A. MODELS 280 S/8, 280 SE/8, 300 SEL/8

In Service Information 109, Group 42/43 of January 1970, we informed you that on the above mentioned models, brake calipers with a piston diameter of 1.38 in. (35 mm) without disc play compensator device are being installed.

In the meantime, these brake calipers are again equipped with a disc play compensator as of the chassis end numbers shown in the chart below:

MODEL	DISC PLAY COMPENSATOR OMITTED STARTING WITH CHASSIS END NO.	CALIPERS WITHOUT DISC PLAY COMPENSATOR	DISC PLAY COMPENSATOR INSTALLED AS OF CHASSIS END NUMBER	CALIPERS WITH DISC PLAY COMPENSATOR
280 S/8	034 764	left,	043 302	left,
280 SE/8	035 763	000 423 36 98	044 368	000 423 42 98
280 SEL/8	035 739	right,	044 085	right,
280 SE/8 Cp./Conv.	003 466	000 423 37 98	004 330	000 423 43 98
300 SEL/8	002 211		003 549	

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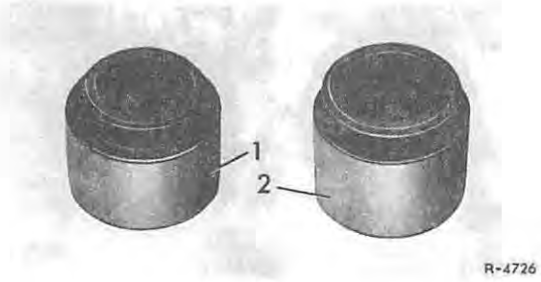
IMPORTANT

In case of repair work on the rear axle of vehicles equipped with disc play compensator, optionally either the grooved ball bearing or the barrel roller bearing may be installed. IN VEHICLES WHICH ARE EQUIPPED WITH THE 1.38 IN. (35 MM) CALIPERS WITHOUT THE DISC PLAY COMPENSATOR DEVICE, ONLY THE GROOVED BALL BEARINGS, PART NO. 001 981 15 25 MAY BE INSTALLED (SEE SERVICE INFORMATION NO. 109, GROUP 42/43 OF JANUARY 1970).



ILLUSTRATION

1. Piston for brake caliper with disc play compensator.
2. Piston for brake caliper without disc play compensator.

NOTE: Both brake pads have to be removed when performing an inspection, whether the brake caliper is equipped with or without disc play compensator. The pistons may be seen in the brake caliper. The Illustration shows both piston designs. The piston on the left (made solid) belongs to a brake caliper with disc play compensator device; the piston on the right (which is hollow) is not equipped with a disc play compensator.

B. MODEL 280 SL/8

This model will continue to be equipped with an unaltered brake system. As previously, the rear axle brake calipers have a piston diameter of 1.65 in. (42 mm) with disc play compensator device. The brake pressure regulator is also installed.

C. MODEL 300 SEL/8 6.3

This model receives (as of chassis end number 003 549) brake calipers of 1.38 in. (35 mm) piston diameter with disc play compensator on the rear axle (same construction as 280 S/8, 280 SE/8, 300 SEL/8). Therefore, the brake pressure regulator is omitted. At the same time with this change, solid brake discs as in all other models will be installed on the rear axle, instead of the ventilated discs.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 109	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 42/43	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW BRAKE CALIPERS FOR REAR WHEEL BRAKES AND NEW REAR AXLE BEARINGS -- MODELS 280 S/8, 280 SE/8, AND 300 SEL/8 (2.8)

On the above mentioned models, brake calipers with a piston diameter of 1.38 in. (35 mm) without disc play compensator device are being installed. The previous piston diameter was 1.65 in. (42 mm) with disc play compensator.

With the smaller piston diameter, the brake power regulator for the rear brakes is no longer needed and is omitted.

These changes are effective as of the following chassis end numbers:

MODEL	CHASSIS END NUMBER
280 S/8	034 764
280 SE/8	035 763
280 SEL/8	035 739
280 SE/8/Cp/Conv.	003 466
300 SEL/8 (2.8)	002 211

The new brake calipers have the following part numbers:

Left Brake Caliper	000 423 36 98
Right Brake Caliper	000 423 37 98

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The following change became effective at the same time:

In models 280 SE/8/Cp/Cv and 300 SEL/8, the barrel roller bearings of the rear axle shaft bearing are replaced with grooved ball bearings.

(In models 280 S/8 and 280 SE/8, grooved ball bearings were installed as of the beginning of production).

IMPORTANT:

WHEN PERFORMING REPAIR WORK ON THE REAR AXLE, THE FOLLOWING POINTS MUST BE OBSERVED:

UNDER NO CIRCUMSTANCES MAY A BARREL ROLLER BEARING FOR THE REAR AXLE SHAFT BEARING BE INSTALLED ON CARS WHERE THE BRAKE CALIPERS WITH THE 1.38 IN. (35 MM) DIAMETER PISTONS WITHOUT DISC PLAY COMPENSATOR ARE INSTALLED.

REASON: THE BARREL SHAPED ROLLER BEARINGS ALLOW GREATER AXIAL MOVEMENTS OF THE AXLE SHAFTS AND BRAKE DISCS.

ON BRAKE CALIPERS WITHOUT DISC PLAY COMPENSATORS, THE PISTONS (WHEN DRIVING AROUND CURVES) WOULD BE PUSHED BACK INTO THE BRAKE CALIPERS SO THAT GREATER BRAKE PEDAL TRAVEL WOULD RESULT.

THEREFORE, FOR REAR AXLES WITH THE GROOVED BALL BEARINGS, ONLY THOSE ARE TO BE USED FOR REPLACEMENT (PART NO. 183 981 00 25 OR 001 981 15 25).

All rear axles with brake calipers of 1.38 in. (35 mm) piston diameter are marked with a yellow paint dot at the rear axle flange.

SUMMARY OF POSSIBLE COMBINATIONS

a.	Brake calipers with 1.65 in. diameter pistons and disc play compensators	- Barrel roller bearings - Grooved ball bearings
b.	Brake calipers with 1.38 in. diameter pistons without disc play compensators	- Only grooved ball bearings

The required parts may be ordered through your Mercedes-Benz parts depot.

Please advise your shop personnel of this very important modification.

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MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
101	SERVICE INFORMATION	42/43	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BRAKE SYSTEM

It has come to our attention that parts of the brake system have been replaced which were absolutely faultless. They may have been destroyed during the installation or maintenance work. This Service Information offers some points which should be observed in case of warranty to avoid unnecessary replacement of parts.

1. MODEL SERIES T 51 BRAKE BOOSTERS

Brake boosters may only be installed together with a separate check valve. Vehicles with diesel engine are excepted; in this case the valves are located in the vacuum pump. Under all circumstances the check valve must be tested (refer to Workshop Manual W 114/115, Job. No. 42-20) prior to the installation of a new brake booster. A drop in vacuum of 2.8 PSI (0.2 atu) max. in 30 seconds is acceptable. If the vacuum drops faster, the vacuum seals (secondary seals) in the tandem master cylinder also need to be checked.

TEST VALUES FOR BRAKE BOOSTERS

Force At Brake Pedal Pounds	Line Pressure PSI T 51/100	T 51/909	T 51/200	T 51/1801
22.4	284.0 - 355.0	369.2 - 411.8	568.0 - 639.0	624.8 - 667.4
33.0	482.8 - 553.8	639.0 - 710.0	852.0 - 923.0	994.0 - 1036.6
44.0	653.2 - 724.2	908.8 - 994.0	1022.4 - 1164.4	1349.0 - 1391.6
55.0	837.8 - 908.8	1136.0 - 1164.4	1491.0 - 1420.0	1675.6 - 1718.2
66.0	1008.2 - 1079.2	1207.0 - 1278.0	1633.0 - 1732.4	1988.0 - 2059.0

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These measurements are to be performed at a vacuum of 10.65 - 11.36 PSI (0.75 - 0.8 atu) and with the brake satisfactorily bled. A dissassembly of the brake booster is justified only if the above mentioned values cannot be achieved.

2. TANDEM MASTER BRAKE CYLINDER

If no leaks are observed in the master brake cylinder, it is to be checked in compliance with the instructions contained in Workshop Manual W 114/115, Job. No. 42-20, before removal. In case it is claimed "the brakes pull to one side" or "they have insufficient braking effect", the replacement of the master brake cylinder will not improve this condition.

NOTE: NORMAL "SEEPING" THROUGH THE LEAK PORT OF THE MASTER CYLINDER IS NOT CONSIDERED A LEAK. HOWEVER, A CLAIM IS JUSTIFIED ONLY IF A SEEPAGE OF BRAKE FLUID ACCUMULATES ON THE BODY SIDE MEMBER UNDERNEATH THE TANDEM MASTER CYLINDER AFTER THE BRAKE PEDAL HAS BEEN DEPRESSED SEVERAL TIMES (BRAKE FLUID DRAINS THROUGH THE LEAK PORT).

3. CALIPERS

Warranty claims will be refused for calipers which are broken at the outside of the pressure cylinders since this is clearly a matter of poor maintenance. The cause of damage is excessively worn brake pad assemblies.

4. BRAKE PAD ASSEMBLIES

In the future, brake pad assemblies with lining qualities not approved by the factory will be scrapped without payment of the claims. This also applies to claims for worn out linings. When brake pad assemblies are removed due to squeaking, the following has to be considered:

On W 114/115 models, brake squeaks occur on rear wheel brakes only; and only the rear brake pad assemblies may be removed in case of warranty. When squeaking occurs, mainly in the front axle, on all other models, the same quality lining must be used on front and rear axle.

5. TIGHTENING TORQUES

Frequently, master cylinder housings were found to be damaged due to excessive tightening of the line connector nuts. A torque of 10.85 ft. lbs. (1.5 kpm) is prescribed for all connections, such as brake lines and brake hoses with 10 x 1 threads.

Since the torque cannot be measured, the quoted value has to be considered a reference value.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 73	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Fuel Separator In The Vacuum Line

The fuel separator in the vacuum line leading from the intake manifold to the brake booster (models T 51/100 or T 51/200) has not been installed in production since some time and will not be available anymore after the present stock of separators under part number 111 435 02 27 has been exhausted.

In case of repairs, a new vacuum hose, connecting the check valve directly to the brake booster should be installed. (This replaces the previously used separator and the two short hoses to the check valve and the adapter of the brake booster.)

When installing the new vacuum hose bè sure that it is routed in such a way that the outlet from the brake booster connection is placed vertically facing downwards and then led in a slight arc to the check valve. If the vehicle has a fuel injection engine, care must be taken to see that the vacuum hose does not interfere with the control linkage.

The lengths of the vacuum hose from the check valve to the brake booster are as follows:

MODEL	Length in Inches	
190 C, 200, 220 B 220 SB, 230, 230 S	19.69 in.	(500 mm)
220 SEB, 230 SL, 250 S 250 SE, 250 SL, 300 SE 300 SEB, 300 SEL, 280 S/8 280 SE/8, 280 SL/8, 300 SEL/8	23.62 in.	(600 mm)

The vacuum hose (part no. 000 435 21 82) is available from your Mercedes-Benz parts depot. It comes 39 in. long and has to be cut to size.

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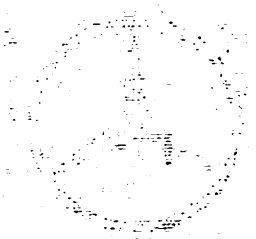

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MERCEDES-BENZ OF NORTH AMERICA, INC.

CABLE: MERCEBENZ FORT LEE
TWX: FORT LEE 201 947-5922
OVERSEAS TELEX: 135422
DOMESTIC TELEX: 135422
PHONE: 201 944-3344

158 LINWOOD PLAZA
P.O. BOX 318
FORT LEE, NEW JERSEY 07024

August 22, 1969

TO ALL MERCEDES-BENZ DEALERS

Re: Recall Campaign: Inspection of the Master Brake Cylinder -- Model 600

Gentlemen:

Attached please find a sample of a notification letter which will be mailed to all M-B owners of the above mentioned model very shortly. Also attached you will find our Service Information bulletin No. MB-T 132, Group 42/43, of August 1969. This inspection is necessary to assure the proper operation of the brakes.

We have been informed by the Teves Co., manufacturer of the master brake cylinders installed in this model, that on a limited number of recently manufactured units, a screw of incorrect length might have been installed in production which could lead to a malfunctioning and possible failure of the front wheel brake circuit. Details may be found in the above mentioned Service Information article.

Directly affected are cars with the following chassis end numbers: 001 285 - 001 286 - 001 289 - 001 296 - 001 301 - 001 303 - 001 307 - 001 309 - 001 313 - 001 317 - 001 318 - 001 327

These cars have the modified tandem master brake cylinder installed and therefore must be inspected. In addition to that, a number of spare parts master brake cylinders of the modified version and replacement kits (consisting of brake booster and master cylinder plus related parts) were imported and possibly installed. It is for this reason that all model 600 vehicles are included in this campaign.

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In addition to the vehicles, you have to include your present spare parts stock in this inspection campaign.

Any master brake cylinder found incorrect in a car in accordance with the details outlined in the Service Information article has to be replaced.

All incorrect master brake cylinders removed from cars or from your stock have to be claimed and returned to our Claims Receiving Department.

This campaign is being handled pursuant to the National Traffic Motor Vehicle Safety Act of 1966. Therefore, the following points will have to be strictly adhered to:

1. After the inspection and/or modification has been carried out, the notification letter to the customer must be certified by the customer and yourself and mailed back to our Home Office Service Department. In the event that the customer is not the original purchaser, please insert under owner's signature, the correct name and address (including zip code) of the present owner.

2. Any inspected and/or modified vehicle has to be identified by a sticker (an initial supply of which is enclosed with the Service Information article). The sticker must be attached to the radiator frame as shown in the attached illustration. Additional stickers may be obtained from the Home Office Technical Service Department.

3. A properly filled out warranty claim for each vehicle inspected and/or modified should be forwarded together with the replaced part with your regular claim shipments to our Claims Receiving Department.

Thanking you in advance for your full cooperation in this matter.

Very truly yours,

MERCEDES-BENZ OF NORTH AMERICA, INC.

H. W. GERTH
General Service Manager

Attachments

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MERCEDES-BENZ OF NORTH AMERICA, INC.

CABLE: MERCEBENZ FORT LEE
TWX: FORT LEE 201 947-5922
OVERSEAS TELEX: 135422
DOMESTIC TELEX: 135422
PHONE: 201 944-3344

158 LINWOOD PLAZA
P.O. BOX 318
FORT LEE, NEW JERSEY 07024

September 8, 1969

Re:

Dear Mercedes-Benz Owner:

Our records indicate that you are the owner of the above referenced model 600 vehicle. We are herewith asking you to bring your car to your authorized M-B dealer in order to have an inspection performed on the master brake cylinder.

We have been informed by the Teves Co., manufacturer of the master brake cylinder installed in your car, that on a limited number of units an incorrect screw might have been installed in production which could lead to a malfunctioning and possible failure of the front wheel brake circuit thus reducing the braking effect of your vehicle. Your dealer will check on this and replace the master brake cylinder if necessary. Please contact your nearest authorized M-B dealer for an appointment. The necessary work will be carried out at no charge to you.

Please give this letter to the dealer when you bring in your car. The dealer will fill out the lower portion of the letter and will require your signature to verify that the inspection and/or modification has been completed.

Thank you for your cooperation,

Very truly yours,
MERCEDES-BENZ OF NORTH AMERICA, INC.

H. W. Gerth
General Service Manager

NOTE:
This notice is sent in compliance with the Federal Traffic Safety Act of 1966. Your failure to respond may relieve Mercedes-Benz of North America, Inc., and its dealers of any further responsibility. Should you have sold the above mentioned vehicle, please pass this letter on to the purchaser.

Dealer: Please check appropriate box before signing.

☐ This is to certify that we have performed the necessary inspection on _____(date) at _____(miles) and found that no modification was required.

☐ This is to certify that we have performed the modification indicated in this letter on _____(date) at _____(miles).

DEALER STAMP AND AUTHORIZED SIGNATURE

OWNER'S SIGNATURE AND DATE

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 132	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 42/43	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Inspection of the Master Brake Cylinder -- Model 600

When the floating piston (16) is in its neutral position, it is held by a retaining screw (13) (illustration 1). The height of the cast iron boss, in which the retaining screw is located was changed from .118" (3 mm) to .275" (7 mm) for manufacturing reasons. Accordingly, the longer retaining screw was phosphorized (color: black) and made longer in order to differentiate it from the previous short screw which was cadmium-plated (looks like zinc-plated).

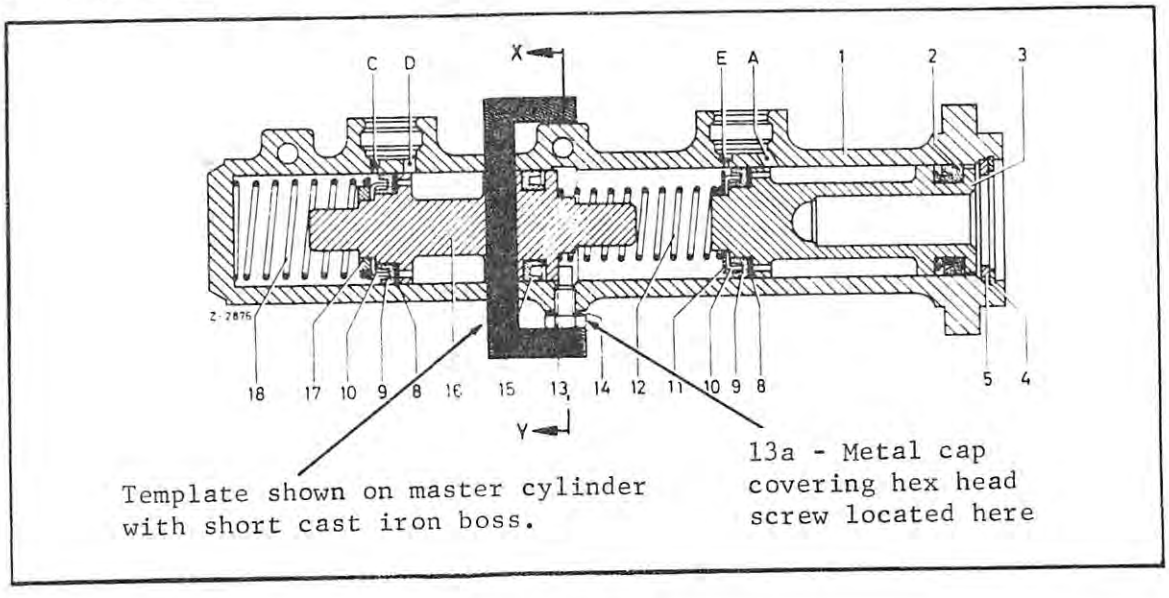

ILLUSTRATION 1

C. Compensating bore
16. Floating piston
13. Retaining screw
18. Pressure spring
13a. Metal cap (not shown here, see illustration 2)

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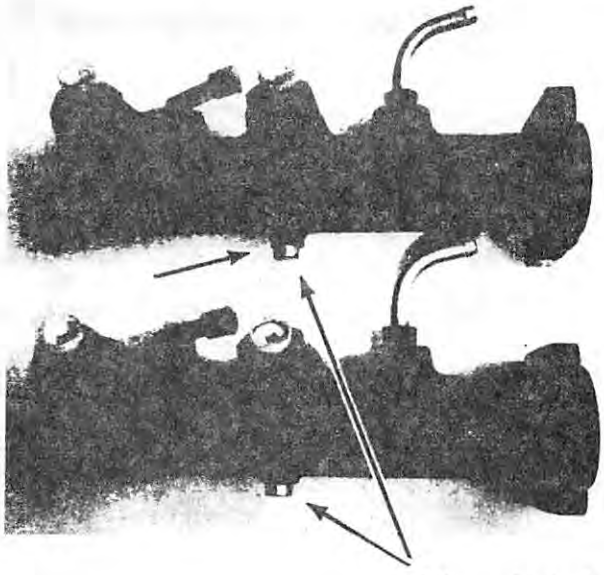

13a - Metal cap

ILLUSTRATION 2

Illustration 2 shows the two versions of the master brake cylinder. The upper one has the long cast iron boss (see arrow).

Please also note the metal cap (13a) covering the hex head retaining screw.

According to the Teves Company, there is a possibility that in some cases, short retaining screws (cadmium-plated) were installed on master cylinders with the higher cast iron boss. In this case, the floating piston has no retaining stop in the neutral position.

In this situation, the floating piston is pushed further back by the pressure spring (18) so that the amount of brake fluid in the front brake circuit chamber increases. When the brake is actuated fast, not enough brake fluid can escape through the compensating bore (C, illustration 1). At the point where the high pressure starts to build up, the primary sleeve is located at the compensating bore and its lip may be forced into this bore, thus being damaged. In time, damage may reach an extent where no pressure will build up in the front brake circuit chamber.

The subject of this "recall campaign", therefore, is to check all master cylinders with extended cast iron boss and to eliminate those with the short retaining screw.

CHECKING PROCEDURE

1. Remove water tank for windshield washing system.

2. Hold mirror underneath master brake cylinder and check whether the sheet metal cap (13a, illustration 2) covering the retaining screw (13) has a blue colored dot (all cars checked at the factory have this blue dot which signifies that they have been inspected for the proper length screw and were found to be O.K. or were modified accordingly).

3. If there is no blue dot, check the height of the cast iron boss plus retaining screw. Use the attached sheet metal template and hold it onto the master cylinder as shown in illustration 3 after removing the rubber cap from the bleeder screw.

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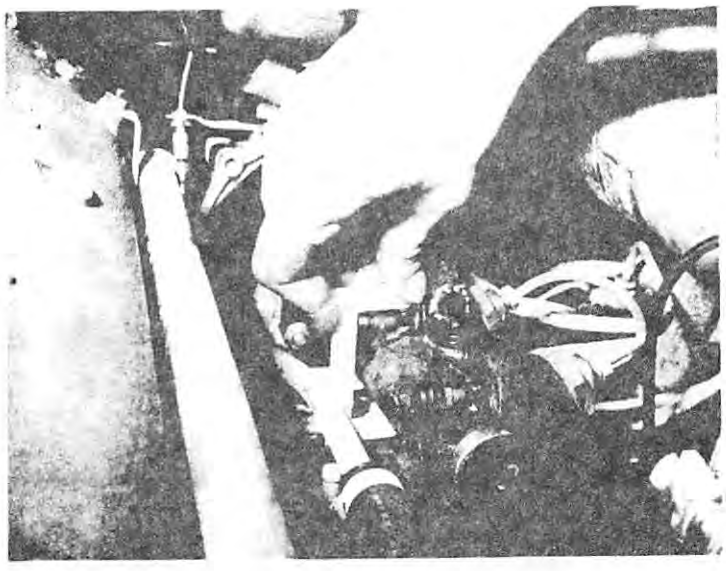

ILLUSTRATION 3

4. If the template can be slipped over the metal cap of the screw, as drawn in illustration 1, the master brake cylinder is O.K.

5. If the template rests against the side of the metal cap, this is the new version brake cylinder with the higher cast iron boss. Remove metal cap from retaining screw with a screwdriver.

If the color of the retaining screw is black, this is the correct (long) screw. If you find a cadmium-plated screw (looks like zinc-plated) - REPLACE ENTIRE MASTER CYLINDER. Install new master brake cylinder, part no. 002 430 05 01, which is available from your Mercedes-Benz parts depot.

NOTE: Keep in mind that your presently stocked master cylinders, part no. 002 430 05 01 and the replacement kits (booster and master cylinder part no. 100 586 00 43) have to be inspected in the same manner.

All master cylinders with the short retaining screw must be returned to our Claims Receiving Department.

6. After checking, if it is found that the retaining screw is correct, replace sheet metal cap on the retaining screw.

For each car inspected a warranty claim ("M-B Dealer Claim for Credit" - form 403) for 15 minutes labor may be submitted. For each car inspected and modified, a warranty claim for parts plus 1 hour labor may be submitted.

All vehicles inspected and/or modified have to be identified by a blue sticker (initial supply enclosed). This label must be attached to the radiator frame (see attached illustration 4).

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NOTE: Additional stickers are available on request from the Home Office Technical Service Department.

The National Traffic and Motor Vehicle Safety Act of 1966 prohibits the retail sale of vehicles with known deficiencies; therefore, in addition to licensed vehicles, all cars in transit and dealer inventory must be inspected and modified if necessary in accordance with these instructions.

Your warranty claims on vehicles in stock must be accompanied by a signed repair order certifying that the modification has been performed.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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APPLICATION OF THE STICKER (SEE ARROW IN PICTURE) FOR THE INSPECTION OF THE MASTER BRAKE CYLINDER CAMPAIGN - - MODEL 600

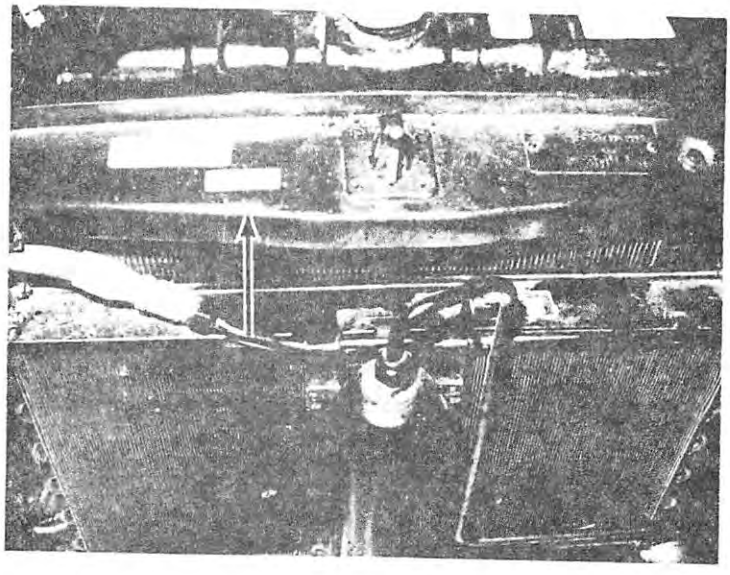

ILLUSTRATION 4

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 127	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, July 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Anti-Squeak Plates For Installations on Girling Dual-Piston Calipers Only

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In Service Information No. 130, Group 42/43, of January 1968, instructions were given for the installation of Anti-Squeak Plates (part no. 000 421 04 20) to eliminate squeaking noises in the brake system on cars fitted with Girling dual-piston calipers. These anti-squeak plates may be installed in place of the heat insulating plates in cases where the squeaking noises cannot be remedied by installation of different pad assemblies.

It has come to our attention that dealers, in some cases, have installed these anti-squeak plates in brake calipers other than Girling dual-piston calipers (17/2).

Please advise all personnel concerned that these anti-squeak plates must not, under any circumstances, be installed in brake calipers other than Girling dual-piston calipers (17/2).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
2	SERVICE INFORMATION	42/43	PASSENGER CARS

Fort Lee, May 1969

This Service Information supersedes Service Information No. 6, Group 42/43, of March 1968.

Additional instructions

TO OUR MERCEDES-BENZ DEALERS

Subject: Brake System -- Model 600

As of chassis end number 000 724, a modified tandem master brake cylinder (version 2) has been installed during production into vehicles of the above mentioned type (illustrations 1 and 2).

The second version of the tandem master cylinder differs from the first one in the thrust rod piston (3) and the secondary collar seal (2) for the thrust rod piston (the necessary seal ring is now located in a groove in the piston). Also, the second version tandem master cylinder is longer by 1.9 inches (47 mm) than the first version and can only be installed together with the modified brake booster (version 2, Illustration 4).

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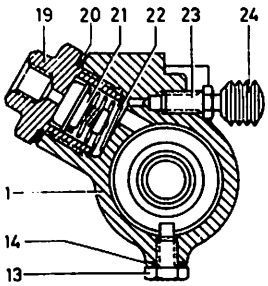
Section X - Y



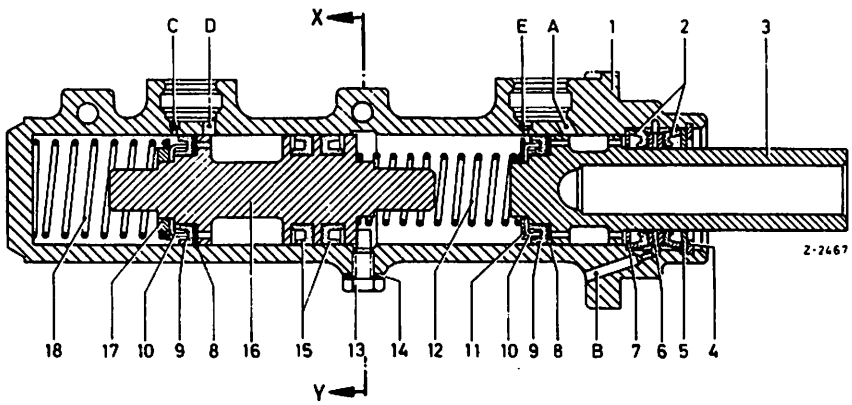


Illustration 1

Tandem Master Cylinder, Version 1

1. Housing
2. Collar seal
3. Thrust rod piston
4. Locking ring
5. Detent plate
6. Spacer (with silicone grease filling)
7. Washer
8. Shim disc
9. Primary collar seal
10. Support ring
11. Spring seat plate
12. Pressure spring
13. Detent screw
14. Seal ring
15. Collar ring
16. Intermediate piston (floating path)
17. Spring seat plate
18. Pressure spring
19. Connector
20. Seal ring
21. Special bottom valve
22. Pressure spring
23. Venting screw
24. Rubber cap

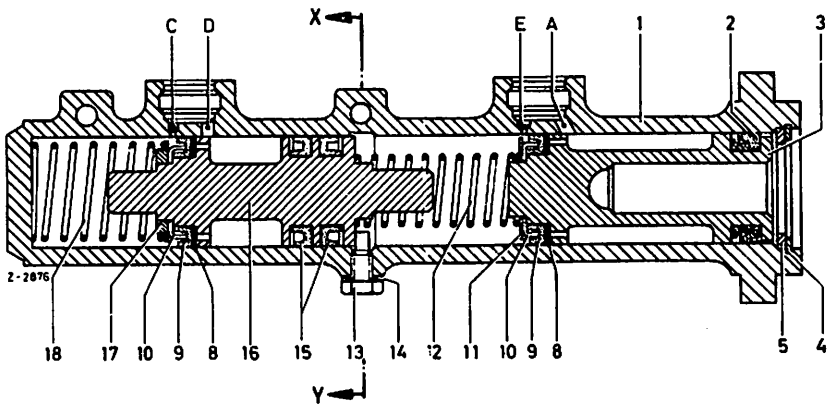


Illustration 2

Tandem Master Cylinder, Version 2

1. Housing
2. Secondary collar seal
3. Thrust rod piston
4. Locking ring
5. Detent plate
6. Shim disc
9. Primary collar seal
10. Support ring
11. Spring seat plate
12. Pressure spring
13. Detent screw
14. Seal ring
15. Collar ring
16. Intermediate piston (floating path)
17. Spring seat plate
18. Pressure spring
19. Connector
20. Seal ring
21. Special bottom valve
22. Pressure spring
23. Venting screw
24. Rubber cap

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The new brake booster also differs from the previous version in the following points (refer to illustrations 3 and 4):

1. It has a flexibly mounted thrust rod, and it extends in length further than the previous piston rod (4, illustration 3; 46, illustration 4).

2. It has a seal ring in the bottom plate especially for exhaust air sealing.

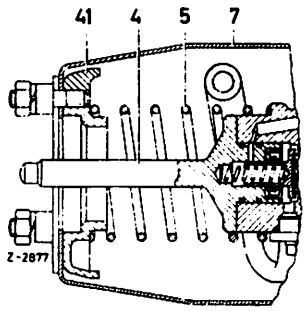

Illustration 3

Brake Booster, Version 1

4. Piston rod
5. Pressure spring
7. Piston housing
41. Bottom plate

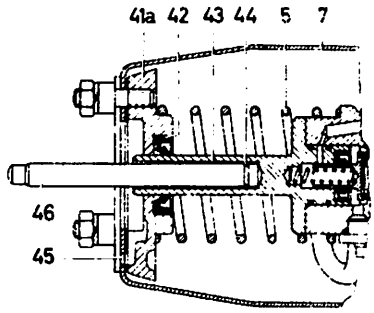

Illustration 4

Brake Booster, Version 2

5. Pressure spring
7. Piston housing
41a. Bottom plate
42. Seal ring
43. Piston shaft
44. Locking ring
45. Air vent hole
46. Thrust rod

<u>The first version (shorter version) of the tandem master brake cylinder</u>, part no. 001 430 55 01 or 002 430 17 01, which had been installed as standard equipment up to and including chassis end no. 000 723, <u>is no longer available for subsequent installations from our parts depots.</u>

From now on, the second version (longer version) tandem master brake cylinder, part no. 002 430 05 01 (color identification: blue stripe) will be valid for replacement purposes. The tandem master brake cylinder has to be replaced together with a Bosch power brake booster if the vehicle is equipped with the first version tandem master cylinder and booster. In addition, a modified water tank for the windshield washer system should be installed in these cases.

The labor time required for performing the above installations, including bleeding the entire brake system and performing leakage tests, is 6.5 hours.

The required parts are supplied as a complete set (see Parts Required list) and can be ordered from your Mercedes-Benz parts depot.

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Parts Required

Quantity	Part	Part No.
1	Replacement set Consisting of:	100 586 00 43
1	Tandem brake master cylinder	002 430 05 01
1	Power brake booster	002 430 03 01
1	Gasket	100 431 00 80
1	Brake line	100 430 34 28
1	Air pressure line	100 320 36 53
1	Water tank	100 869 02 20
1	Support	100 860 00 14
2	Pipe clamps	900288 100101
.012" (0.3 mm)	Hose	002 997 67 82
1 container	Brake fluid H	000 583 10 04

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Installation Procedure

1. Remove the tandem master brake cylinder and the power brake booster (see Workshop Manual - Type 600, Job no. 42-10 and 42-12).

2. Remove the water tank from the windshield washer system.

3. Attach the new tandem master brake cylinder part no. 002 430 05 01 to the brake booster, making sure that no gasket is being placed between the master cylinder and the brake booster.

4. Install the brake booster together with the master cylinder, installing a new gasket between the flange of the brake booster and firewall.

5. Attach the push rod to the brake pedal (as described in the Workshop Manual - Type 600, Job no. 42-12, item #12).

6. Install the new brake line (3) (part no. 100 420 34 28) connecting the pressure chamber of the floating circuit and the three-way fitting (5) for the front wheel brake (illustration 5).

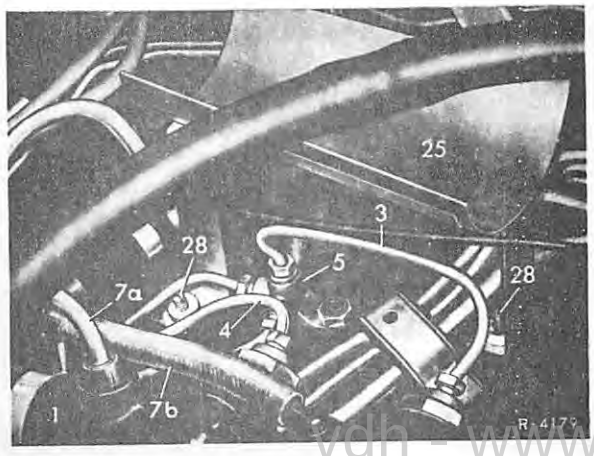

Illustration 5

1. Tandem master brake cylinder
3. Brake line to three-prong connection
4. Brake line to rear wheel brake
5. Three-way fitting
7a. Connecting line to push rod circuit
7b. Connecting line to floating circuit
25. Water tank support
28. Hex bolt

(continued)

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7. Connect the brake line (4) of the rear wheel brake to the push rod circuit of the master cylinder (illustration 5).

8. Install the new air pressure line, part no. 100 320 36 53.

9. Bleed the brake system, making sure that only brake fluid part no. 000 583 10 04, with a high boiling point (type H) is used.

10. Check the entire brake system and the air pressure line to the brake booster for leakage.

11. Attach the support (25) of the windshield washer water tank (26) to the left wheel arch panel. For this purpose, drill three holes and install the support in such a way that it does not contact the air pressure line and the lines of the hydraulic system (illustration 6).

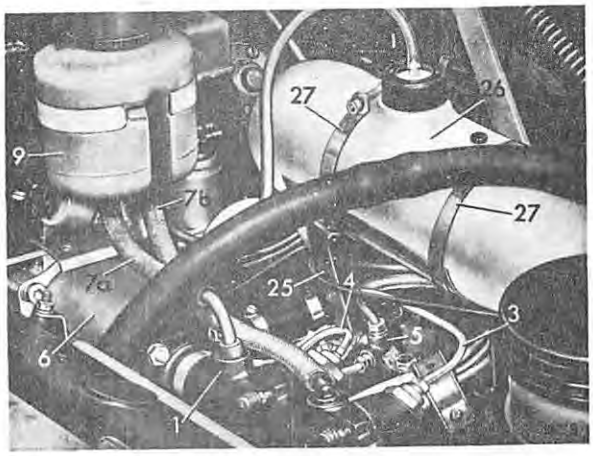

Illustration 6

1. Tandem master brake cylinder
3. Brake line to three-prong connection
4. Brake line to rear wheel brakes
5. Three-way fitting
7a. Connecting line to push rod circuit
7b. Connecting line to floating circuit
9. Brake fluid reservoir
25. Water tank support
26. Water tank
27. Clamp

12. Attach the water tank (26) to the support (25) by using two clamps (27) (illustration 6). Refill with windshield washing fluid.

Important!

If the brake booster must be replaced on vehicles with chassis end numbers up to 000 723, but the first version of the tandem master brake cylinder does not need to be exchanged, the brake booster under part number 002 430 35 01 must be used.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner File Classeur Archivador	Gruppe Group Groupe Grupo	
104a	Service Information	42/43	Passenger Cars

This Service Information supersedes Service Information No. 104, Group 42/43, of December 1968.

Change: Chassis end number for model 280 SL/8 added.

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Brake Booster -- Models 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8

As of the following chassis end numbers, the brake booster model T 51/1801 with a 9 inch diameter (part no. 000 430 95 30) is being installed in the above mentioned models during series production instead of brake booster model T 51/200 with an 8 inch diameter:

Model	Chassis End No.
280 S/8	015 700
280 SE/8	014 781
280 SE/8 Cp./Conv.	001 504
300 SEL/8	000 979
280 SL/8	006 619

In addition to the new brake booster, which reduces the pedal pressure for the driver, plastic vacuum lines will also be installed during production. The plastic vacuum lines and the check valve must always be replaced as a unit.

In this connection, please refer to Service Information No. 63, Group 00, of August 1968, in which we strongly recommend that prior to removing the cylinder head cover, the vacuum line should be disconnected at both connections.

For replacement installations, only brake boosters of the same type and diameter can be used.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 113	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Cast-Iron Brake Calipers on Model 600

During reconditioning of cast-iron brake calipers, shadows are occasionally noticed in the cylinder walls which look like seized spots. Due to these visual findings entire brake calipers have frequently been replaced.

Upon checking these calipers, after return to us, it was discovered that there were no seized spots, but only pressure marks which had very little depth (maximum: .015 mm).

Please be advised that these pressure marks cannot cause any leaks in the brake calipers, since the piston rings still contact the cylinder walls completely. Therefore, cast-iron calipers with pressure marks on the cylinder walls can still be used.

Naturally, the sealing parts, such as piston rings and dust caps, must always be replaced when the pistons are removed. After reassembly, the brake caliper must be checked for leakage.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 54	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 42/43	PASSENGER CARS

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Brake Pads for Disc Brakes On Our Passenger Cars

For a period of approximately 3 months, brake pads with Jurid 220 linings will be installed in models 220/8 through 300 SEL/8.

The brake pads have the color identification mark blue-green-green-green and are stamped with the approved marking "Jurid 220 FG" on the back side. In addition, since the stamp is not visible with the cover plates installed, all cars have a yellow dot on the front wheel hub caps, and cars with rear disc brakes have an additional yellow dot on the flanges of the rear axle shafts.

A) Valid Brake Pads for Disc Brakes

Attached is a list of brake pads which are approved and available at the present time. Service Information No. 59, Group 42/43, dated August 1967, includes a list of brake pads for models prior to the above mentioned ones, which are still valid but not included in the new list.

We would like to emphasize again that only complete sets of approved and marked brake pads may be installed.

When replacing brake pads on vehicles equipped with disc brakes on the front and rear axles (except model 600), please note that the front and rear axle calipers must be fitted with brake pads of the same type.

The exception to the preceding statement is the combination of Textar V-1431 - front axle, and Textar TP 25 D - rear axle, until the Textar TP 25 D lining is used up. For vehicles participating in sporting events, the above combination is not recommended.

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For model 600, for the front axle, the combination of pads should consist of: inside - Textar TP 25 D, outside - Ferodo DS 5 S, as it has in the past.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Attachment

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APPROVED BRAKE PADS

MODEL	MAKE OF CALIPERS	POSITION	BRAKE PAD REPAIR KIT PART NUMBER	COLOR IDENTIFICATION	APPROVED MARKING STAMPED IN
200, 200 D 230, 230 S	Teves and Girling 17/2	Front	000 586 29 42	green-green-white	Necto 242 FF
		Axle	000 586 37 42	green-yellow-green	Textar V-1431 FF
200, 200 D 230, 230 S	Teves and Girling 17/3	Front	000 586 40 42	green-yellow-green	Textar V-1431 FF
		Axle	000 586 27 42	green-green-white	Necto 242 FF
300 SE	Teves	Front	000 586 29 42	green-green-white	Necto 242 FF
		Axle	000 586 37 42	green-yellow-green	Textar V-1431 FF
		Rear Axle	000 586 25 42	green-green-white	Necto 242 FF
			000 586 41 42	green-yellow-green	Textar V-1431 FF
			000 586 22 42[1)]	green-yellow	Textar TP 25 D FF
250 S, 250 SE, 300 SEL, 250 SL, 220/8, 220 D/8, 230/8, 250/8, 280 S/8, 280 SE/8, 300 SEL/8, 280 SL/8	Teves	Front	000 586 29 42	green-green-white	Necto 242 FF
		Axle	000 586 37 42	green-yellow-green	Textar V-1431 FF
		Rear Axle	000 586 25 42	green-green-white	Necto 242 FF
			000 586 41 42	green-yellow-green	Textar V-1431 FF
			000 586 22 42[1)]	green-yellow	Textar TP 25 D FF

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MODEL	MAKE OF CALIPERS	POSITION	BRAKE PAD REPAIR KIT PART NUMBER	COLOR IDENTIFICATION	APPROVED MARKING STAMPED IN
600		Front Axle	000 586 26 42[2)]	blue-blue-blue green-yellow	Fer DS 5 S EE Textar TP 25 D FF
		Rear Axle	000 586 08 42	blue-blue-blue	Fer DS 5 S EE

1. The Textar TP 25 D FF lining for the rear wheel brake may also be used on the front wheel brake combined with the Textar V-1431 lining.

2. The combination brake pad kit consists of 4 brake pads each with Ferodo DS 5 S EE lining for the inner brake pads and Textar TP 25 D FF lining for the outer pads.

The above mentioned parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 46	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Foot-Operated Parking Brake -- Models 220/8 through 250/8

On the above models, if the brake fluid reservoirs are correctly filled, the red warning light in the instrument cluster should go off when the foot-operated parking brake is released.

If, despite the above conditions, the warning light does not go off, this may be an indication that the pedal of the foot-operated parking brake and/or the intermediate lever below the frame floor is jamming in the guide rail, thus preventing the return spring on the compensating lever from releasing the pedal and intermediate lever to their end positions.

To remedy this trouble, proceed as follows:

1. Thoroughly clean guide rail for intermediate lever below frame floor.

2. Remove cotter pin from guide rail and bend guide rail in accordance with the measurements given in illustration 1.

3. Apply an ample amount of grease to the guide rail and fit a new cotter pin into it.

4. Check to see if warning light goes off.

If warning light still does not go off, proceed to step 5.

5. Slightly bend holder for electric switch contact on carrier toward left. Check to see whether pedal of foot-operated parking brake still contacts stop buffer when released, so that the switch for the warning light does not act as a final stop.

If warning light does not go off, be sure to check the pedal of the foot-operated parking brake for ease of movement.

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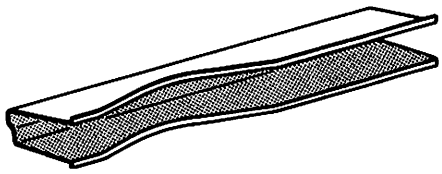
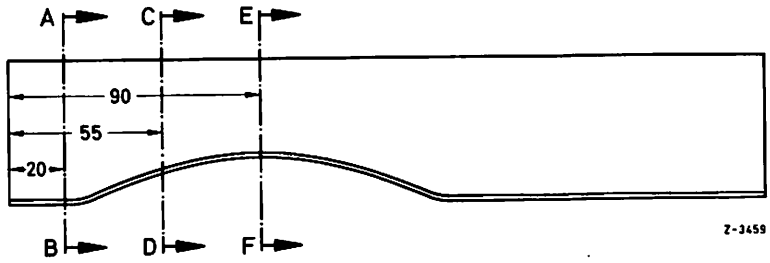


Illustration 1

mm		inches
20	=	0.79
23	=	0.91
24.5	=	0.96
26.5	=	1.04
55	=	2.17
90	=	3.54

Section A-B Section C-D Section E-F

From section E-F, the groove width runs into the existing width.



6. Unhook brake cable and check to see whether pedal can be easily moved from stop to stop.

   If pedal jams, knock the bearing bushing once with a plastic hammer, using a metal hammer on the opposite side to absorb the knock.

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No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
142	SERVICE INFORMATION	42/43	PASSENGER CARS

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Vacuum Pump --
Types 200 D and 220 D/8

To protect the pressure relief bores, the vacuum pump on types 200 D and 220 D/8 is wrapped with adhesive tape at the contact surface between the pump housing and cover prior to shipping from the factory.

Please remove this tape, if still attached, when performing pre-delivery or other service work.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 7	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 42/43	PASSENGER CARS

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Brake Pressure Regulator -- Types 250 S, 250 SE 250 SE Cpe./Conv., 250 SL, 300 SEb, and 300 SEL

Starting with the respective chassis end numbers listed below, the following types are being equipped with modified brake pressure regulators:

Type	Chassis End Number
250 S	068700
250 SE	052712
250 SE Cpe./Conv.	089173
250 SL	005160
300 SEb	002730
300 SEL	002355

The regulating point of the previous version regulator, 568 psi (40 kg/cm^2), has been reduced to 426 psi (30 kg/cm^2) on the modified regulators. At the same time, the diameter of the regulator control piston of the type 250 SL regulator has been reduced from 0.708 in. (18 mm) to 0.629 in. (16 mm); thus, the pressure characteristic curve of the type 250 SL regulator is flatter than that of the other models.

The modified brake pressure regulator for type 250 SL can be identified by a red spot on the adjusting screw (the previous version has a green spot). On the other versions, the regulating point, 30 or 40 kg/cm^2, is stamped on the locking screw (SW 36) for identification purposes.

Test values for the various brake pressure regulators are given on page 2.

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Test Values for Brake Pressure Regulators

Type	Version	Part Number	Approximate Regulating Point psi (kg/cm^2)	Input Pressure psi (kg/cm^2)	Output Pressure psi (kg/cm^2)
250 S - 300 SEL 250 SL	1	000 431 34 12	568 (40)	782.1 (55)	668.3 ± 28 (47 ± 2)
				1422.0 (100)	959.8 ± 42 (67.5 ± 3)
250 S - 300 SEL	2	000 431 35 12	426 (30)	639.9 (45)	526.1 ± 28 (37 ± 2)
				1422.0 (100)	881.6 ± 42 (62 ± 3)
250 SL, 280 SL	2	000 431 36 12	426 (30)	639.9 (45)	490.5 ± 28 (34.5 ± 2)
				1422.0 (100)	732.3 ± 42 (51.5 ± 3)

Present stock of brake pressure regulators (regulating point: 40 kg/cm^2) may be depleted. The modified version will be available through the M-B parts depots as soon as present stock is exhausted.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 130	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 42/43	Passenger Cars

Fort Lee, January 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Girling Dual-Piston Calipers (17/2) -- Installation of Anti-squeak Plates

Complaints of squeaking noises which cannot be remedied by the installation of different pad assemblies are occasionally received on cars fitted with Girling dual-piston calipers. In such cases, anti-squeak plates may be installed in place of the heat insulating plates (7 of illustration 1). When installing anti-squeak plates, however, make sure the open sector of the anti-squeak plate is always facing upward, as shown in illustration 2.

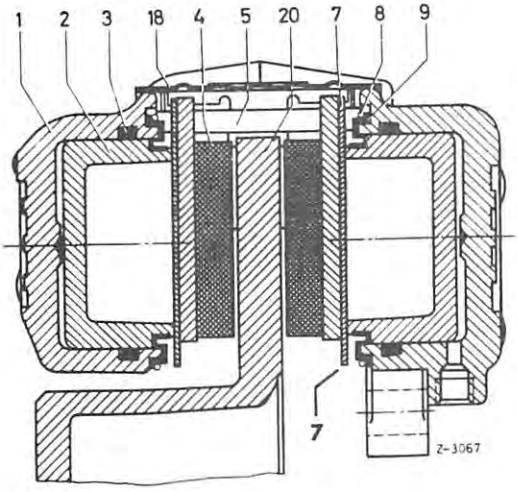

Illustration 1

1. Calipers
2. Piston
3. Piston Ring
4. Pad Assembly
5. Retaining Pin
7. Heat Insulating Plate
8. Clamping Wire
9. Dust Cap
18. Cover Plate
20. Brake Disc

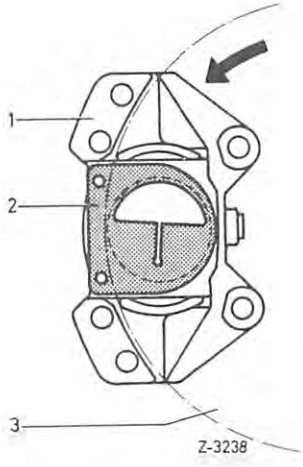

Illustration 2

1. Calipers
2. Anti-squeak Plate
3. Brake Disc

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The anti-squeak plates may be ordered under part number 000 421 04 20 through your M-B Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

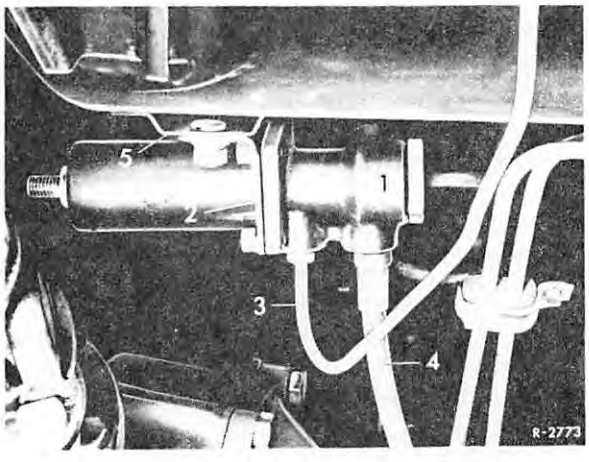
No. 98	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, November 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Checking Brake System for Proper Functioning

In paragraph 001 of Service Schedule E, our instructions are to check the foot and hand brakes for proper functioning. Effective immediately, this check must also include the brake force regulator installed in types 250 S, 250 SE, 250 SE Cpe./Conv., 250 SL, 300 SEb, 300 SEL, and 300 SE Cpe./Conv. (starting August 1965). Additional working time need not be added.



1. Brake force regulator
2. Bracket
3. Brake line from tandem brake master cylinder
4. Brake hose to left rear wheel brake
5. Bracket at frame floor

Checking procedure

1. Drive car over an inspection pit or onto a car lift.

2. With normal engine vacuum in the brake booster, firmly depress brake pedal with about 66 lbs. Then slowly release brake pedal to its normal position while someone else holds a hand on the brake force regulator. If he feels a knock at the switching point, the brake force regulator is functioning normally. This check should be repeated two or three times.

If the knock is not felt, the brake force regulator should be replaced. It must under no circumstances be disassembled, repaired, and reinstalled.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 63	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 42/43	PASSENGER CARS

This Service Information supersedes Service Information No. 93, Group 42/43, dated December 1965.

Fort Lee, November 1967

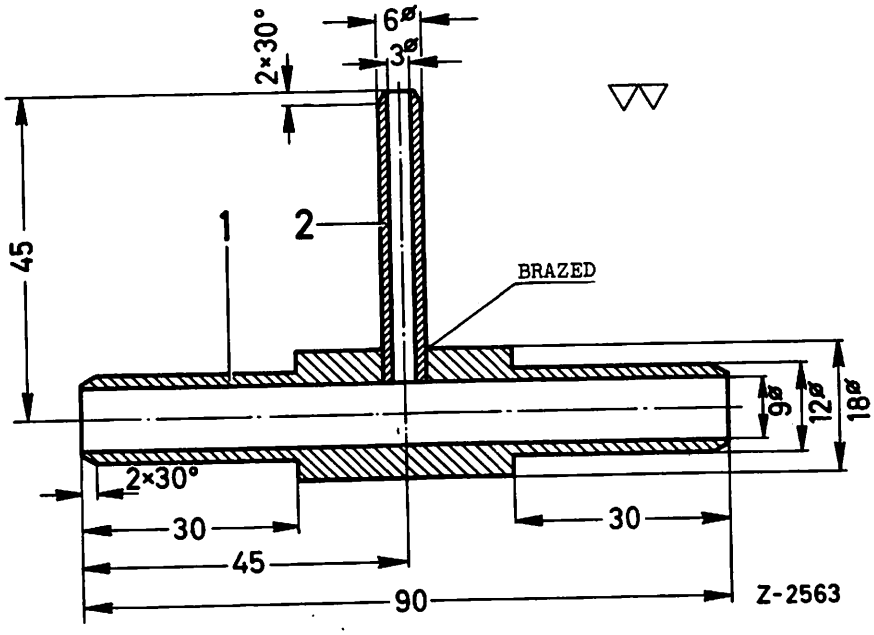
TO OUR MERCEDES-BENZ DEALERS

Subject: Checking and Repairing the Brake System

Service Information No. 93, Group 42/43, dated December 1965, in which we advised you how to check the tandem master brake cylinder and the Type 51 brake boosters, has been revised as follows, with special emphasis on the vacuum supply system.

1. Checking the brake system

a) Connect a vacuum gauge between the intake manifold and brake booster or, if the brake booster has a separate vacuum check valve, between the valve and the brake booster. (On types 190 Dc and 200 D, connect it between the vacuum pump and brake booster.) The required connection may be fabricated in accordance with the drawing below.



1. tube
2. tube

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Conversion Table for Drawing

2 mm = .0787 in.	18 mm = .7086 in.
3 mm = .1181 in.	30 mm = 1.1881 in.
6 mm = .2362 in.	45 mm = 1.7716 in.
9 mm = .3543 in.	90 mm = 3.5433 in.
12 mm = .4724 in.	

b) Connect a suitable high pressure gauge (up to 2000 psi) to a brake caliper or a wheel cylinder. We recommend using an instrument which is equipped with a high and low pressure circuit, such as the TEVES testometer, so that the residual pressure in the brake system can also be measured.

c) Mount a pedal force gauge on the brake pedal.

d) With the engine running, measure the vacuum in the brake booster. With a gasoline engine, the correct vacuum should be achieved by depressing and abruptly releasing the accelerator pedal; with a diesel engine, it should be achieved by maintaining an engine speed of approximately 2,000 rpm's.

If the specified vacuum (see Section 2) is not achieved, first check the O-ring which seals the joint between the brake booster and the tandem master brake cylinder. If necessary, replace the sealing ring. If this does not eliminate the trouble, apparently the vacuum gaskets (secondary gaskets) in the tandem master brake cylinder have been damaged or the diaphragm in the brake booster itself has been damaged. In this case, either the tandem master brake cylinder should be repaired or the booster replaced. (If the booster is replaced, the vacuum check valve must also be replaced - see Service Information No. 57, Group 42/43, of February 1967.)

NOTE: With types 190 Dc and 200 D, please note that temporary variations in the brake booster assist may also be caused by the vacuum pump. (In such cases, repairing the tandem master brake cylinder or replacing the brake booster will, of course, not remedy the trouble.) For instance, the two valves in the vacuum pump may stick to the valve seats due to the formation of gum or other deposits.

Troubles of this nature are difficult to trace, however, because the valves are lifted off their seats as soon as the engine produces sufficiently high vacuum. The vacuum is then normal again, and when checking the brake booster assist, there are no indications of irregularities.

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If the above irregularity is the cause of the trouble, the typical complaint will be about a lack of brake booster assist after the car has been parked for a certain period of time, mainly overnight.

If such a complaint is received, the preceding check-up of the complete brake system can generally be dispensed with. With diesel models, it is sufficient to remove the vacuum pump and clean it thoroughly and to replace the diaphragm and the two plate valves (see Job No. 07-30 in the 3-volume Workshop Manual or the Service Manual for Passenger Cars starting August 1959).

The required parts are included in Repair Kit 000 586 00 43.

On vehicles with gasoline engines, the vacuum check valve should be replaced.

e) Now, depress the brake pedal until the pedal force gauge shows the correct pedal force (see Section 2). With this pedal force, the specified brake line pressure (see Section 2) must be achieved in the hydraulic system. The pedal should be depressed slowly and rapidly during the check, so that any irregularities at the primary sleeves, as well as at the check valves, can be detected.

In case of doubt, the front wheel brake circuit and the rear wheel brake circuit should be checked separately.

2. Measuring values

Type Booster	Vacuum kg/cm^2 (in. Hg)	Pedal Force kg (lbs.)	Brake Line Pressure kg/cm^2 (psi)
T 51/100	0.75-0.8 (22-24)	30 (66.15)	70-75 (995.4-1066.5)
T 51/200			105-120 (1493.1-1706.4)

3. Trouble diagnosis and remedies

Trouble	Cause	Remedy
Not enough brake booster assist due to insufficient vacuum in brake booster	Vacuum hose or connections leaky	Eliminate leaks
	Leaking O-ring between brake booster and tandem master brake cylinder	Replace O-ring

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Trouble	Cause	Remedy
(cont.)	Vacuum gaskets in tandem master brake cylinder damaged	Replace vacuum gaskets
	Leaking sealing ring at brake booster valve cover assembly	Replace brake booster (and vacuum check valve)
	Diaphragm torn	(same as above)
No brake booster assist after car has been parked for some time	Plate valves in vacuum pump sticking	Remove and clean vacuum pump thoroughly in a mild cleaning solvent; replace diaphragm and both plate valves
	Vacuum check valve sticking	Replace vacuum check valve
No or not enough brake booster assist in spite of correct vacuum	Inoperative brake booster	Replace brake booster (and vacuum check valve)
Short brake pedal travel and "hard" pedal	Inoperative check valve in tandem master brake cylinder. No hydraulic pressure builds up in one circuit if pedal is depressed rapidly	Replace check valve
Brake pedal can be slowly depressed. Hydraulic pressure rapidly decreasing when pedal is kept in position	One or both primary sleeves in tandem master brake cylinder damaged	Replace primary sleeves

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 47	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 42/43	PASSENGER CARS

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Vacuum Check Valve for Brake Boosters T 51/100 and T 51/200

In Service Information No. 52, Group 42/43, dated August 1965, we pointed out that when installing brake booster T 51/100 or T 51/200, it is essential that the separate vacuum check valve, part No. 000 431 28 07, also be installed (except in types 190 Dc and 200 D - see Service Information No. 1, Group 42/43, dated January 1966).

If the separate vacuum check valve is not installed, the brake booster diaphragm might be damaged by the penetration of fuel.

Apparently our instructions are not always being followed, since we have found that brake boosters with black adaptors (without vacuum check valve) are being removed after a relatively short service life due to such damage. And, they are being removed from vehicles which were originally equipped with brake boosters with white adaptors (with vacuum check valve), indicating that the separate vacuum check valve was not installed when the brake booster with black adaptor (without vacuum check valve) was subsequently installed.

We, therefore, would like to emphasize again the importance of installing this vacuum check valve, to protect the diaphragm from damage.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 59	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

This Service Information supersedes Service Information No. 20, Group 42/43, dated May 1966.

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Brake Pads for Disc Brakes on Our Passenger Cars

A) Testing brake pads with TEXTAR lining V 1431 FF

As part of a large-scale test, over a period of about 3 months, brake pads with TEXTAR lining V 1431 will be installed in our passenger cars from the following chassis end numbers, respectively:

Type	Position	Chassis End No.
200	Front axle	180094
200 D		333647
230		027461
230 S		102937
250 S	Front and rear axles	042882
250 SE		034240
250 SE Cpe./Conv.		088251
300 SEb		002398
300 SEL		001759
300 SE Cpe./Conv.		009700
250 SL		001223

The brake pads have the color identification green-yellow-green and are stamped "Textar V 1431 FF" on the rear side. In addition, since the stamp is not visible with the cover plates installed, all cars have a red dot on the inner hub cap on the front wheel hub of the front axle, and cars with rear disc brakes have an additional red dot on the flange of the rear axle shaft.

We would like you to inform us of your experiences with this brake lining, with regard to braking action, tendency to squeak, and wear.

When this test is completed, brake calipers will again, until further notice, be fitted with Fadil 77-79 N7 linings (identification mark: NECTO 242-FF).

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B) Valid brake pads for disc brakes

Attached is a list of brake pads which are valid at the present time. Changes which have been made since the last list was issued are noted.

We would like to emphasize again that only brake pads approved by us and only complete sets of them may be installed.

If brake pads are replaced on a vehicle fitted with disc brakes on the front and rear axles (except Type 600), please note that the front and rear axle calipers must be fitted with brake linings of equal quality.

The brake pads which were valid for the TEVES calipers are also valid for the GIRLING calipers, Type 17/2 (two piston design), which have been fitted as a standard since the beginning of this year.

If any complaints about squeaking noises are received, a heat-resistant, permanent lubricant, such as Molykote Paste "U" or Liqui-Moly-Paste 36, should be applied to the areas specified under Job No. 42-10 (see illustrations 42-10/13a and 42-10/22a) in the 3-volume Workshop Manual or the Service Manual for Passenger Cars starting August 1959.

Brake pad rattle with GIRLING calipers, Type 17/3 (three piston design), can be eliminated except for residual noise by installing a wire clip, part No. 000 421 01 91.

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Attachment

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VALID BRAKE PADS

TYPE	MAKE OF CALIPERS	POSITION	BRAKE PAD REPAIR KIT PART NUMBER	COLOR IDENTIFICATION	LINING DESIGNATION (IDENTIFICATION MARK)
190 c, 190 Dc 200, 200 D 230, 230 S [1]	Teves and Girling 17/2	front axle	000 586 06 42 [2]	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 29 42		
			000 586 19 42	green-yellow	Textar TP 25 D FF
			000 586 37 42	green-yellow-green	Textar V 1431 FF
220 b/Sb/SEb 230 SL 200, 200 D 230, 230 S [1]	Girling 17/3	front axle	000 586 10 42 [2]	blue-white	Ferodo DS 31 FF*
			000 586 20 42	green-yellow	Textar TP 25 D FF
			000 586 27 42	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 40 42	green-yellow-green	Textar V 1431 FF
300 SE	Dunlop	front and rear axles	000 586 03 42	yellow-white	Ferodo DS 5 S (FER DS 5 SEE)
			000 586 13 42	yellow-yellow-white	Fadil 77-79 N7 (NECTO 242 FF)
	Teves	front axle	000 586 05 42 [2]	blue-blue-blue	Ferodo DS 5 S (FER DS 5 SEE)
			000 586 06 42 [2]	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 29 42		
			000 586 19 42	green-yellow	Textar TP 25 D FF
		rear axle	000 586 11 42 [2]	blue-blue-blue	Ferodo DS 5 S (FER DS 5 SEE)
			000 586 14 42 [2]	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 25 42		
			000 586 22 42	green-yellow	Textar TP 25 D FF
	Dunlop	hand brake	000 586 02 42	red-yellow	DON 117
				blue-white	Mintex M 50

1) Types 200, 200 D, 230, and 230 S are fitted with either Teves or Girling calipers.

2) These repair kits are no longer available through our Spare Parts Department.

* Not in Pennsylvania.

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TYPE	MAKE OF CALIPERS	POSITION	BRAKE PAD REPAIR KIT PART NUMBER	COLOR IDENTIFICATION	LINING DESIGNATION (IDENTIFICATION MARK)
250 S/SE 300 SEb/SEL 250 SL	Teves	front axle	000 586 06 42[2)]	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 29 42		
			000 586 19 42	green-yellow	Textar TP 25 D FF
			000 586 37 42	green-yellow-green	Textar V 1431 FF
		rear axle	000 586 14 42	green-green-white	Fadil 77-79 N7 (NECTO 242 FF)
			000 586 25 42		
			000 586 22 42	green-yellow	Textar TP 25 D FF
			000 586 41 42	green-yellow-green	Textar V 1431 FF
600	Teves	front axle	000 586 07 42	blue-blue-blue	Ferodo DS 5 S (FER DS 5 SEE)
			000 586 26 42[3)]	blue-blue-blue	Ferodo DS 5 S (FER DS 5 SEE)
				green-yellow	Textar TP 25 D FF
		rear axle	000 586 08 42	blue-blue-blue	Ferodo DS 5 S (FER DS 5 SEE)
		foot-operated parking brake	000 586 09 42	blue-blue-blue-yellow	Ferodo E 533

2) These repair kits are no longer available through our Spare Parts Department.

3) The combination lining kit consists of 4 brake pads with Ferodo DS 5 S lining and 4 brake pads with TEXTAR TP 25 D lining. The brake pads with the Textar lining should be installed on the outer side of the caliper.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 49	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: GIRLING Brake Calipers

The GIRLING calipers of the 1st and 3rd versions, which have an asymmetrical piston arrangement - two small pistons outside and one large piston inside, will now be replaced in production with the GIRLING caliper of the 4th version, which has - similar to the TEVES caliper - one piston of equal size both inside and outside.

Either GIRLING calipers of the 4th version or TEVES calipers can be fitted on the types 200 through 230 S starting with the following chassis end numbers:

200	-	176 225
200 D	-	323 641
230	-	024 823
230 S	-	100 707

In case of repairs, i.e. a leaking caliper, the GIRLING caliper of the 4th version may only be replaced with a caliper of the same version, whereas the ones of the 1st to 3rd version remain interchangeable. Furthermore, only calipers of one make may be installed in a vehicle.

The brake pad repair set for the TEVES caliper can also be used for the GIRLING caliper of the 4th version.

Part Numbers:

Caliper, left (4th version)	- 000 421 97 98
Caliper, right (4th version)	- 000 421 98 98
Repair set (sealing parts) (GIRLING 4th version only)	- 000 586 24 43
Repair set (brake pads) (TEVES & GIRLING 4th version)	- 000 586 29 42 (Fadil 77-79 N7) 000 586 19 42 (Textar TP 25 D) 000 586 37 42 (Textar V 1431)

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 48	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 42/43	Passenger Cars

Fort Lee, August 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Front Axle Brake Calipers — Type 600

The front axle brake calipers on Type 600 were changed from aluminum to cast iron, beginning with chassis end No. 000643. The rear axle brake calipers are still aluminum.

With the new iron calipers, the shim between the piston thrust plate and the brake pad, which was installed to reduce the squealing noises of the disc brake, is no longer necessary. The same result is now achieved by the piston thrust plate which corresponds to the contour of the shim.

Furthermore, the dust cap sealing has been improved by using a coil spring on the piston side.

The lining was changed as well. On the inner side, Ferodo DS 5 S (color marking blue-blue-blue) has been used and on the outer side, Textar TP 25 D (color marking green-yellow). This lining combination is the same as that of the repair kit, part No. 000 586 26 42.

Unlike the aluminum calipers which have brass pistons, the cast iron calipers have steel pistons. Brass pistons must never be installed on cast iron calipers!

Attention:

Both piston versions are very similar. The brass piston can be recognized by its front recess (see arrow in illustration 1), as this section is not chrome-plated.

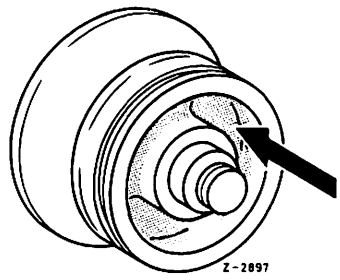

Illustration 1

Vehicles in Repair

When vehicles with factory-installed front axle aluminum calipers are repaired, cast iron replacement calipers may be installed only in pairs; i.e., simultaneously on both the left and right, to maintain the correct weight balance. For instance, if the left

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front aluminum calipers are replaced by cast iron calipers, the right front aluminum calipers must be replaced as well.

The new cast iron calipers have the following part Nos.:

Front axle calipers, left rear	000 421 76 98
Front axle calipers, left front	000 421 77 98
Front axle calipers, right rear	000 421 79 98
Front axle calipers, right front	000 421 78 98

To facilitate correct identification of the calipers, they are marked between the mounting lugs as follows:

LH = left, rear
LV = left, front
RH = right, rear
RV = right, front

When the present stock of aluminum front axle brake calipers is exhausted, only the new cast iron calipers will be available from the parts depots.

Repair instructions for both caliper versions will be published as a supplement to the Workshop Manual Type 600 in the near future.

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Daimler-Benz AG / Export-Service

No. 1	Ordner / File / Classeur / Archivador: SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo: 42/43	PASSENGER CARS

Stuttgart-Untertürkheim, January 1966

To all Mercedes-Benz Agencies

Re: Separate Check Valve for Types 190 DC and 200 D

Our passenger cars, types 190 DC (starting from the types with two-circuit brake) and 200 D, analogously to the types with gasoline engine, have been equipped with a separate check valve in the hose between the vacuum pump and the brake booster. The vacuum pump itself has disc valves.

Continuous running tests and vacuum measurements have shown that the disc valve at the vacuum pump inlet side remains leak-proof also after longer periods of operation and thus guarantees a proper functioning of the brake booster. Therefore the additional separate check valve can be deleted. This change was introduced for type 200 D starting from chassis end No. 254609.

In the case of vehicles of previous production, too, the separate check valve can be removed if, e.g. the valve shows leakage. In this case, instead of the divided vacuum hoses, hoses of 230 mm length have to be installed into L.H.D. vehicles and of 500 mm length into R.H.D. vehicles.

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Daimler-Benz AG / Expert-Service

No. 90	Ordner File Classeur Archivador	SERVICE INFORMATION	Groups Groupe Gruppe Gruppo	42/43	PASSENGER CARS

Stuttgart-Untertürkheim, December 1965

To all Daimler-Benz Agencies

Re: Repairing Calipers

In connection with vehicles equipped with disc brakes the question arises whether it is possible to repair calipers after a longer period of operation. In general the calipers are not very much subject to wear but irregularities may occur due to leaks, corrosion, heavy-going or stuck pistons. All these caliper faults can be remedied in a relatively easy manner.

1. Repairing leaks

Sealing sets with all necessary parts are available for all calipers details under "Spare parts available").

2. Stuck pistons

Stuck pistons must be pressed out by means of high hydraulic pressure. It is best to use a master brake cylinder for this purpose which is operated by means of a respectively long lever arm (to be made by yourselves). For pressing out the calipers must be removed.

3. Removal of corroded material

a) Pistons

Solvents Tri or P 3, a soft brass wire brush or a rough cloth are to be used for this purpose. In case the corroded material cannot be removed with these means and even only small pits are left, new pistons must be installed. For part number see under "Spare parts available".

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b) Cylinder bores

Contrary to the pistons the cylinder bores of the calipers must not be cleaned with gasoline, Tri, or kerosine since these fluids damage the gaskets between the caliper halves. In the bores the material corrodes only up to the groove of the sealing ring, i.e. in that part of the cylinder bore which is not covered by the brake fluid, if the dust cap is not sealed well enough permitting dampness or corroding substances to enter. In this outer part the corroded material may be carefully removed by means of fine emery cloth (grain 380 - 500).

4. Checking the cylinder bores

After the cylinder bores have been cleaned they are to be checked for grooves and wear.

Bore diameter:	Teves calipers	57, 036 mm 56, 984 mm

Note:
In the outer section of the cylinder bore the permissible diameter may be exceeded by a maximum of 0,1 mm.

For carrying out the inspection more rapidly a limit gauge, part No. 111 589 15 21 00, can be obtained. The gauge must not touch the bore.

Girling calipers	large bore	57, 25 mm 57, 20 mm
	small bore	40, 51 mm 40, 46 mm

Note:
No oversize permitted.

5. Assembly

Prior to the assembly all parts - gaskets, pistons, cylinder bores - are to be thoroughly cleaned with spirit. The space below the dust cap should be sufficiently provided with ATE brake cylinder paste.

In this connection we want to point out once more that no further repairs must be carried out, especially the caliper halves must not be disassembled (see also Workshop Manual Passenger Car Types as of August 1959, Job No. 42-10 to 42-13).

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6. Checking for leaks

After the calipers have been mounted they must be subjected to a high and low pressure leak test (see also Workshop Manual Passenger Car Types as of August 1959, Job No. 42-21, section E).

Enclosure

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No. 61	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

Stuttgart-Untertürkheim, September 1965

To all Daimler-Benz Agencies

Re.: Type 600 - Brakes
Repairing the Parking Brake Calipers
Removing and Re-Installing the Brake Cables

This Service Information contains working instructions for repairing parking brake calipers as well as for removing and re-installing brake cables.

Enclosure

Daimler-Benz Aktiengesellschaft

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REMOVING, REPAIRING AND RE-INSTALLING PARKING BRAKE CALIPERS

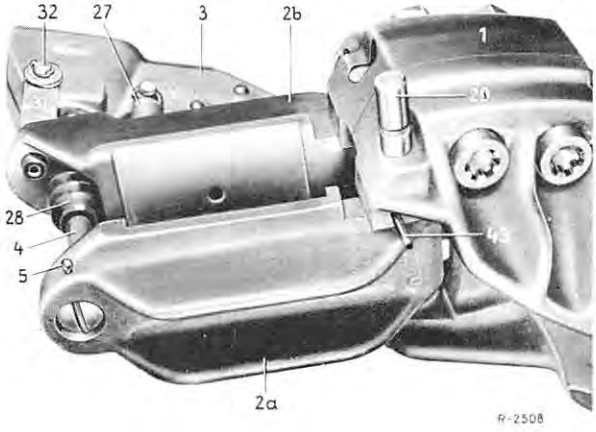
Removing and disassembling

1. Remove calipers (see Workshop Manual Type 600, Job No. 42-4, Section B).

2. Remove brake pads of parking brake (see Workshop Manual Type 600, Job No. 42-6, Section C).

3. Knock tightening pin (43) out of calipers, remove both joint pins (29) and take off parking brake calipers (Illustration 1).

4. Pull cotter pin (5) out of outer lining support (2a) and screw off adjusting screw (4) (Illustration 2).



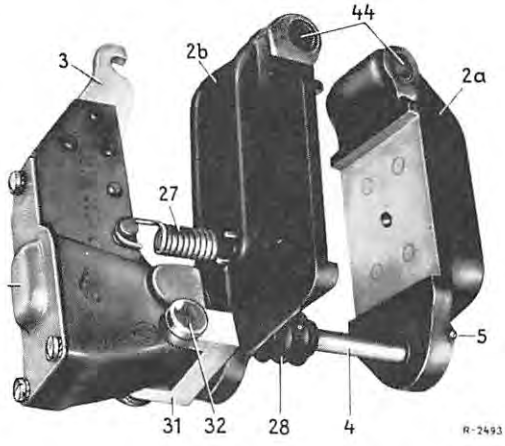


Illustration 1

1	Calipers
2 a	Outer lining support
2 b	Inner lining support
3	Tightening lever
4	Adjusting screw
5	Cotter pin
27	Release spring
28	Rubber sleeve
29	Joint pin
31	Mounting bracket
32	Collar stud
43	Tightening pin

Illustration 2

2 a	Outer lining support
2 b	Inner lining support
3	Tightening lever
4	Adjusting screw
5	Cotter pin
27	Release spring
28	Rubber grommet
31	Mounting bracket
32	Collar stud
33	Cover plate
44	Nidabronce bushing

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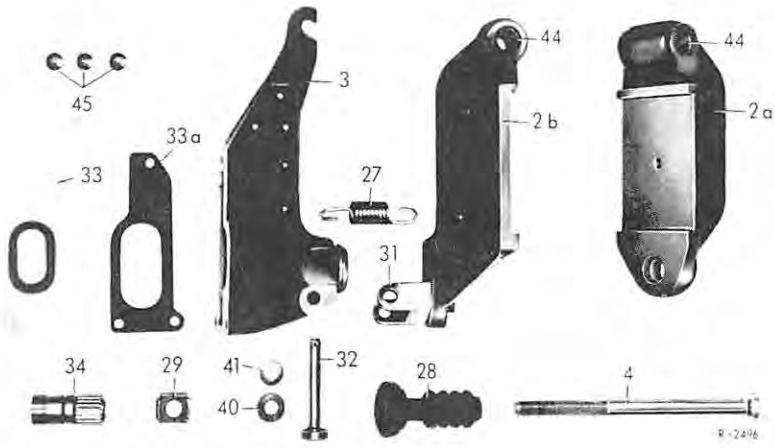

Illustration 3

2 a	Outer lining support
2 b	Inner lining support
3	Tightening lever
4	Adjusting screw
27	Release spring
28	Rubber sleeve
29	Spring plate
31	Mounting bracket
32	Collar stud
33	Cover plate
33 a	Paper seal
34	Adjusting sleeve
40	Shim
41	Spring washer
44	Nidabronce bushing
45	Slotted screw with toothed washer

5. Disconnect release spring (27) from tightening lever (3) and inner lining support (2b).

6. Pull cotter pin out of collar stud (32), remove both shims (40) and (41) and then collar stud from tightening lever (3) and mounting bracket (31) (Illustrations 2 and 3).

7. Remove rubber grommet (28) from collar of tightening lever (3).

8. Remove cover plate (33) with paper seal (33a) from tightening lever after having screwed off the slotted screws (45).

9. Remove adjusting sleeve (34) with spring plate (29) from tightening lever (Illustration 4).

10. Clean all parts thoroughly.

Check

11. Check wear of bushings (44) in lining supports (2a) and (2b). Knock out bushings, if necessary, press in new bushings and grind to dimension required (for values see Workshop Manual Type 600, Job No. 42-0).

12. Check shackle (35) and ratchet (37) in tightening lever (3) (Illustration 6).

Note:

If one of the springs, the shackle, or ratchet has been damaged, the tightening lever must be replaced completely.

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Assembling

13. Place spring plate (29) on adjusting sleeve (34) (Illustration 4).

14. Press shackle (35) in tightening lever (3) downward. Insert adjusting sleeve (34) into tightening lever and see to it that the two angular surfaces of the spring plate reach over the joint piece (30).

15. Fill recess in tightening lever (3) with grease (anti-friction bearing grease) and mount cover plate (33) with new paper seal (33a) (Illustration 2).

16. Place new rubber sleeve (28) on collar of tightening lever. Insert tightening lever into mounting bracket (31) of lining support (2b) leading the rubber sleeve through the bore in the tightening lever. Mount tightening lever with collar stud (32) to lining support (Illustration 5).

Note:

The cotter pin (42) is provided with a shim (40) and a spring washer (41).

17. Screw adjusting screw (4) into tightening lever (3) for several turns. Grease shank of adjusting screw slightly in order to prevent rubber sleeve (28) from turning with the adjusting screw. Insert cotter pin (5) into outer lining support (2a) (Illustration 2).

18. Connect release spring (27) with tightening lever (9) and inner lining support (2b).

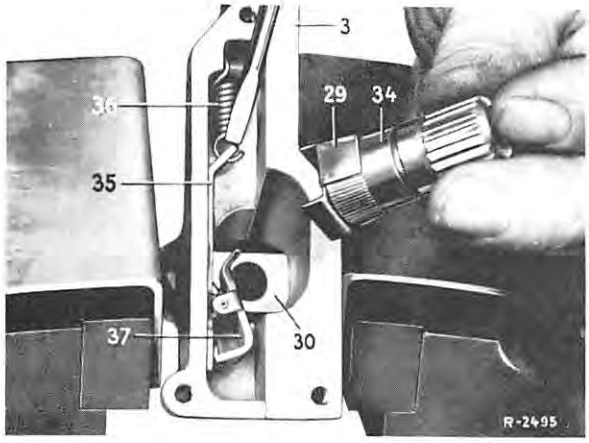

Illustration 4

3	Tightening lever
29	Spring plate
30	Joint piece
34	Adjusting sleeve
35	Shackle
36	Release spring
37	Ratchet

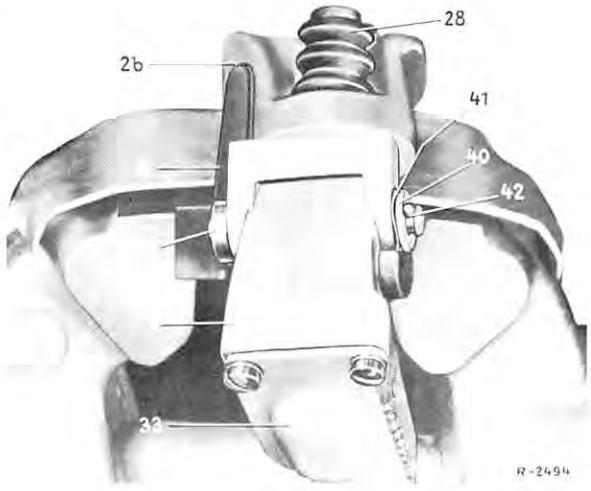

Illustration 5

2 b	Inner lining support
3	Tightening lever
28	Rubber sleeve
31	Mounting bracket
32	Collar stud
33	Cover plate
40	Shim
41	Spring washer
42	Cotter pin

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19. To joint pin (29) apply Molykote paste and mount parking brake calipers to calipers (1). Secure joint pin with tightening pins (43) (Illustration 1).

20. Install calipers (see Workshop Manual Type 600, Job No. 42-4, Section C).

21. Check functioning of automatic adjusting device of hand brake calipers. For this purpose actuate hand brake. At a distance of approx. 9 mm measured from the brake cable mounting point to the calipers the automatic adjustment must be effected. Each adjustment can be noticed by a slight clicking noise caused by the ratchet moving into the next tooth of the adjusting sleeve.

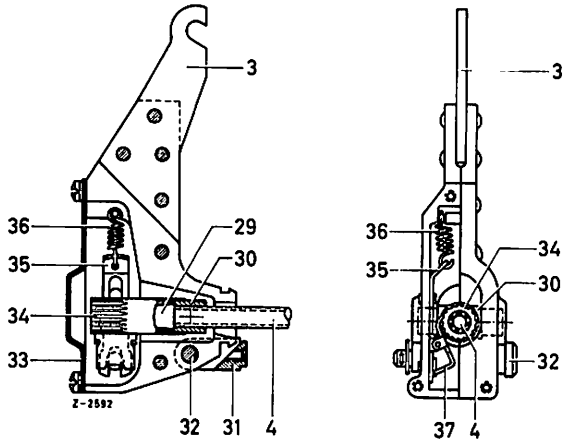

Illustration 6

3 Tightening lever
4 Adjusting screw
29 Spring plate
30 Joint piece
31 Mounting bracket
32 Collar stud with spring washer, shim and cotter pin
33 Cover plate
34 Adjusting sleeve
35 Shackle
36 Release spring
37 Ratchet

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A) Front brake cable

Removing

1. Remove cover (3) at frame floor (see Workshop Manual Type 600, Job No. 42-23, Illustration 42-23/1).

2. Disconnect brake cable from foot-operated parking brake and remove spring clamp.

3. Remove brake cable from rubber grommet (duct to inside of vehicle).

4. Screw wing nut (6) off the tightening screw (7). Disconnect intermediate lever (2) from frame floor (1) (Illustration 7).

5. Remove intermediate lever with front brake cable (3) from the opening of the frame floor. Loosen hexagon nut (4), remove collar stud from intermediate lever, screw fork head and hexagon nut off the threaded piece of the brake cable. (Illustration 7).

6. Disconnect spring clamp (2) from bracket (3) at frame floor and pull brake cable out of tunnel (Illustration 8).

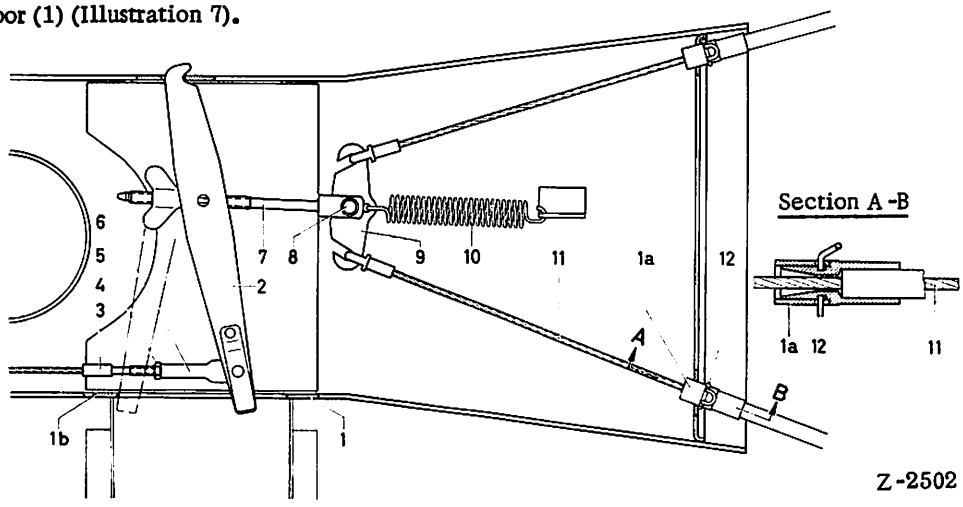

Illustration 7

1 Frame floor
1 a Bracket for brake cable
1 b Stop at frame floor
2 Intermediate lever
3 Front brake cable
4 Hexagon nut
5 Fork head
6 Wing nut
7 Tightening screw
8 Collar stud
9 Compensating lever
10 Release spring
11 Rear brake cable
12 Spring clamp

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Installing

7. During installation attention should be paid that the brake cable duct to the inside of the vehicle is properly sealed. Furthermore, the end of the brake cable, which is pushed into the frame floor bracket, should be provided with a coat of graphite or Molykote in order to prevent it from rusting and sticking.

8. Check and/or correct adjustment of foot operated parking brake prior to connecting the brake cable with the intermediate lever (see Workshop Manual Type 600, Job No. 42-23, Section A).

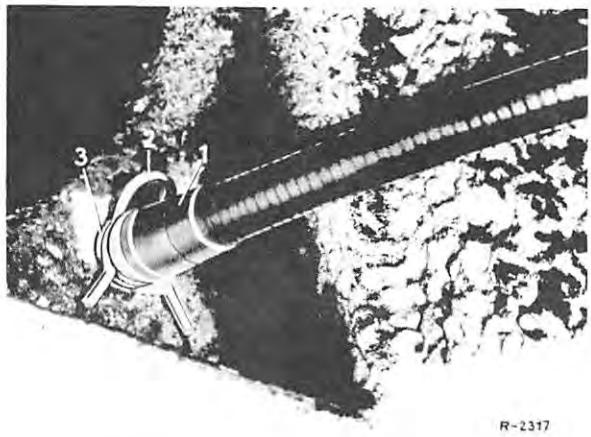


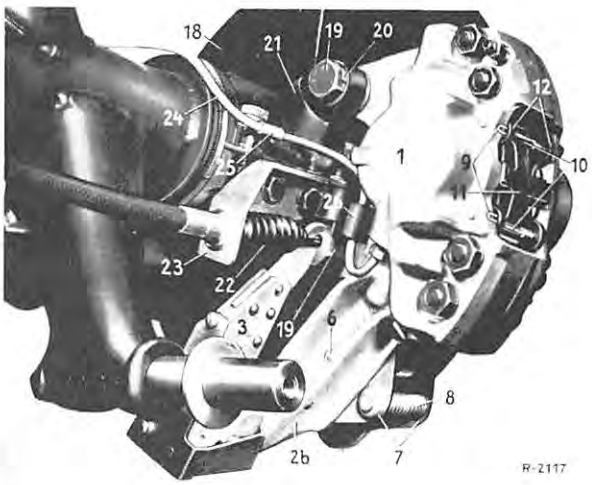
Illustration 8

1 Front brake cable
2 Spring clamp
3 Bracket for brake cable at frame floor

B) Rear brake cable

1. Screw off bracket (23) of rear brake cable at bearing housing (21) for brake support and disconnect brake cable from tightening lever (3) (Illustration 9).

2. Remove cover (3) from frame floor (see Illustration 42-23/1, Workshop Manual Type 600, Job No. 42-23).



3. Screw wing nut (6) back completely and disconnect brake cable (11) from compensating lever (see Illustration 7).

Illustration 9

1 Calipers
2 b Inner lining support
3 Tightening lever
6 Hexagon nut on cylindrical screw
7 Brake pad (parking brake)
8 Thrust spring
9 Securing lug
10 Retaining pin
11 Cross spring
12 Brake pad (service brake)
18 Cover plate
19 Hexagon dowel bolt
20 Safety plate
21 Bearing housing
22 Rubber sleeve
23 Bracket for brake cable
24 Brake line
25 Pipe clamp
26 Rubber ring

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4. Disconnect spring clamp (2) from frame floor bracket and remove brake cable (1) (Illustration 10).

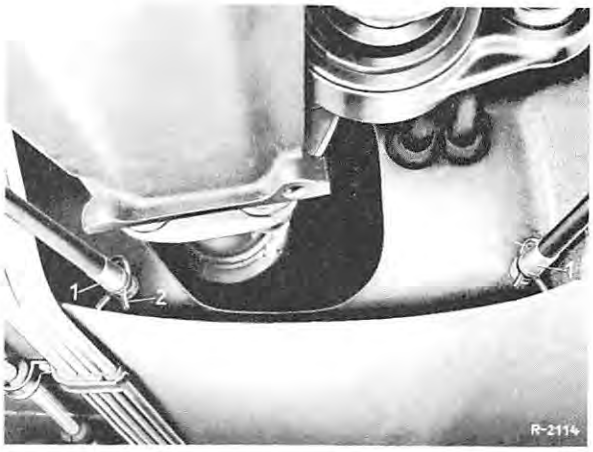

Illustration 10

1 Rear brake cable
2 Spring clamp

Installing

5. Prior to installation the brake cable ends, which are pushed into the frame floor brackets, are to be provided with a coat of graphite grease or Molykote in order to prevent them from rusting and sticking.

6. After the installation of the brake cable the adjustment of the foot-operated parking brake should be checked and corrected, if necessary (see Workshop Manual Type 600, Job No. 42-23, Section A).

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service information

Daimler-Benz AG / Export-Service

No. 56	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 42/43	Passenger Cars

Stuttgart-Untertürkheim, August 1965

To all Daimler-Benz Agencies

Re: Hand Brakes of Types 200, 200 D and 230

Due to the modified mounting of the propeller shaft intermediate bearing the mounting of the hand brake intermediate lever of the above vehicles at the frame floor has been shifted. The central brake cable is mounted in the last hole but one (seen in driving direction) of the multi-hole lug at the intermediate lever. If the cable travel is increased due to wear of the linings or even if the hand brake is pulled very hard this involves the risk of the leaf spring jumping out of the U-guide so that the intermediate lever is kept in this position. With these vehicles the bolt at the intermediate lever has to be shifted immediately to the last hole of the multi-hole lug. Then the wing nut should be adjusted in such a way as to allow the pawl rod to be pulled out, with medium force, (approximately 40 kg) by 5 or 6 of the 16 notches until the final stop.

The following vehicles are concerned (chassis end No.):

Type	200	from 130558 (production start) to 131674
	200 D	from 225648 (production start) to 227085
	230	from 000001 (production start) to 000284

We should like to ask you to take over the cost for the small amount of time required for shifting the central brake cable yourselves.

The following vehicles (chassis end No.) are already supplied ex works with the bolt in the last hole of the multi-hole lug:

Type	200	from 131675 to 132582
	200 D	from 227086 to 229244
	230	from 000285 to 000791

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The vehicles produced thereafter have been equipped with a central brake cable which is 25 mm longer and has the part No. 110 420 34 85. Here the bolt can be inserted either into the last hole or the last hole but one of the multi-hole lug.

If the intermediate lever gets also stuck now and then on vehicles the bolt of which has already been shifted to the last hole (e.g. due to a combination of unfavourable tolerances), the longer central brake cable, part No. 110 420 34 85, should be subsequently installed.

Daimler-Benz Aktiengesellschaft

s/ppa. Pfeiffer s/ppa. Mauthe

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Daimler-Benz AG / Export-Service

No. 52	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 42/43	Passenger Cars

This Service Information renders invalid:

Service Information No. 57, File Service Information Group 42/43, dated October 1964
Service Information No. 33, File Service Information Group 42/43, dated May 1965

Stuttgart-Untertürkheim, August 1965

To all Daimler-Benz Agencies

Re: Separate Vacuum Non-return Valve for Booster Brake T 51

Since the introduction of the separate vacuum non-return valve for booster brake T 51 difficulties have been encountered as our repeated instructions referring to the subsequent installation have obviously not been observed.

It is, therefore, the purpose of this Service Information to draw your attention once more to the various aspects which we have compiled below.

The separate valve is installed in series production into the individual vehicle types as of chassis end numbers:

Type	190 C	096158	Type	220 SEB	066097
	190 DC	156102		220 SEB/C	066143
	220 B	060922		230 SL	005685
	220 SB	135193		300 SE	006869

The non-return valve installed in the vacuum hose prevents fuel from entering the booster brake.

The booster brake itself is no longer equipped with a non-return valve: a valveless black adaptor is mounted instead.

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Our spare parts department now delivers booster brakes without non-return valves only. If such a unit (to be recognized by the black adaptor) is to be installed into a vehicle of previous design as a replacement part, the separate non-return valve, part No. 000 431 28 07 must in any case be subsequently installed into the vacuum hose as otherwise the functioning of the brake system will definitely be impaired.

The vacuum hose installed is to be divided 150 mm behind the suction pipe or vacuum pump adaptor with left-hand drive vehicles and 150 mm ahead of the adaptor of the booster brake with right-hand drive vehicles, and the hose section to the fuel deflector or vacuum line is to be shortened by 30 mm. Then the separate non-return valve is installed by means of hose clips part No. 900262 005100 (WSN 5 N 262) and hose strap part No. 900263 005000 (5 x 0.3 N 263) at the point where the hose was divided. The arrows on the non-return valve must point in suction pipe direction and the white adaptor in booster brake direction.

This improvement - more safety against fuel entering the booster brake - is also of advantage to all previous 220 B and 220 SB vehicles with two-circuit brakes. We should like to ask you, therefore, once more to subsequently install the above valve into all vehicles of type

220 B as of chassis end No. 048977 to 060921
and 220 SB as of chassis end No. 108750 to 135192

This can be done as soon as service or repair jobs are carried out. The non-return valve (white) in the booster brake must not be removed, i.e. the respective vehicle will have two non-return valves from now onward.

For the subsequent installation of the additional vacuum non-return valve into vehicles of type 220 B and 220 SB we take over a maximum of 30 decimal minutes = 20 normal minutes as a guarantee settlement besides the net costs of material. Please submit collective guarantee claims to us for acceptance, referring to this Service Information. The costs incurred should be listed separately for type 220 B and 220 SB, stating the chassis numbers.

The non-return valves, part No. 000 431 28 07, can be ordered in the usual manner from our Department ET-VEX, Stuttgart-Untertürkheim Plant.

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s/ppa. Pfeiffer s/ppa. Mauthe

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Article No.	File	Group	Application
115	SERVICE INFORMATION	46	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: STEERING LINKAGE - ALL PASSENGER CAR MODELS, EXCEPTING MODEL 600

Currently, the Pitman and idler arms on all passenger cars excepting Model 600 are being secured with self-locking nuts (Nylstop/Polystop) in production.

These self-locking nuts are not reusable and are not available from our Parts Depots. Therefore, should steering linkage removal be necessary, castle nut, Part No. 120 990 01 55, with cotter pin, Part No. 000094 002120, should be used as a replacement for re-installation.

NOTE: A HOLE IS PRE-DRILLED IN BALL JOINT THREADS TO FACILITATE COTTER PIN INSERTION.

Castle nuts must be tightened to 25 ft. lbs. (3.5 kpm).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 12	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 46	PASSENGER CARS

FORT LEE, MAY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: STEERING LOCK - MODELS 220 D/8 TO 600

Recently, the legislature in the U.S. required a steering lock, which definitely locks the steering column when the ignition key is removed. Also required is a warning buzzer which sounds if the driver's door is opened while the ignition key is fully engaged in the lock (in position 1 or 0).

Because of these regulations, the previous parking position "steering lock unlocked, ignition key can be removed" was no longer admissible and was, therefore, omitted.

For reasons of uniformity, this steering lock is installed in production in all vehicles.

The previous position is now only used for installation of the lock and for radio operation. In position "1", the key can no longer be removed.

INSTALLATION INSTRUCTIONS

1. When removing the lock cylinder, the ignition key must be turned to position "1".
2. In this position, the lock cover sleeve can be lifted to the bottom edge of the key.
3. After turning back the key to position "0", the ignition key can be taken off together with the cover sleeve.
4. The key must now be reinserted and turned by 90°. In this position, the fixing pin of the lock cylinder can be impressed and the lock cylinder together with the key pulled out.

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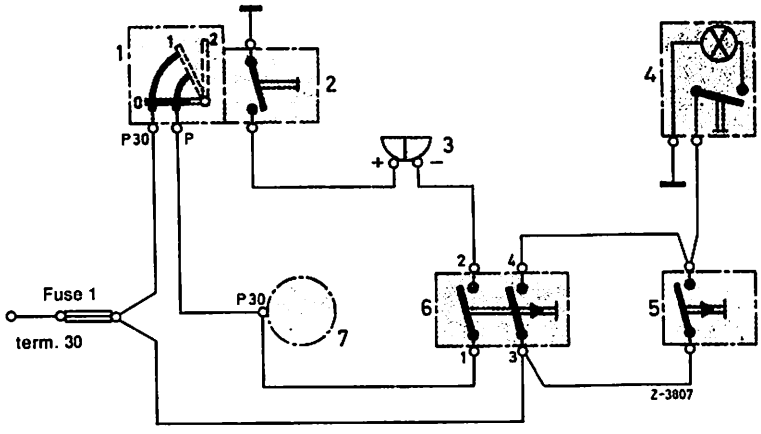
WARNING BUZZER

The wiring diagram below shows the wiring of the warning buzzer. As you can see, the buzzer will only sound if the contact points of both the door contact switch and the buzzer control switch (attached to steering lock) are closed. The buzzer is located on the left side underneath the dash.



ILLUSTRATION

1. Ignition switch
2. Warning switch
3. Warning buzzer
4. Dome light
5. Door contact switch
6. Door contact switch (driver's door)
7. Light switch

PARTS LISTING

DESCRIPTION	PART NUMBER
Buzzer for all types	000 542 23 23 or 000 542 24 23
Door contact switch all types except 280 SE C/C and 250 C	000 821 13 52
Door contact switch for 280 SE C/C and 250 C	000 821 14 52
Buzzer contact switch	002 542 13 17

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Article No.	File	Group	Application
MB-T 255	SERVICE INFORMATION	46	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: POWER STEERING HIGH PRESSURE OIL PUMP LEAKAGE

A number of power steering pumps returned due to leakage were inspected. It was found that only one of thirty-four checked was actually leaking, and only slightly.

We believe that the high exchange rate of these pumps is primarily due to inaccurate diagnosis. Noises which originate from the system are commonly assumed to be caused by oil pump leakage. A leakage check may be performed by simply removing the power-steering reservoir cap and observing the oil. If the oil is milky or foamy, air is in the system. Should this be the case, proceed as follows:

1. Check and tighten all line fittings. Bleed the system.

2. Check the power steering pump pulley shaft seal. Replace if necessary.

NOTE: Since October 1969, improved seal rings have been available for installation. (Those made available from September to December 1969 may be identified by a white dot). This improved seal should prevent leakage and is included in repair set, part number 000 586 20 46.

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In the event the system does not leak, the following noise sources should be checked:

3. Problem: Squeaking when the steering is turned completely to the left or right.

   SOURCE: Fan belts are slipping under load and should be tightened.

   CAUTION: Do not overtighten. Adjust to 5/16" (7mm) deflection under a load of 13 lbs (6kp).

4. Problem: Light groaning noises when the steering is turned completely to the left or right. (System does not leak, no milky or foamy oil, fan belts correctly adjusted). This is a hydraulic noise in the high pressure oil pump (high pressure relief valve).

   Solution: Presently no solution for this noise is available. Noise has no effect upon power steering operation.

Please utilize the above instructions when checking power steering systems. It is doubtful that noises caused by leakage at the power steering pump will occur on pumps installed since September 1969. Previous version pumps can normally be repaired by installation of the new radial seal ring.

To facilitate the use of the power steering pump test device part number 111 589 14 21 00 on all models, a new adapter pipe part number 115 589 13 21 05 has been manufactured. Dealers having possession of the test device, part number 111 589 14 21 00, need only order the adapter. However, the complete test device including the adapter may be ordered under part number 115 589 13 21 00. To prevent pump damage a puller for the pulley is also available and may be ordered under part number 108 589 02 33 00.

Tools may be ordered from our Mercedes-Benz Parts Depot, 400 Alfred Avenue, Teaneck, New Jersey 07666.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 11	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 46	PASSENGER CARS

FORT LEE, MAY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: POWER STEERING PUMP

Occasional complaints are made of crackling noises in the power steering system, which in spite of repeated bleeding, can only be eliminated for a short period.

We noticed that probably air can be drawn in via the seal ring on the drive shaft of the pump.

Power steering pumps are now installed which feature a seal ring with an increased tension of the worm spring in the sealing lip. They are marked with a white color dot during a production period of 3 months.

In cases of complaints on pumps of the previous version, the seal ring can be removed from the pump and an improved one fitted. This item is included in the repair kit, Part No. 000 586 20 46, which can be ordered from our Mercedes-Benz Parts Depots.

We would also like to point out that the connection on the pump housing (pipe elbow) for the hose from the oil reservoir may only be tightened with a maximum torque of 29 ft. lbs. (4 kpm)

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No.	MB-T 164	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	46	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: LEAKAGE ON POWER STEERING PUMP -- MODELS 220/8 THROUGH 300 SEL/8 6.3

Leaks on the power steering pump can be eliminated by using the newly designed seal kit, Part No. 000 586 20 46.

Instructions about the removal, installation, checking and repair of the high pressure oil pump are given in Service Manual W 114/115, page 46-20/1 to 20/5 and Service Manual, August 1959, page 46-28/2 to 28/4.

The seal kit may be ordered through our Mercedes-Benz parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 46	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Steering Wheel Lock - Installation and Warranty Handling - All Models except Model 600

In Service Information No. 27, Group 0, of December 1968, you were informed of the installation and warranty procedures for the steering lock assembly for models 200 through 300 SEL/8.

In this article we wish to additionally advise you that the complete steering lock (which consists of three components) entered production as standard equipment together with the safety steering system (on our Phase I/68 models) as of the following chassis end numbers:

MODEL	CHASSIS END NO.
200 D	358 854
200	190 318
230	034 217
230 S	107 890
250 S	058 444
250 SE	045 294
250 SE Cp/Conv.	088 725
250 SL	002 980
300 SE	002 590
300 SEL	002 131
300 SE Cp/Conv.	009 796

In all Phase II/68 models (220/8 through 300 SEL/8) the 3-part steering wheel lock is standard equipment.

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The complete steering lock consists of the following three components, each of which can be replaced separately:

I. Lock cylinder with appropriate keys
II. Ignition starter switch (electrical part)
III. Steering lock (mechanical part)

In older vehicles the steering locks consisted of two components:

I. Steering lock with lock cylinder (mechanical part)
II. Ignition starter switch (electrical part)

NOTE: Consult your Spare Parts books for the part numbers applicable for the different models.

May we point out once again that in the case of warranty or repair, only the damaged component is to be replaced.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 129	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Steering Idler Arm -- Model 280 SL/8

Since the beginning of the current series production of model 280 SL/8, a maintenance-free steering idler arm is being installed at the factory. (In this connection, also refer to Service Information No. 117, Group 46, of February 1969, issue MBNA 3/69).

Therefore, during repair work or for subsequent installations of the steering idler arm, the following should be adhered to:

A. Model 280 SL/8 with Power Steering

When installing the steering idler arm, part no. 108 463 03 10 (identification no. 804), a steel washer, part no 115 463 00 52 (thickness: .237" or 3.5 mm) must be placed between the steering idler arm (2) and the thrust washer (4) since the thickness of the power steering idler arm is only .79" (20 mm) in the area of the hole for the hex head screw (illustration 1).

B. Model 280 SL/8 with Standard Steering

On model 280 SL/8 with standard steering, the steering idler arm, part no. 108 463 01 10 (identification no. 801) is .98" (25 mm) thick in the area of the hole. For this reason the steel washer should not be used.

IMPORTANT!

After installing the steering idler arm, make sure that the thread of the hex head screw is protruding beyond the self-locking hex nut, since only then proper locking is assured.

The self-locking hex nut (9, illustration 1) can only be used once for safety reasons, as the self-locking action is lost when re-using it.

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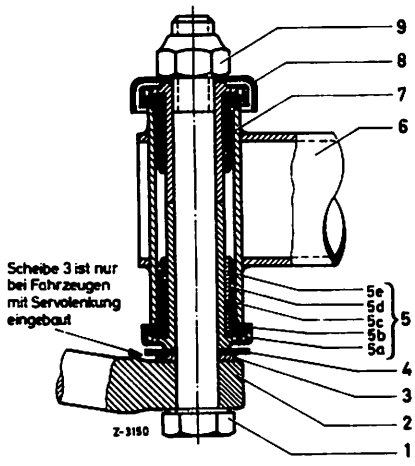

Scheibe 3 ist nur bei Fahrzeugen mit Servolenkung eingebaut = Steel washer (3) is only installed in vehicles with power steering.

Illustration 1

1. Hex head screw
2. Steering idler arm
3. Steel washer
4. Thrust washer
5. Lower rubber bushing
5a. Washer
5b. Steel washer
5c. Rubber bushing
5d. Sleeve
5e. Bushing
6. Pivot bearing
7. Upper rubber bushing
8. Dust cap
9. Self-locking hex nut

Be sure to also observe this information when subsequently installing a power steering unit into model 280 SL/8.

The required parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 117	Service Information	Group 46	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Maintenance-free Bearing of the Steering Idler Arm -- Models 250 S through 300 SEL/8 6.3 (Model Series W 108, 109, 111 Cp/Cv and 113)

On the above mentioned models, as of January 1968, a maintenance-free bearing of the steering idler arm is being installed at the factory during series production.

NOTE: Body shells available for this model series are also equipped with the maintenance-free bearing of the steering idler arm for manufacturing reasons.

In this connection, please refer to Spare Parts Information No. 158, Section VII, of July 24, 1968, entitled "Complete Body Shells".

In the case of repairs of this nature, on vehicles of the above type manufactured prior to January 1968, we recommend installing the new steering idler arm with maintenance-free bearing, the cost of which is essentially lower then that of the previously used type. The parts required for installation are listed below:

Parts Required	Part Number	Notes
Steering idler arm	108 463 03 10	
Bearing	111 460 26 38	
Parts set	114 586 00 46	Consisting of: 2 plain rubber bearings 1 steel washer 1 dust cap 1 hex-head screw 1 hex nut
Protective plate	108 463 00 90	
Bracket	111 463 11 40	

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Also, when replacing a body frame side member or the front end assembly on models 250 S through 300 SEL/8 6.3 (manufactured prior to January 1968) we recommend, in all cases, that the new maintenance-free bearing of the steering idler arm be installed and welded into place.

To determine the correct location and exact positioning of the new bearing, a special tool, part no. 108 589 06 23 00, is available, upon special request, which is to be used while the vehicle is being supported on a "CELETTE" body aligning bench or frame floor measuring gauge.

The required parts are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 114	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Power Steering -- Models 220/8, 220 D/8, 230/8, 250/8, 250 SL and 280 SL/8 (W 113/114/115)

When driving on rough roads, a noise may occasionally be noticed coming from the steering unit column on models of the above mentioned types (with power steering) up to the following chassis end numbers:

Model	Chassis End No.
220 D/8	000 360
220/8	000 130
230/8	000 250
250/8	002 200
250 SL - from chassis end no. 002 980 up to -	005 194
280 SL/8	000 145

This noise, which can be eliminated by utilizing the following procedure, has no influence on the proper functioning of the power steering unit.

Procedure

1. Remove the rubber grommet (41) from the cover plate (34) and turn the steering wheel until the Allen head screw of the universal joint can be unscrewed through the bore in the cover plate.

2. Replace the removed Allen head screw (8 x 30) with Allen head screw 8 x 25 8G, part no. 000912 008055, which is shorter by .20 inches (5 mm).

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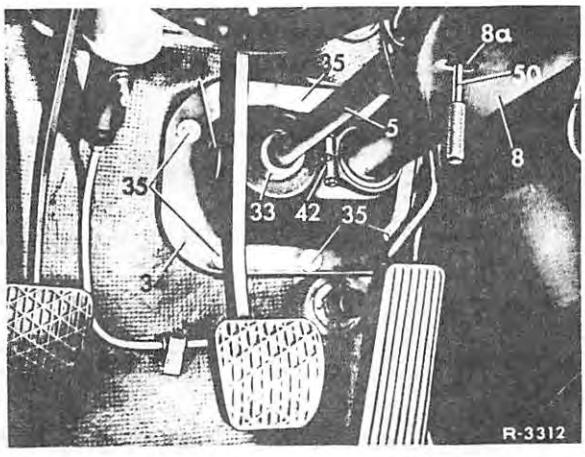

Illustration 1

5. Steering column
8. Steering column jacket
8a. Mounting bore in column jacket
33. Rubber sleeve
34. Cover plate
35. Hex head screws
41. Rubber grommet
42. Clamping screw
50. Mounting pin

3. Also replace, from the engine compartment, the Allen head screw on the lower side of the universal joint with an Allen head screw of the shorter version.

The Allen head screw 8 x 25 8G (shorter version) is available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 53	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS Fort Lee, July 1968

Subject: Power Steering Oil Pump

This will inform you about modifications which have been made on the power steering pump and its mounting support.

1. Power Steering Pump

The drive shaft of the power steering pump, up to now, had a cylindrical seat for the mounting of the belt pulley. As of the following chassis end numbers, a power steering pump with a conical seat for the belt pulley will be installed:

Model	As of Chassis End No.
220/8	000 001
220 D/8	000 001
230	039 780
230/8	000 185
230 S	110 656
250/8	001 942
250 S	072 050
280 S/8	000 057
250 SE	054 901
280 SE/8	000 075
280 SE C/8	000 072
280 SL/8	000 105

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The lower .39 inch (10 mm) diameter bore on the oil pump housing has been modified to a M 10 (10 mm) taphole. In this position, the pump is mounted in the support with a trunnion screw, part No. 127 990 01 01, thus eliminating the use of the nut and lockwasher.

The belt pulley with the previously used cylindrical bore was tightened with a 1/2" nut. On the new design a hex nut M 14 x 1.5 is used.

2. Belt Pulley

In accordance with the modified drive shaft, the belt pulley has a conical mounting bore. In order to remove the belt pulley, the radiator must be dismounted and the belt pulley removed with a conventional 2-claw puller.

3. The quality grade of the screws used to mount the support bracket for the power steering pump on the crankcase was changed from 8 G to 10 K, together with the above mentioned modifications.

When carrying out any jobs on the power steering pump, we recommend using mounting screws of quality grade 10 K. The part numbers and tightening torque values for both screws are listed below:

Mounting Screw	Part No.	Tightening Torque Value
8 G	000912 010043	36.17 ft. lbs. (5 mkp)
10 K	000912 010005	50.62 ft. lbs. (7 mkp)

After our stock of power steering pumps with the cylindrical drive shaft is depleted, our parts depots will only supply pumps with the conical shaft. If, in the case of repairs, such a pump is installed instead of the previous design, the belt pulley must also be replaced. The part numbers of the power steering pumps and belt pulleys are listed on the following page.

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Power Steering Pump Part No.	Belt Pulley Part No.	Model
127 460 05 80 (Cylindrical Shaft)	121 466 07 15	190 C, 190 DC, 200, 200 D, 230
	127 466 02 15	220 B, 220 SB, 220 SEB, 230 S, 230/8, 230 SL, 250 S, 250/8, 250 SE, 250 SL, 280 S/8, 280 SE/8, 280 SL/8
	189 466 02 15	300 SEB
127 460 12 80 (Conical Shaft)	121 466 08 15	190 C, 190 DC, 200, 200 D, 230
	115 466 01 15	220/8
	615 466 00 15	220 D/8
	127 466 03 15	220 B, 220 SB, 220 SEB, 230 S, 230/8, 230 SL, 250 S, 250/8, 250 SE, 250 SL, 280 S/8, 280 SE/8, 280 SL/8
	189 466 03 15	300 SEB
	108 466 03 15	230/8, 250/8, 250 S, 280 S/8 (with exhaust emission control)

The above mentioned parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 41	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Steering Gear Box -
Clicking Noises in Full Lock Position

Recently an increasing number of standard as well as power steering gear boxes have been exchanged because of clicking noises when the steering is returned from the full lock position. Such noises, unfortunately, are usually unavoidable; they are caused by the steering system itself and cannot be eliminated without completely redesigning the steering system. These noises have no effect upon the safety of the steering system, however.

If complaints of this nature are received, please explain to your customers the cause and technical insignificance of these noises and make it clear that they are not the result of a manufacturing deficiency and will not in any way affect the safety of the steering system.

Under no circumstances may steering gear boxes be exchanged in such cases. An exchange would only be a waste of time and money, since the noises would recur on any other subsequently-installed steering gear box.

In the future, we will not accept warranty claims for steering gear box assemblies which have been replaced for the above-mentioned reasons.

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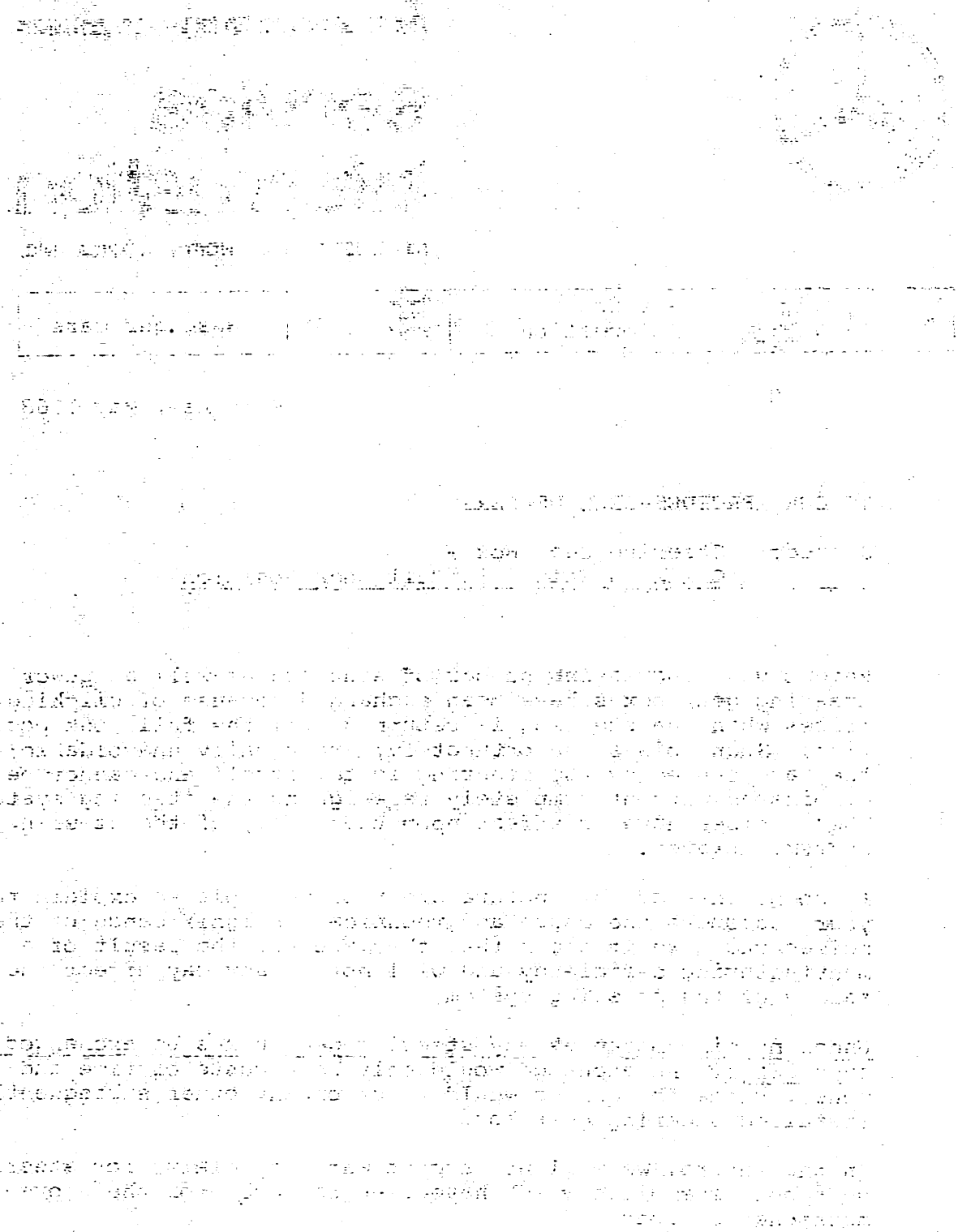

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 100	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, November 1967

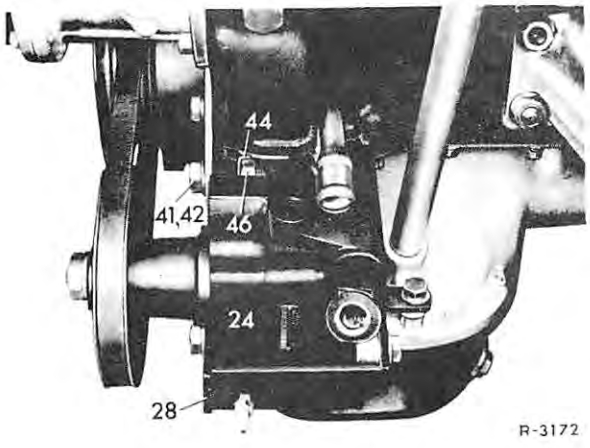
TO OUR MERCEDES-BENZ DEALERS

Subject: Power Steering Modifications

The power-steering mechanism and its auxiliary components have recently been modified as follows:

1. High-pressure oil pump - Types 200 to 300 SEb

The high-pressure oil pump (24) was previously attached to the pump support (28) with a hexagon screw (41), a washer (42), a locking plate (44), and a hexagon nut (46) - see illustration. To simplify this assembly, the upper bore of the oil-pump housing cover has been provided with a 10-mm thread, and the pump is now fastened at this point with a screw M 10 x 20, a washer, and a lock washer, eliminating the need for the locking plate and hexagon nut.



24. High-pressure oil pump
28. Pump support
41. Hexagon screw
42. Washer
44. Locking plate
46. Hexagon nut

A steel washer is seated between the shoulder of the drive shaft and the pulley. This washer (1st version: 1 mm thick; present version: 2 mm thick) prevents the drive shaft from pressing against the pulley flange.

Note:

When replacing the high-pressure oil pump, make sure the connection between the high-pressure expanding hose

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and the pump is leak-proof. To check it, turn the steering to full lock, either left or right, to obtain the full oil pressure. If a leak is detected, the high-pressure expanding hose must be replaced.

2. Pulley for the high-pressure oil pump

The tightening torque of the hexagon nut used to fasten the pulley to the oil-pump drive shaft has been increased from 6 to 8 mkp (43.4 to 57.9 ft. lbs.). And, the pulley, which was previously spot-welded between the hub and sheet-metal part, is now welded by means of inert-gas welding, thus giving it greater rigidity. Only this version is available as a replacement part.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 99	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 46	PASSENGER CARS

Fort Lee, November 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Steering Gear Boxes of Vehicles Involved in Accidents

In order to determine the possible amount of damage to the steering gear box of a car involved in an accident and whether or not it should be replaced, the following standards must be observed:

1. After accidents involving just sheet-metal damage (e.g., fender and side member deformation, etc.), the steering gear box may still be used, provided that

   a) no steering or front axle components, such as steering knuckles, A-frames, tie rods, drag links, pitman arms, intermediate steering arms, and the front axle support, were damaged,

   b) the front axle was not overstressed, and

   c) the steering can be turned from lock to lock smoothly.

2. For safety reasons, the steering gear box should always be replaced if

   a) any steering or front axle components (e.g., tie rods, or A-frames) have in any way sustained permanent deformation, no matter how slight it may be, or

   b) the front axle has been excessively overstressed.

These instructions apply to all steering versions.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 23	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, September 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of Steering Gear Box — Type 600

Beginning with chassis serial end number 000921, a modification was made on the steering gear box of Type 600 in production. All cars of earlier production (up through chassis serial end number 000920, except those listed in the next paragraph) must have their steering gear boxes replaced by the modified version, part No. 100 460 20 01.

A few cars with chassis serial end numbers prior to 000921; namely, 000422, 000854, 000909, 000913, and 000919, have had their steering gear boxes replaced by the new version prior to this campaign and therefore are not subject to this campaign.

> Your attention is called to the last two paragraphs of this Service Information (see page 2).

The new version gear boxes may be recognized by two characteristics: Each of the new gear boxes has a green dot on top of the box. The manufacturer's number on each of the new boxes is 2001 and higher.

Please order these new steering gear boxes from the Mercedes-Benz parts depot at Northbrook only after an appointment has been made upon a customer's request to carry out this modification.

Modification Procedure

The workshop procedure for replacing a steering gear box is described in the attached removal and installation instruction.

Time Allowance

For each car modified according to this Service Information, the time allowance is 3.8 hours.

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Disposition of Replaced Steering Gear Boxes

Dealers are requested to send the removed steering gear boxes together with the respective claim forms (gear boxes, claim forms, and letter of transmittal in same container) to Mercedes-Benz of North America, Inc., Claims Parts' Receiving Department, 400 Alfred Ave., Dock No. 8, Teaneck, New Jersey 07666. The claims and parts are to be submitted on a priority basis. (These are exceptions in this one instance to the claims procedures listed in Division VII, Section B, pages 103-105, May 1967, of the Mercedes-Benz Claims Policies and Procedures Manual.)

The Traffic Safety Act of 1966 prohibits the retail sale of vehicles with known deficiencies; therefore, in addition to licensed vehicles, all cars in transit and dealer inventory must be modified in accordance with these instructions.

Your warranty claims on vehicles in stock must be accompanied by a signed repair order certifying that the modification has been performed.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

Attachment

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REMOVAL AND INSTALLATION OF POWER STEERING

TYPE 600

Removal

1. Drain the oil from the reservoir of the high-pressure oil pump by means of a suction pump or let the oil run off after having unscrewed the allen head screw (18) from the steering (see illustration 6).

2. Detach the high-pressure oil hose (15) and the pipe elbow (14) for the return hose (19) from the power steering, while holding the fittings in place (illustrations 1 and 2).

   Note: Close all connections with dummy plugs or rubber caps to prevent dirt from entering the system.

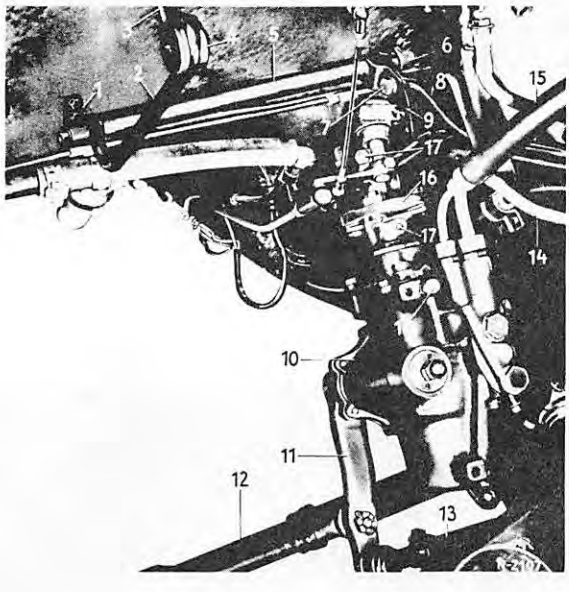

Illustration 1

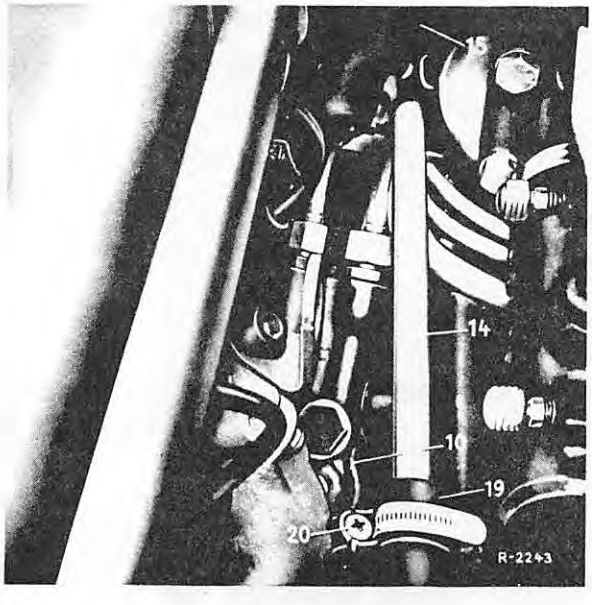

Illustration 2

1. Mounting
2. Lever
3. Regulating rod
4. Damper ring
5. Control shaft
6. Mounting
7. Hex-head screw
8. Pedal lever
9. Lever
10. Power steering
11. Steering gear arm
12. Center tie rod
13. Tie rod
14. Return hose pipe elbow
15. High-pressure expansion hose
16. Steering coupling
17. Clamping screw
18. Bleed screw
19. Return hose
20. Hose clip

3. Unscrew the clamping screw (17) from the lower flange of the steering coupling (16) (illustration 1).

4. Use fixture 111 589 08 33 00 or puller 186 589 10 33 00 (26) to press the center tie rod (12) off the steering gear arm (11) (illustration 3).

5. Detach the lateral support strut (21) from the retainer (23) on the chassis base panel and pull the tie rod (13) off the steering gear arm (11) by means of fixture 136 589 12 33 00 (25) (illustration 4).

6. Unscrew the hex-head screws (4) for fastening the steering assembly to the side frame member (illustration 7) and pull the

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steering worm off the steering coupling (illustration 8) while removing the steering downward.

7. Remove cotter pin from castle nut (19), unscrew the nut, and pull the steering gear arm (11) off the steering shaft by means of fixture 186 589 04 33 00 or fixture 100 589 04 33 00 (illustrations 5 and 6).

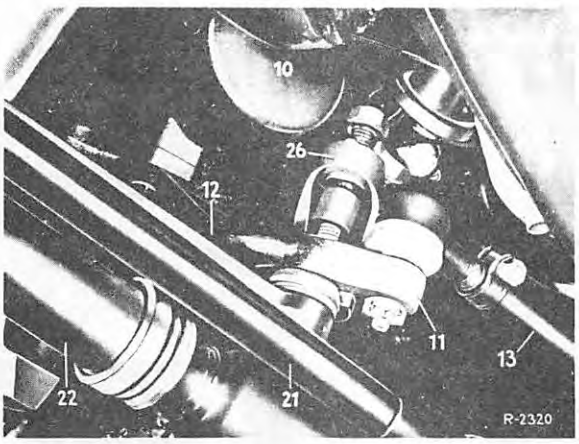

Illustration 3

10. Power steering
11. Steering gear arm
12. Center tie rod
13. Tie rod
21. Lateral support strut
22. Steering shock absorber
24. Puller 186 589 10 33 00

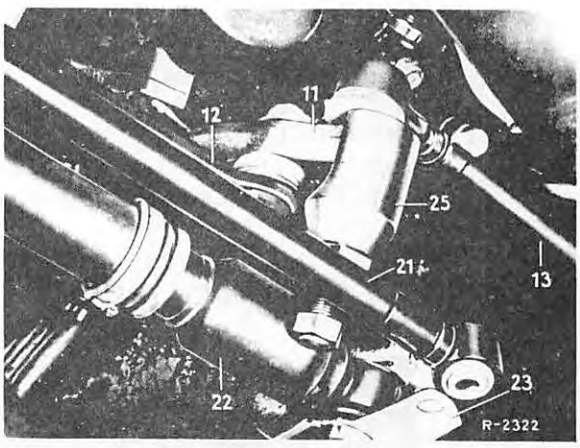

Illustration 4

10. Power steering
11. Steering gear arm
12. Center tie rod
13. Tie rod
21. Lateral support strut
22. Steering shock absorber
23. Retainer on chassis base panel
25. Fixture 186 589 12 33 00

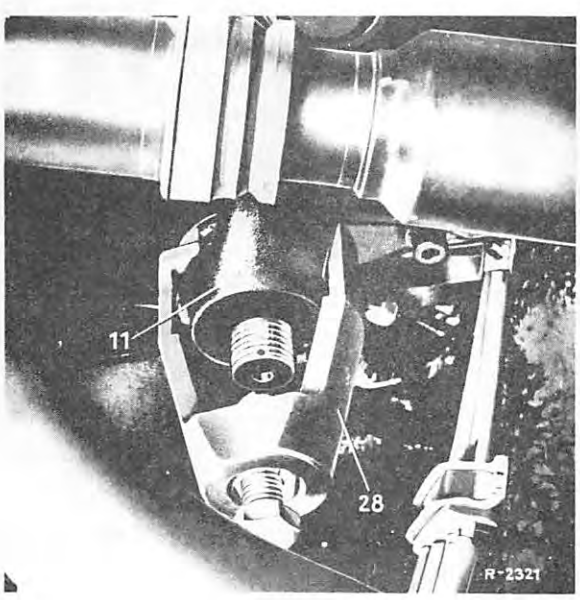

Illustration 5

11. Steering gear arm
24. Puller

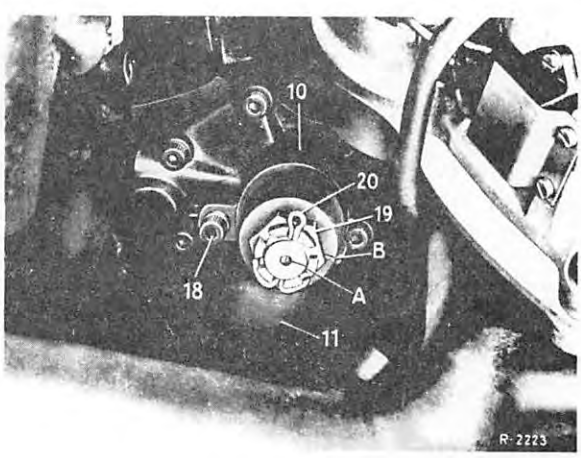

Illustration 6

10. Power steering
11. Steering gear arm
18. Allen head screw
19. Castle nut
20. Cotter pin
A. Marking on the steering shaft
B. Marking on the steering gear arm

Installation

8. Install the steering gear arm (11) on the steering shaft, but pay attention to the position markings (B) on the steering

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gear arm and (A) on the steering shaft which should match up. Tighten the castle nut (19) with a torque of 20 mkg (144.7 ft.-lbs.) and install cotter pin. (For markings, see illustration 6.)

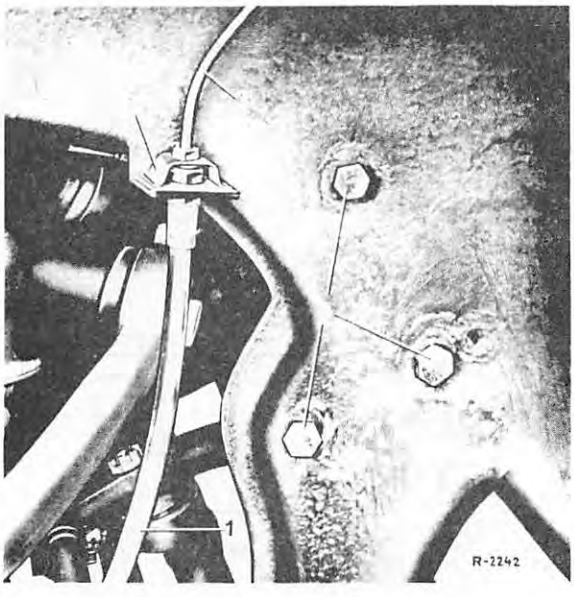

Illustration 7

1. Brake hose
2. Brake hose retainer
3. Brake line
4. Hex-head screw

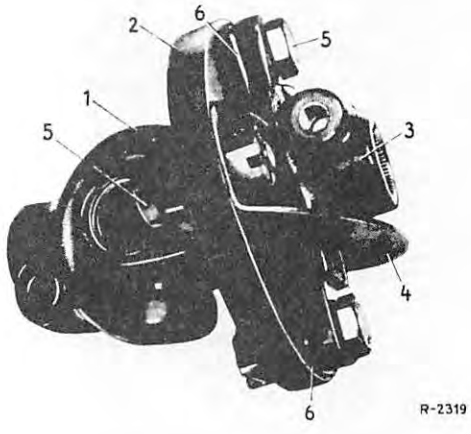

Illustration 8

1. Universal joint
2. Jointing disk
3. Joint flange
4. Bracket
5. Hex-head screw with castle nut and cotter pin
6. Joint underlay

9. Put the steering assembly in center position and unscrew the allen head screw from the lower housing cover (see No. 18 in illustration 6) of the steering assembly. Screw in the center position check screw, part No. 100 589 05 21 00, (1) and fix the steering shaft (2) in position in the lower housing cover (4) (illustration 9).

   Note: The center position check screw, part No. 100 589 05-21 00, should be ordered from the Teaneck parts depot, if not available.

   Before installing the check screw, turn the steering worm until the center of the ball pin of the steering shaft is exactly above the threaded bore in the housing cover.

10. Put the steering shaft in its center position. In this center position, the canceling cam on the steering shaft is opposite the turn signal switch. For inspection purposes, remove the rubber cover for the turn signal switch from the steering column jacket

11. Press the steering worm into the steering coupling while taking care to ensure that the serrations are not damaged and that the steering shaft remains in its center position.

12. Attach the steering assembly to the frame and tighten the three hex-head screws with a torque of 5 mkg (36.2 ft.-lbs.). Insert the lower clamping screw into the steering coupling and tighten with a torque of 2.5 mkg (18.1 ft.-lbs.).

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13. Remove the center check screw and install the allen head screw (18) into the lower housing cover with the seal previously removed from the new steering box (illustration 6).

14. Clean the ball pin and conical seat in the steering gear arm. Reinstall the center tie rod, tighten the castle nut with a box or socket wrench with a torque of 5.5 mkg (39.8 ft.-lbs.), and install cotter pin in the castle nut.

15. Clean the ball pin and the conical seat in the steering gear arm and reinstall the tie rod. Tighten the castle nut with a box or socket wrench with a torque of 5.5 mkg (39.8 ft.-lbs.) and install cotter pin in the castle nut.

16. Attach the lateral support strut to the retainer on the chassis base panel.

17. Turn the steering hard over to the left and to the right and check whether the steering knuckle arm rests against the stop of the lower control arm.

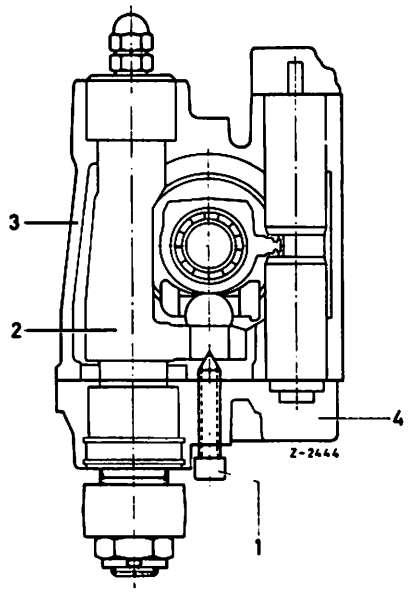

Illustration 9

1. Center position check screw
2. Steering shaft
3. Steering housing
4. Lower housing cover

Note: The steering must be limited by the control arm. If this is not the case, the cause may be an incorrectly installed steering gear arm or toe-in misadjusted on one side. For this reason, it is important to adjust the toe-in with the steering wheel in the center position so that the toe-in on the left and on the right wheel is evenly distributed.

18. Remove the dummy plugs from the pressure and return connections. Attach the high-pressure and return hoses to the upper housing cover of the power steering (see illustration 2).

Note: Make sure that the hoses are properly positioned. Even minor rubbed spots may cause oil loss in a very short time and as a consequence may produce failure of hydraulic assistance.

19. Remove the cover (3) of the reservoir (1) of the high-pressure oil pump, check the oil level, and, if necessary, replenish oil (illustration 10). Use the prescribed type of oil, according to the fuel and oil tables in the Owner's Manual. Absolute cleanliness in this operation is of the utmost importance! It is advisable to use funnel 111 589 04 63 00 for the filling.

20. Attach the bleeder hose (2) to the bleed screw (18, illustration 1) of the power steering and place the other end of the hose into the reservoir (1) (illustration 11).

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21. Open the bleed screw approximately two turns. Run the engine at idle speed. Move the steering wheel several times to both sides no more than 1/4 of a turn from the center position.

    The bleeder hose must be held tightly at the bleed screw and in the reservoir. Otherwise, it may twist away and cause large oil losses.

22. When finished bleeding, close bleed screw and check system for leaks.

    Note: With the engine running, turn the steering to right or left lock for a short time in order to ensure that the maximum oil pressure is reached. Check whether all connection points are absolutely leakproof.

23. Check the toe-in and if necessary, adjust.

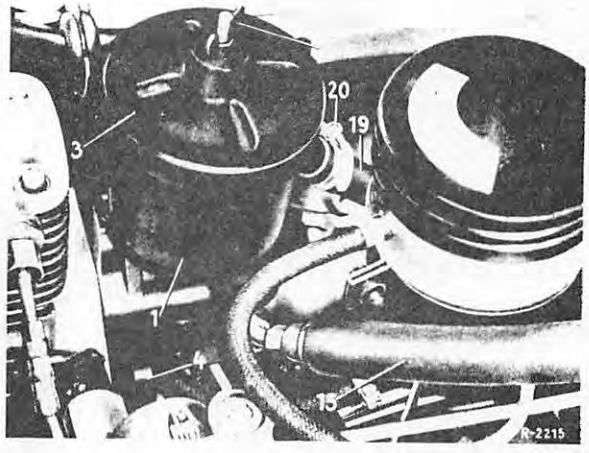

Illustration 10

1. Reservoir
2. Wing nut
3. Cover
4. Allen head screw
19. High-pressure expansion hose
20. Hose clip

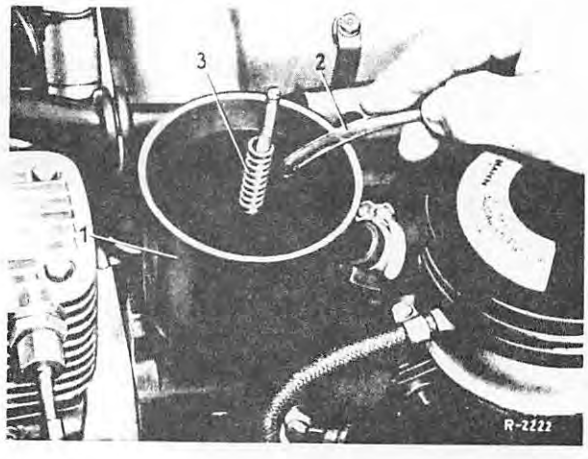

Illustration 11

1. Reservoir
2. Bleeder hose
3. Pressure spring

Adjustment of Toe-In

This is an adjustment of the length of the two tie rods. When the toe-in is adjusted or measured, the steering must be in the straight-ahead position.

When adjusting the toe-in, make sure that the minus limit of the adjustment value is under no circumstances exceeded. The right-hand thread on the tie rods is on the steering knuckle side. To facilitate assembly, the tie rod joint with the right-hand thread has a white color marking.

Adjustment of toe-in is 6 $\pm$ 1 mm or 0° 45' $\pm$ 10'. When using a front-end alignment machine such as John Bean Visualiner, the toe-in should be adjusted to 7/16" $\pm$ 1/16".

24. Check the position of the steering wheel during a trial run. When the wheels are in the straight-ahead position, the steering wheel must be in the dead-center position.

    Note: If the steering wheel is not in the dead-center posi-

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tion, loosen the two hex-head screws (16) on the universal joint (11), knock the universal joint downward with a plastic hammer, adjust the position of the steering wheel, and reinstall the universal joint in the upper half of steering shaft (12). Tighten the two hex-head screws (illustration 12).

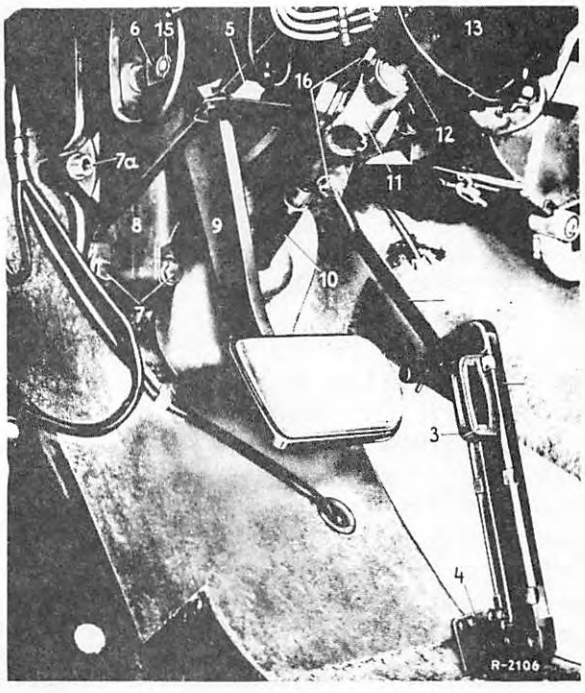

Illustration 12

1. Pedal lever
2. Accelerator pedal
3. Plastic plate
4. Mounting plate
5. Mechanical stop light switch
6. Push rod of power brake
7. Hex-head screw
7a. Allen head screw
8. Support for brake pedal
9. Brake pedal
10. Lower half of steering shaft
11. Universal joint
12. Upper half of steering shaft
13. Steering column jacket
14. Rubber cover
15. Locking clamp on collar bolt
16. Hex-head screw

25. Check whether the automatic return mechanism of the turn signal switch is working properly.

(This is the last page.)

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 58	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 46	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Tie Rod - Type 600

When installing tie rods in the type 600, special care should be taken to ensure that the joint with the right-hand thread is attached to the steering knuckle arm (see Workshop Manual Type 600, Job No. 46-6). The cover of the right-hand thread joint is marked in white. Because of the offset ball-and-socket joints and the field of traverse of the ball pins, these instructions must be adhered to at all times.

(Upon receipt of the 1966 Technical Data Booklet, please note the correction on the inside front cover of the booklet concerning the above, and change the wording on page 409 accordingly.)

In this connection, we would also like to refer to the generally applicable instructions regarding the correct correlation between the tie rod ball-and-socket joints: When tightening the hexagonal screws at the clamp straps, if both tie rods are in lock position on one side, the tie rod is correctly mounted.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 58	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 46	Passenger Cars

Fort Lee, October 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Contact of Steering Tie Rod against the Oil Filter - Type 200

Some instances may be found in which the left tie rod end will chafe the lower part of the oil filter housing when the steering is turned fully to the left.

The following procedure should be followed in eliminating this condition:

1. Check that the lower part of the oil filter housing is turned so that the tie rod end is positioned between two stiffening ribs when the steering is at the left stop position. (This should always be checked when performing service and maintenance inspections involving the oil filter.)

2. If the tie rod end still contacts the filter housing, check the steering linkage for centering when the steering wheel is in center position. Use the special tool, part No. 111 589 17 23. Permissible tolerance is ± 3 mm. (For details, see Workshop Manual Passenger Cars, Starting August 1959, Job Nos. 40-3 and 46-0.)

   It may be necessary to change the track configuration so that the left tie rod is shortened by 1/4 of a rotation and the right one extended the same amount, thus facilitating an earlier stop position. If these corrections have been performed, recheck the toe-in as well as the full right steering stop position.

3. If the tie rod end still touches the filter, the engine need to be raised by inserting three millimeter thick shims between the engine support and the engine rubber mount.

In this connection,we should like to point out that the full steering stop position must not be altered by welding shims on the steering knuckle or the steering knuckle support. Further, it is not permissible to subsequently alter or rework the lower part of the oil filter housing.

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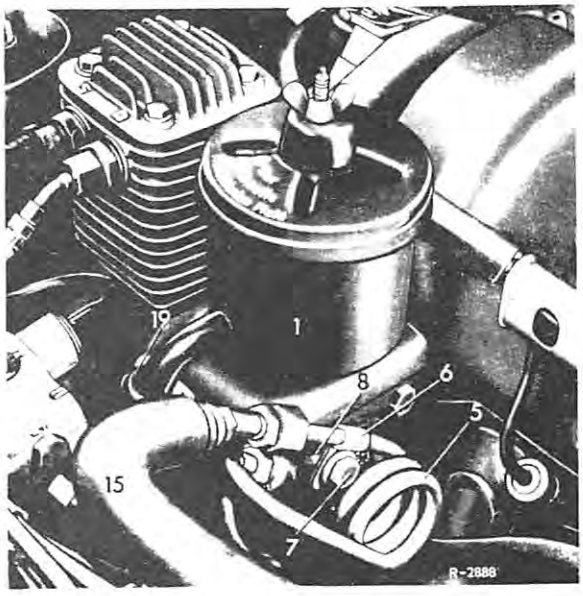
No. 50	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 46	Passenger Cars

Fort Lee, September 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Power Steering and Power Steering Pump - Type 600

For quieter operation, an improved high-pressure expansion hose (15) and a line (5) are now used between the power steering oil pump and power steering on Type 600. This change entered production starting with chassis end number 000573. The line (5) is wound in several loops and provides more efficient silencing of the pump vibrations.



1 Supply tank
5 Line
6 Pipe clamp
7 Hex head screw
8 Spacer sleeve
15 High-pressure expansion hose
19 Return hose

After the stock of the former high-pressure expansion hose (part No. 005 997 65 82) is exhausted, only the new hose (15) will be available. When this new hose is installed on vehicles of previous production, the new line (5) must be installed too.

The procedure in such a case is as follows: The line (5) is connected to the pump housing and must be fastened to the housing with the longer hex head screw (7), washer, pipe clamp (6), and

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spacer sleeve (8). Tighten the hex head screw with a 3.5 - 4 mkg (25.3 - 28.9 ft. lbs.) torque. Then, install the hose (15), bleed the steering, and check system for leaks.

Parts required for the conversion	Part No.
1 High-pressure expansion hose	006 997 69 82
1 Pipe line	100 460 21 24
1 Spacer sleeve	180 466 05 51
1 Hex head screw	001 990 43 01
1 Washer 11.5 DIN 126 DBL 8451-11	000126 011500

Order these parts from your M-B parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 139	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 47/48	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FINE MESH FUEL FILTER -- MODELS 250/8 AND 280 S/8

The above mentioned cars are equipped with a fine mesh fuel filter (3, Illustration 1) as of the following Chassis End Numbers:

Model	Chassis End No.
250/8 Sedan	032 237
250/8 Coupe (114.023)	000 001
280 S/8	032 874

The filter is located in the fuel feed line between the fuel feed pump and the carburetor.

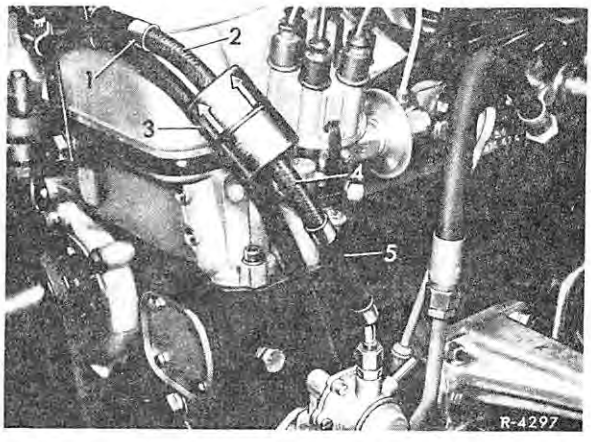

Illustration 1

1. Fuel line
2. Connecting hose
3. Fine mesh fuel filter
4. Connecting hose
5. Fuel line

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This filter is of the throw-away type. Under normal operating conditions, it should be replaced every 30,000 miles (50,000 km). When exchanging the filter, the connecting hoses (2 and 4) must also be replaced. When this is done, a clamp should be fitted on either side of the connecting hoses.

If complaints occur about clogged carburetors, the fine mesh fuel filter may be subsequently installed in all 6 cylinder carburetor engines as follows:

1. Remove fuel line (1, Illustration 2) between fuel feed pump and carburetor.

2. Mark fuel line from pump side as shown in Illustration 2 and cut off 4.3 in. (110 mm).

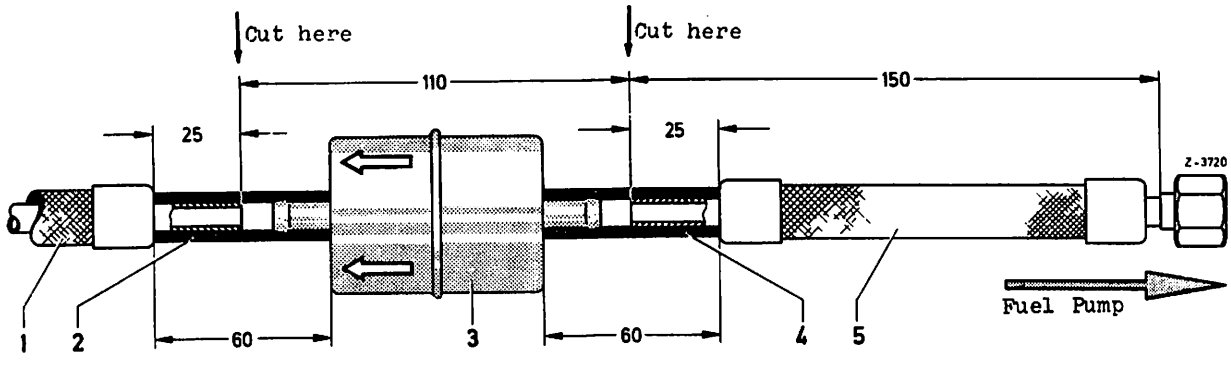

Illustration 2

1. Fuel line to carburetor
2. Connecting hose
3. Fine mesh fuel filter
4. Connecting hose
5. Fuel line from fuel pump

25 mm = 1.0 in.
110 mm = 4.3 in.
150 mm = 5.9 in.
60 mm = 2.4 in.

3. Shorten insulating hose of fuel line (1) leading to the carburetor in such a way so that the fuel pipe projects approximately 1 in. (25 mm). Do not shorten the insulating hose of the fuel line (5) leading to the feed pump but push it downwards towards the screw cap.

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4. Remove burrs from both non-insulated pipe ends. Clean off lines, using compressed air.

5. Connect fuel line (1) to carburetor.

6. Attach to each side of the fine mesh filter one fuel hose approximately 2.4 in. (60 mm) long, by means of two hose clamps each.

   Push filter (3) onto fuel line (1) so that the arrows point towards the carburetor.

7. Connect fuel line (5) to filter and attach to feed pump. Make sure that filter and line are properly aligned.

8. Fasten fuel hoses (2 and 4) with hose clamps.

9. Seal ends of insulating hoses on fuel lines (1 and 5) with friction tape.

The amount of time required for the subsequent installation of a fine mesh fuel filter is 1.3 hours. Since this represents a technical improvement, no warranty claims will be accepted for subsequent installations.

PARTS REQUIRED

QTY.	DESCRIPTION	PART NO.
1	Fine mesh fuel filter	001 477 38 01 Optional 001 477 39 01
	Fuel hose (available by the meter)	110 476 03 26
4	Hose clamp	900269 013100

The parts required are available through our Mercedes-Benz Parts Depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 34	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 47	Passenger Cars

Fort Lee, April 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: A) 65-Liter Fuel Tank - Types: 200, 200 D, 220 b/Sb/SEb, 220 SEb Cpe./Conv., 230, 230 S and 300 SE (up through chassis serial end No. 003082)
B) Installation of Fuel Tanks

A) 65-Liter (17.173-gallon) Fuel Tank

For reasons of standardization in the manufacture of fuel tanks, the angle position of the filler pipe on the 65-liter tank has been increased. At the same time, the tank cap rest (pocket arrangement) on the tank access door has been repositioned to the right.

When stock of the old version is exhausted, we will supply this standardized, new fuel tank (part no. 108 470 03 01) exclusively as a spare part for the above-mentioned types.

If this standardized tank (illustration 1) is installed in vehicles in which the tank cap rest is still located in the middle of the tank access door, the clearance between the filler pipe and the tank cap rest will be reduced to such an extent that difficulties may be encountered during opening and closing of the tank access door. Therefore, the filler pipe must be readjusted (brought forward) approximately 20 mm (.7874 in.). For this purpose, use a tube that will fit over the filler pipe; the tube must have a slot 60 mm(2.362 in.) long and 10 mm(.3937) wide at one end so that it will slip all the way to the base of the filler pipe (see illustration 2).

B) Installation of Fuel Tanks

We have frequently noticed that replacement fuel tanks are not being properly mounted with the specified mounting and fastening parts. Therefore, we would like to emphasize that fuel tanks must be mounted with the specified reinforcement plates (see 1 of illustration 1) and washers. Tightening torque of the fastening screws = 2.0 to 2.2 mkp (14.466 to 15.892 ft. lbs.).

If the reinforcement plates are omitted or the washers are too small, the flanges on the fuel tank may crack and/or tear off.

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Only the following reinforcement plates and washers are to be used for the above-mentioned (subject) types.

Quantity	Description	Part Number
1	Reinforcement plate, front	110 471 07 22
2	Reinforcement plates, back	110 471 08 22
3	Washers	108 990 03 40

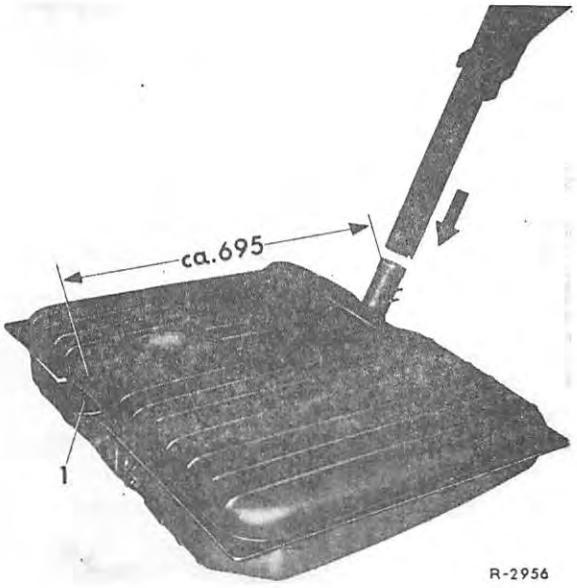

Illustration 1
Fuel tank with standardized angle position of filler pipe

1 - reinforcement plate (slipped over flange)

Illustration 2
Fuel tank with readjusted filler pipe

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 2	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 47	PASSENGER CARS

Fort Lee, October 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Fuel Filter Element - Type 600

We recommend that the Type 600 fuel filter element, part number 000 477 46 15, be changed every 6,000 miles ("D" service) hereafter, instead of the previously stated interval of 12,000 miles ("E" service).

Should hard starting of a Type 600 engine be reported, the fuel filter element should be looked into, as hard starting is usually the result of a clogged element.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 42	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 49	Passenger Cars

Fort Lee, January 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Mounting Screws (Hub Bolts) for Drive Pulley - Saginaw Air Pump

When removing or replacing the drive pulley on the Saginaw air pump, it is important that the original mounting screws with spring washers (hub bolts) be reinstalled.

If the original screws must be replaced for any reason, they may only be replaced with the mounting screws (hub bolts) released by DBAG, part No. 002 990 45 01 (size: ¼" in diameter x ½" long). The use of longer screws or the omission of the spring washers will cause damage to the front bearing.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 29	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 49	Passenger Cars

Fort Lee, June 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Exhaust Manifold of the Type 230 SL

The type 230 SL, starting with car serial end No. 013865, is equipped with cast-iron exhaust manifolds, instead of the previously used sheet-metal ones.

When the stock of sheet-metal manifolds is exhausted, our spare parts depots will supply cast-iron exhaust manifolds and engines equipped with cast-iron manifolds exclusively.

For manufacturing reasons, the configuration of the cast-iron manifolds differs from that of the sheet-metal ones. Consequently, when cast-iron manifolds are subsequently installed, the exhaust system and the injection pump linkage must be modified in accordance with procedures A and B, respectively. When an engine with cast-iron manifolds is subsequently installed, only the exhaust system must be modified - see procedure A.

A. Modification of the Exhaust System

Required Parts
1 Exhaust Pipe, part number 113 490 09 20

Procedure
1. Remove complete exhaust system.
2. Saw off front exhaust pipe (see illustration 1).
3. Weld on new front exhaust pipe (see illustration 2).
4. Test welding for exhaust leaks.
5. Reinstall exhaust system.

B. Modification of Injection Pump Control Linkage

Required Parts	Part (DIN) Number	
1 Bearing support	127 070 17 24	standard transmission
1 Slotted link lever	129 070 00 22	
1 Pull rod	900331 005086	
2 Hex.-head Nuts M 5	000934 005004	
2 Ball sockets	000 991 02 20	

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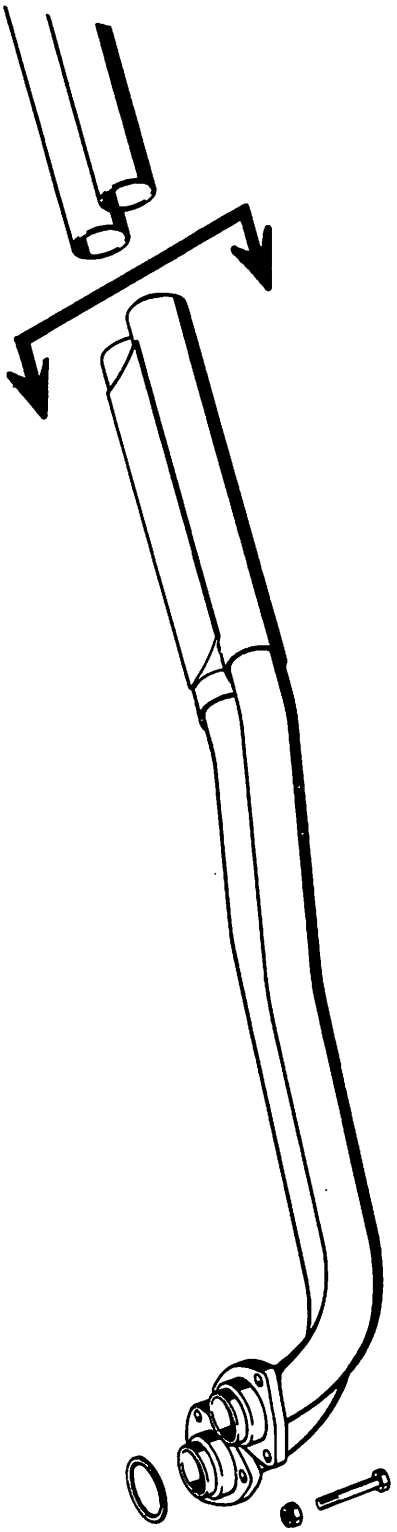

Illustration 1

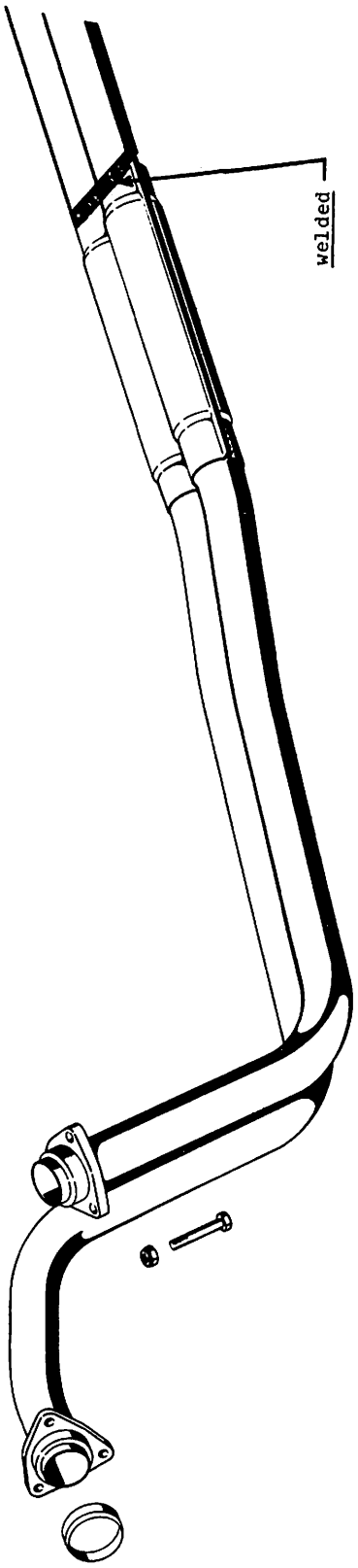

Illustration 2

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Required Parts	Part (DIN) Number	
1 Bearing support	127 070 17 24	
1 Bracket	129 070 00 40	
1 Control lever	129 070 02 22	automatic transmission
1 Pull rod	900331 005051	
2 Hex.head Nuts M 5	000934 005004	
2 Ball sockets	000 991 02 20	

Procedure (see illustration 3)

1. Exchange bearing support (1) at crankcase.
2. On cars with standard transmission, exchange slotted link lever (2).
3. On cars with automatic transmission, exchange bracket (4) and control lever (5).
4. Exchange pull rod (3) between slotted link lever (bracket and control lever) and bearing support.
5. Readjust/correlate injection pump control linkage as described in the "Workshop Manual Passenger Car Models starting August 1959," Group 00, or "Service Manual Maintenance, Tuning, Unit Replacement Passenger Cars starting August 1959," Group 00.

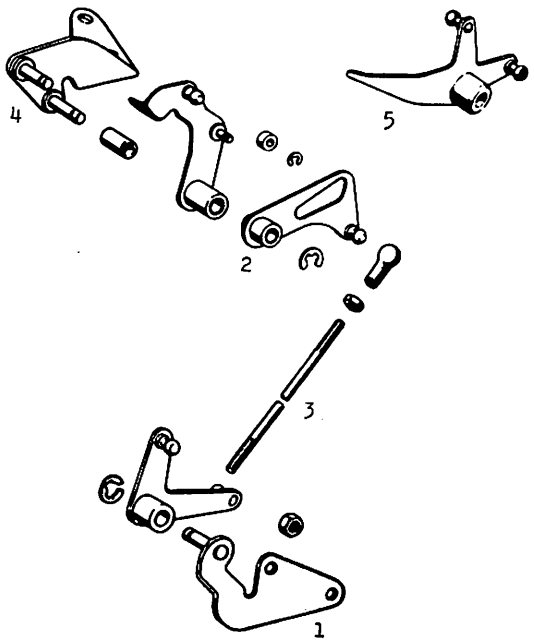

Illustration 3
1. Bearing support
2. Slotted link lever (standard transmission)
3. Pull rod
4. Bracket (automatic transmission)
5. Control lever (automatic transmission)

The time required to modify the exhaust system and the injection pump control linkage is three hours and thirty-five minutes, and the time required to modify just the exhaust system, when installing an engine with a cast-iron manifold, is two hours and thirty minutes.

The required parts can be ordered through your M-B Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 40	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 49	Passenger Cars

Fort Lee, July 1966

TO ALL MERCEDES-BENZ DEALERS

Subject: Exhaust Pipe Bracket - Types 190 c/Dc, 200/D

From the beginning of production of the types 200 and 200 D, a new-version exhaust pipe bracket has been installed on the transmission. This new bracket has now been released also for subsequent installation (repair) on types 190 c/Dc. (See illustrations 1 and 2 .) Existing stocks of the old-version bracket may be used up in repairs for the type 220 series.

R-2861

Illustration 1

Old version

1 exhaust bracket

R-2862

Illustration 2

New version

1 exhaust bracket
2 tightening piece
3 clamp
4 lock nut

When the new-version is subsequently installed on the 190 c/Dc, the following parts are required:

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Quantity	Description	Part No.	Type 190 c	190 Dc
1	mounting plate for mechanical transmission	110 490 04 44	X	X
1	mounting plate for automatic transmission	110 490 03 44	X	X
1	exhaust bracket	108 490 00 40	X	-
1	exhaust bracket	108 492 03 19	-	X
1	tightening piece	110 492 01 26	X	X
1	clamp	110 492 00 27	X	X
2	lock nuts	999901 008000	X	X

These parts may be ordered through your M-B parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 119	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	50	Passenger Cars

Fort Lee, March 1969

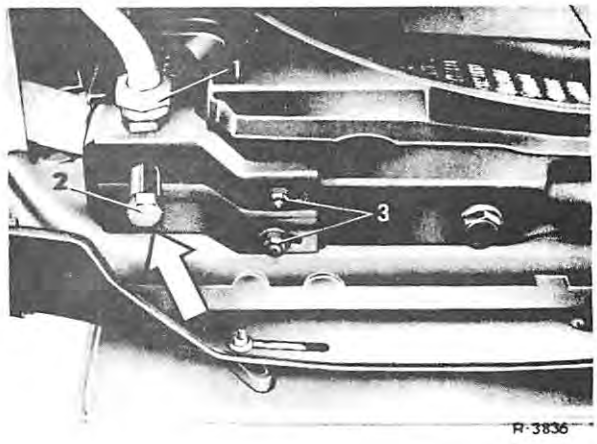
TO OUR MERCEDES-BENZ DEALERS

Subject: Engine Oil Cooler Exchange -- Model 280 SL/8

With Service Information MB-T 109, Group 50, of February 1969, we informed you of an exchange program to be performed on the engine oil coolers of model 280 SL/8, up to and including chassis end number 005 113.

This is to advise you that only cars with chassis end numbers up to and including 002 903 are to be modified. (In this connection, refer to Service Information No. 51, Group 00, of June 1968.) Cars up to and including this chassis end number have an oil cooler drain plug protruding from the bottom of the cooler downwards. This drain plug was omitted in series production as of chassis end no. 002 904 up to and including chassis end no. 005 112. Then, beginning with chassis end number 005 113, installation of an off-set drain plug (pointing rearwards) was resumed.

NOTE: Only oil coolers with drain plugs pointing downwards are to be replaced, as shown in the illustration.



Illustration

2. Oil drain plug

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Additionally, we are now encountering a shortage of replacement oil coolers, and therefore ask you again to rush any removed oil coolers back to the address given below immediately upon removal so they can be modified and returned into the program.

Please send the removed oil coolers to:

Daimler-Benz of North America, Inc.
196 Coolidge Avenue
Englewood, New Jersey 07631

Attn: Mr. V. Tomhave

Warranty claims may be submitted for parts plus 3.0 hours labor for cars without air conditioning and 4.0 hours labor for cars with air conditioning.

Your immediate cooperation will be appreciated.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 109	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 50	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS

Fort Lee, February 1969

Subject: Engine Oil Cooler Exchange -- Model 280 SL/8

On model 280 SL up to and including chassis end number 005 113, the engine oil cooler has a drain tube located at the bottom of the oil cooler. Under adverse driving conditions, this drain tube might be damaged, resulting in a loss of engine oil.

For this reason, on all cars of model 280 SL, up to and including the above chassis end number, the engine oil cooler must be exchanged when a vehicle of this type comes into your dealership for regular services.

The following procedure has been established for this exchange:

1. From your parts depot, order one or two of the engine oil coolers under part no. 108 180 02 65.

   When ordering the oil cooler from your parts depot, specify on your order "oil cooler for exchange". This must also be specified when filling out a warrenty claim later.

2. Send the removed oil cooler immediately to:

   Daimler-Benz of North America, Inc.
   196 Coolidge Avenue
   Englewood, New Jersey 07631

   Attn: Mr. V. Tomhave

   At this location, the drain plug will be removed and the oil cooler will be returned to the respective parts depot to continue this exchange, which can only be conducted if enough removed oil coolers are received. Therefore, please rush the old coolers to the above location.

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During this exchange you will receive oil coolers with an off-set drain plug as well as oil coolers without any drain plug. Since these two versions are interchangeable, they can both be used for installation into vehicles affected by the exchange.

Work Procedure

- Disconnect and remove battery.
- Remove air filter housing.
- Remove hood.
- Drain cooling water (save because of anti-freeze!).
- Disconnect water hoses on radiator.
- Disconnect oil hoses from automatic transmission on radiator.
- Remove radiator.
- Replace engine oil cooler.

The reassembly procedure is the reverse of the above procedure.

Finally, check and correct engine oil level and transmission oil level (automatic transmissions only). Start engine and check for leaks. If necessary, according to condition, replace any worn water or oil hoses.

A warranty claim for parts plus 3.0 hours may be submitted for this job.

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Daimler-Benz AG / Export-Service

No. 18	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 50	Passenger Cars

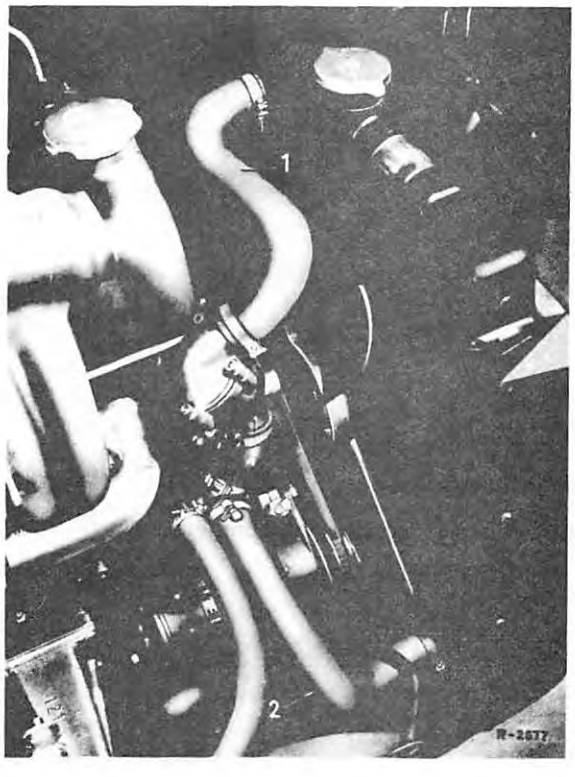
Stuttgart-Untertürkheim, March 1965

To all Daimler-Benz Agencies

Re.: Cooling Water Pipes of Types 190 C to 300 SE

In the course of further development the cooling and heating water hoses have constantly been improved. The present qualities fully meet the requirements; also the hose qualities supplied as spare parts now correspond to the qualities used in the series production. - In case of repairs it should be observed that there are 3 different versions of cooling water pipes available:

1. Present standard version



Type 220 B/SB/SEB 3rd version

Type 190 C/DC 2nd version

Illustration 1

Upper cooling water line:

1 shaped hose from radiator to thermostat casing

Lower cooling water line:

2 shaped hose from water pump to radiator

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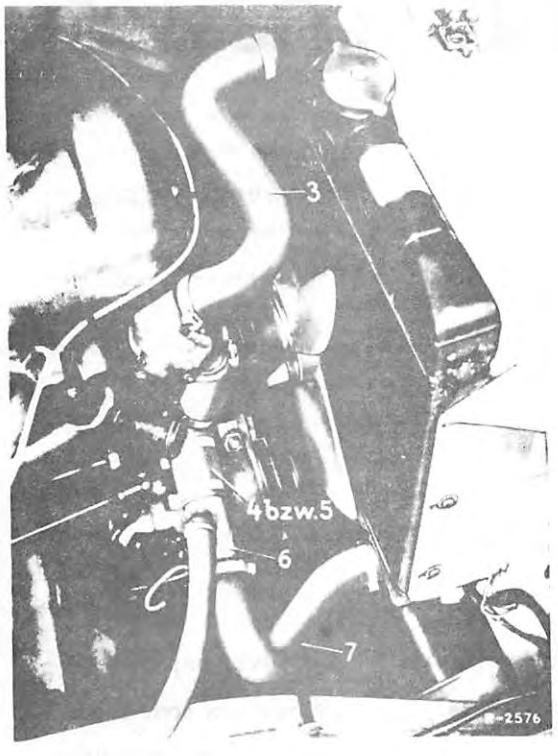
2. Standard version up to July 1962



Type 220 B/SB/SEB 2nd version

Type 190 D/DC 1st version

Illustration 2

Upper cooling water line:

3 shaped hose from radiator to thermostat casing

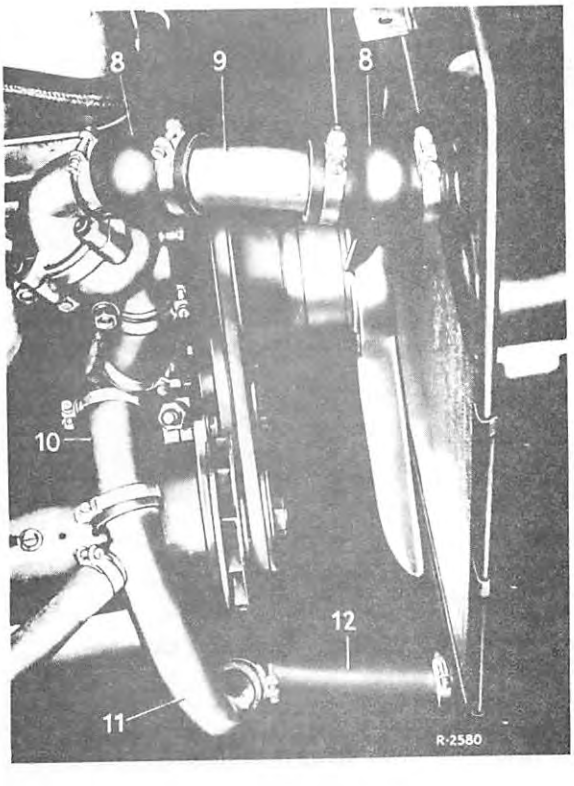
Lower cooling water line:

4 and 5 standard or shaped hose at water pump 190 and 220

6 distributor pipe

7 shaped hose at radiator

3. Version at the beginning of the series production



Type 220 B/SB/SEB

Illustration 3

Upper cooling water line:

8 shaped hose at radiator and thermostat casing

Lower cooling water line:

10 shaped hose at water pump

11 distributor pipe

12 shaped hose at radiator

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REPAIR INSTRUCTIONS

A) Conversion of 1st version (Illustration 3) to 2nd version (Illustration 2)

In case of repairs at the engine (engine replacement, radiator replacement, hose exchange, etc.) the 1st version (Illustration 3) of the lower cooling water line is to be converted to the 2nd version (Illustration 2) as a matter of principle. The connection between engine and radiator is thus made more flexible and, as a consequence thereof, more secure. This is the reason why the shaped hose (12) as well as the distributor pipe (11) are no longer supplied as spare parts.

B) Replacing the hoses

Cooling and heating water hoses are subject to natural aging during operation. It is, therefore, recommended, not only to replace the defective hose but also to exchange all other cooling and heating water hoses.

C) Hose marking

The new shaped hoses can be recognized by the punched-in DB part number and the manufacturer's marking.

The standard hoses (suppliers: Metzeler and Phoenix) bear the manufacturer's marking, the quality designation, and the date of manufacture in a continuous line (Illustrations 4 and 5).

The heating water hoses of the new quality - partly shaped hoses and partly standard hoses - are marked in the same way.

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Illustration 4

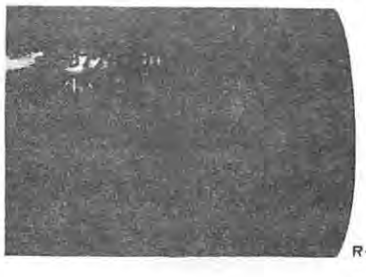
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Illustration 5

For better understanding and a better survey this Service Information is supplemented by a table covering the standard versions for types 190 C to 300 SE and the repair combinations.

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For reasons of safety we have to point out once more that only shaped and standard hoses approved by us are to be used.

If hoses of unknown quality are used the danger arises that the engine is damaged. In this case we would not be able to take over any costs.

Standard hoses are supplied by us by the meter and under the new standard part number only. We cannot warn you enough against using hoses of unknown quality from the market.

Finally we should like to point out that the hose clamps must be mounted carefully. Attention should be paid that the hoses are fully pushed onto the nipples and that the hose clamps are fitted behind the beads of the nipples in any case. The hose clamps must be retightened after a distance covered of 500 km at the latest. In the course of service jobs the joints should each time be carefully checked and the hose clamps be retightened, if necessary.

Enclosure

Daimler-Benz Aktiengesellschaft

s/ppa. Pfeiffer s/ppa. Mauthe

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Type	Illustration	Upper cooling water line Designation/Part number		Lower cooling water line Designation/Part number	
		Standard version	In case of repairs to be replaced by:	Standard version	In case of repairs to be replaced by:
190 C 190 DC	2	Shaped hose (3) 110 501 02 82		Standard hose (4) 900272 038000 (38x46x70 N 272) Distributor pipe (6) Shaped hose (7) 110 501 01 82	Standard hose (4) 900271 038001 (38x46x70 N 271) 110 500 01 91 Shaped hose (7) 110 501 04 82
	1	Shaped hose (1) 110 501 02 82		Shaped hose (2)	110 501 05 82
220 B 220 SB 220 SEB	2 + 3	Shaped hose (8) 121 501 01 82 Connecting pipe (9) 111 501 01 23	Shaped hose (8) 121 501 02 82 or with Radiator 111 500 09 03 1) 111 500 10 03 1) Shaped hose (3) 110 501 02 82	Shaped hose (10) 111 501 02 82 Distributor pipe (11) 111 500 02 91 Shaped hose (12) 111 501 01 82	Converted to Shaped hose (5) 111 501 04 82 Distributor pipe (6) 110 500 01 91 Shaped hose (7) 110 501 04 82
	2	Shaped hose (3) 110 501 02 82		Shaped hose (5) 111 501 02 82 Distributor pipe (6) Shaped hose (7) 110 501 01 82	Shaped hose (5) 111 501 04 82 110 500 01 91 Shaped hose (7) 110 501 04 82
	1	Shaped hose (1) 110 501 02 82		Shaped hose (2)	110 501 05 82
230 SL	-	Shaped hose 113 501 04 82		Shaped hose	113 501 05 82
300 SE	-	Standard hose 900273 038000 (38x46x90 N 273) Cooling water line 189 203 19 02 Shaped hose 312 501 10 82	Standard hose 900271 038001 (38x46x90 N 271)	Standard hose 900273 045000 (45x57x100 N 273) Cooling water line 189 203 24 02 Shaped hose 312 501 10 82	Standard hose 900271 045002 (45x57x100 N 271)

1) For vehicles with automatic DB transmission

On the introduction of new qualities the standard and shaped hoses were changed as well. The part numbers were changed in isolated cases only.
The heating water hoses are not mentioned in this table. Their quality has been changed as well whereas their part numbers have been maintained.

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 71	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 50	PASSENGER CARS

Stuttgart-Untertürkheim, December 1963

To all Daimler-Benz Agencies

Re.: Cooling Water Drain Plug on Passenger Car Models

As known, the old water drain cock on the radiator of passenger car production models has been replaced at the beginning of this year by a hexagon bolt and sealing ring. Occasionally, this hexagon bolt has been tightened too much already by the supplier and the high torque required when loosening the bolt tended to make the water box leak.

As it is done now during production, any tightening of this hexagon bolt at a later date should not exceed a tightening torque of 0.6 to 0.8 mkg. If this does not make the plug completely seal-tight, the sealing ring must be replaced (copper asbestos ring C 14 x 18 DIN 7603). Under no circumstances should the hexagon bolt be tightened more than 1.0 mkg., because otherwise the threaded joint may be torn out of the water box resulting in a leaky radiator.

It is recommended to clean the threads of the hexagon plug prior to screwing it down and to coat it with graphite paste.

Please inform your workshop personnel explicitly about these instructions.

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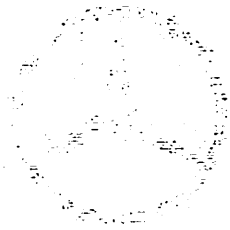

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. S 11	Ordner File Classeur Archivador: Special Versions	Gruppe Group Groupe Grupo 51/52	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of Protective Underplates -- Models 220/8, 220 D/8, 230/8 and 250/8

Models 220/8, 220 D/8, 230/8 and 250/8 which are frequently driven on bad roads or in competition events may be subsequently equipped with two protective underplates:

A) Protective underplate for oil pan
B) Protective underplate for fuel tank

A) Protective Underplate for Oil Pan

NOTE: The protector for the oil pan should be removed and cleaned occasionally, as mud and sand will accumulate on it.

1. On models 220/8 to 230/8, remove ornamental chrome molding (right and left side) located below the front bumper. On model 250/8, remove the front bumper entirely with bracket.

2. Remove the front center section with license plate mounting brackets.

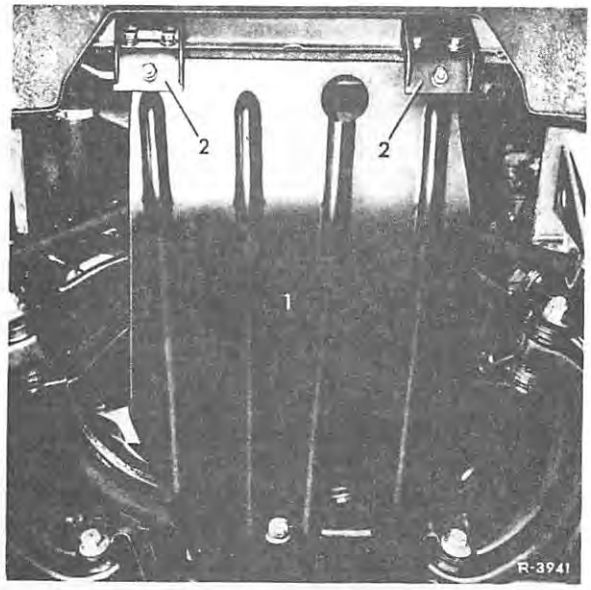

Illustration 1
Protective underplate for oil pan

1. Protective underplate
2. Brackets, front

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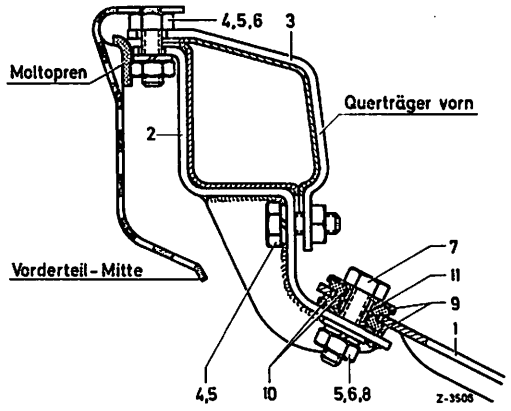

Illustration 2

Front mounting to body cross member

1. Protective underplate
2. Bracket, front
3. Bracket, rear
4. Hex head screw
5. Lock washer
6. Hex nut
7. Hex head screw
8. Washer
9. Disc washer
10. Plastic washer
11. Spacer

Moltopren = Moltoprene (sponge rubber)
Querträger vorn = Cross member, front
Vorderteil-Mitte = Front section, center

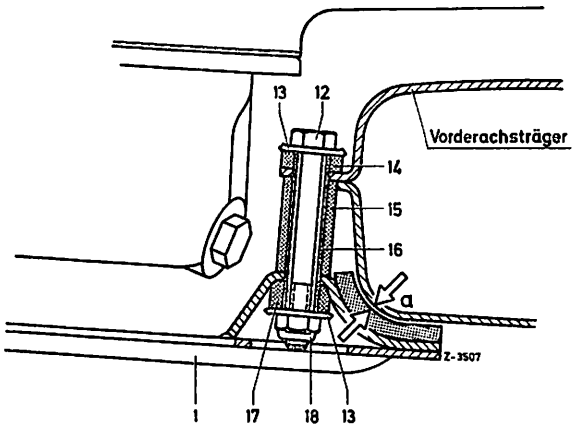

Illustration 3

Rear mounting to front axle support

1. Protective underplate
12. Hex head screw
13. Washer
14. Plastic washer
15. Rubber hose
16. Spacer
17. Plastic shim
18. Self-locking nut

"a" = .08" (2 mm)
Vorderachsträger = Front axle support

3. Using the parts 4 through 6, mount the brackets (parts 2 and 3) for the protective underplate onto the front body cross member (illustration 2). The upper and lower holes for mounting the brackets on the cross member are provided in series production.

4. Using parts 5 through 11, mount the protective underplate (1) onto the bracket (2). Tighten the hex head nut (6) to a torque of 2.9 ft. lbs. (0.4 mkp) (see illustration 2).

5. Slide the rear washer (13) and the plastic washer (14) onto the hex head screw (12). Starting from the top, insert them in the hole of the front section of the front axle support (illustration 3).

6. Slide the rubber hose (15) over the spacer (16). Starting from the bottom, slide both parts onto the hex head screw (12). Then, using parts 13 and 17, attach the protective underplate (1) using a self-locking nut (18) (illustration 3). (Prescribed tightening torque: 2.9 ft. lbs. (0.4 mkp).

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NOTE: When the protective underplate is completely installed, be sure that there is a clearance of approximately "a" = .08" (2 mm) between the riveted rubber plate (on the protective underplate) and the front axle support (see arrows in illustration 3).

7. Reinstall the ornamental chrome moldings, the bumper (if required), and the front center section with the license plate mounting brackets.

B) Protective Underplate for Fuel Tank

1. Remove the rubber floor mat from the trunk.

2. Using a hoist, place the protective underplate in the installation position so that the opening in the underplate is in alignment with the fuel tank drain plug and just touching.

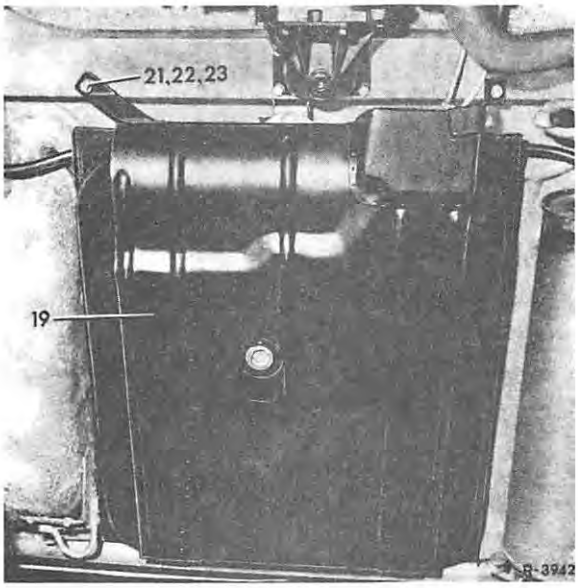

Illustration 4
Protective underplate for fuel tank

19. Protective underplate
21. Countersunk nut
22. Hex nut
23. Lock washer

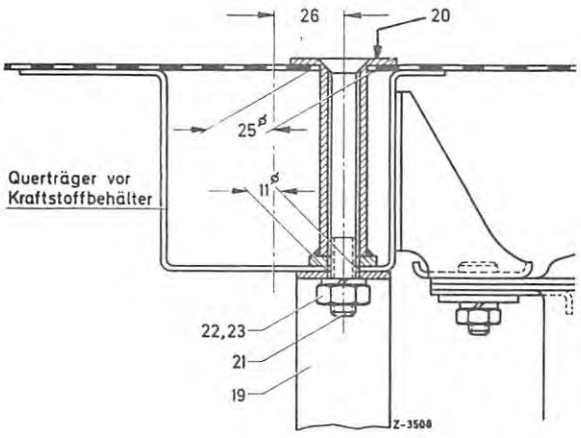

Illustration 5
Front mounting to body cross member

19. Protective underplate
20. Spacer
21. Countersunk nut
22. Hex nut
23. Lock washer

Querträger vor Kraftstoffbehälter = Cross member in front of fuel tank
11 ø = .43" ø
25 ø = .98" ø
26 =1.02"

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3. Unscrew and remove both rear mounting nuts of the fuel tank. Then, using the existing hex nuts and washers (24) mount the rear section of the protective underplate (19) on the threaded bolts of the fuel tank mounting (illustration 6).

4. Press the front part of the protective underplate in installation position on the underside of the body cross member and trace both mounting holes, using the holes in the brackets as templates (see illustration 4 and 5).

5. Lower the hoist supporting the protective underplate. Punch-mark the traced holes on the body cross member. Then, using a .43" Ø (11 mm Ø) drill, drill vertically into the body cross member up to the trunk compartment (illustration 5).

6. Then, using a drill, enlarge these holes at the top of the body cross member to a diameter of .98" Ø (25 mm Ø).

7. Insert the countersunk screws (21) into the spacers (20) and then insert the spacers into the drilled holes (illustration 5).

8. Using one hex nut (22) each and a lock washer (23), mount the protective underplate onto the body cross member (illustrations 4 and 5).

9. Be sure to check for tight seat of the rear fuel tank attachment.

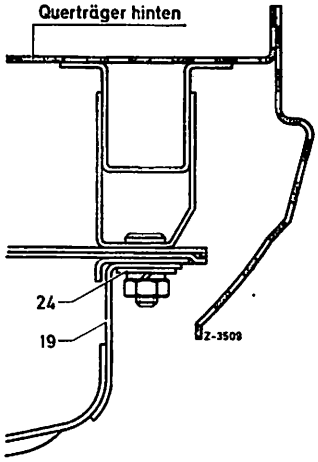

Illustration 6

Rear mounting to body cross member

19. Protective underplate
24. Washer
Querträger hinten = Cross member, rear

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Required parts

Item	Qty.	Description	Part No. or DIN Designation
1	1	Protective underplate for oil pan	115 520 00 42
2	2	Bracket, front	115 520 00 41
3	2	Bracket, rear	115 520 01 41
4	8	Hex head screw M 8 x 18	000933 008028
5	10	Lock washer B 8	000127 008203
6	6	Hex nut M 8	000934 008013
7	2	Hex head screw M 8 x 28	000931 008168
8	2	Washer	000125 008407
9	4	Spring washer	120 155 00 82
10	4	Plastic washer	115 524 01 76
11	2	Spacer	115 524 00 53
12	1	Hex head screw M 8 x 72	000931 008294
13	2	Washer	115 524 00 76
14	1	Plastic washer	115 524 02 76
15	1	Rubber hose 10 x 17 x 36 mm long	900271 010020
16	1	Spacer	115 524 01 53
17	1	Plastic shim	115 524 00 84
18	1	Self-locking hex nut M 8	000985 008001
19	1	Protective underplate for fuel tank	115 520 00 75
20	2	Spacer	115 520 02 41
21	2	Countersunk screws M 10 x 90	007991 010001
22	2	Hex nut M 10	000934 010007
23	2	Lock washer B 10	000127 010202
24	2	Washer	180 990 06 40

The protective underplates are not stock items in our depots. On special request and firm dealer order our depots will have the parts flown in. These parts are not subject for credit consideration.

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Service Department

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MERCEDES-BENZ

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	Ordner / File / Classeur / Archivador	Gruppe / Group / Groupe / Grupo	
S 8	Special Versions	51/52	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of Protective Underplates -- Model 600

Model 600 vehicles which are frequently driven on non-paved roads may be subsequently equipped with the following protective underplates to protect the respective units from damage:

A) Protective underplate for oil pan
B) Protective underplate for transmission
C) Protective underplate for fuel lines
D) Protective underplate for rear axle
E) Protective underplate for fuel tank

A) Protective underplate for oil pan

NOTE: The protector for the oil pan should be removed and cleaned occasionally, as mud and sand will accumulate on this plate.

1. Mount parts (5, 9, 10, 14, and 15) on the two bolts (4). (See illustration 2.)

2. Position both supporting plates (5) on threaded studs which are already welded onto the protective underplate (1) and tighten them lightly with mounting parts 6 and 8 (see illustration 3).

3. Using the parts 9 through 14, provisionally mount the brackets (2 and 3)at the front of the protective plate.

4. Press protective underplate (1) to underside of the body cross member and front axle support and adjust it so that there is a distance of 2.05 in. (52 mm) between the front edge of the front axle support and the center of bolt (4). Loosen hex nuts (8) and shift supporting plates (5) as required. See illustration 3.

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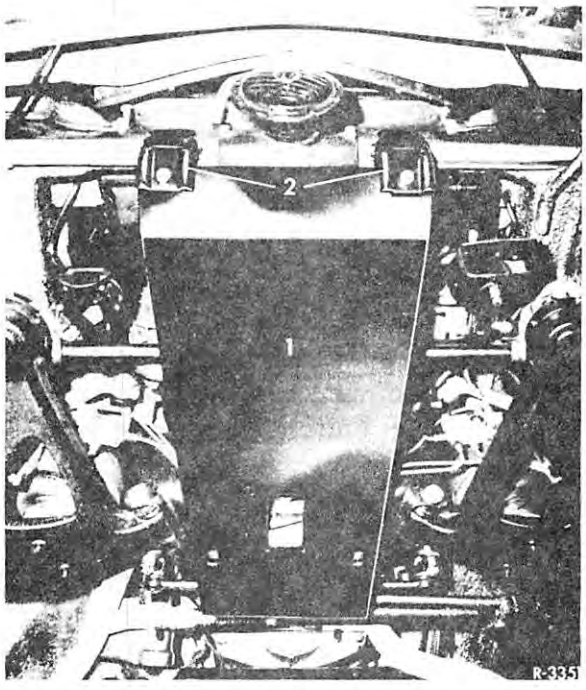

Illustration 1
Protective underplate for oil pan

1. Protective underplate
2. Bracket

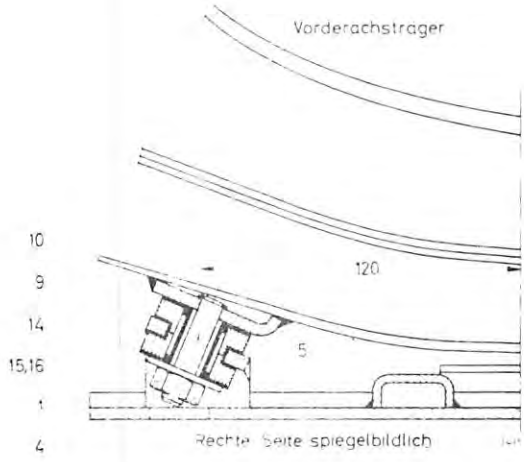

Illustration 2
Mounting to front axle support

1. Protective underplate
4. Bolt with washer
5. Supporting plate
9. Megi ring buffer
10. Spacer sleeve
14. Washer
15. Castle nut
16. Cotter pin

120 mm - 4.93 inches
Vorderachsträger = Front axle support
Rechte Seite spiegelbildlich = right side reversely represented

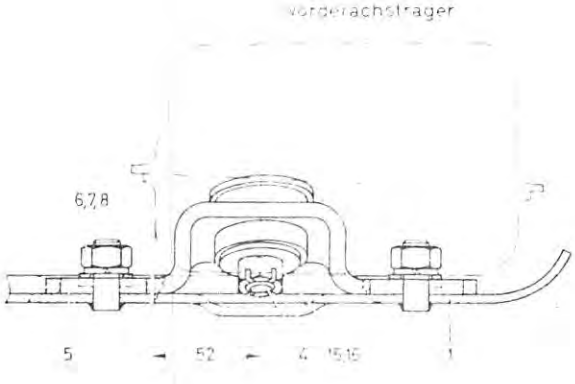

Illustration 3
Mounting to front axle support

1. Protective underplate
4. Bolt with washer
5. Supporting plate
6. Shim
7. Lock washer
8. Hex nut M 10
15. Castle nut
16. Cotter pin

52 mm = 2.05 inches
Vorderachsträger = Front axle support

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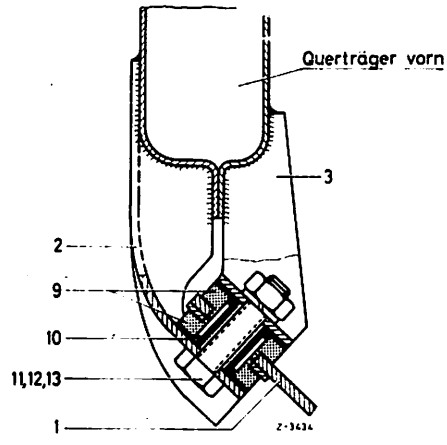

Illustration 4
Mounting to front body cross member

1. Protective underplate
2. Bracket
3. Bracket
9. Megi ring buffer
10. Spacer sleeve
11. Hex head screw
12. Lock washer
13. Hex nut

Querträger vorn = Cross member, front

5. Then tack weld bolt (4) and brackets (2 and 3) to the front axle support and to the body cross member at several points (see illustrations 2 and 4).

   Prior to doing so, remove all dirt and paint from the welding areas.

6. Then remove protective underplate again and fully weld bolt to the front axle support and bracket to the body cross member. After welding has been completed, paint the welds.

7. Mount and fasten the protective underplate (see illustrations 1 through 4).

B) Protective underplate for transmission

1. Position the welding boss (19) and the supporting plate (20) onto the protective underplate and tighten lightly using the hex head screws (22) and the lock washers (23) (see illustration 5).

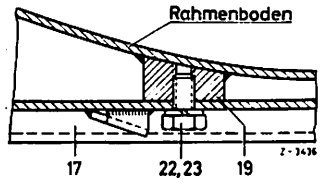

Illustration 5
Mounting to frame floor

17. Protective underplate
19. Welding boss
22. Hex head screw
23. Lock washer

Rahmenboden = Frame floor

2. Press protective underplate (17) to underside of the frame floor and tack-weld the welding bosses (19) and the supporting plates (20) at several points.

   Prior to doing so, remove all dirt and undercoating from the welding area.

3. Then remove protective underplate again and fully weld on welding bosses and supporting plates.

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4. Using a screw (24) and a lock washer (25), mount additional supporting plate (21) onto the protective underplate (17).

5. Mount the protective underplate for the transmission. Then drill three .19 in. diameter (4.8 mm Ø) holes into the frame floor, using the holes in the additional supporting plate (21) as a template (see illustration 6).

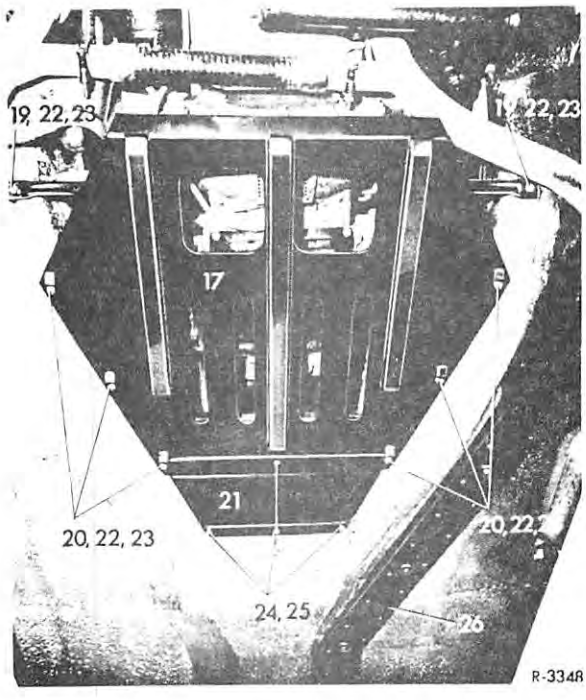

Illustration 6
Protective underplates for transmission and fuel lines

17. Protective underplate for transmission
19. Welding boss
20. Supporting plate
21. Additional supporting plate
22. Hex head screw
23. Lock washer
24. Screw
25. Lock washer
26. Protective underplate for fuel lines

6. Tap M 6 threads into the drilled holes and mount the additional supporting plate (21), using the remaining screws (24) and lock washers (25).

C) Protective underplate for fuel lines

1. Hold the protective underplate (26) in installation position on the frame floor and drill .36 in. diameter (9 + 0.1 mm Ø) holes for the riveting nuts (27 and 28). Use the holes in the protective underplate as templates. See illustrations 6, 7, and 8.

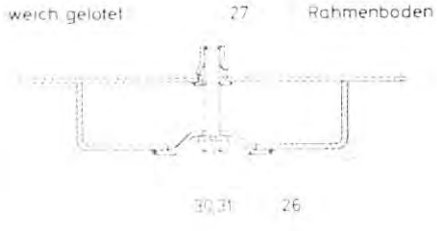

Illustration 7
Section A and B of illustration 8

26. Protective underplate
27. Riveting nut
30. Hex head screw
31. Lock washer

Weich gelötet = Soldered
Rahmenboden = Frame Floor

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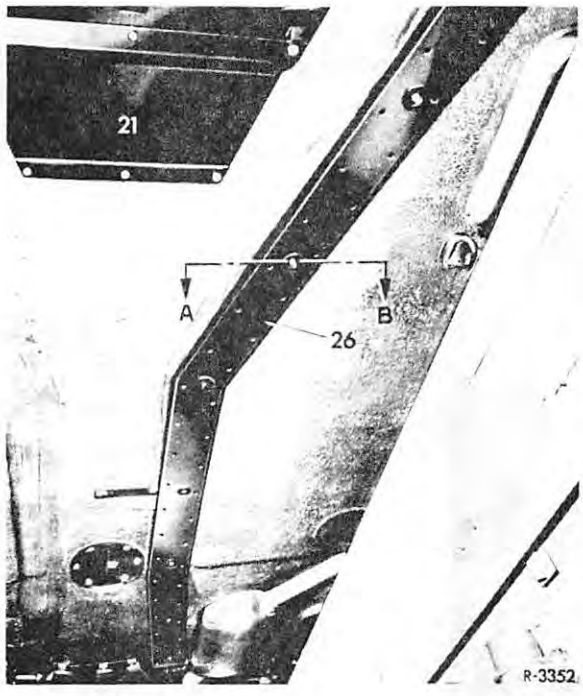

Illustration 8
Protective underplate for fuel lines

21. Additional supporting plate
26. Protective underplate
A and B - see illustration 7

2. Remove protective underplate. Then, remove the undercoating surrounding all the drilled holes.

3. Insert riveting nuts (27 and 28) into the drilled holes and secure them against turning by means of tin soldering (see illustrations 7 and 8).

4. Attach the protective underplate with the hex head screws (29 and 30) and the lock washers (31).

D) and E) Protective underplate for rear axle and fuel tank

1. Empty and remove the fuel tank.

2. Mount protective underplate for the rear axle housing (32) along with protective underplate for the fuel tank (38), using the hex head screws (33) and the lock washers (34) (see illustration 9).

3. Using the hex head screws (40 and/or 43) and lock washers (41 and/or 44) lightly attach the welding plates (39 and 42) to the 4 mounting holes at the rear of the protective underplate for the fuel tank (38) and at the bracket (lateral left of underplate).

4. Hold complete protective underplate in installation position on the underside of the frame floor and the rear body cross member. Then drill three .41 in. diameter (10.5 mm Ø) holes into the frame floor, using the holes in the protective underplate (32) as a template (see illustration 9).

5. Tack-weld the welding plates (39 and 42) to the rear body cross member and to the left side member at several points. (See illustration 10.)

vdh - www.mercedesclubs.de (over)

Prior to doing so, remove all dirt and undercoating from the welding areas. After welding has been completed, paint the welds.

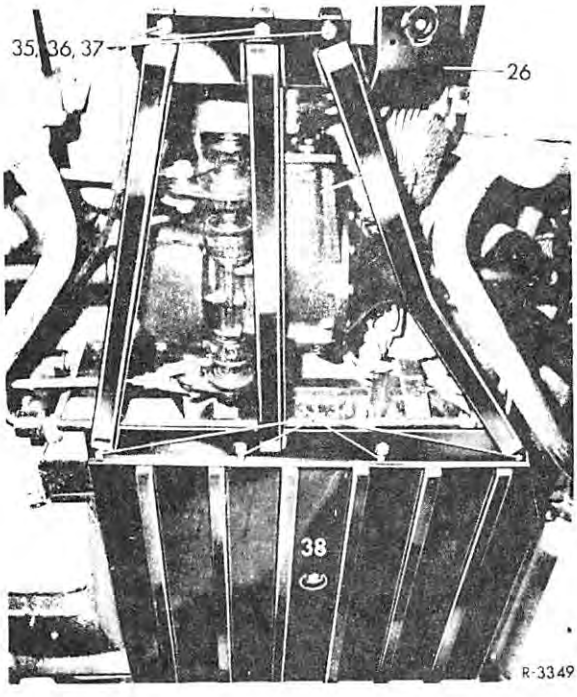

Illustration 9
Protective underplate for rear axle and fuel tank

32. Protective underplate for rear axle
33. Hex head screw
34. Lock washer
35. Hex head screw
36. Lock washer
37. Hex nut
38. Protective underplate for fuel tank

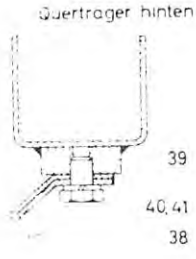

Illustration 10
Section C and D of Illustration 11

38. Protective underplate for fuel tank
39. Welding plate
40. Hex head screw
41. Lock washer

Querträger hinten = Cross member, rear

6. Mark the location, on the spare wheel trough, of the two lateral holes, using the holes in the existing bracket to the right of the protective underplate (38) as a template. See illustration 11.

(continued)

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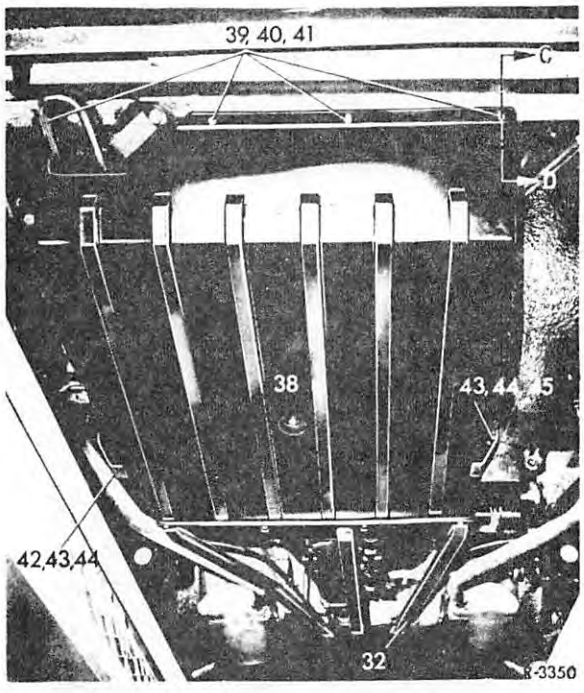

Illustration 11
Protective underplate for rear axle and fuel tank

32. Protective underplate for rear axle
38. Protective underplate for fuel tank
39. Welding plate
40. Hex head screw
41. Lock washer
43. Hex head screw
44. Lock washer
45. Hex nut
C and D - see illustration 10

7. Then remove the protective underplate again and drill two .26 inch diameter (6.5 mm Ø) holes into the marked locations on the spare wheel trough. After drilling, screw on the welding plates (39 and 42).

8. Reinstall the fuel tank. Mount and finally fasten the protective underplates.

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Parts Required

Item	Qty.	Description	Part No. or DIN Designation
1	1	Protective underplate for oil pan	100 520 01 42
2	2	Bracket	100 524 04 40
3	2	Bracket	100 524 06 40 1)
	2	Bracket	100 524 05 40 2)
4	2	Bolt with washer	100 520 00 74
5	2	Supporting plate	111 524 15 40
6	4	Shim	111 524 00 18
7	4	Lock washer B 10	000 127 01 02 02
8	4	Hex nut M 10	000 934 01 00 05
9	8	Megi ring buffer	001 987 08 40
10	4	Spacer sleeve	111 524 02 53
11	2	Hex head screw M 10 x 40	000 931 01 00 54
12	2	Lock washer B 10	000 127 01 02 02
13	2	Hex nut M 10	000 934 01 00 05
14	2	Lock washer B 10.5	009 021 01 02 01
15	2	Castle nut M 10	000 937 01 00 03
16	2	Cotter pin 2 x 22	000 094 00 20 21
17	1	Protective underplate for transmission	100 520 00 88
18	1	Rubber buffer	111 524 00 81
19	2	Welding boss	100 524 00 86
20	6	Supporting plate	100 524 01 86
21	1	Additional supporting plate	100 524 01 33
22	8	Hex head screw M 8 x 15	000 933 00 80 16
23	8	Lock washer B 8	000 127 00 82 03
24	4	Screw AM 6 x 8	000 085 00 61 39
25	4	Lock washer A 6	000 137 00 61 01
26a	1	Protective underplate for fuel lines - front section	100 520 02 75
26b	1	Protective underplate for	100 520 04 75 3)
		fuel lines - rear section	100 520 05 75 4)
27	6	Riveting nut M 6	000 984 07 21 3)
	7	Riveting nut M 6	000 984 07 21 4)
28	3	Riveting nut M 6	000 984 12 21 3)
	4	Riveting nut M 6	000 984 12 21 4)
29	2	Hex head screw M 6 x 18	000 933 00 60 77
30	7	Hex head screw M 6 x 35	000 931 00 60 97 3)
	9	Hex head screw M 6 x 35	000 931 00 60 97 4)
31	9	Lock washer B 6	000 127 00 62 03 3)
	11	Lock washer B 6	000 127 00 62 03 4)

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Item	Qty.	Description	Part No. or DIN Designation
32	1	Protective underplate for rear axle	100 520 03 75
33	4	Hex head screw M 8 x 15	000 933 00 80 16
34	4	Lock washer B 8	000 127 00 82 03
35	3	Hex head screw M 10 x 18	000 933 01 01 06
36	3	Lock washer B 10	000 127 01 02 02
37	3	Hex nut M 10	000 934 01 00 07
38	1	Protective underplate for fuel tank	100 520 01 75
39	4	Welding plate	100 524 01 86
40	4	Hex head screw M 8 x 12	000 933 00 81 06
41	4	Lock washer B 8	000 127 00 82 03
42	1	Welding plate	100 524 02 86
43	4	Hex head screw M 6 x 12	000 933 00 60 16
44	4	Lock washer B 6	000 127 00 62 03
45	2	Hex nut M 6	000 934 00 60 06

1) up to chassis end no. 769
2) as of chassis end no. 770
3) for Model 600 Sedan
4) for Model 600 Pullman

The required parts may be ordered through your Mercedes-Benz parts depot. Allow six to eight weeks delivery time since parts will be specially ordered from the factory.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. S 13	Ordner File Classeur Archivador Special Versions	Gruppe Group Groupe Grupo 51/52	Passenger Cars

This Service Information supersedes: Service Information No. S 1, File Special Versions, Group 51/52, dated January 1966. (The contents were revised and the Types 250 SL and 280 SL/8 added.)

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of Protective Underplates -- Types 230 SL, 250 SL, and 280 SL/8

Types 230 SL, 250 SL, and 280 SL/8 which are frequently driven on bad roads may be subsequently equipped with the following protective underplates to protect the respective units from damage:

A) Protective underplate for oil pan
B) Protective underplate for slave cylinder
C) Protective underplate for rear axle
D) Protective underplate for fuel tank

The protectors for the oil pan and the rear axle should be removed and cleaned from time to time, as mud and sand will inevitably accumulate on them.

Installation Procedure

A) Protective Underplate for Oil Pan

1. In accordance with the measurements provided in illustration 1, mark the inner surface of the front body cross member with prick punch for drilling two holes for each bracket (4). (This is now being done in production at the factory.)

2. Then put brackets (2 and 4) in place and, using them as drilling templates, drill four 0.335 in. (8.5 mm) diameter holes in the cross member for the mounting screws of each bracket (the holes are now being provided in production at the factory). Subsequently mount brackets (2 and 4) together with mounting angles (3). See illustrations 1 and 2.

3. Using mounting parts 8 to 12 (illustration 2), mount

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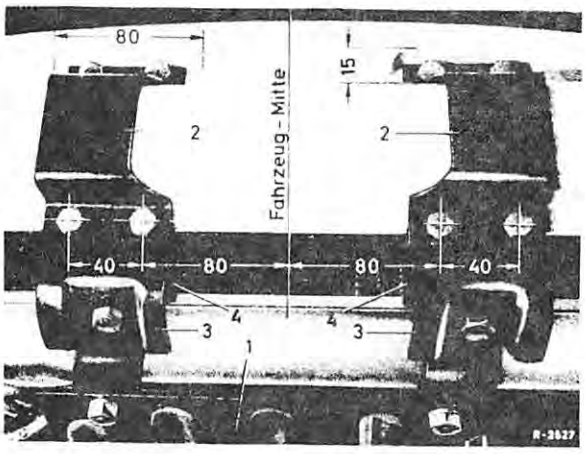


Illustration 1
Mounting to front body cross member

1. Protective underplate for oil pan
2. Bracket
3. Mounting angle
4. Bracket

15 mm = 0.591 in.
40 mm = 1.575 in.
80 mm = 3.150 in.
Fahrzeug-Mitte = Center of car

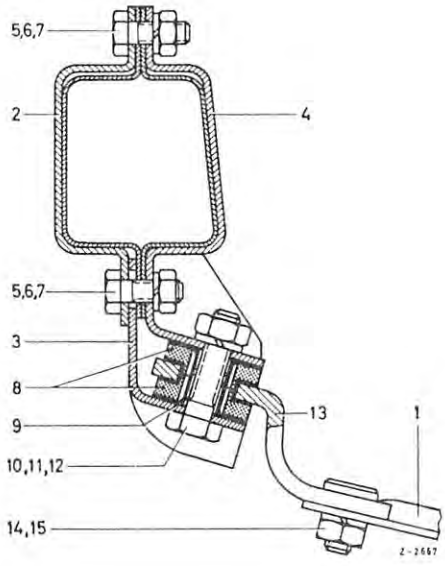


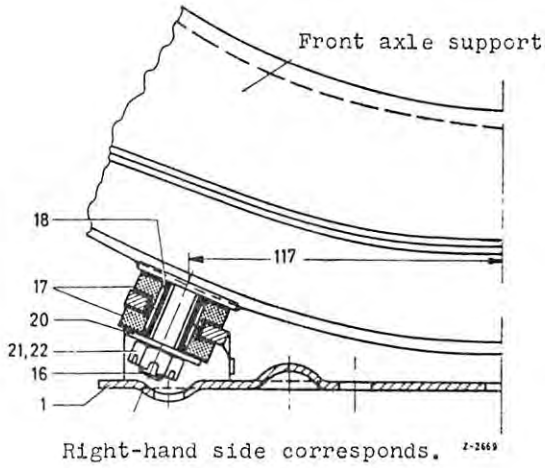
Illustration 2
Mounting to front body cross member

1. Protective underplate for oil pan
2. Bracket
3. Mounting angle
4. Bracket
5. Hex-head screw
6. Lock washer
7. Hexagon nut
8. Megi ring buffer
9. Spacer sleeve
10. Hex-head screw
11. Lock washer
12. Hexagon nut
13. Bracket
14. Hexagon nut
15. Lock washer

Illustration 3
Bolt with washer on front axle support

1. Protective underplate for oil pan
16. Bolt with washer
17. Megi ring buffer
18. Spacer sleeve
20. Washer
21. Castle nut
22. Cotter pin

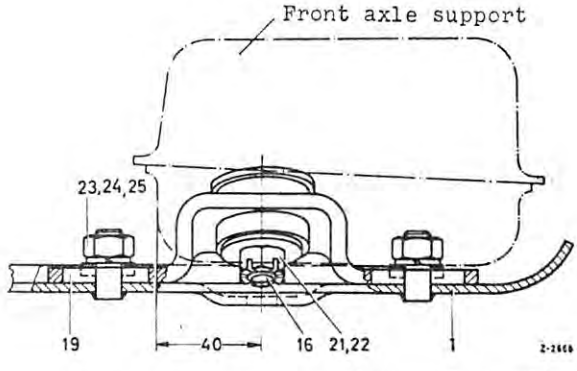
117 mm = 4.606 in.



Right-hand side corresponds.

Illustration 4
Mounting to front axle support

1. Protective underplate for oil pan
16. Bolt with washer
19. Supporting plate
21. Castle nut
22. Cotter pin
23. Shim
24. Lock washer
25. Hexagon nut



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brackets (13) to mounting angles (3) and brackets (4) (see illustration 2).

4. Attach parts 17 to 21 to bolts with washers (16) (see illustration 3).

5. Position both supporting plates (19) on threaded studs which are already welded onto the protective underplate (1) and tighten them lightly with mounting parts 23 to 25 (see illustration 4).

6. With hexagon nuts (14) and lock washers (15), fasten protective underplate (1) on the front brackets (13) (see illustration 2).

7. Press protective underplate (1) to underside of front axle support and adjust it so that there is a distance of 1.6 in. (40 mm) between the front edge of the front axle support and the center of bolt (16). Loosen hexagon nuts (25) and shift supporting plates (19) as required. See illustration 4.

8. Then tack-weld bolts with washers (16) to front axle support at several points (see illustration 3).

   Prior to doing so, remove all dirt and paint from the welding areas.

   Then remove protective underplate again and fully weld washers (16) to the front axle support. After welding has been completed, paint the welds.

9. Mount and fasten finally the protective underplate (see illustrations 2, 4, and 5).

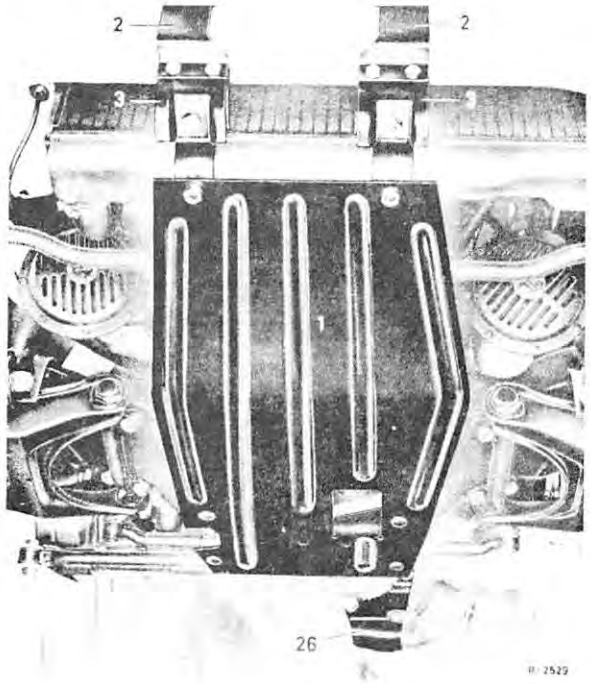

Illustration 5
Protective underplate for oil pan

1. Protective underplate for oil pan
2. Brackets, left and right
3. Mounting angles, left and right
26. Protective underplate for slave cylinder

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B) Protective Underplate for Clutch Slave Cylinder

10. Unscrew both left hex-head screws which fasten the intermediate flange to the oil pan and the cover plate to the intermediate flange. Then mount protective underplate with hex-head screws (27 and 28) and lock washers (29). See illustration 6a or 6b.

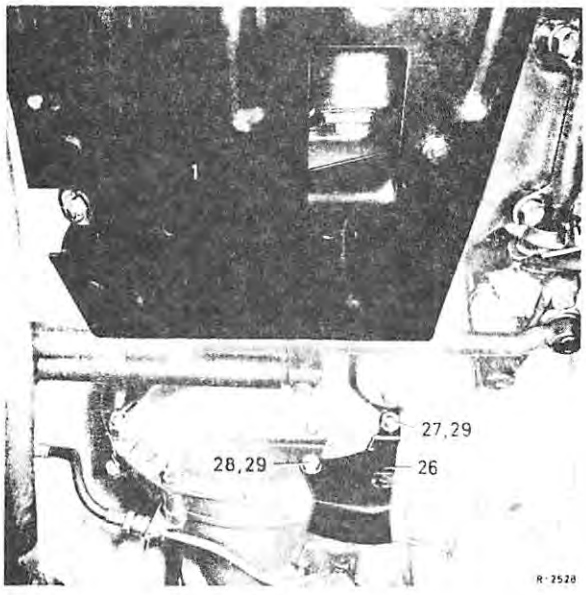

Illustration 6a
Protective underplate for slave cylinder -- Type 230 SL

1. Protective underplate for oil pan
26. Protective underplate for slave cylinder
27. Hex-head screw
28. Hex-head screw
29. Lock washer

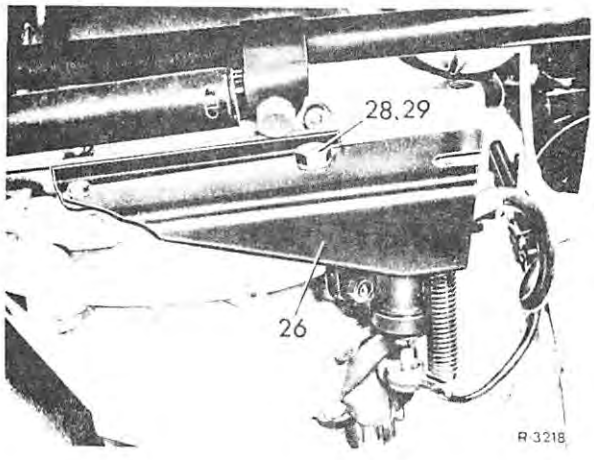

Illustration 6b
Protective underplate for slave cylinder -- Type 250 SL/280 SL/8

26. Protective underplate for slave cylinder
28. Hex-head screw
29. Lock washer

C&D) Protective Underplates for Rear Axle and Fuel Tank

11. Empty and remove fuel tank (for details, see Job No. 47-1 in the Service Manual or Workshop Manual for Passenger Car Models Starting August 1959).

12. Starting from the center of the fuel tank mounting (46), press brackets (31, 32, and 41) onto frame cross member and weld them on electrically (see illustration 7).

    Before starting to weld, remove all dirt and paint from the respective welding points. Subsequently cover the welds with paint.

13. Replace the fuel tank into installation position and support it from below.

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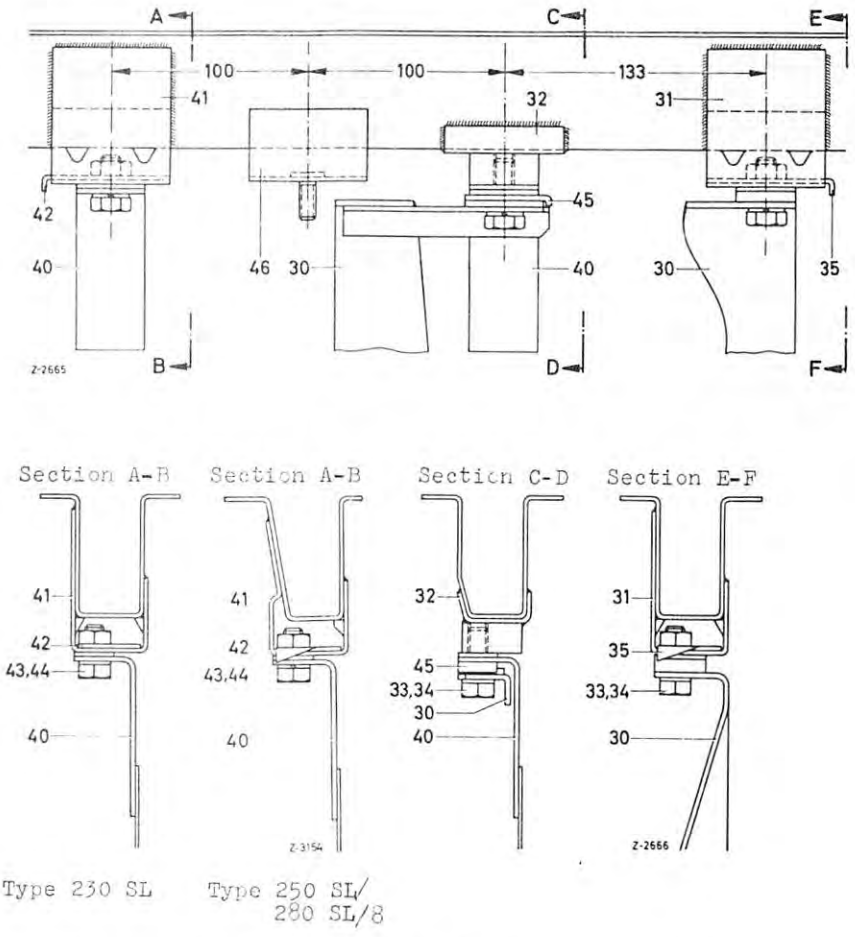

Illustration 7. Mounting protective underplates for rear axle and fuel tank on frame cross member in front of fuel tank

30. Protective underplate for rear axle
31. Bracket
32. Bracket
33. Hex-head screw
34. Lock washer
35. Mounting rail
40. Protective underplate for fuel tank
41. Bracket
42. Mounting rail
43. Hex-head screw
44. Lock washer
45. Shim
46. Tank mounting, front

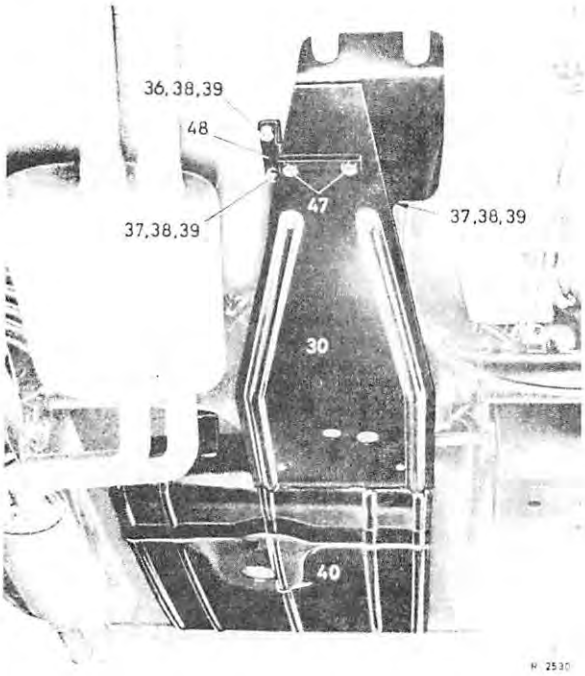

Illustration 8

Protective underplates for rear axle and fuel tank

30. Protective underplate for rear axle
36. Hex-head screw
37. Hex-head screw
38. Lock washer
39. Hexagon nut
40. Protective underplate for fuel tank
47. Hex-head screw
48. Bracket

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14. Push mounting rail (42) into bracket (41). Then fasten the front of the protective underplate for the fuel tank to the bracket (41) with hex-head screw (43) and lock washer (44) (see illustration 7).

15. Mount the rear of the fuel tank protective underplate (40) on the threaded studs on which the rear of the tank is mounted. Use the existing hex nuts, washers, and lock washers.

16. On type 250 SL/280 SL/8, additionally attach protective underplate (40) to left frame side member flange with parts 40 a, b, and c. Use the holes in the plate as a template when drilling the mounting holes. (See illustration 9.)

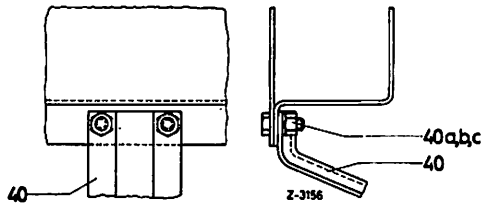

Illustration 9

Mounting protective underplate for fuel tank on frame side member -- Type 250 SL/280 SL/8

40. Protective underplate for fuel tank
40a. Hex-head screw
40b. Lock washer
40c. Hexagon nut

17. Push mounting rail (35) into left bracket (31) (and on type 230 SL up to chassis end No. 003241, also into the right bracket -- 31, too). In type 230 SL beginning with chassis end No. 003242, the right bracket (31) is replaced by bracket (32), and the 250 SL's/280 SL/8's are all as shown in illustration 7. In any case, use hex-head screws (33) and lock washers (34) to fasten the protective underplate for the rear axle (30) and the protective underplate for the fuel tank (40) to brackets (31 and 31 or 31 and 32, (illustration 7). Place shim (45) between these protective underplates as shown in illustration 7, section C - D.

18. Hold front part of rear axle protective underplate (30) and bracket (48) in installation position on underside of frame floor. Then drill two 0.33 in. (8.5 mm) diameter holes into the frame floor, using the side holes in the bracket (48) as drilling templates (see illustration 8).

19. Attach bracket (48) of protective underplate (30) to frame floor with hex-head screws (36 and 37), lock washers (38), and hex nuts (39). Subsequently remove hex-head screws (47) and lock washers and again remove protective underplate for rear axle (30).

20. Now drill the third mounting hole into the frame floor, using the now visible third bore in the bracket (48) as a drilling template. Then insert hex-head screw (37) and tighten hex nut (39) with lock washer (38).

21. Remount protective underplate (30) (see illustration 8).

(continued)

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Required parts

Item	Qty.	Description	Part No. or DIN Designation 230 SL	250 SL/280 SL/8
1	1	Protective underplate for oil pan	113 520 04 75	
		Mounting parts on body cross member, front:		
2	1	Bracket, left		111 52[illegible]4 40
	1	Bracket, right		111 524 40
3	2	Mounting angle	111 524 00 10	40
4	2	Bracket	111 520 00 41	113 524 01 10
5	8	Hex-head screw M 8 x 25		520 09 41
6	8	Lock washer B 8		000933 008180
7	8	Hexagon nut M 8		000127 008203
8	4	Megi ring buffer		000934 008013
9	2	Spacer sleeve		001 987 08 40
10	2	Hex-head screw M 10 x 400		111 524 02 53
11	2	Lock washer B 10		000933 010094
12	2	Hexagon nut M 10		000127 010202
13	2	Bracket, front		000934 010007
14	2	Hexagon nut M 10	113 520 02 41	113 520 10 41
15	2	Lock washer B 10		000934 010007
		Mounting parts on front axle support:		000127 010202
16	2	Bolt with washer		
17	4	Megi ring buffer		111 520 02 74
18	2	Spacer sleeve		001 987 08 40
19	2	Supporting plate		111 524 02 53
20	2	Washer A 10.5		111 524 15 40
21	2	Castle nut M 10		009021 016102
22	2	Cotter pin 2 x 22		000937 010000
23	4	Shim		000094 002007
24	4	Lock washer B 10		111 524 00 18
[illegible]	4	Hexagon nut M 10		000127 010202
				000934 010007
	1	Protective underplate for slave cylinder		
	1	Hex-head screw M 10 x 85	110 520 00 75[1]	110 524 01 33[1]
		Hex-head screw M 10 x 20	000933 010074	-
		Lock washer B 10		000933 010089
				000127 010202
		Protective underplate [illegible]r rear axle		
		[illegible]acket		113 520 02 75
		[illegible]cket	112 524 03 40[2]	-
		[illegible]et	112 524 03 40[3]	112 524 03 40
		[illegible]ad screw 28	113 520 06 41[3]	113 520 08 41
		[illegible]her B 10		000931 010198
		[illegible]rail, left		000127 010202
		[illegible]ail, left	112 520 00 27[2]	-
				112 520 00 27[3]

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Item	Qty.	Description	Part No. or DIN Designation 230 SL	250 SL/280 SL/8
36	1	Hex-head screw M 8 x 35		000933 008118
37	2	Hex-head screw M 8 x 20		000933 008108
38	3	Lock washer B 8		000127 008203
39	3	Hexagon nut M 8		000934 008013
40	1	Protective underplate for fuel tank		113 520 06 75
40a	2	Hex-head screw M 6 x 15	-	000933 006026
40b	2	Lock washer M 6	-	000127 006203
40c	2	Hexagon nut M 6	-	000934 006006
41	1	Bracing rail, right	112 524 03 40	112 524 05 40
42	1	Hex-head screw M 10 x 20		112 520 01 27
43	1	Lock washer B 10		000933 010089
44	1	Shim		000127 010202
45				113 524 04 18
47, 48				

...rs with automatic transmission only

...type 230 SL, up through chassis end No. 003241

...type 230 SL, from chassis end No. 003242

Two hex-head screws (47) and one bracket (48) are delivered along with the protective underplate for rear axle (30). They are not available as separate parts.

The required parts may be ordered through your Mercedes-Benz Parts Depot and will be made available to you within 4 to 5 weeks. These parts cannot be returned for credit.

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Article No. S 2	File Special Versions	Group 51/52	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

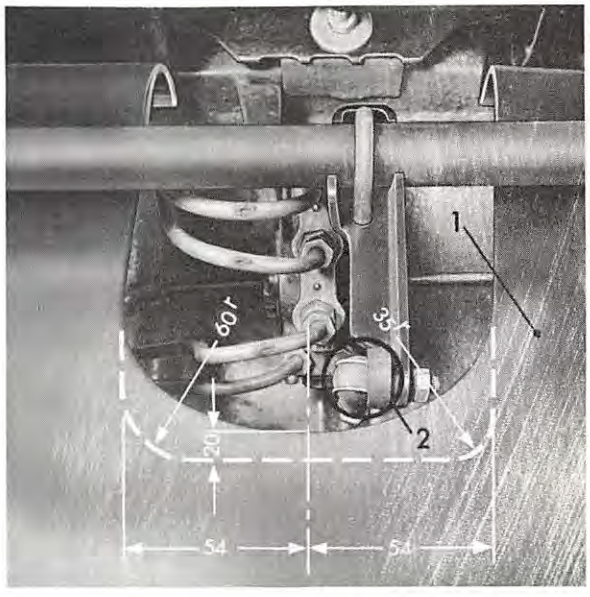
Subject: Protective Underplate for Rear Axle -- Models 300 SE, 300 SEL, and 300 SE Cpe./Conv.

Upon request, the above models can be equipped with a protective underplate for the rear axle.

During the next service inspection of any of the above models equipped with this plate, we would like to ask you to check the distance between the protective underplate (1, illustration) and the angular joint of the control lever on the torsion bar (2, illustration). To do so, the car must be lifted so that the rear wheels are completely off the ground.

1. Protective underplate
2. Angular joint

mm		inches
20	=	.8
35	=	1.4
54	=	2.1
60	=	2.4



If the distance between these parts is less than .8 in. (20 mm), the protective underplate must be reworked in accordance with the dimensions given in the above illustration.

A warranty claim for .5 hours labor may be submitted for the above work.

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MERCEDES-BENZ OF CANADA, LTD.

No. S 14	Ordner / File / Classeur / Archivador Special Versions	Gruppe / Group / Groupe / Grupo 51/52	Passenger Cars

Fort Lee, April 1968

This Service Information supersedes: Service Information No. S 12, File Special Versions, Group 51/52, dated December 1964.

Modification: The types of August 1965 have now been added.

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of Protective Underplates for Sedan Types 190 c, 190 Dc, 220 b/Sb/SEb, 200, 200 D, 230, 230 S, 250 S/SE, 300 SE/SEb, and 300 SEL. Coupé/Convertible Types 220 SEb, 250 SE, and 300 SE

Vehicles of the above-listed types which are frequently driven on bad roads may be subsequently equipped with the following protective underplates to guard the respective units from damage:

a. Protective underplate for oil pan
b. Protective underplate for slave cylinder
c. Guard plate for exhaust pipe bracket
d. Protective underplate for rear axle
e. Protective underplate for fuel tank
f. Protector for pre-silencer
g. Protective underplates for pipe lines

Illustration 1 shows the various protective plates in position, except the one for pipe lines, which is shown in illustration 16.

The protectors for the oil pan and rear axle should be removed and cleaned occasionally, as mud and sand will accumulate on these two plates.

As shown in the following list (see page 3), two different versions of the front axle support and handbrake equalizer are

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installed in types 220 b, 220 Sb, and 220 SEb sedan. For the second-version front axle support, which is more arched toward the bottom, a different oil pan protector will be needed and, in some cases, different mounting parts also than with the front

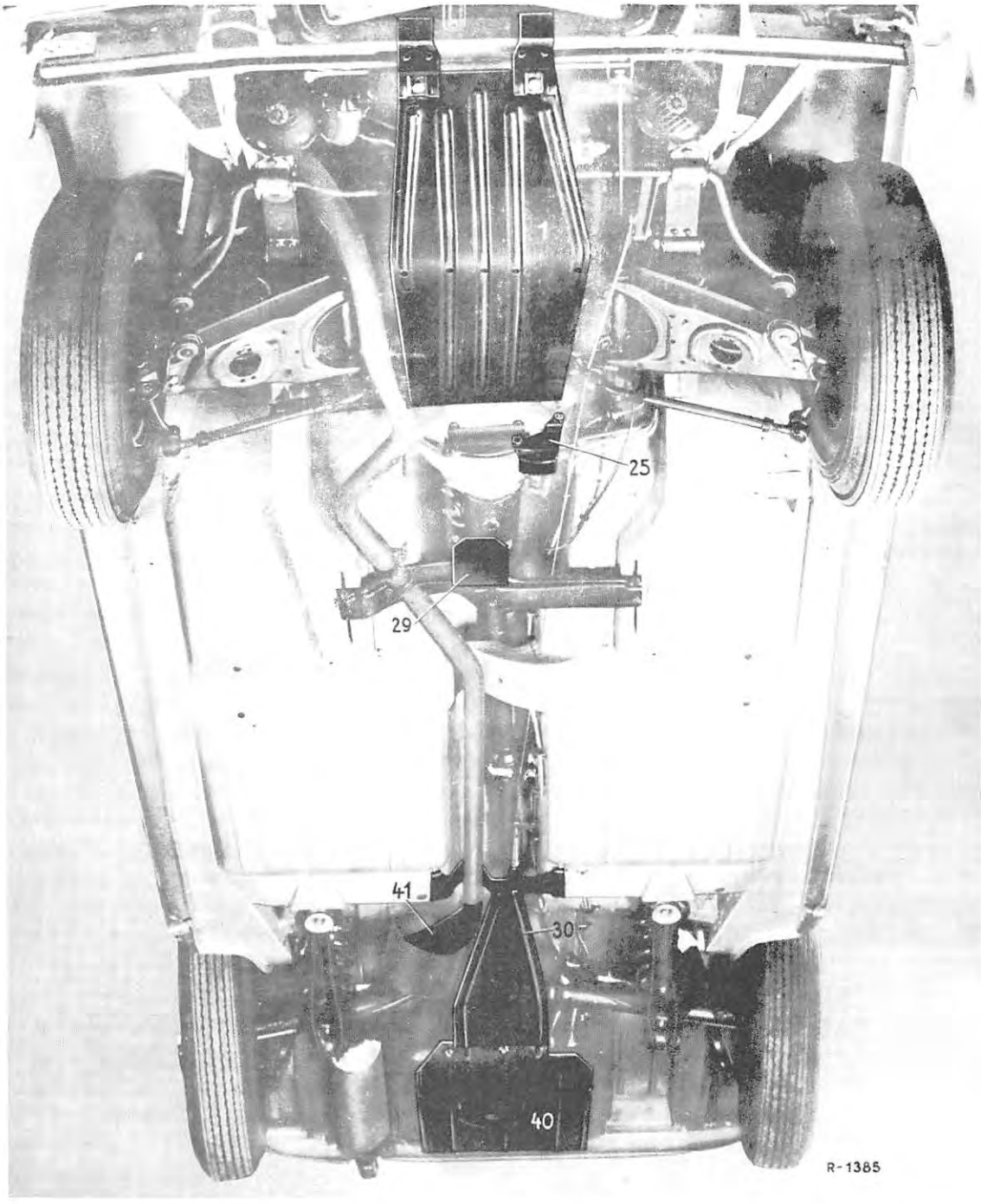

Illustration 1

Protective Underplates in Position on Car

1. Protective underplate for oil pan
25. Protective underplate for slave cylinder
29. Guard plate for exhaust pipe bracket
30. Protective underplate for rear axle
40. Protective underplate for fuel tank
41. Protector for pre-silencer

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axle support of the first version. The second-version handbrake equalizer requires a shorter return spring. For the first version, you must fabricate a holding bracket, since only the second version of the rear axle protection (without holding bracket for the return spring) is available from the parts depots.

FRONT AXLE SUPPORT AND HANDBRAKE EQUALIZER

Type	1st version installed up through chassis end No.	2nd version installed beginning with chassis end No.
190 c, 190 Dc, 200, 200 D	-	000001
220 b	023660	023661
220 Sb	049856	049857
220 SEb Sedan	016975	016976
220 SEb Cpe./Conv., 250 SE Cpe./Conv.	-	000001
all 300 SE	-	000001
230 S, 250 S, 250 SE Sedan	-	000001

Installation Procedure

A. Protective Underplate for Oil Pan

1. In accordance with the measurements in illustration 2, mark the inner surface of the front body cross member with prick punch for drilling two holes for each bracket (4). (This is now being done in production at the factory.)

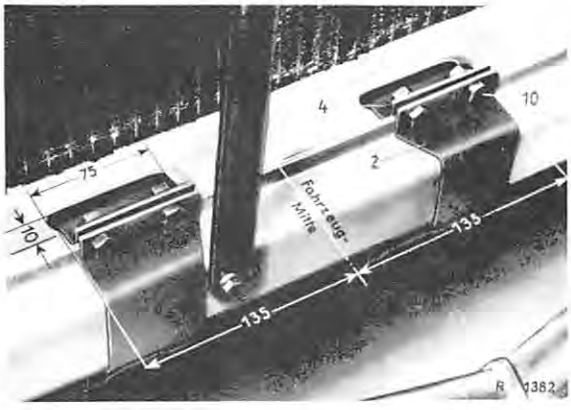

Illustration 2

Mounting to Front Body Cross Member, All Types, except 230, 250 S, 250 SE Sedan, 300 SEb, and 300 SEL

2. Bracket, left
4. Bracket
10. Hex-head screw

10 mm = 0.393 in.
75 mm = 2.953 in.
135 mm = 5.315 in.

Fahrzeug-Mitte = centerline of car

2. Then put brackets (2 and 4) in place and, using them as drilling templates, drill four 0.335 in. (8.5 mm) diameter holes in the cross member for the mounting screws of each bracket (the holes are now being provided in production at the factory). Subsequently mount brackets (2 and 4) together with mounting angles (3). See illustration 3a or 3b.

3. Using either a bolt with bracket (13) or a bolt with washer (14), depending on the case, mount parts 15 to 21 (see illustrations 4 to 7).

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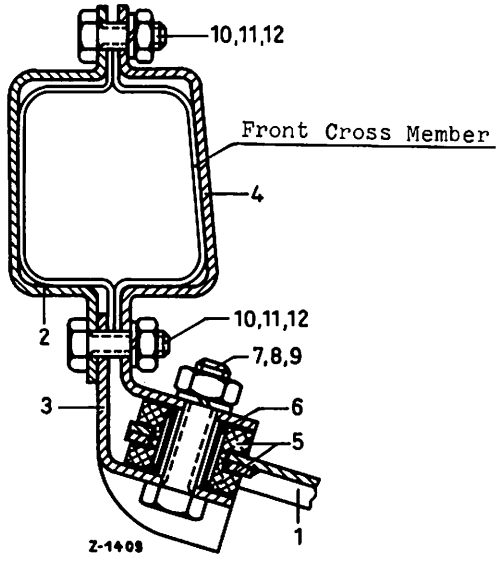

Illustration 3a

Mounting to Front Body Cross Member, All Types, except 230, 250 S, 250 SE Sedan, 300 SEb, and 300 SEL

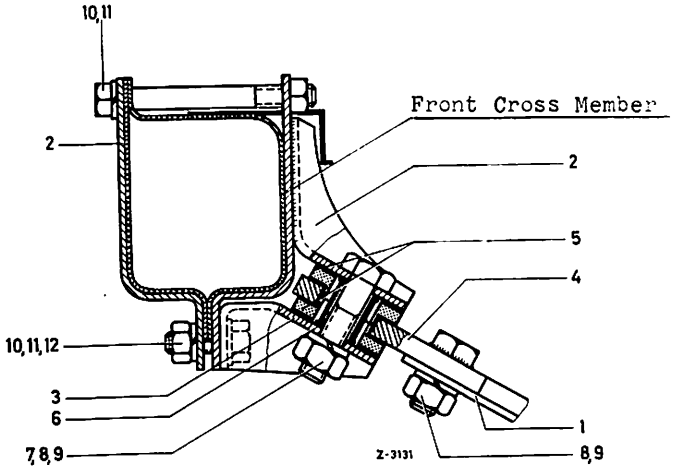

Illustration 3b

Mounting to Front Body Cross Member, Types 230, 250 S, 250 SE Sedan, 300 SEb, and 300 SEL

1. Protective underplate for oil pan
2. Illustration 3a: Bracket. Illustration 3b: Bracket, front and rear
3. Mounting angle
4. Bracket
5. Megi ring buffer
6. Spacer sleeve
7. Hex-head screw
8. Lock washer
9. Hex nut
10. Hex-head screw
11. Lock washer
12. Hex nut

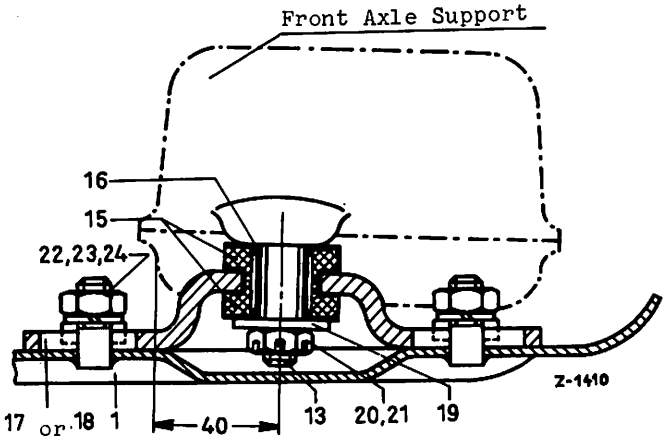

Illustration 4

Mounting to Front Axle Support, 1st Version (220 b/Sb/SEb Sedan)

1. Protective underplate for oil pan
13. Bolt with bracket
15. Megi ring buffer
16. Spacer sleeve
17. Supporting plate, right
18. Supporting plate, left
19. Washer
20. Castle nut
21. Cotter pin
22. Shim
23. Lock washer
24. Hex nut

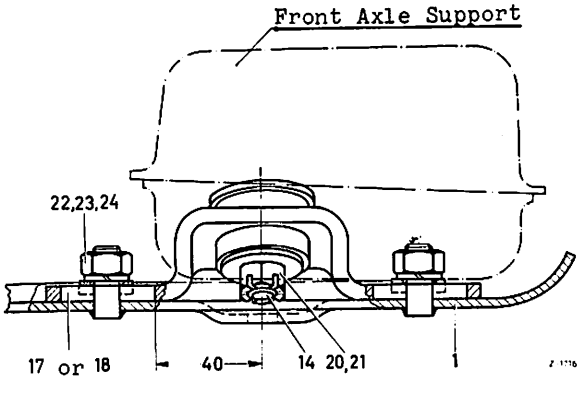

Illustration 5

Mounting to Front Axle Support, 2nd Version

1. Protective underplate for oil pan
14. Bolt with washer
17. Supporting plate, right
18. Supporting plate, left
20. Castle nut
21. Cotter pin
22. Shim
23. Lock washer
24. Hex nut

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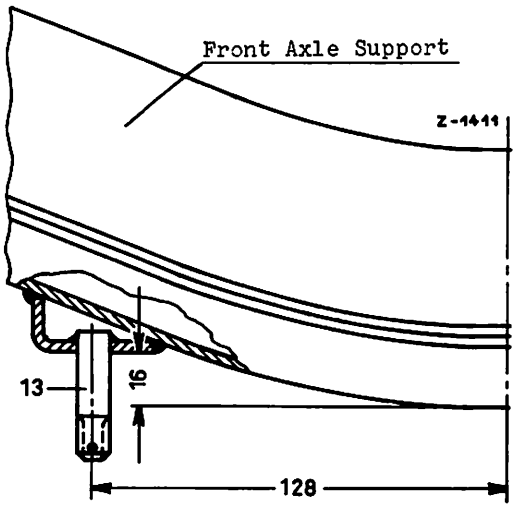


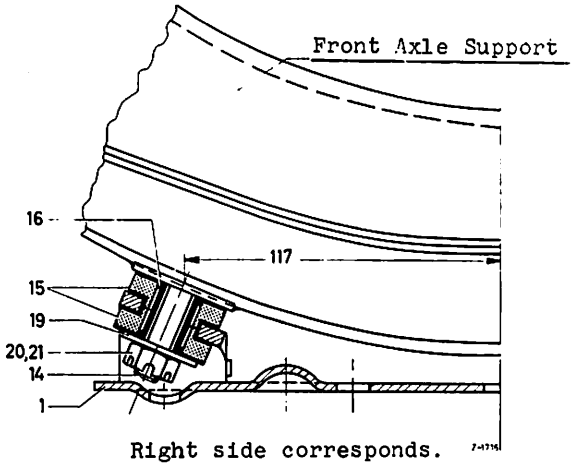
Right side corresponds.

Illustration 6

Bolt with Bracket on Front Axle Support, 1st Version (220 b/Sb/SEb Sedan)

13. Bolt with bracket

13 mm = 0.512 in.
16 mm = 0.629 in.
128 mm = 5.039 in.



Right side corresponds.

Illustration 7

Bolt with Washer on Front Axle Support, 2nd Version

1. Protective underplate for oil pan
14. Bolt with washer
15. Megi ring buffer
16. Spacer sleeve
19. Washer
20. Castle nut
21. Cotter pin

4. Position supporting plates (17 and 18) on threaded studs which are already welded onto the protective underplate (1) and tighten them lightly with mounting parts 22 to 24 (see illustrations 4 and 5).

5. With mounting parts 5 to 9 (illustration 3a or 3b), fasten the protective underplate (1) at the front to mounting angles (3) or brackets (4), as the case may be.

6. Press protective underplate (1) to underside of front axle support and adjust it so that there is a distance of 1.6 in. (40 mm) between the front edge of the front axle support and the center of bolt (13 or 14). Loosen hex nuts (24) and shift supporting plates (17 or 18) as required. See illustration 4 or 5.

7. Then tack-weld either the bolts with brackets (13) or the bolts with washers (14), as the case may be, to front axle support at several points (see illustration 6 or 7).

   Prior to doing so, remove all dirt and paint from the welding areas.

   Then remove protective underplate again and fully weld brackets or washers to the front axle support. After welding has been completed, paint the welds.

8. Mount and fasten finally the protective underplate (illustrations 3a or 3b and 4 or 5).

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B. Protective Underplate for Clutch Slave Cylinder

9. Unscrew the left hex-head screw which fastens the intermediate flange to the oil pan and the cover plate to the intermediate flange. Then mount protective underplate (25) with hex-head screw (26) which is .2 inches (5 mm) longer. Use the regular hex-head screw on the right side. See illustrations 8 and 9.

NOTE:

If cover plate on intermediate flange is still fitted with hex-head screws M 6 x 12 (.236" or 6 mm diameter), enlarge the hole and thread on the left one to .394" (10 mm) diameter and use M 10 x 1.5 hex-head screw (27), which is included in the standard parts kit.

C. Guard Plate for Exhaust Pipe Bracket

10. Simply attach this guard plate (29) with both hex-head screws which hold the exhaust pipe bracket, as shown in illustration 10. (Note: This guard plate is not needed on Types 200, 200 D, 230, 230 S, 250 S, 250 SE, and 300 SEb.)

D & E. Protective Underplate for Rear Axle and Fuel Tank

11. Remove the rubber floor mat from the trunk and the felt padding from the cross member in front of fuel tank and lay the electrical wiring to the side.

12. For Types 190 c/Dc, 200, 200 D, 220 b/Sb/SEb, 230, and 230 S, start from center of frame cross member in front of fuel tank and mark locations for two holes, one to the left and one to the right, for the mounting rail (36). Space them 3.94" (100 mm) apart. Drill 7/16" diameter holes (11 mm diameter) through both the upper and lower layers of the cross member, and then enlarge the holes in the top layer to 63/64" (25 mm) diameter. (See illustration 11a.)

For Types 250 S/SE and 300 SE/SEb/SEL, start from a point at the center of frame cross member in front of fuel tank but .276" (7 mm) forward and mark locations for two holes, one to the left and one to the right, for the mounting rail (36). Space them 3.94" (100 mm) apart. Drill 7/16" diameter holes (11 mm diameter) through both the upper and lower layers of the cross member, and then enlarge the holes in the top layer to 47/64" (18.5 mm) diameter. (See illustration 11b.)

13. Insert mounting rail (36) and fasten the protective underplates (30 and 40) to mounting rail (36) by means of cylindrical head screws (37), lock washers (38), and washers (39) (illustration 11a or 11b).

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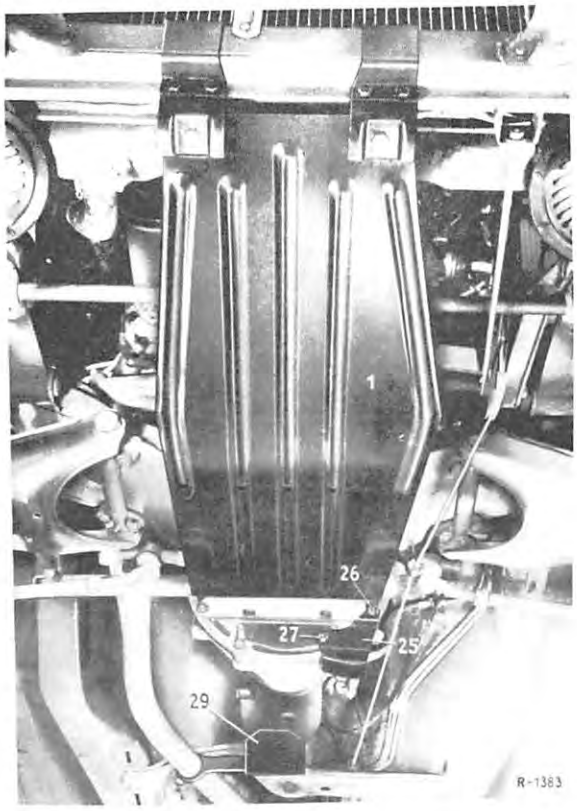


Illustration 8

Protective Underplates for Oil Pan and Clutch Slave Cylinder and Guard Plate for Exhaust Pipe Bracket

1. Protective underplate for oil pan
25. Protective underplate for slave cylinder
26. Hex-head screw
27. Hex-head screw
29. Guard plate for exhaust pipe bracket

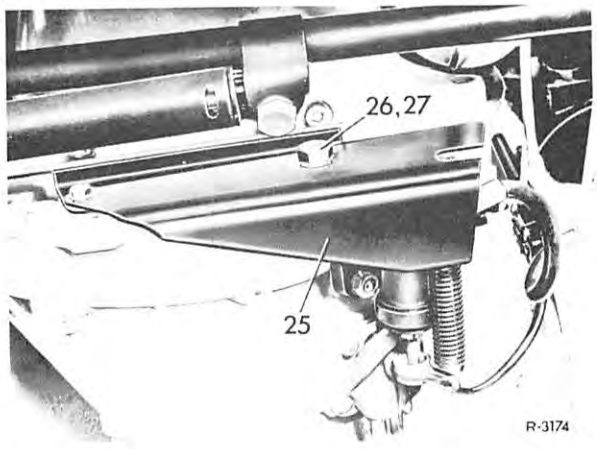


Illustration 9

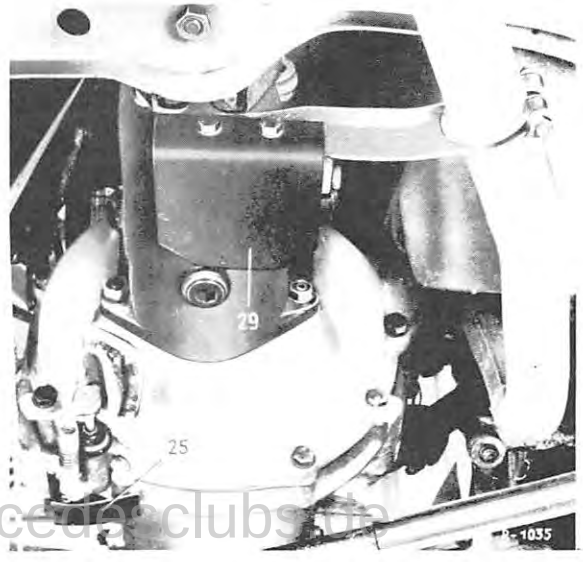
Protective Underplate for Clutch Slave Cylinder

25. Protective underplate for clutch slave cylinder
26. Hex-head screw
27. Lock washer

Illustration 10

Guard Plate for Exhaust Pipe Bracket

25. Protective underplate for slave cylinder
29. Guard plate for exhaust pipe bracket



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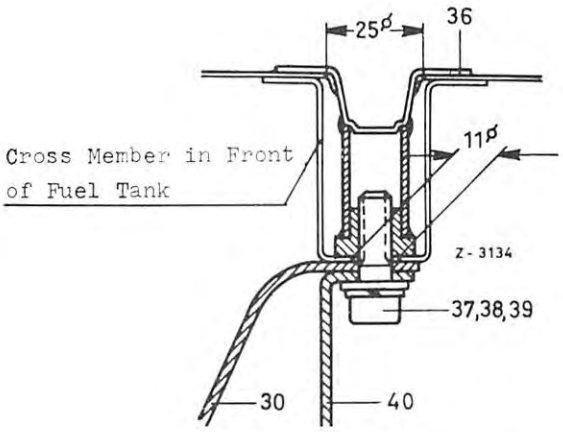

Illustration 11a

Attachment on Cross Member in Front of Fuel Tank - Types 190 c to 230 S

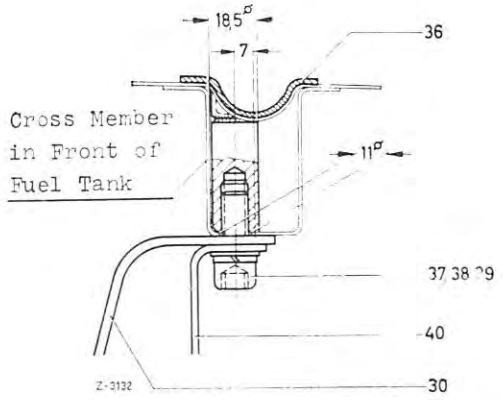

Illustration 11b

Attachment on Cross Member in Front of Fuel Tank - Types 250 S, 250 SE, 300 SE, 300 SEb, and 300 SEL

30. Protective underplate for rear axle
36. Mounting rail
37. Cylindrical head screw
38. Lock washer
39. Washer
40. Protective underplate for fuel tank

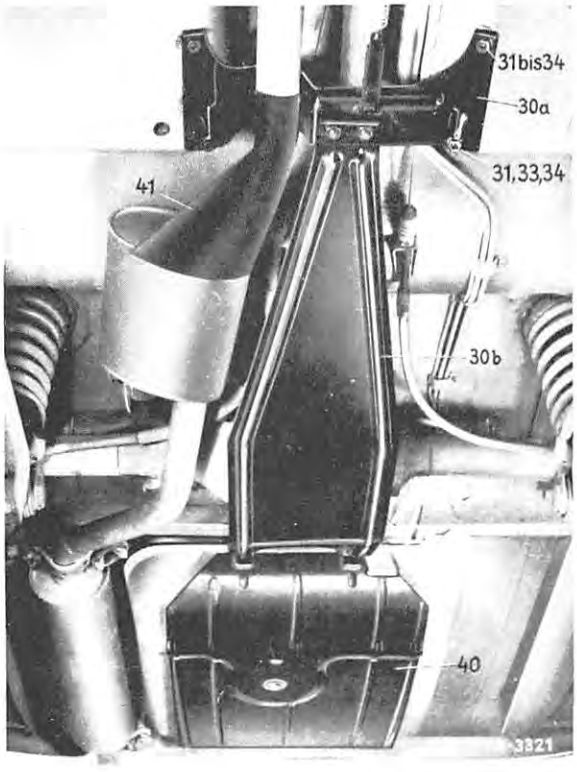

Illustration 12

Protective Underplates for Rear Axle and Fuel Tank, Plus Protector for Pre-Silencer, 1st Version

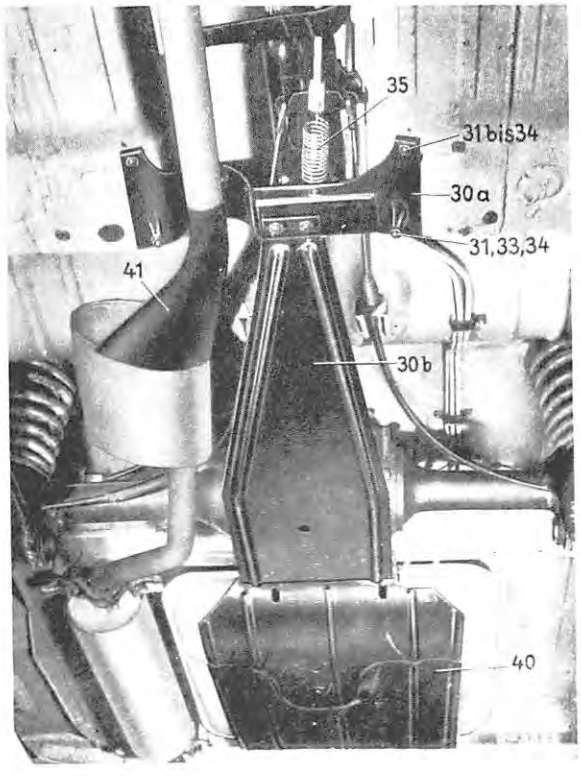

Illustration 13

Protective Underplates for Rear Axle and Fuel Tank, Plus Protector for Pre-Silencer, 2nd Version

30a. Bracket
30b. Protective underplate for rear axle
31. Hex-head screw
32. Washer
33. Lock Washer
35. Return Spring (Illus. 13 only)
34. Hex nut
40. Protective underplate for fuel tank
41. Protector for pre-silencer
bis 34 = 31 thru 34

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14. Mount rear of fuel tank protective underplate (40) on the threaded studs on which the tank is attached. Use the original hex nuts and lock washers, plus new washers (40d).

15. Remove holder for the return spring on center brake cable on frame floor.

16. Hold front part of rear axle protective underplate (30b) and bracket (30a) in installation position on underside of frame floor. Then drill four 0.33 in. (8.5 mm) diameter holes into the frame floor, using the holes in the bracket as drilling templates (see illustration 12 or 13).

17. Attach bracket to frame floor with hex-head screws, washers, lock washers, and hex nuts (parts 31 to 34).

18. On Types 220 b, 220 Sb, and 220 SEb sedan with handbrake equalizer of first version, make a holder for return spring according to illustration 14 and fasten to bracket (30a) by means of one hex-head screw M 6 x 15 DIN 933-8 G, lock washer B 6 DIN 127, and hex nut M 6 DIN 934-5 S. Use the original return spring again (illustration 12).

    For the 2nd version, install the short return spring (see 35, illustration 13).

19. On Types 250 S/SE and 300 SE/SEb/SEL, fasten protective underplate (40) additionally to left side member by parts 40a, b, and c. Use holes in bracket as templates when drilling the mounting holes (illustration 15).

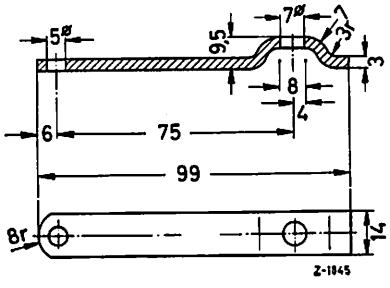

Illustration 14

Holder for Return Spring

3 mm = 0.118 in.		8 mm = 0.315 in.	
4 mm = 0.157 in.		9.5 mm = 0.374 in.	
5 mm = 0.197 in.		14 mm = 0.515 in.	
6 mm = 0.236 in.		75 mm = 2.953 in.	
7 mm = 0.276 in.		99 mm = 3.898 in.	

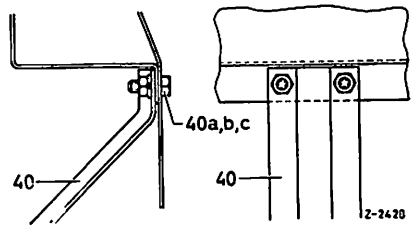

Illustration 15

Mounting Protective Underplate for Fuel Tank on Cross Member

40. Protective underplate for fuel tank
40a. Hex-head screw
40b. Lock washer
40c. Hex nut

F. Protector for Pre-Silencer

20. Weld the protector (41) to the pre-silencer and exhaust pipe, as shown in illustration 13.

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G. Protective Underplate for Pipe Lines

This is applicable only for Types 200, 200 D, 230, 230-S, 250 S/SE, and 300 SEb/SEL.

21. Refer to illustration 16. Hold the protective underplate (42) in installation position on the frame floor. On sedans, drill seven .33" diameter (8.5 mm) holes and on coupés/convertibles three .33" diameter (8.5 mm) holes in the frame floor. On both sedans and coupés/convertibles, drill four more holes .19" diameter (4.8 mm). Use the holes in the protective underplate as templates. Attach the protective underplate with hex-head screws, lock washers, hex nuts, and rubber washers, parts 43 to 46 on the sedans and parts 43 to 47 on the coupés/convertibles.

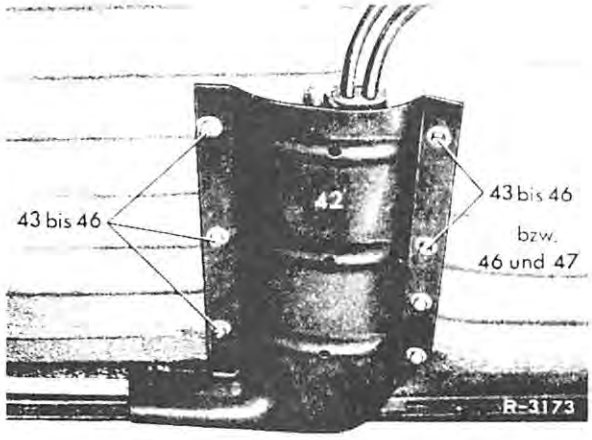

Illustration 16

Protective Underplate for Pipe Lines—
Types 200, 200 D, 230, 230 S, 250 S/SE, and 300 SEb/SEL

42. Protective underplate for pipe lines
43. Hex-head screw
44. Lock washer
45. Hex nut
46. Rubber washer
47. Sheet metal hex-head screw

43 bis 46 = 43 through 46.
43 bis 46 bzw. 46 und 47 = 43 through 46 or 43 through 47, depending on the vehicle type.

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Parts Required

SEDAN TYPES 190 c, 190 Dc, 220 b/Sb/SEb, 200, 200 D, 230 S, AND 300 SE.
COUPÉ/CONVERTIBLE TYPES 220 SEb, 250 SE, AND 300 SE

ITEM	QTY.	DESIGNATION	PART NUMBER OR DIN DESIGNATION	
			190 c/Dc, 200, 200 D	SEDANS 220 b/Sb/SEb, 300 SE, 230 S. COUPÉS/CONVERTIBLES 220 SEb, 250 SE, 300 SE
1	1	Protective underplate for oil pan	110 520 01 42	111 520 03 42
		Mounting parts on front body cross member:		
2	1	Bracket, right	111 524 02 40	
	1	Bracket, left	111 524 14 40	
3	2	Mounting angle	111 524 00 10	
4	2	Bracket	111 520 00 41	
5	4	Megi ring buffer	001 987 08 40	
6	2	Spacer sleeve	111 524 02 53	
7	2	Hex-head screw M 10 x 40	000933 010094	
8	2	Lock washer B 10	000127 010202	
9	2	Hex nut M 10	000934 010007	
10	8	Hex-head screw M 8 x 22	000933 008114	
11	8	Lock washer B 8	000127 008203	
12	8	Hex nut M 8	000934 008013	
		Mounting parts on front axle support:		
13	2	Bolt with bracket	--	111 520 03 41 1)
14	2	Bolt with washer	111 520 02 74 2)	
15	4	Megi ring buffer	001 987 08 40	
16	2	Spacer sleeve	111 524 02 53	
17	1	Supporting plate, right	--	111 524 04 40 1)
18	1	Supporting plate, left	--	111 524 05 40 1)
	2	Supporting plate	111 524 15 40 2)	
19	2	Washer A 10.5	009021 010102	
20	2	Castle nut M 10	000937 010000	
21	2	Cotter pin 2 x 25	000094 002020	
22	4	Shim	111 524 00 18	
23	4	Lock washer B 10	000127 010202	
24	4	Hex nut M 10	000934 010007	
25	1	Protective underplate for clutch slave cylinder 7)	110 520 00 75 4) 110 524 01 33 5)	-- 112 524 03 33 6)
26	1	Hex-head screw M 10 x 85	000933 010151 4)	
	1	Hex-head screw M 10 x 20	000933 010089 5)	
	1	Hex-head screw M 8 x 45	000933 008119 6)	
27	1	Hex-head screw M 10 x 20	000933 010089 4)	
	1	Lock washer B 10	000127 010202 4) 5)	
28a	1	Lock washer 10.5	000125 010504 6)	
28b	2	Lock washer 8.4	000125 008407 6)	
29	1	Guard plate for exhaust pipe bracket	111 524 00 33 4)	
30	1	Protective underplate for rear axle, consisting of:	111 520 03 75	-- 112 520 02 75 8)

(continued)

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(continued)

ITEM	QTY.	DESIGNATION	PART NUMBER OR DIN DESIGNATION	
			190 c/Dc, 200, 200 D	SEDANS 220 b/Sb/SEb, 300 SE, 230 S. COUPES/CONVERTIBLES 220 SEb, 250 SE, 300 SE
30a	1	Bracket	--	112 524 02 40 8)
30b	1	Protective underplate	--	--
30c	2	Hex-head screw M 10 x 18	--	000933 010106 8)
	2	Lock washer B 10	--	000127 010202 8)
	2	Hex nut M 10	--	000934 010007 8)
		Mounting parts on frame floor, front:		
31	4	Hex-head screw M 8 x 1	000933 008028	
32	2	Washer 11.5	000126 011501	
33	4	Lock washer B 8	000127 008203	
34	4	Hex nut M 9	000934 008013	
35	1	Return spring	110 993 08 10	
		Mounting parts on cross member in front of fuel tank:		
36	1	Mounting rail	--	112 310 00 68 8)
			111 520 04 41	
37	2	Cylindrical head screw M 10 x 25	000912 010006	
38	2	Lock washer B 10	000127 010202	
39	2	Washer 10.5	--	000433 010504 8)
40	1	Protective underplate for fuel tank	111 520 06 75	
			111 520 08 75 13)	
			--	112 520 00 75 8)
			--	112 520 03 75 8)13)
			--	111 520 00 75 9)
40a	2	Hex-head screw M 6 x 15	--	000933 006026 8)
40b	2	Lock washer B 6	--	000127 006203 8)
40c	2	Hex nut M 6	--	000934 006006 8)
40d	2	Washer	180 990 06 40	
41	1	Protector for pre-silencer	111 491 00 91	
			--	113 491 00 92 3)
42	1	Protective underplate for pipe lines	110 524 02 33 10)	
43	7	Hex-head screw M 8 x 18	000933 008028 10)	
	3	Hex-head screw M 8 x 18	--	000933 008028 12)
44	7	Lock washer B 8	000127 008203 10)	
	3	Lock washer B 8	--	000127 008203 12)
45	7	Hex nut M 8	000934 008008 10)	
	3	Hex nut M 8	--	000934 008008 12)
46	7	Rubber washer	110 987 07 41 10)	
47	4	Hex-head sheet metal screw B 6.3 x 13	--	007976 006203 12)
48	1	Cover plate for automatic clutch	--	111 250 05 56 11)
49	1	Hex-head screw M 10 x 35	--	000933 010093 11)
50	1	Hex-head screw M 6 x 35	--	000930 006083 11)
51	1	Cover plate for outlet	--	111 257 10 90 11)

1) 1st version } see chart on page 3.
2) 2nd version }
3) For Types 250 SE Cpe./Conv. and all 300 SE with double-pipe exhaust system.
4) For Types 190 c, 190 Dc, 220 b, 220 Sb, 220 SEb, all 300 SE up to August 1965 production.

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5) For Types 200, 200 D, 230 S, 250 SE Cpe./Conv.
6) For Type 300 SE Cpe./Conv. beginning with August 1965 production.
7) Not required on vehicles with M-B automatic transmission.
8) For Types 250 SE Cpe./Conv. and all 300 SE with 82-liter tank.
9) For Type 220 SEb only.
10) For Types 200, 200 D, 230 S, 250 SE Cpe./Conv. and 300 SE Cpe./Conv. only.
11) Parts 48 to 51 will be additionally required on vehicles with automatic clutch.
12) For Types 220 SEb, 250 SE, and 300 SE Cpe./Conv.
13) Beginning with these chassis end Nos. on these types:

200	-	188956	250 SE Cpe./Conv.	-	088654
200 D	-	353816	300 SE Cpe./Conv.	-	009785
230 S	-	106807			

TYPES 230, 250 S, 250 SE Sedan, 300 SEb, and 300 SEL

ITEM	QTY.	DESIGNATION	PART NUMBER OR DIN DESIGNATION	
			230	250 S, 250 SE Sedan 300 SEb, 300 SEL
1	1	Protective underplate for oil pan	110 520 02 42	108 520 00 42
		Mounting parts on front body cross member:		
2	2	Bracket, front	110 524 02 40	
	2	Bracket, rear	110 520 01 41	
3	2	Mounting angle	110 520 03 41	
4	1	Bracket, right	110 520 04 41	
	1	Bracket, left	110 520 00 41	
5	4	Megi ring buffer	001 987 08 40	
6	2	Spacer sleeve	111 524 02 53	
7	2	Hex-head screw M 10 x 40	000933 010094	
8	5	Lock washer B 10	000127 010202	
9	5	Hex nut M 10	000934 010007	
10	4	Hex-head screw M 8 x 25	000933 008115	
	4	Hex-head screw M 8 x 75	000933 008171	
11	8	Lock washer B 8	000127 008203	
12	4	Hex nut M 8	000934 008013	
		Mounting parts on front axle support:		
14	2	Bolt with washer	111 520 02 74	
15	4	Megi ring buffer	001 987 08 40	
16	2	Spacer sleeve	111 524 02 53	
18	2	Supporting plate	111 524 15 40	
19	2	Washer A 10.5	009021 010102	
20	2	Castle nut M 10	000937 010000	
21	2	Cotter pin 2 x 25	000094 002020	
22	4	Shim	111 524 00 18	
23	4	Lock washer B 10	000127 010202	
24	4	Hex nut M 10	000934 010007	
25	1	Protective underplate for clutch slave cylinder [3]	110 524 01 33 [1]	-- / 112 524 03 33 [2]
26	1	Hex-head screw M 10 x 20	000933 010089 [1]	
	1	Hex-head screw M 8 x 45	000933 008119 [2]	
27	1	Lock washer B 10	000127 010202 [1]	
28a	1	Washer 10.5	000125 010504 [2]	
28b	2	Washer 8.4	000125 008407 [2]	

(continued)

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(continued)

ITEM	QTY.	DESIGNATION	PART NUMBER OR DIN DESIGNATION	
			230	250 S, 250 SE Sedan 300 SEb, 300 SEL
30	1	Protective underplate for rear axle, consisting of:	111 520 03 75	--
30a	1	Bracket	--	112 524 02 40
30b	1	Protective underplate	--	112 520 02 75
30c	2	Hex-head screw M 10 x 18	--	000933 010106
	2	Lock washer B 10	--	000127 010202
	2	Hex nut M 10	--	000934 010007
		Mounting parts on frame floor, front:		
31	4	Hex-head screw M 8 x 18	000933 008028	
32	2	Washer 11.5	000126 011502	
33	4	Lock washer B 8	000127 008203	
34	4	Hex nut M 8	000934 008013	
35	1	Return spring	110 993 08 10	
		Mounting parts on cross member in front of fuel tank:		
36	1	Mounting rail	111 520 04 41	112 310 00 68
37	2	Cylindrical head screw M 10 x 25	000912 010006	
38	2	Lock washer B 10	000127 010202	
39	2	Washer 10.5	000433 010504	
40	1	Protective underplate for fuel tank	111 520 06 75 111 520 08 75 6)	112 520 00 75 112 520 03 75 6)
40a	2	Hex-head screw M 6 x 15	--	000933 006026
40b	2	Lock washer B 6	--	000127 006203
40c	2	Hex nut M 6	--	000934 006006
40d	2	Washer	180 990 06 40	
41	1	Protector for pre-silencer	111 491 00 91 4) 113 491 00 92 5)	
42	1	Protective underplate for pipe lines	110 524 02 33	
43	7	Hex-head screw M 8 x 18	000933 008028	
44	7	Lock washer B 8	000127 008203	
45	7	Hex-head nut M 8	000934 008013	
46	7	Rubber washer	110 987 07 41	

1) For Types 230, 250 S, and 250 SE Sedan.
2) For Types 300 SEb and 300 SEL.
3) Not required for vehicles with M-B automatic transmission.
4) For Types 230 and 250 S only.
5) For Types 250 SE Sedan, 300 SEb, and 300 SEL only.
6) Beginning with these chassis end Nos. on these types:

230	- 032529	300 SEb	- 002570
250 S	- 053222	300 SEL	- 002079
250 SE Sedan	- 043330		

The required parts may be obtained from your local Mercedes-Benz parts depot. Delivery time is four to five weeks, since most of the items are "special request" items.

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Service Department

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. S 10	Ordner / File / Classeur / Archivador	Special Versions	Gruppe / Group / Groupe / Grupo 52	Passenger Cars

Stuttgart-Untertürkheim, July 1962

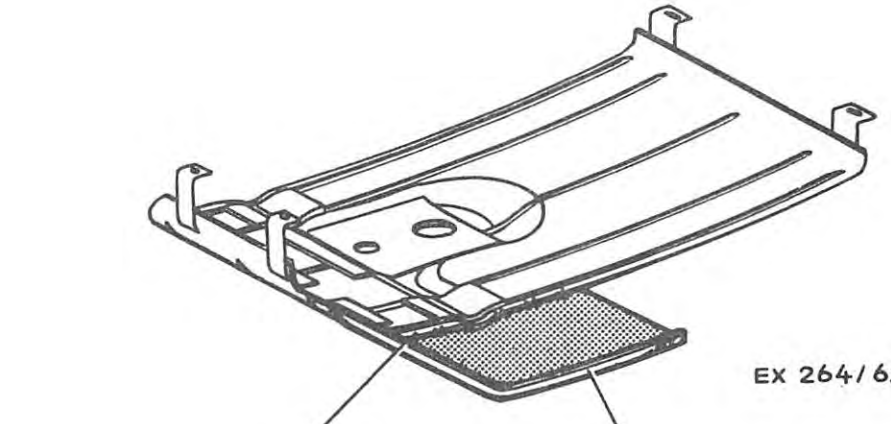
To all Daimler-Benz Agencies

Re. : Installation of an additional plate for protection of the fuel lines of types 190c, 190 Dc, 220b and 220 Sb

Underpans have been developed in order to protect the units in countries with poor road conditions (refer to Service Information No. S 15 of July 1960, File Special versions, Group 52).

Owing to the replacement of the screwed fuel line connections at the fuel tank by hose connections, damages have occurred repeatedly by gravel. We have, therefore, released an additional protection plate in order to protect the fuel lines. It is spot-welded to the left side of the underpans for fuel tanks.

The additional protection plate can also be welded on subsequently. (spot-welding).



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additional protection plate	part No. 111 524 05 33
underpan, complete, for types 190c, 190 Dc	part No. 111 520 05 75
underpan, complete, for types 220b, 220 Sb	part No. 111 520 04 75

Daimler-Benz Aktiengesellschaft
s/ppa Pfeiffer s/ppa Mauthe

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There are advantages and disadvantages of radial-ply tires as compared to conventional tires:

Advantages of Radial-Ply Tires

The firm tread gives better resistance to wear and somewhat reduced rolling friction, thereby giving longer service life and reduced fuel consumption.

Generally, higher curve speeds are possible; however, the lateral stability generally diminishes faster than with conventional tires.

Radial tires are hardly affected by street car tracks or longitudinal highway joints. With widely-spaced roughness on the road surface, they have good absorbing properties at speeds over approx. 60 km/h (38 mph).

They develop less rolling noise on good road surfaces.

Their winter properties are slightly better (but never will substitute for winter tires).

Disadvantages of Radial-Ply Tires

In case of closely-spaced roughness on the road surface; e.g., cobble-stone roads, they make louder and harsher noise at speeds less than 60 km/h (38 mph). They may vibrate at higher speeds.

Under certain driving conditions, they may cause jolting, since these tires have little circumferential dampening property.

In cross winds, most radial-ply tires behave like the conventional tires, although there are some makes which react more sensitively.

When mounted on the front wheels, some radial-ply tires tend toward higher shoulder wear, whereas on the rear axle they show higher tread center wear.

Changing to Radial-Ply Tires

We offer the following advice concerning changing over to radial ply tires.

1. When conversion is made, radial-ply tires of the same make and same model should be used on all wheels. Do not use them in combination with conventional tires. In special cases, conventional tires may be mounted temporarily on the front and radial-ply tires on the rear, but never vice versa. Of course, the tire pressure of the respective tire type must be observed. Combinations of summer and winter tires are not permitted.

(over)

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2. As there are special pressure requirements for radial-ply tires, the appropriate decal for the tire must be mounted inside the flap of the fuel tank filler neck. (See table at end of article for decal part numbers.)

3. Our previous instructions regarding rotation of radial-ply tires from front to rear and vice versa after every 5,000 km (3000 miles) must be strictly observed.

A table showing disc wheels which must be used when mounting radial-ply tires accompanies this information.

(continued)

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Disc Wheels for Radial-Ply Tires

TYPE AND TIRE	DISC WHEEL DESIGNATION	PART NO. OF DISC WHEEL	Tire Pressure Decal, Radial-Ply Tires PART NUMBER
Radial-ply tire 7.00-13 190 c, 190 Dc 200 D	5 JK x 13-B (standard)	110 400 02 02 without middle centering 111 400 11 02 with middle centering	000 584 79 39 (available in German only)
Radial-ply tire 7.25-13 190 c, 190 Dc 200, 200 D 230, 230 S 220 b, 220 Sb, 220 SEb 220 SEb Coupe			
Radial-ply tire 185 HR 14 250 S, 250 SE 250 SE Cpe./Conv. 300 SEb 300 SEL 300 SE Cpe./Conv.	6 J x 14-H (standard)	108 400 00 02 with middle centering	001 584 01 39
Radial-ply tire 185 HR 14 300 SE (1) 300 SE Cpe./Conv. (1)	6 J x 14-H		

(1) Cars up through August 1965 production had 13" wheels.

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MERCEDES-BENZ

service information

Daimler-Benz AG / Export-Service

No. 5.4	Special Versions	54	Passenger Cars

Stuttgart Untertürkheim, February 1963

To all Daimler Benz Agencies

Re SA No 10524
Battery 12 Volt 84 Ah, Type 190 Dc

The battery capacity of 66 Ah with type 190 Dc has been laid out to meet the requirements of normal operating conditions. The output of the 66 Ah battery may not suffice, however, for vehicles which are mostly used for short distance runs with frequent starting (physicians' cars and cabs) and which are equipped with additional permanent consumers (radio telephone sets etc.). In such cases an 84 Ah battery can be installed upon special request. This measure, however, necessitates the extension of the battery tray. Up to Chassis End No. 041156 extending of the welded on battery tray has to be effected by yourselves (refer to Section A). As of Chassis End No. 041157 the battery tray has been lowered by 10 to 15 mm so that a longer battery tray only needs to be screwed on to the existing tray.

A. Extension of the battery tray with vehicles with elevated battery

EXTENT OF WORK

1. Remove battery, tray and felt pad.

2. Cut off the vertical section and the spot welded flaps of the front supporting angle (Figure 4).

3. Prepare sheet metal insert (4) (Figure 4).

4. Spot weld supporting angle (5) to one end of the sheet metal insert (4). Please observe that the flaps have to be spot welded to the outside. The supporting angle has to be re-machined accordingly.

5. Prepare support (6) and spot weld same to the bottom side of the supporting angle (Figure 1 and 4).

6. Paint complete sheet metal insert with support, then place it in the battery tray and weld it to same in several places (Figure 4).

7. Screw support (6) to the left frame side member by using the parts item 7 to 9. If there are no mounting holes the support should be welded on electrically.

8. Remove ground wire on left frame side member and replace it by the longer ground wire (3) (Figure 3).

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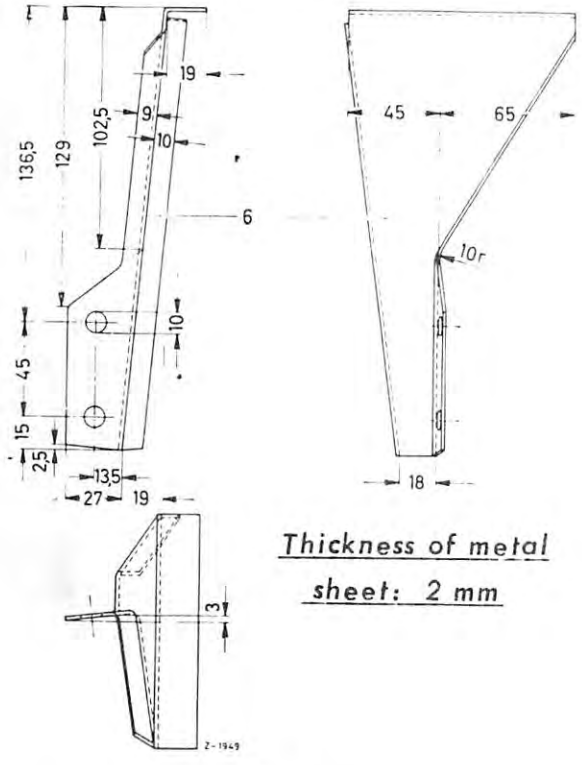
Note:
Up to Chassis End No. 012799 the ground wire is not mounted to the frame side member but to the engine. With these vehicles the ground wire need not be replaced (Figure 2).

9. Insert 84 Ah battery, put on mounting frame (2) and fix battery.

Note:
Tray and felt pad between battery bottom and battery tray are no longer required with sheet-metal insert (4).

10. Connect the starting cable to the positive pole and the ground wire to the negative pole of the battery.



Thickness of metal sheet: 2 mm

Figure 1
6 Support

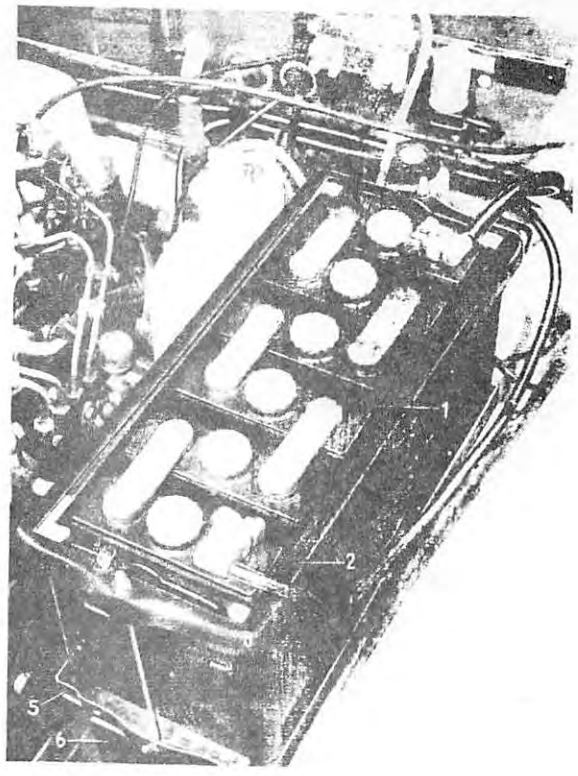


Figure 2
1 Battery
2 Mounting frame
5 Supporting angle
6 Support

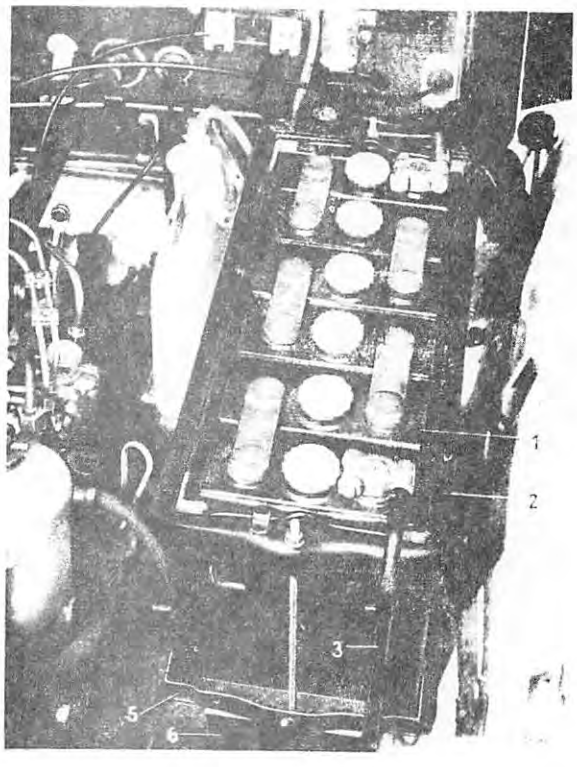


Figure 3
1 Battery
2 Mounting frame
3 Ground wire
5 Supporting angle
6 Support

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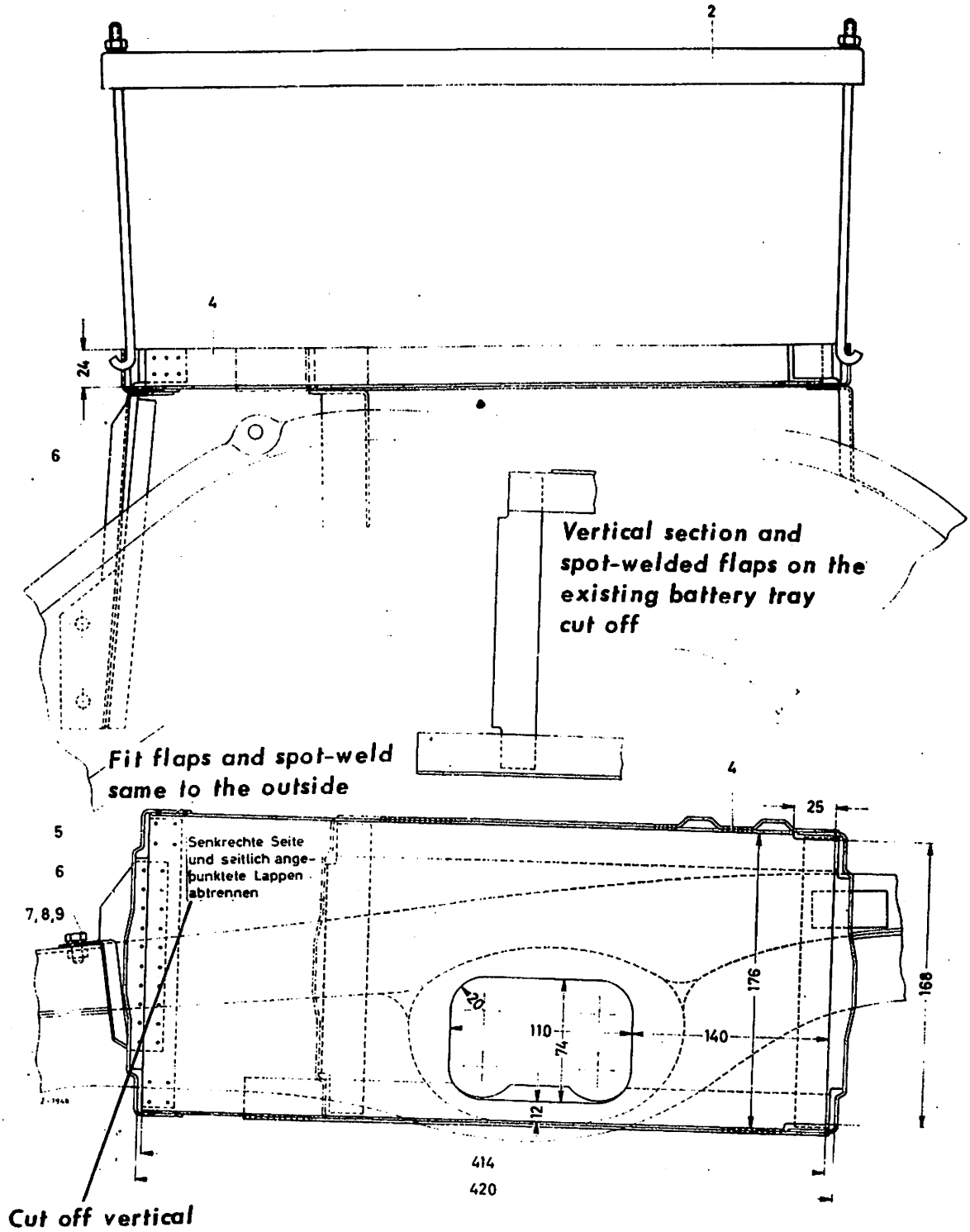

Figure 4

2 Mounting frame
4 Sheet-metal insert
5 Supporting angle
6 Support
7 Hex. hd. screw
8 Lock washer
9 Champion blind nut

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B. Extension of the battery tray with vehicles with lowered battery

EXTENT OF WORK

1. Remove battery, tray and felt pad.

2. Remove ground wire and starting cable and replace same by ground wire (4) and starting cable (5) (Figure 5).

3. Put extended battery tray (2) on existing battery tray and screw it to same by using the parts item 6 to 11 (Figure 6).

4. Insert the 84 Ah battery in such a way that both battery poles point inwards. Then put on mounting frame (3) and fix battery.

5. Connect the starting cable (5) to the positive pole and the ground wire (4) to the negative pole of the battery (Figure 5).

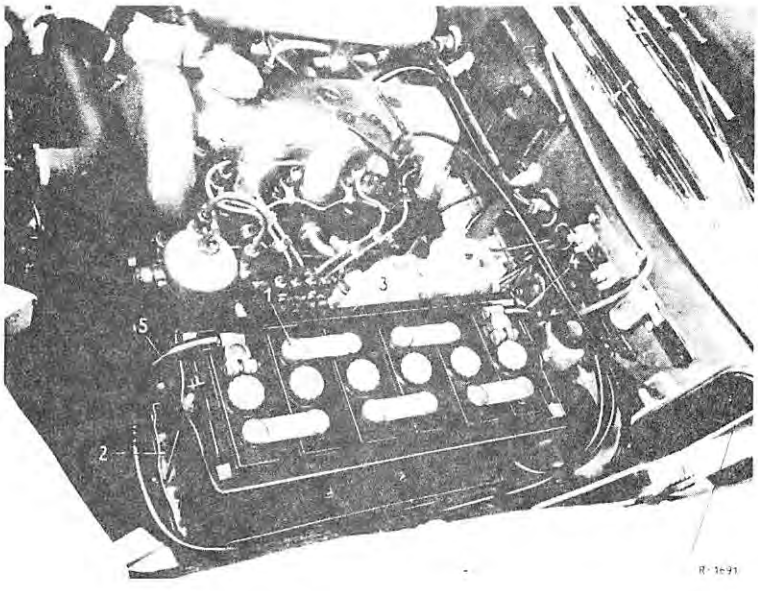

Figure 5

1 Battery
2 Battery tray
3 Mounting frame
4 Ground wire
5 Starting cable

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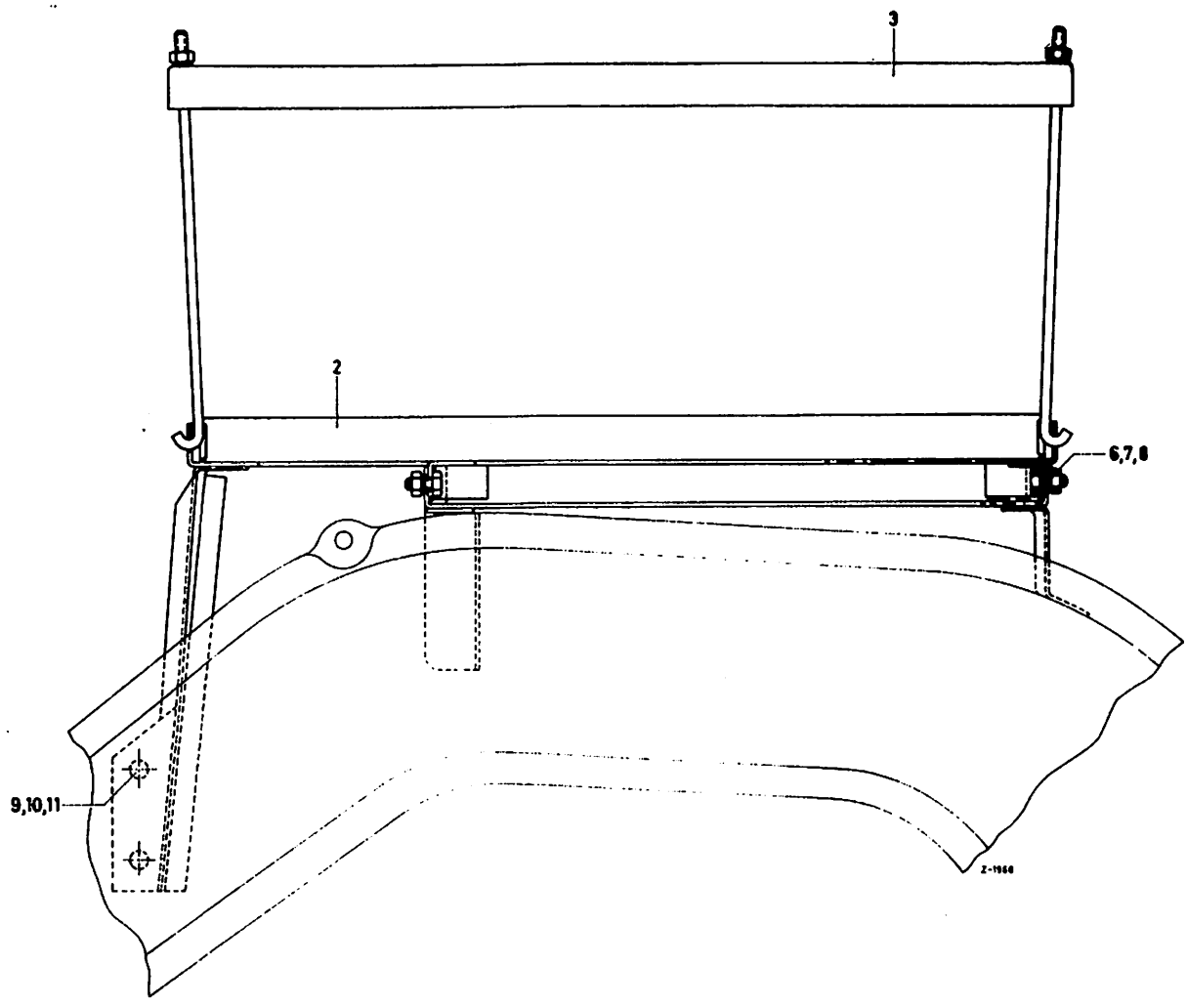

Figure 6

2 *Battery tray*
3 *Mounting frame*
6 *Hex. hd. screw*
7 *Lock washer*
8 *Hexagon nut*
9 *Hex. hd. screw*
10 *Lock washer*
11 *Champion blind nut*

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RANGE OF DELIVERY: Up to Chassis End No. 041156

Item	Quantity	Denomination	Part No. or DIN designation and material specification
1	1	Battery 12 Volt 84 Ah	000 541 48 01
2	1	Mounting frame	110 540 01 23
3	1	Ground wire	Wire B 35 acc. to DIN 72551 Cu black, 450 long 1)
4	1	Sheet-metal insert	Drawing sheet USt 1203 414 x 224 x 1 thick 1)
5	1	Supporting angle	110 626 10 45
6	1	Support	USt 1203 2 thick 1)
7	2	Hex. hd.screw	M 6 x 15 DIN 933-8 G
8	2	Lock washer	B 6 DIN 127
9	2	Champion blind nut	000 990 40 91

1) The parts item 3, 4 and 6 have to be manufactured by yourselves.

RANGE OF DELIVERY: As of Chassis End No. 041157

Item	Quantity	Denomination	Part No. or DIN designation
1	1	Battery 12 Volt 84 Ah	000 541 48 01
2	1	Battery tray	110 540 00 16
3	1	Mounting frame	110 540 01 23
4	1	Ground wire	110 540 03 31
5	1	Starting cable	110 540 01 31
6	4	Hex. hd. screw	M 6 x 12 DIN 933-8 G
7	4	Lock washer	B 6 DIN 127
8	4	Hexagon nut	M 6 DIN 934-5 S
9	2	Hex. hd. screw	M 6 x 15 DIN 933-8 G
10	2	Lock washer	B 6 DIN 127
11	2	Champion blind nut	000 990 40 91

The parts required for subsequent installation may be obtained from our Department ET-VEX, Stuttgart-Untertürkheim Plant, via your competent distributors through the usual channels by stating the respective part numbers.

Daimler-Benz Aktiengesellschaft
s/ppa. Pfeiffer s/ppa. Mauthe

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 308	SERVICE INFORMATION	54	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ELECTRIC CLOCKS ALL MODELS

Numerous electric clocks are being replaced by dealer personnel, under warranty, as defective. However, inspection of these clocks revealed that the majority had no defect whatsoever.

The erratic operation of these clocks was due to insufficient contact between the clock ground terminal and the terminal provided for the clock in the printed circuit. For this reason, the printed circuit plate has been modified to improve contact since March 1970 production.

This modified printed circuit plate cannot be installed in older models, therefore, for clock repair the following repair steps should be taken:

1. Should the clock operate erratically, e.g. does not operate or runs erratically remove the clock from the instrument panel.

NOTE: The clock has two threaded mounting studs on the back of the housing which connect the clock to the electric circuit panel. The stud located approximately behind the numeral three on the dial face provides the clock ground contact.

2. Install one (1) spring, part number 700 542 00 99 on the threaded stud behind the 3 o'clock position, reinstall clock.

Installation of this spring will provide for improved ground contact and should, in most cases, correct erratic clock operation...if caused by temporary ground disconnection. Springs are available from our parts depots.

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over

Please note that there is also a possibility of readjustment built into each clock. After removal of the "VDO" sticker on the back of the clock, it may be adjusted by turning the then exposed adjustment screw. In case it is determined that a clock loses or gains continuosly at the same rate, it should be adjusted rather than replaced.

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MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 310	SERVICE INFORMATION	54	PASSENGER CARS

July, 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BECKER RADIO REPLACEMENT INSTRUCTIONS

Currently, Becker radios are available for installation in Mercedes-Benz automobiles in two sizes which are different in height and length.

If the installation of a replacement radio of a size different from the one installed is required (large to small/small to large exchange), certain modifications are necessary to ensure correct installation.

Radio Replacement - Larger (2 1/16" high to Smaller (1 11/16" high) version models W 111 Cp/Cv, W 108 and W 109.

The smaller version radio is stabilized by the dashboard, therefore the rear mounting bracket is not utilized. Additional stabilization is provided by 2 foam rubber bands (1/2" x 1/2" x 3 1/8") included with, and secured to, the bottom radio cover. (Illustration 1 see reverse).

Radio Replacement - Smaller to Larger Version, W 111 Coupe/Conv.

The mounting bracket which mounts to the rear of the large radio is factory installed in the vehicle. When a large radio is installed, this bracket must be removed from the automobile, attached to the rear of the radio and, with the radio, reinstalled. For this purpose a mounting bolt is provided with the replacement radio. (Illustration 1)

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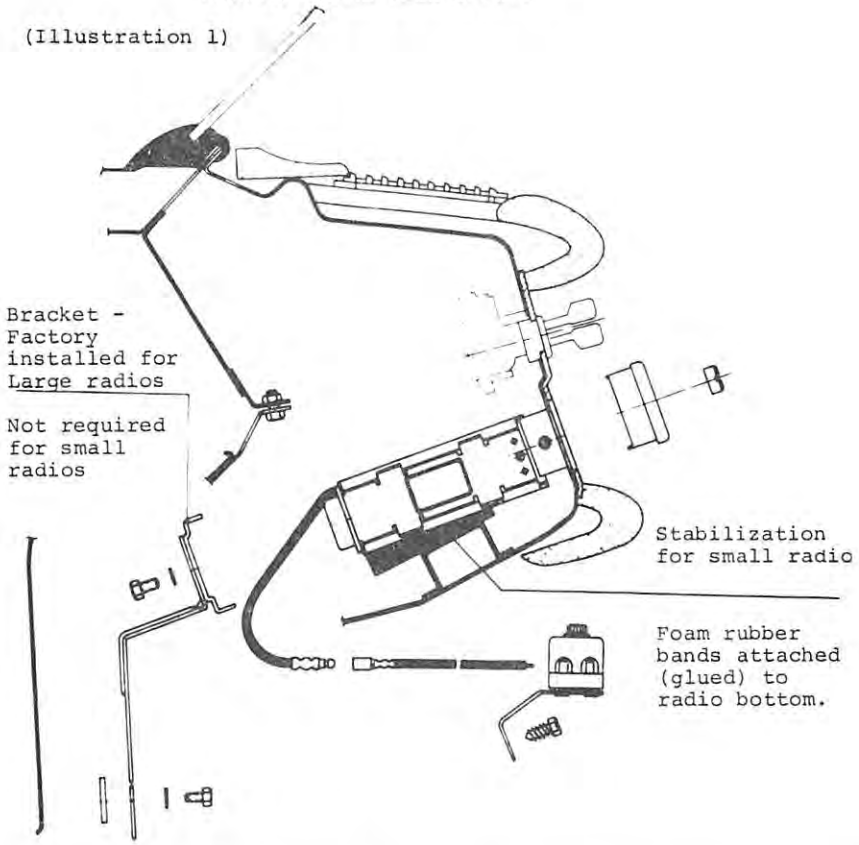
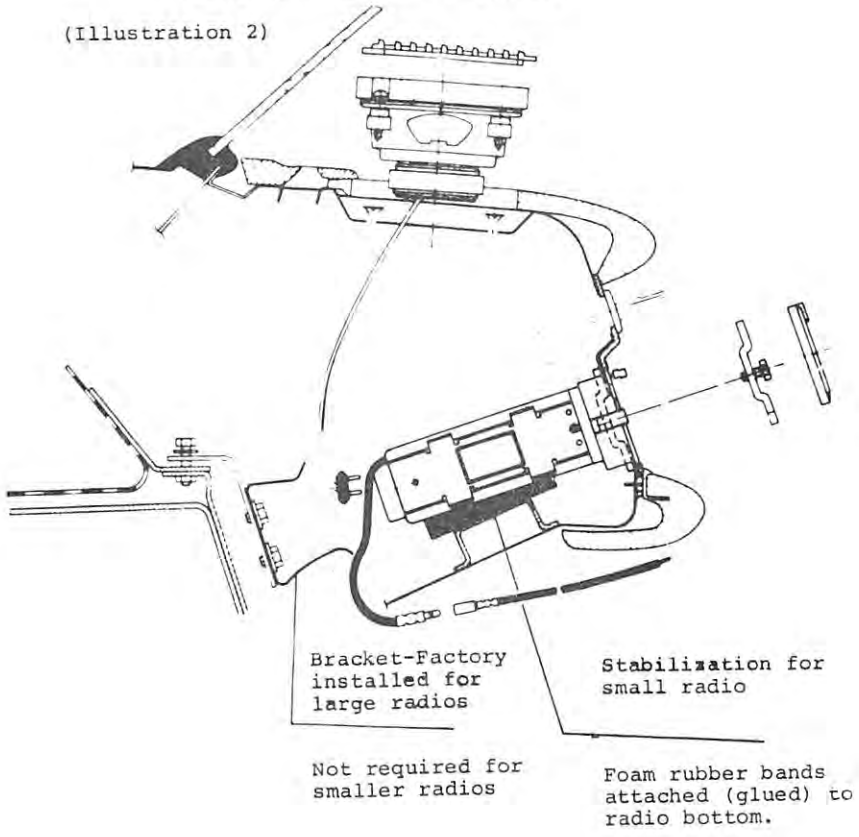
MERCEDES-BENZ W111 CP/CV.

(Illustration 1)



MERCEDES-BENZ MODELS W108/109

(Illustration 2)



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Radio Replacement - Smaller to Larger, Models W108/109.

The radio rear mounting bracket is factory installed in the vehicle. A large version radio need only be positioned in this bracket. (Illustration 2).

Radio Replacement - Smaller to Larger/Larger to Smaller Versions, Models W 114/115.

No modifications are required to install either size radio.

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MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 259	SERVICE INFORMATION	54	PASSENGER CARS

FORT LEE, MAY 1971

TO OUR MERCEDES-BENZ DEALERS

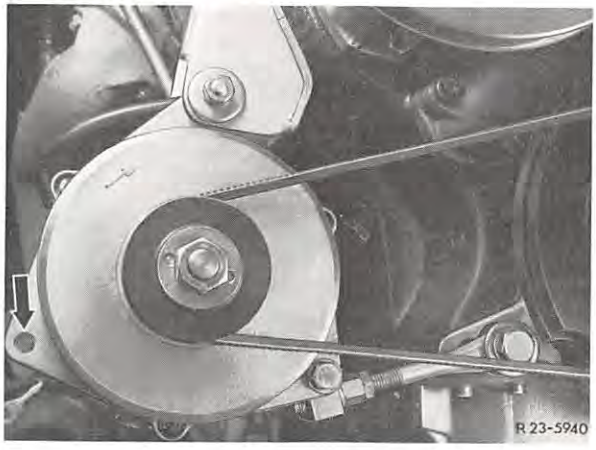
SUBJECT: RIGHT SIDE ALTERNATOR BELT/BRACKET MODIFICATIONS, MODEL 600.

To improve the right side alternator drive belt life on the model 600, the alternator bracket has been modified and improved drive belts installed in production, beginning with engine end number 001851. When the right side bracket is replaced, only the new version bracket, adjusting bolt and belts should be installed.

The clamping block (Illustration) must be mounted to the lower left (driving direction) threaded hole. The arrow indicates the threaded hole where the previous version adjusting bolt was mounted.

Recommended repair times are 4.8 hours for vehicles without air conditioning and 6.4 hours for air conditioned vehicles.

- ILLUSTRATION -



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Parts Information:

Nomenclature	Part Number
Right Side Alternator Carrier	100 150 20 73
Adjusting Bolt	100 155 09 23
Wide Angle Belts	002 997 40 92

The previous version belts remain valid up to engine no. 001850 and may be ordered under part number 001 997 63 92.

Parts may be ordered from our Mercedes-Benz Parts Depots.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Division

JRH/ch

MB-T 259, GR. 54

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
95	SERVICE INFORMATION	54	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TURN SIGNAL SWITCH -- MODELS 220 D/8 TO 300 SEL/8 6.3 (EXCEPT 280 SL/8)

Turn signal switches that fail to return to the neutral position after negotiating a corner may be repaired with minimum cost. Switch replacement is not necessary, nor would it be a solution to the problem. The malfunction is attributed to the gap between the steering spindle return cam and the return trigger, which is too small. The solution merely involves moving the switch slightly away from the steering spindle.

WORK PROCEDURES:

1. Remove rubber protective cover on switch.
2. "Back off" the two Phillips screws securing the switch.
3. Pull the switch out a little, push the points of the Phillips screws through the holes in the switch housing and hold.
4. Place one shim (A4,3 DIN 6797) on each screw, then tighten the screws.
5. Function test switch and replace rubber cover.

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Future warranty claims for switches replaced due to this malfunction will not be honored.

Should repair be necessary, a completed warranty claim for 0.3 hours labor should be mailed to MBNA, Claims Processing, 158 Linwood Plaza, Fort Lee, New Jersey 07024.

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Service Division

JRH:sd

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 132	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 54	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: RADIATOR TEMPERATURE GAUGE -- MODELS 220 D/8 THROUGH 250/8 CP. (MODEL SERIES 114/115)

The routing of the capillary tube of the cooling water temperature gauge was modified in production as of the following chassis end numbers:

MODEL	AS OF CHASSIS END NUMBER
220 D/8	095 340
220/8	033 372
230/8	032 722
250/8	030 402
250/8 Cp.	001 475

In case of repairs, the routing of the capillary tube may be modified as follows:

A. Models 220/8, 230/8 and 250/8

Procedure

1. Remove capillary tube from strap of heater hose.
2. Fasten capillary tube to left-hand side cowl strut, using the center strap (see illustration 1).

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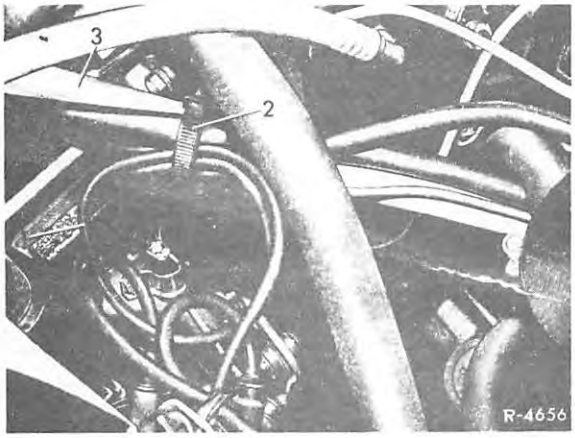

ILLUSTRATION 1

Attaching the capillary tube to the left-hand side cowl strut.

1. Capillary tube
2. Strap
3. Cowl strut

NOTE: THE ROUTING FROM THE CONNECTION ON THE CYLINDER HEAD ALONG THE SPARK PLUG CABLES REMAINS UNCHANGED.

B. Model 220 D/8

Procedure

1. De-pressurize radiator.
2. Remove temperature sensing element from cylinder head and reinstall according to illustration 2.
3. Remove lower pipe support of 1st and 2nd injection line. Reinstall with a capillary tube strap.
4. Remove capillary tube from the heater hose strap.
5. Attach capillary tube to the left-hand side front end strut by means of a strap.

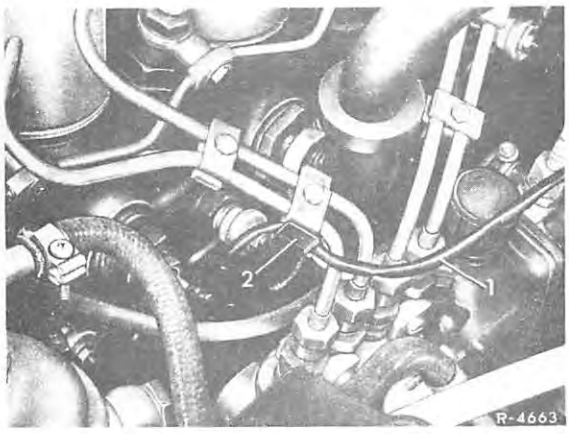

ILLUSTRATION 2

Attaching the capillary tube on model 220 D/8 by means of a cable strap.

1. Capillary tube
2. Cable strap

The cable strap, part No. 615 159 00 40, may be ordered through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 160	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 54	Passenger Cars

Fort Lee, November 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Fog Lights On Model 250/8 Coupe

Fog lights are now part of the standard equipment on Model 250/8 C and are factory installed on all cars manufactured as of November 1, 1969, as of chassis end number 000 764, but excluding the following four vehicles: 000 765, 000 766, 000 771 and 000 772.

The fog lights are installed on the front panel between the radiator grille and headlights. They are operated by pulling out the headlight switch on the dashboard, but they will only operate in conjunction with the low beam headlights. For this reason, if the high beam headlights are switched on, the fog lights will automatically be shut off, but will come back on if you switch back to low beam headlights.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 152	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 54	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Revised Circuit Arrangement for the 212° F Thermo Switch Controlling the Auxiliary Fan -- Reference: Service Introduction Book "Model Year 1970 Passenger Cars USA Version" - page 11

Wiring diagram #11 (model 250/8 Sedan and Coupe) and wiring diagram #12 (model 280 S/8) found on page 11 of the above mentioned book do not correspond to the latest status. Similar to the wiring on the 280 SE/8, the relay of the auxiliary fan is connected to ground via the 212° F (100° C) thermo switch, however, not to terminal #5, but to terminal #6 of the plug located on the relay (left side of car, before battery).

Enclosed please find revised wiring diagrams. Be sure to observe that in Figure 11, as well as in Figure 12, the connection on terminal #4 was omitted and that both wires are now connected to terminal #6.

We urge you to insert this sheet into your book immediately in order to avoid any future error.

Unfortunately, a small number of cars were released which have the wires connected the same way as incorrectly shown in the book. On these cars, the auxiliary fan will not operate unless the above modification is made.

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Attachment

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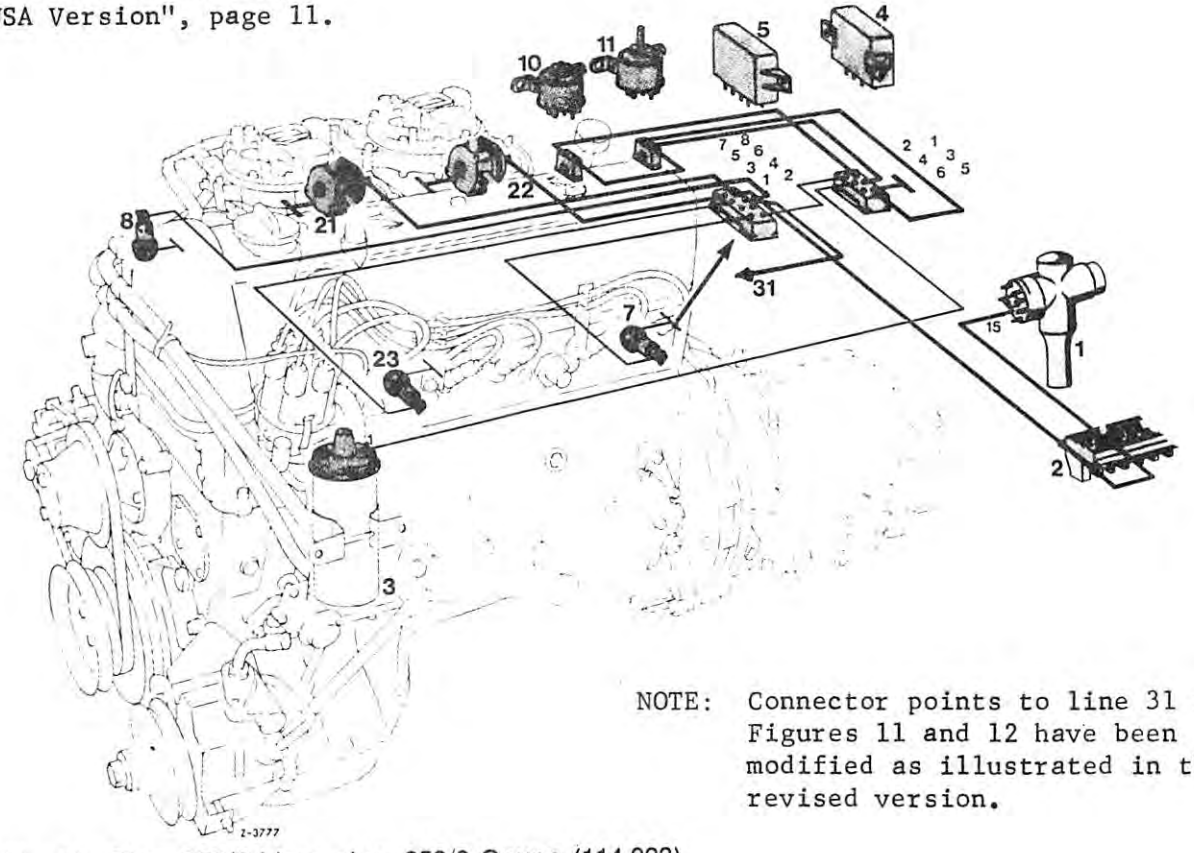
Insert sheet for booklet
"Model Year 1970 Passenger
Cars USA Version", page 11.



NOTE: Connector points to line 31 in Figures 11 and 12 have been modified as illustrated in this revised version.

Fig. 11 Type 250/8 Limousine, 250/8 Coupe (114.023)

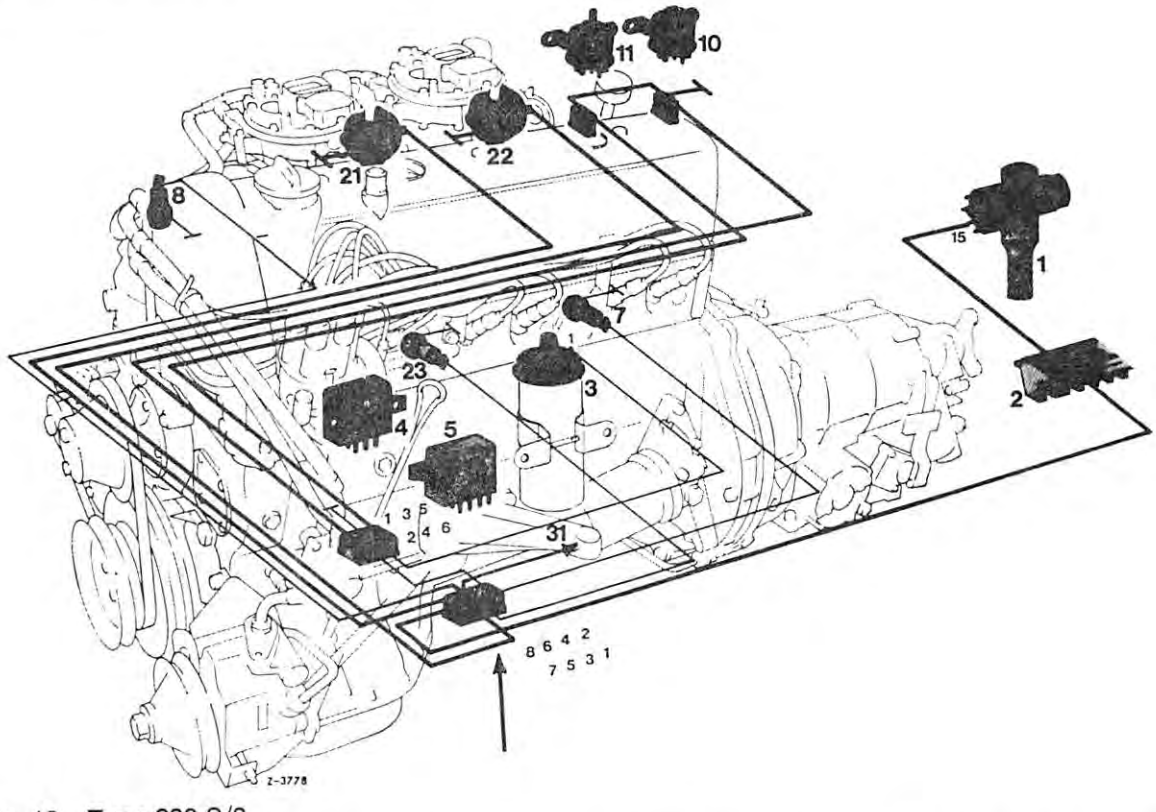


Fig. 12 Type 280 S/8

1 Ignition starter switch
2 Fuse box
3 Ignition coil
4 RPM switch
5 Relay box
7 Temperature switch 17 ° C (63 ° F)
8 Temperature switch 100 ° (212 ° F)
10 Two-way valve
11 Three-way valve
21 Front choke cover
22 Rear choke cover
23 Temperature switch 65 C (149 F)
31 To relay for supplementary fan

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MERCEDES-BENZ OF NORTH AMERICA, INC.

CABLE: MERCEBENZ FORT LEE
TWX: FORT LEE 201 947-5922
OVERSEAS TELEX: 135422
DOMESTIC TELEX: 135422
PHONE: 201 944-3344

158 LINWOOD PLAZA
P.O. BOX 310
FORT LEE, NEW JERSEY 07024

October 17, 1968

TO ALL MERCEDES-BENZ DEALERS

Re: Recall Campaign on Hazard Warning Light Switch and Flasher -- Models 220/8, 220 D/8, 230/8 and 250/8

Gentlemen:

Please find attached a sample of a notification letter which will be mailed to all M-B owners of the above mentioned models very shortly. This campaign is necessary to assure the proper operation of the hazard warning light switch and flasher. A new type electronic switch/flasher has been developed to replace the thermal - mechanical flasher presently installed in the above mentioned models.

The present warning light flasher, part no. 001 544 40 32 (Bosch #0 336 285 001), must be replaced with the new electronic type, part no. 001 544 66 32 (Bosch #0 336 403 001), on vehicles with chassis end numbers up to but not including those listed below:

Model	Chassis End No.
220/8	011 067
220 D/8	024 621
230/8	010 451
250/8	014 099

This campaign will be handled pursuant to the National Traffic and Motor Vehicle Safety Act of 1966. Therefore, the following points will have to be strictly adhered to:

1. After the modification has been carried out, the notification letter to the customer must be certified by the customer and yourself and mailed back to the Home Office Service Department. In the event that the customer is not the original purchaser, please insert under owner's signature the correct name and address (including zip code) of the present owner.

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2. The modified vehicle has to be identified by a sticker which will be supplied with the part. This label must be attached to the radiator frame. (See attached illustration.)

3. A properly filled out warranty claim for each vehicle modified should be mailed to Mercedes-Benz of North America, Inc., Claims Processing, 158 Linwood Plaza, Fort Lee, New Jersey 07024.

Please check your sales records on all of the above vehicles as well as vehicles in transit and your inventory and give the total count of those involved to your Parts Manager so he may expedite an order for sufficient parts immediately. The parts, of course, are available from your parts depot.

Also attached please find the work instructions for the installation of the new type switch/flasher.

Thanking you in advance for your full cooperation in this matter.

Very truly yours,

MERCEDES-BENZ OF NORTH AMERICA, INC.

G. K. Korallus
Vice President

Attachments

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MERCEDES-BENZ OF NORTH AMERICA, INC.

CABLE: MERCEBENZ FORT LEE
TWX: FORT LEE 201 947-5922
OVERSEAS TELEX: 23 01 2351
DOMESTIC TELEX: 01 2351
PHONE: 201 944-3344

158 LINWOOD PLAZA
P.O. BOX 318
FORT LEE, NEW JERSEY 07024

Re:

Dear Mercedes-Benz Owner:

Our records indicate you are the owner of the above referenced Mercedes-Benz passenger car. We have recently determined that the hazard warning light switch-flasher on some of these models may fail and not operate under certain atmospheric conditions.

Accordingly, the switch-flasher combination currently in your vehicle will be replaced by our dealer without charge to you. Please contact your nearest authorized Mercedes-Benz dealer immediately. This could be an important safety matter for you.

The dealer will fill out the lower portion of this letter after the part has been replaced and will require your signature.

Thank you for your cooperation.

Very truly yours,

MERCEDES-BENZ OF NORTH AMERICA, INC.

G. K. Korallus
Vice President

NOTE: This notice is sent in compliance with the Federal Traffic Safety Act of 1966. Your failure to respond may relieve Mercedes-Benz of North America, Inc., and its dealers of any further responsibility. Should you have sold the above mentioned vehicle, please pass this letter on to the purchaser.

This is to certify that we have replaced the subject switch-flasher on_____(Date) at_____(Miles).

DEALER STAMP & SIGNATURE
SIGNATURE

OWNER'S SIGNATURE
& DATE

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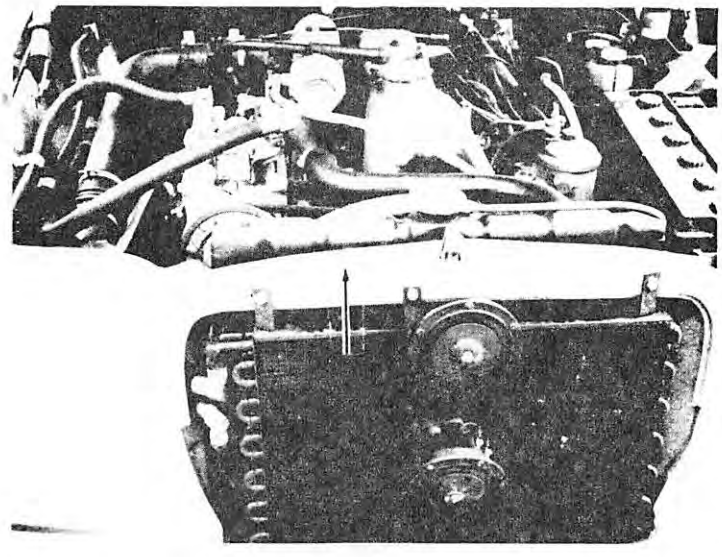
APPLICATION OF THE STICKER (SEE ARROW IN PICTURE) FOR THE HAZARD WARNING LIGHT SWITCH AND FLASHER MODIFICATION CAMPAIGN-MODELS 220/8, 220 D/8, 230/8 and 250/8



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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 94	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 54	Passenger Cars

Fort Lee, October 17, 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of Hazard Warning Light Switch and Flasher -- Models 220/8, 220 D/8, 230/8 and 250/8

These work instructions cover the replacement of the hazard warning light flasher and switch on models 220/8, 220 D/8, 230/8 and 250/8 up to but not including the following chassis end numbers:

Model	Chassis End No.
220/8	011 067
220 D/8	024 621
230/8	010 451
250/8	014 099

Vehicles produced as of and including the above mentioned chassis end numbers need not be modified.

Procedure:

1. Disconnect the battery negative ground cable.

2. Remove the two round plastic nuts located on the upper right and left sides of the center console (see arrow). Then, remove the small plastic grille from the lower center portion of the console (see arrow). With the grille off, remove the phillips head screw from behind it. Remove the two phillips head screws from the lower right and left rear sides of the console (see arrow). Slide console rearward. (See Illustration 1.)

NOTE: On some earlier vehicles the phillips head screw must be removed prior to the removal of the grille.

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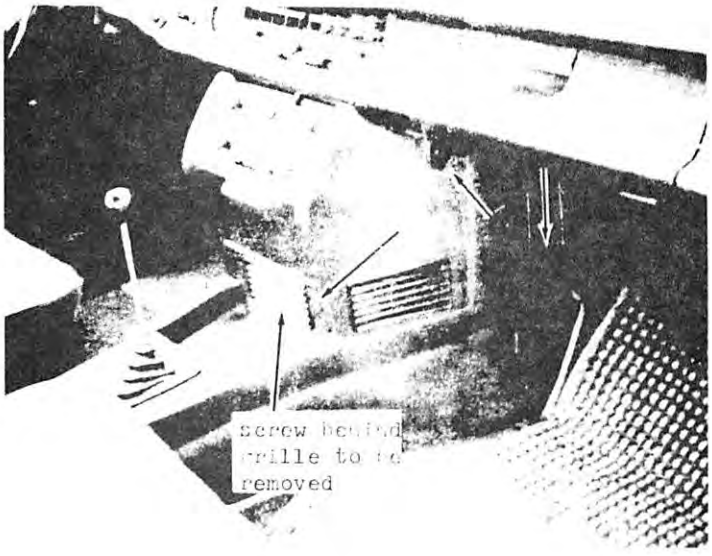

Illustration 1

Arrows = Items to be removed.

3. Using a wrench to hold the switch shaft, unscrew the knob (illustration 2). Remove the retaining ring. Then, remove the flasher assembly and disconnect the wire plug.

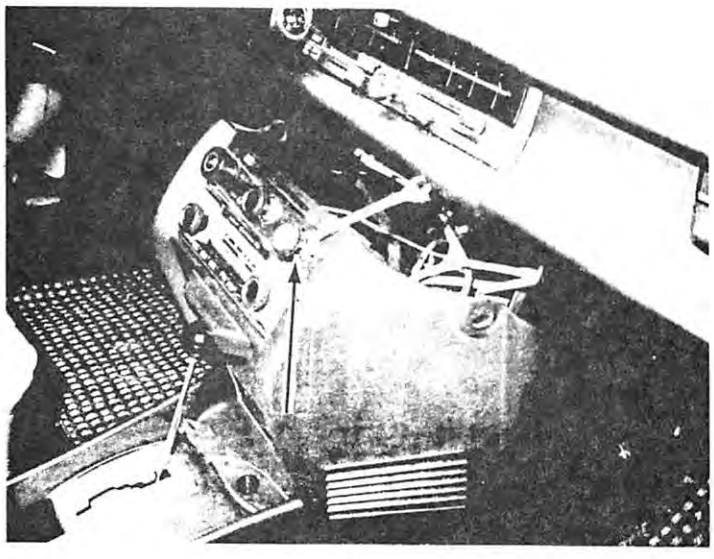

Illustration 2

4. Install the new electronic type switch/flasher, part no. 001 544 66 32 (Bosch #0 336 403 001). Be sure the plug prongs are turned 90° to the right in order to assure sufficient clearance at the radio and the dashboard. (See illustrations 3 and 4.)

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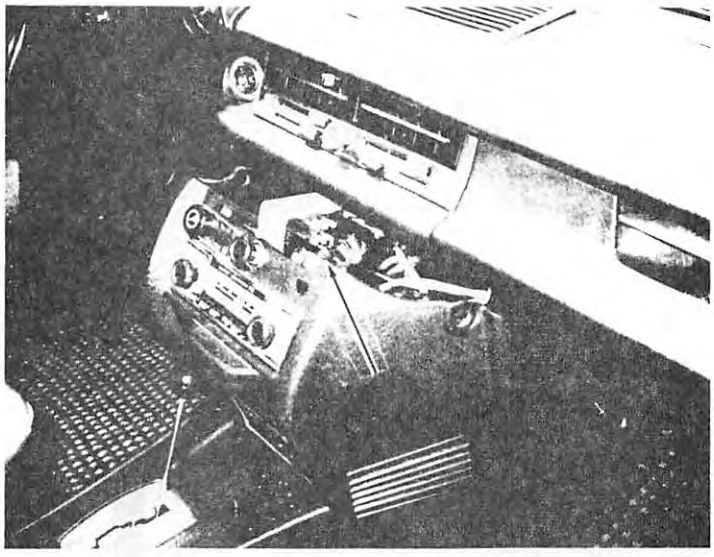

Illustration 3

Correct position of flasher upon installation.
Note the 90° angle of the plug prongs.

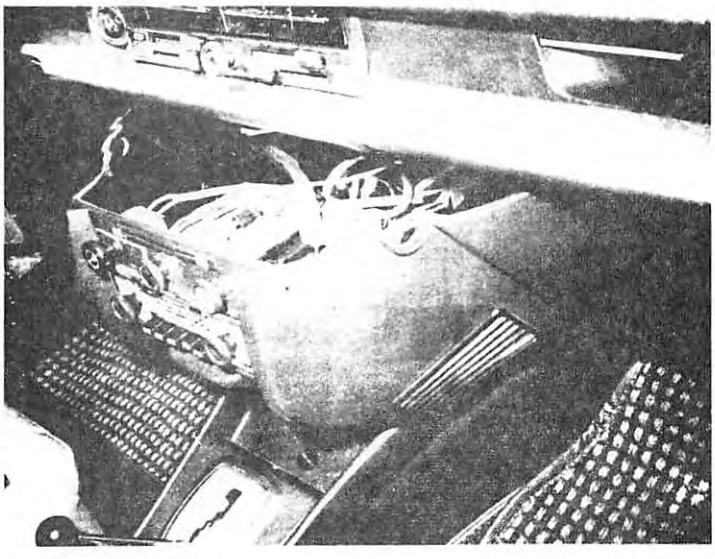

Illustration 4

Correct position of flasher upon completed installation.

5. Slide console back into its original position and reinstall all screws, plastic nuts and the plastic grille.

6. Re-connect battery negative ground cable.

7. After the work has been completed, check for proper operation.

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For each car modified submit a form 403, "M-B Dealer Claim for Credit", for parts plus 20 minutes labor. The amounts claimed must be stated individually for parts and labor. No other warranty repair may be entered on this claim. The removed flasher/switch must be submitted with the claim. (Note: Operation # SC 013/68.)

The modified vehicle has to be identified by a sticker which will be supplied with the part. This label must be attached to the radiator frame (see attached illustration).

The parts required are available through your Mercedes-Benz parts depot.

The National Traffic and Motor Vehicle Safety Act of 1966 prohibits the retail sale of vehicles with known deficiencies; therefore, in addition to licensed vehicles, all cars in transit and dealer inventory must be modified in accordance with these instructions.

Your warranty claims on vehicles in stock must be accompanied by a signed repair order certifying that the modification has been performed.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 17	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 54	Passenger Cars

Fort Lee, August 1967

TO OUR MERCEDES-BENZ DEALERS

Subject: Instructions for Subsequent Installation of Hazard Warning Lights, Types 190 c/Dc, 220 b/Sb/SEb/Cpe.,Conv., 230 SL, 300 SE/Cpe.,Conv., 300 SEL

All Mercedes-Benz vehicles for importation into the U.S.A. are currently equipped with hazard warning lights at the factory. Actuation of a switch on the instrument panel causes all four directional signal lights to blink simultaneously as a warning for emergency or other reasons. Because of either state law or owner preference, there may be cases where installation is desired on cars of the earlier production. The following installation procedures have been developed for these cases.

In each case, the instructions are to drill a hole and refer to the drilling template enclosed. These templates are all printed on one sheet, and should be cut out with scissors, razor blade, and punch. We recommend to use these pattern templates to make permanent templates out of either plastic or metal for durability.

I. Installation in Types 190 c/Dc, 220 b/Sb/SEb, and 300 SE/SEL

PARTS LIST: KIT, Part No. 710 820 00 99

Quantity	Description	Part Number
1	Harness	110 820 19 17
1	Flasher	001 821 08 51
1	Securing nut	110 821 00 59
1	Knob	110 820 00 92
1	Tag, Emergency	110 826 00 22

Order this kit from your Mercedes-Benz Parts Depot.

1. Remove underdash cover on the right side of steering post, below the instrument panel.

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2. Remove two mounting screws from the bracket where the cable connectors are attached and disconnect harness plug leading to the steering column. Pull bracket with the remaining cable connectors down to obtain working room.

3. Remove underdash cover on the left side below the instrument panel. Locate the wire (color code red, blue, and white) which is found looped over the end of the main harness binding where the wires are attached to the fuse box. Pull out the loose end of this wire (cut binding, if necessary) and connect to the after fuse side of fuse No. 1 on the fuse box.

4. Place drilling template (provided herewith) over windshield wiper and light switches. Using the template as a guide, mark hole location on dash panel at the point indicated on the template. Drill 1/8" hole there as a guide. Enlarge the hole to proper size by using a 13/32" drill. CAUTION: BE CAREFUL WHEN DRILLING HOLE, TO AVOID DAMAGING OR CRACKING THE DASH PANEL.

5. Attach hazard light switch to the plug at the long end of the new wiring harness. Insert switch into instrument panel, place red "Emergency" tag on switch, and secure with retaining nut.

6. Connect short end of the new harness (male plug) to the female plug on the mounting bracket (where plug from the steering column harness was originally connected).

7. Connect female plug of the new harness to the male plug of the steering column harness. Tape both plugs together with electrical tape and place connectors behind steering column.

8. Reinstall bracket assembly to its original location and replace both underdash covers.

9. After the work has been completed, pull out the switch to "on"position and check all four directional signal lights for proper operation.

II. Installation in Types 220 SEb Cpe.,Conv., and 300 SE Cpe.,Conv.

PARTS LIST: KIT, Part No. 712 820 00 99

Quantity	Description	Part Number
1	Harness	110 820 19 17
1	Flasher	001 821 08 51
1	Securing nut	110 821 00 59
1	Knob	110 820 00 92
1	Tag, Emergency	110 826 00 22

Order this kit from your Mercedes-Benz Parts Depot.

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1. Remove underdash cover on the right side of steering post, below the instrument panel.

2. Remove two mounting screws from the bracket where the cable connectors are attached and disconnect harness plug leading to the steering column. Pull bracket with the remaining cable connectors down to obtain working room.

3. Remove underdash cover on the left side below the instrument panel. Locate the wire (color code red, blue, and white) which is found looped over the end of the main harness binding where the wires are attached to the fuse box. Pull out the loose end of this wire (cut binding, if necessary) and connect to the after fuse side of fuse No. 1 on the fuse box.

4. Place drilling template (provided herewith) over windshield wiper and light switches. Using the template as a guide, mark hole location on dash panel at the point indicated on the template. Make sure template is centered over the light switch. Drill 1/8" hole as a guide at marked location. Enlarge the hole to proper size by using a 13/32" drill. CAUTION: BE CAREFUL WHEN DRILLING HOLE, TO AVOID DAMAGING OR CRACKING THE DASH PANEL.

5. Attach hazard light switch to the plug at the long end of the new wiring harness. Insert switch into instrument panel (plug connector should face to the bottom), place red "Emergency" tag on switch, and secure with retaining nut.

6. Connect short end of the new harness (male plug) to the female plug on the mounting bracket (where plug from the steering column harness was originally connected).

7. Connect female plug of the new harness to the male plug of the steering column harness. Tape both plugs together with electrical tape and place connectors behind steering column.

8. Reinstall bracket assembly to its original location and replace both underdash covers.

9. After the work has been completed, pull out the switch to "on" position and check all four directional signal lights for proper operation.

III. Installation in Type 230 SL

PARTS LIST: KIT, Part No. 713 820 00 99

Quantity	Description	Part Number
1	Harness	113 820 02 15
1	Flasher	001 821 08 51
1	Securing nut	110 821 00 59
1	Knob	110 820 00 92
1	Tag, Emergency	110 826 00 22

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Order this kit from your Mercedes-Benz Parts Depot.

1. Disconnect battery.

2. Remove upper mounting screw from underdash cover on the left side of the instrument panel and lower the cover for access to the wires.

3. Remove two mounting screws from the bracket where the cable connectors are attached and disconnect harness plug leading to the steering column. Pull bracket with the remaining cable connectors down to obtain working room.

4. Remove cover from fuse box, unscrew the two mounting screws, and, from inside of car, pull fuse box down to make wires accessible.

5. Locate the wire (color code red, blue, and white) which is found looped over and attached to the wires connected to the No. 1 fuse. Cut binding and connect wire to the after fuse side of fuse No. 1. Reinstall fuse box and reconnect battery.

6. Pull disc pad from steering wheel, remove center locknut, and pull off wheel. (This step is required to obtain room for drilling hole in instrument panel.) NOTE: BEFORE REMOVING THE STEERING WHEEL, MARK POSITION OF WHEEL IN RELATION TO STEERING SHAFT.

7. Place drilling template (provided herewith) over the light switch. Using the template as a guide, mark hole location on dash panel at the point indicated on the template. Drill 1/8" hole there as a guide. Enlarge the hole to proper size by using a 13/32" drill. CAUTION: BE CAREFUL WHEN DRILLING HOLE, TO AVOID DAMAGING THE DASH PANEL.

8. Attach hazard light switch to the plug at the long end of the new wiring harness. Insert switch into instrument panel, place red "Emergency" tag on switch, and secure with retaining nut.

9. Connect short end of the new harness (male plug) to the female plug on the mounting bracket (where plug from the steering column harness was originally connected).

10. Connect female plug of the new harness to the male plug of the steering column harness. Tape both plugs together with electrical tape and attach them (with electrical tape) to the main harness which leads to the fuse box.

11. Reinstall bracket assembly to its original location and replace underdash cover.

12. Reinstall steering wheel and disc pad to their original positions.

13. After the work has been completed, pull out the switch to "on" position and check all four directional signal lights for proper operation.

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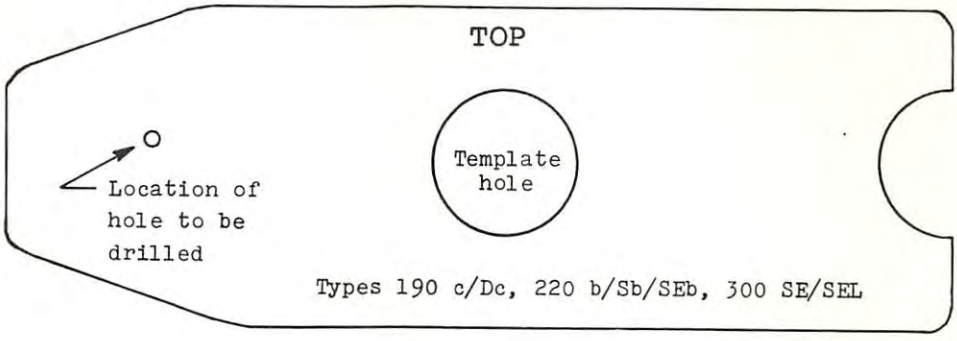
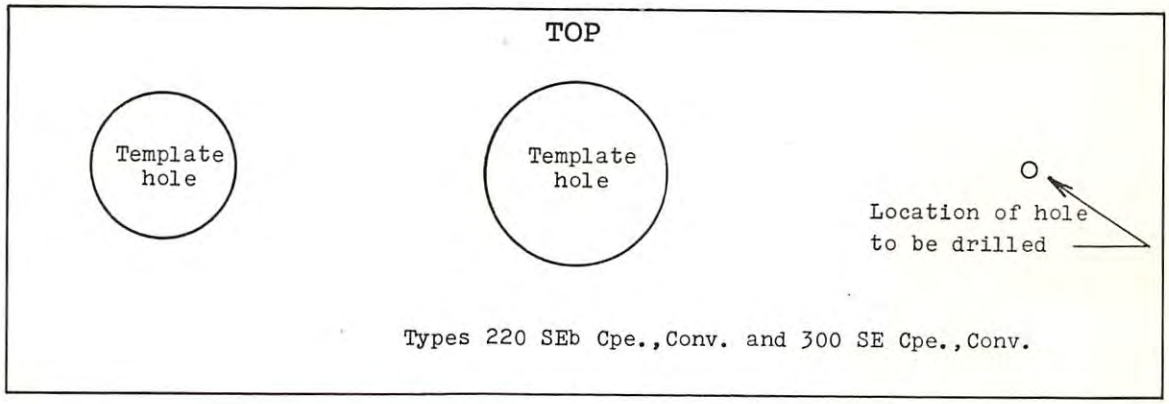
DRILLING TEMPLATES FOR HAZARD WARNING LIGHTS INSTALLATION

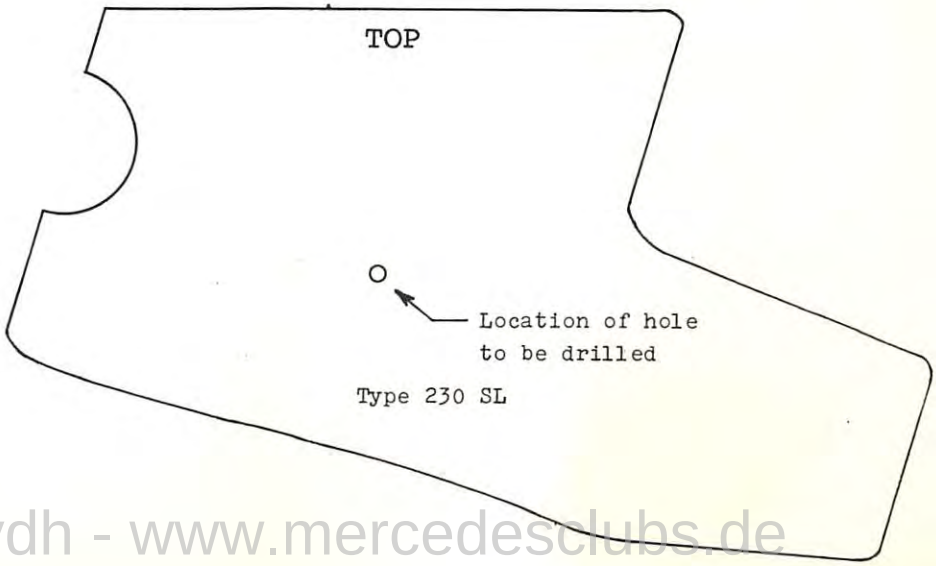
These templates accompany Service Information MB-T 17, Group 54. Cut them out with scissors, razor blade, and punch in order to use.



Types 190 c/Dc, 220 b/Sb/SEb, 300 SE/SEL



Types 220 SEb Cpe.,Conv. and 300 SE Cpe.,Conv.



Type 230 SL

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service information

Daimler-Benz AG / Export-Service

No. 15	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 54	Passenger Cars

Fort Lee, June 1967

TO OUR MERCEDES-BENZ DEALERS

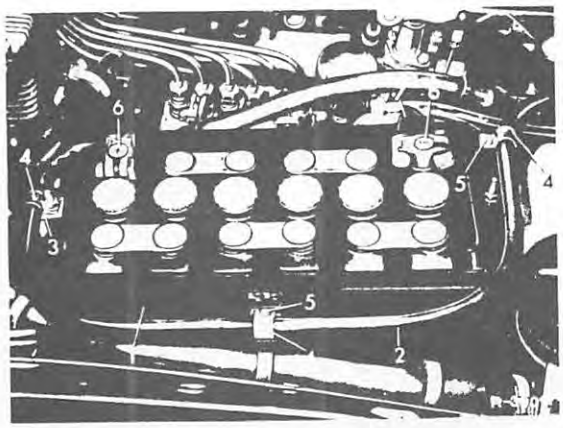
Subject: Damage to Engine Hood by Negative Pole of the Battery: Types 300 SEb/SEL

In early vehicles of the above types, when certain design tolerances coincide, the closed engine hood may rest against the negative pole of the battery, thereby damaging the engine hood. The design was changed to prevent this, beginning with chassis end no. 001212 for Type 300 SEb and 000576 for Type 300 SEL.

On cars with serial numbers prior to these and where this trouble is discovered, the following work is necessary to enlarge the distance between the engine hood and the battery pole.

Parts Required (Numerals in parentheses correspond to those in the illustration.)		Part Nos.
1 Mounting frame	(1)	(108 540 03 23 for 300 SEL (108 540 04 23 for 300 SEb
1 Positive cable	(2)	108 540 04 30
1 Bracket	(3)	111 542 05 40
3 Mounting clamps	(4)	187 995 00 37
2 Hex-head sheet metal screws 4.8 x 13	(5)	007976 004205

These parts can be obtained from your Mercedes-Benz parts depot.



Working Procedure:

1. Turn battery through 180°, so that the battery poles (6, in illustration) face the engine.
2. Remove ground cable (7) in front of the battery support and re-install it on side member flange behind the battery support. A mounting hole is provided there.

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3. Replace positive cable (2) and mounting frame (1) of the battery with the new parts listed above.

In order that a form 403, "M-B Dealer Claim for Credit", can be submitted, this work must have prior zone approval. Where approval is given and the work is done, submit claim for parts plus 2-1/2 hours for conversion of battery, 20 minutes for removing dent in hood, and 4 hours, 25 minutes for repainting the hood.

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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REPRINTED FROM MOTOR TREND MAGAZINE, MARCH 1976

OUT OF ROUND

A STAR SHALL SHOW THEM THE WAY

by Karl Ludvigsen

What would we do without Mercedes-Benz? I pose that question philosophically, not materially. If M-B shut down its production lines tomorrow, we wouldn't miss the 340,000 passenger cars and 210,000 commercial vehicles that Daimler-Benz builds every year. Sure, there'd be a momentary gap in some markets, such as West Germany, where Mercedes-Benz trucks and buses are dominant, but others would rush gleefully to plug that gap.

If there were no more Mercedes-Benz cars, we'd miss the example they set for the rest of the industry. Lately I've become more and more aware of just how heavily we do rely on Mercedes-Benz to supply a standard for excellence in car making. It didn't happen overnight. I mark it as having developed over the last decade, specifically from the introduction of the new big body (since superseded) for the 250 and 300 models in the fall of 1965. That car and its smaller "New Generation" companions had a sober yet modern look that's classical in its simplicity. They're the ones that built a reputation for Mercedes-Benz cars in the United States that's become awesome.

Surely not a man, woman or child of TV-viewing age exists who doesn't realize that when car makers need something exceptional with which to compare their products, they choose a Mercedes-Benz. (I haven't been able to use the abbreviation "Mercedes" ever since I wrote a book about the Mercedes-Benz racing cars and discovered how important the Benz contribution was to the company's cars.) Obviously, they choose it for comparisons because they feel people know that Mercedes-Benz cars are extremely good, and also because most Mercedes-Benz models are priced so high they can hardly be thought of as competition for almost anything else.

I can't believe the number of Mercedes-Benz comparisons we're being exposed to. The bandwagon seemed to start rolling two or three years ago. That's when we saw commercials of a Mazda beating a 450SLC M-B in a drag race and of a Datsun 510 zipping around corners with an M-B 600 sedan (The idea was that both of them had independent rear suspension). When Audi introduced its 100LS sedans here, it also made much of a likeness in shape to Mercedes-Benz cars (hardly surprising, since the 100LS was styled when Audi was a subsidiary of Daimler-Benz).

Now Audi's back again with TV commericals that are reminding us that the 100LS and the small M-B sedans look similar from some angles. Volvo is showing us commercials that compare its 6-cylinder sedans to Mercedes-Benz models. Saab is doing a takeoff on the early Audi technique with a commercial that says Saabs are a lot like some other good cars, including Mercedes-Benz. And, of course, Mercury is doing everything it can to be certain you can't see one of its new Monarchs without thinking of a Mercedes-Benz. It pushes the (very tenuous) similarity of the Monarch to an M-B in print ads, on TV and in its public relations. *Motor Trend* even bought the p.r. push, as you can see from our July, 1974, cover.

Public relations was also part of Cadillac's campaign to position its Seville as a lower-cost alternative to the M-B 450SE. When it showed the Seville to the press, it had a 450SE sedan right there for comparison test-driving. Cadillac followed up on that by providing its dealers with elaborate brochures and sales training aids that showed how they could sell the Seville by comparing it to the Mercedes-Benz.

Even relatively humble Volkswagen found a way to brighten its products with the glow of the three-pointed star. When it introduced fuel injection in the Beetle, it showed it on the race track with two other injected cars: a Porsche 917 and a Mercedes-Benz 280SE 4.5. Yes, it was far-fetched, but VW could be sure that people would recognize and react to the prestige of that elegant M-B grille.

Another German firm relied on the public's perception of Mercedes-Benz to try a little reverse psychology. "Our status symbol is under the hood, not on it," said BMW in a magazine ad that only thinly disguised its reference to the famous circled star on a stalk. The image of that star above the grille, steadfastly maintained on all M-B models except the trucks and sports cars, has of course inspired many American imitators. *Motor Trend* looked at some of the pseudo-Stuttgart grilles and emblems in our January, 1974, issue. (Car makers abroad seem to have been both too proud and too shy to indulge in such imitative styling.)

Even the concept of the company that makes Mercedes-Benz cars has been used as a basis for comparison. John DeLorean invoked the magic name when he talked about the car company he'd like to have: "I'd like to start sort of an American Mercedes-like auto company, to build a low-volume, high-quality car." Of course the secret of the success of Daimler-Benz lies mainly in its volume products, the trucks and diesel cars, which form a foundation for the more exotic and expensive models. But we tend to think of them as a "low-volume" producer, because we get only some 45,000 M-B cars a year, cars that exert an influence out of all proportion to their numbers.

We did once have an American Mercedes company, one that built, from 1904 to 1907, cars identical to those made in Germany. One of the reasons it didn't survive then was that we were building some excellent luxury cars of our own, such as the Simplex, admittedly patterned on the Mercedes design (it wasn't Mercedes-Benz in those days). In the 1930s, our costly luxury automobiles—the Packards, Lincolns, Cadillacs, Marmons and Duesenbergs—easily outclassed the big cars in the Mercedes-Benz line. Then, the M-B machines were trying to be sports cars and luxury cars at the same time and failing to be either. Now, they make the same attempt and manage to be both! This is the personality change that has made them the most respected cars in the world.

In our June, 1974, issue we explained why Mercedes-Benz cars have earned that respect in our eyes and in those of other car makers. Their cars are good because they're backed by a bitter determination on the part of everyone in the plant to make them good. Twenty years ago, an American company tried to market a car built to comparable standards; it was called the Lincoln Continental Mark II. In his new book, *Rolling Sculpture*, Gordon Buehrig reminds us how hard Ford worked to make this a fine automobile.

As a car, the Mark II Continental didn't survive; but as a concept, it deserves to live. It proved we *can* build a car of outstanding quality in America. All we lack is the will to do so. If we did it, we'd have an American car that others would use as a yardstick for excellence. How about it, Lincoln? Chrysler? Cadillac? Could an American car again become "The Standard of the World?"■

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service information

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Article No.	File	Group	Application
MB-T 215	SERVICE INFORMATION	58/59	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: STEREO RADIO PERFORMANCE EVALUATION

Since April 1970, stereo radios have been made available in Mercedes-Benz automobiles. Recently, complaints have been received regarding their performance. This Service Information will summarize findings resulting from tests conducted to evaluate stereo radio performance in general.

To comment on stereo radio performance, one must be familiar with the present state of the art. Comments regarding this will be covered in detail, however our tests indicate that the stereo radios installed in Mercedes-Benz automobiles have extremely good design and performance characteristics.

Stereo reception in a moving vehicle is subjected to operating conditions totally different than those of a stationary stereo radio. The greatest difficulty lies in radio sensitivity to signals. Generally the more sensitive a car radio, the better the reception will be as distance from the station increases. This is advantageous in suburbs and outlying areas, however the amount of reception disturbance apparent in cities will increase. FM stereo has a range of approximately 20 miles before reception noises become apparent; consequently, tuning to other stations is required more frequently than with AM.

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Many stations transmit through directional beam antennas in order to concentrate maximum power for good reception in heavily populated areas. Since stereo radios require a much stronger signal (approximately 6 to 8 times stronger), they can only function disturbance-free where strong signals are available. For this reason, the antenna should always be extended to its full length. Adjusting the antenna to a different height, however, might help to filter out disturbing signals when a strong stereo signal is available. In addition, VHF signals (very high frequency) travel only in a straight line which results in interrupted transmission whenever geographical conditions prevent either direct or indirect (through reflection) signal reception. AM signals, by comparison, are more flexible.

Occasionally, both a direct and reflected signal from the same station may be received at the same time and momentarily cancel each other. This is called a multipath signal and will cause distortion or noise. Multipath noises are normally increased in downtown areas or on roads surrounded by mountains.

All present stereo car radios have a decoder incorporated which is designed to switch the radio from stereo to mono in the event signal strength falls below a specified value. The problem is to set the value so that the radio will play stereo as much as possible, and also switch to mono when the signal is disturbed. However, switching to mono will only slightly improve reception by eliminating some disturbance.

In FM mono operation, however, there are still two noise sources:

a. decoder noise when radio is trying to switch back and forth.

b. "second" (stereo) signal noise which exists and is attempting to "kick in" even with the radio in mono operation.

Crackling noises received when traveling in outlying areas may result from either or both of these two sources.

Radio signal sensitivity is the most difficult problem for automobile stereo reception. Disturbances resulting from station reflections, etc., however, are suppressed somewhat by manufacturers through the use of low frequency speakers which result in the reduction of high frequency disturbances.

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Manufacturers are now developing devices which will automatically adjust radio signal sensitivity to signal strength. This will be a significant improvement as it will reduce geographical condition influence, as well as that of station distance. However, there will always be a limit! At present, accurate fine-tuning is the only solution to this problem. If interference is still experienced, switch to a stronger station. If no disturbance-free stereo signal is available, station to receiver distance is too far, or a high interference area is present. Set the tone control to bass position (counterclockwise) or switch to AM until you have reached a strong FM signal area. In interference "laced" areas, rear speaker utilization helps to reduce noise (lower frequency response).

USE OF TAPE DECK/CONNECTION

For traveling in rural areas, the subsequent installation of a stereo tape deck is recommended. Factory installed stereo radios have a pre-installed adapter which may be used by removing the blind plug on the back of the radio. A European Audio Plug must be used for installation. The blind plug provides an internal circuit connection for volume control. Removal of this plug interrupts the radio circuit which is restored by installation of the tape deck. A switch (radio to tape deck or vice versa) or a provision whereby the unit will switch automatically when inserting or removing a tape cartridge will be featured. Should the automatic switch be provided, the cartridge must be either partially or totally removed to play the radio. The tape deck to radio hook-up allows for tape playback volume control using the radio's volume control (and amplifier).

PERFORMANCE EVALUATION

In the future, we request that the above mentioned information be considered when dealing with complaints. Before unit replacement, it should first be established whether poor performance is due to outside influences or mechanical failure inside the radio. This may generally be determined by operating the radio in a densely populated area with strong uninterrupted stereo signals. Radio replacement is only justified if performance is inadequate under such favorable conditions.

Finally, a few hints on tuning:

1. The balance control switch on the dashboard (round knob) controls the balance between the front and rear speakers.

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2. The balance control switch (operated by a lever) next to the station selector knob on the radio controls the balance between the two channels, i.e., between left and right side. There is one channel on each side of the car (speakers are not hooked up crosswise as some domestic manufacturers are doing). We suggest to set this control to center position.

3. In order to "fix" a station, all that is necessary is to tune the radio precisely to that station, then pull out one of the pushbuttons of the appropriate band (AM or FM) and push it in all the way. If you want to fix a different station on this pushbutton, the procedure is the same. Manual fine-tuning should still be done for FM stereo reception.

4. Incidentally, the abbreviations used on the pushbuttons indicate:

   AM = Amplitude modulation

   FM = Frequency modulation

   BC = Broadcasting.

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Article No.	File	Group	Application
157	SERVICE INFORMATION	60 - 81 84 - 89	PASSENGER CARS

MAR - - 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: FRONT DOORS, MODELS 180 D to 180 C, 190 D TO 190 B, 220 A, 219 and 220 S

New standardized version front doors will be made available for the above-mentioned models when current version stockage is exhausted. Repair parts information is provided below.

When installing the new version door on vehicles manufactured without pivot windows, two modifications are necessary.

1. Solder over holes in upper door frame.
2. Weld both pivot window lower mounting cage nuts to the inner door panel.

NOTE: VEHICLES WITH PIVOT WINDOWS REQUIRE NO MODIFICATIONS!

PARTS INFORMATION:

NOMENCLATURE	OLD PART NO.	NEW PART NO.
door, right w/pivot window door, right w/o pivot window	120 720 02 05 10 180 720 08 05 10 180 720 04 05	120 720 04 05
door, left, w/pivot window door, left, w/pivot window	120 720 01 05 10 180 720 07 05 10 180 720 03 05	120 720 03 05

Parts may be ordered from our Mercedes-Benz parts depots.

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Article No.	File	Group	Application
116	SERVICE INFORMATION	60-81 84-89	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ELECTRIC WINDOW LIFTS - REINFORCED WINDOW LIFTERS/ ADDITIONAL STOP BRACKET -- MODELS 280 SE/8 CP./CV. AND 280 SE/9 3.5 CP./CV.

To eliminate the possibilities of the windows overriding in the normal raised position production changes have been initiated for the left and right door electric window lifts on the above referenced models as follows:

a. The window base rail (2, Illustration 1) now has two stop brackets (3) for the raised position (only one was previously installed).

b. An additional support (12) for the second stop bracket (7) has been cast into the door frame. This additional bracket is available for subsequent installation on vehicles manufactured prior to the below listed production cut-off chassis end numbers.

PRODUCTION CUT-OFF:

MODEL		CHASSIS END NUMBER
280 SE/8 Cp./Cv. (6 cylinder)	Right door	004602
	Left door	004628
280 SE/9 3.5 Cp./Cv. (8 cylinder)	Right door	000298
	Left door	000594

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In addition, the window lifters (parallel arms) (Item 1) have been reinforced.

PRODUCTION CUT-OFF:

MODEL	CHASSIS END NO.
280 SE/8 Cp./Cv.	004910
280 SE/9 3.5 Cp./Cv.	001800

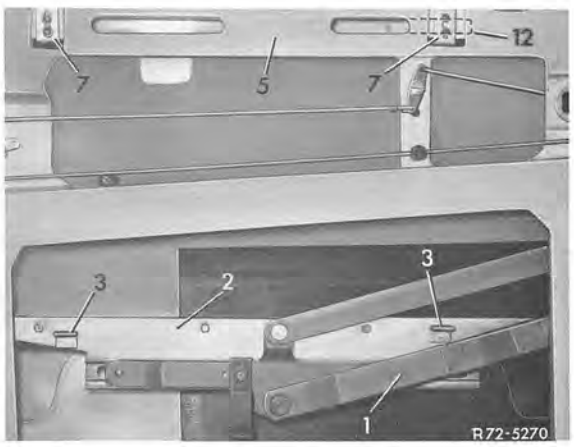

ILLUSTRATION 1

1. Window lifter
2. Window base rail
3. Stop bracket on window base rail
5. Door frame
7. Window stop bracket on door frame
12. Bracket (dotted line indicates previous version, with oblong hole)

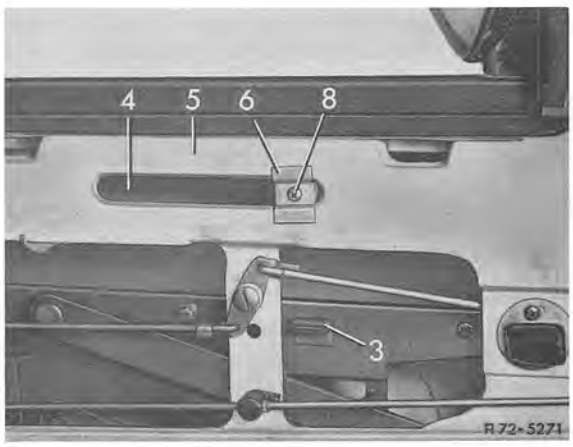

ILLUSTRATION 2

3. Window base rail with stop bracket
4. Slotted hole (previous version)
5. Door frame
6. Clamp for stop bracket
8. Phillips screw

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INSTALLATION INSTRUCTIONS:

1. Remove window lifter and window base rail (old version).

2. Install the reinforced window lifter, (1, Illustration 1) and the window base rail, with the attached stop brackets.

3. On Model 280 SE/8 Cp./Cv. up to chassis end number 002864 only:

   Install one stop bracket (modification set, Part No. 111 720 54 23) for the window base rail in the slotted hole (4, Illustration 2) located in the door frame (5). (see Illustration 3)

   NOTE: A STOP BRACKET HAS BEEN INSTALLED IN MODEL 280 SE/9 3.5 CP./CV. SINCE PRODUCTION BEGAN.

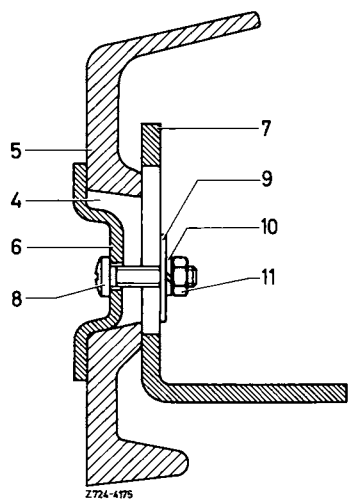

ILLUSTRATION 3

4. Slotted hole
5. Door frame
6. Bracket
7. Stop bracket
8. Flat head screw
9. Washer
10. Studded disc
11. Nut

4. Adjust the door frame stop brackets to the window base rail stop brackets and inspect for proper raised position by operating windows with the door closed.

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NOTE: THE PREVIOUS WINDOW LIFT VERSION, WITHOUT REINFORCEMENT AND STOP BRACKET, PART NO. 111 720 53 46 (LEFT) AND 111 720 54 46 (RIGHT) IS NO LONGER AVAILABLE. SINCE JULY 1970 OUR PARTS DEPOTS STOCK ONLY THE IMPROVED VERSION.

PARTS REQUIRED

DESCRIPTION	PART NUMBER
Window lifter without motor, left	111 720 55 46
Window lifter without motor, right	111 720 56 46
Window base rail left	111 720 61 45
Window base rail right	111 720 62 45
Stop bracket [1]	111 720 54 23

1) Required on Model 280 SE/8 Cp./Cv. up to chassis end number 002864.

The required parts may be ordered from our Mercedes-Benz Parts Depots.

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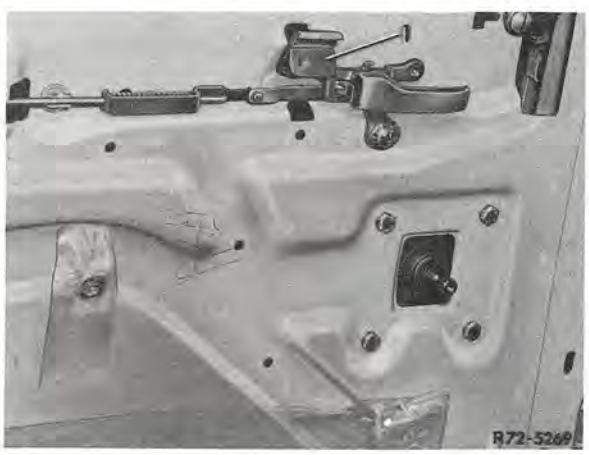
Article No.	File	Group	Application
105	SERVICE INFORMATION	60-81 84-89	PASSENGER CARS

FORT LEE, DECEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REAR DOOR GRIP HANDLE MOUNTINGS -- MODELS 280 S/8 THROUGH 300 SEL/8 6.3

The rear door grip handle mountings for the above mentioned models have been changed. These handles were previously secured to brackets, however they are now mounted to the inside door opening handle (See Illustration).



ILLUSTRATION

1. Inside door opening handle (with cast-on grip handle mounting)

Redesigned replacement door shells are now available from our Parts Depots and will be supplied automatically when the current design stockage is exhausted. Therefore, the information listed on the following page should be referenced when ordering replacement parts.

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PARTS REQUIRED

MODEL	UP TO CHASSIS END NO.	DOOR SHELL LEFT PART NUMBER	DOOR SHELL RIGHT PART NUMBER	DOOR OPENER HANDLE LEFT PART NUMBER	DOOR OPENER HANDLE RIGHT PART NUMBER
250 S, 250 SE 280 S/8 280 SE/8	073924 019231 018812	108 730 21 05 108 730 13 05 108 730 25 05	108 730 22 05 108 730 14 05 108 730 26 05	115 760 01 61	115 760 02 61
280 SEL	019325	108 730 23 05 108 730 15 05 108 730 29 05	108 730 24 05 108 730 16 05 108 730 30 05	115 760 01 61	115 760 02 61
300 SEL/8 300 SEL/8 6.3	001292 000934	109 730 09 05 109 730 07 05 109 730 11 05	109 730 10 05 109 730 08 05 109 730 12 05	115 760 01 61	115 760 02 61

Please note that it will not be necessary to order the new door opener handles with new door shells for vehicles with serial numbers higher than those listed above.

The required parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
S 7	SERVICE INFORMATION	60-81 84-89	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: HEATED REAR WINDOW -- MODELS 230 SL, 250 SL, 280 SL/8 CP.

Two versions of the electrically heated rear windows are now available for subsequent installation on the above mentioned models. Both laminated clear Sigla and laminated, tinted, heat insulated Sigla glass are available through Mercedes-Benz Parts Depots.

The interior trim code and complete chassis number must be provided when ordering item number 27, page 2. Accessory kit, items 2 through 20 may be ordered in kit form under Part Number 113 670 00 80.

Order the rear glass, tinted or clear, under the respective part number, depending upon the desired version.

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SCOPE OF DELIVERY

ITEM NO.	QTY.	DESCRIPTION	PART NO. OR DIN DESIGNATION	
1	1	Elec. heated rear window laminated safety glass, clear (Sigla)	113 678 04 10	
	1	Elec. heated rear window, heat insulating, laminated safety glass, tinted (Sigla)	113 678 05 10	
2	1	Auxiliary cable harness	113 820 11 15	
3	1	Fuse box bracket	113 545 04 40	
4	1	Fuse box	000 545 62 01	
5	1	Fuse element 16 AMP (Fuse box on bracket)	000 545 43 34	
6	2	Metal screw AM 4 x 12	007985 004126	
7	2	Lock washer B 4	000127 004203	
8	2	Hex. nut M 4	000934 004004	
9	1	Grommet	186 997 07 81	
10	1	Clamp	186 995 02 20	
11	1	Sheet metal screw B 3.9 x 6.5	007981 003254	
12	1	Grommet	108 988 00 27	
13	1	Switch with	001 821 61 51	
	1	Bulb W, 12 V 1.2 W	--	
14	1	Trim plate	115 821 04 03	
15	1	Knob	115 820 16 92	
		Bracket and switch on tray		
16	1	Bracket for switch	113 826 01 14	
17	3	Metal screw AM 4 x 10	007985 004125	
18	3	Washer A 4.3	009021 004103	
19	3	Hex. nut M 4	000934 004004	
20	1	Washer 13	000125 013012	
21	1	Lining of rear side panel, assembly left	113 690 35 41 113 690 37 41	1) 2)

1) M-B Tex
2) Leather

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ATTACHMENT

60-81
S 7, Gr. 84-89

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INSTALLATION INSTRUCTIONS

PROCEDURE

A. COUPE TOP

1. Remove coupe top.

2. To remove the rear window, first remove the garnish molding, both sheet metal screws holding the garnish moldings left and right, detach the garnish moldings from the clips, and remove the inside window moldings. From the exterior, carefully remove the rear window and rubber molding. Apply light pressure from the interior, if necessary.

3. Beginning at the center of the top, remove the plastic head liner from the underside; 15 3/4 in. (400 mm) to the left (See Illustration 2).

4. Partially remove the rubber molding (Item a, Illustrations 1 and 2) and mark position of cable passage hole.

5. Drill a 25/64 in. (10 mm) diameter hole in such a way that this hole leads from the center heated rear window rubber molding support area to the rubber seal channel inside the coupe top.

6. Shape a channel-like groove for routing of the electric lines (Illustrations 2 and 3, Section A,B).

7. Insert the grommet (12) into the hole, from the exterior. Shorten the grommet from the interior until it is flush with the hole.

8. Install the rear window. (For details see Service Manual Passenger Cars 1968, Models 114/115, Job No. 67-3.)

9. Replace window molding and garnish moldings.

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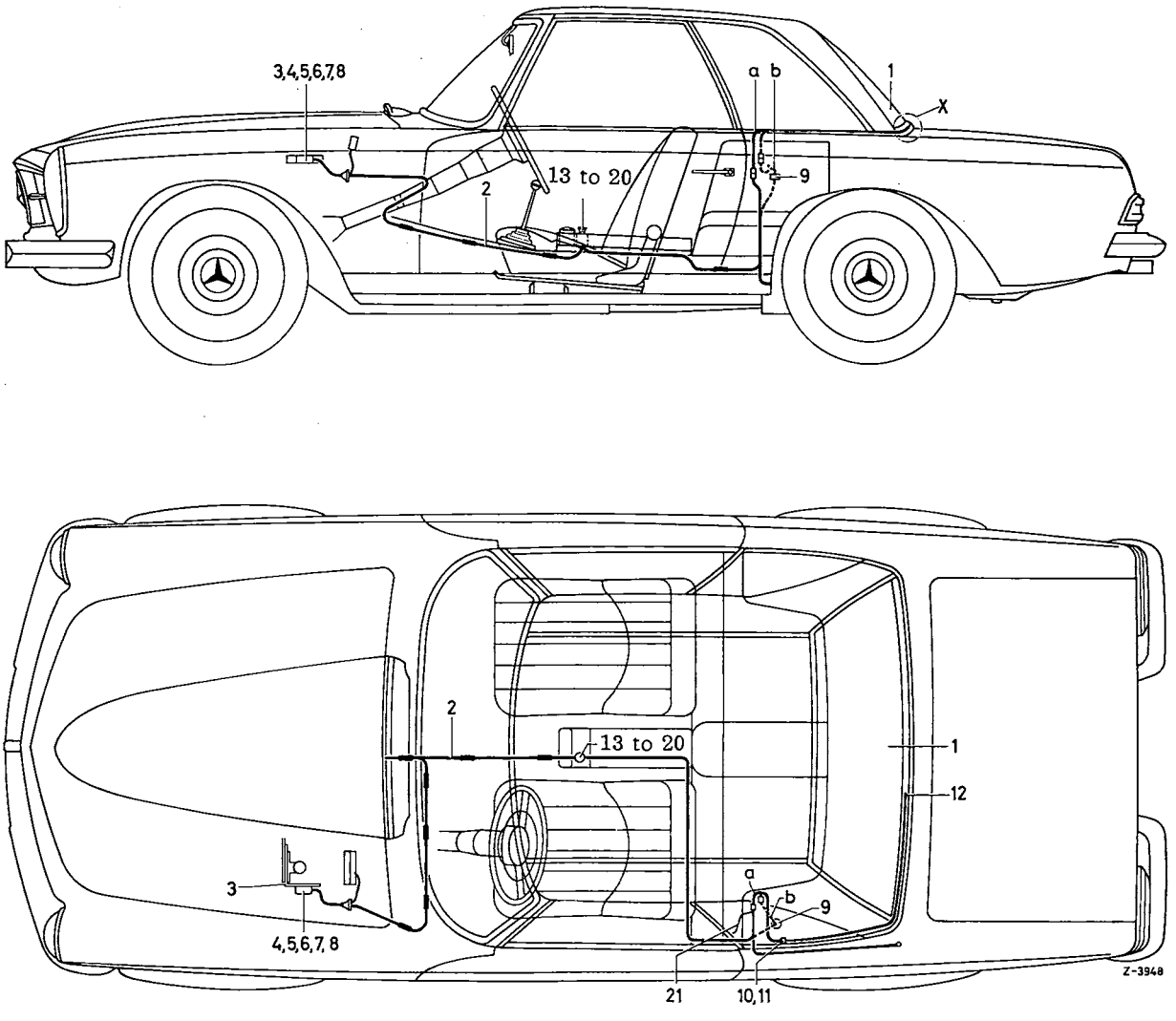

ILLUSTRATION 1

Circuitry

a	With roadster top
1.	Rear window
2.	Cable harness
3.	Bracket
4.	Fuse box
5.	Fuse element
6.	Metal screw
7.	Lock washer
8.	Hex. nut
9.	Grommet
10.	Cable clamp
11.	Sheet metal screw
12.	Grommet
13.	Switch
14.	Trim plate
15.	Knob
16.	Bracket
17.	Metal screw
18.	Washer
19.	Hex. nut
20.	Washer
21.	Lining

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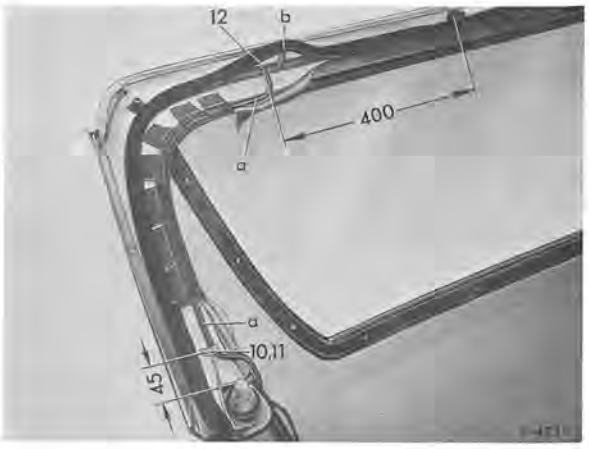
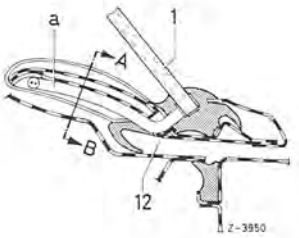


ILLUSTRATION 2

Arrangement of electrical wires
in coupe top

a Electrical wires
b Rubber seal
10. Cable clamp
11. Sheet metal screw
12. Grommet
45 mm = 1 25/32 in.
400 mm = 15 3/4 in.



Section A-B

ILLUSTRATION 3

Detail X of Illustration 1

a Electrical wires
1. Rear window
12. Grommet
14 mm = 9/16 in.
8 mm = 5/16 in.

IMPORTANT! THE FOLLOWING POINTS REQUIRE SPECIAL ATTENTION DURING INSTALLATION OF HEATED REAR WINDOWS:

a. Use only new rubber moldings.

b. Soften rubber moldings with glycerine.

c. Prior to installing the rubber molding, perforate it where the hole is located and insert the electrical lines (Illustrations 1 through 3).

d. Place window and attached rubber molding (ensure installation cord is attached) into window opening and center accurately.

e. Utilizing the installation cord and beginning at the bottom, slip the inner rubber lip over the ridge. Pressure may be applied carefully from the outside.

CAUTION: STRIKING OR TAPPING, EVEN WITH THE PALM OF THE HAND, MAY BREAK THE GLASS.

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f. When inserting and installing the rear window, continuously pull the electric wire.

g. Ensure the entire rubber molding is seated properly on the ridge.

10. Route electrical wiring as shown in Illustration 2. Secure with cable clamp (10) and sheet metal screw (11).

11. Re-glue plastic lining and electrical lines to the roof frame member.

12. Solder double plug prongs to the rear window electrical lines. Assemble plug.

13. Clean rear window.

B. BODY SECTION

14. Disconnect ground cable from battery.

15. Remove left front floor mats and driver's seat.

16. Remove left rear side panel (See Illustration 5).

17. Remove tray.

18. Loosen carpeting as required to install cable harness (See Illustration 1).

19. Remove left cover located under instrument panel and remove Z-bracket.

20. Remove the main fuse box from the fire wall and pull downwards as far as possible. Disconnect plug from socket.

21. Route the auxiliary cable harness (2) under the carpet, along the main cable harness, through grommet in the left side of the fire wall and into the engine compartment (See Illustration 1).

22. Fasten auxiliary fuse box (4) to bracket (3) with metal screws (6), lock washers (7) and hex. nuts (8).

23. Remove both hex. nuts which secure the clutch fluid reservoir. Attach bracket (3) and retighten nuts (See Illustration 4)

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24. Connect electrical lines 1 and 2 to the auxiliary fuse box (4). Insert fuse element (5) (See Illustrations 4 and 9).

25. If necessary, remove radio or radio opening cover. Also connect electrical line (5) to ground of the main cable harness.

26. Fasten the electrical line (4) to the existing ground behind the rear side panel.

27. Disconnect the double plug from the auxiliary cable harness (2) and feed the electrical line from the rear through the hole in the rear side panel (21). Subsequently fasten the rear side panel and re-assemble double plug (See Illustration 6).

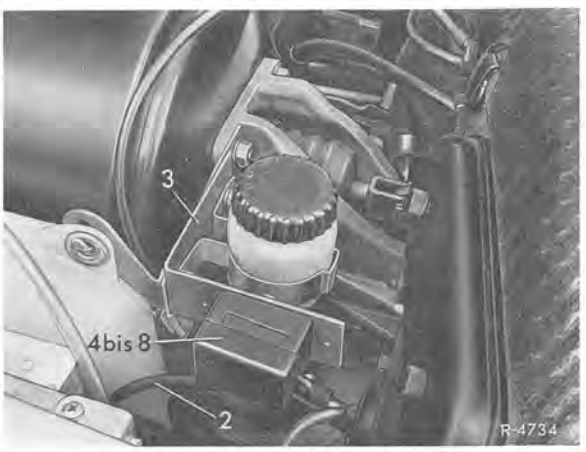

ILLUSTRATION 4
Arrangement of bracket with fuse box

2. Auxiliary cable harness
3. Bracket
4. Fuse box
5. Fuse element
6. Metal screw
7. Lock washer
8. Hex. nut

ILLUSTRATION 5
Arrangement of left rear side panel

21. Cover

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ILLUSTRATION 6
Arrangement of electric plug connection on rear side panel

2. Auxiliary cable harness
21. Cover

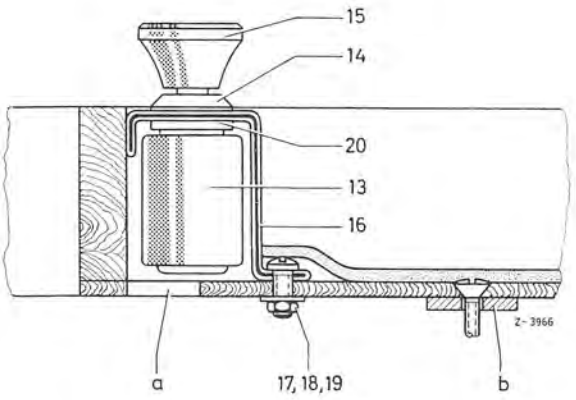

ILLUSTRATION 7
Arrangement of switch in tray

a = slot 25/32 x 3 in. (20 x 75 mm) long
b = cardboard strips 1 x 3½ in. (25 x 90 mm) long
13. Push button switch
14. Trim plate
15. Knob
16. Bracket
17. Metal screw
18. Washer
19. Hex. nut
20. Washer

28. Make cut out (a) in tray 25/32 in. (20 mm) wide and 3 in. (75 mm) long, 1.5 in. to the left and right of tray center for installation of electrical line (See Illustration 7).

29. Install switch (13) into bracket (16) by means of washer (20), trim plate (14) and knob (15) (See Illustration 7).

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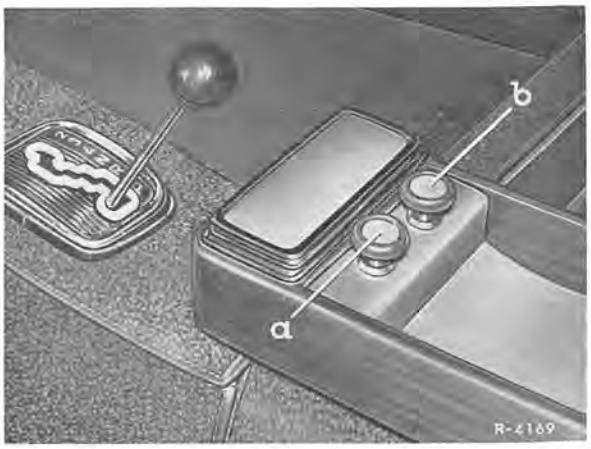

ILLUSTRATION 8

Arrangement of switches
a Accessory
b Heatable rear window

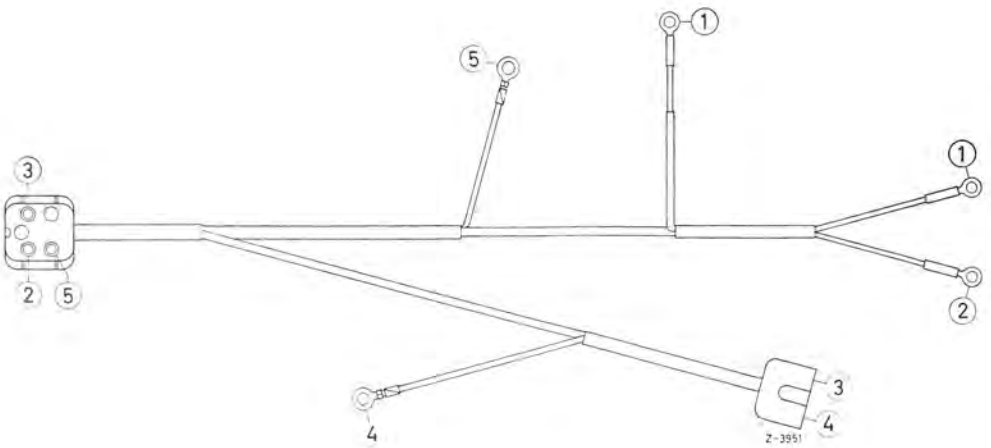

ILLUSTRATION 9

Auxiliary cable harness (2)

COLOR CODE OF THE AUXILIARY CABLE HARNESS (ILLUSTRATION 9)

LEAD NO.	ELECTRICAL LINES FROM	TO	BASIC COLOR	IDENTIFICATION COLOR	CROSS SECTION mm^2 AND CIRCULAR MILLS
1	Main fuse No. 2 terminal 15/54	Auxiliary fuse	black	red	2.5/4750
2	Coupling switch	Auxiliary fuse	black	red	2.5/4750
3	Coupling switch	Cable connector rear side panel	black	---	2.5/4750
4	Rear side panel ground	Cable connector rear side panel	brown	---	2.5/4750
5	Coupling switch	Main ground instrument panel	brown	---	0.75/1500

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30. Push the main cable harness four-prong plug (2) through the slot in the tray and secure to switch (13).

31. Fasten bracket (16) to the tray using items 17 to 19.

32. Paste a cardboard strip (b) to the underside of the tray as shown in Illustration 7. Re-fasten tray. Shorten tray carpet to fit bracket (16).

33. Re-cement the floor carpeting and the auxiliary cable harness.

34. Mount Z-bracket and cover under the left hand side of the instrument panel.

35. Re-install driver's seat. Insert front floor mats. Re-connect battery.

36. Re-install coupe top, connect two-prong plug to the socket on rear side panel and re-install left rear side panel.

37. Test system for operation.

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service information

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Article No.	File	Group	Application
MB-T 179	SERVICE INFORMATION	60-81 84-89	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

This Service Information supersedes Service Information No. MB-T 10, Group 60-81, 84-89 of April 1967.

SUBJECT: CLEANING AND CARE OF CONVERTIBLE TOPS, INSTRUCTIONS FOR SEALING LEAKY SEAMS

A. CLEANING AND CARE

The life and appearance of the convertible top depends to a great extent on expert care and cleaning. It is recommended that automobiles be parked in the shade, when possible, as intensive sunshine tends to deteriorate color and fabric.

The top need not be washed with detergent every time the car is washed. Sprinkling or rinsing the top with clean water should be sufficient.

Cleaning of convertible tops may be accomplished in either of the following ways:

1. DRY

   Brush with a soft brush in only one direction i.e., from front to rear.

2. WET

   First clean the top (dry) with a soft brush.

   Cleaning is best accomplished with a mild detergent. However, for heavily soiled tops, Happich Washing Detergent (Frischdienst) Part No. 000 986 14 60 is recommended. Plenty of lukewarm water should be used, applied with a sponge or soft brush.

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NOTE: DO NOT USE GASOLINE OR OTHER PETROLEUM SUBSTANCES TO CLEAN TOPS.

Rinse liberally with water, making sure that all detergents are removed. Air dry the closed top in the shade.

Wash the plastic rear window with a cloth soaked with a detergent solution. Do not use stain or tar remover, thinners, sharp edged instruments, etc., to remove stains, snow or ice.

Re-impregnation of the top should be performed at regular intervals, depending upon the climatic location. It is recommended that automobiles located in damp, rainy areas have top re-impregnation performed every six months, while dryer climates with intensive sunshine would warrent re-impregnation only once a year.

NOTE: WARRANTY CLAIMS WILL NOT BE HONORED FOR TOPS RETURNED WHICH HAVE NOT BEEN RE-IMPREGNATED!

RE-IMPREGNATION PROCEDURES

1. Wash top thoroughly, using Happich Washing Detergent (Frischdienst) Part No. 000 986 14 60.

   NOTE: DO NOT REMOVE TOP FROM AUTOMOBILE.

2. Allow top to dry in the shade.

3. Apply Victoria Impregnating Compound (Happich Co.) Part No. 000 986 15 60.

   NOTE: DISSOLVE CONTENTS OF BOTTLE (IMPREGNATING COMPOUND) INTO 1 QUART OF LUKEWARM WATER AND STIR WELL. APPLY SOLUTION EVENLY TO THE DRY TOP USING A SPONGE OR SOFT BRUSH.

   In the future, the Happich Washing Detergent and Victoria Impregnating Compound will be combined and may be ordered as a kit under Part No. 000 986 15 60.

B. INSTRUCTIONS FOR SEALING LEAKY SEAMS OF CONVERTIBLE TOPS

Leaky seams of convertible tops should be sealed with Hypalon, a two-component lacquer which is based on chlorosulphide polyethylene.

NOTE: HYPALON CONTAINS LEAD; THEREFORE SAFETY PRECAUTIONS SHOULD BE OBSERVED. HYPALON MAY BE USED FOR SEALING INSIDE SEAMS ONLY. APPLICATION TO OTHER AREAS WILL RUIN THE TOP.

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1. SEALING PROCEDURE

a. Remove top and support frame to facilitate access to inside of seams.
b. Apply heavy coat of Hypalon with brush to inside of seams. Do not allow lacquer to drip or run.
c. Allow six hours curing time for lacquer. Do not operate top during this time.

2. HYPALON LACQUER KIT PREPARATION

Only prepare the two-component lacquer shortly before application.

Mixing proportions for Hypalon Kit:	Resin lacquer.....10 parts Hardener.....1 part Plastic thinner.....5 parts

One kit, which is sufficient to seal all seams of one convertible top, consists of a 3.5 ounce (100 grams) can of resin lacquer, a .35 ounce (10 grams) can of hardener, and a 3.5 ounce (100 grams) can of plastic thinner.

Mix the 3.5 ounce (100 grams) of resin lacquer and the .35 ounce (10 grams) of hardener together, but only add half (1.8 ounces - 50 grams) of the plastic thinner to the mixture. The other half of the plastic thinner should be used to clean the brush when the job is completed.

All materials may be ordered through our Mercedes-Benz Parts Depots. The storage life of the Hypalon Kit is approximately six months.

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Article No.	File	Group	Application
85	SERVICE INFORMATION	60-81 84-89	PASSENGER CARS

FORT LEE, OCTOBER 1970

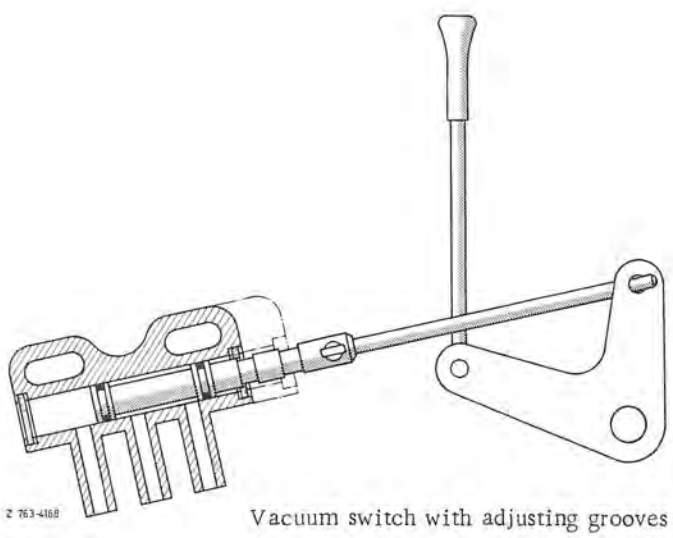
TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CENTRAL LOCKING UNIT ADJUSTMENT - ALL MODELS EXCEPT SL TYPES

Modified driver door vacuum switch piston rods, with two adjusting grooves, have recently been introduced (See Illustration).

This improved piston rod provides for simplified vacuum switch adjustment procedures:

1. Secure the switch by two (2) screws so as to provide movement within the oblong holes.
2. Adjust the switch so that the outer edge is flush with the center of the inner adjusting groove (unlocked) or the outer adjusting groove (locked) (See Illustration), and tighten.



Z 763-4168

Vacuum switch with adjusting grooves

Additional information on this system will be furnished as it becomes available.

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No. 93	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODIFICATION OF THE MOUNTING FOR THE STRIKER PLATE -- MODELS 220 SE/C TO 300 SE/C AND 230 SL TO 280 SL/8.

This is to inform you that the locks have been modified on Models 280 SE/8 Cp. and 280 SL/8. A striker plate with four mounting holes is now being installed in place of the striker plate with three mounting holes. For this reason, the hole pattern (Illustration 2) in the sheet metal fold of the rear fender had to be modified.

START OF SERIES PRODUCTION

MODEL	AS OF CHASSIS END NUMBER
280 SE/8 Cp.	003 061
280 SL/8	010 366

In order to simplify parts storage, the replacement rear fenders for the coupes and convertibles of Models 230 SL to 280 SL/8 will be modified to the four-hole-mounting. The threaded mounting plate comes fastened to the fender.

Therefore, in case of repair on vehicles with a three-mounting-hole striker plate, the existing striker plate has to be replaced with the new version. Consideration must be given as to the type of lock used, i.e. whether it has a spring loaded catch or a rotating catch (Illustration 1).

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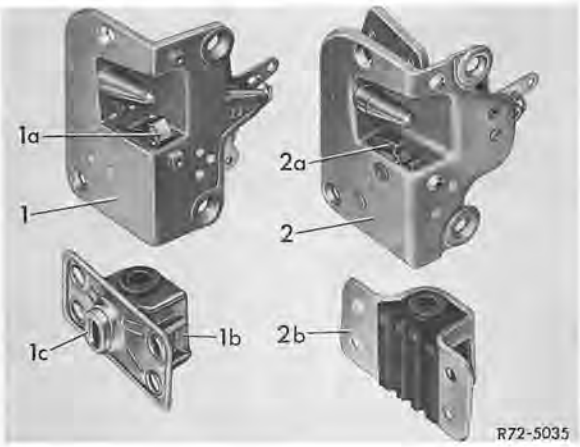

ILLUSTRATION 1

1. Lock with spring-loaded catch
1a. Catch
1b. Striker plate
1c. Riveting
2. Rotating-catch lock
2a. Rotating-catch
2b. Striker plate rubber cushioned

WORKING INSTRUCTIONS

1. The lock with spring-loaded catch (1) may be identified by its catch (1a). The matching striker plate (1b) has the Part Numbers:

   Striker plate, left.....108 720 03 04

   Striker plate, right.....108 720 04 04

   When mounting this type of striker plate, an opening between the mounting holes of the bracket (Illustration 2, 1d) has to be provided.

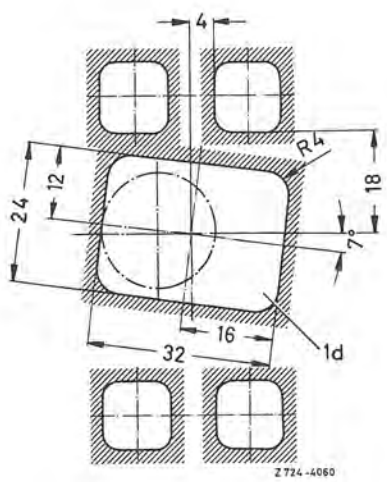

ILLUSTRATION 2

1d. Opening

R4 = .16 in. radius

4 mm = 5/32 in.
12 mm = 15/32 in.
16 mm = 5/8 in.
18 mm = 45/64 in.
24 mm = 15/16 in.
32 mm = 1.26 in.

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2. The rotating-catch lock (2) can be recognized by the brass colored catch (2a). The matching rubber cushioned striker plates (2b)(Illustration 1) have the following part numbers:

   Striker plate, left.....115 720 05 04

   Striker plate, right.....115 720 06 04

   For this striker plate, no cut-out in the sheet metal fold may be provided.

REPLACEMENT PARTS REQUIRED

MODEL	DESCRIPTION	PART NUMBER
220 SEB/Cp. 250 SE/Cp. 280 SE/8 Cp. 300 SE/Cp.	Rear fender, left Rear fender, right	111 630 57 21 111 630 58 21
220 SEB Conv. 250 SE Conv. 280 SE/8 Conv. 300 SE Conv.	Rear fender, left Rear fender, right	111 630 85 21 111 630 86 21
230 SL 250 SL 280 SL	Covering, rear Side panel, left Side panel, right	113 640 03 05 113 640 05 09 113 640 06 09

All parts mentioned herein are available from our Mercedes-Benz Parts Depots.

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No. 57	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81, 84-89	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: PAINT REPAIR JOBS ON VEHICLES WITH ELECTRONIC COMPONENTS -- MODELS 280 SE/9 3.5, 300 SEL/9 3.5 AND 220/8 TO 600

When paint repair jobs on vehicles with electronic components are being performed in your shop, the following equipment should be removed from the vehicle before it is brought into the paint baking oven:

1. Transistor ignition switching unit.
2. Engine RPM Switch (vehicles with emission control).
3. Electronic control unit for fuel injection.

This precaution is required to prevent costly damages.

Please advise other firms, such as body shops, which may carry out paint repair jobs on Mercedes-Benz cars for you, of the preceding information.

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No. 31	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: DOOR NOISE ELIMINATION -- MODELS 220 D/8 TO 250 C/8 AND 250 S TO 300 SEL/8 6.3 (SERIES W 108/109/114/115)

Door noises may have several different causes. In this Service Information a list of various remedies have been compiled. It is subdivided as follows:

A) Door Alignment
B) Striker Plate/Door Lock Noises
C) Weatherstrip Noises
D) Noises from Window Molding of Models 220 D/8 to 300 SEL/8 6.3
E) Door Lock Push Button Noises
F) Front Fender Noises/Models 220 D/8 to 250 C/8
G) Noises from Ornamental Molding Below Windshield on Models 220 D/8 to 300 SEL/8 6.3
H) Parts Required

A) DOOR ALIGNMENT

In order to eliminate door noises, the door alignment must first be checked and, if necessary, corrected. Possibly, it may seem as if the door sags when opened. This, generally, is an optical illusion. Make sure that the upper edge of the window frame and roof bead are .16 in. apart (Illustration 1) when the door is closed.

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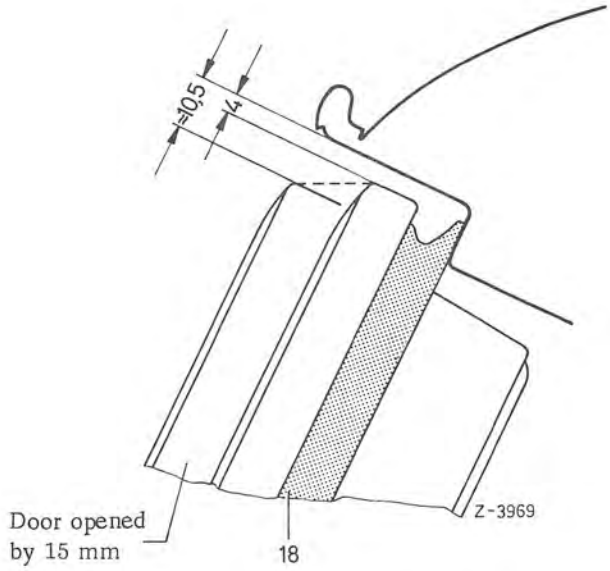

ILLUSTRATION 1

18. Weatherstrip

On Models 220 D/8 to 250 C/8, door hinge hex. head screws should be tightened to 22 ft. lbs.

B) STRIKER PLATE/DOOR LOCK NOISES

1. Bevelling/Striker Plate Catch

It is possible that the striker plate catch has a sharp edge (2) where it comes into contact with the latch (Item 1, Illustration 2). This must be bevelled, utilizing a sharp triangular scraper.

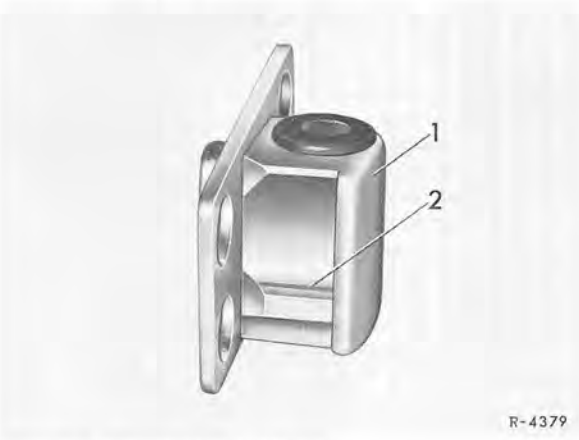

ILLUSTRATION 2

1. Striker plate catch
2. Edge

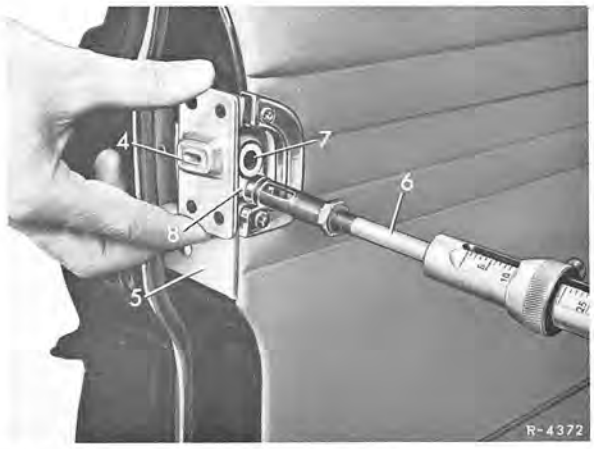

ILLUSTRATION 3

4. Striker plate
5. Lock
6. Pressure gauge
7. Rubber mount
8. Striker plate housing

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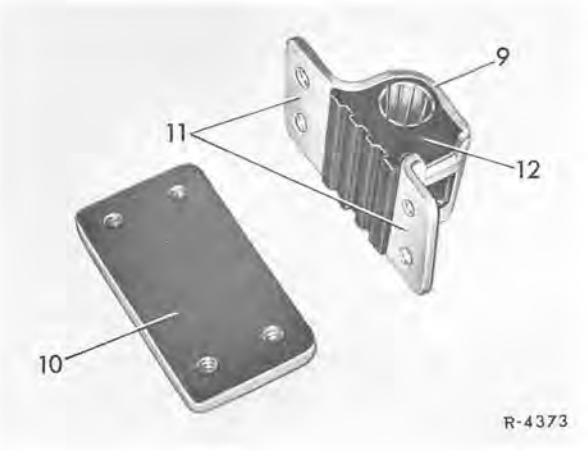

ILLUSTRATION 4

9. Striker plate, non-riveted
10. Steel plate
11. Contact surface
12. Rubber

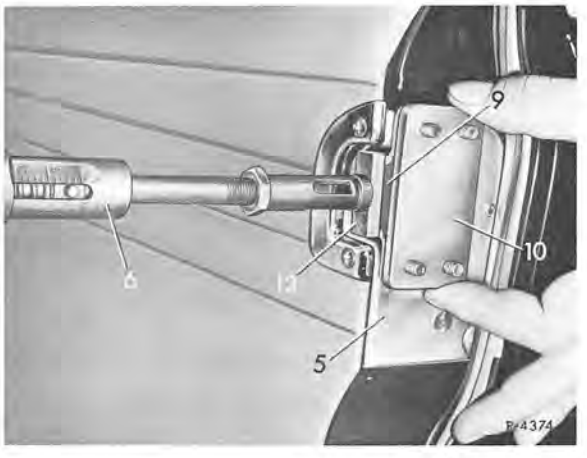

ILLUSTRATION 5

5. Lock
6. Pressure gauge 100 589 07 21 00
9. Striker plate, non-riveted
10. Steel plate
13. Flat iron

2. Striker Plate Closing Pressure Checks (riveted)

The closing pressure is the force needed to press the lock onto the striker plate. It should amount to at least 22 lbs. and is measured as follows:

a. Unscrew striker plate.
b. Position striker plate (Item 4, Illustration 3) on lock (5).
c. Press striker plate onto the lock by means of a pressure gauge, Part No. 100 589 07 21 00 (6).

NOTE: MAKE CERTAIN THAT THE PRESSURE GAUGE (6) IS NOT PLACED ON THE RUBBER MOUNT (7) BUT ON THE STRIKER PLATE HOUSING (8) (ILLUSTRATION 3).

3. Striker Plate Closing Pressure Checks (non-riveted)

Non-riveted striker plates (9) must be checked as follows:

a. Remove striker plate.
b. Screw steel plate (Item 10, Illustration 4) onto contact surface (11) of striker plate in order to prevent the rubber (12) from giving way.

NOTE: THE STEEL PLATE SHOULD BE MANUFACTURED IN YOUR OWN WORKSHOP IN ACCORDANCE WITH THE PATTERN OF THE STRIKER PLATE.

c. Fit striker plate (9) ontolock(5).
d. Press striker plate into the lock by means of the pressure gauge (6) (Illustration 5).

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NOTE: WHEN THE STRIKER PLATE IS PRESSED IN BY MEANS OF THE PRESSURE GAUGE, A FLAT IRON (13) MUST BE PLACED ON THE STRIKER PLATE TO PREVENT PRESSING ON THE RUBBER (ILLUSTRATION 5).

4. Inspection Instructions

When performing the operations described in paragraphs 2 and 3, ensure that the striker plate is pressed in and positioned so that it is not tilted on the locking pin. It is recommended that the closing pressure be measured two or three times to obtain an exact value. Should the closing pressure be too low, replace the striker plate.

5. Riveted Striker Plate Lubrication

Rivets securing the striker plate housing (14, Illustration 7) to the base plate (15) may loosen slightly. Should this condition exist, the upper portion of the striker plate housing (14) contact surface (16) should be lightly coated with a suitable lubricant. If the noise persists, the striker plate should be removed and the oval-shaped pressed-on rivet head (17) lubricated. In the event the above corrective measures fail, striker plate replacement is required.

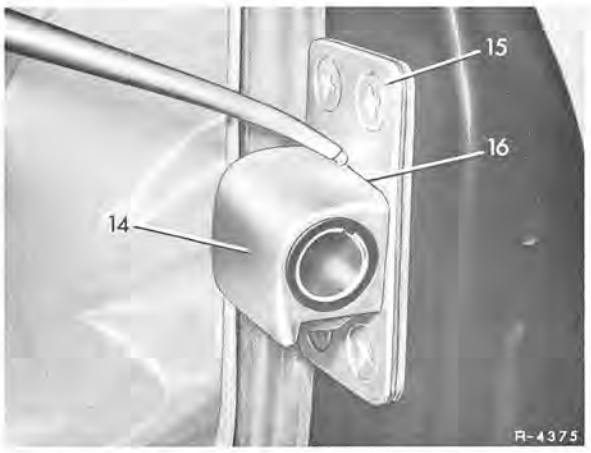

ILLUSTRATION 6

14. Housing
15. Base plate
16. Contact surface

ILLUSTRATION 7

17. Rivet head

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6. Door Lock Noises

If door lock noises exist, the latch and striker plate should be cleaned and lubricated with a thin coat of Shell Retinax G. In addition, when servicing a vehicle, we recommend that locks also be serviced as follows:

a. Door locks: clean conical lock pin and latch, especially the contact surface with the striker plate.
b. Striker plate: clean and grease brass sleeve, inside, and contact surface with latch.

For this purpose only, Shell Retinax G grease is recommended. From past experience we know that any other grease will have little or no effect on door noises.

CAUTION: NEVER BRING STEEL STRIKER PLATES (STANDARD AS OF MAY 1969) INTO ALIGNMENT BY HITTING THEM. LOOSEN ALL SCREWS TO PREVENT THE HOUSING DAMAGE.

C) WEATHERSTRIP NOISES

1. Front and Rear Doors on Models 220 D/8 to 250 C/8

a. To stop rubber squeaks, the stipulated clearance of .8 in. to .9 in. (Illustration 8) between window frame (8) and weatherstrip contact surfaces (9) must be maintained (refer also to Service Manual Passenger Cars starting 1968, Series 114/115, Job. No. 72-17/3, Paragraph D).

b. Clean rubber dust from the door opening contact surface and coat the weatherstrip several times with rubber lubricant.

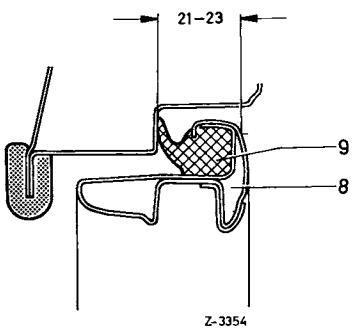

ILLUSTRATION 8

8. Window frame
9. Weatherstrip

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ILLUSTRATION 9

18. Corrugated weatherstrip

ILLUSTRATION 10

18. Corrugated weatherstrip

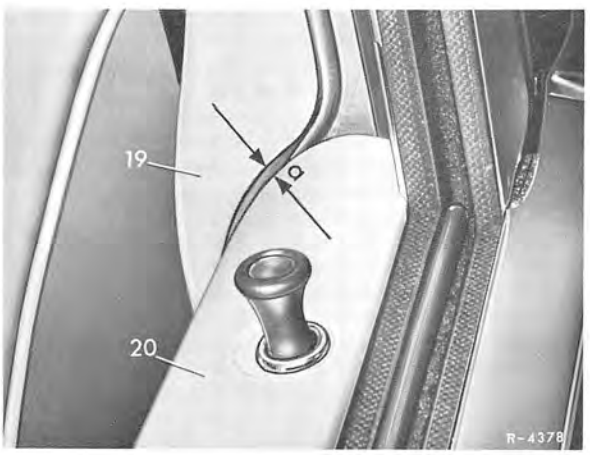

ILLUSTRATION 11

19. Lining for center post
20. Window molding
Dimension "a" = at least .08 in.

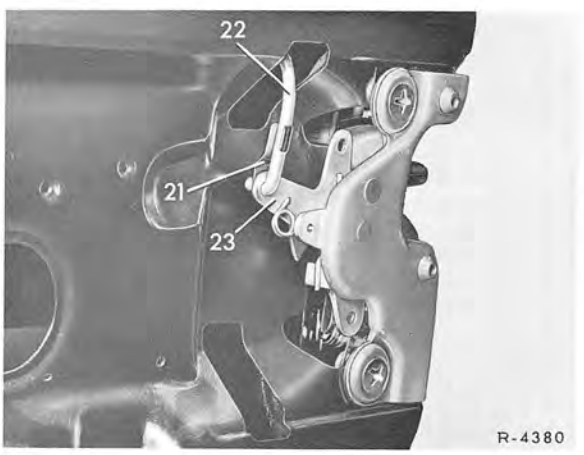

ILLUSTRATION 12

21. Locking spring
22. Locking rods
23. Bell-crank lever

c. Should instructions in paragraphs a. and b. not eliminate the noise, a corrugated weatherstrip (18) should be installed (Illustrations 9 and 10). Required parts are listed under Section H.

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2. Front/Rear Door Noises - Models 250 S to 300 SEL/8 6.3

a. Should front door rubber noises exist (smooth rubber sections, Model Series W 108/109), ensure that the rubber grommet is properly mounted on the front door post.

b. Since August 1969, only corrugated weatherstripping has been installed in Model Series W 108/109 (Illustrations 9 and 10). This weatherstripping may be installed subsequently if remedies indicated in Section C should fail. Required replacement parts are listed in Section H.

D) NOISES FROM WINDOW MOLDING OF MODELS 220 D/8 TO 300 SEL/8 6.3

The clearance between the window molding and center door post should be at least .08 in. when the door is closed. If there is less clearance, the center door post lining (19) must be loosened and a cardboard strip fitted in the window molding area (20) (Illustration 11).

E) DOOR LOCK PUSH BUTTON NOISES

1. Remove door window molding.

2. Loosen door trim panel in the area of the lock push button.

3. Check to see if the locking spring (21) presses the locking rods (22) against the bell crank lever (23) of the lock (Illustration 12).

NOTE: IF THE PRESSURE IS TOO LOW, THE LOCKING SPRING MUST BE RE-BENT OR, IF NECESSARY, REPLACED (SEE SECTION H). WHEN DOING SO, REMOVE THE DOOR TRIM PANEL COMPLETELY, AS IT ONLY CAN BE BENT VERY SLIGHTLY (DANGER OF BREAKING).

F) FRONT FENDER NOISES/MODELS 220 D/8 TO 250 C/8

Noises may originate from the folded front fender flange (24) and attaching panel (25). These noises are often mistaken for door noises. Noise elimination may be accomplished by lubricating the fold areas. The hex. head screw (26) on the attaching panel (25), at the front post (27) must also be checked to ensure tightness (Illustration 13).

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ILLUSTRATION 13

24. Folded flange
25. Attaching panel
26. Hex. head screw
27. Front door post

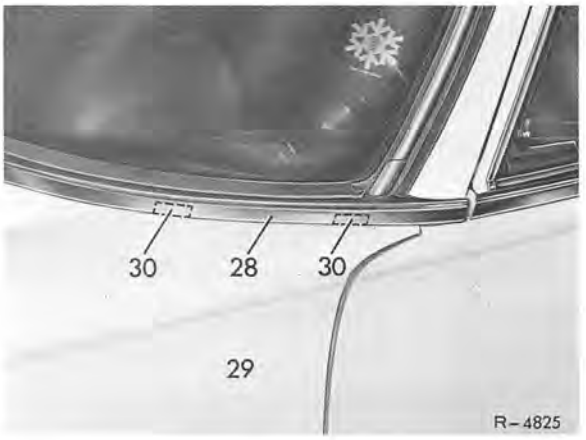

ILLUSTRATION 14

28. Ornamental molding below windshield
29. Fender
30. Plastic spacer

G) NOISES FROM ORNAMENTAL MOLDING BELOW WINDSHIELD ON MODELS 220 D/8 TO 300 SEL/8 6.3

Make certain that the ornamental molding (28) does not rest on the fender (29) and that there is a slight clearance. Ensure that plastic spacers (30) are correctly installed (Illustration 14).

H) PARTS REQUIRED

SERIES W	QTY.	DESCRIPTION	PART NUMBER
114/115	1	Corrugated weatherstrip, left front door	115 720 07 78
114/115	1	Corrugated weatherstrip, right front door	115 720 08 78
114/115	1	Corrugated weatherstrip, left rear door	115 730 13 78
114/115	1	Corrugated weatherstrip, right rear door	115 730 14 78
108/109	1	Corrugated weatherstrip, left front door	108 720 03 78
108/109	1	Corrugated weatherstrip, right front door	108 720 04 78
108	1	Corrugated weatherstrip, left rear door	108 730 05 78
108	1	Corrugated weatherstrip, right rear door	108 730 06 78
109	1	Corrugated weatherstrip, left rear door	109 730 05 78
109	1	Corrugated weatherstrip, right rear door	109 730 06 78
	1	Locking spring	100 994 01 60

Listed parts may be ordered from your local Parts Depot in the normal manner.

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Article No.	File	Group	Application
80	SERVICE INFORMATION	80-81 84-89	PASSENGER CARS

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: WIND AND TIRE NOISE ELIMINATION -- MODELS 220/8 THROUGH 300 SEL/8 6.3

I. WIND NOISES

Wind noises may occur at body points where air deflection is experienced. Improperly fitted window channeling, weatherstripping and garnish moldings cause air cavities and pockets, which in turn are directly responsible for undesireable wind noises.

This Service Information contains detailed illustrations and instructions for wind noise elimination. The most common causes of these noises are listed below and should be investigated when noise conditions exist:

A. Vent panes
B. Door weatherstrips
C. Window channels
D. Sliding roof panel

DIAGNOSIS IS IMPORTANT! In order to locate the origin of the noise, it is recommended to tape over the suspected areas, one by one, during a test drive. We have also found that a stethoscope can be used to advantage.

A. VENT PANE

1. Remove garnish molding (1, Illustration 1).
2. Seal the area (indicated by arrows) between the door frame (2) and rubber seal (3) with a suitable sealing compound.

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(over)

NOTE: THE RUBBER PACKING (4) MUST FIT TIGHTLY AGAINST THE GLASS AND FRAME.

3. If rubber wrinkles have formed, remove the garnish molding cement (Illustration 1).

ILLUSTRATION 1

1. Garnish molding
2. Door frame
3. Rubber sealing strip
4. Rubber lip

4. If the vent pane upper corner does not fit flush with the weatherstripping, the chrome bar (7, Illustration 2) must be repositioned by striking it lightly.

NOTE: A LEATHER COVERED WOOD BLOCK SHOULD BE USED.

ILLUSTRATION 2

7. Chrome window stay bar

5. The rubber seat (8, Illustration 3) mounting the vent pane to the chrome frame, must fit snugly at the upper and lower corners (9 and 10). If necessary, re-seal with friction tape.

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6. Vent panes (Sedan Models 280 S/8 to 300 SEL/8 6.3) with elbow lever locks require special care when adjusting. If the vent pane does not close freely, the draw rod must be lengthened; should it fit loosely, the tension band screw must be tightened.

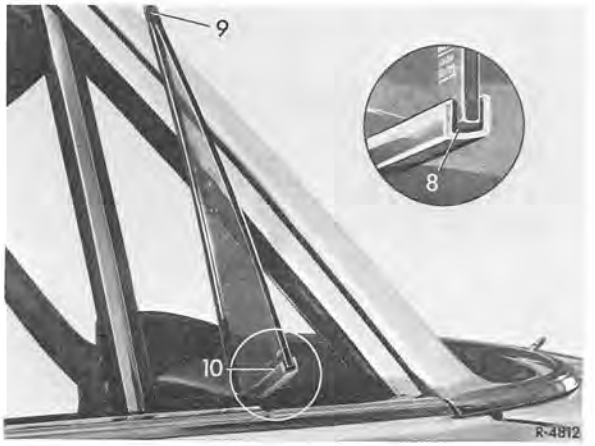

ILLUSTRATION 3

8. Rubber seat
9. Upper vent pane corner
10. Lower corner

B. DOOR WEATHERSTRIPS

1. To check door weatherstripping for leakage, the suspected area should be marked with chalk (see arrows, Illustration 4); the door closed with the outside button depressed (do not slam it!); then reopened. The weatherstripping seat should be checked where the chalk has left markings. In areas where no chalk markings appear, wind noises may occur.

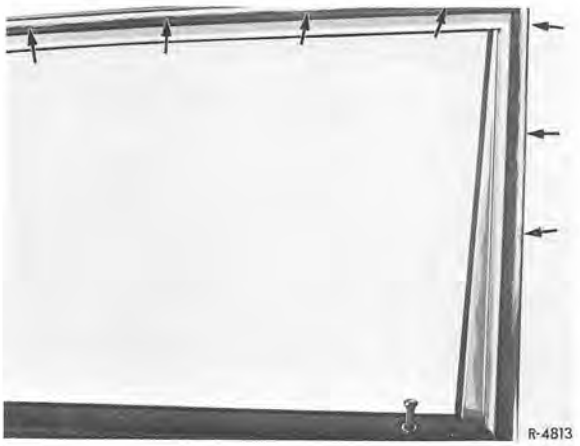

ILLUSTRATION 4

Arrows: Chalk-marked regions

NOTE: WAX CRAYON OR COMMON RED BLACKBOARD CHALK SHOULD NOT BE USED AS THESE ARE DIFFICULT TO REMOVE FROM PAINT.

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2. Reposition the weatherstripping or replace, if necessary. Remove excessive paint under weatherstrip. The distance from the weatherstrip seat to the window frame should be between 13/16 in. and 7/8 in. (21 to 23 mm). (See Workshop Manual 114/115, Job No. 72-17/3). Worn out weatherstripping (no tension or dead rubber) must be replaced.

NOTE: THE RUBBER WEATHERSTRIPPING SHOULD BE TREATED WITH OREL, TALCUM, OR CHALK DUST FOR PRESERVATION.

C. WINDOW CHANNELS

1. Broken corners on window channels (11, Illustration 5) must be bound with black adhesive cloth tape (12).

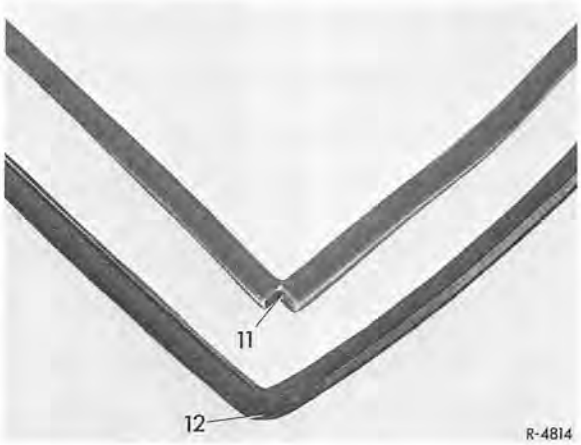

ILLUSTRATION 5

11. Broken corners
12. Black adhesive tape

2. When installing the window channels, ensure that the profile pieces (14, Illustration 6), Part No. 108 725 00 98, and (16), Part No. 115 725 09 98, are inserted in their respective top corners (13 and 15).

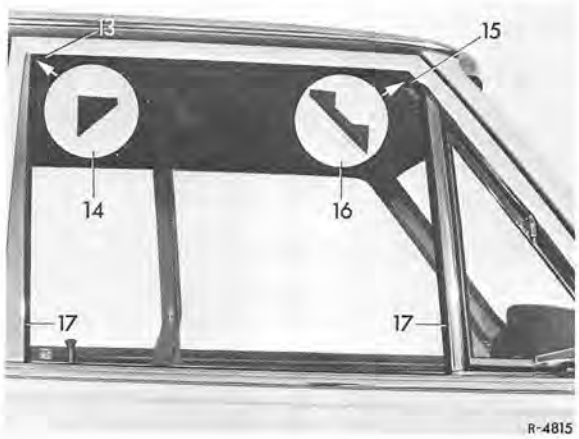

ILLUSTRATION 6

13. Rear upper corner
14. Profile piece, Part No. 108 725 00 98
15. Front upper corner
16. Profile piece Part No. 115 725 09 98
17. Verticle window run

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NOTE: IN THE EVENT WINDOWS ARE HARD TO RAISE OR LOWER, TAP THE WINDOW CHANNEL INSIDE THE ARCH LIGHTLY WITH A HAMMER AND WOODEN BLOCK. ENSURE NO GREASE IS APPLIED TO THE RUNNERS OR ON THE BLOCK AS THIS WILL EVENTUALLY DAMAGE THE WEATHERSTRIPPING.

3. The sliding window must rest against the window channel on the outside, and the channel must rest on the outside of the door frame. If the window is not flush, glue a rubber strip between the channel and door frame on the inside.

4. Both vertical window channels (17) must be glued tightly into the door frame.

D. SLIDING ROOF PANEL

The sliding roof panel must be adjusted so that the front edge is 1 mm lower and the rear edge 1 mm higher than the outer roof panelling.

II. TIRE NOISES

Tire noises are transmitted to the interior via the rear ventilation passages and roof frame. To minimize noises, particular care must be taken to ensure that sound proofing is properly installed and affixed. The following points should be observed when "troubleshooting" noises or re-installing sound proofing.

NOTE: MODELS 280 S/8 TO 300 SEL/8 6.3 SEDANS SHOULD HAVE THE ENTIRE ROOF COVERED AND MODELS 220 D/8 TO 250/8 SEDANS FROM THE CENTER DOOR POST REARWARDS (SEE ILLUSTRATION 7).

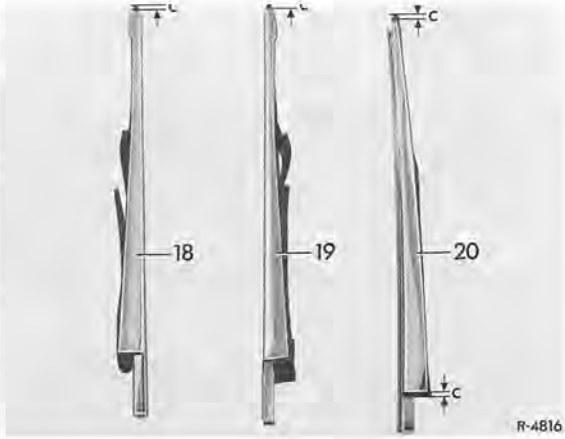

ILLUSTRATION 7

24. Shaped piece, Part No. 115 691 05 30

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2. Models 220 D/8 to 250/8

The rear corner post must be completely sealed against the roof frame by means of the shaped piece (24, Illustration 7), Part No. 115 691 05 30, and covered with moltoprene-coated bituminous cardboard.

3. Models 220 D/8 to 300 SEL/8 6.3

The space for the air outlet behind the hat tray must amount to 1/4 in. (7 mm) between the reinforcement (25) and the rear window weather seal (26, Illustration 8).

NOTE: CARE MUST BE TAKEN TO ENSURE THAT THE 1/8 IN. (4 MM) THICK FELT LINER IS WELL SECURED.

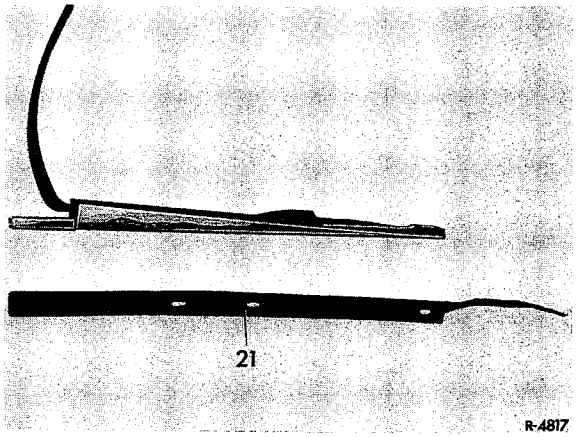

ILLUSTRATION 8

25. Hat tray reinforcement
26. Window weather seal
27. Felt 1/8 in. (4 mm) thickness
a = 1/4 in. (7 mm)

4. Models 220 D/8 to 250/8

The rear corner post air outlet opening must be checked to ensure the space between the embellisher (28, Illustration 9) and outer roof panel (29) is from 5/16 in. (8 mm) to 3/8 in. (10 mm) wide.

Models 280 S/8 to 300 SEL/8 6.3

The air outlet slot between the trunk lid and the center piece under the rear window must be 1/4 in. (7 mm) to 3/8 in. (10 mm) wide.

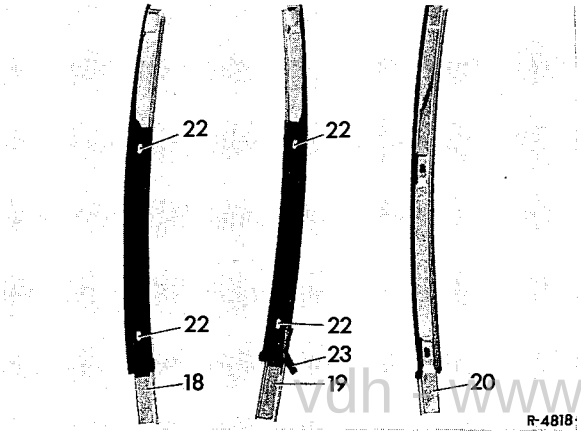

ILLUSTRATION 9

b = 5/16 to 3/8 in. (8 to 10 mm)
28. Embellisher
29. Roof outer panelling

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5. Models 220 D/8 to 250/8

The air passage (30, Illustration 10) under the hat tray must fit flush to the rear corner post (31). If not, it must be sealed with moltoprene-coated bituminous cardboard (32). Air passage paint drain holes must also be sealed in this manner.

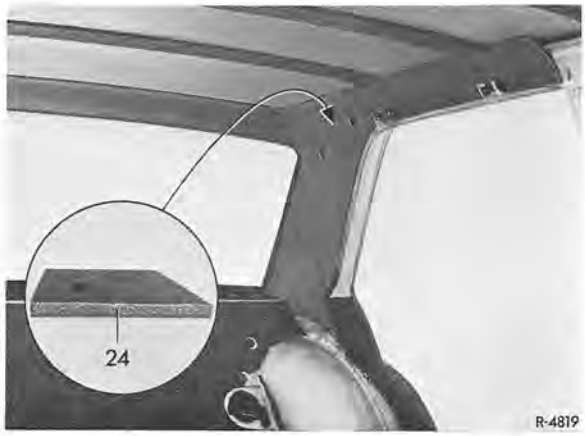

ILLUSTRATION 10

30. Air passage under the hat tray
31. Rear corner post
32. Moltoprene-coated bituminous cardboard

6. Models 220 D/8 to 250/8

All openings in the partition behind the rear seat must be covered with bituminous cardboard.

The required parts may be ordered from our Mercedes-Benz Parts Depots.

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No. 40	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MOUNTING OF THE WINDOW CRANK IN PASSENGER CARS

In January, 1970, the mounting of the window cranks in passenger cars was altered. The crank is now fastened without a screw and is held in place only by the protective padding. For this reason, the shaft (1) of the crank mechanism has been provided with a groove, while the padding (2) has a corresponding cutout (3) (See Illustration).

To remove this unit, lift the padding (2) and pull it towards the crank knob. The padding can then be disengaged and the crank removed.

Vehicles with the previous type of crank mechanism can, in case of repair, also be fitted with the new version. In this case, the spacer and the padding have to be replaced.

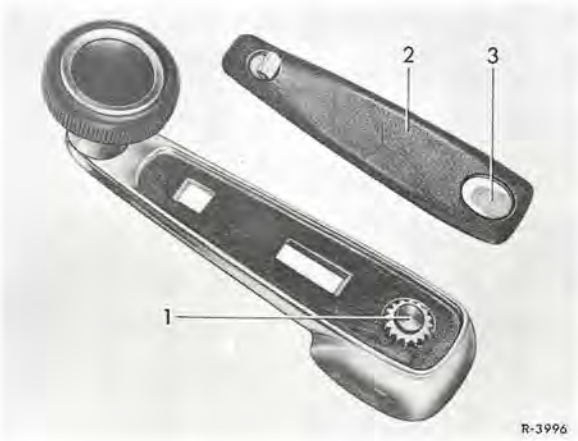

ILLUSTRATION I

1. Shaft of crank mechanism
2. Padding
3. Cutout

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SERIAL NUMBER CUT-OFF

MODEL	AS OF CHASSIS END NUMBER
220/8	046471
220 D/8	111771
250/8	041713
250/8 Cp. (114.023)	001242
280 S/8	047185
280 SE/8	049844
280 SEL/8	051514
280 SE/8 Cp.	004625
280 SE/9 3.5	000516
280 SL/8	015519

PARTS REQUIRED

MODEL	CRANK MECHANISM	PART NUMBERS
220 D/8 to 250/8	Front door, left	115 725 09 02
	Front door, right	115 725 10 02
	Rear door, left	108 735 03 02
	Rear door, right	108 735 04 02
250/8 Cp.	Front door, left	115 725 07 02
	Front door, right	115 725 08 02
	Rear window, left	115 673 05 03
	Rear window, right	115 673 06 03
280 S/8 to	Front door, left	108 725 03 02
280 SEL/8	Front door, right	108 725 04 02
	Rear door, left	108 735 03 02
	Rear door, right	108 735 04 03
280 SE/8 Cp.	Front door, left	111 725 63 02
280 SE/9 Cp. 3.5	Front door, right	111 725 64 02
	Rear window, left	111 673 69 03
	Rear window, right	111 673 70 03
280 SL/8	Front door, left	113 725 07 02
	Front door, right	113 725 08 02
ALL MODELS	Crank	108 760 02 02
	Spacer	108 768 01 13
	Padding	108 768 00 95

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In addition, the color code of the padding should be stated as follows:

COLOR OF PADDING	CODE NUMBER
red	3000
light red	3001
blue	5000
green	6000
grey	7049
brown	8010
bamboo	8011
off-white	8014
grey-beige	8052
cognac	8070
light beige	8081
green-beige	6011
black	9000

The previously mentioned parts are available from your local Mercedes-Benz Parts Depots.

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No. 58	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MOUNTING OF ORNAMENTAL MOULDINGS ONTO REAR COLUMN - LEFT AND RIGHT -- MODELS 220 D/8 TO 250/8 SEDAN (MODEL SERIES W 114/115)

As of January 1970, the ornamental mouldings are no longer clipped onto the rear columns, but pressed onto the roof groove on the rear columns.

A special tool has been developed to do this which features a manually operated eccentric by means of which the ornamental moulding can be pressed onto the roof groove.

INSTALLATION INSTRUCTIONS

1. Position ornamental moulding (1, Illustration 1) onto roof groove. Place bottom edge of moulding to the stop so that it contacts the ornamental bar (7) below the rear window. A .06 in. (1.5 mm) thick cardboard strip should be placed as a spacer between both parts.

   NOTE: Check roof groove prior to painting; it must run parallel to the roof panel. Re-align groove if necessary, otherwise the ornamental moulding will not be correctly aligned.

   In order to prevent damage to the paint on the roof groove during fitting, the underside of the ornamental moulding should be slightly greased with an acidless vaseline.

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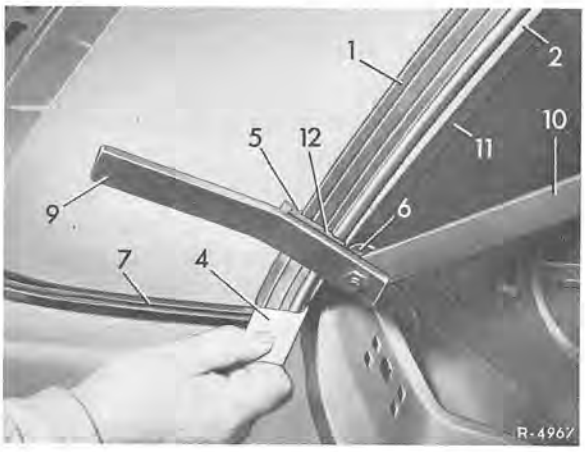

ILLUSTRATION 1

1. Ornamental moulding
2. Roof groove
4. Cardboard strip
5. Lug
6. Pressure roll
7. Ornamental bar
9. Guide lever
10. Eccentric lever
11. Roof groove plate
12. Plastic fitting

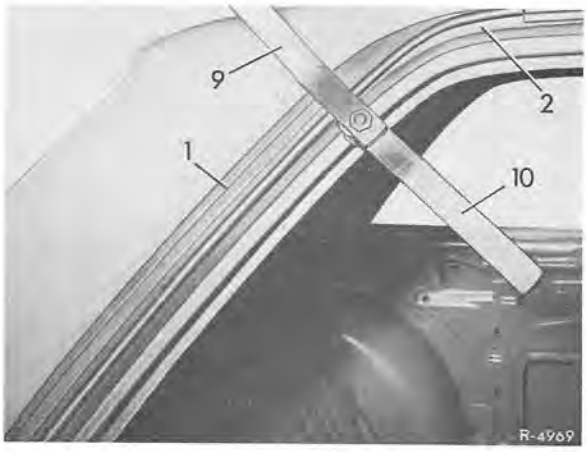

ILLUSTRATION 2

1. Ornamental moulding
2. Roof groove
9. Guide lever
10. Eccentric lever

2. Insert the opened special tool with the lug (5, Illustration 1) of the plastic fitting (12) from top to bottom into the ornamental moulding (1) and position the pressure roll (6) of the eccentric lever (10) on the groove plate (11).

3. Actuate eccentric lever (10, Illustration 2) and simultaneously lead the special tool with the aid of the guide lever (9), thus pressing the ornamental moulding (1) onto the roof groove (2).

   NOTE: During the pressing procedure, move the special tool in such a way that the plastic fitting of the guide lever rests slightly on the outer side of the ornamental moulding.

4. With mounting tool (8, Illustration 3), carefully tap the upper part of ornamental moulding (1) onto roof groove (2). The ornamental moulding must be aligned parallel to the drip rail (3) to ensure that a gap-free and smooth fit will result.

   NOTE: The drip rail (3, Illustration 3) is fitted as previously and should be riveted in front to the roof groove.

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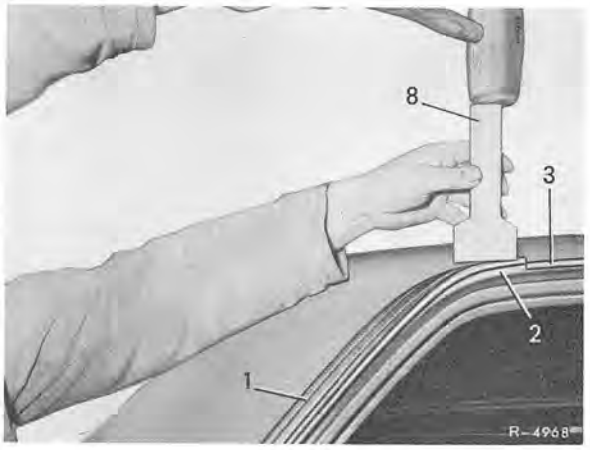

ILLUSTRATION 3

1. Ornamental moulding
2. Roof groove
3. Drip rail
8. Mounting for drip rail

The pressing tool for ornamental mouldings, Part No. 115 589 19 61 00, and the mounting tool for the drip rail, Part No. 110 589 04 59 00, may be ordered from our M-B Parts Depot, 400 Alfred Avenue, Teaneck, New Jersey 07666.

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No. MB-T 192	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, AUGUST 1970

TO OUR MERCEDES BENZ DEALERS

SUBJECT: HEATABLE REAR WINDOW PANE -- MODELS 220/8, 220 D/8 230/8 AND 250/8

The following Service Information will provide you with the work instructions for the subsequent installation on an electrically heated rear window into the above mentioned models.

The following versions are available for subsequent installations:

a. Models 230/8 and 250/8 (W 114) Sedans
Models 220/8 and 220 D/8 (W 115) Sedans

Heated Glass, Tinted (with printed circuit)
Tempered Safety Glass (SEKURIT)

Part No. 115 678 10 10

Heated Glass, Clear
Laminated Safety Glass (SIGLA)

Part No. 115 678 02 10

b. Model 250/8 Coupe (114.023)

Heated Glass, Tinted (with printed circuit)
Tempered Safety Glass (SEKURIT)

Part No. 115 678 11 10

Heated Glass, Clear (with printed circuit)
Tempered Safety Glass (SEKURIT)

Part No. 115 678 12 10

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The Part Numbers of the individual components required in the installation are given in the table at the end of this article. However, items numbered 2 through 25 are available as a kit under Part No. 115 670 13 81. The heatable rear windows (item No. 1) must be ordered separately under their specific Part Numbers.

NOTE: THE ITEM IDENTIFICATION REFERENCE NUMBERS IN THE FOLLOWING TEXT APPLY NOT ONLY TO THE ILLUSTRATIONS NAMED, BUT ALSO TO THE PARTS LIST AT THE END OF THIS INFORMATION.

The installation time for all vehicle models is approximately 4.2 hours.

The required parts are available from our Mercedes-Benz Parts Depots.

INSTALLATION INSTRUCTIONS

1. Remove the rear window (for procedure see Service Manual - Passenger Cars as of 1968 (W 114/115) Job No. 67-3).

2. Disconnect the negative ground lead from the battery.

3. Now, remove the following: the rear seat with back rest, the paneling on the right side center pillar post and the right side scuff plate. To do this, slightly lift the edge guard on the bottom of the windshield pillar post.

4. Remove the center console located between the instrument panel and the tunnel. Then detach the cover paneling at both the left and right sides below the instrument panel.

5. a) When installing a heatable rear window made of laminated safety glass, punch-mark and drill a .4 in. diameter (10 mm diameter) hole at 22.6 in. (573 mm) to the right or left of the vehicle's center into the spot-welded flange of the window opening. (See Illustration 3)

   b) When installing a heatable rear window made of tempered safety glass, enlarge the existing left and right side holes in the spot-welded flange of the window opening to .4 in. diameter (10 mm diameter).

   Then insert the grommets (2, Illustration 3).

6. Install the new heatable rear window pane, by using the procedure in Job No. 67-3 of the Service Manual - Passenger Cars as of 1968 (W 114/115).

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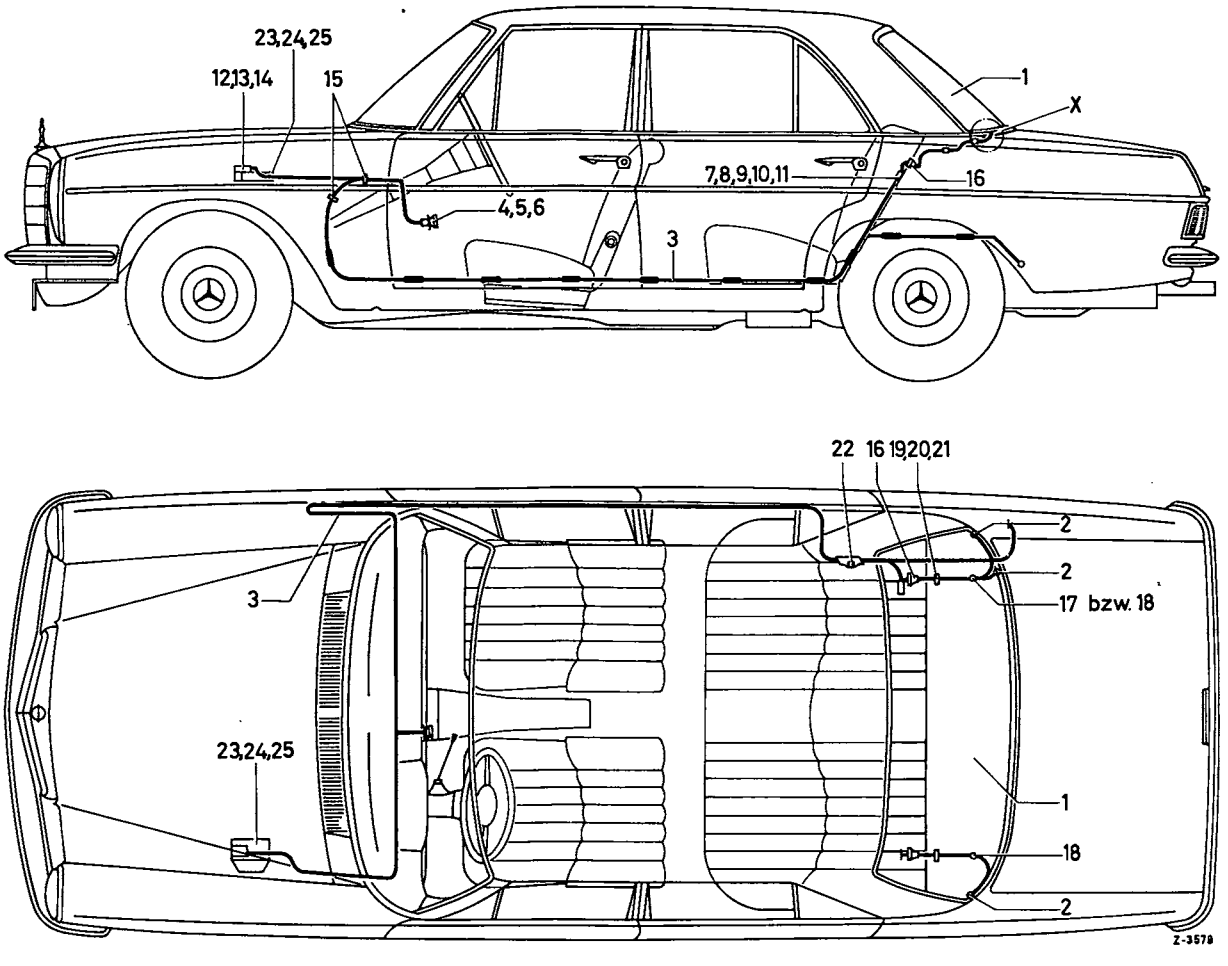

ILLUSTRATION 1
WIRING ARRANGEMENT

1.	Rear window pane	9.	Lock washer	17.	Clip
2.	Grommet	10.	Oval head screw	18.	Clip
3.	Additional wire harness	11.	Lock washer	19.	Clamp
4.	Switch	12.	Fuse box	20.	Clamp
5.	Trim plate	13.	Oval head screw	21.	Oval head screw
6.	Knob	14.	Fuse	22.	Covering
7.	Wire connector	15.	Wire strap	23.	Mounting bracket
8.	Oval head screw	16.	Rubber grommet	24.	Hex. head sheet metal screw
				25.	Rubber grommet

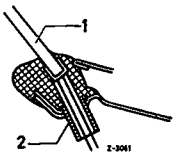

ILLUSTRATION 2
Detail X of
Illustration 1

1. Rear window 2. Grommet

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IMPORTANT!

The following points should be particularly observed when installing the new heatable rear window pane.

a. Use only new weatherstrip.

b. Treat the weatherstrip with glycerin to make it flexible.

c. Before installing the weatherstrip, punch a hole through it where the electrical wires will be for the new window pane and pull both wires through it (See Illustrations 1, 2, and 3).

d. Mount the weatherstrip, with cord inserted, on the new pane and, having placed the electrical wires through the grommet, place pane in the body window opening. Adjust the rubber so that it fits the sheet metal edge exactly.

e. Pull the inner rubber lip over the sheet metal edge by means of the cord, beginning from the bottom side. When doing so, pressure from the outside should be applied, but knocking and pounding may break the pane, even if done only with the palm of the hand.

f. When installing and inserting the rear window pane, continuously feed electrical wire from the trunk.

7. Fasten the wire connector (7) to the right side on the rear panel inside the passenger compartment by means of the oval head screws (10) and the lock washers (11). The holes for the screws are already provided (See Illustrations 3 and 4).

8. Detach perforated section in the plastic noise insulator on the rear panel above wire connector (7) and insert rubber grommet (16) (See Illustrations 3 and 4).

9. With laminated glass panes only!

   Using items 17, 19, and 21, secure electrical wire of heatable rear window made of laminated glass to lower section of rear shelf.

   With tempered glass!

   Secure right-hand side electrical wire using items 18, 20 and 21.

   Then feed electrical wire through rubber grommet (16) into the passenger compartment and attach to wire connector (7) with oval head screw (8) and lock washer (9). (See Illustration 3)

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10. With tempered glass panes only!

Secure its ground wire to the bottom of the rear shelf using the clip (18) and the clamp of the main cable harness, feed it through the rubber grommet in the rear panel, and finally attach it to the ground connection provided on the rear panel (See Illustrations 1 and 3).

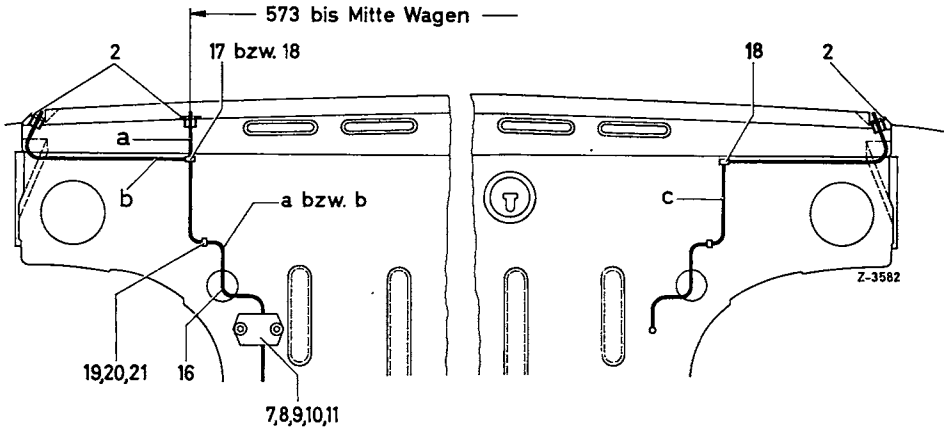

ILLUSTRATION 3

Arrangement of Wire Connector and Electrical Wires on Rear Panel

a = electrical wires of laminated safety glass pane
b = electrical wires of tempered safety glass pane
c = ground wire of tempered safety glass pane
573 bis Mitte Wagen = 22.57 in. to center of car
bzw. = or

2. Grommet
7. Wire connector
8. Oval head screw
9. Lock washer
10. Oval head sheet metal screw
11. Lock washer
16. Grommet
17. Clip
18. Clip
19. Clamp
20. Clamp
21. Oval head sheet metal screw

11. Connect electrical wires 3 and 5 of additional cable harness (3) to wire connector (7) and to ground connection of rear lights which is provided in the trunk (brown wire). Pull electrical wire 5 (Ground cable) out of additional cable harness (3) (See Illustrations 1, 4 and 7).

12. Fasten covering (22, Illustration 4) to anchorage of safety belts.

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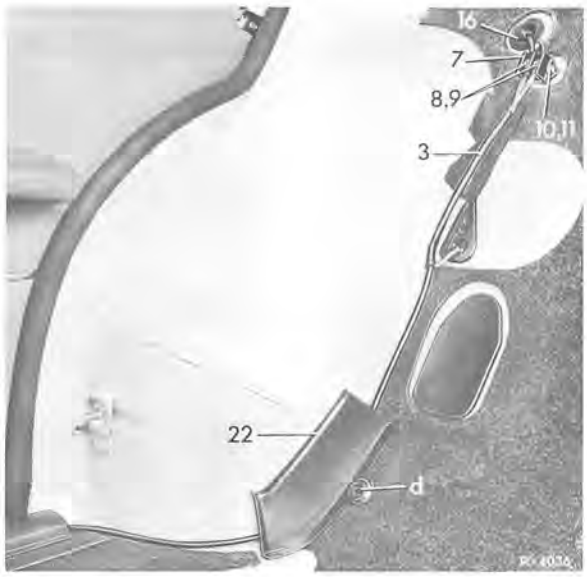

ILLUSTRATION 4

Covering for additional cable harness viewed from front to rear of car.

d = Screw in anchorage of safety belts
3. Additional cable harness
7. Wire connector
8. Oval head screw
9. Lock washer
10. Oval head sheet metal screw
11. Lock ring
16. Rubber grommet
22. Covering

13. Wrap several layers of insulating tape, part number 001 898 41 85, around additional cable harness (3) at the locations pointed out in Illustration 1. Lay additional cable harness (3) under covering along body side member at right-hand side and along main cable harness under instrument panel. Secure it with cable straps (15), feed it through the grommet provided in left section of front panel and connect it to fuse box.

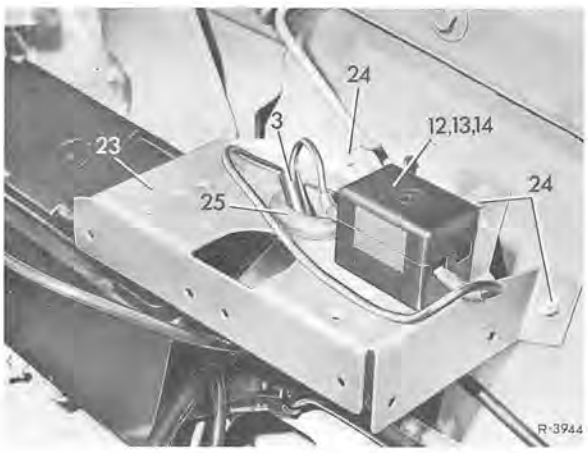

ILLUSTRATION 5

Additional Fuse Box with Mounting Bracket

3. Additional cable harness
12. Fuse box
13. Oval head sheet metal screw
14. Fuse 16 amp.
23. Mounting bracket
24. Hex. head sheet metal screw
25. Rubber grommet

14. Connect electrical wire 4 to main ground connection of main cable harness under the instrument panel.

15. Connect electrical wire no. 1 to fuse no. 2 in main fuse box using terminal 15/54 in front of the fuse.

16. Using three hex. head sheet-metal screws (24, Illustration 5), secure mounting bracket (23) and rubber grommet (25) to the wheel housing panel in the left-hand side of engine compartment. Two mounting holes are already provided for, the third hole has to be drilled after punch-marking.

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17. Secure additional fuse box (12) to mounting bracket (23) with oval head screws and connect electrical wires 1 and 2.

18. Cut hole in center console for switch (4) and mount switch (4) with bulb, trim plate (5) and knob (6). Then attach wire coupling of additional cable harness (3) to the switch (4) and reinstall center console (See Illustration 6).

ILLUSTRATION 6

Arrangement of Switches on Center Console

4. Switch with bulb
5. Trim plate
6. Knob

bis = to

19. Reinstall rear seat with back rest, scuff plate on right side, paneling on center pillar post and covers below the instrument panel.

20. Insert fuse 16 amp. (14) into additional fuse box (12). (See Illustration 5).

21. Connect negative ground to a cleaned (scraped) spot on the body.

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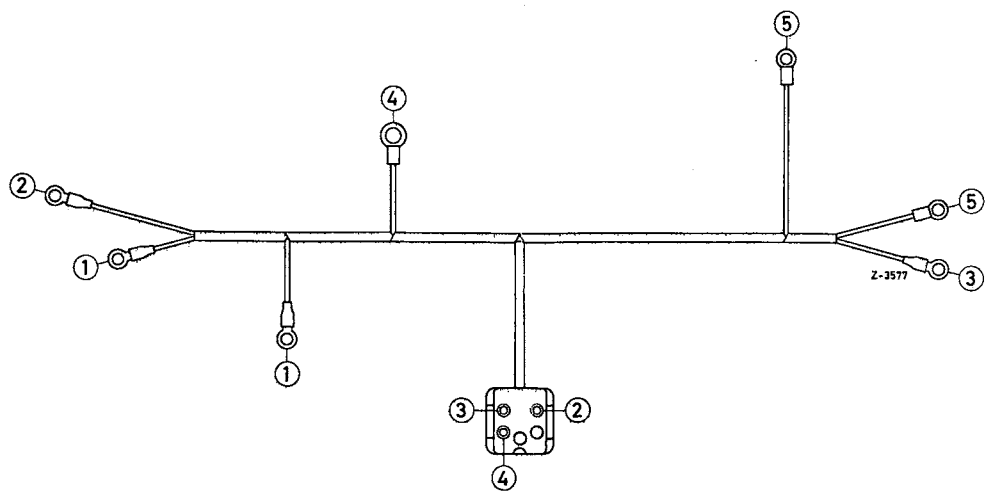

ILLUSTRATION 7
Additional Cable Harness

COLOR IDENTIFICATION FOR ADDITIONAL CABLE HARNESS
(Illustration 7)

LINE NO.	ELECTRICAL LINES FROM	TO	BASIC COLOR	IDENTIFICATION COLOR	CROSS SECTION MM 2) & CIRCULAR MILS
1	Main fuse box no. 2 terminal 15/54	Additional fuse box	Black	Red	2.5/4750
2	Additional Fuse box	Connector/switch	Black	Red	2.5/4750
3	Connector/switch	Wire connector rear window pane	Yellow	Green	2.5/4750
4	Ground connection	Main ground connection below instrument panel	Brown		.75/1500
5	Ground wire connector	Ground connection of rear lights.	Brown		2.5/4750

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SCOPE OF DELIVERY

ITEM	QUANTITY	DESCRIPTION	Part No. or DIN Designation SEDAN	COUPE
1	1	Rear window pane	115 678 02 10 1)	115 678 12 10 3)
	1	Rear window pane	115 678 10 10 2)	115 678 11 10 2)
	1	Grommet	108 988 00 27 5)	
2	2	Grommet	108 988 00 27 4)	
3	1	Additional cable harness	115 820 00 51	
	1	Switch with		
4	1	bulb 12 V, 1.2 W	001 821 40 51	
5	1	Trim plate	115 821 04 03	
6	1	Knob	115 820 01 92	
7	1	Wire connector	000 546 70 41	
8	2	Oval head screw	007985 004125	
9	2	Lock washer	000127 004203	
10	2	Oval head sheet-metal screw	007981 003241	
11	2	Lock washer	000127 004203	
12	1	Additional Fuse box	000 545 62 01	
13	2	Oval head sheet-metal screw	007981 004221	
14	1	Fuse 16 amp.	000 545 43 34	
15	2	Cable strap	114 997 01 90	
16	1	Rubber grommet	111 997 02 81	
17	1	Clip	002 988 02 78 5)	
18	2	Clip	002 988 01 78 4)	
	1	Clip (on right side trunk lid hinge)		000 988 88 78
19	1	Clamp	181 995 00 20 5)	
20	1	Clamp	186 995 02 20 4)	
21	1	Oval head sheet-metal screw	007981 004318	
22	1	Covering	115 821 02 30	
23	1	Mounting bracket	115 821 01 14	
24	3	Hex. head sheet-metal screw	007976 004205	
25	1	Grommet in mounting bracket	100 997 08 81	

1) Laminated safety glass, clear
2) Tempered safety glass, tinted
3) Tempered safety glass, clear
4) With tempered safety glass only
5) With laminated safety glass only

NOTE: ITEMS NUMBERED 2 TO 25 ARE AVAILABLE AS A KIT UNDER PART NO. 115 670 13 81.

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No. S 6	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81, 84-89	PASSENGER CARS

FORT LEE, AUGUST 1970

This Service Information supersedes Service Information No. S 5, Group 60-81, 84-89, of December 1968

MODIFICATION: Models supplemented, Parts List revised.

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SUBSEQUENT INSTALLATION OF SKI RACK - MODELS 190 C TO 600

In this Service Information, we have outlined Working Instructions for the subsequent installation of a ski rack into Models 190 C to 600.

The WORKING INSTRUCTIONS are as follows:

With the exception of Models 230 SL, 250 SL, 280 SL/8 Cp., and 250/8 Cp., the ski rack is fitted to the drip rail on sedans and coupes and is no longer supported on the roof which, therefore, prevents damage to the roof and which also allows installation on cars with sliding roofs.

CAUTION: When mounting the ski racks, be sure to note that measures "a" and "b" (See Illustration 1) are adhered to and that the supports sit correctly in the drip rail.

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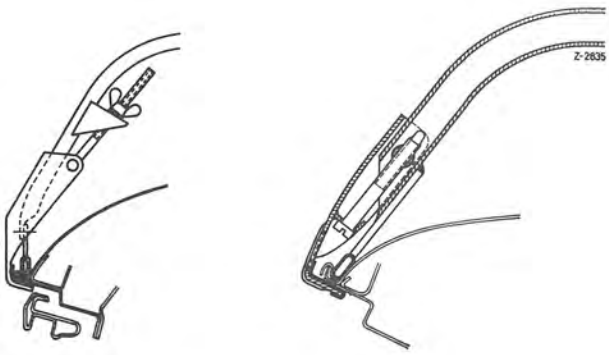
ILLUSTRATION 1 - SEDANS AND COUPES

MODEL	MEASURE: a	b
190 C, 190 DC, 220 B, 220 Sb, 220 SEb Sedan, 300 SE Sedan, 200, 200 D, 230, 230 S	12 in. (300 mm)	20 in. (500 mm)
220 SEb, 250 SE, 280 SE/8, 280 SE/9-3.5, 300 SE Coupe	20 in. (520 mm)	10 in. (250 mm)
220 D/8, 220/8, 230/8, 250/8 Sedan	10 in. (250 mm)	16 in. (400 mm)
250 S, 250 SE Sedan, 280 S/8, 280 SE/8 Sedan, 300 SEb, 300 SEL, 300 SEL/8, 300 SEL/8 6.3, 300 SEL/9 3.5	10 in. (250 mm)	20 in. (490 mm)
600	6 in. (150 mm)	23 in. (590 mm)



Section through mounting on drip rail

Arrangement for Model 600

Arrangement for all Models except Model 600

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ILLUSTRATION 2

Models 220 SEb Convertible
250 SE Convertible
280 SE/8 Convertible
280 SE/9 3.5 Convertible
300 SE Convertible

ILLUSTRATION 3

Models 230 SL, 250 SL,
280 SL/8 Roadster

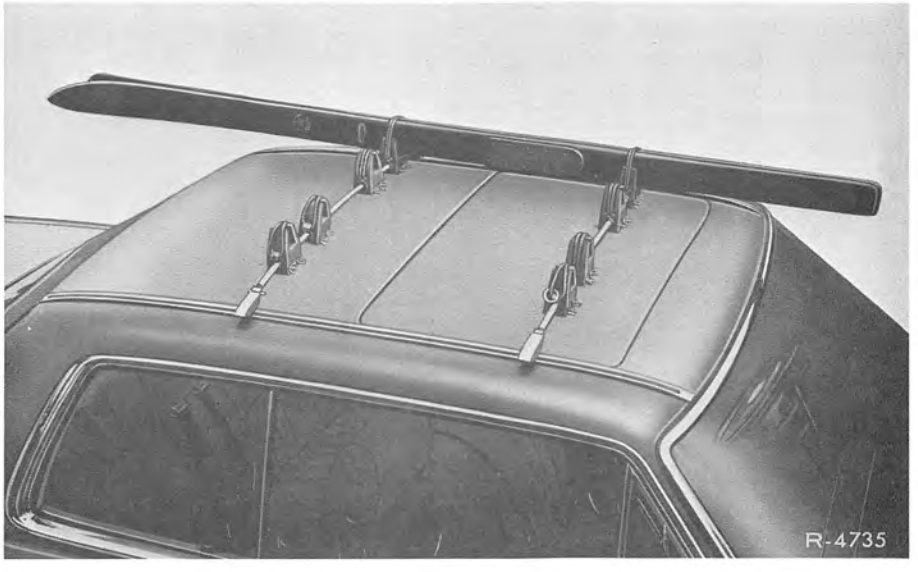

ILLUSTRATION 4

Models 230 SL, 250 SL,
280 SL/8 Coupe
250/8 Coupe

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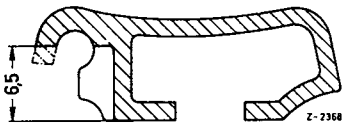

ILLUSTRATION 5

Section ornamental moulding Coupe roof - Models 230 SL, 250 SL, 280 SL/8
6.5 mm = .26 in.

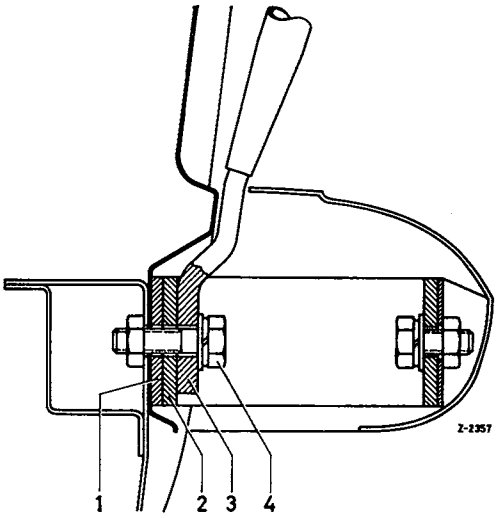

ILLUSTRATION 6

Ski rack above luggage compartment lid section mounting bumpers and lower ski rack Models 230 SL, 250 SL, 280 SL/8

1. Spacer plate
2. Bumper bracket
3. Ski rack
4. Hex. head screw with lock washer and washer

Contrary to the Sedan and Coupe versions, the ski racks are mounted on the luggage compartment lid and/or above the luggage compartment lid for the convertible Models 220 SEb, 250 SE, 280 SE/8, 280 SE/9 3.5 and 300 SE, as can be seen in Illustration 2. The ski racks can be mounted with closed as well as opened tops.

For Models 230 SL, 250 SL and 280 SL/8, there exists a ski rack version which can be mounted on the roof and another which can be mounted above the luggage compartment lid. The first version is designed for Coupes with ornamental mouldings on the roof and the second for Coupes without ornamental mouldings on the roof and for Roadster models. (For details, refer to Illustrations 3 and 4)

IMPORTANT!

On vehicles delivered prior to October 1963, the cut-outs in the ornamental roof mouldings are too narrow where the roof-mounted ski rack version is applicable. Therefore, the cut-outs must be re-machined in accordance with the measure indicated in Illustration 5.

On Model 250/8 Coupe, the ski rack will generally be attached to the standard ornamental mouldings on the roof. For details, refer to Illustration 4.

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PARTS REQUIRED

MODELS	DESCRIPTION	PART NUMBER
190 C, 190 DC, 220 B, 220 Sb 220 SEb Sedan, 300 SE Sedan 200, 200 D, 230, 230 S	Support, front Support, rear Additional caps 1)	000 840 19 18 000 840 20 18 000 840 08 18
220 SEb Coupe, 250 SE Coupe 280 SE/8 Coupe, 280 SE/9 3.5 Cp. 300 SE Coupe	Support, front Support, rear Additional caps 1)	000 840 21 18 000 840 22 18 000 840 08 18
220 D/8, 220/8, 230/8, 250/8 Sedan 250 S, 250 SE Sedan, 280 S/8 280 SE/8 Sedan, 300 SEb, 300 SEL, 300 SEL/8, 300 SEL/8- 6.3, 300 SEL/9 3.5	Support, front and rear Additional caps 1)	 000 840 16 18 000 840 08 18
250/8 Coupe		115 840 01 91
220 SEb Convertible, 250 SE Convertible 280 SE/8 Convertible, 280 SE/9- 3.5 Convertible, 300 SE Convertible		 111 840 80 91
230 SL, 250 SL, 280 SL/8 Roadster and Coupe without ornamental moulding on coupe top		 113 840 01 91
230 SL, 250 SL, 280 SL/8 Coupe with ornamental moulding on coupe top		 113 840 02 91
600	Support, front and rear Additional caps 1)	 000 840 15 18 000 840 08 18

1) Consisting of four additional front and rear caps with mounting parts.

The complete ski rack can be ordered from our Mercedes-Benz Parts Depots with a delivery time of 6-8 weeks.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. S 9	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, AUGUST 1970

This Service Information supersedes Service Information No. S 3, Group 60-81, 84-89, of July 1968.

MODIFICATION: Models supplemented, parts list revised.

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SUBSEQUENT INSTALLATION OF LUGGAGE RACK - MODELS 190 C TO 600

In this Service Information, we have outlined Working Instructions for the subsequent installation of a luggage rack onto Models 190 C to 600.

WORK INSTRUCTIONS

With the exception of Models 230 SL, 250 SL, 280 SL/8 Cp., and 250/8 Cp., the luggage rack is fitted to the drip rail on sedans and coupes and is no longer supported on the roof which prevents damage to the roof and which, also, allows installation on cars with sliding roofs.

A separate and completely chromium-plated rack version with special lock is provided for Models 230 SL, 250 SL, 280 SL/8 Cp., and 250/8 Cp. with rails on the roof. If no rails are installed on the roofs of "SL" Models, they can be ordered from our Parts Depots and mounted subsequently.

CAUTION: On vehicles delivered prior to October 1963, the recesses in the roof railings are somewhat too tight. Therefore, when fitting a luggage rack, adjust these recesses to the dimension quoted in Illustration 3.

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Permissible Load on the Luggage Rack:

190 C to 600.....Maximum 130 lbs. (60 kg)

230 SL, 250 SL,
280 SL/8 and 250/8 Cp.....Maximum 66 lbs. (30 kg)

ILLUSTRATION 1

MODEL	DIMENSION "a"
190 C, 190 DC, 220 B, 220 SB, 220 SEb Sedan and 300 SE Sedan, 200, 200 D, 230, 230 S	9 in. = 230 mm
220 SEb, 250 SE, 280 SE/8, 280 SE/9 3.5, 300 SE Cp.	15 in. = 370 mm
220/8, 220 D/8, 230/8, 250/8 Sedan	10 in. = 250 mm
250 S, 250 SE Sedan, 280 S/8, 280 SE/8 Sedan, 300 SEb, 300 SEL, 300 SEL/8, 300 SEL/9 3.5, 300 SEL/8 6.3	10 in. = 250 mm
600	6 in. = 150 mm
600 long	0 in. = 0 mm

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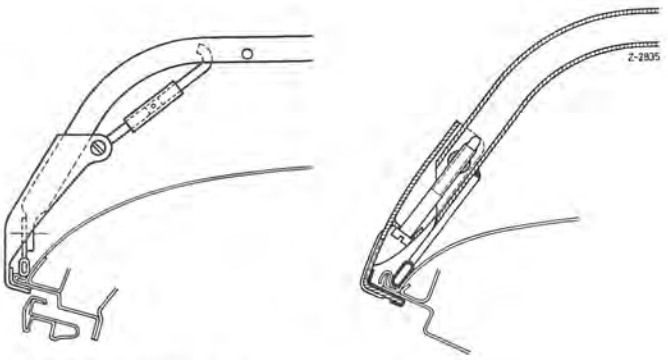

ILLUSTRATION 2

Section of support on drip rail

Arrangement on Model 600

Arrangement on all other Models except 600

ILLUSTRATION 3

Models 230 SL, 250 SL, 280 SL/8 Cp., 250/8 Cp.

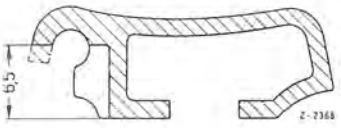

ILLUSTRATION 4

Section of rails on coupe roof - Models 230 SL, 250 SL, and 280 SL/8

6.5 mm = .26 in.

PARTS REQUIRED

MODEL	DESCRIPTION	PART NUMBER
190 C, 190 DC, 220 B, 220 Sb, 220 SEb Sedan, 300 SE Sedan, 200, 200 D, 230, 230 S	Support, front	000 840 19 18
	Support, rear	000 840 20 18
	Rack	000 850 04 03
220 SEb, 250 SE, 280 SE/8, 280 SE/9 3.5, 300 SE Cp.	Support, front	000 840 21 18
	Support, rear	000 840 22 18
	Rack	000 850 04 03
230 SL, 250 SL and 280 SL/8 Cp.		113 840 00 20
220/8, 220 D/8, 230/8, 250/8 Sedan, 250 S, 250 SE Sedan, 280 S/8, 280 SE/8 Sedan, 300 SEb, 300 SEL, 300 SEL/8, 300 SEL/8 6.3, 300 SEL/9 3.5	Support, front and rear	000 840 16 18
	Rack	000 850 04 03
250/8 Cp.		115 840 00 20
600	Support, front and rear	000 840 15 18
	Rack	000 850 03 03

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In addition to the luggage rack, a tarpaulin made of gray or black canvas is available as an option.

The Part Numbers for the tarpaulin are as follows:

MODELS	PART NUMBER
For all models with the exception of "SL" Models and 250/8 Cp., and 600	000 850 02 34
250/8 Cp.	000 850 05 34
230 SL, 250 SL and 280 SL/8 Cp.	000 850 04 34
600	000 850 01 34

The luggage rack assembly and the tarpaulin can be ordered from our MBNA Parts Depots but are not stock items. Please allow for a delivery time of 6-8 weeks from the time that the order is received.

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No. 55	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: LOCKS AND KEYS FOR MODEL 600

As standard equipment, the Model 600 has two (2) keys: a master key which fits all locks on the car, and a secondary key which only fits the door locks and the steering wheel lock.

The master key system necessitates that all locks must be of the same pattern. For this reason, it is not possible to maintain a stock of spare parts. Therefore, if a lock has to be replaced, a lock with a different coding must be temporarily installed and two keys must be used until the correct replacement lock arrives.

Because of this, please keep at least one of the following types of locks in stock distinguishing between vehicles with Ymos locks (up to Chassis End No. 331) and Keso locks (as of Chassis End No. 332):

QTY.	TYPE OF LOCK	UP TO CHASSIS END NO. 000 331 PART NUMBER	AS OF CHASSIS END NO. 000 332 UP TO CHASSIS END NO. 001 020	AS OF CHASSIS END NO. 001 021 PART NUMBER
1	Cylinder lock (left-side front door)	100 800 27 74	100 800 31 74	100 720 09 35
1	Cylinder lock (right-side front door)	100 800 28 74	100 800 32 74	100 720 10 35
1	Hydraulic trunk lock	100 800 17 74	100 800 29 74	100 800 29 74
1	Lock for glove compartment	100 689 00 01	100 689 01 01	100 689 01 01

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The cylinder for the trunk lock cannot be kept in stock as it is not possible to remove this cylinder from the lock without special equipment (which you do not have in your workshop). Therefore, if a fault in the cylinder of the trunk lock cannot be corrected by following the instructions in Service Information No. 31, Group 60-81, 84-89, of April 1967, then the hydraulic trunk lock must be replaced.

It is not necessary to maintain a special stock of spare steering wheel locks (Part No. 000 462 33 30) for Model 600, since, as a temporary measure, the steering wheel lock used for Model 230 SL, Part No. 000 462 28 30, can be installed.

The master key, Part No. 000 766 12 06, and the secondary keys, Part No. 000 766 13 06, as well as the locks can be ordered from our Mercedes-Benz Parts Depots.

Be sure that when ordering locks and keys for a particular vehicle, you state the lock number as well as the Part Number. On Model 600, to avoid theft, this number is indicated on an extra key tag instead of on the key itself. The lock number also appears in the vehicle data card, two copies of which are provided with every car.

NOTE: In this connection, please refer to our Spare Parts Information #103, Group VII - Parts Technical, dated June 16, 1967, which pertains to the replacement of the steering wheel lock on Model 600.

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No. 97	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: LOOSENING OF DASHBOARD PADDING

It has come to our attention, that as a result of intense sunlight, the padding on the dashboard around the defroster outlets may become detached.

For this reason, a trim ring has been developed which can be permanently fitted over the defroster outlets in order to hold the padding down. Before installing these rings, the padding should be reglued.

NOTE: FOR THIS PURPOSE, USE PADDING ADHESIVE + 10% HARDENER.

Illustration 1

1. Instrument panel
2. Trim ring

The padding must be pressed into place using a suitable piece of sheet metal, which is to be fastened between the defrosters and the dashboard.

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INSTRUCTIONS:

1. Remove windshield (Workshop Manual, W 114/115, Job No. 67/1C).

2. Any unused padding should be cut off and any exposed foam rubber or sheet metal parts should be repainted.

3. Attach trim ring (2) onto opening. When doing this, take care that the hole for the inner screw is drilled as close to the edge as possible.

4. Mark the position of the holes and, with a .09 in. (2.4 mm) drill, bore hole. The flange of the defroster outlet must be drilled through at the same time.

5. The trim rings are to be fastened in place using .11 x .98 in. (2.9 x 25 mm) black painted oval head screws.

6. Replace the windshield.

NOTE: IN THE CASE OF 1970 MODEL YEAR CARS, THE WINDSHIELD HAS TO BE REPASTED INTO THE FRAME PERSUANT TO FEDERAL HIGHWAY SAFETY STANDARD 201.

PARTS REQUIRED

QTY.	PART NAME	PART NO.
2	Trim ring	115 689 00 81

The required parts may be ordered through our Mercedes-Benz Parts Depots.

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No. MB-T 187	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SHEET METAL SCREWS FOR FASTENING OF FRONT PART-CENTER PIECE, PART NO. 115 881 05 09, ONTO THE FRONT FENDERS - MODELS 220 D/8 THROUGH 250/8 CP. (114.023)

The metal screws should be inserted on the following vehicles from above as shown in the Illustration. Please check all cars coming in for service and have them corrected, if necessary.

MODEL	CHASSIS END NO. FROM	TO
220/8	032 677	047 176
220 D/8	073 074	113 560
250/8	029 696	042 306
250/8 Cp. (114.023)	000 001	001 362

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For the modification, the following parts are required:

QTY.	ITEM	ITEM NO.
2	Sheet metal screw	007976 006303
2	Washer	009021 006103
2	Clip fastener (nut)	000994 50 45

A warranty claim for 10 minutes of labor plus net material costs may be submitted.

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MERCEDES-BENZ OF CANADA, LTD.

No. S 5	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, JULY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: OUTSIDE REAR VIEW MIRROR -- MODELS 190 C TO 300 SEL/8 6.3

Some states require that an additional outside mirror be mounted on the right side of the vehicle when the view, by means of the inside mirror, is obstructed or when a trailer is towed.

We are, therefore, furnishing you with the following Working Instructions for the subsequent installation of a side view mirror on the right side of the car.

WORKING INSTRUCTIONS

1) Mark mounting holes according to Illustrations 1 and 2, on Models 230 SL, 250 SL and 280 SL/8.

NOTE: MEASURE CAREFULLY TO ACHIEVE EXACT MIRROR IMAGE INSTALLATION AS THIS IS REQUIRED BY "U.S. SAFETY STANDARD III" FOR NEW CARS AND SHOULD ALSO BE FOLLOWED FOR CARS ALREADY IN USE.

2) Drill two .3 inch dia. holes in the front fender (on SL Models in the driver's door, using mirror bracket as template). Coat with anti-corrosion paint.

3) Remove door liner on Models 230 SL, 250 SL and 280 SL/8 from right hand door.

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4) Slip base (2) on bolts of mirror bracket and mount side view mirror (1) onto fender with items 3 to 5, on SL models on door by means of items 4 and 5. Adapt counterplate (3) prior to mounting on coupes and convertibles. No matching is required on sedans. Adjust side view mirror. (Illustration 2)

5) Reinstall door linings on SL models.

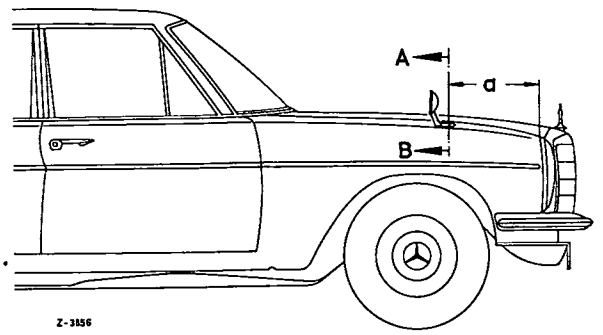

ILLUSTRATION 1

Arrangement of right hand side view mirror.

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MODEL	DIMENSIONS: A	B	C
190 C, 190 DC, 200, 200 D, 230	11.02 in.	--	29.73 in.[1)]
220 B, 220 SB, 220 SEB Sedan, 230 S, 300 SE Sedan	18.11 in.	--	29.73 in.[1)]
200/8, 200 D/8, 220/8, 220 D/8, 230/8, 250/8, 250/8 Cp.	15.75 in.	1.02 in.	--
250 S, 250 SE Sedan, 280 S/8, 280 SE/8 Sedan, 300 SEB, 300 SEL, 300 SEL/8, 300 SEL/9 3.5, 300 SEL/8 6.3	15.75 in.	1.77 in.	--
220 SEB, 250 SE, 280 SE/8, 280 SE/9 3.5, 300 SE, Cp. Conv.	15.75 in.	1.77 in.	--
230 SL, 250 SL, 280 SL/8	In mirror position with respect to driver's door.		

1) measured from car center line

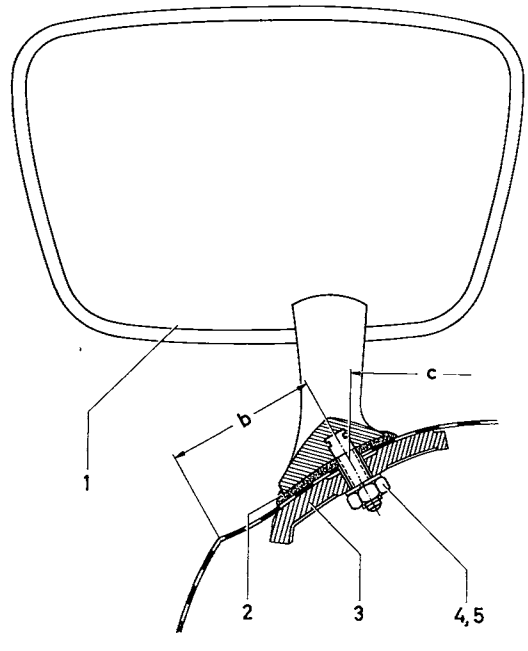

ILLUSTRATION 2

Section A - B

Mounting side view mirror on front fender.

1. Side view mirror
2. Base
3. Counterplate
4. Spring washer
5. Hex nut

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PARTS REQUIRED

ITEM	QTY.	DESCRIPTION	PART NUMBER OR DESIGNATION PER DIN	
1	1	Side view mirror assembly, right hand side	---	
2	1	Base	108 811 01 96	
3	1	Counterplate	108 811 01 11	1)
4	2	Spring washer B6	000127 006203	
5	2	Hex nut M6	000934 006006	

1) Item number 3 is not included in the scope of delivery, but has to be ordered separately. Not needed for models 230 SL, 250 SL and 280 SL/8.

PARTS KIT (LESS ITEM NO. 3)

MODEL	PARTS KIT NO.
190 C, 190 DC, 200, 200 D, 220 B, 220 SB, 220 SEB Sedan, 230, 230 S, 230 SL, 250 SL, 280 SL/8, 300 SE Sedan, 200/8, 200 D/8, 220/8, 220 D/8, 230/8, 250/8 Cp.	113 810 30 16
250 S, 250 SE Sedan, 280 S/8, 280 SE/8 Sedan, 300 SEB, 300 SEL, 300 SEL/8, 300 SEL/9 3.5, 300 SEL/8 6.3 Coupes and convertibles of models 220 SEB, 250 SE, 280 SE/8, 280 SE/9 3.5, 300 SE	108 810 32 16

The parts required are available from our Spare Parts Depots under special request only.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 141	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: REPLACEMENT OF DOOR STRAP RETAINER BRACKETS IN THE FRONT SIDE WALL OR CENTER COLUMNS -- MODELS 220 D/8 TO 250/8 CP.

In the above mentioned models, the door strap retainer brackets may cause rattling noises. In case of complaints, the only possible way to correct this condition is to replace the brackets. The required welding must be performed only by using the arc-welding method (shielded arc-welding, if possible).

A. FRONT WALL COLUMN

1. Remove cover from inner panel of front wall pillar and knock out bolt from door strap retainer.
2. Drill out plug welds (2) of retainer bracket (1) (Illustration 1).

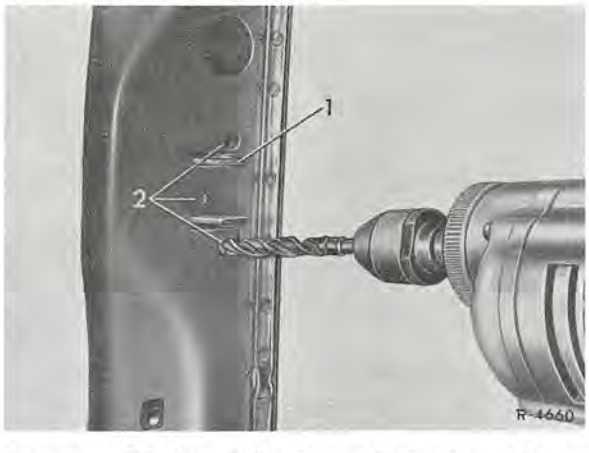

ILLUSTRATION 1

1. Bracket
2. Welding points

3. Tear off bracket. Remove through hole in inner side panel of front wall column.
4. Position new bracket and attach to front wall column by plug welding.
5. Smoothen welded spots and paint.
6. Replace cover on inner side panel. Insert bolt for door strap retainer.

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B. CENTER COLUMN

1. Remove cover from center column.
2. Remove bolt of door strap retainer.
3. Drill out plug welds of brackets.
4. Tear off bracket and remove.

NOTE: IN ORDER TO BE ABLE TO REMOVE THE OLD BRACKET AND POSITION THE NEW ONE (3), THE INNER PANEL (4) OF THE CENTER COLUMN HAS TO BE CUT AND BENT (ILLUSTRATION 2).

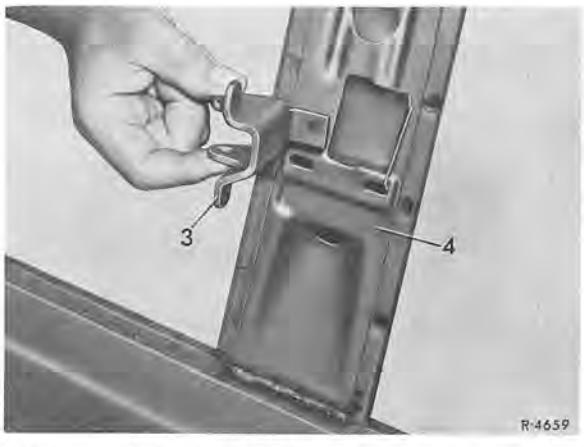

ILLUSTRATION 2

3. New bracket

4. Inner panel of center column

5. Plug weld new bracket.
6. Straighten back inner panel of center column and weld.
7. Smoothen welded area and paint.
8. Replace cover.

PARTS REQUIRED	PART NUMBER
Bracket for front wall column, left and right	115 637 01 20
Bracket for center column, left and right	115 637 00 20

The parts required may be ordered through our Mercedes-Benz parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 72	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo 60-81, 84-89	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: COMFORT HYDRAULIC SYSTEM -- MODEL 600

This Service Information is a summary of modifications made over the years on the Finger Tip Hydraulic System of model 600.

Enclosed is an up-to-date hydraulic control diagram. The different versions of the hydraulic circuits are designated (a), (b) and (c) in the diagram.

Section A describes the different versions of the hydraulic circuit.

Section B deals with the hydraulic pressure reservoir.

Section C is about the shut-off valve (to shut off the entire hydraulic circuit).

Section D describes that the hydraulic pressure warning light was omitted.

Section E tells you what to switch in case of replacement of push buttons of hydraulic switches.

Any adjustment of hydraulic switches should be done according to Section F.

Very important is Section G containing information on the replacement of hydraulic control switches and hydraulic elements.

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SECTION A. VARIOUS VERSIONS OF THE HYDRAULIC CIRCUIT

The hydraulic circuit pertaining to the heating, ventilation and air conditioning systems was re-designed and 2 major modifications were made. The attached circuit diagram shows the originally-built version with the circuit (a).

Circuit (a)

This circuit represents the original version as described in the workshop manual model 600 under group 80. The ventilation flaps in the car as well as in the trunk and underneath the rear seat were exclusively controlled from the temperature selector knob. All of these flaps are closed (with the exception of the air conditioning flap control underneath the head rack) when the temperature selector knob is in position and/or switched in heating.

The hydraulic circuits (b) and (c) were necessitated by the following modifications.

Circuit (b)

- started with chassis end No. 000 169.
- hatches in cross-duct of front compartment eliminated.
    - control cables replaced by a hydraulic switch connected to the air flow regulating lever.
- when shifting air flow regulating lever to position "O" (far right), fresh air flaps and additionally installed rear compartment flaps may be closed, even with temperature selector knob in position "N".
    - this arrangement required the installation of a hydraulic relay.
    - two different hydraulic switches actuate the same operating features depending on climate desired.
- this circuit arrangement permits:
    - a complete draft free condition.
    - a complete elimination of annoying odors from the outside through the flip of a control lever.

Circuit (c)

- with installation of new air conditioning system as of chassis end No. 000 792, rear evaporator was eliminated.
- also omitted were the circulating and distributor flaps of the rear heat exchangers.
- the air flow in rear compartment is controlled by rear compartment flap. (discussed in circuit (b))
- switching temperature selector knob to "cooling" closes:
    - rear compartment flap, and
    - fresh air flaps in front compartment.

- this creates clean air circulation within the compartments, increasing the efficiency of the air conditioning system.

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NOTE: - SLIDING ROOF OPERATION INCORPORATED WITHIN NEW DIAGRAM.
- A CABLE TRANSMITS THE MOVEMENTS OF A HYDRAULIC ELEMENT TO THE SLIDING ROOF.
- LOCATION OF ELEMENT: TRUNK, BEHIND TRUNK LID HINGES.

The vehicles of the USA Version, starting with chassis end No. 1029 (besides chassis end No.'s 996, 1021, 1024 and 1026) have door locks without hydraulic actuation, i.e., the door lock elements and switches shown in the diagram are omitted.

Furthermore, starting with chassis end No. 1435, a vacuum element, located in each door, provides that the windows cannot be hydraulically operated when the ignition is turned off.

SECTION B. OIL PRESSURE RESERVOIR

On cars up to and including chassis end No. 000 367, a Bosch Diaphram oil pressure reservoir was used.

A Teves piston type oil pressure reservoir is installed as standard equipment as of chassis end No. 000 368.

SECTION C. SHUT-OFF VALVE FOR HYDRAULIC SYSTEM

- A shut-off valve is installed between the high pressure pump and the oil pressure reservoir, and the lines routed in the vehicle.
- Location of valve: left front wheel arch panel of engine compartment.
- Shut-off valve may separate pipe system from pressure sources without de-pressurizing the system.
  (See Workshop Manual, Model 600, Group 80-83, p. 225, Section D - Testing Oil Pressure Container and Fingertip Control Hydraulic Pump).

After closing valve, residual pressure in lines may be eliminated by operating a window once.

Service connections are provided at the shut-off valve for:
- Pressure warning switch
- Pressure gauge

SECTION D. HYDRAULIC PRESSURE WARNING SWITCH

- Model 600 was originally provided with a:

  Pressure warning switch
  Pressure indication light

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- Above mentioned equipment is omitted as of chassis end No. 000 746. (Cars with chassis end No. 000 749, 000 751, 000 753, and 000 758 were yet equipped with original equipment).

- In case the hydraulic pressure warning switch becomes defective, it is not necessary to replace it by a new one.

- Warning lights in instrument panel were given following new functions. (illustration 1)

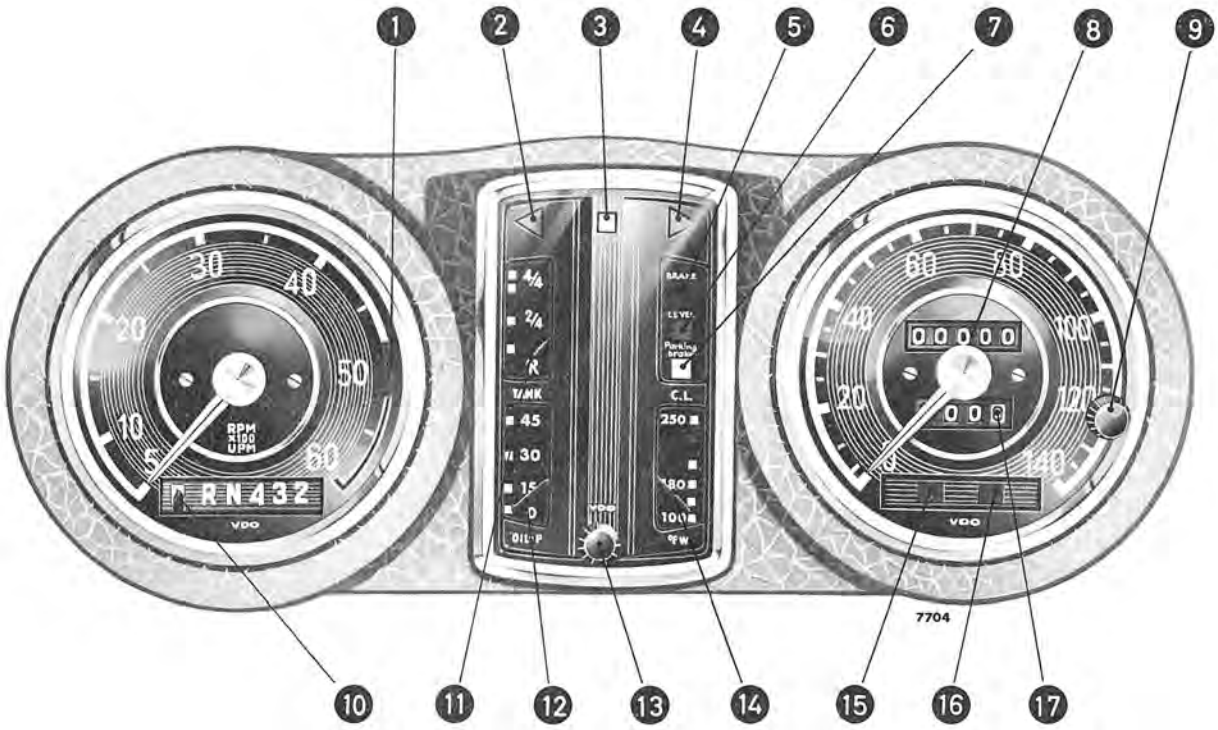

Illustration 1

5. Red Light: Air pressure too low

6. Yellow Light: Air suspension not in normal position

7. White Light: Parking brake engaged
(formally orange)

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In case the warning device is removed from the vehicle, proceed as follows:

1. De-pressurize comfort hydraulic system.
   Caution: High Pressures.

   For vehicles up to chassis end No. 000 381, refer to Workshop Manual, Model 600, Group 80-3, p. 225, Section D "Testing Oil-Pressure Container and Finger Tip Control Hydraulic Pump".

   As of chassis end No. 000 382, a shut-off valve is provided. Refer to Section C, this Service Information.

2. Disconnect line to pressure warning switch.

   On vehicles up to chassis end No. 000 381 on the connector at the left-front wheel arch.

   On vehicles starting with chassis end No. 000 382 disconnect on shut-off valve.

3. Seal connection point on connector or shut-off valve by using a plug.

4. Re-pressurize hydraulic system or open shut-off valve.

   Check whether plug is leaking.

5. Disconnect cable connector at pressure warning switch.

   Remove pressure warning switch from vehicle.

   Do not remove warning light from the instrument panel, its removal requires a rather high working time.

SECTION E. REPLACEMENT OF SWITCH PUSH-BUTTONS

In model 600, as of chassis end No. 001 021, in general, hydraulic switch contacts with shorter push buttons are installed. They are also supplied as spare parts.

When installing a switch of new type with shorter push buttons in a vehicle of earlier construction, longer push buttons may be retained.

Longer buttons may be pulled off old switch and mounted onto new switch.

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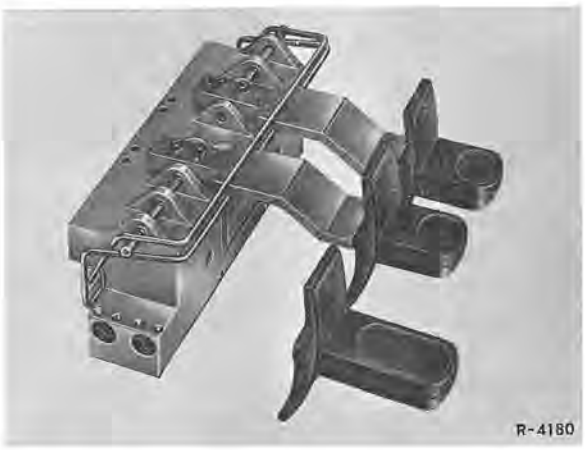

ILLUSTRATION 2

Hydraulic switch contacts with shorter push buttons

Push buttons may be damaged at removal.
We recommend to remove switch contacts together with the push buttons and dip them into hot water.

Made of Thermo-plastic material, they are easily removed in a warm condition.

Long type push buttons are easily slid onto switch levers of the new switch.

Caution: When dipping into hot water, prevent that the switch contacts are wetted.

SECTION F. ADJUSTMENT OF HYDRAULIC SWITCHES

Clearance of actuating levers on various hydraulic switches will increase with use.

When function of switches is impaired, they not necessarily have to be replaced.

Replacement of switches is required only when:

The mounting of the actuating lever is excessively worn.

Other trouble, for example interior leaks, occur.

The clearance of the actuating levers may be adjusted or corrected by means of the adjusting screw (2, Illustration 3) .

Proceed as follows:

1. Expose the relevant hydraulic switch. Refer to Workshop Manual, Model 600, Group 80, Part H "Removal and Installation of Hydraulic Switch", pp. 240-241.

2. Remove the protective coat of paint from both adjusting screws.

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3. Completely eliminate the clearance of the actuating lever by retracting the adjusting screws.

   Caution: The actuating lever must be adjusted by simultaneous retracting of both adjusting screws parallel to the upper edge of the switch. Make sure that the adjustment screws (2) just slightly touch the push rod (3). A push rod and therewith a valve should never be lifted. (illustration 3)

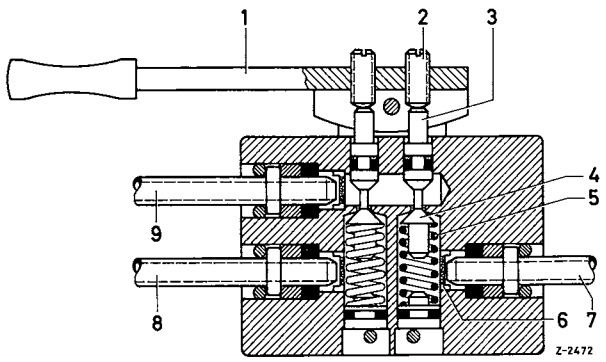

Illustration 3
Hydraulic Switch

1. Actuating lever
2. Adjusting screw
3. Push rod
4. Valve
5. Compression spring
6. Filter
7. Pressure line
8. Return line
9. Control line

4. Retrack both adjusting screws slightly by approximately the width of the screw slot so that the clearance on the actuating lever is secured.

NOTE: In order to secure proper functioning of both valves, a minimum clearance is definitely required. Measuring this clearance with available workshop equipment, however, is not possible.

5. Carefully seal off adjusting screws with a coat of paint.

   We recommend to correct the clearance of those hydraulic switches which are easily accessible. The door trim does not have to be completely removed.

SECTION G. REPLACEMENT PROCEDURES FOR HYDRAULIC SWITCHES AND HYDRAULIC ELEMENTS.

When leaks on the hydraulic elements of door and trunk lid locks occur, the removal of these locks is not justified if the lock is mechanically sound.

It is easily possible to replace any defective part of the locks; their function will not be impaired if the exchange is properly exercised. The replacement of any hydraulic element should not create any problems.

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Required Procedures to Replace a Switch:

a. The Door Lock

Removal

1. Detach spring (1).
2. Remove actuating plate (2).
3. Remove switch mounting screws (5).
4. Remove notched pins (3). Notched pins are used as additional fasteners between switch and lock housing. Remove switch.

Installation

5. Fasten the new switch. Do not tighten mounting screws (5) now.
6. Fasten actuating plate (2) to the switch levers of the hydraulic switch.

NOTE: Apply a coat of paint to the screws before inserting them.

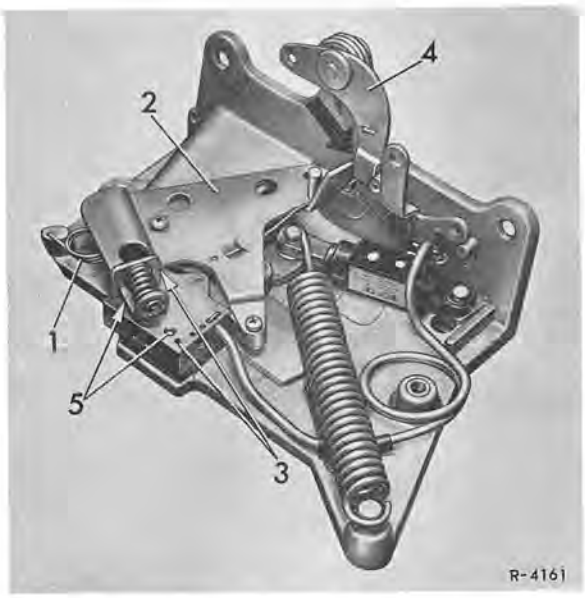

Illustration 4

1. Spring
2. Actuating plate
3. Notched pins
4. Dis-latching lever
5. Mounting screws

7. Rotate switch with the actuating plate so that the clearance between the dis-latching lever (4) and the actuating plate amounts to .08 in. (2.0 mm)-.10 in. (2.5 mm). See arrow in illustration 4.

8. Tighten mounting screws (5) in this position.

9. Re-drill holes and insert pins.

Caution: Pay particular attention to the removal of chips which originated from drilling. Finally, re-grease lock.

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b. The Trunk Lid Lock

Removal

1. Detach spring (1).
2. Remove return line (2).
3. Remove safety clips for pressure line (3) and return line (4) from the switches.
4. Remove screws for switches and lines. Simultaneously push the switches in an upward direction away from the connection holes.

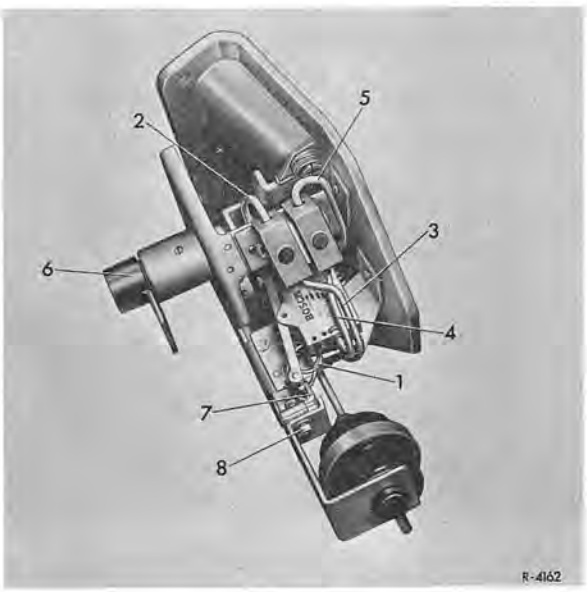

Illustration 5

1. Spring
2. Return line
3. Pressure line
4. Return line
5. Pressure line
6. Locking cylinder
7. Bearing bracket
8. Screw

5. Disconnect pressure line (5), as well as the control line leading to the hydraulic element from the switches. Both of these mentioned lines are not visible in illustration 5. Remove switches.

Installation

NOTE: Installation of switches and connection of lines is performed in reverse order of removal.

Important Instructions:

Position the switches in such a way that the switch levers are in alignment to each other. Make sure that the switch levers are traveling the full distance back and forth when the locking cylinder (6) pulls or pushes. (The switch levers touch the upper edge of the housing when the lock is in "idle" position.)

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6. Attach spring.

Adjust dead-center so that the switch levers will actuate only at the last 3/16 in. (4 to 5 mm) of their movement when the locking cylinder pushes.

Position bearing bracket (7) after losening the screw (8) in the relevant direction.

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Attachment

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Revised CIRCUIT DIAGRAM OF FINGERTIP HYDRAULIC SYSTEM

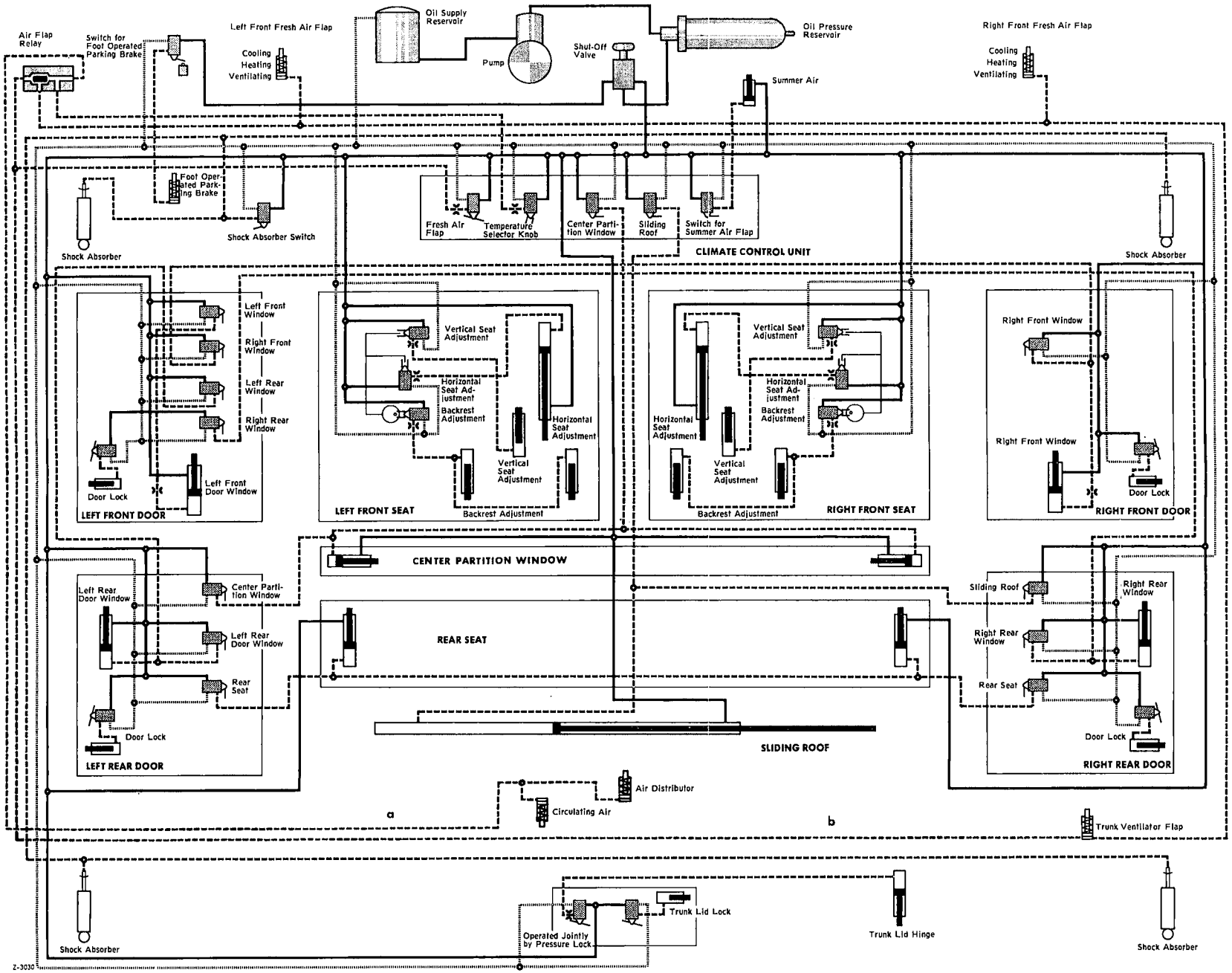

DIAGRAM SYMBOLS

- Pressure Line
- Control Line
- Return Line
- Control Line with Adjustable Throttle

Hydraulic Switches

- Directly Actuated, Manual
- Indirectly Actuated, Manual
- Indirectly Actuated, Electro-Magnetic
- --With Adjustable Throttle

Hydraulic Element

- Double Acting
- Single Acting
- Single Acting (Automatic Return by Spring Action) Z-3674

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 60	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 60-81 84-89	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CONVERTIBLE TOP BASE -- MODELS 230 SL, 250 SL, 280 SL/8

In the above mentioned models, a movable stop angle instead of a rigid stop angle is available.

Damage to convertible tops may occur unless carefully operated according to instruction.

NOTE: REFERENCE SERVICE INFORMATION NO. 57, GROUP 60-81/84-89, AND SERVICE INFORMATION NO. 138, GROUP 60-81/84-89, OF JANUARY 1968.

In order to minimize the possibility of damage, a new top support with movable stop angle was developed and is installed in 280 SL/8's as of chassis end No. 004 087. It may be subsequently installed in all 250 SL's and in 230 SL's as of chassis end No. 019 020.

A. Replacement of Top Mechanism

1. Remove top and both retaining bars (3, Illustration 1) by pulling out of fabric holder retaining bar (2) and remove top bases.

2. Transfer and reinstall all individual parts of the top bases the same way as they were installed on the old ones. Attach new retaining bars (3). Re-insert oval head screws (10 and 11) after tightening.

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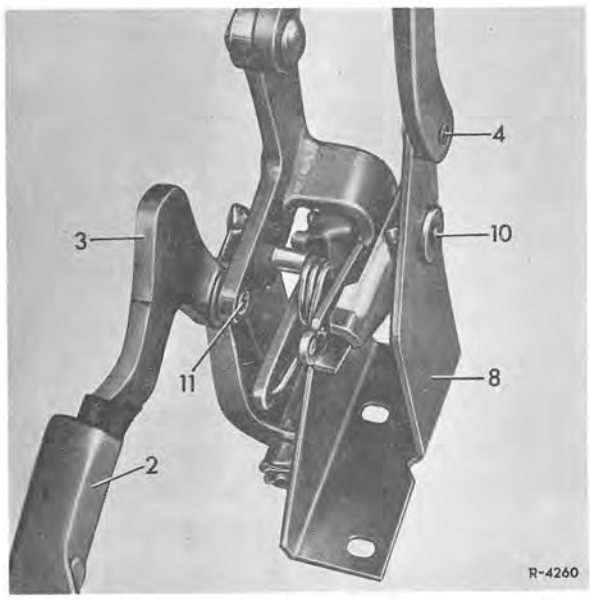

Illustration 1

2. Fabric Holder retaining bar
3. Retaining bar
4. Oval head screw
8. Top base
10, 11. Oval head screw

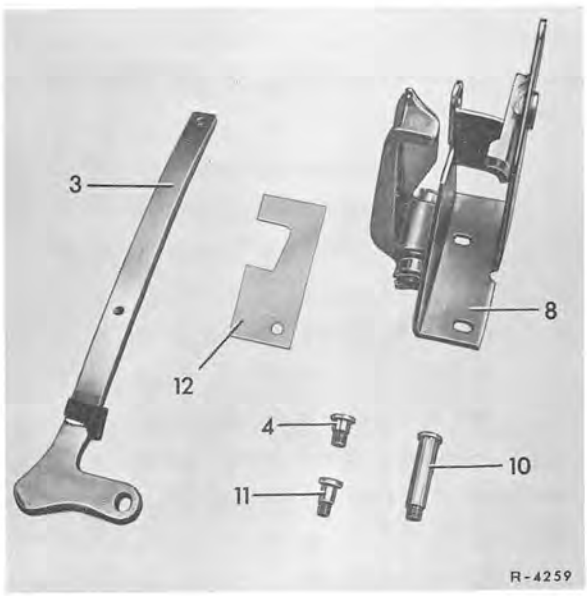

Illustration 2

3. Retaining bar
4. Oval head screw
8. Top base
10, 11. Oval head screw
12. Intermediate layer

3. After assembly of parts shown in Illustration 2 onto bases, attach them on top mechanism as shown in Illustrations 3 and 4.

4. Reinstall complete top, use new intermediate layers (12).

NOTE: Always use same number of layers in each place as removed.

B. Adjustment of Fabric Holder Retaining Bars

1. Close top base and latch.

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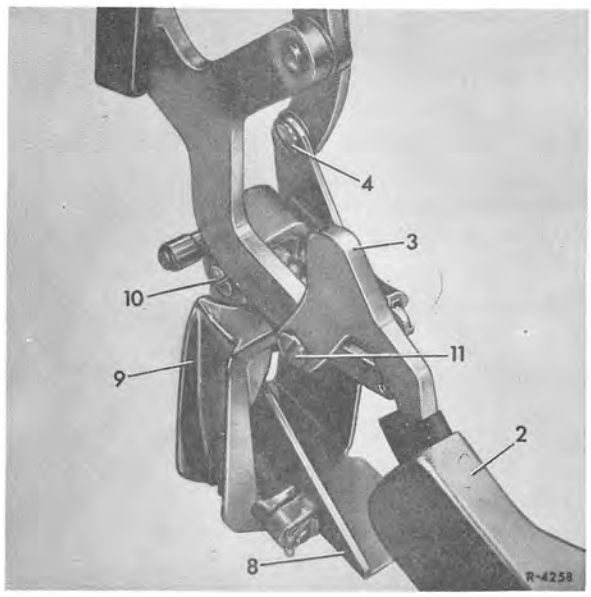

Illustration 3

2. Fabric holder retaining bar
3. Retaining bar
4. Oval head screw
8. Top base
9. Stop angle
10, 11. Oval head screw

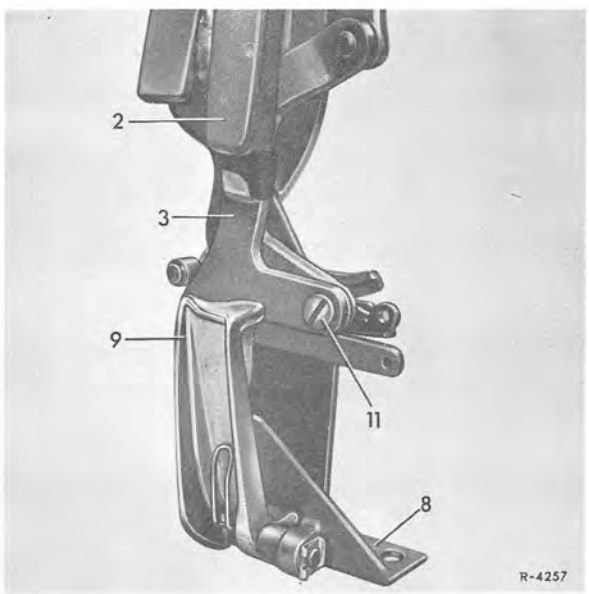

Illustration 4

2. Fabric holder retaining bar
3. Retaining bar
8. Top base
9. Stop angle
11. Oval head screw

2. Flap down fabric holder retaining bar (2) and simultaneously pull back until retention pin (5) reaches into lock hole by about .2 in. (5 mm).

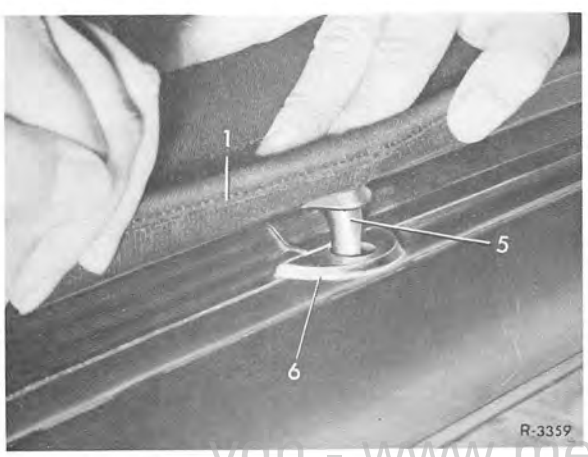

Illustration 5

1. Folding top
5. Retention pin
6. Collar

(over)

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3. In this position, tighten the retaining screws in the retaining bars (3, Illustration 6). Then push the fabric holder retaining bar (2) further down to lock the retention pin (5).

FUNCTION TEST: If top is correctly adjusted, the fabric holder retaining bar may be flapped down easily until retention pin touches lock. This guarantees easy operation of the fabric holder retaining bar.

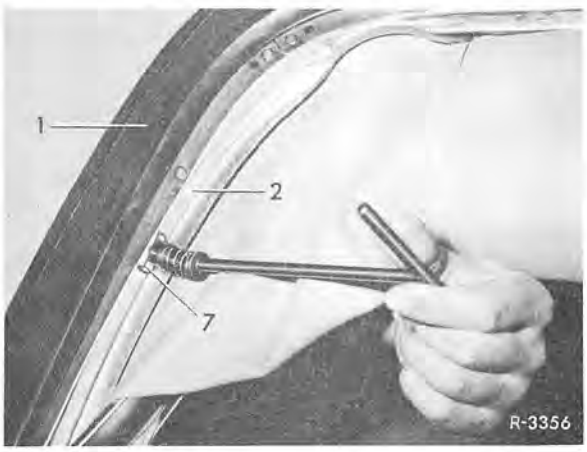

Illustration 6

1. Folding top
2. Fabric holder retaining bar
7. Base plate for mounting screws of retaining bar (3)

NOTE: Furthermore, check whether the convertible top scours on certain spots in the vicinity of the hinge yoke (13, Illustration 7) when opening the convertible top cover.

If scouring is visible, check for roughness of the hinge yoke on the side facing the convertible top.

If necessary, use emery cloth to smooth affected areas and apply one coat of paint.

Illustration 7

13. Folding top hinge yoke

(over)

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C. List of Required Parts

Quantity	Part Name	Part Number
1	Left hand retaining bar	113 770 17 14
1	Right hand retaining bar	113 770 18 14
2	Oval head screw	113 984 13 31
2	Oval head screw	113 984 16 31
1	Left hand folding top support	113 770 13 22
1	Right hand folding top support	113 770 14 22
2	Oval head screw	113 984 24 31
	Intermediate layer, as required	113 772 01 60

The above mentioned parts are available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 96	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Locks and Keys -- Models 220/8 to 600

Our suppliers have received unwarranted complaints about lock units. The following points are concerned:

1. Cylinder Lock and Key

   In most cases, cylinder locks replaced under warranty operate correctly when the proper keys are used. The trouble is caused by replacement keys which have been incorrectly cut.

2. Trunk Locks with Secondary Key

   We often receive trunk locks and secondary keys (round head) with the complaint that they do not lock. Such faults should not happen. The extra key (with the round head) is not meant to operate either the trunk or glove compartment locks.

These points should be observed when making complaints about locks. In the future claims will be rejected for locks which are removed without genuine cause.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 48	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, June 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Mounting of the Armrest on the Driver's Door -- Models 220/8 through 250/8 (W 114/115)

As of April 1968, the armrest on the driver's side door of the above models is being installed .94" (24 mm) higher than before. Because of this modification, the previously used doors and the new version doors are both in stock under the same part number: 115 720 05 05 (left front door).

If the driver's door has to be replaced, the armrest must be mounted at the same mounting points as on the damaged door. Otherwise the pressure marks and the existing holes will not be covered.

The new version door can be fitted to all vehicles, since both the former (5, illustration 1) and the new version mounting holes exist on the inner door panel.

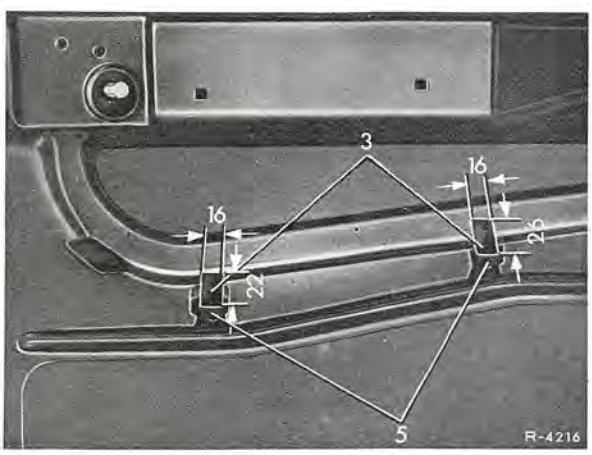

ILLUSTRATION 1

3. Holes in the inner door panel
5. Mounting holes - former version

(over)

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If a new version door is replaced by a former version door (whichever is available) it must be modified as follows by attaching two support brackets (1 and 2, illustration 2) in order to insure the proper fastening of the armrest:

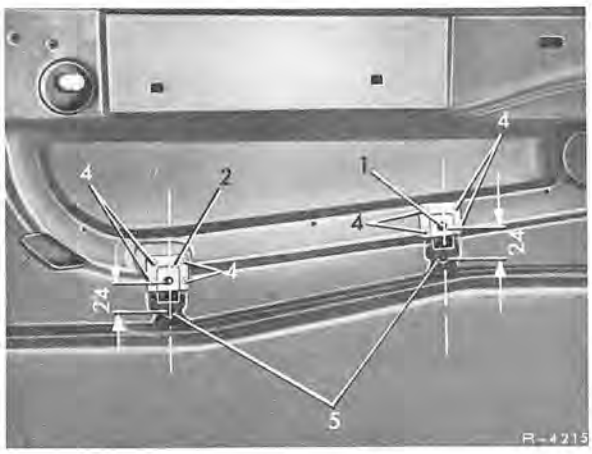

ILLUSTRATION 2

1. Front support bracket
2. Rear support bracket
4. Pop rivets
5. Mounting holes - former version

Procedure

1. Mark and file out holes (3) in inner door panel (illustration 1).

2. Drill .16" (4 mm) holes for the rivets.

3. Paint all exposed metal edges with anti-corrosive paint.

4. Attach small support bracket (1) at front and large support bracket (2) at rear with pop-rivets (4) (illustration 2).

Parts Required	Part Number
Small support bracket	115 722 00 31
Large support bracket	115 722 01 31
Pop rivet	000 990 38 97

The required parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 94	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Paint Jobs on Hub Caps, Part No. 115 400 00 25, for Passenger Car Models as of January 1968

A cover template has been developed for paint jobs on the hub caps (part no. 115 400 00 25) of passenger car models as of January 1968 to facilitate expert paint jobs.

In cases of repainting or damaged paint surfaces, the finish paint MB KH (Dr. Kurt Herbert material), special baking finish or MB KH, air dried finish, can be applied directly onto the old coat after thoroughly cleaning and sanding the respective surfaces.

If the old paint coat is damaged down to the chromium layer, or completely or partly peeled off, proceed as follows:

PRE-TREATMENT

Completely remove the old paint coat (finish and colored primer) with MB cauterizing paste or any good paint remover. Thoroughly clean chromium surface with washing fluid or combi-thinner.

PRIMING

A non-sanding primer must be used for best results. A primer of this type can be purchased locally.

TEMPLATE ORDERS

The above mentioned cover template may be ordered under part no. 115 589 04 63 00 from the Teaneck Parts Depot (in Canada, order from M-B of Canada, Toronto, Ont.).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 127	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

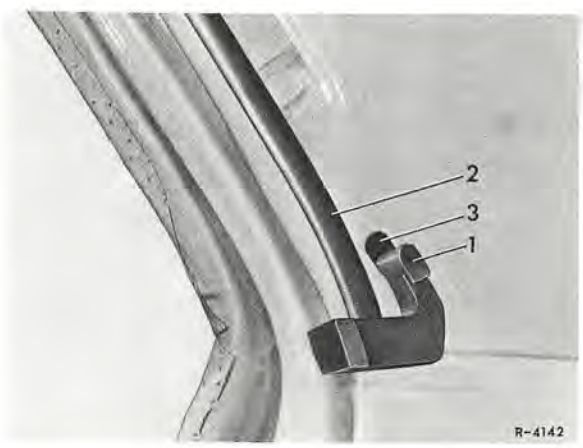
Subject: Mounting of Ornamental Chrome Bar on the Drip Rail -- Models 220/8 through 250/8

In order to correctly align and mount the ornamental chrome bar on the drip rail, a small alignment tool has been developed which is used to properly position the drip rail bar on the rear column so that the chrome panel, covering the ventilation outlet, and the drip rail bar will be flush at the bottom of the rear column.

For mounting the drip rail bar, proceed as follows:

1. Insert the alignment tool (1) into the bottom hole on the rear column (3) after removing the clip (illustration).

2. Place the drip rail bar (2) against the alignment tool (1) and firmly press the bar onto the roof seam, working from the rear to the front (illustration).



Illustration

1. Alignment tool
2. Drip rail chrome bar
3. Rear column

(over)

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NOTE: Be sure to reinsert the bottom clip only after the drip rail bar has been mounted - since otherwise the alignment tool cannot be inserted.

The alignment tool can be ordered under part no. 115 589 13 61 00 in the usual way through the Parts Depot, 400 Alfred Avenue, Teaneck, New Jersey 07666, by submitting a spare parts order form and stating the description and complete tool number. Forms should be clearly marked with "Special Tool Order" and should contain orders for special tools only. (In Canada submit orders to MBC, Toronto.)

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	136	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	60-81 84-89	Passenger Cars

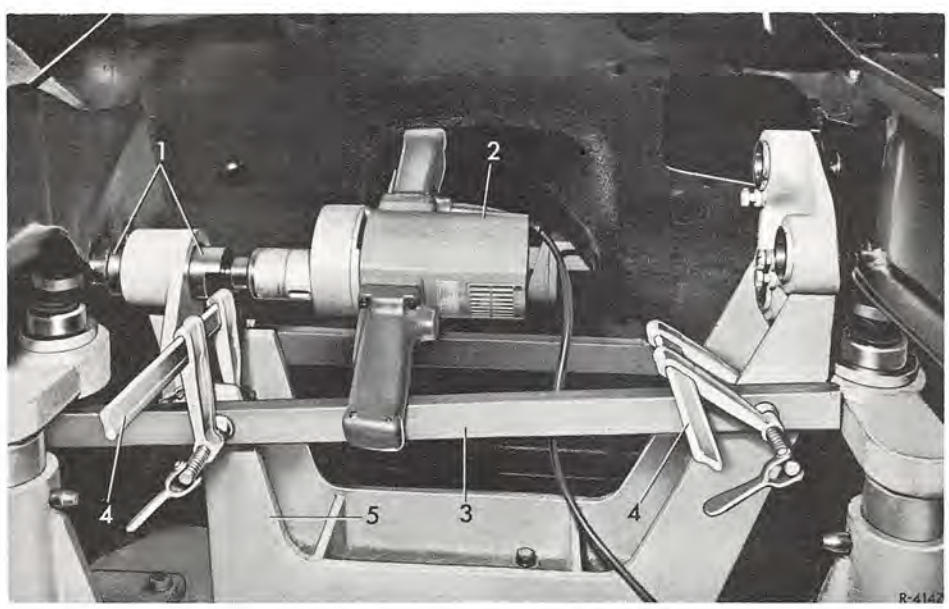
Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Safety Measure When Performing Repair Work on the Front End Assembly

As a precautionary measure, we would like to point out the following procedure when performing repair work on the front end assembly.

Special care is required when milling the pivot bearing and steering-box hole pattern. As you know, a slow-running drilling machine which develops a high torque must be secured against turning during the performance of these jobs. This can be done very simply when the drilling machine handle rests against a square tube. The tube must be attached on the drilling bridge with screw clamps.



1. Milling cutter 2. Drilling machine 3. Tube
4. Screw clamps 5. Drilling bridge

Please strongly emphasize to your personnel the importance of observing this safety measure.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	126	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	60-81 84-89	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of the Tunnel Covering with Tray -- Models 220/8 through 250/8 (W 114/115)

The tunnel covering mat for the floor shift under part no. 115 680 02 50 is no longer available. Instead, a modified covering will be available from your Mercedes-Benz parts depot under part no. 115 680 00 50 on special air order. Please state the complete chassis, body and trim numbers.

The modified tunnel covering with tray is supplied without the cut-out for the gear shift lever. Therefore, by following the guide lines which are pre-marked on the inside of the tunnel covering (as shown in illustration) you can proceed to cut out the opening using a sharp knife. The mounting holes for the covering of the floor shift must be pierced with a suitable tool.

1. Pre-marked guide lines for section to be cut out

2. Mounting holes

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No. 135	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

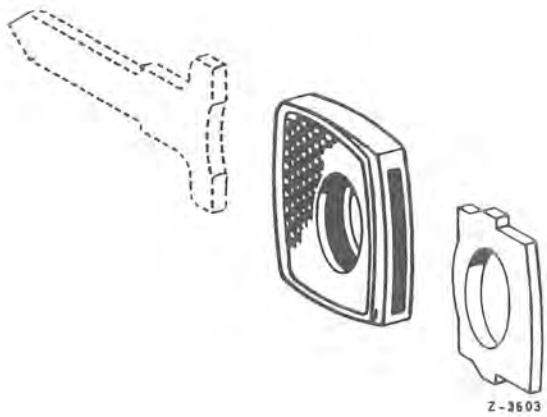
Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Safety Grip on Vehicle Keys

The vehicle keys of our passenger cars are provided with a yielding plastic grip to prevent the possibility of injuries. These grips sometimes break under high pressure.

Since May 1968, a tougher material is used for these plastic grips. Damaged plastic grips are replaceable so that the key itself need not be discarded.



The plastic grip for the master key may be ordered under part no. 000 766 44 06; the grip for the secondary key under part no. 000 766 45 06 from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 91	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 60-81 84-89	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Adjustment of Manually Operated Windows -- Models 230 SL, 250 SL and 280 SL - Coupe and Convertible

The following are the work instructions for properly adjusting the manually operated windows on the above mentioned models.

1. Remove the upper and rear rubber seals (2 and 3, illustration 1) from the frame of the hard top or soft top and loosen the window guide rails.

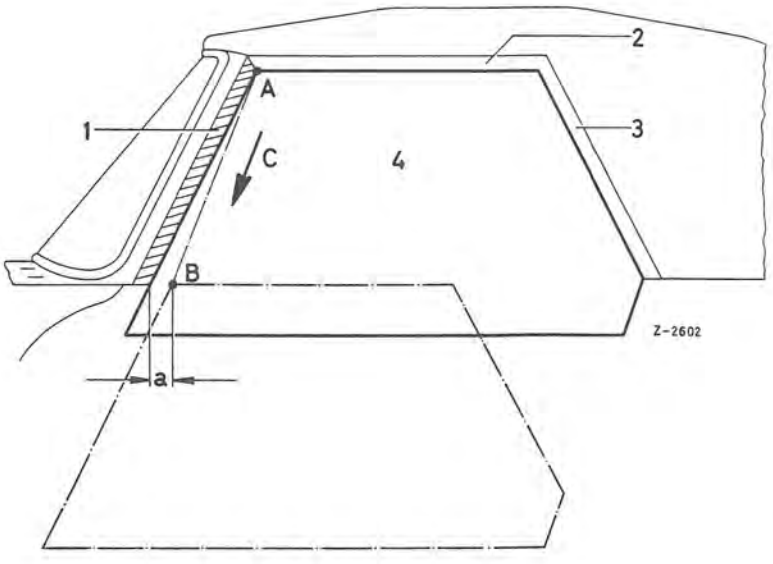

Illustration 1

1. Rubber seal
2. Rubber seal, to be removed
3. Rubber seal, to be removed
4. Manually operated window

A. Upper front window edge, closed

B. Upper front window edge, open

C. Direction of lift

dimension "a" = .12" (3 mm)

(over)

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2. Open manually operated window completely and adjust the distance (dimension a, illustration 1) to .12" by turning the base plate (5, illustration 2).

   NOTE: A side view of the vehicle (see illustration 1) shows that when opening the window, it does not run parallel with the windshield pillar, but to a higher angle (see arrow), so that when the window is completely open it departs from the rubber seal by a distance of .12" (dimension "a") (illustration 1).

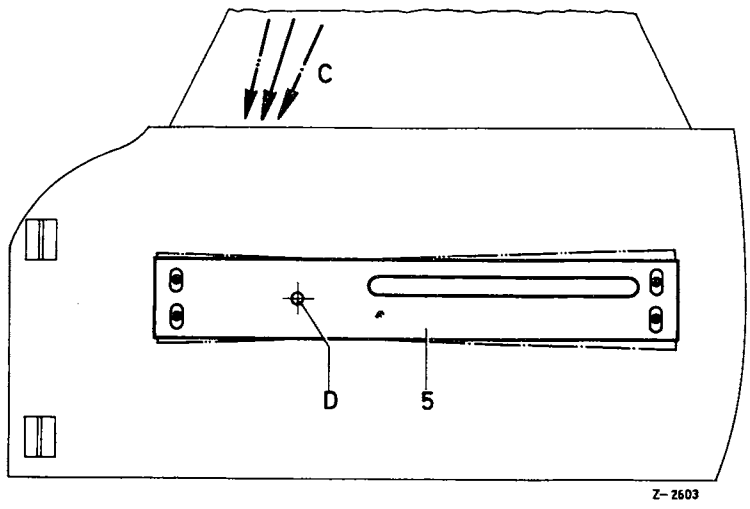

Illustration 2

5. Base plate
C. Direction of lift
D. Pivot point

3. With the window rolled up, adjust it to the rubber seal (1, illustration 1) at the windshield pillar. To do this, turn the window in the window retaining rail until the window front edge lies parallel with the windshield pillar (illustration 3).

   NOTE: During this procedure the base plate must <u>not</u> be turned.

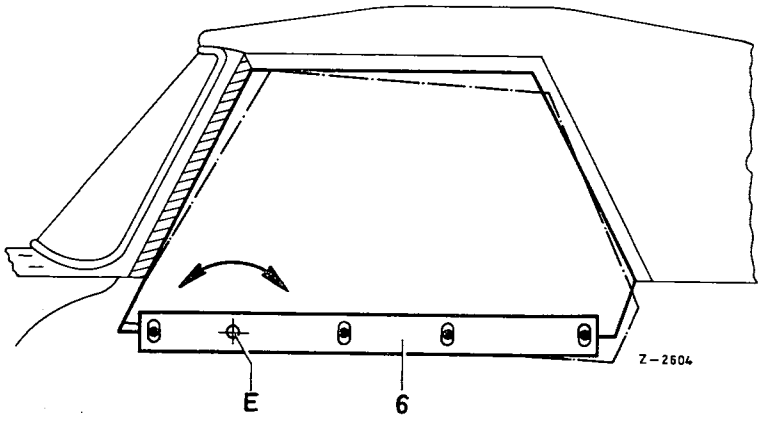

Illustration 3

6. Window retaining rail
E. Pivot point

(continued)

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4. Loosen the two screws in the bearing support (7, illustration 4) at the window lifting rail and push the window forward or backward until it rests with moderate pressure against the rubber seal of the windshield pillar. Bring the window guide rails in line with the glass and fasten them.

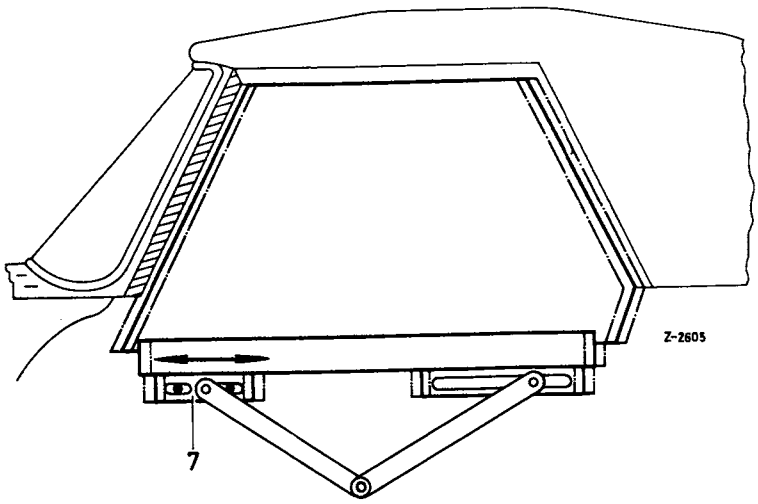

Illustration 4

7. Bearing support

5. Mount the upper and the rear rubber seals (2 and 3, illustration 1) and align them to the glass.

6. With the door open (just slightly ajar) adjust the upper lifting stop of the glass.

   a. For this purpose readjust the stop angles of the window retaining rail (9) in such a way that, with the window completely closed, there is still a distance of .08" (2 mm) (dimension b) between the top surface of the glass and the rubber seal (illustration 5).

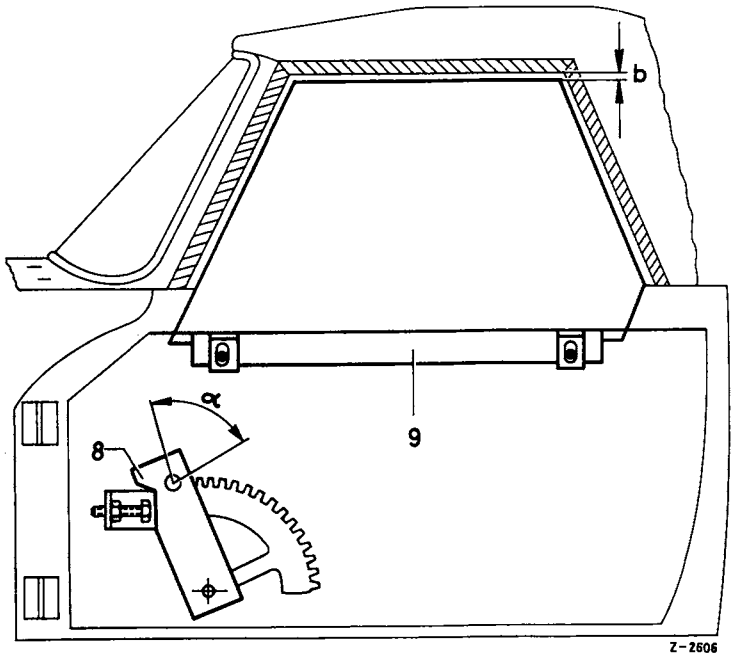

Illustration 5

8. Window Regulator
9. Window retaining rail
dimension "b" = .08" (2 mm)
angle = 50°

(over)

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b. Adjust the stop at the window regulator (8, illustration 5) in such a way, that, with the door open and the window completely closed, the manually operated window handle can still be turned approximately 500.

7. Adjust lateral pre-tensioning of the door-glass with the glass completely rolled up. Now, check if the upper front edge of the door-glass is just touching the rubber seal with the door being opened by "d" dimension (.59" = 15 mm), measured at the lower rear edge of the door. If necessary, re-adjust the door-glass by turning the two screws (10, illustration 6).

NOTE: When the door is closed the glass is pressed into the rubber seal and in this way is tightly secured in its seat.

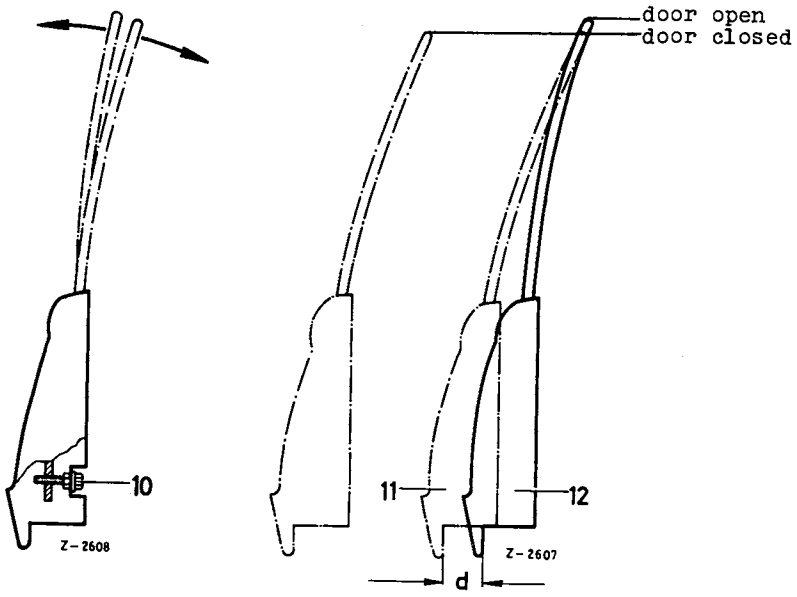

Illustration 6

10. Two screws to adjust pretensioning of glass.
11. Window is just touching rubber seal.
12. Door closed, window is pressed into the rubber seal.

dimension "d" = .6" (15 mm)

8. Check windows for ease of operation. If windows do not operate easily, do the following:

a. Loosen the window guide rail (16) at both mounting screws and move it parallel with the lifting direction of the window until a distance of approximately .08" (2 mm) (dimension "e", illustration 7) is reached. Retighten both mounting screws.

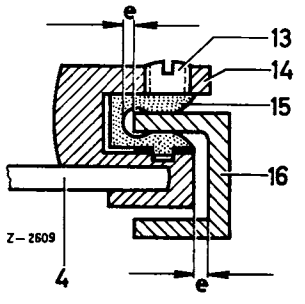

Illustration 7

4. Glass
13. Threaded pin
14. Guide jaw, front, bottom
15. Slide
16. Window guide rail

dimension "e" = .08" (2 mm)

b. Press the slides (15) and the threaded pin (13) together until the window has no clearance, but can still be moved easily. Secure the threaded pin with a screw locking enamel.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 80	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, August 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Adhesive for Interior Trim Materials

This is to advise you of a good adhesive product - "Scotch Grip" Rubber Adhesive # 1300, manufactured by the 3 M Co., (Minnesota Mining and Manufacturing Co.) of St. Paul, Minnesota, which is recommended for gluing interior trim materials such as vinyl, canvas tops, leather, tex leather, etc.

This adhesive has been approved by our factory for use according to the manufacturer's directions which are printed on the container.

"Scotch Grip" can be purchased locally either in an aerosol type spray can or in a non-pressurized can.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 45	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS Fort Lee, October 1968

Subject: Mounting of Chrome Moldings on the Side Windows -- Models 220 SEB Cp/Conv. through 300 SE Cp/Conv.

The side windows on the above mentioned models are framed with chrome moldings on the top. The seat and seal of the moldings to the panes are achieved by an appropriately profiled rubber seal. If the moldings are loose, the rubber seals have to be replaced (part no. 111 673 55 21).

NOTE: Although the required length for one pane is 22 inches, the new rubber seal is supplied in lengths of 100 inches.

Procedure

1. Remove chrome molding (if necessary soften rubber seal with a cleaning solvent such as "Scotch Grip" Brand Solvent #2) and remove rubber particles from the molding. Thoroughly clean the interior of the molding from glue residues with a cleaning solvent such as the one mentioned above.

2. Clean both sides of the new rubber seal with cleaning solvent. Apply "Scotch Grip" Rubber Adhesive #1300, manufactured by the 3 M Co., (see Service Information MB-T 80, Group 60-81/84-89, of August 1968) on the interior of the seal, fit and press it on the pane. (This adhesive must be purchased locally.)

3. Apply "Scotch Grip" on the interior of the molding. Fit molding by pressing it on the rubber seal of the side pane.

4. Keep the molding in position by placing several adhesive strips over the chrome molding. Place center of strips on top of the molding, then press down the ends of the strips on the sides of the pane.

(over)

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5. Close the corresponding door and roll up the window.

6. The drying time is approximately 12 minutes. Do not operate the door or window during this period.

The rubber seal is available through your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 67	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Door Lock Assembly -- Models 220/8 through 250/8

A new type door lock control lever is being installed in production on the door locks of the above mentioned models as of the following chassis end numbers:

Model	Chassis End No.
220 D/8	004 537
220/8	001 647
230/8	002 076
250/8	005 369

Should the door lock need replacing in any vehicle with chassis end numbers prior to those shown above, the door lock control lever can be replaced with the new type.

A. Installation of Door Lock Control Lever

1. Remove the door handle (1, illustration 1). (See Workshop Manual Passenger Cars as of 1968 - W 114/115, under Job No. 72-17, Section B.)

2. Prior to removal of old control lever, measure and record the distance between the lever and the rear of the lock housing.

3. Remove screw (4) from the door lock control lever (2). Remove door lock control lever. Attach new door lock control lever (3) to the same dimensions as previous lever (illustration 1).

4. Adjust new door lock control lever to same depth setting as the old one.

5. Re-install door handle and test operation.

The new type door lock control lever can be ordered under part no. 115 766 01 70 through your M-B parts depot.

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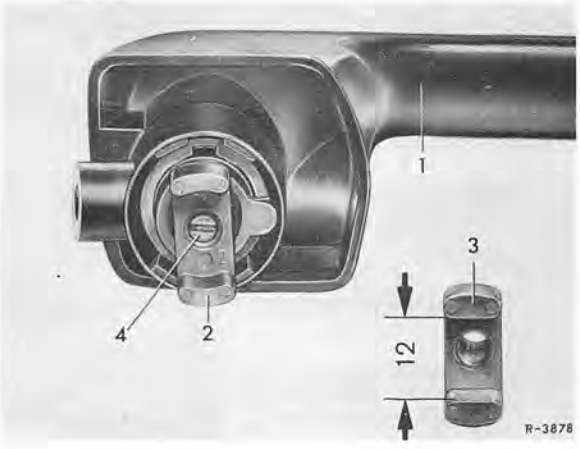

Illustration 1

1. Door handle
2. Old door lock control lever
3. New door lock control lever
4. Screw

12 mm = .47 inches

B. Stiffness of Door Lock Assembly

In some cases with low temperatures, the key cannot be turned or can only be turned slightly (with door closed). In this case the grease in the door lock has become stiff and the pawl does not engage fast enough. This may be corrected as follows:

1. Remove the door lock.
2. Using a cleaning solvent, remove any grease, clean and dry the entire lock assembly.
3. Apply a light non-freezing oil, e.g. Automatic Transmission Fluid (ATF) to all points of motion, especially the catches and the pawl bearing.
4. Reinstall door lock.

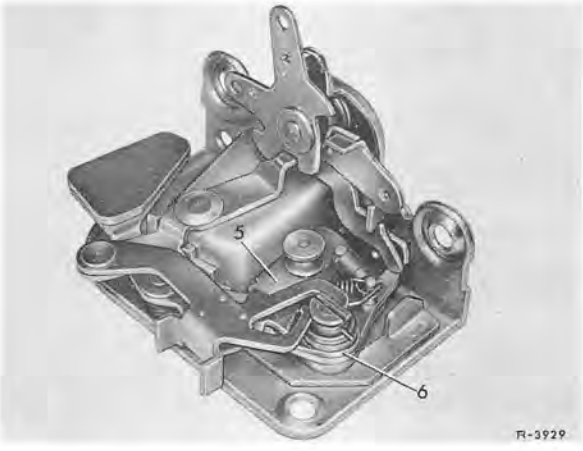

Illustration 2

5. Catch
6. Pawl

Warranty Claims

A warranty claim for parts plus 0.2 hours labor may be submitted for the "Installation of the Door Lock Control Lever" (item "A").

A warranty claim for 1.1 hours labor for correcting "Stiffness of the Door Lock Assembly" (item "B") may be submitted for both door locks.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 22	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS

Subject: Sliding Roof -- Model 600

During the next service inspection for each model 600 equipped with a sliding roof, the teleflex cable of the hydraulic sliding roof mechanism should be checked for the prescribed center distance between the holes.

If troubles have already occurred as a result of the teleflex cable sticking in the guide tube when the roof is opened, the teleflex cable should be replaced (see Service Information No. 73, Group 60-81/84-89, of November 1965). Newly-installed teleflex cables should also be checked for the prescribed center distance between the two holes of .315 - .472 in. (8 - 12 mm) (see illustration 4). If the dimension is greater than that specified, the teleflex cable should be altered to the correct length.

Time allowances

Checking teleflex cable:	35 minutes
Checking and modifying (replacing, if necessary) teleflex cable:	2 hours and 10 minutes

If either job is carried out together with another job, the respective time allowance should be decreased by 10 minutes.

Checking Procedure

1. Open sliding roof three quarters of the way; using a folding tool (8) or wooden wedge, loosen sliding roof lining (7) from clamps along front edge and remove lining in forward direction (illustration 1).

2. Close sliding roof.

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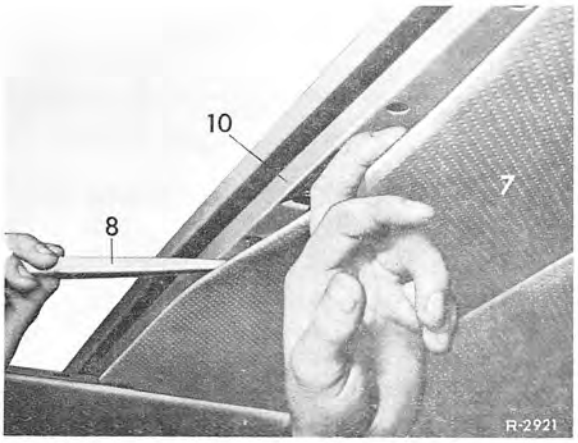


Illustration 1

7. Sliding roof lining
8. Folding tool (wooden wedge)
10. Sliding roof cover

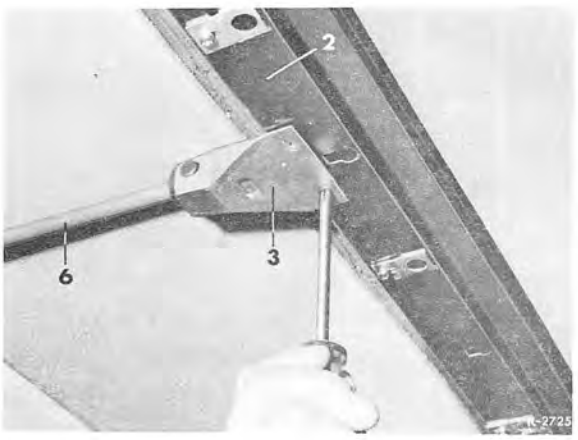


Illustration 2

2. Sliding roof frame
3. Guide plate
6. Guide tube

Illustration 3

3. Guide plate
4. Pin clamp
5. Sleeve

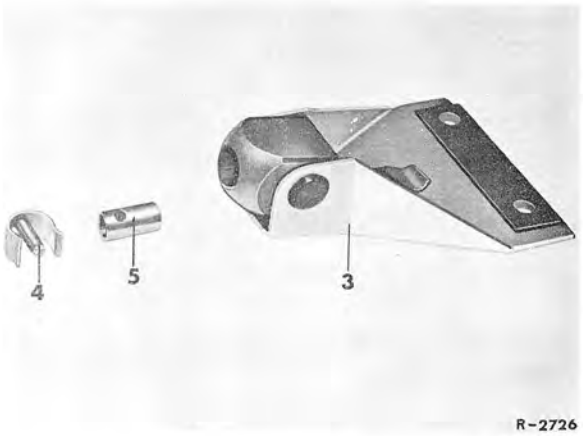
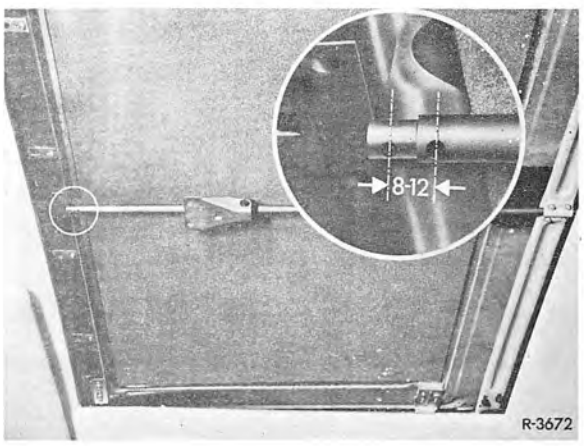


Illustration 4



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3. Depressurize comfort hydraulic system (see Workshop Manual, Type 600, Job No. 80-3, Section B).

4. Discharge pressure in hydraulic element by pushing sliding roof control switch downward (to "open" position).

5. Unscrew and push back guide plate (3) (illustration 2).

6. Remove pin clamp (4) and sleeve (5) (illustration 3).

7. Let engine run for a short time, until pressure has again accumulated in hydraulic system.

8. Press guide tube (6) slightly downward and push sliding roof control switch upward (to "close" position) until teleflex cable is completely extended from guide tube (6) (stop of element).

9. With the teleflex cable completely extended, measure the distance between the two holes (illustration 4). The distance should be .315 to .472 in. (8 to 12 mm); if it is greater than .472 in. (12 mm), remove the teleflex cable and shorten it the distance which exceeds .472 in. (12 mm).

Shortening teleflex cable

10. Unsolder the brazed joint with bore from the push rod.

11. Measuring from the brazing spot, mark and saw off the required length from the push rod.

    Note: The push rod may be shortened a maximum length of .984 in. (25 mm). Shortening it by a greater length is not permitted, since the teleflex cable would then emerge from the guide tube.

12. Braze joint and finish brazing spot.

13. Reassemble sliding roof.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 23	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 60-81 84-89	Passenger Cars

This Service Information supersedes:
Service Information No. 62, Group 60-81/ 84-89, of January 1967.
Modification: Instructions extended.

Fort Lee, July 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Central Locking System Vacuum Elements

After varying periods of operation, especially during cold weather, the vacuum elements of the central locking system may show a certain operational lag. This is caused by increased friction between the vacuum element control rod and the rod guide, due to lack of lubrication.

To correct this, the vacuum elements are often replaced, which is a very costly measure. To remedy this inconvenience and prevent it from recurring, the grease chambers simply should be refilled from time to time with Molycote grease BR 2, which is available through Dow Corning lubricant distributors, in accordance with the following procedure.

1. Remove door trim panels (see Service Manual or Workshop Manual, Passenger Cars starting August 1959, Job Nos. 72-3 through 72-7; for model 600, see Workshop Manual, Type 600, Job No. 72-6).

2. Pull the grease chamber (4) off the control rod guide (2), pack it with Molycote grease BR 2, and re-attach it by pressing it onto the bead of the guide (see illustration 1).

3. Move the control rod (3) back and forth several times to allow sufficient grease from the grease packing (5) to enter the area between the control rod (3) and the rod guide (2).

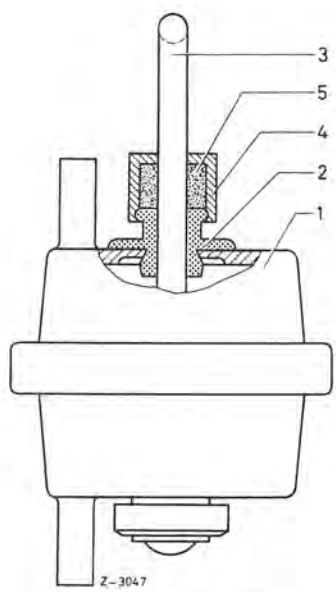

Illustration 1

1. Vacuum element
2. Rod guide
3. Control rod
4. Grease chamber
5. Grease packing

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Note: The vacuum elements at the air-conditioning control assembly and trunk lock are only accessible when these assemblies have been partially removed (see Workshop Manual, Type 600, Job No. 83-8 or 80-10, section F).

On model 600, the vacuum element for the fuel filler door lock can be screwed off together with the bracket only when the rear trunk compartment cover has been removed. On all other models, the vacuum element for the fuel filler door lock can be reached by removing the protective cap.

If, on passenger cars other than model 600, the fuel filler door cannot be opened even though the car is unlocked, perform steps 4 and 5.

4. Pull fuel filler door open as far as possible. Then, through the small gap, spray the control rod with a lubricant containing colloidal graphite and allow it to take effect (illustration 2).

5. Close the fuel filler door to prevent the control rod from rubbing against the striker plate. Then, with the engine running, actuate the locking system several times.

Illustration 2

4. Lubricant

Note: If the fuel filler door cannot be opened during the first attempt, repeat steps 4 and 5.

6. With the filler door open, clean the vacuum element and remove all lubricant coating from the rod guide and rod. Pack the grease chamber with Molycote grease BR 2 in accordance with steps 1 through 3.

7. Check striker plate for correct adjustment.

Note: The control rod must not rub against the striker plate. Therefore, adjust the striker plate so that there is a clearance of 0.12 - 0.16" (3 - 4 mm) between it and the control rod.

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Two different replacement vacuum elements for the fuel filler door lock are available through the M-B parts depot for all models except model 600:

with rod guide and grease packing	-	Part No. 112 800 06 75
without rod guide, maintenance-free	-	Part No. 108 800 14 75

For model 600, order part No. 100 800 45 75.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 17	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 60-81 84-89	Passenger Cars

Fort Lee, April 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Repairing Damaged Convertible Tops -- Type 230 SL (from chassis end No. 019020) and Types 250 SL and 280 SL (from beginning of series)

The correct procedure for lowering the convertible top on types 230 SL and 250 SL is described in detail in the respective owner's manuals. We additionally informed you of the proper procedure in Service Information articles No. 57 and No. 138, Group 60-81/84-89, of August 1967 and January 1968, respectively.

If, contrary to our instructions, the rear top bow is not arrested prior to lowering the top, the bow will not lift out of the storage compartment when the top is raised; and if, despite this condition, the top is pulled out of the storage compartment forcefully, the rear top bow will jam against the center catch in the storage compartment and in the hinges of the compartment cover, possibly causing damage to the top material and resulting in bent retaining rails (3, illustration 1).

To raise the top in such cases without damaging the top material and retaining rails, press the top tightly together, reach under the rear top bow, and lift the complete top out.

In case of a complaintabout the rear edge of a convertible top being damaged, first check to see if the top can be opened and closed properly in accordance with the prescribed procedure. If it can be, then only the damaged top material need be repaired or, if necessary, replaced. If, however, the retaining rails are bent so that the top bows cannot be anchored, either the rollers or retaining rails, depending upon the extent of damage to the retaining rails, must be replaced.

If the retaining rails are only slightly bent, replace the rollers with larger ones in accordance with procedure (A); if the retaining rails are excessively bent, replace the retaining rails in accordance with procedure (B).

A. Freeing up guide levers and replacing rollers

1. Raise top from storage compartment.

2. Remove chrome covers from front hinges.

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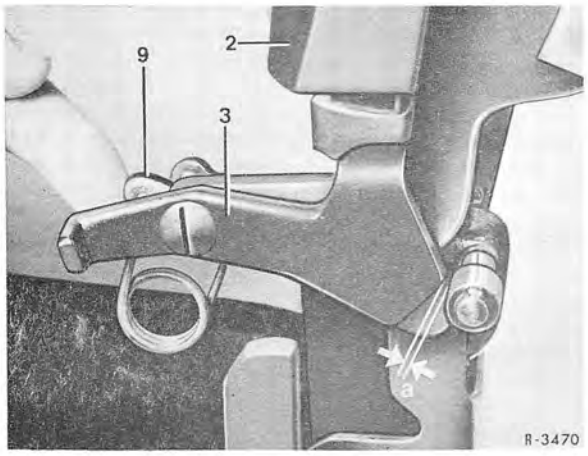

Illustration 1

2. Top bow
3. Retaining rail
9. Guide lever

a. Test dimension (.078 in. or 2 mm maximum)

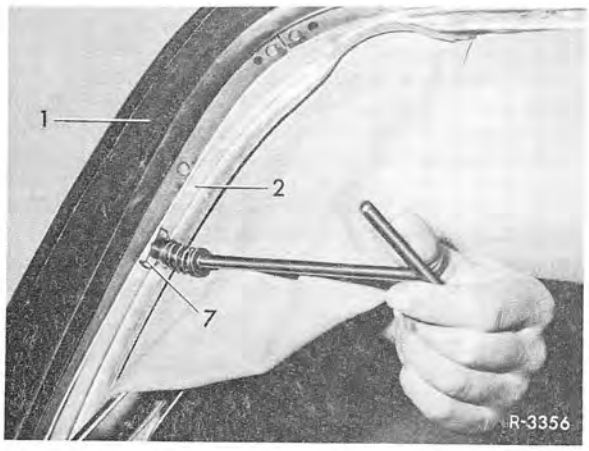

Illustration 2

1. Top
2. Top bow
7. Shim for attaching bolts of retaining rails

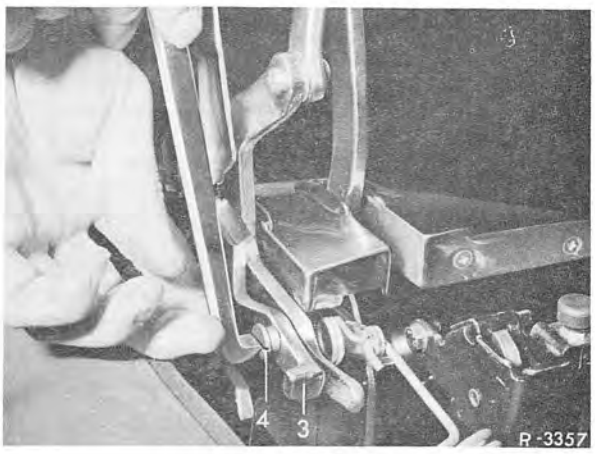

Illustration 3

3. Retaining rail
4. Oval-head screw

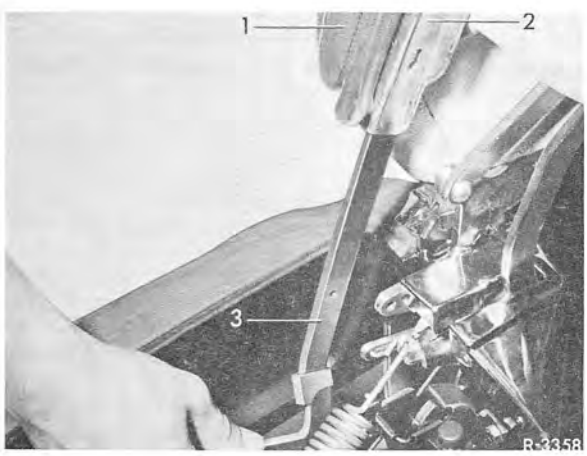

Illustration 4

1. Top
2. Top bow
3. Retaining rail

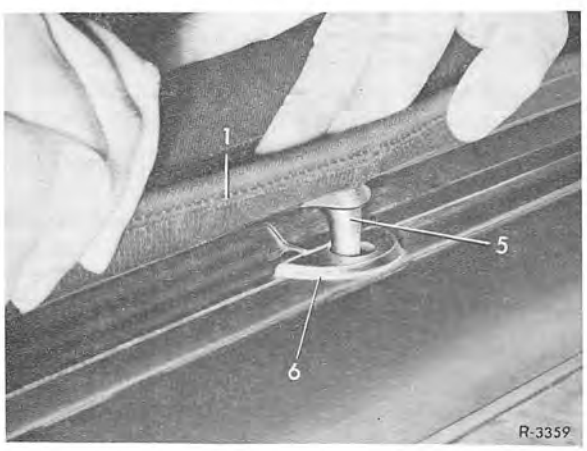

Illustration 5

1. Top
5. Anchoring pin
6. Escutcheon

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(continued)

3. Detach leg springs (illustration 1).

4. Check guide levers (9) with rollers. If rollers are stiff, remove top and eliminate cause of stiffness of guide levers.

5. Lift each guide lever (9) to stop position and fold up top bow (2) as shown in illustration 1. If dimension "a" (illustration 1) between either roller and retaining rail is greater than .078 in. (2 mm), replace rollers with .5 in. (13 mm) O.D. rollers (see parts list).

6. Check anchoring again (test dimension "a"; up to .078 in. or 2 mm permissible). If, in spite of replacing the rollers, the top bow cannot be sufficiently anchored, replace retaining rails in accordance with procedure (B).

Note: If the top is removed in order to replace the top material or to eliminate stiffness of the guide levers, reinstall top exactly as it was before. In addition, make sure the number of shims at each fastening point in the storage compartment is unchanged (normally 4 each at the right and 3 each at the left).

B. Replacing retaining rails

1. Fold up top (1) and top bow (2).

2. Unscrew retaining rail attaching bolts (illustration 2).

3. Remove oval-head screws (4) from retaining rail pivots (illustration 3).

4. Remove bent retaining rails from top bow and replace with new rails (illustration 4). Insert attaching bolts, but do not tighten yet.

5. Install new oval-head screws (4);secure by crimping and distorting exposed threads with a punch.

Adjustment of top bow after replacement of retaining rails

6. Attach top at windshield frame brackets and lock.

7. Fold down top bow (2) and, at the same time, pull it back far enough for the anchoring pin (5) to engage the escutcheon (6) a short distance behind the hole center and approximately 1/5 in. (5 mm) deep (illustration 5).

8. With the top bow in this position, tighten the inserted attaching bolts in the retaining rails. Then push top bow downward to engage the anchoring pin (5) (functioning check).

Note: If the top has been properly adjusted, you should be able to move the anchoring pin (5) slightly in the escutcheon (6) until it engages. If you cannot, correct locking and opening of the top bow will not be possible.

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Parts List

Quantity	Description	Part Number
1	Retaining rail, left	113 770 15 14
1	Retaining rail, right	113 770 16 14
2	Oval-head screw	113 984 13 31
If required:		
2	Rollers (.5 in. or 13 mm O.D.)	113 991 01 40

The above parts may be ordered through the M-B parts depots.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 48	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	60-81 84-89	Passenger Cars

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Mercedes-Benz "Kar Kare Kit"

The specially-developed paints used on M-B vehicles today require care compounds with compositions individually suited to them; the same applies to upholstery materials, plastic paneling, chrome-plated and light-metal body parts, and all other materials which require regular care and maintenance to prevent premature wear. The number of commercially-available car care compounds has become so great over the years that we are no longer able to evaluate all of them with regard to applicability to M-B vehicles.

We have, therefore, made up a Mercedes-Benz "Kar Kare Kit", containing recommended polishes, cleaners, etc. The materials contained in the kit are composed according to factory requirements and, thus, are exceptionally well suited for use on M-B vehicles. Furthermore, through constant quality control at the factory, we can ensure that the recommended materials will always correspond to the latest technical developments, while retaining a high standard of quality.

Only the materials contained in the M-B Kar Kare Kit should be used in your workshop in the future, and these materials should be recommended to customers who maintain their own cars.

The Kar Kare Kit comes in a handy carrying case and may be ordered through your M-B Parts Depot under part No. 000 986 00 00. The individual items contained in the kit may be ordered separately under their respective part numbers (see list on page 2).

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Mercedes-Benz Kar Kare Kit, part No. 000 986 00 00:

Qty.	Container	Description	Part Number
1	3½-oz. tube	MB Chrome Polish	000 986 06 60
3	3½-oz. bag	MB Windshield Washer Concentrate	000 986 41 71
1	½-pint bottle	MB Glass Cleaning Liquid	000 986 40 71
1	½-pint can	MB Spot Remover	000 986 08 71
1	½-pint can	MB Tar Remover	000 986 02 71
1	½-pint can	MB Paint Polish	000 986 05 61
1	½-pint bottle	MB Insect Remover	000 986 76 71
1	½-pint bottle	MB Auto Shampoo	000 986 15 71
1	3½-oz. bag	MB Polishing Cotton	000 986 03 62
1		MB Polishing Cloth	000 986 04 62

Price information may be obtained from Spare Parts Information No. 125, December 29, 1967, and the M-B parts price list of January 1, 1968.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 94	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 82	Passenger Cars

Fort Lee, December 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Power Window Motors

In order to simplify storing in our spare parts department, the power window motors will be delivered with rubber caps only, in the future.

The following should be observed when replacing the power window motor:

If the cable exit of the installed motor points upward, the rubber cap (4, illustration 1) prevents penetration of dirt and water. The rubber cap must be mounted to avoid trouble in the motor's operation.

Illustration 1

1. Power window motor
2. Inner door panel
3. Base plate
4. Rubber cap

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If, however, the window motor with the cable exit is installed pointing downwards, no rubber cap must be installed. In this position, no dirt or water can enter via the cable exit (illustration 2).

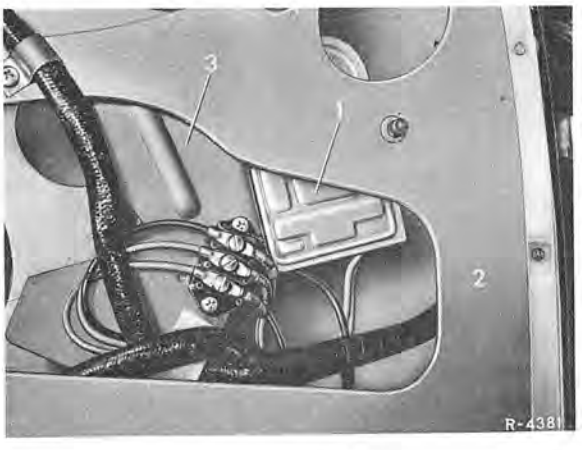

Illustration 2

1. Power window motor
2. Inner door panel
3. Base plate

If, in this case, the rubber cap remains on the device, water may accumulate in there and could cause trouble in the power window motor.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 116	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	82	Passenger Cars

Fort Lee, April 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Hella K 11145 Fog Light for Installation on Models 220/8, 220 D/8, 230/8, 250/8 (W 114/115) and 190 C, 190 DC, 200, and 200 D

In order to meet numerous customer requests, we are introducing a new type fog light, the Hella K 11145, which is now available for "after-market" installations on the above models only.

The fog lights are connected to the main light switch on the instrument panel. By pulling its knob out, they may be operated together with the low beam headlights. Switching to the high beam headlights will automatically turn the fog lights off.

The installation instructions below take the various State regulations into consideration regarding connection and installation of the lamps. However, we recommend that you check with your State Motor Vehicle Bureau for valid installation rules and then comply.

The Hella K 11145 Fog Light may be ordered from your Mercedes-Benz parts depot under part no. 115 820 00 56. The package includes one (1) fog light, plus mounting hardware. You will also need a bulb for the fog light, part no. 072601 012400.

NOTE: INSTRUCTIONS FOR INSTALLATION ARE NOT INCLUDED WITH FOG LIGHT, therefore, please follow instructions below.

INSTALLATION PROCEDURE - Hella K 11145 Fog Light

NOTE: These installation instructions are applicable only to model series W 114/115. On other models, installation is basically similar.

1. Remove battery from car.

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2. Remove <u>complete</u> fuse box from mounting bracket.

3. Disconnect gray/black and gray/yellow/green wires, which are connected to a common terminal at the #8 fuse.

4. Cut gray/black wire (the smaller of the two in diameter) close to the terminal, leaving terminal lug connected to the heavier gray/yellow/green wire.

5. Connect gray/yellow/green wire to either the #11 or #12 fuse on the consumer side.

6. Splice and tape gray/black wire (which you have already cut) to the other gray/black wire at #8 fuse. Install fuse box.

7. Remove phillips head screws from fog lamp covers and carefully remove covers.

8. Remove bailing clip from bulb socket and remove socket. Install bulbs, part no. 072601 012400.

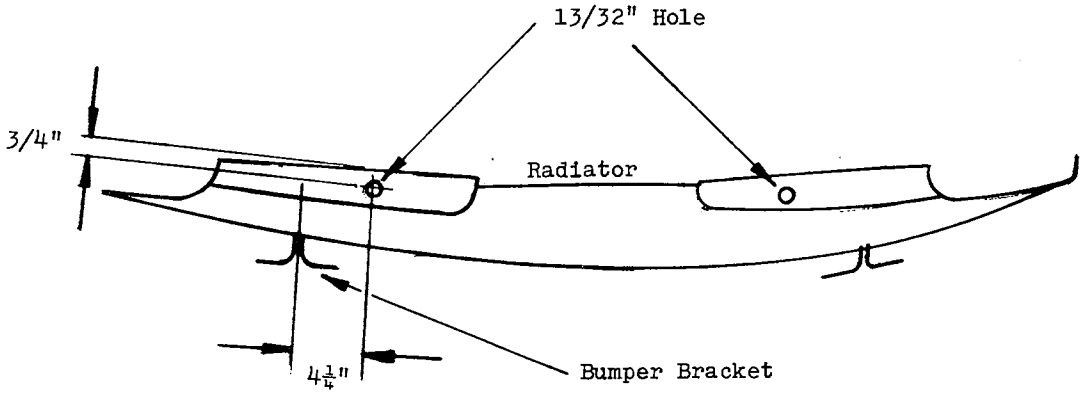
9. Connect #16 gauge wire (SAE), approximately 2 feet long, to bulb socket and pass through rubber grommet in lamp housing.

10. Reassemble lamps.

(See Illustration 1)

11. Measure a distance of 4-1/4" from the bumper brace toward the center of the car and 3/4" from the body panel. Center punch, then drill a hole 13/32" on each side through the body panel.

<u>TOP VIEW</u>



<u>ILLUSTRATION 1</u>

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(continued)

(See Illustration 2)

12. Install metal "U" washer and plastic washer on mounting bolt. Pass mounting bolt through hole and install large rectangular support plate, lock washer and nut.

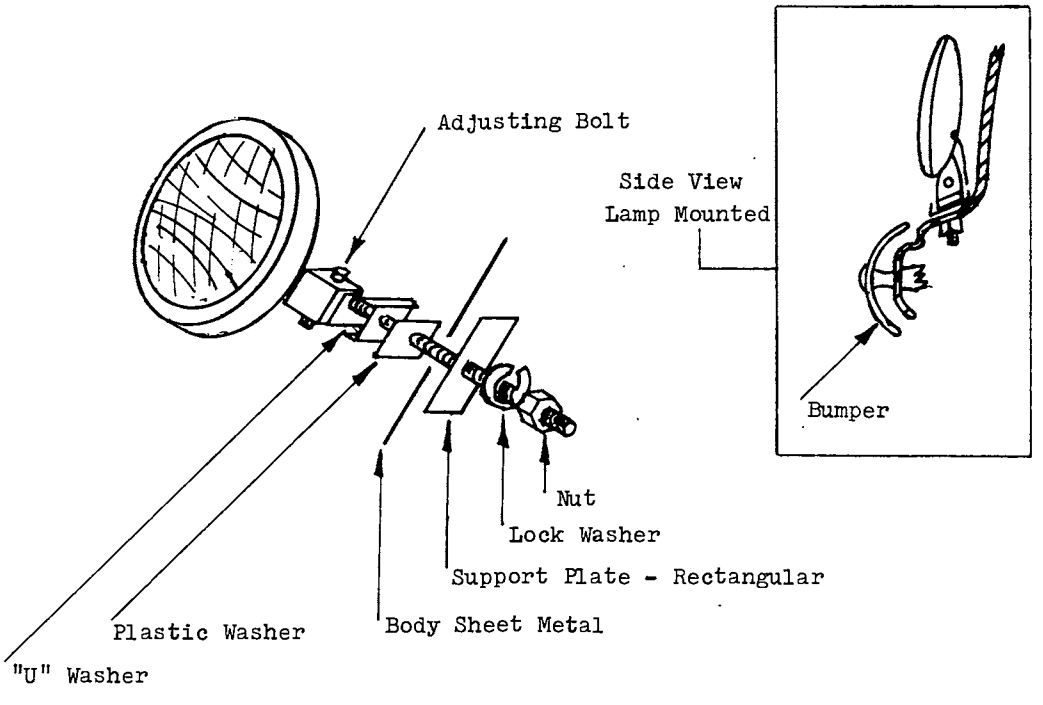

ILLUSTRATION 2

13. Align Fog Light with face parallel to headlight face. Tighten mounting bolt. (Do not tighten lamp adjusting bolt at this time.)

14. Remove chrome headlight bezels.

15. Lead wire through bumper bracket opening and through rubber sleeve leading into the headlight housing cavity.

(See Illustration 3)

16. Remove cover from bakelite socket and remove gray/green wire.

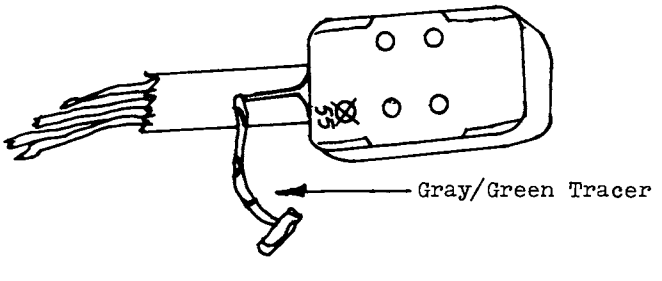

ILLUSTRATION 3

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17. Slit back plastic cable cover about 1" being careful not to damage the wires inside the cover. Pull gray/green wire to the end of the slit. Close slit with electrician's tape.

18. Remove existing end and install solderless spade connectors. Install male connector on Fog Light lead. Join both leads and insulate with tape.

19. Reinstall headlight bezels and battery.

(See Illustration 4)

20. Park car 25' from a wall, positioned perpendicular to that wall. Measure height to center of fog light lens. Adjust beam to a 4" drop (from the measurement taken at the lens) at 25' distance. Tighten adjusting bolt.

    NOTE: Liberal adjustment is provided in all directions by the adjusting bolt.

Correct Aiming = Dimension "B" should be 4" less than dimension "A" at 25' distance.

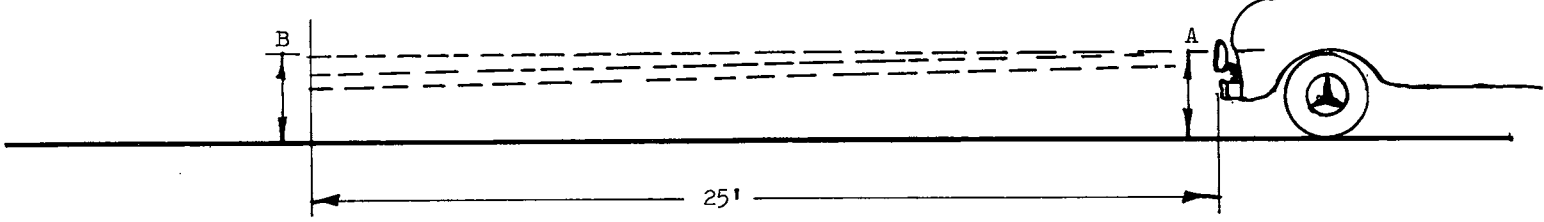

ILLUSTRATION 4

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 134	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 82	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Windshield Washing System -- Model 600

A more powerful pump for the windshield washing system is now installed on Model 600, starting with chassis end no. 001 064. This pump is also available for replacement installation from your M-B parts depot.

A. PROCEDURE FOR REMOVING OLD PUMP

Refer to Illustration 1

1. Remove brake fluid reservoir (1) carefully from clamp (2) by lifting upward.
2. Unscrew bracket (3) of brake fluid reservoir.
3. Disconnect electric plug connection (4) and hose connections (5) from water pump (6).
4. Remove bracket (3), including windshield washer pump (6).
5. Unscrew old washer pump from bracket (3).

Illustration 1

1. Brake fluid reservoir
2. Clamp
3. Bracket
4. Electric plug connection
5. Hose connections
6. Washer pump

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NOTE: New pump (6) is to be attached at the lower hole (7) of bracket (3) - illustration 2.

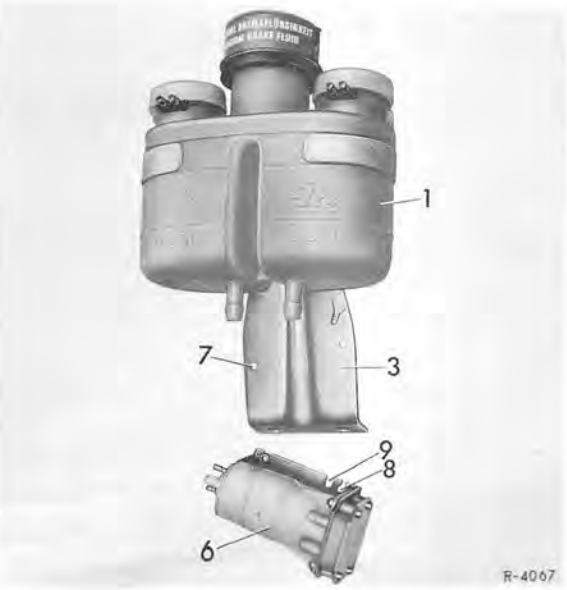

Illustration 2

1. Brake fluid reservoir
3. Bracket
6. Washer pump
7. Lower hole
8. Right-hand hole cutout
9. Left-hand hole cutout

Illustration 3

1. Brake fluid reservoir
3. Bracket
6. Washer pump
8. Right-hand hole cutout
9. Left-hand hole cutout

B. PROCEDURE FOR INSTALLING NEW PUMP

Refer to Illustration 3

1. Position pump (6) so that the right-hand hole cutout (8) is positioned above the edge of the bracket (3).

Refer to Illustration 2

2. On bracket (3), make a mark of the pump's (6) left-hand cutout (9). Remove pump and drill a hole of 0.18" (4.5 mm) diameter.

3. Attach pump (6) to bracket (3).

Refer to Illustration 1

4. Install bracket (3); connect electric plug connection (4) and water hoses (5).

5. Install brake fluid reservoir (1) carefully in clamp (2).

NOTE: Check the reservoir for leaks following its installation. If refilling of brake fluid is necessary, please be

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reminded to use only brake fluid with a very high boiling point.

The new pump for the windshield washing system may be ordered under part no. 100 869 03 21 from your M-B parts depot.

In case of warranty, a claim for parts, plus 1.0 hour labor may be submitted for this job.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	123	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	82	Passenger Cars

Fort Lee, January 1969

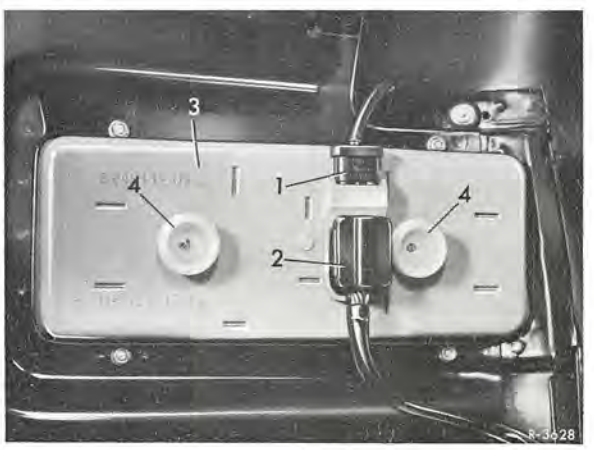
TO OUR MERCEDES-BENZ DEALERS

Subject: Rear Light Unit -- Models 220/8 through 250/8 (Model Series W 114/115)

The rubber strings for sealing the lenses of the rear light unit may settle in the course of time. In order to balance this, it is sufficient to slightly retighten the knurled nuts (4) for mounting the lenses.

Illustration

1. Plug for license-plate light
2. 6-prong plug
3. Rear light housing
4. Knurled nut



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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 96	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 82	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Anti-Static Interference Suppressors -- Models 190 C through 600

1. Interference Suppressors on the Wheel Hubs

When driving at relatively high speeds on dry roads, the wheels may become electrostatically charged due to increased friction on the tires. This static electricity is then transmitted through the vehicle via the front wheel bearings. With the radio turned on, it will be audible as heavy static interference coming from the radio speaker.

In order to eliminate this condition, anti-static interference suppressors (parts listed below) can be installed on both front wheel hubs.

Parts Required	Part Number
Wheel Cap	108 334 00 25
Contact Spring	108 547 00 85

As of August 1968, all vehicles are being equipped with the above mentioned parts during series production.

2. Interference Suppressed Spark Plugs

As soon as the supply of the suppressed type spark plugs is depleted, we will no longer stock this item.

When installing new spark plugs (of the non-suppressed version) only the suppressed-type spark plug wire connectors with a resistance of 5 kilo ohms can be used (see "Parts Required"). Likewise, if the previous suppressed-type spark plugs are to be used, only spark plug wire connectors with a resistance of 1 kilo ohm are to be used, since, spark plug wire connectors with high resistance may under no circumstances be installed together with non-suppressed spark plugs.

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Spark plug wire connectors (5 kilo ohms) to be used only in conjunction with non-suppressed spark plugs:

Parts Required	Part Number
Straight connector	000 156 30 10
Angular connector (for no. 1 cylinder)	000 156 32 10

The above mentioned parts are available from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 83	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	82	Passenger Cars

Fort Lee, August 1968

This Service Information
supersedes Service Information
No. MB-T 79, Group 82, dated
July 1968.
Changes: Additional Chassis End Numbers.

TO OUR MERCEDES-BENZ DEALERS

Subject: Electrically Operated Windows

The Federal Highway Administration issued a warning, which was published in their "Department of Transportation News", dated May 19, 1968, stating that power windows can result in injury to unattended children in an automobile where the power windows can be operated with the ignition key in the "OFF" position.

In the case of customer requests to allow the power windows to be operative only when the ignition key is in "ON" position and/or the engine is running, we have listed below the instructions for disconnecting the "over-ride" position of the power window safety switch.

A. Disconnecting Procedure for models 200, 230, 230 S, 250 S/SE, 280 S/SE/8, 280 SE/8 Cp. Conv., 280 SE (with long wheelbase), and 300 SEL/8.

Remove the power window safety switch from the control panel using a screwdriver to snap it out.

Disconnect the thin brown and white striped wire from the terminal.

Cut off the connector lug.

Fold wire back and tape to the harness.

Snap lock-out switch assembly back into the control panel.

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B. Disconnecting Procedure for models 220/8, 220 D/8, 230/8, and 250/8.

Remove connecting plug from the relay with the 6-prong connector located on the bottom of the relay bracket closest to the fire wall on the right side of the engine compartment.

Open plug and remove the white cable with the green stripe from the connector.

Cut off the metal cable lug, fold the wire back and tape it to the wiring harness.

Plug connector back into the relay.

The power windows are only operative with the ignition switch in the "ON" position as of the following chassis end numbers:

Model	Chassis End No.
220/8	012 558
220 D/8	027 331
230/8	011 700
250/8	015 156
280 S/8	013 727
280 SE/8	012 142
280 SE/8 (long wheel base)	012 174
280 SE Cp/8	001 229
300 SEL/8	000 789
300 SEL/8 6.3	000 119

The time required for either of these modifications is .25 hours.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	58	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	82	Passenger Cars

Fort Lee, July 1968

TO ALL MERCEDES-BENZ DEALERS

Subject: Windshield Wiper Noises

Following are work instructions for eliminating various types of noises which may be caused by the windshield wipers because of too much or too little contact pressure on the windshield and/or by twisted windshield wiper arms.

Prior to checking the wipers for the possible cause of the noise, a thorough cleaning of the windshield and the wiper blade is imperative. Be sure to replace any worn or damaged wiper blades. (Refer to Service Information No. 123, Group 00, dated January 1968).

1. Chatter-Type Noises

This type of noise may be caused by twisted wiper arms, which cause the wiper blade not to tilt correctly in the opposite direction of the movement of the windshield wiper. With the rubber lip unable to reverse its direction in either end position, right or left, these chatter-type noises will result.

To remedy this situation, using your hand or a screwdriver, bend wiper arm on the hook-in joint in such a manner that the end of the wiper arm lies parallel to the wiped area which it encompasses. This can be accomplished with the aid of a self-made wooden check block (1, illustration 1 and illustration 2). Be sure to check that the wiper arm still makes contact in the upper wiper area of the windshield.

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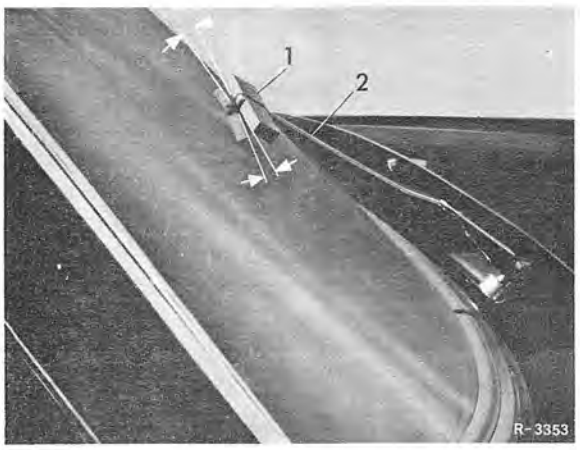
1. Wooden check block

2. Wiper arm

Illustration 1

Twisted Wiper Arm



1. Wooden check block

2. Wiper Arm

Illustration 2

Correct Wiper Arm Position

2. Whistling-Type Noises

This type of noise may be caused by too little contact pressure against the windshield, thereby causing whistling-type noises when the wipers move in both directions.

To remedy this situation, lift off the wiper arm and bend slightly towards the windshield to increase the contact pressure. A check with the wooden check block should be made to be sure that the wiper arm is not twisted or damaged in any way after bending.

The contact pressure of the wiper blade can be checked by using a spring scale. The correct pressure values are listed on the following page.

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Model	Wiper Blade Length	Specified Contact Pressure
190 C, 190 DC, 200, 200 D, 230	12 inches (30.5 cm)	16 lbs ± 2 lbs (450 ± 50 g)
230 S	13 inches (33 cm)	19 lbs ± 2 lbs (550 ± 50 g)
220 D/8 to 250/8, 250 S, 250 SE, 280 S, 280 SE, 300 SE, 300 SEL, 300 SEL/8, 300 SEL/8 6.3	16 inches (40 cm)	21 lbs ± 2 lbs (600 ± 60 g)
230 SL, 250 SL, 280 SL	16 inches (40 cm)	16 lbs ± 2 lbs (450 ± 50 g)
600	16 inches (40 cm)	23 lbs ± 2 lbs (650 ± 50 g)

3. Clicking-Type Noises

This type of noise may be caused by excessive clearance at the joints of the large and small wiper blade brackets or excessive clearance between the zinc die cast cap situated on the wiper shaft and the spring case of the wiper arm.

To remedy this situation, determine the specific cause of the noise and replace the damaged part.

All parts are available through your Mercedes-Benz parts depot.

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C O R R E C T I O N

Re: Service Information No. 120, Group 82, dated February 1968, "Auxiliary High-Beam Headlights -- Passenger Cars"

A typographical error appears on page 1, paragraph 4, of the above article, which was published in Service Information Issue MBNA 2/68.

Please change your copies to read as follows:

1. Lay a 13-gauge cable (Brown & Sharp gauge) from terminal 30 at the light switch, via the relay operating contacts (terminals 30 and 87), to an auxiliary two-pole fuse box, part No. 000 545 03 01.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 120	Ordner File Classeur Archivador Service Information	Gruppe Group Groupo Grupo 82	Passenger Cars

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Auxiliary High-Beam Headlights -- Passenger Cars

If auxiliary high-beam headlights - which are offered by various firms - are legally permitted and a customer desires them on his car, they are usually connected in such a way that they can be operated together with the standard high-beam headlights.

On our passenger cars, however, such a connection would increase the load on the dimmer switch from 90 up to 200 watts, a higher total electric load than the dimmer switch contacts are laid out for. Therefore, to prevent heavy wear or premature failure of the dimmer switch, the current supply to the auxiliary high-beam headlights must be made by means of a relay.

When subsequently installing auxiliary high-beam headlights, make sure that a relay with operating contact is installed. The relay, part No. 000 542 58 19, should be connected as follows:

1. Lay a 13-gauge cable (Brown & Sharp gauge) from terminal 30 at the light switch, rig the relay operating contacts (terminals 30 and 87), to an auxiliary two-pole fuse box, part No. 000 545 03 01.

   Note: The terminals of the auxiliary two-pole fuse box (8 amp. each) should be connected on the input side.

2. Lay a 15-gauge cable (B & S) from the auxiliary fuse box to each of the high-beam headlights.

3. Connect relay terminal 86 to terminal 56a of fuse #9 with a 17-gauge cable (B & S).

4. Connect terminal 85 of relay to ground.

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On cars which have already been equipped with auxiliary high-beam headlights whose current supply is not directed via a relay, an operating contact relay should be installed as soon as possible.

The necessary parts may be ordered through your M-B Parts Depot.

Experience has shown that complaints about dimmer switches can always be attributed to excessive loads resulting from the subsequent installation of additional electrical consumers.

In the future, warranty claims concerning dimmer switches will be declined if the switches show evidence of excessive loads.

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Article No.	File	Group	Application
MB-T 239	SERVICE INFORMATION	83	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TESTING AND REPAIR OF THE YORK DA 210 AIR CONDITIONING COMPRESSOR

1. Reconditioning:

When noises are detected originating from the York DA 210 air conditioner compressor, it should first be determined if reconditioning is possible before the compressor is replaced. Presently, several parts repair kits are available for this compressor and we request that these kits be used whenever possible.

Compressors which have damage to the cylinders, crankshaft, or housing must naturally be replaced. In this case, the electromagnetic clutch assembly, if serviceable, must be transferred to the new compressor.

Air conditioner compressors returned for warranty claims must be intact, in other words, the rotalock valve must be installed and the various connection ports plugged. Plugs may be obtained from the new compressor. Warranty claims will be processed only when these instructions are followed. Incomplete compressors will be returned to the sender.

Repair Parts Listing

Nomenclature		Part No.
Cylinder Head Cover w/Gasket Set	1. version	000 586 07 13 (1)
Cylinder Head Cover w/Gasket Set	2. version	000 586 09 13 (1)
Cylinder Head Cover w/Gasket Set		000 586 17 13 (2)
Valve plate w/Gasket Set	1. version	000 586 08 13 (1)
Valve plate w/Gasket Set	2. version	000 586 10 13 (1)
Gasket Set Valve Plate	1. version	000 586 12 13 (1)
Gasket Set Valve Plate	2. version	000 586 13 13 (1)

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Nomenclature	Part No.
Rotalock Valve	000 131 18 04
Flange valve (Pressure Side)	000 131 27 04 (2)
Flange valve (Intake Side)	000 131 26 04 (2)
Flange Gasket	000 131 39 80 (2)
O-Ring (between valve and cylinder head cover)	010 997 69 45 (2)
Rotalock valve seal	002 997 59 40
Seal Set Input side	000 586 06 13
Gasket Compressor Cover (lower)	000 131 38 80
Gasket Compressor Flange (rear)	000 131 24 60
O-Ring Oil level Check Screw	007 997 84 45
Repair Set Connector Parts (electric	000 586 03 13
Repair Set Connecting Parts(clutch)	000 586 04 13

1) For version clarification see Service Information No. 83, Group 83, dated December 1969.

2) For Models 300SEL/8 - 6.3 and 600.

Parts may be ordered from our Mercedes-Benz Parts Depots.

II. A/C Compressor Testing:

If no visible compressor damage is apparent and the cooling capacity is not sufficient, the compressor must then be tested. The condition of the flange gasket and flutter valve on the valve plate must be checked.

1. Start engine and operate between 1000 and 1200 RPM.

2. Switch on air conditioner to maximum cooling capacity.

3. After an approximate 10 minute warm-up period, slowly close the suction valve (6), then the pressure valve (7). Shut off engine. (Illustration 1)

NOTE: The warm-up period is necessary to ensure that the compressor is warm. Throughout the entire test, the compressor must be warmer than the ambient temperature so that condensation does not form in the system.

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4. Remove the locking caps (4) from the suction and pressure valves. Connections must be clean and dry.

5. Connect the testing device (Pressure Gauge) pressure hose (6) to the pressure valve (10). Open valve (4) to the pressure gauge and close the valve to the suction gauge (Item 5 in Figure 2) on the testing device (1).

6. Drill a 0.020" (0.5 mm) diameter hole through a cap nut and install the nut (8) on the central threaded stud of the testing device.

7. Start the engine and let it idle.

8. Switch A/C on. The test must be conducted without interruption. (See Note, Item 3).

Caution: Do not operate compressor with valves closed for more than 15 seconds.

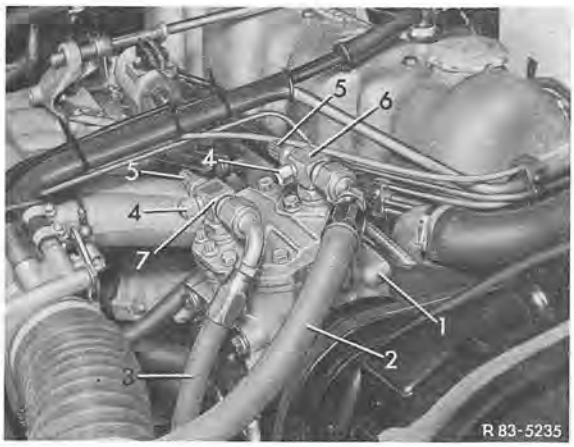

Illustration 1

1. A/C Compressor
2. Hose from Damper to Compressor
3. Hose from Compressor to Condenser
4. Locking Cap
5. Cover
6. Intake Valve
7. Pressure Valve

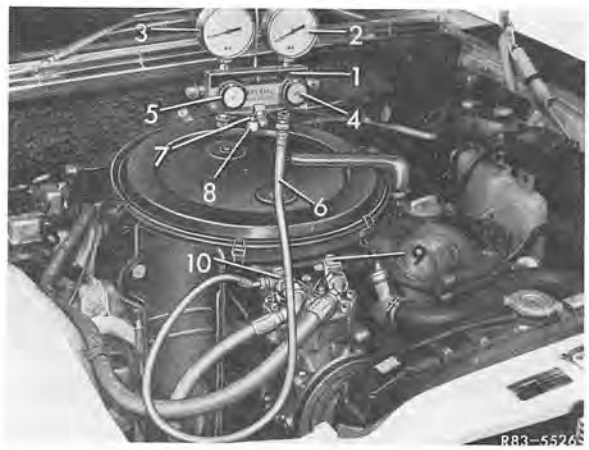

Illustration 2

1. Testing Device
2. High Pressure Gauge
3. Low Pressure Gauge
4. Valve
5. Valve
6. Pressure Hose
7. Threaded Stud
8. Capnut
9. Suction Valve
10. Pressure Valve

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9. Check the maximum pressure on the high pressure gauge (2) and switch off air conditioner. Pressure must be between 174 (12.0 atu) and 232 (16.0 atu) psi.

10. If the specified pressure is not received, either the valve plate flutter valve is malfunctioning or the flange gasket is leaking. Compressor reconditioning is then necessary. Should the flutter valve and gaskets be serviceable, the only remaining defect is piston ring damage. If this be the case, compressor replacement is required.

11. Check compressor oil level and replenish if necessary.

12. Replace the suction valve (4) locking cap (6), open the suction valve for a short time.

    NOTE: Due to the freon return flow, the air in the compressor will be released through the pressure valve.

13. Remove pressure hose (6) and replace pressure valve (7) locking cap (4).

14. After exchanging the compressor, or in the event the compressor is serviceable, reconnect it to the A/C system and if necessary replenish the freon(R12).

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Article No.	File	Group	Application
MB-T 237	SERVICE INFORMATION	83	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: BEHR AIR CONDITIONER DISCHARGE NOISE, MODELS 300 SEL AND 280 SE CP/CV WITH 3.5 LTR. ENG.

Complaints have been received regarding droning noises originating from air conditioning systems installed in the above referenced models. These noises are predominate between 1,500 and 3,500 rpm, under high discharge pressure.

This noise source may be eliminated by installing a muffler (Part No. 709 835 08 97) in conjunction with the A/C discharge line:

NOTE: This muffler will not be installed during production, however, a similiar production change is expected.

INSTALLATION INSTRUCTIONS ARE AS FOLLOWS:

1. Disconnect battery, cover fenders.
2. Purge refrigerant from system.
3. Isolate compressor from system by closing the discharge and suction service valves.
4. Remove discharge hose between discharge valve and compressor.

NOTE:
Do not remove the protective caps from the new hose until it is ready for installation. Before connecting the hose apply a few drops of refrigerant oil to the flare nut seat and use new copper sealing rings for each connection.

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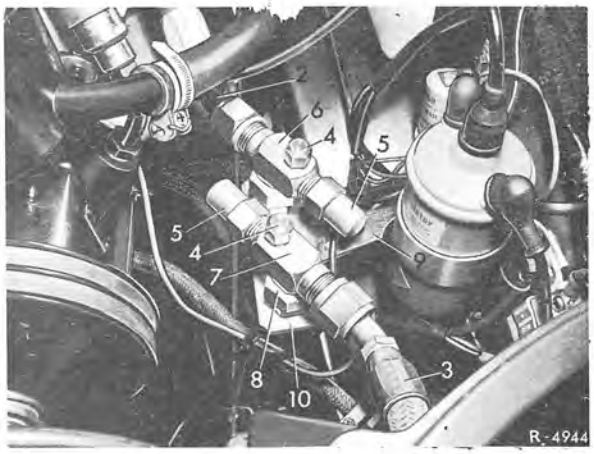
5. Connect the new hose to the compressor, from the underside of the vehicle (Illustration 1).

Illustration 1



6. Route the refrigerant hose to the discharge valve and connect.

NOTE: Ensure that the hose and/or muffler does not interfere with the compressor, brake lines, or emergency brake cable (Illustrations 2 and 3).

Illustration 2

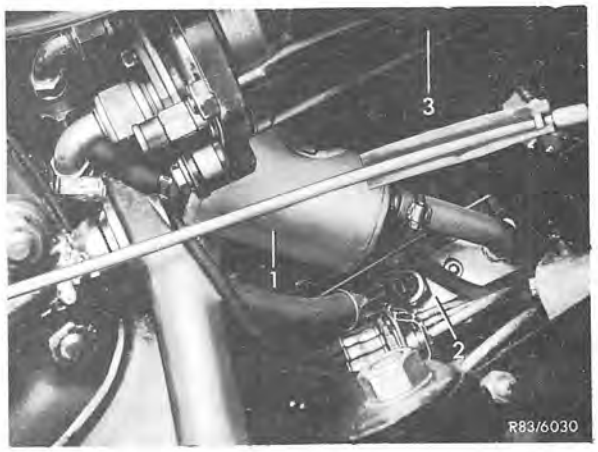


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Illustration 3

7. Secure connections at compressor and discharge valve.

8. Evacuate system, recharge as required and inspect for leakage.

NOTE: Complete evacuation is not required as the system is not defective (leaks, etc.). Evacuation to 29.5 psi vacuum is sufficient.

A warranty claim for 1.5 hours labor, plus parts may be submitted.

Parts may be ordered from our Mercedes-Benz Parts Depots.

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Article No.	File	Group	Application
MBSI 160	SERVICE INFORMATION	83	PASSENGER CARS

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: HARD OPERATING/HEATER CONTROL VALVES - ALL MODELS EXCEPT 600

Numerous articles have been published emphasizing the importance of using corrosion inhibitors in the cooling system all year around. Inhibitors prevent rust accumulation and scaling in cooling system parts, lines and also provides lubrication to heater control valves.

The Fuels and Lubricants Manual, Page 311, lists recommended corrosion inhibitors. Past experience has shown that antifreeze alone will not always adequately prevent corrosion, therefore utilization of these inhibitors is strongly recommended.

With extended operation however (approximately 10,000 miles) the effectiveness of rust inhibitor solutions tend to deteriorate. Consequently, the heater control valves may be difficult to operate or inoperable if they have not been used for some time.

Complaints received regarding hard to operate or inoperable heater valves may be rectified by adding approximately 2 ounces (30 cu.cm) of corrosion inhibitor solution to the cooling water. Bring the engine to operating temperature and repeatedly actuate the heater control valves when the thermostat opens. The corrosion inhibitor compound will penetrate rust, scale, etc. and the valves should operate freely after a period of time.

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Should a sticking heater control valve require removal of the plug, remove the "O" ring, clean the plug and housing in an oil based solvent, apply Molykote stopcock Lubricant 1104 when reassembling.

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Article No.	File	Group	Application
MB-T 203	SERVICE INFORMATION	83	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: THERMO KING AIR-CONDITIONER COMPRESSOR NOISES

The majority of air-conditioner compressors returned to Thermo King for noise, have been tested with their special equipment and found to be without defects. In view of this, it is believed that service personnel are misinterpreting other noises and vibrations as being faulty compressors. This Service Information will explain the most common sources which should be investigated and if defective, corrected before determining if replacement is required.

There are three primary sources of noise that can easily be mistaken for a defective compressor.

Excessive belt "whipping" is probably the most common of the three. When the compressor drive belt is loosely adjusted, excessive throbbing and vibrations will occur, generally along the longest leg of the belt. A close visual inspection will reveal this as the source of noise and correct tension will eliminate the problem.

A loose clutch center bolt, improperly installed clutch, or defective clutch bearing will all result in the pulley striking the field coil when the clutch is engaged. This sharp knocking sound can easily be picked up in the compressor housing since the clutch is attached directly to the crankshaft. Proper torque on the center bolt, correct installation, or replacement of the clutch pulley will of course, cure the noise.

Excessive head pressure due to an overcharge of refrigerant or air in the system is another common source of compressor noise. Proper evacuation and refrigerant charge will correct this situation.

Should excessive compressure noise be apparent, the expansion valve may be blocked. MB-T 200, Group 83, dated September 1970, gives detailed instructions for necessary corrections.

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Compressor or basic unit cartons which have been accidently inverted during shipment will result in excessive oil in the cylinders and cylinder head of the compressor. If this has occurred, the compressor will generally be quite noisy after initial installation and charging.

NOTE: DO NOT REPLACE THE COMPRESSOR UNTIL THE SYSTEM HAS BEEN IN OPERATION FOR 30 MINUTES!

You will find that the noise will quickly diminish and completely disappear within this period of time.

Since a compressor has many moving parts, it is normal for it to generate some noise just as a motor generates some noise as it is operated. The refrigerant gases, as they are moved by the compressor pistons, also produce noises and vibrations as a normal situation.

The level of acceptable noise varies with each customer and generally an explanation of how the compressor functions and what it does, serves to satisfy a customer. That is, if the compressor is performing its work it is natural to produce noise.

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Article No.	File	Group	Application
MB-T 178	SERVICE INFORMATION	83	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: OIL CHARGE/COMPRESSOR OIL LEVEL CHECKS, YORK A/C COMPRESSOR

York A/C Compressors, Models 209/210 are high-speed versions. Therefore, satisfactory operation and sustained compressor life depends, to a great extent, upon proper lubrication. This service information will outline working data required to aid you in ensuring proper compressor lubrication.

I. CHECKING OIL LEVEL BEFORE/AFTER SYSTEM STABILIZATION

Should an A/C system's output prove unsatisfactory after normal check-up, the system may be overcharged with oil, especially if a replacement compressor has been installed. It is, therefore, necessary that the system's oil level be checked after the system has been operated and the desired inside body temperature stabilized, because an undetermined amount of oil will be absorbed by the refrigerant and entrained in the A/C system.

For this reason, it is necessary that the lubricant level be checked, using the following procedures:

NOTE: To obtain a correct lubricant reading, the system must have been operated, and the compressor crankcase warm.

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With the service gauges connected to the compressor-service valve ports, slowly close the suction service valve until the suction pressure gauge reads zero (0), or slightly below. Stop the engine at this time. When the suction gauge reads slightly above zero (0), quickly close the suction service valve completely, then close the discharge valve.

CAUTION: It is important that the suction service valve be closed slowly when pumping down the system. Abnormal amounts of oil may siphon from the compressor due to the sudden pressure reduction on the refrigerant-saturated oil in the compressor crankcase.

After both service valves are closed, the suction pressure will slowly rise to a gauge pressure of approximately five (5) pounds. The remaining compressor pressure may be relieved by unscrewing the oil-check plug five (5) full turns. Bleed the pressure off until the gauge reads zero (0).

Next, remove the oil check plug and "O" ring. Determine the oil level utilizing the chart on page 4. The dipstick reading (depending on compressor position) should correspond with readings shown on the Oil Charge Chart.

The compressor oil level should never be below a minimum level of six (6) ounces, or exceed a maximum of ten (10) ounces. Excessive amounts of oil are detrimental to the system's operations.

NOTE: Prior to each season, the oil level must be checked. If compressor replacement is required to a system that has been in operation, the new compressor oil charge should not exceed ten (10) ounces.

CAUTION: When inserting the oil filler plug, the sealing "O" ring must be slipped over the threads as to ensure it is not twisted. Insert the oil filler plug, tighten until snug. Should the plug leak, do not attempt to stop the leak by overtightening!

The leak may result from dirt under the seat, under the "O" ring, a fractured "O" ring, a damaged oil filler plug seat, or filler plug opening. To stop leaks at the oil filler plug, first correct the mechanical cause, then insert a new "O" ring.

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NOTE: The compressor oil level must be checked when installed, again after the system has been fully charged with refrigerant, operated, and brought to the desired interior compartment temperature.

All "DA" model compressors are factory-charged with 5/8 pint (10 ounces) of "Suniso" No. 5 or Texaco Capella "E", grade 500 viscosity oil. Only these, or equivalent oils should be used when adding or changing oil. Keep the oil storage container tightly capped at all times!

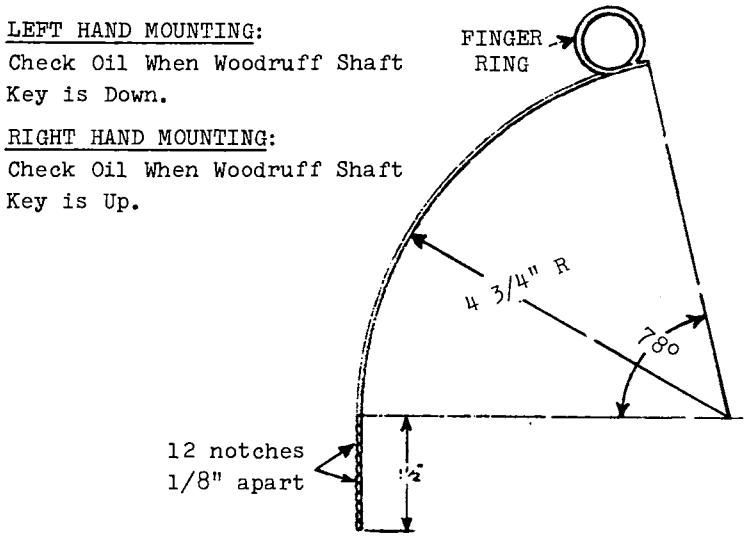
Make an initial oil level check after the compressor is mounted and before initial operation. On vertical mount installation, use either plug for oil level checks. However, on other than vertical mount installations, the upper plug should be utilized.

II. A/C COMPRESSOR OIL LEVEL DIPSTICK / OIL CHARGE CHART

The A/C compressor oil level dipstick (See Illustration) may be purchased or fabricated locally and may be utilized for checking all compressors, in any mounting position.

Should you fabricate this dipstick, 1/8 in. diameter stock, 8 5/16 in. in length, preferably of non-ferrous material (to prevent corrosion) may be used. A notched end is advisable, for visibly determining oil levels.

ILLUSTRATION



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Oil charge levels in ounces, at various dipstick levels (for both horizontal and vertical mountings), are indicated in the oil charge chart shown below. The oil charge, after system stabilization, should be maintained at a minimum of six (6) ounces and a maximum of ten (10) ounces, for best results.

OIL CHARGE VS. DIP STICK DEPTH MEASUREMENTS

Oil Charge, Ounces	6	8	10	12	16
Vertical Mount	7/8 in.	1 in.	1-1/8 in.	1-7/16 in.	1-7/8 in.
Horizontal Mount	13/16 in.	1 in.	1-3/16 in.	1-5/8 in.	1-15/16 in.

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MB-T No. 200	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 83	PASSENGER CARS

FORT LEE, SEPTEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT:
1. TECHNICAL SPECIFICATIONS AND TEST DATA FOR AIR-CONDITIONING SYSTEMS
2. CLEANING OF EXPANSION VALVE FILTER SCREEN (IMPORTANT)
3. INSTALLATION OF NEW FILTER SCREEN
4. ADJUSTMENT OF THERMOSTATIC SWITCH

This service information is divided into four sections in an effort to provide a complete and thorough understanding of our air-conditioning systems. Read the S.I. in its entirity before attempting adjustments, etc. Should the air-conditioning unit provide poor output, instructions in section 2, page 7, should be applied first.

1. TECHNICAL SPECIFICATIONS AND TEST DATA FOR AIR-CONDITIONING SYSTEMS.

Attached are charts which will enable you to check the air conditioning systems used by Mercedes-Benz in order to determine whether or not these systems are operating satisfactorily under various temperature and humidity conditions. The influence of the humidity, however, is being eliminated in the test procedure as described hereafter.

The test data provided on pages 3 and 4 cover a temperature range from 65° to 110°F and measurements taken may slightly differ from the values given in the charts.

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TEST PROCEDURE REQUIREMENTS

Before and during testing, the vehicle must be parked entirely in the shade, a well ventilated room, or otherwise protected from sunshine. (This eliminates the influence of the vehicle's color and type of glass). The vehicle should be occupied by one person only.

Engine

An engine speed of 2,000 RPM should be maintained with the air conditioning system switched "ON" and the engine hood closed.

Air Conditioning System

The air conditioning system should be set to full cooling capacity, full blower speed, fresh air louvers should be closed, all nozzles adjusted to blow horizontally. All windows must be closed.

TEST DATA

All test measurements are to be taken after the air conditioning has been "stabilized". This stable condition will be obtained after approximately 20 minutes of operation at high temperature and high humidity. The influence of humidity will be eliminated extensively when the windows are closed and the system has been operated for approximately 20 minutes before the test is being performed.

1. Temperature of the passenger compartment has to be measured 20 in. (50 cm) behind the upper edge of the windshield and 4 in. (10 cm) below the dome.

2. The exhaust temperature of the cold air at the nozzles should not be below 32°F (0°C).

2.1 The temperature of the refrigerated air at the nozzles should not vary by more than 4°F (3°C).

2.2 The temperature of the refrigerated air at the nozzles should not vary by more than 7°F (5°C).

2.3 The temperature of the refrigerated air at the nozzles should not vary by more than 9°F (6,5°C).

* depends on Model - see charts pages 3 and 4

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TEMPERATURE - PRESSURE RELATIONSHIP (SEE TEST PROCEDURE)

MODELS 220/8, 220 D/8, 230/8, 250/8, 250/8 CP. [2), 2.1]

MODEL 300 SEL/8 6.3 [2), 2.3]

AMBIENT (OUTSIDE) TEMPERATURE		COMPARTMENT TEMPERATURE		HIGH PRESSURE		LOW PRESSURE	
F°	C°	F°	C°	(lb/in^2) psi	(kp/cm^2) atu	(lb/in^2) psi	(kp/cm^2) atu
65	18.5	47-51	8.5-10.5	155-175	10.9-12.3		
70	21	50-54	10-12	160-180	11.3-12.7		
75	24	52-56	11.5-13.5	165-185	11.6-13	9 - 11	0.6-0.8
80	26.5	57-61	14-16	170-190	12-13.4		
85	29.5	63-66	17-19	180-200	12.7-14	9.5-11.5	0.65-0.85
90	32	64-68	18-20	195-215	13.7-15.1	10.5-12.5	0.7-0.9
95	35	68-72	20-22	210-230	14.8-16.2	12 - 14	0.8-1.0
100	38	73-77	23-25	220-240	15.5-16.9	14 - 16	0.95-1.15
105	40.5	79-83	26-28	245-265	17.2-18.6	16-18	1.1-1.3
110	43	83-87	28-32	260-280	18.3-19.7	19-21	1.3-1.5

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TEMPERATURE - PRESSURE RELATIONSHIP (SEE TEST PROCEDURE)

MODELS 250 S/SE, 280 S/8, 280 SE/8, 280 SEL/8 [2), 2.2]

AMBIENT (OUTSIDE) TEMPERATURE		COMPARTMENT TEMPERATURE		HIGH PRESSURE		LOW PRESSURE	
F°	C°	F°	C°	(lb/in^2) psi	(kp/cm^2) atu	(lb/in^2) psi	(kp/cm^2) atu
65	18.5	45-49	7.5-9.5	140-160	9.8-11.2	13-15	0.9-1.05
70	21	50-54	10-12	150-170	10.5-12	13.5-15.5	0.95-1.1
75	24	54-57	12-14	160-180	11.2-12.8	14-16	1.0-1.15
80	26.5	57-61	14-16	165-185	11.6-13	15-17	1.05-1.2
85	29.5	63-66	17-19	175-195	12.3-13.7	15.5-17.5	1.1-1.25
90	32	64-68	18-20	185-205	13-14.4	16-18	1.15-1.3
95	35	68-72	20-22	195-215	13.7-15.1	17-19	1.2-1.35
100	38	72-75	22-24	205-225	14.4-15.8	17.5-19.5	1.25-1.4
105	40.5	75-79	24-26	210-230	14.8-16.2	18-20	1.3-1.4
110	43	79-81	26-27	220-240	15.5-16.9	18.5-20.5	1.3-1.45

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TECHNICAL DATA FOR AIR CONDITIONING SYSTEMS

MODEL	220/8, 220 D/8	230/8, 250/8, 250/8 Cp.,	250 S, 250 SE, 280 S/8, 280 SE/8, 300 SEb	300 SEL/8	300 SEL/8 6.3
Make of A/C	BEHR / FRIGIKING / THERMO KING		BEHR		
Refrigerating Capacity	FRIGIKING/THERMO KING appr. 14-15000 Btu/h BEHR approx. 16 000 Btu/h (4 000 kcal/h)		Approx. 14 700 Btu/h (3 700 kcal/h)		
Filling Cap.	BEHR 42 oz. (1,2 KG) TH.KG./FRIG. 30 oz.	BEHR/FRIGIK. 26 oz.	2.2 lbs (1.0 kg) = 35 oz		
Refrigerant	R 12				
Compressor	York Aluminum Model RDA 210				
Compressor Oil Capacity		Minimum	Normal	New	
	Oil Charge:	6.0 oz. (170 g)	8 oz. (220 g)	10.0 oz. (280 g)	
	Dip Stick Depth:	7/8 in. (23 mm)	1.0 in. (25 mm)	1 1/8 in. (28 mm)	
Oil Brand	"Suniso" # 5, "Texaco", Capella "E", Shell Clavus 129 (500 viscosity)				
Magnetic Clutch, Nominal Diameter	6.0 in.	FRIGIKING 6.7 in. Pitts BEHR, THERMO KING 6.5 in.	7.0 in.	6.0 in.	
V-Belt	1/2 x 54 in. (Deyco) (12.5 x 1375 mm)	1/2 x 52 in. (Deyco) (12.5 x 1325 mm)	1/2 x 52 in. (12.5 x 1325 mm)	2 x 1/2 x 44 in. (2 x 12.5 x 1125 mm)	
Compr. Ratio	1 : 0.77	1 : 0.89	1 : 0.83	1 : 1.05	
Condensor Face Area/Depth	263.5 sq. in./2.4 in.deep 3 Rows (17.0 dm^2/62 mm)	263,5 sq. in./1.6 in.deep 2 Rows (17.0 dm^2/40 mm)	279 sq. in. / 1.6 in. deep - 2 Rows (18.0 dm^2 / 40 mm)		
Evaporator Face Area / Depth	93 sq. in. / 3.3 in. deep - 4 Rows (6.0 dm^2/85 mm)		79 sq. in. /3,3 in, deep - 4 Rows (5.1 dm^2/85 mm)		
Air Volume At 12 V (cu.ft/min.)	225 (6.3 m^3 / min.)		260 (7.4 m^3/ min.)		
Blower Rate of Power Input at 12 V (W)	FRIGIKING: 120 BEHR: 120 THERMO KING: 90		180		
Total A/C Wattage Input at 12 V (W)	FRIGIKING/ BEHR approx. 160 THERMO KING approx. 140		approx. 220		
Lowest Cold Air Exhaust Temper.	32 to +39° F (+0 to + 4° C)		32 to 39° F (+0 to + 4° C)		

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TECHNICAL DATA FOR AIR CONDITIONING

MODEL	250 S, 250 SE 280 S/8, 280 SE/8 280 SEL/8, 300 SEL/8/SEb	230 SL, 250 SL 280 SL/8	220 B/SB/SFB 220 SEB Cp/Cv 230 S, 250 SE Cp/Cv 280 SE/8 Cp/Cv
Make of A/C	FRIGIKING THERMO KING (For U.S.A. Vehicles only)	FRIGIKING	B F H R
Refrigerating Capacity	approx. 12 700 Btu/h approx. 3 200 kcal/h	approx. 13 000 Btu/h approx. 3 300 kcal/h	approx. 14 000 Btu/h approx. 3 500 kcal/h
Filling Capacity	A/C 170 I,II,III 45 oz. A/C 174/175 36 oz.	2.2 lbs. (1.0 kg) = 35 oz.	1.75 lbs (0.8 kg) = 28oz
Refrigerant	R 12		
Compressor	York Aluminum Compressor Model A 210		
Oil Capacity	Minimum / Normal / New Oil Charge 6.0 oz (170g) / 8.0 oz (220g) / 10.0 oz (280g) Dip Stick Depth 7/8 in (23mm) / 1 in (25mm) / 1 1/8 in (28mm)		
Oil Brand	"Suniso" 5, "Texaco" Capella "E", Shell Clavus 129 (500 viscosity)		
Magnetic Clutch, Nominal Diameter	6.7 in. Pitts FRIGIKING 6.5 in. THERMO KING	6.0 in.	7.0 in.
V - Belt	1/2x52 in. (Deyco) (12.5x1325 mm)	2x1/2x42in. (2x12.5x1075 mm)	1/2x53 in. 12,5x1350 mm
Compressor Ratio	1 : 0.98	1 : 0.80	1 : 0.83
Condensor Face Area/Depth	285 sq.in./1.7 in. deep - 2 Rows (18.4 dm^2/44 mm)	310 sq.in./.79 in. deep - 1 Row (20.0 dm^2/20 mm) 66.7 sq.in./3 in. deep - 3 Rows (4.3 dm^2/75 mm)	226 sq.in/2.36 in. deep - 2 Rows 146 dm^2/60 mm
Evaporator Face Area/Depth	93 sq.in./3.36 in.deep - 4 Rows (6.0 dm^2/88 mm)	55.8 sq.in./3.74 in.deep - 5 Rows (3.6 dm^2/95 mm)	66.6 sq.in./3.54 mm 4.3 dm^2/90 - 3 rows
Air Volume At 12 V (cu.Ft/min.)	250 (5.6 m^3/min.)	200 (5.6 m^3 / min.)	230 (6,5 m^3 / min.)
Blower Rate of Power Input at 12 V (Watts)	TH. A/C 170 I,II,III: 120 W A/C 174 184 Watts A/C 175 184 Watts	approx. 115 W	approx. 80 W
Total A/C Wattage Input at 12 V (Watts)	approx. 220	approx. 140	approx. 120
Lowest Cold Air Exhaust Temperat.	32° to 40° F	32° to 40° F	32° to 40° F

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2. CLEANING OF EXPANSION VALVE FILTER SCREEN

It has been found that the "low pressure" readings, which are shown in the preceding temperature - pressure relationship charts, may rapidly drop to 0, when accelerating the engine speed from idle. If such a condition is found, the expansion valve filter screen (see Illustration) may be clogged and should be cleaned. All Thermoking and Frigiking Air Conditioning Units are equipped with a long conical type filter screen as shown in the illustration, whereas the BEHR units are equipped with a smaller, flat type filter screen (indicated by dotted line in Illustration). It has been found that on BEHR units with this flat-type filter screen, a possibility exists that the screen will be clogged. In this case, we advise that the discharge line be detached from the expansion valve and to remove the filter screen with a suitable tool, such as a needle or a bent piece of wire. This type filter should be replaced with the long, conical type filter screen, which is available from our Mercedes-Benz Parts Depots under Part No. 715 835 00 72. The long, conical filter screen entered production on 8-1-70.

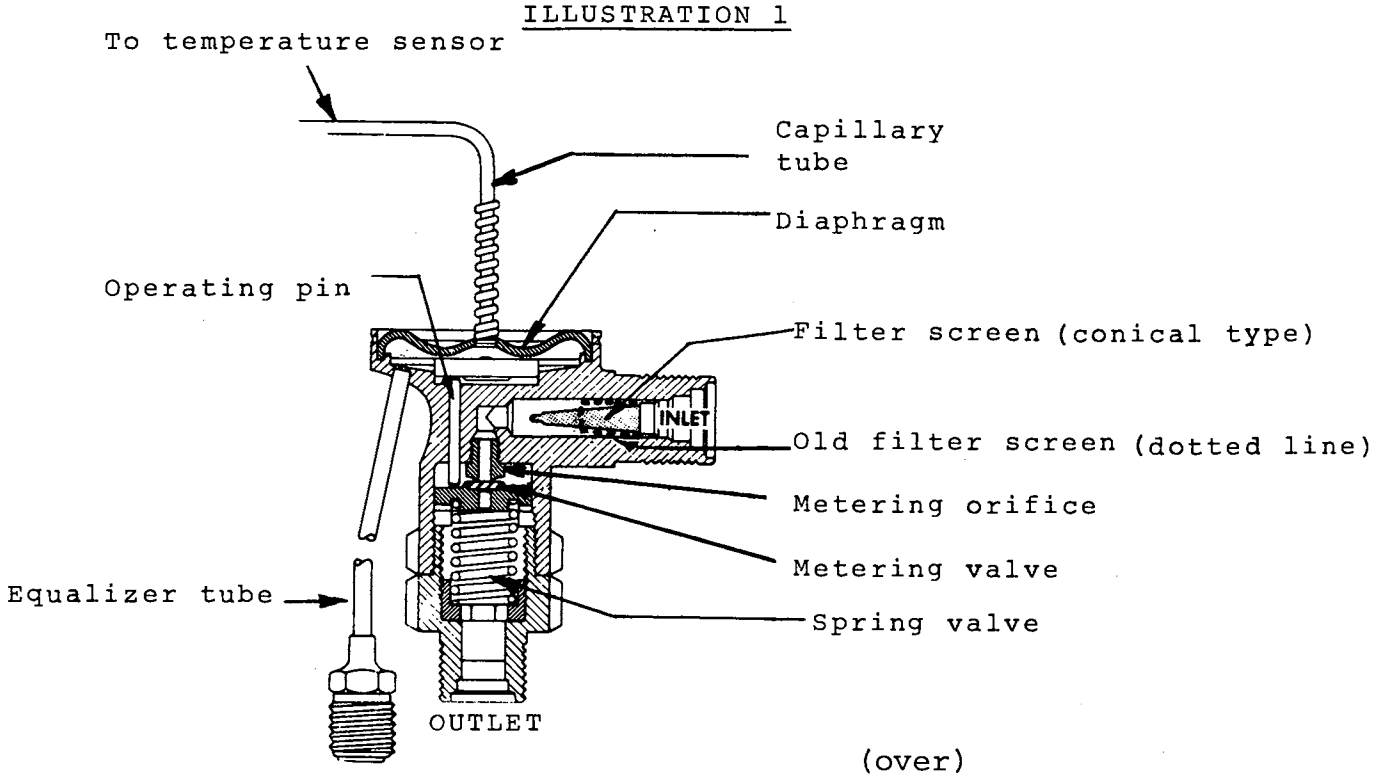
NOTE: WHEN REPLACING OR CLEANING THIS FILTER SCREEN, IT IS NOT NECESSARY TO REMOVE THE EXPANSION VALVE ITSELF.

In case of warranty, the following labor rates may be claimed in addition to the filter screen:

Models 220/8, 220 D/8, 230/8
250/8 Sedan and Coupe.....2.25 hours

Models 250 S, 250 SE, 280 S/8
280 SE/8, 300 SEL/8 2.8 and 6.3.....3.00 hours

ILLUSTRATION 1



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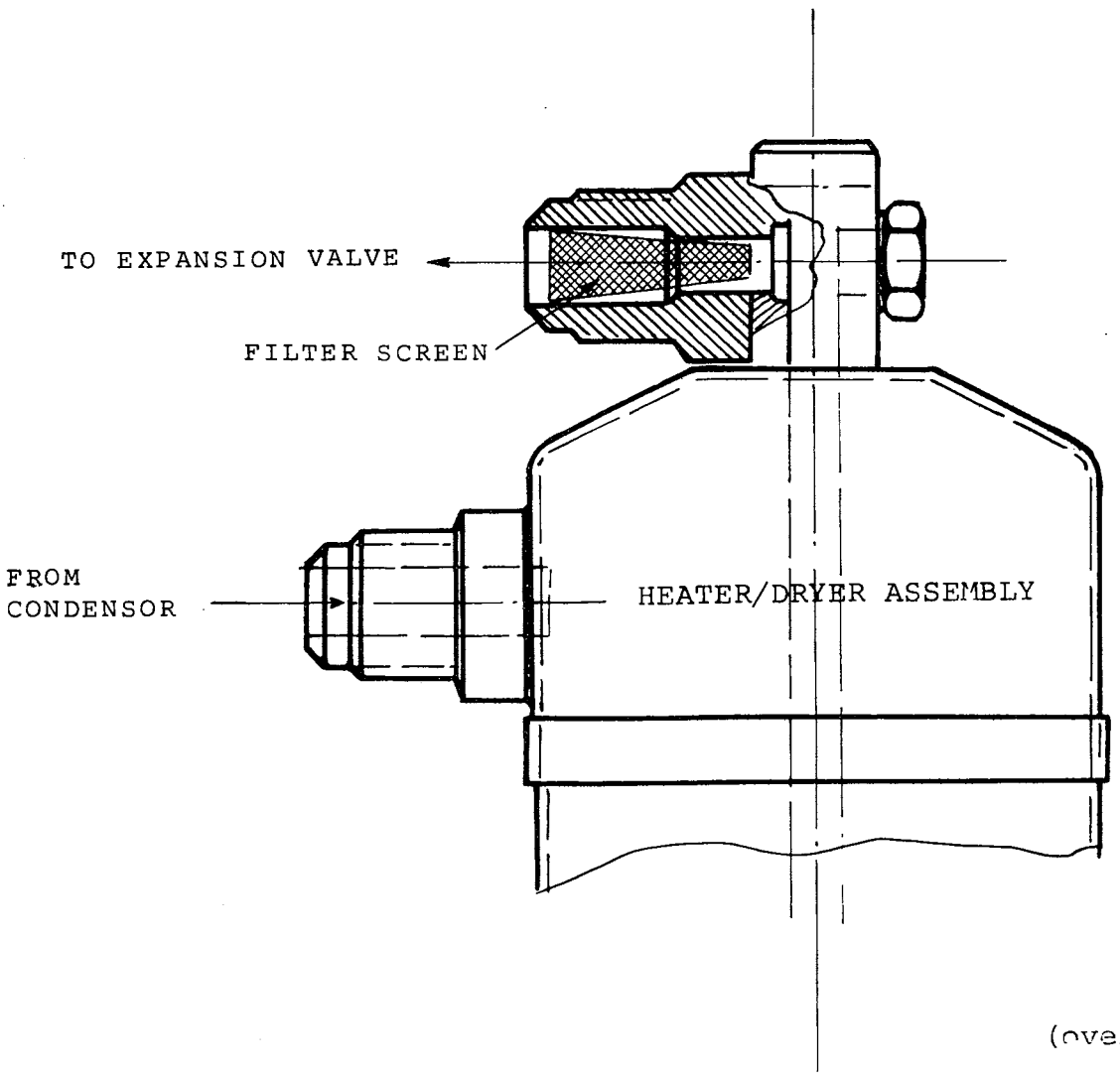
3. INSTALLATION OF NEW FILTER SCREEN

An additional filter screen, Part No. 715 835 00 71 has been introduced for installation in the receiver/dryer discharge connection assembly (Illustration 2). Installation should be accomplished on models presently without this filter and installed during receiver/dryer replacement. Future receiver/dryers will have this filter screen pre-installed and can be identified by a label on the receiver/dryer body.

For installation, remove the refrigeration hose (receiver/dryer to expansion valve) at the receiver/dryer (Illustration 2). Insert the filter screen as indicated and reinstall the hose.

Servicing instructions for this valve are the same as indicated in Section 2.

ILLUSTRATION 2



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4. ADJUSTMENT OF THERMOSTATIC SWITCH

The thermostatic switch is an evaporator temperature sensing switch which is connected into the compressor clutch circuit. Opening and closing of the switch contacts will "cycle" the compressor (switching compressor on and off). In case the temperature of the evaporator approaches the freezing point, the thermostatic switch will open the circuit and disengage the compressor clutch as a precautionary measure. The exhaust air temperature should then be in the vicinity of 32-33°F.

In case testing reveals that this exhaust temperature is higher (e.g. 40°F) while the operating pressures (given in the temperature - pressure relationship charts) are within the tolerances, the adjustment of the thermostatic switch has to be corrected.

WORKING INSTRUCTIONS

1. Remove thermostatic switch, as described under Group 83 of the Workshop Manuals.

2. Remove plastic cover from side of thermostatic switch which will provide for access to the thermostatic switch adjusting screw. You will note a circular arrow indicating which direction the adjusting screw should be turned in order to set the thermostatic switch colder. Turning this screw in the opposite direction will adjust the thermostatic switch warmer. Please adjust thermostatic switch by turning this screw accordingly. Each complete turn of the screw corresponds to a temperature change of 3 1/2° F.

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. MB-T 193	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 83	PASSENGER CARS

FORT LEE, SEPTEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR LEAKS ON HEATING/AIR-CONDITIONING SYSTEMS EQUIPPED WITH VACUUM CONTROLLED FRIGIKING AIR/CONDITIONING -- MODEL 250/8

This Service Information Bulletin is a summary of operations to be performed in case complaints are received regarding air leaks through the integrated heating/ventilation and air-conditioning system on the above mentioned model equipped with vacuum controlled air-conditioning.

Section A will deal with an adjustment and modification to the linkage of the vacuum element controlling movement of the evaporator door. Section B will give you additional instructions for sealing of the evaporator door, similar to the information given in Service Information MB-T 177, Group 83, May 1970, regarding the sealing of manually controlled air-conditioning systems.

A. LINKAGE ADJUSTMENT

A condition might exist where the evaporator door is not fully aligned either with the heater case or with the evaporator. This is caused by insufficient travel of the vacuum element which can be compensated for by installing a new bracket kit, Part Number 700 831 23 99, on the evaporator door control lever. Please refer to Illustration I (Item a is the old bracket whereas the new bracket is shown as Item b). Simply clip off the rivet holding the bracket on the control lever and install the new bracket with the screw as shown in Illustrations 1 and 2. This installation will provide a better closing of the evaporator door against the heater housing. In case it is now found that the evaporator door does not fully close against the evaporator case, it will be necessary to readjust the position of the vacuum element which is mounted in elongated holes and therefore it's position can be adjusted as required.

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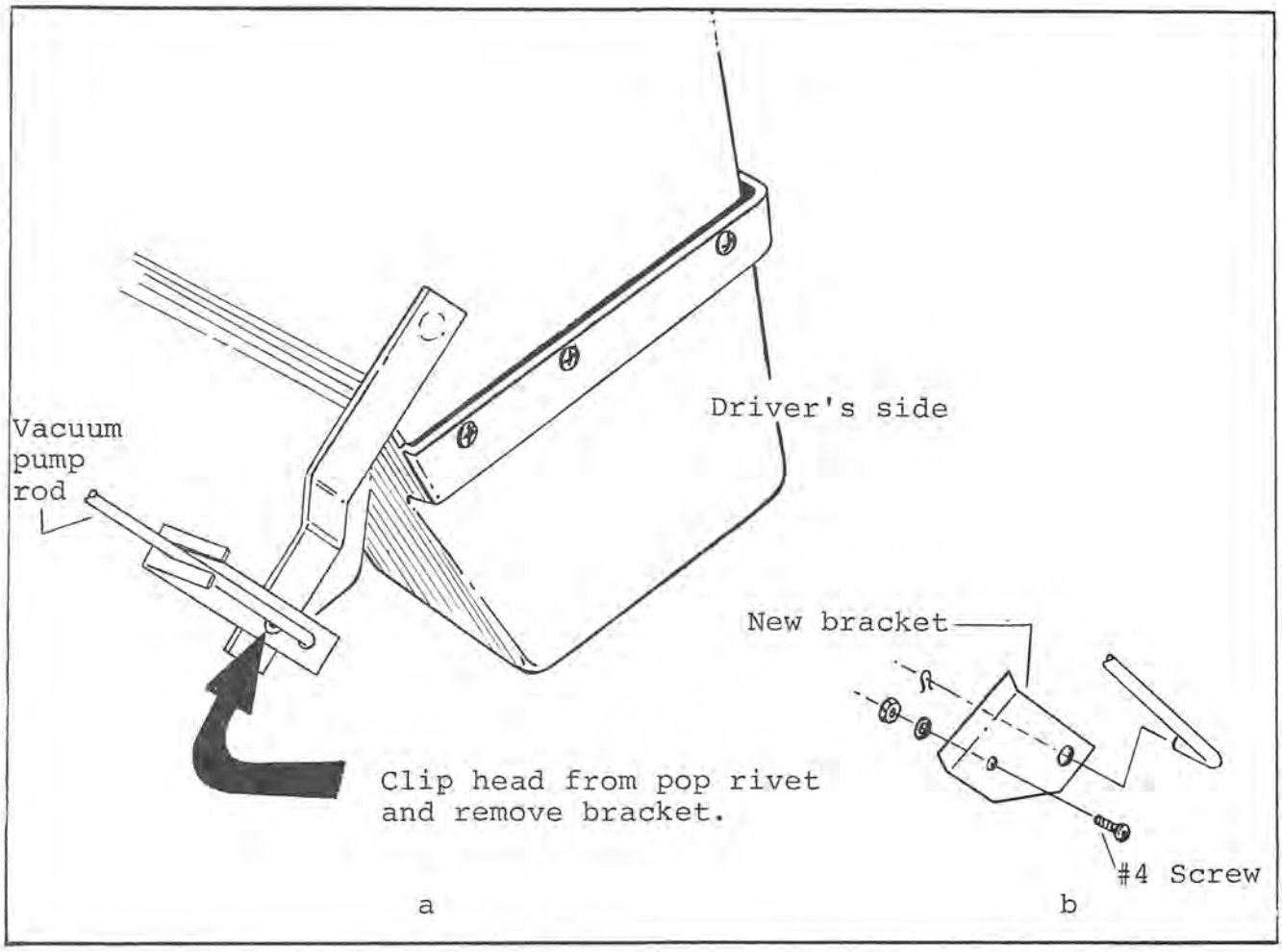

ILLUSTRATION I

MERCEDES-BENZ PHASE II - MODIFICATION

a = old bracket b = new bracket

NOTE: AFTER MOVING THE VACUUM ELEMENT AND SWITCHING TO POSITION "A/C", MAKE SURE THAT THERE IS AN ADDITIONAL TOLERANCE OF 5/32 IN. TRAVEL ON THE END OF THE SPRING LEVER CONTROLLING THE ELECTRICAL HEATING/COOLING CHANGEOVER SWITCH. IF NECESSARY, THIS SWITCH CAN ALSO BE RE-POSITIONED BY MOVING IT IN IT'S ELONGATED MOUNTING HOLES.

B. In case it is found that the above mentioned adjustments do not satisfactorily eliminate air leaks, it is possible to seal off remaining air leaks by installing foam rubber strips on the heater housing and on the evaporator door - heater side as described in Service Information MB-T 177, Group 83, May 1970, paragraph 2.7 through 2.10. In order to do this, sealing kit, Part Number 700 831 23 42, is required.

C. In case any other irregularities are found on the heating/air-conditioning systems as described in MB-T 177, they should be corrected as mentioned therein.

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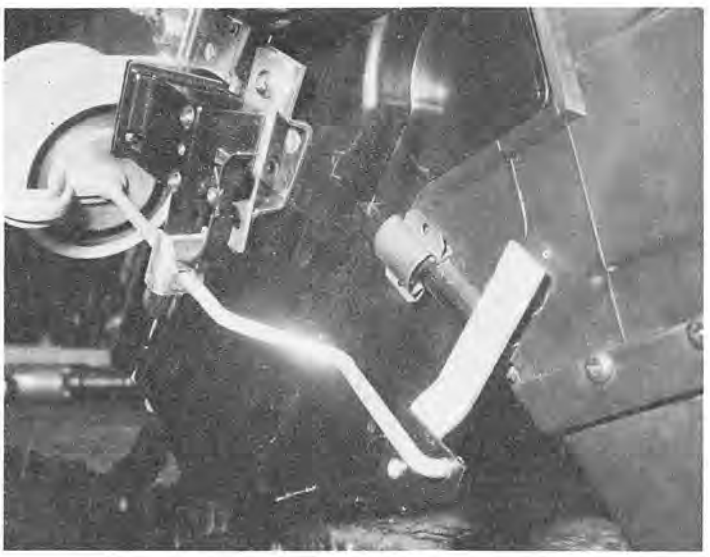

ILLUSTRATION 2

Arrangement of new bracket on evaporator door control lever.

D. In case of subsequent sealing of already installed air-conditioning units, a warranty claim may be submitted as follows:

1. Parts and labor of 20 minutes for installation of the new bracket mentioned under Section A.

2. Parts and labor of 2.0 hours for performance of the additional sealing described under Section B.

3. No warranty adjustment will be made when sealing an air-conditioning unit at the time of the first installation.

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Article No.	File	Group	Application
MB-T 177A	SERVICE INFORMATION	83	PASSENGER CARS

This Service Information supplements Service Information No. MB-T 177, Group 83, of May 1970.

FORT LEE, JANUARY 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: INCREASED WARRANTY TIME ALLOWANCE, MB-T 177, GROUP 83, OF MAY 1970, SUBJECT: AIR LEAKS ON HEATING/AIR CONDITIONING SYSTEMS -- MODELS 220/8 THROUGH 250/8, EQUIPPED WITH MANUAL CONTROL FRIGIKING OR THERMOKING A/C

The warranty time allowance indicated on Page 2, MB-T 177, Group 83, dated May 1970, has been increased from 3.5 hours to 6.5 hours with the following provisions:

Subject Service Information provides detailed sealing procedures. However, this allotted time increase is provided only when ALL sealing operations are performed according to instructions.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 162	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 83	PASSENGER CARS

FORT LEE, JANUARY 1969

JAN 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SUPPLEMENTARY INSTALLATION OF A TRIM COVER UNDERNEATH A/C EVAPORATOR HOUSING -- MODEL 280 SE/8 CP./CONV.

This is to inform you that approximately 400 of the above mentioned 1970 cars were delivered to both domestic and tourist customers without a covering of the mounting supports for the evaporator housing. Inasmuch as the appearance of these mounting struts is not satisfactory to many customers, it was decided that a trim covering should be subsequently installed in all of these cars. The cost of this action will be absorbed by us. The appropriate trim covers for all cars will be sent to you from your respective Mercedes-Benz parts depot for each car sold by your dealership.

IMPORTANT:

MOST OF THE VEHICLES UP TO AND INCLUDING CHASSIS END NUMBER 004 281 ARE STILL IN OUR VEHICLE PREPARATION CENTER INVENTORY. THE SUBSEQUENT INSTALLATION OF THESE TRIM COVERS ON ALL 1970 CARS WILL BE MADE THERE.

STARTING WITH CHASSIS SERIAL END NUMBER 004 282, ALL CARS ARE PRODUCTION-EQUIPPED WITH THESE COVERS. FOLLOWING ARE INSTALLATION INSTRUCTIONS AND THE PARTS LIST. THE MATERIALS (PARTS), AS OUTLINED ON PAGE 4 OF THIS SERVICE INFORMATION, WILL BE FORWARDED TO YOU FREE OF CHARGE. PLEASE DO NOT ORDER THIS MATERIAL FROM OUR PARTS DEPOTS, SINCE THE MATERIAL WILL BE FORWARDED TO YOU AUTOMATICALLY. A CLAIM FOR 1.4 HOURS OF LABOR MAY BE SUBMITTED FOR EACH CAR.

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INSTALLATION:

1. Remove left and right protective covers of the evaporator housing grille.

   Reinstall and tighten the lower oval head screws to secure both struts (see illustration 1).

2. Disassemble and remove the condensation water drain hose.

   Shorten hose approximately .6 in. (15 mm) at evaporator side of water hose.

3. Remove rubber grommet for water drain hose in the tunnel and in the carpet and replace with rubber grommet (6) and drain hose (see illustration 1).

NOTE: THE RUBBER GROMMET IN THE CARPET IS TO BE SCRAPPED. IN CASE THE WATER DRAIN HOSE RESTS AGAINST THE CUTOUT OF THE TUNNEL CARPET, ENLARGE CUTOUT.

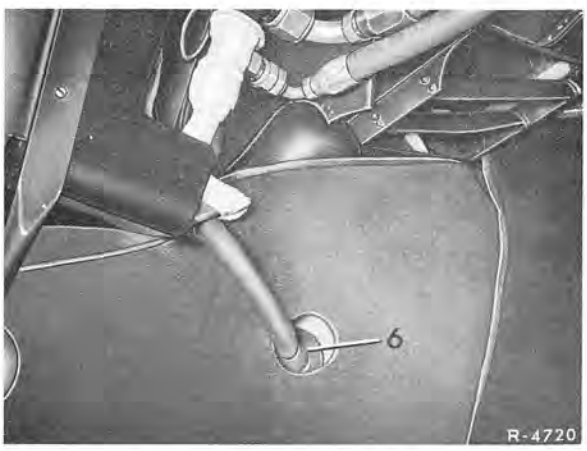

ILLUSTRATION 1

Arrangement of water drain hose

6. Rubber grommet

4. Dissassemble and remove the right-side cover below the dashboard. Cut off material as indicated in Illustration 2 and install cover.

ILLUSTRATION 2

Right-side cover below dashboard.

50 mm = 1.97 in.
4 mm = 0.16 in.

(over)

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5. Cut center cover below and behind the evaporator housing as shown in Illustration 3, however, do not remove.

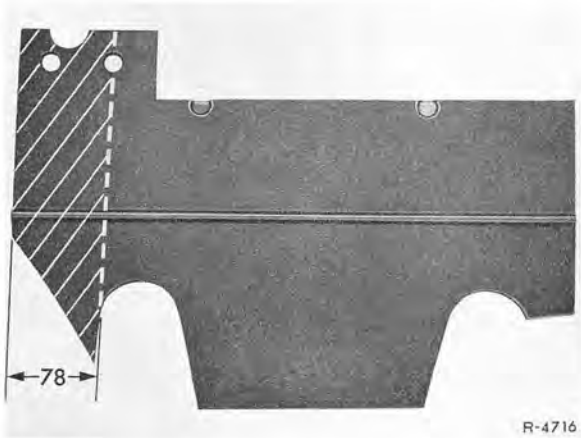

ILLUSTRATION 3

Center cover below the dashboard

78 mm.= 3.07 in.

6. Fasten to the left and right hand side of the evaporator housing:

   - the cover (1)
   - the left and right strut of evaporator housing

   with the long oval head screws (2). (See Illustrations 4 and 5.)

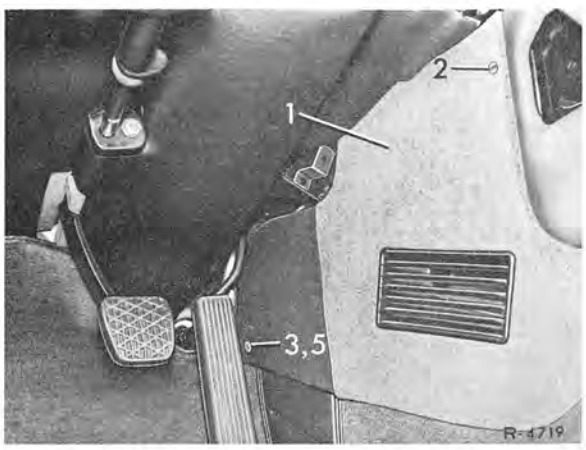

ILLUSTRATION 4

Arrangement of cover on left side of evaporator housing

1. Cover
2. Oval-head screw
3. Oval-head sheet metal screw
5. Counter-sunk washer

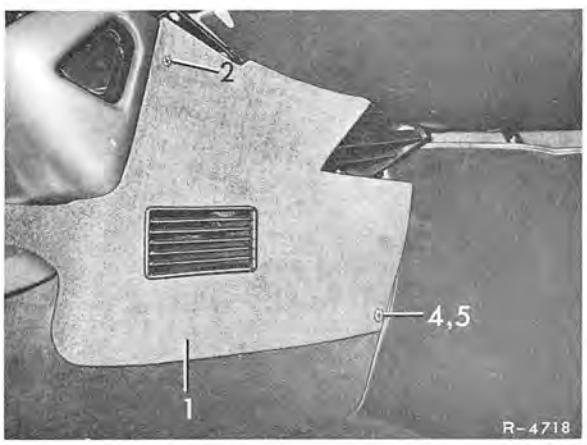

ILLUSTRATION 5

Arrangement of cover on right side of evaporator housing

1. Cover
2. Oval-head screw
4. Oval-head sheet metal screw
5. Counter-sunk washer

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7. Remove floor mats.

Punch two holes on left and right hand side on front part of tunnel in order to fasten cover (1) (drill holes on convertible models). Fasten cover with oval-head sheet metal screws (3, Illustration 4 and 4, Illustration 5) and counter-sunk washer (5, Illustration 4 and 5).

PARTS REQUIRED

NO.	QUANTITY	DESCRIPTION	PART NO. OR DIN DESIGNATION
1	1	EVAPORATOR HOUSING COVER	111 680 20 17
2	2	OVAL-HEAD SCREW AM 5 X 20	007985 005143
3	1	OVAL-HEAD SHEET METAL SCREW (LEFT) B3.9 X 32	007983 003227
4	1	OVAL-HEAD SHEET METAL SCREW (RIGHT) B3.9 X 38	007983 003228
5	2	COUNTER-SUNK WASHER	000 985 06 62
6	1	RUBBER GROMMET FOR WATER DRAIN HOSE	110 782 00 19

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 154	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 83	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: 300 SEL/8 6.3 - A/C COMPRESSOR MOUNT

Complaints regarding excessive noises coming from the Air Conditioning Compressor on the above mentioned model, especially appearing in the 1800 to 3500 rpm range, may be eliminated by the installation of:

a. A reinforced compressor mount.

b. A support strut between the A/C compressor and the right side motor mount.

These parts are installed in production in some cars as of chassis end No. 003 164, and in all cars as of chassis end No. 003 236.

INSTALLATION INSTRUCTIONS

A. INSTALLATION OF A REINFORCED COMPRESSOR MOUNT

1. Cover left front fender.
2. Remove air filter cover with air hose.
3. Remove the windshield washer container.
4. Loosen A/C retainer screw at idler pulley and remove V-belts.
5. Remove the lower hex. head screw fastening the idler pulley mount to the engine block (3, Illustration 1).

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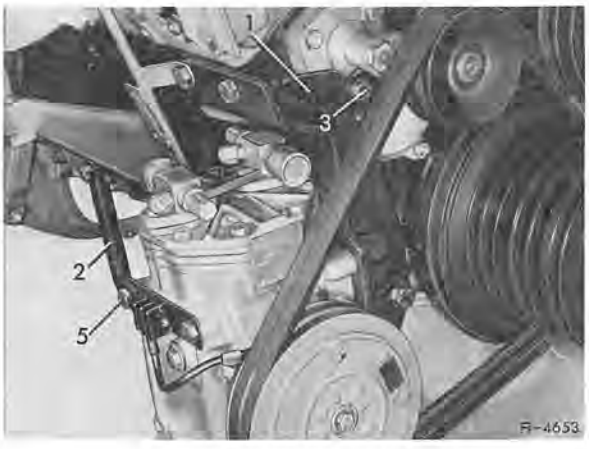

ILLUSTRATION 1

1. Support bracket
2. Support
3,5. Hex. head screw

6. Disconnect automatic transmission oil cooler hose (right side) at the oil line. Disconnect oil line at the automatic transmission and remove oil line from the rear of the engine block (oil line clamps have to be removed).

7. Remove hose clamps at compressor and battery.

8. Detach A/C compressor with mount from crankcase by removing three hex. head screws and one hex. nut.

9. Swing A/C compressor with mount downward as far as possible and remove mount from compressor.

10. Attach reinforced mount to compressor.

11. Attach A/C compressor to crankcase. Make sure that the mount rests against the cooling water drain screw tension-free. If necessary, install washers. To attach the compressor mount at the idler pulley, use a .2 in. (5 mm) longer hex. head screw, part No. 000 931 00 80 57, and connect oil line to automatic transmission and oil cooler hose.

12. Reinstall transmission oil cooler line.

13. Reinstall V-belts and adjust.

B. INSTALLATION OF THE SUPPORT BRACE

1. Remove the upper front hex. nut from the right motor mount. (see illustration 2 on following page).

2. Remove some material from motor mount to insure a proper fit of the brace to the motor mount.

3. Attach brace to motor mount and A/C compressor.

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NOTE: MAKE SURE THAT HIGH PRESSURE HOSE FROM COMPRESSOR CONDENSOR DOES NOT INTERFERE WITH THE BRACE. RELOCATE HOSE IF NECESSARY.

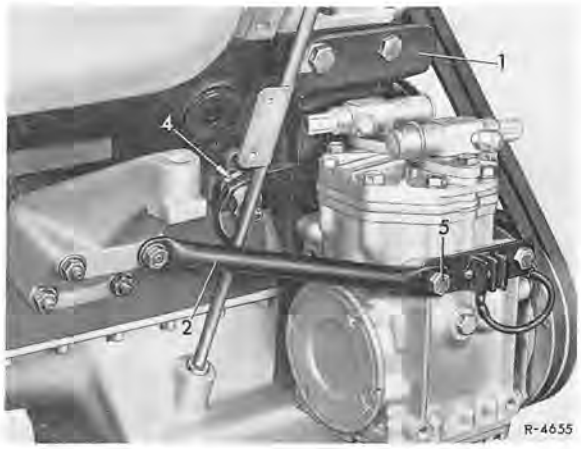

ILLUSTRATION 2

1. Support bracket
2. Support
4. Washer
5. Hex. head screw

4. Reattach hose brackets at compressor and battery.
5. Reinstall air filter cover with air hose.
6. Reinstall windshield washer container.
7. Check performance of the air conditioning and check for leaks.
8. Check automatic transmission oil level.

The time required for this job is 5 hours.

PARTS REQUIRED	PART NUMBER
Reinforced mount	100 130 02 35
Support brace	100 131 10 95
1 Hex. head screw	000931 008057
1 Hex. head screw	002 990 24 01

The parts required may be ordered from our Mercedes-Benz parts depots.

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Article No.	File	Group	Application
128	SERVICE INFORMATION	83	PASSENGER CARS

Fort Lee, March 1971

TO OUR MERCEDES - BENZ DEALERS

SUBJECT: SUBSEQUENT INSTALLATION OF 144°F (63°C) THERMO-SWITCHES ON BEHR AND THERMOKING AIR CONDITIONER UNITS, MODELS 280S/8 TO 300 SEL/8 6.3.

A 144°F (62°C) thermoswitch, which is in addition to the 212°F (100°C) thermoswitch, may be subsequently installed on BEHR and THERMOKING Air Conditioner units. This switch improves the air conditioner capacity by automatically engaging the auxiliary fan according to freon temperature in the system; regardless of the cooling water temperature.

PRODUCTION CUT-OFF CHASSIS NUMBERS ARE AS FOLLOWS:

MODEL	CHASSIS END NUMBER
250/8 (114.011)	003121
250/8 Cp (114.023)	003571
280S/8	062731
280 SE/SEL	068130
300 SEL/9 3.5	001366
280 SE/9 3.5 Cp/Cv	001070
300 SEL/8 63	005085

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I. BEHR AIR CONDITIONERS:

To facilitate the installation of the thermoswitch on a BEHR A/C, a threaded hole has been provided in the receiver/dryer. Vehicles with chassis end numbers prior to those listed on page one require receiver/dryer replacement to accomplish subsequent switch installation.

PARTS LISTING (BEHR):

POS.	QTY.	DESCRIPTION	PART NUMBER
1	1	Receiver/Dryer	108 835 04 71
2	1	Thermo Switch	108 835 03 47
3	1	Thermo Switch	001 821 73 51
4	1	Electric Lead*	
	1	Insulation Hose for Wire	
5	1	Electric Lead*	
	1	Insulation Hose for Wire	
6	1	Flat Pin Plug	000 546 45 50
7	1	Cable Shoe	
8	2	Protective Cap	000 546 00 45

*16 Gauge

Parts, except items 4, 5 and 7 may be ordered from Mercedes-Benz Parts Depots.

RECOMMENDED REPAIR TIMES ARE AS FOLLOWS:

a. Switch installation without receiver/dryer replacement 1.5 hours.

b. Switch installation/receiver dryer replacement - 2.8 hours.

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INSTALLATION INSTRUCTIONS (BEHR)

1. Check receiver/dryer for thermoswitch threaded hole (Illustration, item 4).

ILLUSTRATION 1

1. Receiver/Dryer
2. Strainer
3. Fuse
4. Thermoswitch

2. If the receiver/dryer does not have a threaded hole, discharge the air conditioner and remove the receiver/dryer unit.

3. Install a filter screen (2) in the new receiver/dryer (1) top connection.

4. Install receiver/dryer unit, evacuate air conditioning system, recharge with freon, and check operation (Illustrations 1 and 2).

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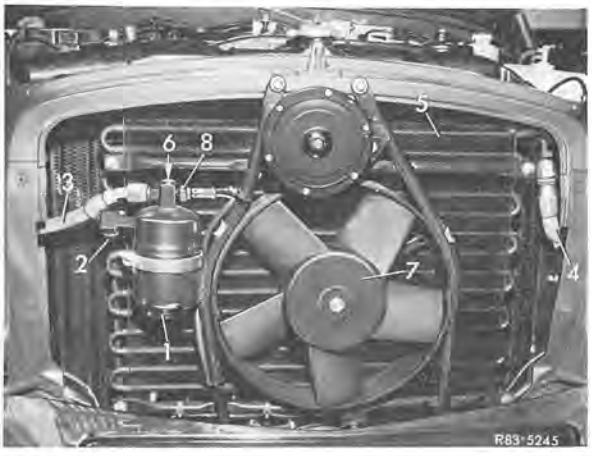

ILLUSTRATION 2

Receiver/Dryer Configuration with temperature switch

1. Receiver/Dryer
2. Pipe line
3. Hose line
4. Hose line
5. Condenser
6. Inspection glass
7. Auxiliary fan
8. Thermoswitch

5. Screw thermoswitch (4) into threaded hole on receiver/dryer.

6. Fabricate two wires (8 and 9) and connect as follows:

   a. Connect wire (9) to the ground terminal located on the right radiator baffle.

   b. Connect wire (8) from the two pin coupling housing and safety switch with wire (7).

   c. Connect the flat pin connectors (6) on the opposite ends of the wires (8 and 9) to the thermoswitch connections.

ILLUSTRATION 3

Wiring Harness for auxiliary fan

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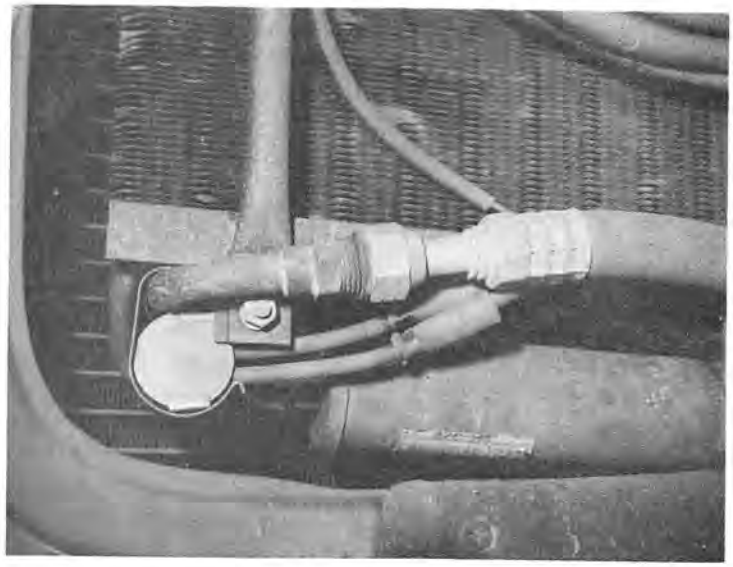
7. Check auxiliary fan operation. Switch ignition to "on" position. Connect the electrical couplings to the thermoswitch, and at the same time press the safety switch down.

II. THERMOKING AIR CONDITIONER

Subsequent installation of the 144° F. thermoswitch on THERMOKING Air Conditioners differs from that of BEHR models. The thermoswitch is mounted to the receiver/dryer inlet by a clamp and actuates according to receiver/dryer inlet line temperature. (See Illustration)

INSTALLATION INSTRUCTIONS:

An additional clamp, Part No. 108 831 02 83 may be used to hold the switch to the condensor inlet tube. (See Illustration) This additional clamp is only used for improved thermoswitch mounting. The wiring harness and all other parts to control the auxiliary fan are identical for both units.



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PARTS LISTING (THERMOKING):

POS.	QTY.	DESCRIPTION	PART NUMBER
1	1	Klixon Thermoswitch with Clamp	108 821 05 51
2	1	Auxiliary Clamp	108 831 02 83
3	1	Electric Wire*	
	1	Insulation Hose for Wire	
4	1	Electric Wire*	
	1	Insulation Hose for Wire	
5	2	Flat Pin Plug	000 546 45 40
6	1	Cable Shoe	
7	2	Protective Cap	000 546 00 45

* 16 Gauge

Parts, except items 3, 4 and 6 may be ordered from Mercedes-Benz Parts Depots.

Recommended repair time for installation is 1.5 hours.

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COLOR IDENTIFICATION CHART

WIRE	ELECTRICAL WIRING FROM	TO	COLOR
1	Fuse box Connector 15/54 before fuse (supply side)	2-pole fuse box	red/ black
2	4-pole coupling Relay terminal 30	2-pole fuse box	black/ blue
3	4-pole coupling Relay terminal 30	4-pole fuse coupling	black/ blue
4	4-pole coupling Relay terminal	2-pole coupling Safety switch	brown/ black
5	2-pole coupling Fan	Ground	brown
6	2-pole coupling Fan	4-pole coupling Relay Terminal 87	yellow
7	Thermoswitch Thermoswitch housing	2-pole coupling Safety switch	brown/ yellow
8	Temperature switch Dryer	2-pole coupling Safety switch	brown/ yellow
9	Temperature switch Dryer	Ground	brown

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 83	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo 83	PASSENGER CARS

FORT LEE, DECEMBER 1969

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: AIR CONDITIONING COMPRESSOR MODIFICATIONS

Both bores for the check valves of the A/C compressor were recently arranged symmetrically in the cylinder head (see illustration). The valve plate and the upper cylinder head gasket had to be modified accordingly. Compressors of the new version are marked with the letter "J" in front of the factory number on the model plate.

NOTE: TOP: 1st Version BOTTOM: 2nd Version

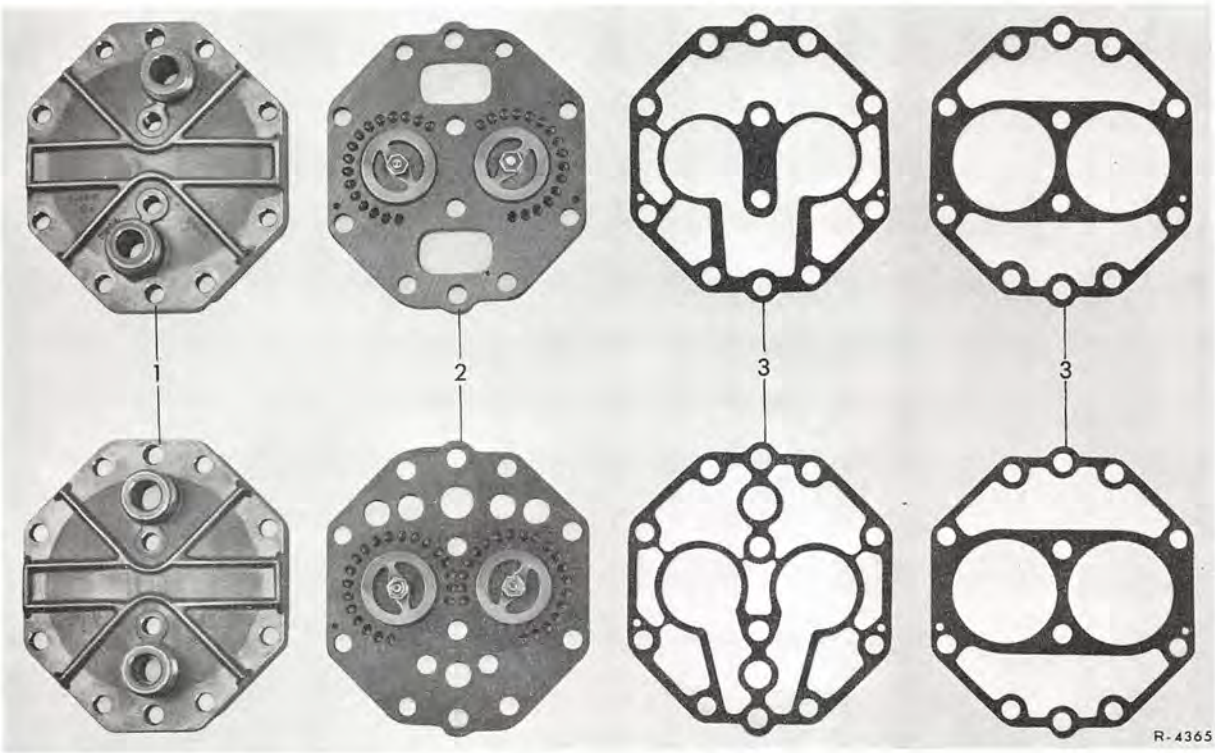

ILLUSTRATION 1

1. Cylinder head cover 2. Valve plate 3. Set of valve gaskets

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The following should be observed when reconditioning or exchanging compressors:

1. Complete compressors may be exchanged with each other.

2. In case of exchanging only the cylinder head cover and/ or valve plate or cylinder head gasket marked up to and including code letter "H", only parts of the 1st version, and as of letter "J" only the parts of the 2nd version should be used.

PARTS REQUIRED

DESCRIPTION	1ST VERSION PART NO.	2ND VERSION PART NO.
CYLINDER HEAD COVER WITH GASKET SET	000 586 07 13	000 586 09 13
VALVE PLATE WITH GASKET SET	000 586 08 13	000 586 10 13
GASKET SET FOR VALVE PLATE	000 586 05 13	000 586 11 13

The required parts may be ordered from your Mercedes-Benz parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 137	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

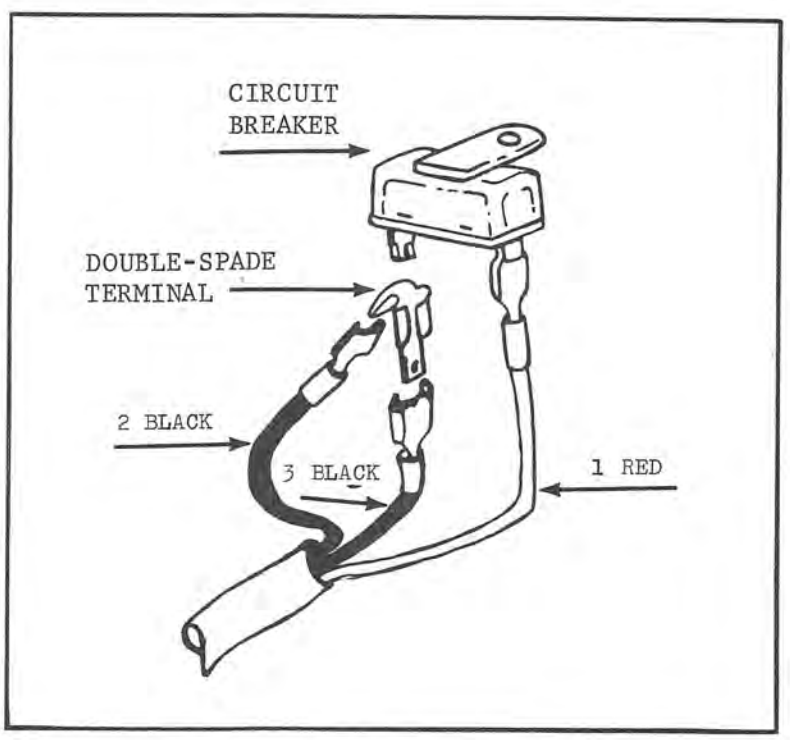
Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Frigiking Air Conditioning Units -- Models 220/8, 220 D/8, 230/8 and 250/8

Reference is made to the Frigiking Air Conditioning Installation Instructions manual (Frigiking print no. 91-13790) for models 220/8, 220 D/8, 230/8 and 250/8. The drawings on page 21 show the connections of the wiring harness.

We wish to point out that the connection of the circuit breaker is incorrectly shown in this drawing. The two black wires (no. 2 and 3) should both be connected on the same terminal of the circuit breaker (by using the double-spade terminal) whereas the red wire (no. 1) should be connected on the other terminal as illustrated below:



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The revised circuit provides circuit breaker protection for a portion of the equipment not now protected.

Please advise all personnel concerned of this situation and also be sure to check out all subject cars coming to your dealership.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 142	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, September 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of A/C Wire Harness in 1969 and Later 280S/8; 280SE/8; 280SEL/8; 280SE/8 Cp./Cv.; 300SEL/8 and 280SL/8 Models Equipped with New Type Automatic Transmission (Part No. 108 270 11 01)

Many cars of the above models have been factory-equipped with an air conditioning wiring harness which. for technical reasons, should not be used if any of these cars are subsequently equipped with an air conditioning unit. ONLY THE AIR CONDITIONING WIRE HARNESS SUPPLIED WITH THE AIR CONDITIONING KIT IS TO BE USED.

HOOK-UP OF THE IDLE INCREASE SOLENOID --
MODELS 280SE/8; 280SE/8 cp./cv; 300SEL/8; 280SL/8

To stabilize the idle speed on all SE and 280 SL models when the air conditioner compressor clutch engages, the solenoid must be hooked up as follows:

1. Prepare wires No. 1 and No. 2 as per illustration 1 below.

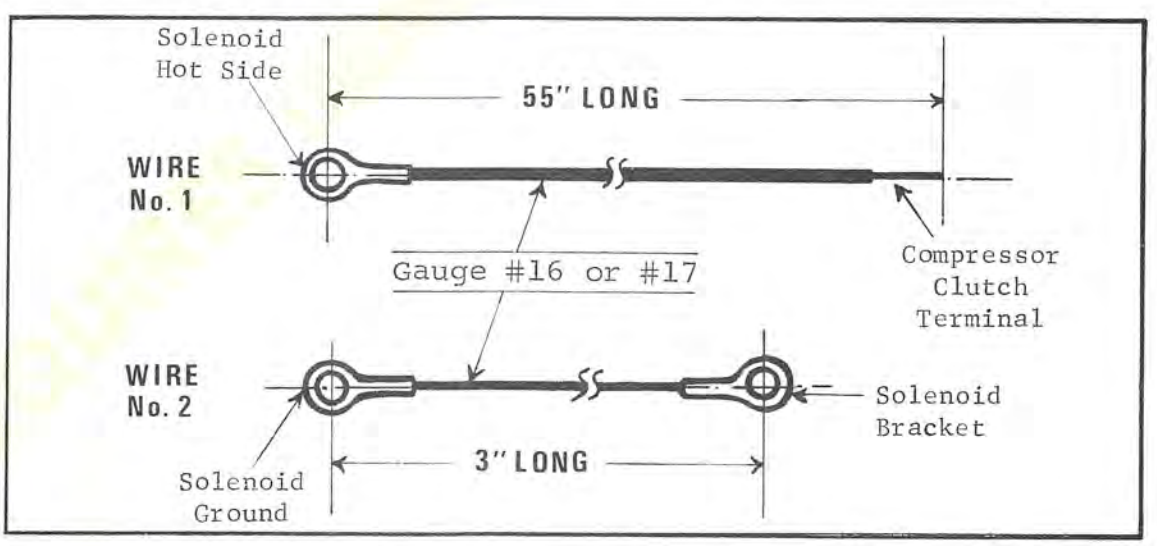

Illustration 1

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2. Connect the No. 1 wire to the air conditioning compressor clutch terminal (see Illustration 2). Route the wire alongside the main wiring harness at the body side member (see Illustration 3), and connect the wire to the idle increase solenoid (see Illustration 4).

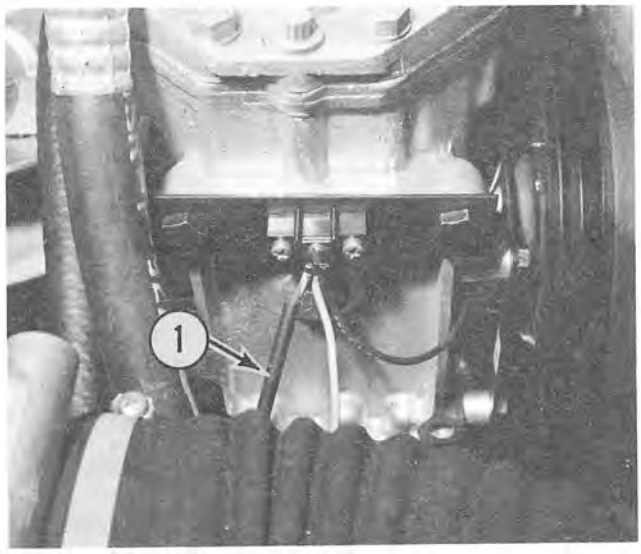

Illustration 2

(1) Wire No. 1

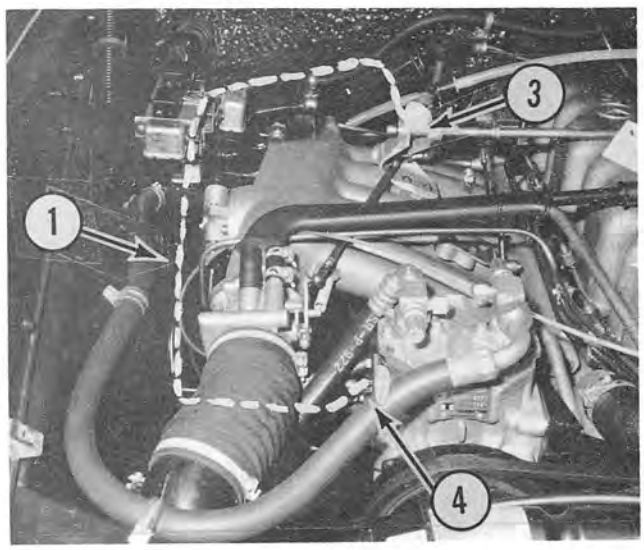

Illustration 3

(1) Wire No. 1
(3) Solenoid Terminal
(4) Compressor Clutch Terminal

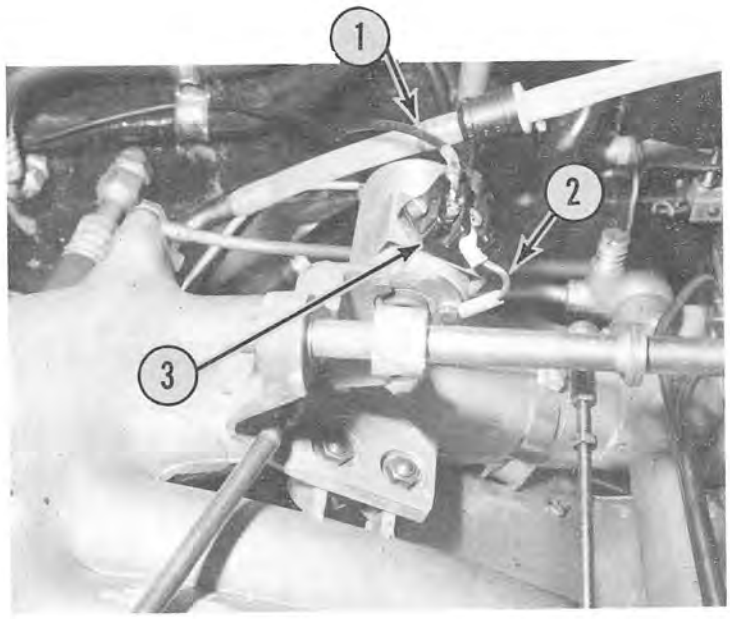

Illustration 4

(1) Wire No. 1
(2) Wire No. 2
(3) Solenoid Terminal

3. Connect the No. 2 wire (ground) as per illustration 4 above.

The cost for this particular installation is to be charged as a part of the air conditioning installation.

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AIR CONDITIONING INSTALLATIONS -- MODEL 280 S/8

No installation of special wires is required on the above model cars. The wiring harness included in the air conditioning kit is to be hooked up according to the air conditioning installation instructions supplied by Frigiking or Thermo King.

I M P O R T A N T

After the stock of 1969 air conditioning units (Part No. 700 830 15 00) for models 280S/8, 280SE/8, 280SEL/8 and 300SEL/8 is exhausted, a 1970 Thermo King air conditioning unit will be used.

ORDER THERMO KING AIR CONDITIONING UNIT 170 SM3
MB Part No. 700 830 22 00

plus the following accessories:

A/C Wiring Harnesss
TK44-9086..... MBNA Part No. 700 831 22 01
Brace for Condenser..... MBNA Part No. 108 620 12 85

for car models and chassis end numbers as indicated:

MODELS	WITH CHASSIS END NUMBERS LOWER THAN....
280 S/8	035 214
280 SE/8	036 081
300 SEL/8	002 221

NOTE: Installation of the brace and wiring harness must be made according to the installation instructions. Mounting material is included in the air conditioning kit.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 135a	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

Fort Lee, September 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Installation of An Auxiliary Electric Fan Into 1970 Vehicles Equipped with Factory-Installed Wiring Harness and Electrical Components -- Models 250/8, 280 S/8, 280 SE/8, 280 SEL/8 and 300 SEL/8

Please note that this article supersedes our Service Information No. MB-T 135, Group 83, of August 1969. For various technical reasons, the auxiliary electrical fan may only be installed into 1970 production cars.

If any of the above 1970 model cars are to be equipped subsequently with an air conditioning unit, an additional fan must also be installed in front of the condenser. This will increase the engine cooling capacity and the cooling capacity of the A/C unit at low driving speeds.

Installation of the electric fan is mandatory with the A/C unit on the following models which were factory-equipped with the necessary components - fan wiring harness, relay, fuse box, safety switch, thermostat switch, etc. (see diagram on Page 5), as of the following chassis end numbers:

MODEL	CHASSIS END NO.
250/8	033 533
280 S/8	035 214
280 SE/8, 280 SEL/8	036 081
300 SEL/8	002 221

(Model 230/8 was discontinued in production.)

Please note that this fan can only be installed in combination with the following air conditioning evaporator kits:

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MODEL	EVAPORATOR KIT PART NUMBER	MANUFACTURER
250/8	700 830 21 00 or 700 830 23 00	FRIGIKING
280 S/8 280 SE/SEL/8 300 SEL/8	700 830 22 00 (170 SM3)	THERMO KING

Note: Install ONLY complete units by one manufacturer!

Vacuum-controlled units are only available from FRIGIKING. The installation of the fan with BEHR A/C units is covered because these will be available for subsequent installation sometime in the future.

INSTALLATION

1. Remove the horns from the brace between the radiator shroud and the front cross member, then remove the brace itself.

2. Attach fan using items 3 through 6 (see parts list) onto the brace (item 2) (see illustrations 1 and 2).

ILLUSTRATION 1

Attachment of Additional Fan on Model 250/8 with BEHR and FRIGIKING A/C

1. Fan
2. Brace
3. Clamp
4. Hex head screw
5. Washer
6. Lock washer
7. Nut
8. Hex head screw
9. Lock washer
10. Washer

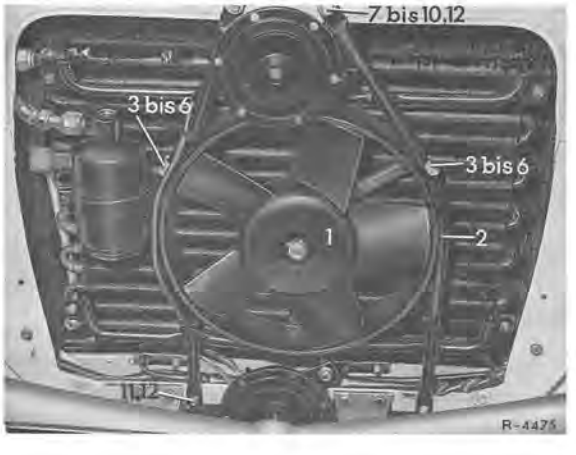

ILLUSTRATION 2

Attachment of Additional Fan on Models 280 S/8 Through 300 SEL/8 with BEHR A/C

1. Fan
2. Brace
3. Clamp
4. Hex head screw
5. Washer
6. Lock washer
7. Sheet metal nut
8. Hex head screw
9. Lock washer
10. Washer
11. Hex head sheet metal screw
12. Spacer washer

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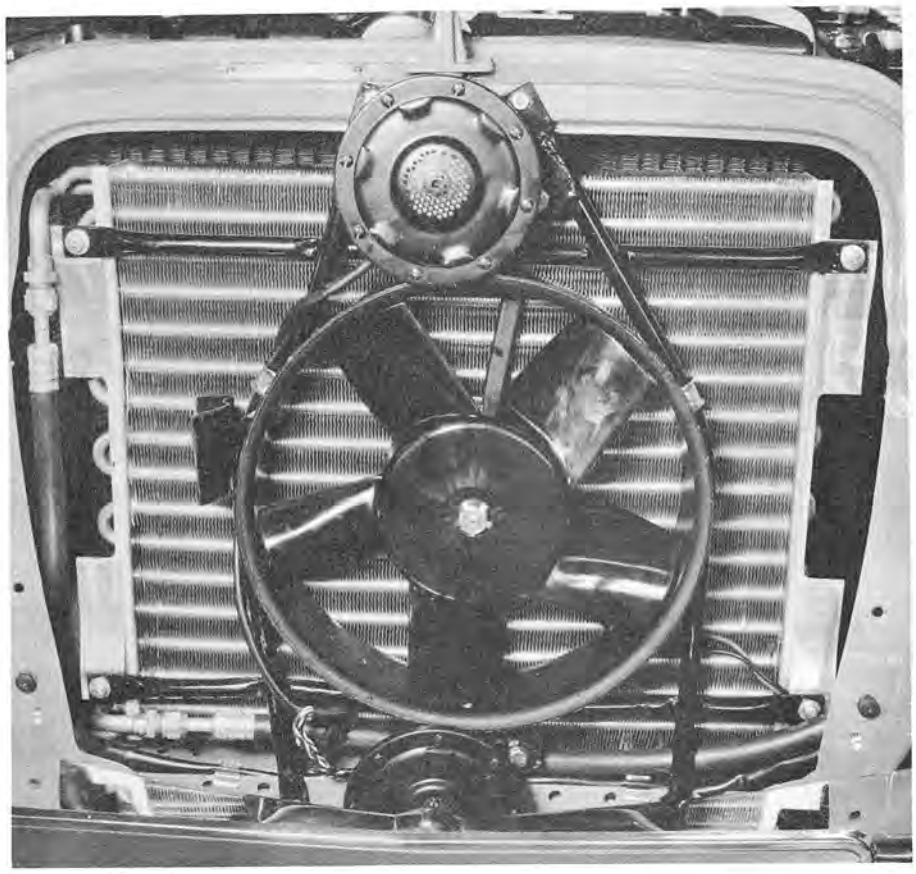

ILLUSTRATION 2a
Attachment of Additional Fan on
Models 280 S/8, 280 SE/8, 280 SEL/8
and 300 SEL/8 - with THERMO KING A/C

3. On model 250/8 with Behr and Frigiking A/C, use items 7 through 9 and/or 10 to mount the brace (2) with the fan (1) to the holes in the radiator shroud (illustration 1).

   On models 280 S/8, 280 SE/8, and 300 SEL/8 with Behr A/C, assemble the condenser to the brace using the removed hex head bolts and hex nuts. With Thermo King A/C, assemble condenser to brace using four 1/4" x 3/4" machine screws and nuts which are provided in the A/C kits.

4. On models 280 S/8 through 300 SEL/8, use elongated holes on the brace as a template and drill two holes of 1/8" diameter into the front cross member. Then, using hex head sheet metal screws (11) and washers (10), tighten the brace (illustration 2).

   Make sure that the fan does not contact the condenser. If necessary, compensate by installing washers (12) between brace and mounting points on both ends of the brace (illustration 2).

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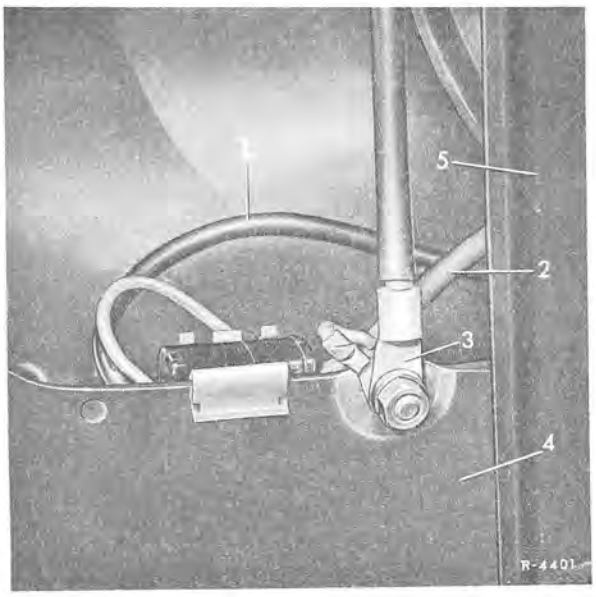

ILLUSTRATION 3

Arrangement of Plug Connection On Front Cross Member (left side) Models 230/8 and 250/8

1. Main wiring harness for fan
2. Fan wire
3. Ground connection of battery
4. Left side cross member
5. Radiator shroud, left side

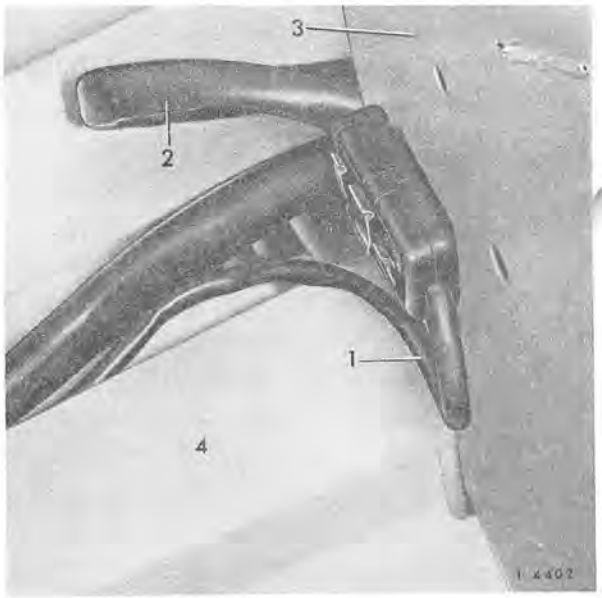

ILLUSTRATION 4

Arrangement of Plug Connection On Left Side of Radiator Shroud Models 280 S/8 through 300 SEL/8

1. Main wiring harness for fan
2. Fan wire
3. Radiator shroud
4. Front cross member

5. On model 250/8, using the existing hex head screws, washers, and lock washers, screw the brace (2), together with the condenser onto the two condenser mounting brackets on the front cross member (illustration 2).

6. Install the horns with the existing mounting brackets onto brace as shown in illustrations 1, 2 and 2a.

   Important! When connecting the electrical wires, make sure there is no electrical contact with the brace.

7. Route the wires alongside the brace and attach them with plastic tie-wraps.

8. Route the electrical wires from the fan alongside main wiring harness into the left side of the engine compartment and connect the wire plug connectors as shown in illustrations 3 and 4.

9. If applicable, remove hex head plug with seal ring from the cover of the coolant thermostat and install thermostat switch with seal (13) and tighten securely. Then, connect the ground cable to the thermostat switch and install rubber cap (14) (illustration 5).

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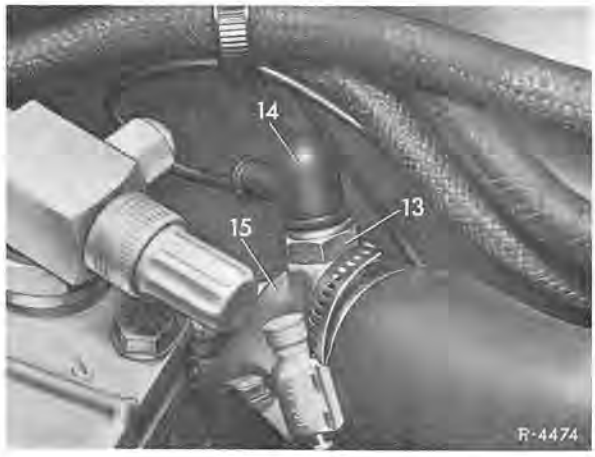


ILLUSTRATION 5

Arrangement of the Thermostat Switch In the Cover of the Radiator Coolant Thermostat

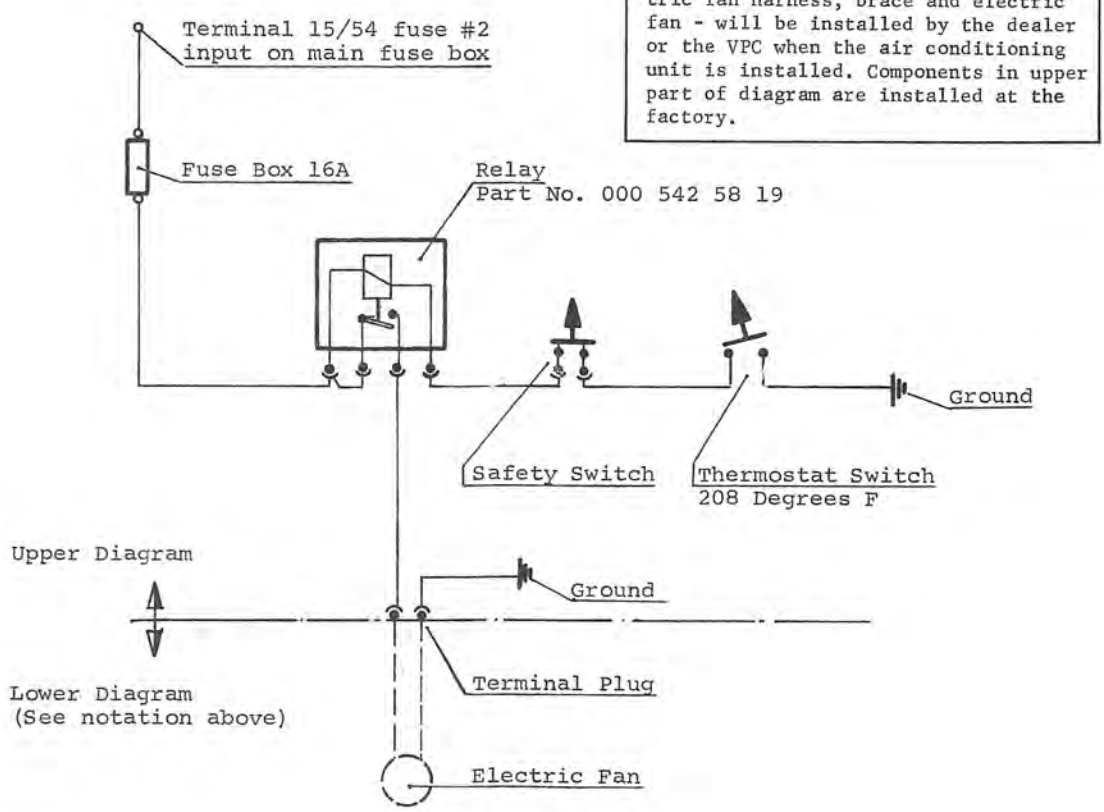
13. Thermostat switch
14. Rubber cap
15. Cover of coolant thermostat housing

10. To check for proper operation of the fan, switch on the ignition, connect the thermostat switch terminal 13 to ground and push down electrical cut-out switch located at the left side of the fire wall. This latter switch will cut off current supply to the fan whenever the hood is open.

NOTE: Make sure that the horns do not have contact with the hood grill when closed. If necessary, loosen horns and twist bracket on the brace.

Electrical Diagram for Auxiliary Fan

NOTE: Components in lower part of diagram - the terminal wire, electric fan harness, brace and electric fan - will be installed by the dealer or the VPC when the air conditioning unit is installed. Components in upper part of diagram are installed at the factory.



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PARTS LIST

Item No.	Quantity	Description	Part Number or DIN Designation	
			250/8	280 S/8 280 SE/8 280 SEL/8 300 SEL/8
1	1	Fan	114 835 00 07	
2	1	Brace	114 620 00 85	108 620 12 85
3	3	Clamp (for fan on brace)	114 995 02 20	
4	3	Hex head screw M 6 x 12	000933 006016	
5	3	Washer 6,4	000125 006407	
6	3	Lock Washer B 6 (top and bottom of brace)	000127 006203	
7	1	Nut	000 984 02 22	
8	2	Hex head screw M 6 x 12	000933 006016	
	2	Hex head screw M 6 x 15		000933 006026
9	2	Lock washer B 6	000127 006203	
10	2	Washer B 6,4	009021 006203	
11	2	Hex head sheet metal screw B 5,5 x 22		007976 005206
12	6	Spacer Washer (top and bottom of brace)		115 990 42 40

PART NUMBERS FOR KITS		
Fan (item no. 1)	114 835 00 07	
Brace with mounting parts (items 2 - 14)	114 830 00 08	108 830 00 08

These parts are available from your Mercedes-Benz parts depot under their respective part numbers.

The cost for subsequent installation of the auxiliary fan together with an air conditioning unit is to be charged as part of the air conditioning installation.

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C O R R E C T I O N

Re: Service Information No. MB-T 139, Group 83, dated August 1969, "Modification of the Air Conditioning System -- Models 220/8 through 250/8 (W 114/115) - 1970 Models"

In the above article, the part number for the "Mounting Brackets and Attachment Parts" was listed incorrectly. (See page 3, under heading "PARTS ORDERING".) Instead of 114 830 00 07, the part number should read 114 830 00 08.

Please change your copies accordingly.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 139	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

Fort Lee, August 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of the Air Conditioning System -- Models 220/8 through 250/8 (W 114/115) - 1970 Models

The air conditioning system for the above models has been modified. The manual control lever switching the heating system over to the air conditioning system has been replaced by a vacuum device. This vacuum device is operated by the thermostat switch. The operation of the air conditioning blower by the three-speed heater blower switch has not been changed. This switch automatically controls the air conditioning blower when the air conditioning thermostat knob is activated. (See electric and vacuum diagram - page 2.)

The installation of this vacuum-controlled air conditioning unit for subsequent A/C installations in the U.S. on model 250/8 only becomes effective with the introduction of the 1970 models. It is mandatory that together with this air conditioning system, an auxiliary electric fan is installed in front of the 2-row condenser (see Service Information MB-T 135a, Group 83, of August 1969).

All 250/8 models are factory-equipped with vacuum-controlled components, electric fan components and the respective wiring harnesses. The installation instructions are included with the air conditioning and the electric fan kits. FRIGIKING is the only air conditioning kit applicable for U.S. installation into 1970 model 250/8.

The 1970 models 220/8 and 220 D/8 are not equipped with the vacuum-controlled components and wiring harness, and therefore the manually-controlled Thermo King or Frigiking air conditioning units must be subsequently installed into these cars.

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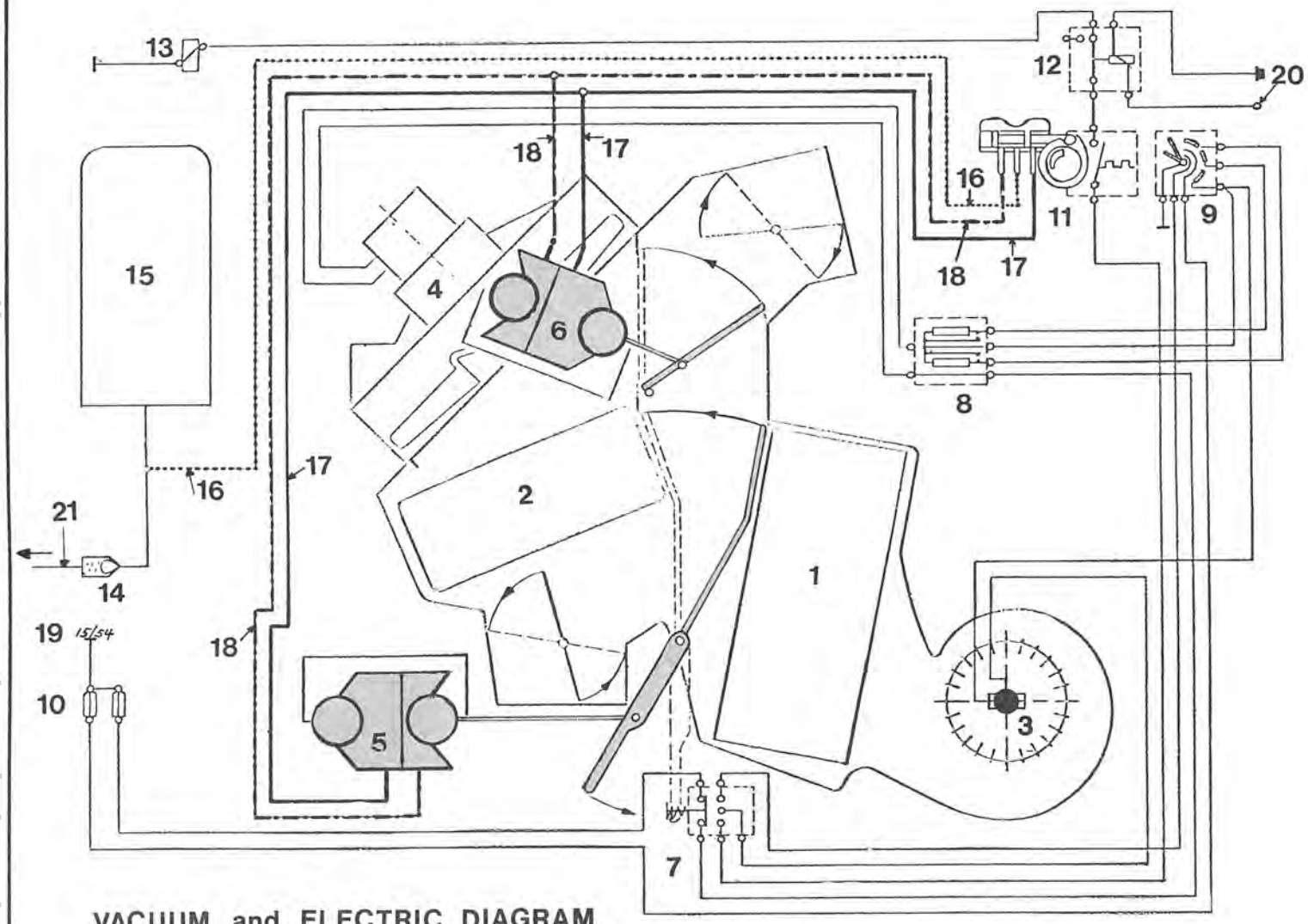

VACUUM and ELECTRIC DIAGRAM

Vacuum-Controlled Air Conditioner – W 114/115 Models

1. Evaporator
2. Heater Core
3. A/C Blower
4. Heater blower
5. Vacuum motor
6. Vacuum motor
7. Transfer switch
   (Heater blower--A/C blower)
8. Resister assembly in fire wall
9. Heater-A/C blower switch
10. Fuse box
    (Heating and A/C system)
11. Thermostat vacuum switch
12. Relay
13. A/C clutch
14. Check valve for vacuum system
15. Vacuum tank
16. Vacuum line (input)
17. Vacuum line (position cooling)
18. Vacuum line (position heating)
19. Terminal #2 or 3 main fuse box
20. Terminal #50 to starter
21. Vacuum line to intake manifold

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FACTORY INSTALLATION

Additionally we would like to inform you that the factory is installing BEHR A/C units in cars delivered under our European Delivery Program into models 220/8 through 250/8 starting with chassis end numbers:

220/8	034 113
220 D/8	076 505
230/8	033 609
250/8	031 062

The model 250 C has had a vacuum-controlled BEHR air conditioning unit factory-installed since the beginning of production on European delivery and domestic delivery cars.

Model 230/8 has been discontinued in production as of the end of the 1969 model year.

The additional electric fan for cars equipped with factory-installed air conditioning units entered production as of chassis end numbers:

230/8	033 719
250/8	031 206

NOTE: For technical reasons, no vacuum-controlled air conditioning unit can be subsequently installed in the United States into any 1969 model year cars. The air conditioning wiring harness, sometimes found in these cars, has to be disconnected and removed. Instead, only the air conditioning wiring harness delivered with the air conditioning kits are to be used.

However, the modification outlined in Service Information MB-T 123, Group 20, of May 1969, must be performed on cars with the appropriate chassis end numbers. This will insure the correct engagement termperature and performance of the viscous fan coupling on cars that have not been modified at the factory.

PARTS ORDERING

For model 250/8 (1970 series), as of chassis end number 033 533 the new FRIGIKING air conditioning unit must be ordered.

Series		Part Number
W 114	Evaporator Kit	700 830 21 00 or 700 830 23 00
W 114 (6 cyl.)	Engine Kit	700 131 63 01

In addition, the following electric fan parts have to be ordered:

Electric Fan
Part number 114 835 00 07

Mounting Brackets and Attachment Parts
Part number 114 830 00 07

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NOTE: All other parts of the air conditioning unit are not affected by the above-outlined modifications.

The installation instructions for both the vacuum-controlled air conditioning units and the electric fan are supplied with the Frigiking air conditioning kit and the electric fan kit.

IMPORTANT! The air conditioning wiring harness (for vacuum-controlled air conditioning units) delivered in the cars, has European-type wiring connectors. They will therefore have to be slightly modified in order to connect the Frigiking air conditioning unit to this wiring harness. A detailed description of the necessary modifications is contained on a "flysheet" which is supplied with the air conditioning unit.

In the future, the relay and circuit breaker will be installed by the factory. The cost for subsequent installation of the auxiliary fan together with an air conditioning unit is to be charged as part of the air conditioning installation.

AIR CONDITIONING FOR MODELS 220/8 and 220 D/8

As soon as it is possible to install the vacuum-controlled air conditioning unit into these models in the U.S., we will inform you accordingly.

For the present, only the manually-controlled air conditioning units are to be installed until further notice. The part numbers are as follows:

THERMO KING:	W 115/114	Evaporator Kit	700 830 18 00
	W 115	Engine Kit	700 131 68 01
	W 114	Engine Kit	700 131 62 01
FRIGIKING:	W 115/114	Evaporator Kit	700 830 17 00
	W 115	Engine Kit	700 131 66 01
	W 114	Engine Kit	700 131 63 01

Note: Should you find a car of these models which has the wiring harness for the vacuum-controlled air conditioning unit already installed, disconnect and remove this harness and use only the one supplied with the manually-controlled air conditioning unit.

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All parts mentioned in this article are available from your Mercedes-Benz parts depot under their respective part numbers.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	137	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Modification of Bowden Cables and Water Tap (Control Valve) for Heating System of Models 220/8 to 250/8 (W 114/115)

A modification of the bowden cable arrangement has been introduced into series production to ease the operation of the heater control valves on the above models. In addition, new control valve levers with an improved flow regulation are also being installed.

These modifications have been included in series production starting with the following chassis end numbers:

MODEL	CHASSIS END NO.
220 D/8	017 074
220/8	007 141
230/8	006 792
250/8	008 888

The new parts are also available for replacement installations in cases of customer complaints.

With the old cable arrangement, there was a possibility of water and dirt particles entering the bowden cable sheathings, causing them to become stiff in operation. The new cables, with plastic sleeves and modified brackets, are designed to correct this condition. The control valves, in addition, must now be fitted with new type valve levers which have square holes.

A. PROCEDURE FOR REMOVAL

1. Drain cooling water.

2. Dismount loudspeaker covering.

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3. Remove glove compartment (see Workshop Manual, Model Series W 114/115, Job No. 68-2).

4. Loosen and remove center air outlet.

5. Remove rubber boot between center air nozzle and heater box.

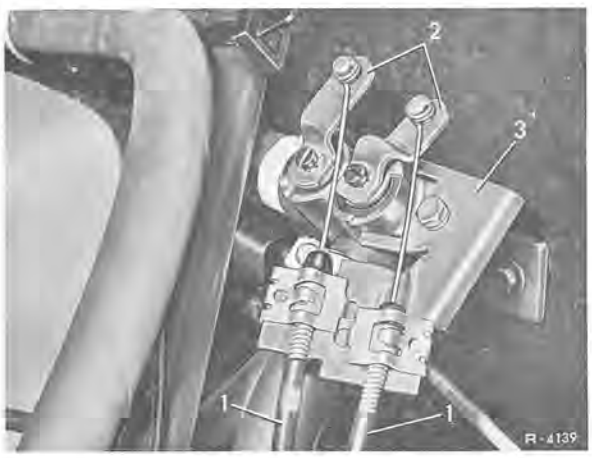
6. Loosen bowden cable for air deflector door of defroster nozzle and air duct extension for rear compartment heating.

7. Disconnect bowden cables from water tap.

8. Remove entire operating levers for heating system.

9. Remove bowden cables from operating lever system.

NOTE: Installation procedure which follows is the reverse of the removal procedure - see illustration below.



ILLUSTRATION

1. Bowden cables with plastic sleeves
2. Control valve levers with square holes
3. Bowden cable bracket

B. PROCEDURE FOR INSTALLATION

1. Fit new bowden cables (1) to operating lever system and feed them through the rubber grommet on the dash panel.

2. Remove bowden cable bracket (3) from water tap and screw on the new bracket.

3. Remove levers (2) from water control valves and install the new ones.

   NOTE: When installing the control valve levers, be careful that they are inserted in the correct position (see illustration). The levers must be lubricated only with Molykote 1104. The use of other lubricants is not permitted.

4. Connect bowden cables to the water control valves.

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The components for this modification may be ordered from your Mercedes-Benz parts depot.

PART	QUANTITY	PART NO.
Control valve lever with square holes	2	000 835 15 20
Bowden cable, left	1	115 830 02 31
Bowden cable, right	1	115 830 03 31
Bowden cable bracket	1	115 835 15 14

For your information, we would like to advise that, subsequent to the above described version, another modification entered production as of these chassis serial end numbers:

220 D/8	-	022 968
220/8	-	010 050
230/8	-	009 573
250/8	-	013 397

With this arrangement, the water control valves are mounted horizontally and in a way to facilitate a more direct routing of the bowden cables thereby providing smoother operation of the control levers. It is not possible, however, to subsequently install this latest version.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	28	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	83	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

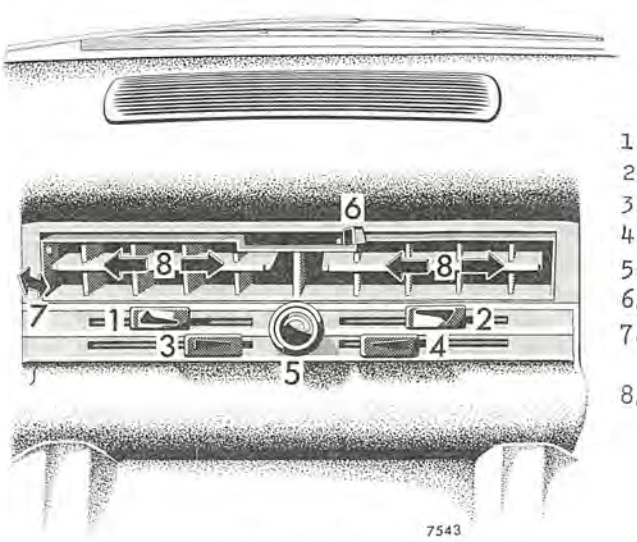
Subject: Operation of the Heating and Ventilating System -- Models 220/8 through 250/8 (W 114/115)

As you know, the heating and ventilating system of models 220/8 through 250/8 functions differently in comparison to the older models. It has been noted that our customers who previously owned older M-B models are not aware of how to utilize the new heating and ventilating system to its fullest capacity.

We therefore wish to provide you, through this article, with a summary of the most important facts regarding the operation of the heating and ventilating system.

A. General Information

The air flow rate for ventilation was increased considerably to provide a very strong stream of air at the individual air nozzles. Thus a frozen windshield can be defrosted much faster. As soon as this is accomplished, the air flow rate can be reduced with the lever for the windshield ventilation (1, illustration 1).



1. Lever for windshield ventilation
2. Lever for front and rear floor wells
3. Heat control lever, left side
4. Heat control lever, right side
5. Blower switch
6. Lever for outside fresh air
7. Air nozzle insert for fresh air - adjustable upwards
8. Adjustable louvres for fresh air - to left and right

ILLUSTRATION 1

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With only one lever opened (e.g. lever 1) and all the delivered air blown through one nozzle, in one direction, passengers might find the high air flow rate to be unpleasant. Therefore, without impairing the air flow rate, the air stream at the nozzles can be reduced by opening both side annular nozzles (lever 10, illustration 2 - moved upwards). In this instance we suggest that both side annular nozzles (9, illustration 2) be swivelled upwards and towards the outside.

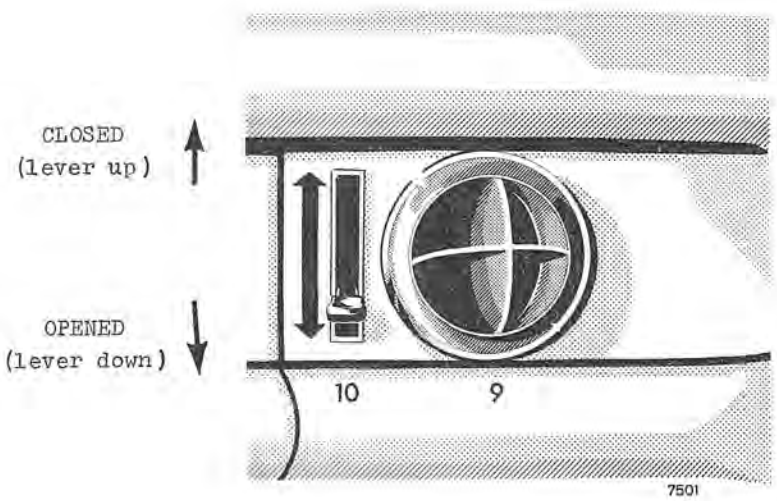

ILLUSTRATION 2

9. Annular nozzles for cross ventilation
10. Lever for air supply to annular nozzles

Outside fresh air can be blown through the center nozzle (items 6 through 8) located in the dash panel. This stream of air can be directed upwards by moving the nozzle insert (7) and, to both sides by moving the adjustable louvres (8) (illustration 1).

NOTE: If passengers are sensitive to a direct flow of air, we suggest positioning the louvres towards each other and moving the nozzle insert upwards to direct the air flow to the top center.

Heater ducts are provided at the front leg compartments. If the air blown out of these ports is considered disturbing, they can be closed with a cap, part no. 115 687 06 10, (which is available from your Mercedes-Benz parts depot).

B. Recommendations for Adjusting the Heating and Ventilating System

1. Defrosting

a. If a strong hot air stream is desired to defrost the windshield, all the hot air is to be blown upwards. To achieve this, fully open the air supply for the windshield (1) and the right and left heaters (3 and 4). Close all other air supplies, such as

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for the front and rear floor wells (2), the fresh air supply (6) and cross ventilation (10).

NOTE: The blower (5), which was explicitly provided for low-speed driving (city driving) may additionally be switched on.

b. The side windows can be defrosted and kept free from fogging during driving by opening the lever for the windshield (1), the levers for the right and left heaters (3 and 4) and the levers for the annular nozzles (10). The air stream is to be directed towards the side windows by swivelling the annular nozzles.

c. To keep the rear window free of mist, a large amount of hot air is to be directed upwards (lever 1). For this purpose, almost close the air supply for the front and rear floor wells (lever 2).

2. Heating and Ventilating of Passenger Compartment During Normal Driving Conditions

a. If normal heating of the passenger compartment is desired without a direct stream of air, we recommend opening all the levers, with the exception of the fresh air lever (6). Temperature may then be adjusted by means of the heat control levers (3 and 4).

NOTE: Opening the heater valves only a small amount will produce temperature conditions which provide cooler air at the head and shoulder level and warmer air at the leg areas.

b. For primary heating of the left or right side front and rear floor wells, direct the main air stream downwards (lever 1 is almost closed, and lever 2 is completely opened).

c. If requested, the temperature conditions described under No. 2, item a, "NOTE" (above) can be attained even with a high volume of heat. For this purpose, all hot air must be directed downwards (lever 1 completely closed) and the fresh air lever (6) opened to a small degree (in this instance, direct the fresh air louvres towards the top rear center).

3. Ventilation of Passenger Compartment During Normal Driving Conditions

a. The desired rate of air flow can be controlled by adjusting levers 1 and 2, and the fresh air lever (6). Keep the heat control levers (3 and 4) closed.

b. If a direct stream of air is desired, close all air openings not required and direct the air stream to the desired location by swivelling the appropriate nozzle.

c. The air stream can be intensified by means of a 3 speed blower (5) used in conjunction with any selected adjustment.

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C. Summary

With all air flaps opened, a high rate of air flow with a low flow of speed can be created to obtain ventilation which, to a large extent, is free of direct air streams. Only one flap opened results in an intense stream of air.

NOTE: Because of the high speed of air flow however, slight rushing noises may be encountered.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 114	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Frigiking Air Conditioning Kit -- Models 280 S/8 and 280 SE/8

The Frigiking Co. advised us that the capillary tube of the thermostat switch supplied with the Frigiking Air Conditioning kit sometimes has an incorrect length of 30 inches. The correct length of the capillary tube should be 42 inches.

For this reason, upon receiving a Frigiking Air Conditioning kit, part no. 700 830 19 00 (which is to be installed into models 280 S/8 and 280 SE/8), be sure to measure the length of the capillary tube. If the length is incorrect, a thermostat switch with capillary tube with the correct length of 42 inches must be ordered under part no. 700 831 02 41 (Frigiking part no. 55-00 114) from your Mercedes-Benz parts depot.

Incorrect switches removed from the master pack, part no. 700 830 19 00 must be returned to your M-B parts depot immediately, accompanied by an AFA (Approval for Authorization) form MBNA 512.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 112	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Air Conditioning -- All 1969 Models with Six Cylinder Engines

We have received reports from the field advising us that the alternator on some of the 1969 six cylinder models (with air conditioning) has short-circuited because the compressor brace made contact with the alternator.

According to a "NOTE" in both the Frigiking and Thermo-King "Installation Instructions" manuals, the clearance between the compressor brace and the innermost alternator terminal must be sufficient. On some models it is necessary to cut off the innermost terminal on the backside of the alternator.

The terminal and terminal cover must be trimmed to provide at least 3/16" (5 mm) clearance between the terminal and the compressor brace. Coat the exposed end of the terminal with black paint to prevent corrosion.

Please be sure that your workshop personnel are informed accordingly.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 115	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Air Leaks on Frigiking and Thermo King Air Conditioning Units -- Models 220/8 through 250/8

On some of the above mentioned models we have experienced air entering the passenger compartment through vent slots located on both sides and the front of the center console.

The following information summarizes the procedures for correcting this condition on both the Frigiking and Thermo King A/C units. Kits with the required parts are available through all Mercedes-Benz parts depots under part no.:

Frigiking sealing kit - # 700 831 17 67

Thermo King sealing kit - # 700 831 18 86

The use of these kits is explained in subsequent paragraphs.

Please be sure to order the right kit for either Frigiking or Thermo King A/C.

NOTE: Recent production of complete A/C kits already include the sealing components so that the aforementioned kits are not needed.

I. INSTRUCTIONS FOR FRIGIKING A/C

1. Remove the protective tape from the two 1/2 x 1/4 x 5-1/8" insulation strips (illustration 2), and place the insulation strips on the inside of the evaporator door, aligning the centers of the strips with the coil end plates, and placing the strips on top of the existing insulation strips.

   NOTE: When the strips are properly installed, the lower ends of the strips should contact the evaporator door hinge and the upper ends should overlap the long piece

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of the original door insulation. The upper ends of the insulation strips should be approximately 3/8" from the edge of the evaporator door.

2. With the "hooked" end of the "driver's" side case filler assembly at the top facing the return bends of the evaporator coil, insert the case filler assembly between the pivot rod and the evaporator coil. Push the filler assembly down and hook the assembly over the coil return bend. Use the same procedure for installing the "passenger" side case filler assembly.

3. Seal the holes in the tops of the filler assemblies with the Permagum sealant provided. Utilize the sealant to seal any other possible sources of air leakage around the filler assemblies. Seal the voids between the coil end plates and the evaporator housing by applying a bead of Permagum sealant at the inside joints of the coil end plates and the evaporator housing. The bead of sealant should extend from the evaporator door hinge to the bottom of the coil end plates.

4. Remove the protective tape from the 1/2 x 1/4 x 13-7/8" insulation strip and, with the adhesive side of the strip up, place the strip along the top inner edge of the evaporator door. Align the strip perpendicular with the ends of the end plate sealing strips; keep the strip straight and gently close the evaporator door to correctly attach the strip to the evaporator housing.

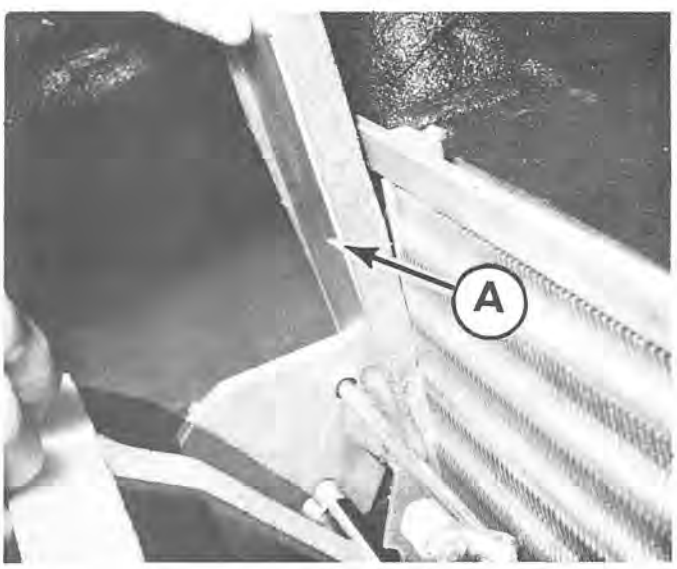

ILLUSTRATION 1

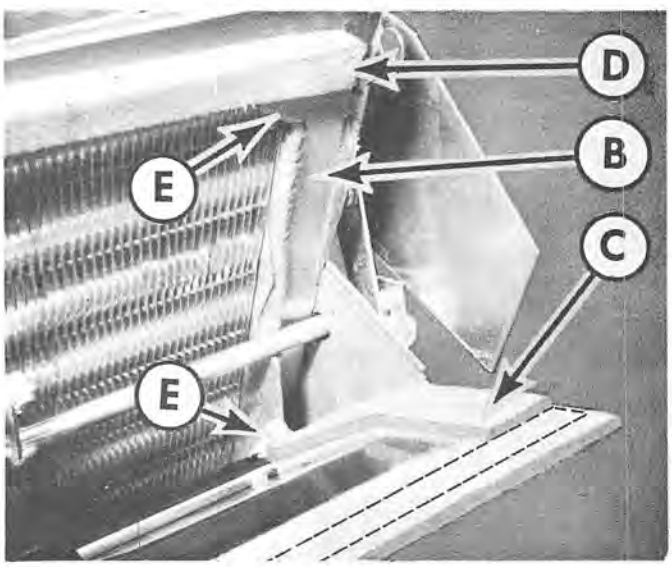

ILLUSTRATION 2

CODE	QUANTITY	PART DESCRIPTION
A	1	FILLER ASSEMBLY, DRIVER'S SIDE
B	1	FILLER ASSEMBLY, PASSENGER'S SIDE
C	2	INSULATION STRIP, 1/4 x 1/2 x 5-1/8
D	1	INSULATION STRIP, 1/4 x 1/2 x 13-7/8
E	1	PERMAGUM, 1/4 lbs.

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II. INSTRUCTIONS FOR THERMO KING A/C

1. Carefully remove console cover.

2. Carefully remove evaporator housing and lay on passenger side floorboard.

3. Work the 3/8 x 5/8 x 8-1/8 Neoprene strip between second and third row of return bends. Push the 3/8 x 1-1/2 x 8-1/8 Neoprene strip between the return bends and housing. (Illustration 3.)

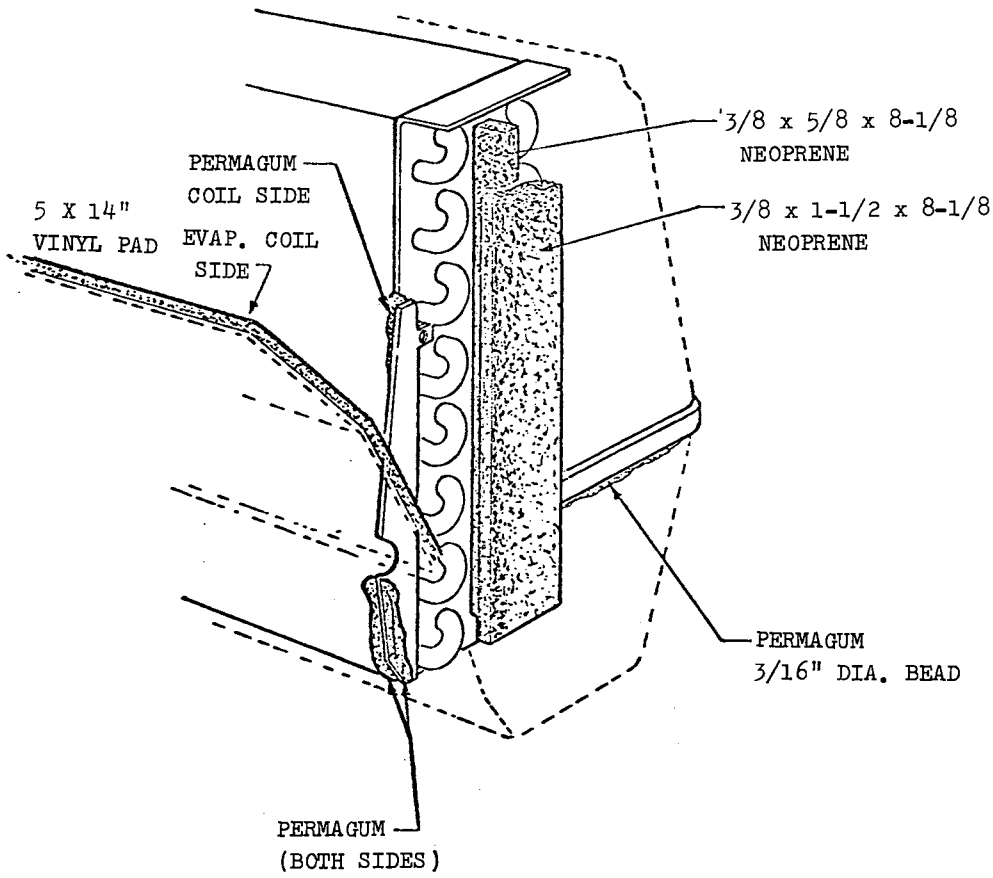

ILLUSTRATION 3

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4. Remove gray sponge material from expansion valve side of housing (between coil and housing). Using a screwdriver, carefully push the 1/2 x 1 x 9 pad of Permagum into the space making sure it seats on the housing and coil. (Illustration 4.) Do not remove linkage and spring.

5. Remove the rubber material from the evaporator coil side of the damper and install the 5 x 14" vinyl pad. Remove backing from pad and install so it extends to the edge of damper on all sides.

6. Use the 3/16" Permagum to seal coil side of air baffles at sides of coil, both sides of baffles at housing, and along sides of Neoprene strips installed in return bends.

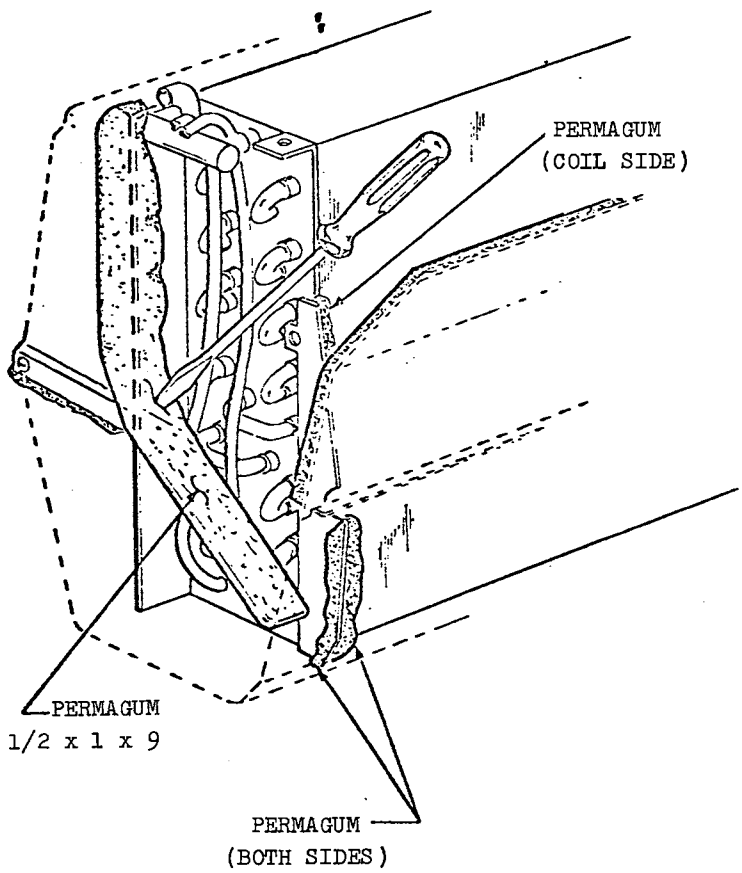

ILLUSTRATION 4

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7. If rubber strip at top of evaporator coil extends beyond coil, cut off excess so strip is flush with edge of coil.

   NOTE: This is important and must be done carefully to obtain a straight edge.

8. Use Permagum to seal joint between upper and lower sections of housing all around housing.

9. Check for air leaks by closing damper against evaporator coil. Install jumper cable to operate fan motor and check for air leaks around all sides of housing. If any leaks are found, reseal in that area with Permagum until case is air-tight.

10. When unit is leak-free, install on heater housing and seal evaporator to housing so there are no leaks.

11. Install thermostat bulb in coil, connect all wiring, and install console cover.

    NOTE: The two speed nuts are included for attaching the control lever face plate, as these were ommited from some kits.

A warranty claim may be submitted for either parts kit and/or 2½ hours labor for modification of already installed A/C units. In case of an initial installation of A/C units which are not factory-sealed, a claim for ½ hour labor, plus parts, may be submitted.

In either case, the date of installation of the air conditioning unit and the compressor serial number must be stated on the warranty claim.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 97	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, January 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: New Alternator V-Belt for All 6-Cylinder Engine Models

According to the Frigiking and Thermo-King Air Conditioning Installation Instructions manuals, it is necessary to cut off the innermost terminal on the backside of the alternator during the installation of an air conditioning unit. This is necessary in order to provide sufficient clearance between the terminal and the compressor brace.

We would like to advise you at this time that a longer alternator V-belt has entered series assembly in order to position the alternator far enough from the engine, thus eliminating the necessity of trimming the terminal. (The minimum clearance between the brace and the B+ terminal should be .20" or 5 mm.)

This new V-belt can only be installed together with a new alternator adjustment bolt. The new V-belt and adjustment bolt should be installed during the installation of an air conditioning unit on all 6 cylinder models up to the chassis end numbers listed below:

An alternator V-belt, part no. 000 997 83 92, with a new alternator adjusting bolt, part no. 121 155 20 23, entered series production as of the following chassis end numbers:

MODEL	CHASSIS END NO.
230/8	011 115
250/8	014 616
280 S/8	014 480

The alternator V-belt, part no. 002 997 08 92, with the new alternator adjusting bolt, part no. 121 155 20 23, entered series production on these models as of the following chassis end numbers:

280 SE/8	011 620
280 SE/8 Cp./Conv.	001 150
300 SEL/8	000 761

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The new alternator adjusting bolt, part no. 121 155 20 23, as used on the carburetor engines, later entered series production on the fuel injection models as of the following engine serial end numbers:

MODEL	CHASSIS END NO.
280 SE/8	015 550
280 SE/8 Cp. Conv.	001 550
300 SEL/8	001 042

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 93	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

Fort Lee, January 1969

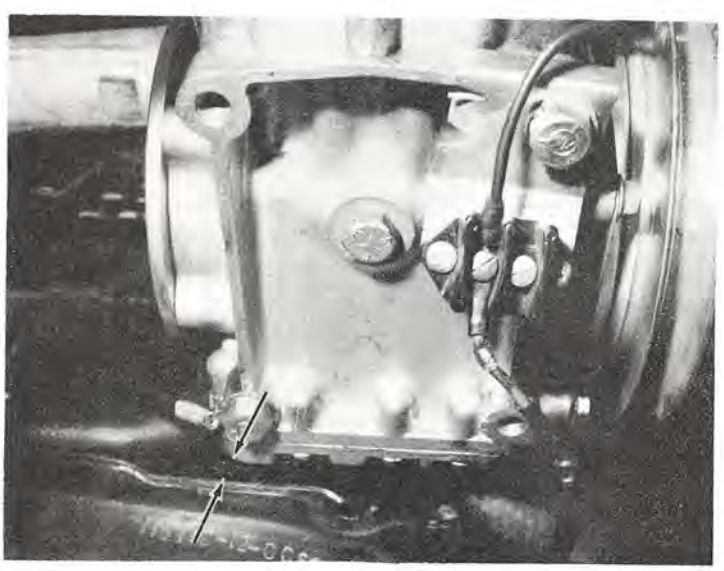
TO OUR MERCEDES-BENZ DEALERS

Subject: Air Conditioning -- Model 220 D/8

When installing an air conditioning unit in model 220 D/8, be sure that there is sufficient clearance between the compressor and the right hand body frame side member as shown in the illustration below.

This may be achieved by installing the rubber engine mounts of model 250/8, part no. 114 223 01 12 - left side, and part no. 114 223 02 12 - right side, which are available from your Mercedes-Benz parts depot.

On later production cars of this model, the frame side member flange will be slightly relieved in order to facilitate more clearance.



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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 75	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, December 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Magnetic Hot Water Valve -- Model 600

The magnetic hot water valve which regulates the hot water flow to the heaters is subject to accumulations of various deposits on the valve seat.

These deposits may cause the valve to remain partially open when it should be completely closed. As a result, the heater stays on constantly, thus producing hot air and causing the heat sensor to "sense" heat. This may prevent the hot water valve from being opened completely in case the temperature control is actually set to "heat", even though the heat sensor is functioning properly. (In order to maintain a constant temperature level, according to the temperature selected, the heat sensor "senses" the desired temperature and accordingly, opens or closes the hot water valve.)

If it has been proven through testing (see "Workshop Manual Type 600", job no. 83-11) that the heat sensor is functioning properly, the hot water valve should be checked for leakage due to deposits. In this case, the valve should be removed and cleaned.

Please note that there are three versions of the hot water valve: (Shown in illustrations 1 and 3.)

- First version (1) equipped with a strainer (9) (illustrations 1 and 3).
- Second (2) and third (3) version without strainer (illustrations 1 and 3).

The exterior of the first version is identified by a flange (4), which contrary to the flange of the second and third versions (5a and 5b) consists of two sections and has a greater diameter (illustration 1).

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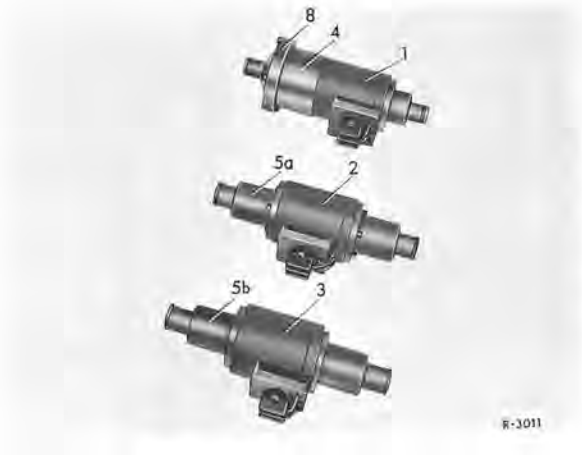

Illustration 1

1. First version, magnetic hot water valve
2. Second version, magnetic hot water valve
3. Third version, magnetic hot water valve
4. Flange with valve seat
5a Flange with valve seat
5b Flange with valve seat
8. Cover plate

A. Removal and Installation Procedure of the Magnetic Hot Water Valve

Removal:

1. Drain cooling water.
2. Disconnect the ground cable from the battery.
3. Loosen the water hose clamps and remove the hoses from the hot water valve.
4. Unscrew the lower front mounting nut and remove the protective cap.
5. Disconnect the cable.
6. Unscrew the lower rear mounting nut.
7. Remove the hot water valve from the retaining clamps by pulling downward.

Installation:

Installation is the reverse of the removal procedure.

B. Repair of the Magnetic Hot Water Valve

First Version

The valve seat (6) is located inside the flange (4). To retain the necessary contact pressure, the setting of the adjustment screw (7) for the valve seat must, under no circumstances, be changed. (See illustrations 1 and 2.)

Disassembly of First Version Valve (illustrations 1 and 3)

1. Unscrew and remove the 4 screws from the cover plate (8).
2. Remove and clean both the cover plate (8) and the strainer (9).
3. Mark the installation position of the flange (4) in relation to the valve housing (1).

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4. Unscrew and remove the screws (inside the flange) which connect the flange (4) and the valve housing (1). Remove the flange.

5. Clean the valve seat and the passage tube (10) and then lightly grease with a water pump grease.

Reassembly of First Version Valve

Reassembly is the reverse of the disassembly procedure.

After reassembling, check the valve for leakage with a pressure of 14.2 lbs./sq in. (1 kg/cm^2) applied in the direction of the water flow (see arrow - 4, illustration 3).

NOTE: If the valve is heavily clogged, disassemble completely as shown in illustration 3, and clean.

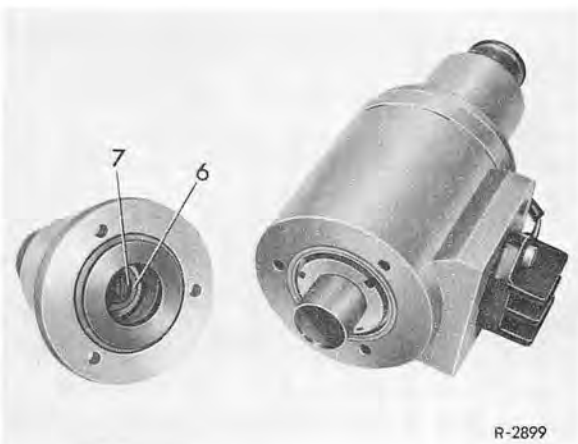

Illustration 2

6. Valve seat
7. Adjustment screw

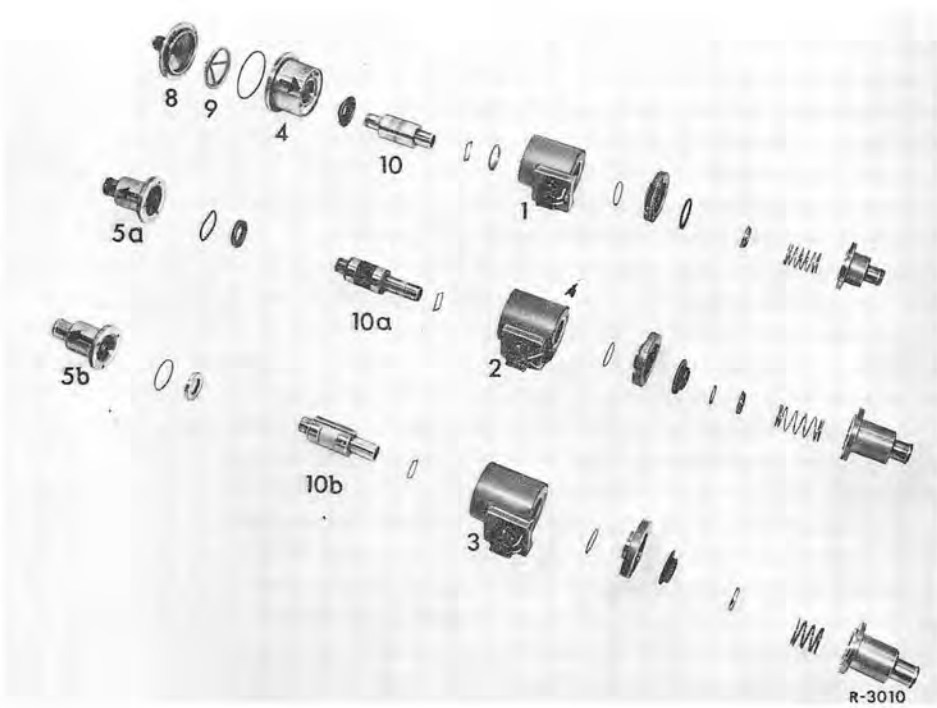

Illustration 3

1. First version
2. Second version
3. Third version
4. Flange
5a Flange
5b Flange
8. Cover plate
9. Strainer, first version
10. Passage tube
10a Passage tube
10b Passage tube
arrows (4, 5a, 5b) = direction of flow

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Second and Third Version

The valve seat (6) is located inside the flange (5a or 5b). Contrary to the first version, no strainer is provided. In order to retain the necessary contact pressure, the setting of the adjustment screw (7) for the valve seat must, under no circumstances, be changed. (See illustrations 1 and 2.)

Disassembly of Second and Third Version Valves (illustrations 1, 2, and 3)

1. Mark the installation position of the flange (5a or 5b) in relation to the valve housing (2 or 3).

2. Remove the screws from the flange. Then remove the flange.

3. Clean the valve seat (6) and the passage tube (10a or 10b) and then lightly grease with a water pump grease.

   NOTE: If the valve is heavily clogged, disassemble completely as shown in illustration 3, and clean.

Reassembly of Second and Third Version Valves

Reassembly is the reverse of the disassembly procedure.

After reassembling, check the valve for leakage with a pressure of 14.2 lbs./sq in. (1 kg/cm^2) applied in the direction of the water flow (see arrow - 5a or 5b, illustration 3).

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 87	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe 83	Passenger Cars

Fort Lee, November 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Heating -- Models 220/8 through 250/8 (W 114/115)

On some cars, an excessive amount of direct heat (with the heater on) may be blown on the driver's legs, coming from the heater duct near the leg compartment area.

In order to prevent this direct flow of heat, deflector plates have been installed on the left heater duct during series production on the above mentioned models since the beginning of April 1968.

Installation of the deflector plate started as of the following chassis end numbers:

Model	Chassis End No.
220/8	004 502
220 D/8	011 423
230/8	004 512
250/8	008 310

As of August 1968 production, the opening in the transmission tunnel covering is being closed by a cover plate (7, illustration 1).

Upon customer's request, a deflector plate (6) and a cover plate (7) (illustration 1) are available for subsequent installation on the left heater duct (illustration 2).

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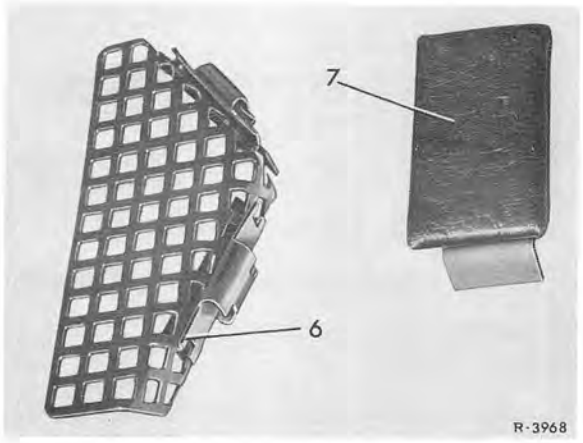

Illustration 1

6. Deflector plate
7. Cover plate

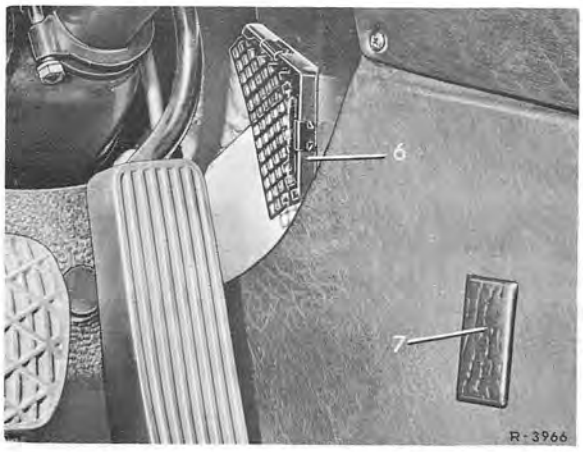

Illustration 2

6. Deflector plate
7. Cover plate

The deflector plate, part no. 115 687 01 10, and the cover plate, part no. 115 687 00 10 (state color!), are available on special request from your Mercedes-Benz parts depot. Please state the trim code, chassis and body number.

A warranty claim for parts only may be submitted for the preceding jobs.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 71	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	83	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS Fort Lee, June 1968

Subject: Supplementary Installation Procedure for Thermo King Air Conditioning Unit AAC 176/177, -- Models 220/8, 220 D/8, 230/8, and 250/8.

Some of the early production Thermo King Air-Conditioning units - AAC 176/177, have a number of shortcomings which should be corrected during installation. The following information summarizes these shortcomings and the procedure for correcting them. We would like to point out, however, that during installation, you may find only some or possibly none of these shortcomings on a particular unit. Therefore, to obtain a quality installation, only those corrective measures which apply to a particular unit should be carried out.

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A. Condenser Installation

The Thermo King Installation Instructions manual does not provide an illustration indicating the proper location of the lower brackets for installing the condenser. In the near future, these models will come with the mounting holes already provided by the factory.

For the present, it will be necessary to drill four (4) 9/64" diameter holes by using brackets as templates, as shown in illustration 1.

Install condenser bracket using four (4) #10 x 5/8 screws.

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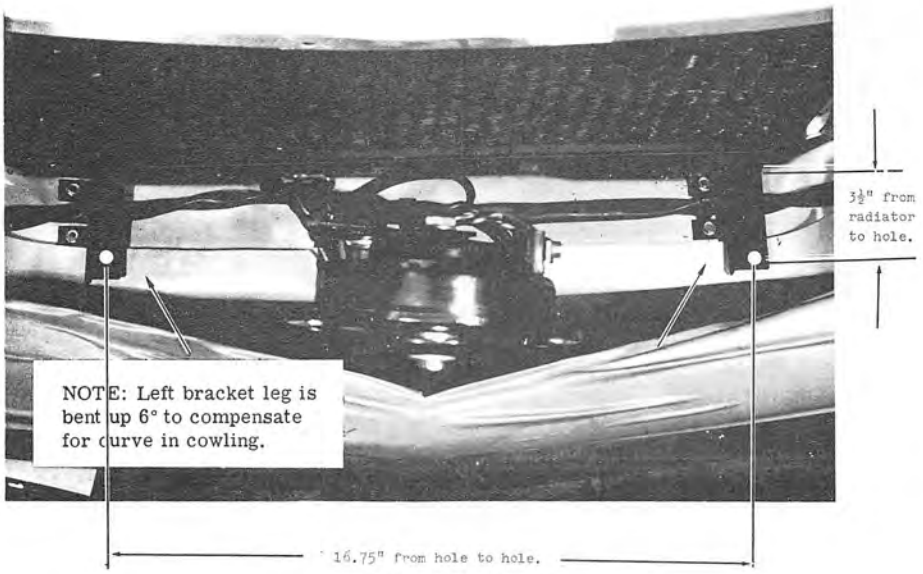

Illustration 1

B. Installation of the Receiver-Dryer

During the installation of the receiver-dryer, the insulating material cut out of the fire wall has to be installed between the receiver-dryer and the wheel housing to insure that the receiver-dryer cannot rattle against the wheel housing. (See illustration 2).

NOTE: Tear a .20" (5 mm) piece of material from the originally removed insulating material and attach by pressing the adhesive side against the wheel housing.

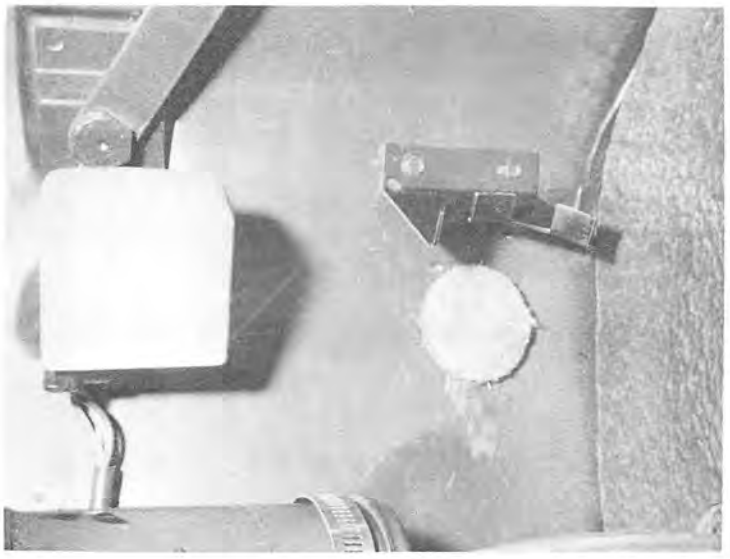

Illustration 2

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C. Preparation of Evaporator Case for Installation

1. If the attachment of the damper door actuating lever to the rod is loose, file the rod in order to lengthen the flat portion where the actuating lever is attached and tighten the clamping bolt securely. If the clamping bolt is too short, a longer bolt will have to be used.

2. The evaporator case to the heater housing is not air-tight. Therefore, to insure an air-tight seal around the flange, use Permagum as required.

3. The lengths of the two bowden cables, which were supplied with the kit, for the air-conditioning controls are incorrect. The correct lengths are listed below:

Short Cable:	Wire length	9.84" (250 mm)
	Case length	6.30" (160 mm)
Long Cable:	Wire length	16.54" (400 mm)
	Case length	11.02" (260 mm)

Cut bowden cables to lengths indicated above.

The rubber sleeve on the short cable must be removed in order to install the holding clip to the mounting bracket. The eye on the end of the long cable must be cut off.

4. Check the bracket, which guides the spring loaded rod on the right side of the damper door, for interference with the thin copper tubes located along the right side of the evaporator housing. If the bracket is too close to the copper tubes when moving the damper door, bend the tubes carefully toward the evaporator. Check for operation and free movement of the rod. If the cotter pin in the upper position interferes with the rivet of the bracket, the cotter pin must be removed and left out.

NOTE: If the cotter pin is removed, the damper door must remain in closed position (to the coil) during installation of the evaporator case, otherwise, the spring may come off the rod.

D. Installation of Evaporator Case

1. For proper sealing of the damper to the heater, a foam rubber seal 1" x 1/2" x 15 1/4" must be glued to the heater (see illustration 3) before installation of the evaporator case. (The foam rubber must be purchased locally).

2. The evaporator case must be mounted with one additional sheet-metal screw on each side. (See illustration 4, which indicates the location of these screws).

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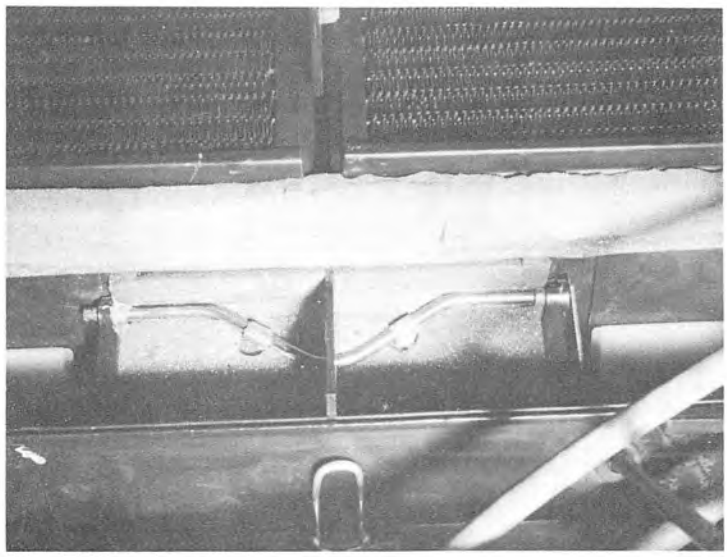

Illustration 3

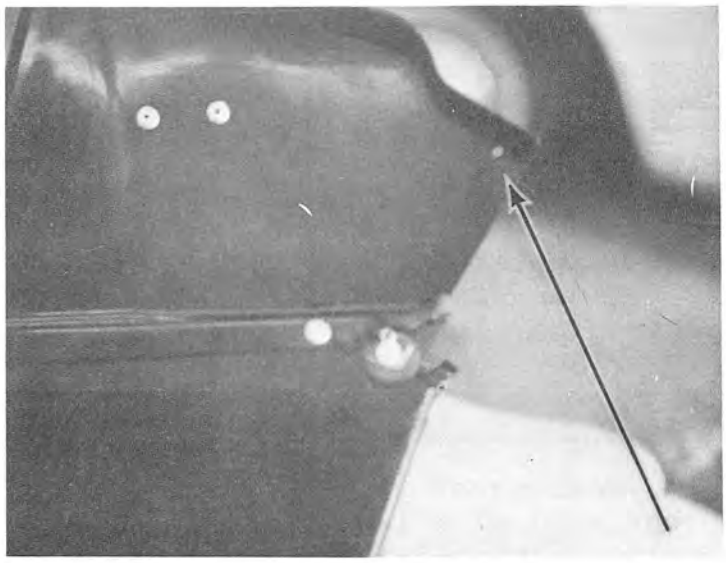

Illustration 4

3. The template for locating the drain hose holes, supplied with the air-conditioning kit, cannot be used. Therefore, it will be necessary to drill a .52 inch (14 mm) hole in the tunnel for the drain hose, after the evaporator case has been installed.

(continued)

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NOTE: A rubber grommet is not to be used now, as the present grommet is too small and therefore, will not fit properly.

The drain hole location is indicated on illustration 5.

Illustration 5

4. It is possible, that during the installation of the evaporator case to the heater housing, the blower housing could accidentally be bent, resulting in the blower wheels touching the blower housing. To avoid the possibility of this happening, be sure to install the evaporator case with extreme care.

5. When installing the evaporator case to the heater housing, the evaporator case may be too close to the transmission tunnel, (see illustration 6), causing the evaporator case to push against the clip bosses of the heater housing. In this case, the cut outs in the housing must be enlarged in a downward direction by 1/4" (a, illustration 7).

6. When installing the evaporator case, check for free movement of the damper. If the center slot of the damper door interferes with the center reinforcement of the heater housing, it will be necessary to enlarge the slot of the damper door as required. (See b, illustration 7).

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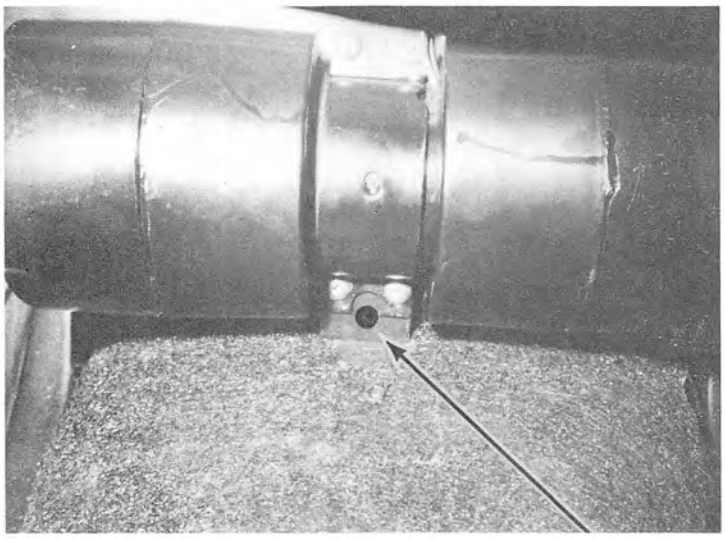

Illustration 6

Blower Motor Bracket

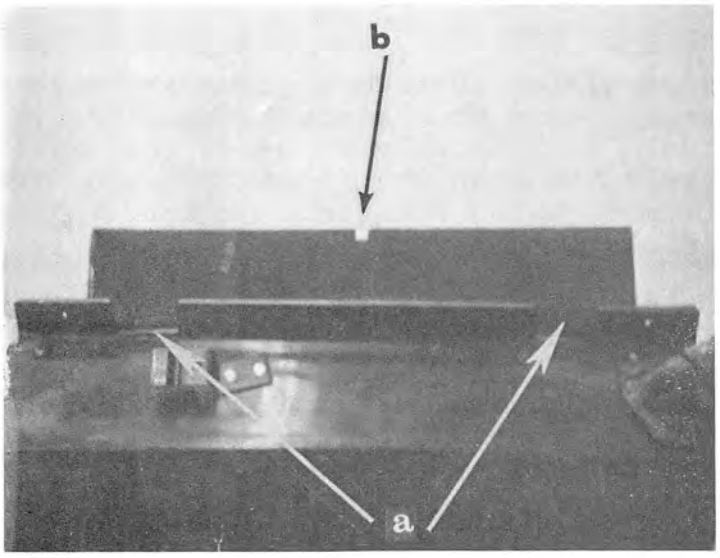

Illustration 7

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7. The Installation Instruction manual shows that the blower motor support bracket is to be attached to the blower rear mounting bracket by using a metric screw and nut.

   Instead, use the sheet metal screw supplied with the kit. Therefore, a 9/64" diameter hole must be drilled into the blower motor support bracket (illustration 6). Use the angle bracket which is to be installed later on the transmission tunnel as a template.

   NOTE: The drilling of the hole is to be done after the installation of the evaporator case.

8. If the upper flange of the evaporator case interferes with the hole for the bowden cable in the heater housing, cut off the edge of the flange of the evaporator housing as required.

9. To compensate for the variation in the thickness of the foam rubber of the cover housing at the thermostat switch location, use one (1) or two (2) 1/2" I.D. x 1" O.D. flat washers between the thermostat housing and the cover housing.

   To fill out the space between the thermostat shaft and the knock-out hole in the cover housing, use the tubular spacers supplied with the kit.

10. The Thermo King kit does not come with clips for fastening the control lever face plate to the cover housing. Therefore, use clip (part No. 108 994 01 45) or equivalent Timmermann clip.

11. The inlet and outlet tubes of the evaporator coil (on some units) may interfere with the glove compartment. In that case, carefully bend tubes down approximately 10°.

E. Hose Routing

Photo # 20, on page 28, of the Installation Instructions manual is incorrect. The manual shows a 90° fitting on the inlet hose of the receiver dryer.

Instead, install the production hose, which is supplied with the kit, with a straight fitting on the receiver dryer. (See illustration 8).

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Illustration 8

F. Installation of Wire Harness

1. The in-line fuses required for the air-conditioning wire harness are: 8 amp. in the black wire, and 16 amp. in the red wire. Be sure the red wire has a 16 amp. fuse. If not, install a 16 amp. fuse accordingly.

2. The early air-conditioning units do not have a ground cable for the relais, as shown on item 1, photo # 17, of the Installation Instructions manual. For this reason, be sure that both screws mounted to the fire wall are grounded.

   NOTE: On later air-conditioning units, you will find a ground cable in the kit.

3. The air-conditioning unit for the 4-cylinder models does not contain a ground cable for the compressor in the kit. Therefore, if you install a compressor on a 4-cylinder model, be sure to install a ground cable. Use gauge No. 10 cable, 16" long, with cable connectors that have an inner diameter of the eye of 3/8".

4. The inner diameter of the rubber grommet for the electric harness is too large. Therefore, this grommet should be sealed by using Permagum.

5. The color code and terminals of the present blower motor wire leads are inconsistent. Connect the wire in such a way that the blower motor wheel turns clock-wise facing the motor from the drivers side.

(over)

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NOTE: On later air-conditioning units, both blower motor wires will have a push-in type connector and will be color coded the same as the harness wires.

6. After installing an air-conditioning unit, be sure to attach the Label of Certification, supplied with the kit, to the right side of the radiator frame, of the car, as seen in the driving direction.

The above mentioned parts, identified by M-B part numbers, are available through your Mercedes-Benz parts depot.

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C O R R E C T I O N

Re: Service Information No. MB-T 70, Group 83, dated May 1968, "Air Conditioning -- Models 230/8 and 250/8"

In the above article, due to a typographical error, an incorrect cut-off chassis end number was listed for model 250/8. Instead of 004906, the chassis end number should read 004946.

Please change your copies accordingly.

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MERCEDES-BENZ

service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 40	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo 83	Passenger Cars

Fort Lee, May 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Water Entering Car through Ventilation System -- Models 220/8 through 250/8

On the above models, the high water pressure used at automatic car washes can cause more water to pass through the ornamental grill than the water drains can discharge, possibly resulting in water entering the car through the air distribution ducts.

To correct this condition, the blower housing flange has been modified effective with the following chassis end numbers:

220 D/8	-	4206
220/8	-	1505
230/8	-	1954
250/8	-	5233

If necessary, a shield can be subsequently installed on earlier cars. We further recommend slightly cutting the two water drain cover flaps to facilitate opening of the water drains under very slight water pressure.

Installation of shield

1. Remove ornamental grille and air inlet mesh by pulling out spreader rivets.

   Note: To remove rivets, push plastic center pin in with sharp object.

2. Apply a layer of body sealer along the contact edge (5) of the shield (1) (illustration 1).

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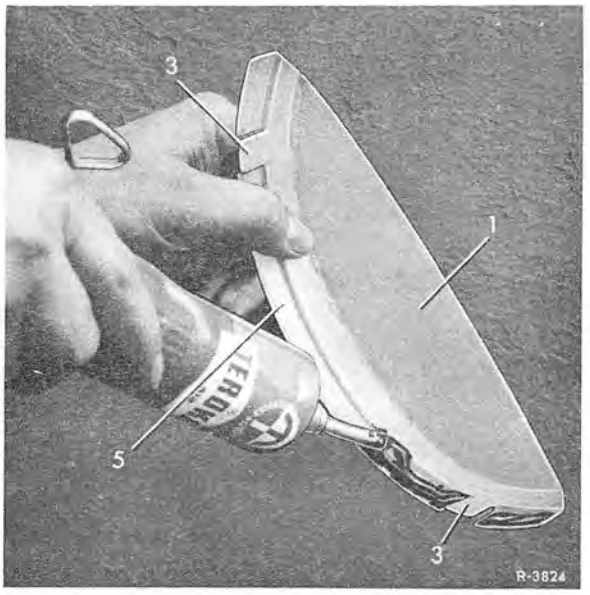

Illustration 1

1. Shield
3. Cut-out section
5. Contact edge

3. Install shield (1) horizontally on air inlet opening flange in such a manner that the cut-out sections are located between the flange (2) and the blower housing (4) (illustration 2).

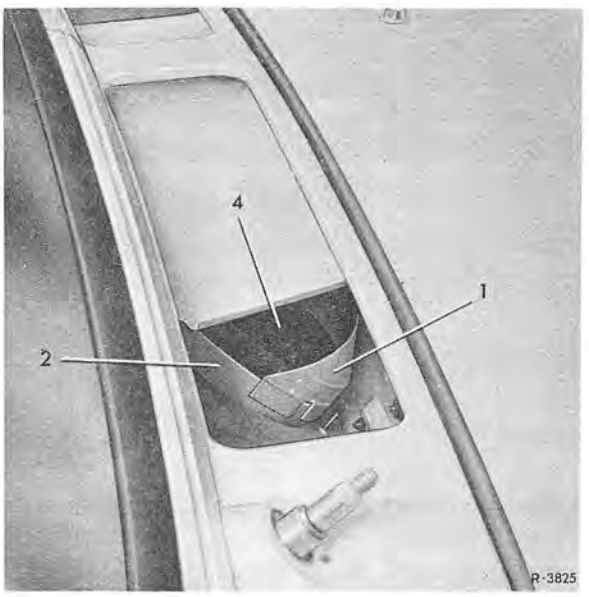

Illustration 2

1. Shield
2. Air inlet opening flange
4. Blower housing

4. Apply a thick layer of body sealer to the exposed sides of cut-out sections (3) and ends of shield.

5. Reinstall ornamental grille and air inlet mesh.

Required parts

One (1) shield, part No. 115 836 00 33, and five (5) spreader rivets, part No. 000 990 03 92, all of which can be ordered through the M-B parts depots, and sealing compound, which can be procured locally.

Installation time: 0.4 hours

A warranty claim for parts plus labor may be submitted for the above job.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 47	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo 83	Passenger Cars

Fort Lee, March 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Operating Difficulties with Heater Control Cables -- Types 250 S and 250 SE

We have received several reports about operating difficulties with the bowden heater control cables on types 250 S and 250 SE.

In such cases, the difficulty is usually caused by cooling water deposits, which cause the heater valves to stick and consequently result in improper positioning and failure of the cables.

To prevent the valves from sticking, a rust inhibitor should be added to the cooling water and the valve levers should be actuated several times during the summer months in accordance with the instructions in the owner's manuals.

To further ensure proper operating of the heater control cables, caution should be exercised during subsequent installation of radios and air-conditioning units to make sure that the position of the cables is not altered, particularly with respect to the heater control levers.

If operating difficulties are encountered during the summer months, the following maintenance work should be performed:

1. Drain cooling water. (Preserve it if it contains anti-freeze.)

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2. Remove ashtray and glove compartment. Depress nylon center pins, remove light from bracket, and disconnect lamp from connector. (See illustration 1.)

3. Disconnect both cables from the valve levers, but, to avoid having to readjust the cables later, do not disconnect them from the holding brackets (see illustra- 2).

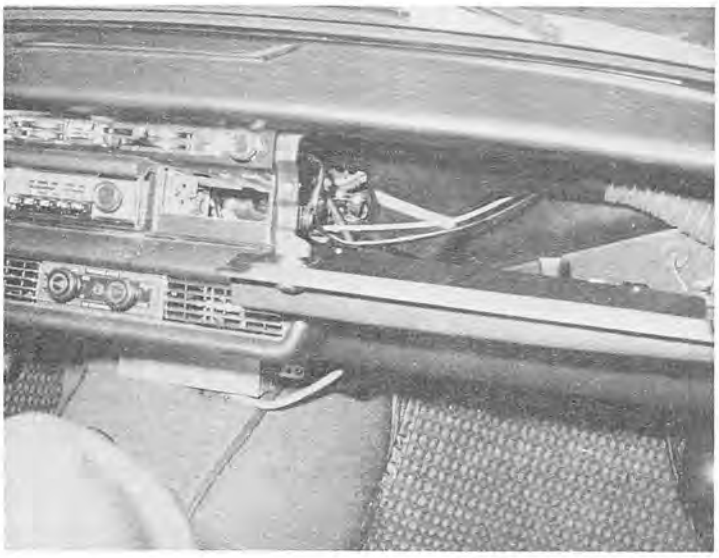

Illustration 1

4. Loosen screws at hot water valve levers.

5. Mark the position of the levers with respect to the locking plates. Then remove both levers and locking plates.

6. Using needle-nose pliers, remove snap rings and lift out valves.

7. Clean valves and valve body with cleaning solvent (do not use emery cloth) and, if necessary, replace seals (see valve seal table below).

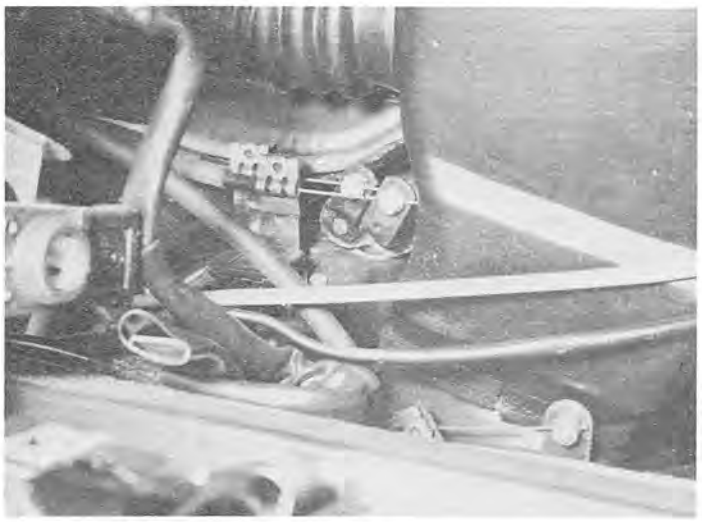

Illustration 2

8. Before reassembly, coat all moving surfaces with Molykote #1011 (valve lubricant).

VALVE SEALS

TYPE	CHASSIS END NO.	HEAT EXCHANGER	PART NUMBER AND QUANTITY OF REQUIRED SEALS
250 S	up to 037 191	000 835 35 01	000 835 00 98 (1)
	from 037 192	000 835 55 01	000 835 00 98 (2) 000 835 08 98 (2)
250 SE	up to 029 951	000 835 35 01	000 835 00 98 (1)
	from 029 952	000 835 55 01	000 835 00 98 (2) 000 835 08 98 (2)

(continued)

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VALVE SEALS (CONT.)

TYPE	CHASSIS END NO.	HEAT EXCHANGER	PART NUMBER AND QUANTITY OF REQUIRED SEALS
300 SEb	up to 002 293	000 835 35 01	000 835 00 98 (1)
	from 002 294	000 835 55 01	000 835 00 98 (2) 000 835 08 98 (2)
300 SEL	up to 001 548	000 835 35 01	000 835 00 98 (1)
	from 001 549	000 835 55 01	000 835 00 98 (2) 000 835 08 98 (2)
200, 200 D, 230, 30 S, 230 SL, 250 SL, 250 SE Coupe/Conv., 300 SE Coupe/Conv., 600	See parts catalogs.		000 835 00 98 (1)

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 36	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: 91-97	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Location of the Backrest Adjustment Control Knob -- Models 220/8 through 250/8

On the above mentioned models, the adjustment control knob for the backrests are located on the door side of the right and left front seats. In case of customer complaints regarding difficulty in reaching this knob, it is possible to interchange the front seats (so that both control knobs are facing each other). However, this can only be done provided there are no folding arm rests or center seat cushions fitted (or provided for).

When carrying out this job, make sure that the tracks for the seats are also interchanged.

Important!

The seat locks must remain attached to the side of the transmission tunnel.

Please note that this job can only be performed on vehicles of model series W 114/115.

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Article No.	File	Group	Application
6/71	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, AUGUST 1971

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M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

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Parts Manager			
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308	54	Electric clocks, all models
313	27	Automatic transmission K4A 040 Models 300 SEL/9-3.5 and 280 SE/9-3.5 cp/cv.
314	27	Automatic transmission, Models K4A 025, K4C 025, K4A 040, K4B 050, Installation of fluid coupling and repair of primary pump and front transmission cover.

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

DID YOU KNOW . . .

. . . that to improve engine operation during warm-up periods, the 63°F (17°C) temperature switch (part no. 033 545 6724) has been incorporated into the engine lubrication system and is installed in the oil filter housing?

This switch has been installed in production on the following models, beginning with the following chassis end numbers: 250/8 Cp-004201, 250/8-005020, 280S/8-076171, and 280SE/8-SEL/8-082981.

. . . that Necto 242FF brake linings are not released for front brake installation on models 220/8, 220D/8, 230/8, 250/8 and 250/8 Cp?

For released brake pads, please refer to SI No. 6, Group 42/43, August 1970.

Address any communications
relative to this issue to

Mercedes-Benz of North America, Inc.
Attention: Technical Service Department

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DID YOU KNOW . . .

. . . that Service Information MB-T165, Group 03, March 1970, provides information on proper rear crankshaft seal installation for 4 and 6 cylinder engines?

. . . that a new injection nozzle (part no. 000 017 69 12) to eliminate diesel "pinging" under partial load, is available in the event this condition cannot be eliminated utilizing the procedures described in Service Information 113, April 1968 and 67, November 1969?

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SUBJECT: SOME FACTS ABOUT UNLEADED GASOLINE

The recent television advertising by some oil companies about the improvements of air pollution by car exhaust, when using unleaded gasoline, needs some clarification. These ads could lead the general public to the opinion that all you have to do to reduce the car exhaust emissions and to clean up the air is to drive with undeaded gasoline. This is not quite so. Let's look at the facts.

When we are talking about "lead emissions", we are talking about lead particles exhausted into the atmosphere. The federal Environmental Protection Agency estimated in a recent report that motor vehicles contribute only four per cent of the total man-made particulates entering the U.S. atmosphere from all sources. On the average, a car produces about 0.35 grams per mile of particulate matter, and an appreciable portion of this is lead in urban areas.

Recent studies with normal leaded fuel on a variety of cars, conducted in the laboratories of Ethyl Corporation, the company that manufactures most of the lead used in gasoline, show that under the federal emission test cycle, which approximates city driving conditions, the portion of the exhaust particulates which becomes air suspended averages about 0.34 grams per mile. The composition of this suspended particulate consists of approximately one third lead components (20 per cent lead), on third carbon and one third other components which contain iron, ammonium and nitrate ions, sulfur, etc. In other words, non-leaded gasoline reduces the vehicle emission particulates only by one third, according to Ethyl. This is one third of four per cent of the total from all sources.

The most objectionable vehicle exhaust emissions are nitrogen oxide, carbon monoxide and hydrocarbons. These emissions are gases, as opposed to lead emissions which are particulates. Gaseous exhaust components contribute very considerably to the pollution of our air, depending on the location, the intensity of the car population and the climatic conditions.

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The contribution of vehicle exhaust to the total air pollution has been as high as 80 per cent, depending on population density. These emissions are objectionable because nitrogen oxide and hydrocarbons, in particular, contribute to photochemical smog.

It might be of interest to note that the introduction of exhaust emission controls, as used in the 1971 model cars, has reduced the exhaust emissions to a point where, if all cars on the road were emitting only to the 1971 standards, the air would be as clean as in the early 1940's.

Coming back to the effect of unleaded gasoline on the total air pollution caused by car emissions, you will understand from the above explanations that the contribution of lead particulates, because of their small volume but even more importantly, because they are not affected by the photochemical process, is minimal. However, future federal requirements will reduce the particulate emissions, also.

Now one might ask "why all the fuss about unleaded gasoline"? There is one very good reason why unleaded gasoline is going to be the coming thing: further reduction of the automobile exhaust emission, already required by legislation for 1975, will at the present state of technology require the usage of such exotic apparatus as thermal reactors or catalytic reactors. The lifetime, in particular of the catalysts in these devices, is effected by the amount of lead in the gasoline. The more lead, the less the life expectancy of these elements. Therefore, the automotive ındustry is very much interested that unleaded gasoline is being marketed and made available for future engines that will be equipped with catalytic reactors and thermal reactors. Also, lead-free gas tends to produce fewer hydrocarbon and carbon monoxide pollutants.

This is the main reason why the marketing of unleaded gasoline has been intensified. There are a few important considerations to be taken into account when using unleaded gasolines on today's high compression engines. Generally, but not necessarily, most of the unleaded gasolines now being marketed have an octane rating of 91. Using unleaded gasoline with this octane number in a high compression engine can destroy the engine rapidly because the anti-knock protection, the reason lead had been added to gasoline, is no longer there.

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However, there are a few unleaded gasolines on the market which have a 98 or higher octane number. Talking specifically about our present Mercedes-Benz gasoline engines, use of high octane unleaded gasoline will not result in damage to our engines, as long as the octane number is 98 RON or higher for carburetor cars, and 96 RON or higher for fuel injected cars.

In some domestic cars the use of unleaded gasoline as such, low or high octane number, might lead to exhaust valve recession. Valve recession is a wearing of the valve tulip into the cylinder head material to a point where the exhaust valve will not seat completely anymore. If valve recession progresses to this point, a burned exhaust valve will be the result. On our present Mercedes-Benz cars we do not have to worry about this factor, since both the exhaust valve inserts in the cylinder heads and the seat of the exhaust valve tulip are "armoured". However, low octane gasoline with or without lead cannot be used under any circumstances with our present Mercedes-Benz high compression engines.

We hope that the above explanation will make it understandable why unleaded gasoline is here and will spread, and what the facts are concerning its introduction and its usage.

Note: The above considerations do not apply to the low-compression engines of the 1972 models, which require the use of unleaded gasoline.

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MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
MB-T 244	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, AUGUST 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: ADJUSTMENT CALCULATOR CAMBER AND CASTER.

Basic information for front wheel camber/caster adjustments is normally obtained from the adjustment diagram (KD 00 140 01 00). However, extensive familiarity with this diagram is required to perform quick and accurate adjustments. Therefore, an adjustment calculator which will provide quick camber/caster data, has been developed.

This adjustment calculator is designed to ease wheel alignment either using the new caster adjustment device, part number 001 589 33 21 00, or locally procured camber gauge In either case, an intermediate adjustment angle is specified to bring the wheel into the correct alignment. Various symbols and colors provide for simplified data reference. The adjustment calculator and instructions are contained in a transparent plastic cover.

The enclosed calculator is provided free of charge. Additional calculators may be ordered from the MBNA Technical Literature Department, 158 Linwood Plaza, Fort Lee, New Jersey 07024 or Mercedes-Benz of Canada, Limited, 849 Englinton Avenue East, Toronto 17, Ontario, Canada, at $1.00

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Service Division

See instructions on reverse side.

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INSTRUCTIONS FOR THE USE OF WHEEL ALIGNMENT CALCULATOR

KD 00 100 3254 00

The wheel alignment indicator provides information on the adjustment of all MB passenger cars of Series 114/115, using either camber or caster indicating devices. To use the calculator it is necessary to know the nominal (specified) values of both camber and caster for the particular vehicle type, and the measured angles for the front end being aligned.

These values are entered on the calculator and result, after the calculating procedure detailed below, in an intermediate adjustment angle which is to be achieved by adjusting the front eccentric of the suspension. The rear eccentric is then used to set the wheel at the nominal value.

With the procedure correctly followed, these two adjustments will result in the correct setup of both camber and caster, and there will be no need for continuous trial-and-error procedures to align the wheel.

ALIGNMENT USING CASTER INDICATOR

USE ONLY RED SCALES ON CALCULATOR

STEP 1

Align the red scales on the two outermost disks of the calculator so that the nominal camber angle on scale 1a is lined up with the nominal caster angle on scale 2a.

ALIGNMENT USING CAMBER INDICATOR

USE ONLY BLUE SCALES ON CALCULATOR

Align the blue scales on the two outermost disks of the calculator so that the nominal camber angle on scale 1b is lined up with the nominal caster angle on scale 2b.

Hold the outermost disks locked in this position between thumb and forefinger.

STEP 2

With the outermost disks of the calculator held together firmly, rotate the inner, smaller disk until the measured camber angle on scale 3 is exactly opposite the measured caster angle on scale 4.

STEP 3

Read off the intermediate caster adjustment on scale 5a, at the arrow.

Read off the intermediate camber adjustment on scale 5b, at the arrow.

Adjust the wheel to the intermediate value shown, by rotating the front eccentric.

STEP 4

Align the wheel to the nominal caster angle by using the rear eccentric adjustment.

Align the wheel to the nominal camber angle by using the rear eccentric adjustment.

NOTE: CURRENT SPECIFICATIONS ON THESE MODELS CALL FOR:

CAMBER = $0^{\circ}\ 00' \pm 10'$	
CASTER = $\frac{2^{\circ}\ 30'}{3^{\circ}\ 30'}, \pm 20'$	Manual Steering Power Steering

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Article No.	File	Group	Application
5/71	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, MAY 1971

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

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MB-T 234	07	Throttle Valve Assembly Standardization, Models 180DC, 190D, 190DB, 190DC, 200D/8 and 220D/8.
MB-T 249	01	Cylinder Head/Cylinder Head Bolts, Models 250/8 and 280S/8.
MB-T 259	54	Right Side Alternator Belt/ Bracket Modifications, Model 600
MB-T 262	00	Adjustment Gauge For Windshield Wiper Linkage, Models 220D/8 To 250/8 Cp.

MBNA/MBC ISSUE NO. 5-71

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- CORRECTION NOTICE -

Paragraph 2, Service Information Number 133, Group 05, March 1971, Subject: Installation of Stop Bushing In The Chain Tensioners --- Models 280SE/9 3.5 Cp/Cv and 300SEL/9 3.5 should be changed as follows:

All vehicles with chassis end numbers, etc.

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

DID YOU KNOW . . .

. . . that injection nozzles manufactured by firms other than BOSCH are available on the market as a substitute replacement? These "immitations" are neither recommended or released for installation on Mercedes-Benz Diesel engines. We strongly recommend that only original MB spare parts, manufactured according to specifications and covered by warranty be used.

. . . that since December 1970, and beginning with chassis end no. 171580, the throttle valve assembly venturi pipe is now cast as an intregral part of the throttle valve assembly on the Model 220D/8?

Address any communications relative to this issue to

Mercedes-Benz of North America, Inc.
Attention: Technical Service Department

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

DID YOU KNOW . . .

. . . that the holes drilled in the fenders and doors to facilitate installation of ornamental moldings on models 230 SL through 280 SL/8 sometimes become corroded which prevents proper reinstallation and/or securing of these moldings?

This condition may be corrected by reboring the corroded holes to 3/16" (5mm) in diameter and securing the moldings using plastic expanding rivets, part number 000 990 03 92; available from MB Parts Depots.

Address any communications relative to this issue to

Mercedes-Benz of North America, Inc.
Attention: Technical Service Department

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

DID YOU KNOW . . .

. . . that the rubber boot around the transmission selector lever was modified on vehicles with floor shift, automatic transmissions. The new boot (which was redesigned in order to improve suppression of transmission operation noises) will only fit on vehicles equipped with the new foam-padded selector lever - See Service Information No. MB-T 219, group 26/27, February 1971. Part no. of the new boot: 115 267 05 97.

. . . that the "Selector lever box" (part no. 000 260 01 72) used in connection with the new foam-padded floor shift lever is a modified version? In case of subsequent installation of a new selector lever on vehicles manufactured prior to June 1970 the new box has to be installed.

Address any communications relative to this issue to

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Article No.	File	Group	Application
4/71	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, APRIL 1971

CIRCULATION

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160	83	Hard Operating/Heater Control Valves - All Models except 600
MB-T 229	00	Approved Engine Oils, Models 300SEL/8-6.3 and 600.
MB-T 232	27	Flex-Plate to Hydraulic Coupling Connection, Models 220D/8 to 300SEL/9 3.5 with automatic transmissions.
MB-T 237	83	Behr Air Conditioner Discharge Noise, Models 300SEL and 280SE Cp/Cv with 3.5 Ltr. Eng.
MB-T 240	27	Automatic Transmission Breather Cap, Models 220D/8, 220/8, 250/8, 250/8 Cp., 280S/8, 280SE/8, 280SE/8 Cp/Cv, 280SE/9 - 3.5 and 300SEL/9 - 3.5.

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CORRECTION NOTICE

The parts listing contained on page 4, Service Information Number 162, Group 27, March 1971, should be changed as indicated.

PARTS INFORMATION:

NOMENCLATURE	PART NUMBER
Vacuum Cell	000 270 01 79
Pressure Pin (39.65mm)	115 277 29 75
Pressure Pin (40.15mm)	115 277 30 75
Pressure Pin (40.65mm)	115 277 31 75
Omnifit, Rapid Red M	002 989 23 71

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Article No.	File	Group	Application
3/71	SERVICE INFORMATION	L	PASSENGER CARS

Fort Lee, March, 1971

CIRCULATION

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Parts Manager			
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156	42/43	Disc Brakes
157	60-81 84-89	Front Doors
128	83	Subsequent Installation of 144°F Thermoswitches on Behr and Thermoking A/C Units
W 7	Tools	Socket Wrench (New Version) For Nozzle Holder

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C O R R E C T I O N

Re: "Did You Know?" item, 2/71 Issue

The above referenced "Did You Know Item" should be changed to read as follows:

Did you know ....

> that the original piston for M 116 engines, standard size part number 116 030 10 17 is now replaced by 116 030 30 17, which is now used in production.
>
> Intermediate size piston 116 030 11 17 is replaced by 116 030 31 17 and first repair size 116 030 12 17 is replaced by 116 030 32 17.

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC. • MERCEDES-BENZ OF CANADA, LTD.

Article No.	File	Group	Application
1/71	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, JANUARY 1971

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

CONTENTS

NO.	GROUP	SUBJECT
MB-T 223	00	Approved Engine Oils, Oil Change Intervals and Oil Filling Quantities
MB-T 208	00	Vehicle Preservation Instructions for New Cars
131	00	Hypoid Gear Oil for Rear Axles, All Passenger Car Models
123	07	Zenith Carburetors
MB-T 226	07	Carburetor Adjustment - 6 Cylinder Engines
MB-T 217	09/11	Flame Arrester Screens, Vehicles Equipped with 3.5 L Engines
141	20	Top Cooling Water Hose Chafing
MB-T 177a	83	Increased Warranty Time Allowance, MB-T 177, Group 83, May 1970
80	60-81 84-89	Wind and Tire Noise Elimination

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MBNA / MBC ISSUE NO. 2-71

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

D I D Y O U K N O W . . .

. . . that pistons, Part No. 116 030 10 17, for M 116 engines were replaced by pistons, Part No. 116 030 30 17?

Both piston versions may still be used, but a later version, Part No. 116 030 32 17 "Repair Stage I", is now used in production.

Address any communications relative to this issue to

Mercedes-Benz of North America, Inc.
Attention: Technical Service Department

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Article No.	File	Group	Application
1/71	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, JANUARY 1971

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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114	07	Self-Locking Nut/Fuel Injection Pump Centrifugal Timing Device Model 220 D/8
MB-T 216	40	Tire Intermixing
MB-T 214	42	Brake Fluids
122	42/43	Parking Brake Adjustment -- Models 220/8 to 300 SEL/8 6.3
115	46	Steering Linkage - All Passenger Car Models, Excepting Model 600

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Article No.	File	Group	Application
12/70	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, DECEMBER 1970

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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109	32	Humming Noise/Automatic Leveling Control -- Model 220 D/8
65	40	Recommended Radial Ply Tires Models 220 D/8 to 300 SEL/8 6.3
105	60-81 84-89	Rear Door Grip Handle Mountings Models 280 S/8 through 300 SEL/8-6.3

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MBNA / MBC ISSUE NO. 12/70

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DON'T BE A VICTIM OF RUMORS --- KEEP INFORMED. READ YOUR MERCEDES-BENZ SERVICE INFORMATION !

Strictly Shop...

D I D Y O U K N O W . . . .

. . . that the impulse sending units located in the distributor on cars with electronic injection systems have to be replaced every 60,000 miles (or every 5th "E" Service Schedule)?

These units are responsible for timely injection of the fuel by the injection nozzles. By design, they are subject to wear and should be replaced as indicated.

Address any communications
relative to this issue to

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Attention: Technical Service Department

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Article No.	File	Group	Application
11/70	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, NOVEMBER 1970

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

CONTENTS

NO.	GROUP	SUBJECT
MB-T 209	00	Service Information Filing System Change
68	03	Crankcase Assembly Cooling Grooves -- Model 280 SL/8
62	07	Mechanical Gasoline Injection System Modifications -- Models 280 SE/8, 280 SL/8 and 300 SEL/8
117	35	Hydraulic Load Compensator Thrust Arm Bushings
MB-T 203	83	Thermo King Air-Conditioner Compressor Noises
	60-81	
116	84-89	Electric Window Lifts - Reinforced Window Lifters/Additional Stop Bracket -- Models 280 SE/8 Cp./Cv. and 280 SE/9 3.5 Cp./Cv.

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Strictly Shop...

D I D Y O U K N O W . . .

. . . that Service Information No. 132, Group 54, dated January 1970, contained instructions for re-routing the capillary tube on all 114/115 models?

This modification is no longer required and models now produced will have the capillary tube installed as it was prior to the modification.

. . . that plastic mesh radiator grills will soon replace the metal grills currently used?

The new plastic grill, which is fully interchangeable with the metal one, has already been installed in production on some 250's and 250 Coupes (Part No. 114 888 01 85).

Beginning November, all W 114 models will be produced with the plastic grill.

. . . that headrest cushions tend to loosen with use?

This condition may be corrected by removing the plastic covers, located on either end of the cushion, at the swivel point. The swivel screws may then be tightened to the desired value with a socket wrench.

. . . that most of the customer complaints received regarding removal/re-installation of the rear seat cushion on Models 220 D/8 to 300 SEL/8 6.3 are primarily due to incorrect re-installation procedures by the owner?

The cushion mounting is designed so that the front edge must be installed first, then the rear edge pushed down under the backrest. This method affords safe anchorage and is considered a passenger safety measure.

Address any communications relative to this issue to

Mercedes-Benz of North America, Inc.
Attention: Technical Service Department

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Article No.	File	Group	Application
MB-T 251	SERVICE INFORMATION	L	PASSENGER CARS

This Service Information supersedes Service Information MB-T 190, Group L, of August 1970.

FORT LEE, APRIL 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TEST MANUAL, SUPPLEMENT NUMBER 7.

Attached please find Supplement Number 7 to the Test Manual. The grey Tune-up Test Sheets contain data pertinent to Mercedes Benz passenger cars, both European and USA versions, manufactured since 1968. Test Sheets 1151a through 1157b provide data for USA version (exhaust emission vehicles. All other test sheets (1102a through 1112b) are not related to USA version automobiles and may be discarded if so desired.

This supplement also increases the total Test Manual contents. Therefore, the Commercial Vehicle Axle Adjustment Data contained in Part II, which has been declared invalid, (yellow test sheets) may be removed and discarded. Current Commercial Vehicle Axle Adjustment Data may be found in pertinent Commercial Vehicle Technical Data Manuals.

Additional copies of Supplement Number 7 may be ordered from MBNA Technical Literature Department, 158 Linwood Plaza, Ft. Lee, New Jersey 07024 or Mercedes-Benz of Canada, Limited, 849 Eglington Avenue East, Toronto 17, Ontario, in Canada.

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Article No.	File	Group	Application
MB-T 241	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, MARCH 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: CHECK CHARTS FOR AUTOMATIC TRANSMISSIONS/FUEL INJECTION SYSTEMS

The check charts listed above were introduced in Service Information No. MB-T 188 of June, 1970 and No. MB-T 191 of July, 1970. Both Service Informations contained disposition and general information pertinent to these forms. To insure compliance with the aforementioned Service Informations, this publication will briefly summarize the two.

FORM MBNA 468 CHECK CHART FOR AUTOMATIC TRANSMISSIONS:

This form must be used when a transmission is replaced or undergoing repair work during the warranty period. A copy of this form must accompany each automatic transmission warranty claim submitted.

FORM MBNA 469, CHECK CHART FOR FUEL INJECTION SYSTEMS (6 CYLINDER ENGINES)

Required when a fuel injection pump is replaced or major adjustments performed during the warranty period. A copy must accompany each fuel injection warranty claim submitted.

NOTE: IN THE FUTURE, PAYMENT OF WARRANTY CLAIMS FOR TRANSMISSION AND FUEL INJECTION SYSTEM REPAIR OR COMPONENT REPLACEMENT WILL NOT BE PROCESSED UNLESS ACCOMPANIED BY THESE FORMS.

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Article No.	File	Group	Application
112	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, NOVEMBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: GASOLINE INJECTION ENGINE STARTING SYSTEMS BOOKLET

Attached please find a copy of our new booklet entitled "Starting Systems for Gasoline Injected Engines". This eight page publication contains quick reference data pertinent to various injection starting systems and should prove both informative and helpful to service personnel.

Additional copies of this booklet may be ordered from Mercedes-Benz of North America, Inc., 158 Linwood Plaza, Fort Lee, New Jersey 07024, Attn: Technical Service Department.

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No.	MB-T 202	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	L	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SERVICE INTRODUCTION BOOKLET FOR MODELS 280 SE/9 3.5 CP./CONV., 300 SEL/9 3.5 USA VERSION (REFER TO ELECTRIC WIRING DIAGRAM, PAGES 76 AND 77)

The electric wiring diagram appearing in the above mentioned booklet deviates slightly from the actual situation.

Enclosed you will find one copy of the corrected diagram along with the explanation. We request that you replace the existing diagram by pasting the attached pages over the incorrect pages in order to prevent any further confusion.

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No. MB-T 204	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo L	PASSENGER CARS

FORT LEE, OCTOBER 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: SERVICE WORKSHEETS

Attached please find a sample set of the latest Mercedes-Benz Service Worksheets. They have just been revised to include all models as well as all presently valid service/maintenance recommendations.

In order to be able to perform quality service, we recommend that these worksheets always be used when servicing cars. We have invested a substantial amount of time and money in order to produce these worksheets and we suggest that you utilize them accordingly. They are available from the Technical Service Department.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 136	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo L	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW INSTRUCTIONAL CHARTS FOR PASSENGER CAR MODELS SINCE 1968

We herewith inform you that the above mentioned new instructional charts (multi-color printing) are now available. The size of these charts is 8 1/4 in. by 11 3/4 in. One set of these charts consists of 20 different charts.

We would like to point out that Chart No. KTG 9813 is good only for Model 250/8 Sedan, engine M 114; while Chart No. KTG 9816 showing engine M 130 is applicable to models 280 S and 250/8 Coupe.

The charts may be ordered free of charge under Part No. KD 00 102 4207 00, from our Technical Service Department.

Please find enclosed one set of charts.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 141	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	L	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: POLICY
DISTRIBUTION OF WORKSHOP MANUAL TO CUSTOMERS

We have undertaken an evaluation of our present policy regarding the distribution of workshop manuals to customers.

The policy, whereby requests for workshop manuals from customers living within a 50 mile radius of an authorized Mercedes-Benz dealer had to be channeled through the respective dealer, is being discontinued. Workshop manuals are now sold to customers without any restrictions, as availability permits.

Although the proper use of these publications by customers is obstructed to a certain degree by the fact that other allied service literature as well as adequate technical training are not available to them, we consider this policy change a major improvement in the service area, especially in view of the great number of requests for literature which we constantly receive.

We would like to bring to your attention that bound issues of 2 of our manuals are now utilized for distribution to customers, namely the following manuals:

"Service Manual Maintenance, Tuning, Unit Replacement -- Passenger Cars starting August 1959",

"Service Manual Maintenance, Tuning, Unit Replacement -- Passenger Cars Starting 1968, Series 114/115".

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These manuals are available at a list price of $12.00 and a dealer net price of $10.00.

Since both of these manuals are bound editions, no further supplements to them will be issued. The "Service Manual Passenger Cars as of 1959" is complete through supplement 40.

"Service Manual Passenger Cars starting 1968" is presently complete through supplement No. 3 and future supplements will be contained in reprint editions which will be issued periodically (about once a year).

Customer orders for workshop manuals should only contain the information needed to handle the request; other communication should be made separately.

Please inform all customers requesting shop manuals from now on that these may be directly ordered by writing to:

Mercedes-Benz of North America, Inc.
158 Linwood Plaza
Fort Lee, N.J. 07024
Attn.: Technical Service Department

We are sure that this revised policy and procedure will prove to be beneficial to all concerned.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 163	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	L	PASSENGER CARS

FORT LEE, MARCH 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: EXCERPTS FROM NEW REPAIR MANUAL FOR MODEL SERIES 114/115

Enclosed please find copies of the first available chapters of our new Repair Manual for the model series 114/115 entitled:

REPAIR - PASSENGER CARS STARTING 1968 - REAR BODY SECTION, SERIES 114/115 (GROUP 63/64/98) KD 00 102 1202 00

REPAIR - PASSENGER CARS STARTING 1968 - REAR AXLE, SERIES 114/115 (GROUP 35) KD 00 102 1202 01

The Repair Manual for Passenger Cars Starting 1968, which deals mainly with repair and overhauling procedures, is now in preparation.

NOTE: THESE SUPPLEMENTS ARE NOT TO BE FILED WITH ANY OTHER SERVICE MANUALS AS THEY REPRESENT ONLY PART OF THE NEW REPAIR MANUAL.

Additional copies of these supplements are available from the Home Office Technical Service Department upon request.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 166	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo L	PASSENGER CARS

FORT LEE, FEBRUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW CAR PRE-DELIVERY INSPECTION-FORM MBNA 435, 1-70. THIS NEW FORM REPLACES THE MERCEDES-BENZ CERTIFICATE OF PREPARATION FOR RETAIL DELIVERY FORM 454

For some years you have been successfully using the "Certificate of Preparation For Retail Delivery" form in preparing automobiles for retail delivery to your customers. The operations were performed on the cars in addition to all the checks and/or adjustments performed by us in our Vehicle Preparation Centers.

Over the years, more and more emphasis is being put by the governmental agencies on the safe operation of the automobiles and protection of customers. We, as Mercedes-Benz of North America, do appreciate the efforts by authorities and have expanded our VPC preparations and inspections in order to meet the requirements.

During the time the automobiles leave our VPC's and the time they are being retailed to customers, things can happen which are beyond our control. In order to make sure that your and our customers do receive an automobile in the best humanly possible condition, we do need your assistance in achieving this goal. For that reason we have expanded the inspection form for pre-delivery to a greater extent as compared to the previous inspection form in order to cover all items involved.

The new pre-delivery inspection form consists, as before, of three copies, one for the customer, one for your own records, and one to be sent to the MBNA Claims Department. Your Addressograph recorder may be used for imprinting your name and address.

(over)

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The form as such is self-explanatory and we would like you to make use of this new form as of now. We are sure that you will appreciate supplying your customers with automobiles in perfect condition, which can be achieved by performing the operations outlined conscientiously.

Attached we are sending each of our dealers a small initial supply (10 copies) of subject form. Additional copies may be ordered through our Technical Service Department free of charge.

As a rule, however, these forms will be supplied with each new car, as was done in the past with the "Certificate of Preparation for Retail Delivery".

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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MERCEDES-BENZ

NEW CAR PRE-DELIVERY INSPECTION

▶ INSPECT THE FOLLOWING ITEMS AND CORRECT AS NECESSARY

Consult shop manual and service bulletins for adjustment standards and torque specifications. If parts replacements are made, submit corresponding claim.

Selling Dealer Name & Address

MODEL & YEAR _____

CHASSIS SERIAL NO. _____

NOTE: INSPECTION AND/OR CORRECTION OF THE ITEMS LISTED IN THIS FORM ARE CONSIDERED PART OF THE DEALER'S NEW CAR PREPARATION AND OBLIGATIONS.

INSPECTED BY _____

DATE _____

PART 1: INSIDE CAR, ENGINE OFF

_____ 1. Horns
_____ 2. Windshield wipers and washer
_____ 3. Alternator light
_____ 4. Parking brake warning light
_____ 5. High beam control light
_____ 6. Hazard warning lights and control lights
_____ 7. Cigar lighter
_____ 8. Steering lock
_____ 9. Ignition key warning buzzer
_____ 10. Heated rear window
_____ 11. Heating/Ventilation controls
_____ 12. Accelerator pedal operation
_____ 13. Power windows/electric sliding roof
_____ 14. Manual windows
_____ 15. Vent windows
_____ 16. Seat adjustments/seat belts
_____ 17. Radio/automatic antenna
_____ 18. Turn signals/control lights
_____ 19. Stop lights, parking lights
_____ 20. Courtesy lights
_____ 21. Fog lights
_____ 22. Hood release and safety catch

PART 2: UNDER HOOD, ENGINE OFF

_____ 23. Engine oil level
_____ 24. Battery fluid level and state of charge
_____ 25. Radiator coolant level and anti-freeze protection
_____ 26. Load leveler, fluid level in reservoir
_____ 27. Steering fluid level
_____ 28. Brake fluid reservoir fluid level
_____ 29. Clutch master cylinder fluid level
_____ 30. Windshield washer fluid level/anti-freeze solvent
_____ 31. Hoses and lines for leaks of water, oil, fluids
_____ 32. Throttle linkage and wide open position, lubricate if required
_____ 33. Drive belt tensions
_____ 34. Operation of auxiliary fan

PART 3: UNDER HOOD, ENGINE RUNNING, WARM

_____ 35. Automatic transmission fluid level
_____ 36. Automatic choke operation
_____ 37. Dwell angle
_____ 38. Ignition timing
_____ 39. Idle speed adjustment in neutral and gear (set parking brake!)
_____ 40. Idle mixture
_____ 41. Fast idle adjustment

PART 4: ON HOIST, ENGINE OFF

_____ 42. Manual transmission fluid level
_____ 43. Rear axle fluid level
_____ 44. Visual inspection of lines and fittings for leaks of water, oil, fluids
_____ 45. Steering linkage connections
_____ 46. Front axle mounting bolts
_____ 47. Steering box mounting bolts
_____ 48. Routing of brake hoses, lines and cables

PART 5: OUTSIDE OF CAR, ENGINE OFF

_____ 49. Headlight adjustment, high/low beam
_____ 50. Door locks, keys and trunk lock, child safety lock (rear doors)
_____ 51. Wheel bolt torque
_____ 52. Exterior paint and moldings, door operation
_____ 53. Tire pressure and condition, including spare wheel
_____ 54. Check toe-in

PART 6: SPECIAL SYSTEMS, WHEN APPLICABLE

A. AIR SUSPENSION

_____ 55. Remove rubber shipping blocks
_____ 56. Alcohol in anti-freeze container
_____ 57. Proper operation of air suspension pull knob: raised position/control light
_____ 58. Drain condensation water from pressure tank

B. COMFORT HYDRAULIC SYSTEM

_____ 59. Fluid level in reservoir with engine running
_____ 60. Front and rear seat adjustment controls
_____ 61. All windows, trunk lid, sliding roof, partition window
_____ 62. Heating/cooling and ventilation flaps

C. VACUUM CONTROLS

_____ 63. Door locks, trunk lock, fuel filler flap
_____ 64. Seat backrest locking (coupes, convertibles)

PART 7: ROAD TEST (OR DYNAMOMETER)

_____ 65. Starter lockout switch (N and P)
_____ 66. Transmission shifting, including parking lock
_____ 67. All instruments and indicators
_____ 68. Steering control
_____ 69. Service Brake
_____ 70. Engine performance
_____ 71. Parking brake
_____ 72. Air conditioning/heater
_____ 73. Abnormal noises

PART 8: GENERAL

_____ 74. Install all items in accessory carton
_____ 75. Clean interior and exterior of car including tires, trunk and engine compartment
_____ 76. Check contents of trunk: tool kit, spare wheel, wheel bolt wrench, car jack
_____ 77. Check contents of glove compartment: Owner's Manual, seat belt operation instructions, dealer directory, service booklet/plastic cover and "Owner's Service and Warranty Policy" booklet, accessory warranty card and literature
_____ 78. Complete set of keys: 2 master, 1 secondary

PART 9: DELIVERY – OWNER INSTRUCTED IN:

_____ 79. General operation of vehicle and all accessories
_____ 80. Use of keys
_____ 81. Instruments
_____ 82. Hood lock and radiator cap, coolant level
_____ 83. Checking oil, brake fluid levels
_____ 84. Operation of convertible top
_____ 85. Explanation of servicing requirements and warranty
_____ 86. Changing wheel/use of jack/tire pressure chart
_____ 87. Fuel and oil requirements
_____ 88. Operation and service of air suspension, comfort hydraulic system and vacuum controls if applicable

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DISTRIBUTION: White—Customer; Yellow—Dealer; Pink—Claims Dept. Printed in U.S.A.

MERCEDES-BENZ

NEW CAR PRE-DELIVERY INSPECTION

► INSPECT THE FOLLOWING ITEMS AND CORRECT AS NECESSARY

Consult shop manual and service bulletins for adjustment standards and torque specifications. If parts replacements are made, submit corresponding claim.

Selling Dealer Name & Address

MODEL & YEAR _____

CHASSIS SERIAL NO. _____

NOTE: INSPECTION AND/OR CORRECTION OF THE ITEMS LISTED IN THIS FORM ARE CONSIDERED PART OF THE DEALER'S NEW CAR PREPARATION AND OBLIGATIONS.

INSPECTED BY _____

DATE _____

PART 1: INSIDE CAR, ENGINE OFF

_____ 1. Horns
_____ 2. Windshield wipers and washer
_____ 3. Alternator light
_____ 4. Parking brake warning light
_____ 5. High beam control light
_____ 6. Hazard warning lights and control lights
_____ 7. Cigar lighter
_____ 8. Steering lock
_____ 9. Ignition key warning buzzer
_____ 10. Heated rear window
_____ 11. Heating/Ventilation controls
_____ 12. Accelerator pedal operation
_____ 13. Power windows/electric sliding roof
_____ 14. Manual windows
_____ 15. Vent windows
_____ 16. Seat adjustments/seat belts
_____ 17. Radio/automatic antenna
_____ 18. Turn signals/control lights
_____ 19. Stop lights, parking lights
_____ 20. Courtesy lights
_____ 21. Fog lights
_____ 22. Hood release and safety catch

PART 2: UNDER HOOD, ENGINE OFF

_____ 23. Engine oil level
_____ 24. Battery fluid level and state of charge
_____ 25. Radiator coolant level and anti-freeze protection
_____ 26. Load leveler, fluid level in reservoir
_____ 27. Steering fluid level
_____ 28. Brake fluid reservoir fluid level
_____ 29. Clutch master cylinder fluid level
_____ 30. Windshield washer fluid level/anti-freeze solvent
_____ 31. Hoses and lines for leaks of water, oil, fluids
_____ 32. Throttle linkage and wide open position, lubricate if required
_____ 33. Drive belt tensions
_____ 34. Operation of auxiliary fan

PART 3: UNDER HOOD, ENGINE RUNNING, WARM

_____ 35. Automatic transmission fluid level
_____ 36. Automatic choke operation
_____ 37. Dwell angle
_____ 38. Ignition timing
_____ 39. Idle speed adjustment in neutral and gear (set parking brake!)
_____ 40. Idle mixture
_____ 41. Fast idle adjustment

PART 4: ON HOIST, ENGINE OFF

_____ 42. Manual transmission fluid level
_____ 43. Rear axle fluid level
_____ 44. Visual inspection of lines and fittings for leaks of water, oil, fluids
_____ 45. Steering linkage connections
_____ 46. Front axle mounting bolts
_____ 47. Steering box mounting bolts
_____ 48. Routing of brake hoses, lines and cables

PART 5: OUTSIDE OF CAR, ENGINE OFF

_____ 49. Headlight adjustment, high/low beam
_____ 50. Door locks, keys and trunk lock, child safety lock (rear doors)
_____ 51. Wheel bolt torque
_____ 52. Exterior paint and moldings, door operation
_____ 53. Tire pressure and condition, including spare wheel
_____ 54. Check toe-in

PART 6: SPECIAL SYSTEMS, WHEN APPLICABLE

A. AIR SUSPENSION

_____ 55. Remove rubber shipping blocks
_____ 56. Alcohol in anti-freeze container
_____ 57. Proper operation of air suspension pull knob: raised position/control light
_____ 58. Drain condensation water from pressure tank

B. COMFORT HYDRAULIC SYSTEM

_____ 59. Fluid level in reservoir with engine running
_____ 60. Front and rear seat adjustment controls
_____ 61. All windows, trunk lid, sliding roof, partition window
_____ 62. Heating/cooling and ventilation flaps

C. VACUUM CONTROLS

_____ 63. Door locks, trunk lock, fuel filler flap
_____ 64. Seat backrest locking (coupes, convertibles)

PART 7: ROAD TEST (OR DYNAMOMETER)

_____ 65. Starter lockout switch (N and P)
_____ 66. Transmission shifting, including parking lock
_____ 67. All instruments and indicators
_____ 68. Steering control
_____ 69. Service Brake
_____ 70. Engine performance
_____ 71. Parking brake
_____ 72. Air conditioning/heater
_____ 73. Abnormal noises

PART 8: GENERAL

_____ 74. Install all items in accessory carton
_____ 75. Clean interior and exterior of car including tires, trunk and engine compartment
_____ 76. Check contents of trunk: tool kit, spare wheel, wheel bolt wrench, car jack
_____ 77. Check contents of glove compartment: Owner's Manual, seat belt operation instructions, dealer directory, service booklet/plastic cover and "Owner's Service and Warranty Policy" booklet, accessory warranty card and literature
_____ 78. Complete set of keys: 2 master, 1 secondary

PART 9: DELIVERY – OWNER INSTRUCTED IN:

_____ 79. General operation of vehicle and all accessories
_____ 80. Use of keys
_____ 81. Instruments
_____ 82. Hood lock and radiator cap, coolant level
_____ 83. Checking oil, brake fluid levels
_____ 84. Operation of convertible top
_____ 85. Explanation of servicing requirements and warranty
_____ 86. Changing wheel/use of jack/tire pressure chart
_____ 87. Fuel and oil requirements
_____ 88. Operation and service of air suspension, comfort hydraulic system and vacuum controls if applicable

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MBNA 435 1/70

DISTRIBUTION: White—Customer; Yellow—Dealer; Pink—Claims Dept.

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Article No.	File	Group	Application
MB-T 285	SERVICE INFORMATION	L	PASSENGER CARS

Fort Lee, June 1971

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: MODEL 600 SERVICE OPERATION TIME GUIDE

By separate mail you will receive your initial copy of the new TIME GUIDE for Model 600. Detailed explanations as to the purpose of this publication and how the book is organized are contained in the book itself.

Additional copies of this manual are available from our Technical Literature Department, 158 Linwood Plaza, Fort Lee, New Jersey 07024 or Mercedes-Benz of Canada, Limited, 849 Eglinton Avenue East, Toronto 17, Ontario at a price of $3.50 each.

We hope this manual will aid you in providing improved service to your customers.

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No.	MB-T 190	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	L	PASSENGER CARS

This Service Information supersedes Service Information No. 14, Group L, of May 1970.

FORT LEE, AUGUST 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: TEST MANUAL

There seems to be confusion with the proper use of the Tune-Up Test Sheets of the recently mailed Supplements Nos. 5 and 6 to the Test Manual. We would like to clarify that the exhaust gas values and the output data listed on the slide chart including the test sheets are only valid for the earlier models up to and including model year 1967. Starting with model year 1968, all models are equipped with exhaust emission control systems. Listed below, in detail, are the publications which contain information on the exhaust data and tune-up specifications for the above models.

1. The following 1968 production model year cars are being covered in Service Information No. MB-T 31, Group 07 of October 1967:

200	250 SE
230	250 SL
230 S	600
250 S	

(over)

REQUIRED IMMEDIATE INFORMATION

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2. For vehicles starting with production year 1968-1969, the test data published in Service Information No. MB-T 53, Group 07, of May 1968 has to be used for the following models:

220/8	280 SE/8
230/8	280 SL/8
250/8	300 SEL/8
280 S/8	

3. For Model 300 SEL/8 6.3, production year 1968-1969, the test values listed in the booklet "Type 300 SEL/8 6.3" must be used. Page 19 will show you the "Adjustment Values for Injection Test Stand or in Operation".

4. For production year 1970 Models, the test data listed in the booklet "Model Year 1970 Passenger Cars - USA Version" has to be used. The data may be found on Page 50 under the title "Exhaust Gas Test Data and Idling Speed".

   The following Models are covered:

220/8	280 SL/8
250/8 Sedan	300 SEL/8
250/8 Cp. (114.023)	300 SEL/8 6.3
280 S/8	600
280 SE/8	

5. For Models 280 SE/9 3.5 Cp./Cv. and the 300 SEL/9 3.5, the data is found on Page 39 under "Recommended Values for Exhaust Gas Testing" in the introduction booklet "The Models 280 SE/9 3.5 Cp./Cv., 300 SEL/9 3.5 - USA Version".

NOTE: The exhaust gas values for 1968/1969, as well as 1970 models are also listed in the Technical Data Booklet, 1969 Edition (Pages 131-135). The 3.5 liter models are covered in the "Appendix" to the Data Booklet which is in the pocket of the back cover.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 159	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	L	Passenger Cars

Fort Lee, November 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Data Recorder Machine Adjustment For MBNA FORM 470 - DEALER WARRANTY REPAIR ORDER

It was necessary for us to make certain arrangements on MBNA Form 470 which will require you to adjust your Data Recorder Machine to conform to the spacing for imprinting Dealer's Name and Address and Owner's Name, Address and Model Identification etc. on the form.

Unlike the standard blue (Reynolds & Reynolds) Repair Order Form (#554) for regular Repair Orders, the boxes for plate imprints on Form 470 are positioned higher up toward the top of the form. Another difference you will notice is that the perforated tab is at the top of the form rather than on the side.

> Your Data Plate imprinting machine should be adjusted to conform to the spacing of Form 470 because some of the information would be illegible on the copies if the machine is not "set" to the form. This, of course, will make imprintings on Form 554 slightly "off" but all information will still be readable on the form.
>
> A better possibility, of course, is to make two visible marks next to the sliding guide for the adjustment of the forms in your Data Recorder Machine for the proper imprinting of both forms. Be sure, however, always to adjust the guide correctly for the imprint on the respective form.

Please be informed that we are planning to make revisions as necessary on future printings so that the area for data plate imprinting will be the same on all forms.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 153	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, October 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: New Service Booklet

This is to advise you that a new version service booklet - print number KD 00 130 6019 0 is available, which reflects any maintenance service applicable for all of the 1970 model year cars. (One sample booklet is enclosed.)

Due to circumstances beyond our control, a number of cars were delivered to dealers without the proper service booklet in the owner's service literature pouch.

We are, therefore, asking you to check all cars received from the VPC and to order booklets accordingly from the Home Office, Technical Service Department.

Please Note: Order booklets only as needed - do not order more since our supply is limited.

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Article No.	File	Group	Application
MB-T 222	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, JANUARY 1970

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: INTRODUCTION, SHOP REPAIR MANUAL, PASSENGER CARS STARTING 1968, SERIES 108-115, VOLUME 1 -- MODELS 220/8, 220 D/8, 250/8, 250/8 2.8, 250/8 CP., 280 S/8, 280 SE/SEL, 280 SE/8 CP./CV., 300 SEL/9 3.5, 300 SEL/8 6.3

We are pleased to provide our dealers with this manual which covers major repairs for all current production passenger cars except the Model 600.

The manual contains three major group sections. Easy reference to individual jobs is made by means of the job number index filed behind the group index sheets. The manual presently contains repair procedures for automatic transmission and body repair.

Supplements to the manual pertaining to other components, modifications and improvements will be made available periodically free of charge.

A current well-maintained copy of this manual will prove invaluable to Service Technicians and provide a key to good customer service.

Additional copies of this manual may be ordered from Mercedes-Benz of North America, Inc., 158 Linwood Plaza, Fort Lee, New Jersey 07024, Attn: Technical Literature Department, at a dealer net price of $15.00.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 120	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, February 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: AIR CONDITIONING -- Operating and Servicing Booklets

This is to advise you that new instruction booklets on the air conditioning systems, as installed in Mercedes-Benz passenger cars, are now available. These booklets cover extensive technical information on . . . .

- Operation
- Maintenance/Servicing
- Trouble Shooting
- Technical Data

. . . . and many other important topics.

Two different booklets cover the complete M-B line:

Booklet, part no. 115 834 00 00 covers models:

220/8, 220 D/8,
230/8 and 250/8

Booklet, part no. 108 834 01 00 covers models:

250 S, 250 SE, 250 SL,
250 SE Cp/Cv., 300 SE, 300 SEL,
280 S/8, 280 SE/8,
280 SL/8, 280 SE Cp/Cv.,
300 SEL/8 and 300 SEL/8 6.3

Please note that the booklets are basically applicable for all brands of air conditioning systems installed in M-B's, namely, BEHR, THERMO KING and FRIGIKING, despite the fact that there are slight variances between the systems.

(over)

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We are herewith enclosing one copy of each booklet to be used by your dealership. Additional copies for your customers may be ordered free of charge from the Home Office Technical Service Department.

NOTE: When placing customer orders, be sure to state the customer's name, complete address (including zip code) and the model designation of the car.

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No. 70	Ordner / File / Classeur / Archivador SERVICE INFORMATION	Gruppe / Group / Groupe / Grupo L	PASSENGER CARS

FORT LEE, DECEMBER 1969

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW BROCHURE "PASSENGER CARS STARTING 1968, TYPES 280 S/8 TO 300 SEL/8 6.3, GENERAL INFORMATION"

Enclosed please find your copy of a new brochure (print no. KD 00 102 1305 00) containing complete engine adjustment and tuning data applicable to the above mentioned models.

We would like to point out, however, that this booklet is ONLY APPLICABLE TO 1968 AND 1969 MODEL YEAR CARS. The tuning values given may not be used for 1970 cars. For this reason, all booklets were stamped accordingly on the inside cover page. We might add, however, that some of the basic design information in the booklets is still correct for 1970 vehicles but for tuning, use only the blue "Model Year 1970 Passenger Cars USA Version" booklets which were already distributed to all dealers and service technicians attending the 1970 model year training.

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No. 1	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, May 1969

TO OUR MERCEDES-BENZ DEALERS

Subject: Summer and Winter Tire Table Booklets for Our Passenger Cars

A. Summer Tire Booklets

The "Summer Tires Passenger Cars as of January 1968 - October 1968" booklet (a copy of which is enclosed) is now available under print no. KD 00 102 3208 from the Home Office Technical Service Department in limited quantities.

CORRECTION NOTE: In the "Summer Tires Passenger Cars as of January 1968 - October 1968" booklet, on the end page, under the heading "Special Version: Radial-Ply Tires and Associated Disc Wheels", the sub-title which reads "Radial-ply-tires 185 HR 15^{1})" is incorrect. Instead, it should read "Radial-ply-tires 185 HR 14^{1})".

All copies of this booklet have been corrected by ink (as you will note on the copy enclosed).

The booklet "Tires for Passenger Cars - November 1967" remains applicable for older vehicle models equipped with 13" wheels and can be ordered under print no. KD 00 102 3204.

B. Winter Tire Booklet

The booklet "Winter Tires and Snow Chains - January 1968" contains all M & S-E tires (studded) which have been approved up to now.

This booklet can be ordered under print number KD 00 102 3207, also from the Home Office Technical Service Department.

Further types of tires are being tested at present and will be made known to you at such time as they are approved.

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No. 112	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, February 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Supplementary Booklet on Exhaust Emission Control Systems

Enclosed is a supplementary booklet on the exhaust emission control systems used on Mercedes-Benz passenger cars imported into the U.S.A. This booklet, "Exhaust Emission Control, Otto Engines for Passenger Cars"[1], contains extensive information on the systems, as well as other important data, and should be used for reference purposes in conjunction with the booklet, "Exhaust Emission Control Systems, Passenger Cars, U.S.A. Version", which was sent to you last year, as an attachment to Service Information No. MB-T 25, Group 07, of August 1967.

Correction

Please correct the engine tuning values given on page 24 of the enclosed booklet so that they correspond with those provided in the engine test specification sheets which were sent to you with Service Information No. MB-T 31, Group 07, of October 1967.

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1) Otto engines are gasoline engines.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 89	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	L	Fuels/Lubricants

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Fuels and Lubricants - ("Betriebsstoff-Vorschriften")

A copy of the M-B publication, "Specifications for Service Products" (Betriebsstoff-Vorschriften) will be sent to you shortly to provide you with a complete reference on fuels, lubricants, etc. for all Mercedes-Benz products.

The book is in looseleaf form and has colorful index tabs for quick reference to the various Mercedes-Benz products and the approved fuels and lubricants to use in each.

"Specifications for Service Products" is a complete compilation of fuels and lubricants and will be of great value to you if kept 100% up-to-date and in good condition.

It is, therefore, imperative that you file all supplements, which will be sent to you from time to time, as soon as they are received.

The latest supplements, (#13 and #14) will be sent to you with your copy of the book and we urge you to file them in their proper sections immediately so they do not get lost.

Watch for your copy of "Specifications for Service Products"; it will arrive soon in a separate mail.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 88	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	L	Diesel Engines

Fort Lee, October 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Diesel Station Directories - Request Form 489

We have made arrangements with eighteen major oil companies to furnish, at the request of our M-B "Diesel" owners, a directory listing their main diesel fuel stations in each state.

Our new brochure, MBNA form 489 (samples enclosed), contains an alphabetical listing of the oil companies to which M-B Diesel owners may write for a free diesel station directory.

We have received samples of the directories and find that many list diesel stations which offer twenty-four hour service. A large number of stations have restaurants, emergency road and tire service, mechanics' services, large parking facilities and other conveniences. Many directories list the telephone number of the stations and some also furnish a map pinpointing the location of diesel stations on major interstate and U.S. highways.

Your "Diesel" customers will be interested in this directory offer and we are enclosing a token supply of the brochure (MBNA 489) containing details for obtaining the directories. A brochure, in the future, will be placed in each M-B Diesel before it leaves the warehouse.

For additional copies of this brochure, send your request to:

MERCEDES-BENZ OF NORTH AMERICA, INC.
158 Linwood Plaza
Fort Lee, New Jersey 07024
Attention: Technical Service Dept.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 86	Ordner / File / Classeur / Archivador	Service Information	Gruppe / Group / Groupe / Grupo	L	Passenger Cars

Fort Lee, Spetember 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Revised Data Chart - MBNA #430
"Engine Test Data and Tune-Up Specifications

Enclosed is a new edition of the "Supplementary Engine Test Data" chart, entitled "Engine Test Data and Tune-Up Specifications" (MBNA #430).

The new version gives engine test and tune-up specifications applicable to the later Mercedes-Benz models.

NOTE: The old chart, "Supplementary Engine Test Data" is still in effect for older M-B models (those manufactured before 1961).

Designed for serviceability and convenience, the new chart gives specifications which are vitally necessary to technicians in their every day performance of engine tests and tune-ups:

- VALVE CLEARANCE - Intake and Exhaust
- VALVE TIMING INTAKE OPENING
- INJECTION PUMP SETTING
- INJECTION NOZZLE PRESSURE - New and Used
- IDLE SPEED RPM - Standard Transmission; Automatic Transmission - Neutral and In Gear.
- TIMING ADJ. DEGR. BTDC at 4500 RPM Vacu. Disconn.
- DWELL ANGLE

In addition to the above, the back of the chart continues to feature the tables and figures for converting various metric measurements into English units.

Place this "Engine Test Data and Tune-Up Specifications" chart in a convenient location so your technicians will have these important specifications available at all times.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 78	Ordner File Classeur Archivador	Service Information	Gruppe Group Groupe Grupo	L	Passenger Cars

Fort Lee, July 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Special Tool Catalog for Passenger Cars

The importance of adequate availability of special tools in your workshop cannot be overemphasized. The use of special tools improves productivity and efficiency and - most important - satisfies customers through competent workmanship.

Attached, please find a newly designed tool catalog for passenger cars covering the most important special tools for the performance of maintenance service and repairs on Mercedes-Benz passenger cars in your workshop.

The tool catalog has been designed according to our group system as illustrated on sheet 3 entitled "Index of Groups". You will further find on the following sheet all tool numbers listed according to our numerical system.

By knowing either the group or the tool number, you will always be able to locate or identify the respective tool you are looking for. From pages numbered 1 through 32 visual reference is given for each special tool with description, model application, tool number, group, and price.

Technician's hand tools are a basic requirement and are as important as special tools. For this reason we are listing on the last sheet in our tool catalog, recommended technician's hand tool sets which have been specially designed for Mercedes-Benz passenger cars and can be ordered directly from the following company:

S T A H L W I L L E
International Tool Corporation
Ross Road
King of Prussia, Pennsylvania 19406
Phone: (215) 265-3566

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There are, of course, other tool sets and individual tools available. For more information write or call the above-mentioned company who will be glad to assist and mail you a catalog of their complete line of hand tools. In case of additional tool inquiries which are not mentioned in the attached tool catalog, we suggest you call upon your local Mercedes-Benz service representative who is in possession of a more complete tool catalog which contains all available Mercedes-Benz tools.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. MB-T 75	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

TO OUR MERCEDES-BENZ DEALERS Fort Lee, July 1968

Subject: Service Charts for Passenger Cars

This is to introduce to you the new service charts, which, we are sure, will prove to be very effective for the performance of services according to the various service schedules.

The charts illustrate those portions of the service schedules dealing with greasing, lubricating, and the checking of bolts and nuts for tightness on the engine and the chassis/body.

You will receive the following charts:

a) "List of Service Charts for Passenger Cars According to Type/Model and Order Number" - print No. KD 00 171 6934 0.

b) "Service Chart 910 D" - print No. KD 00 130 6804 0.

c) "Service Chart 250 D and 400 D" - print No. KD 00 130 6504 0 and KD 00 130 6604 0.

A few words of explanation.....

Looking at the chart, lettered "a" above, you will note that this chart is a survey of all service charts and is valid for our present models as well as for all out-of-production models produced as of 1953. Below each column of models you will find the appropriate numbers of the four (4) charts applicable for those models.

The two service charts lettered "b" and "c", are applicable to our new models, 220/8 through 250/8. The letters A, B, E, or F/H, of course, signify the service schedules A, B, E, or F/H (Fruejahr/Herbst, which means the spring/fall inspection). Charts 865 D and 865 E will be sent to you as soon as they become available.

You will automatically receive all of the remaining charts as availability permits.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 47	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

This Service Information supersedes Service Information No. 35, Group L, and Service Information No. 6, Group L, both dated July 1967.

Fort Lee, July 1968

TO OUR MERCEDES-BENZ DEALERS

Subject: Tire Tables

Enclosed are copies of the new editions of the Tire Tables which should be filed with your Technical Data Booklet.

a) "Tires for Passenger Cars", November 1967 edition - code - KD 00 102 32 04

b) "Tire Pressure Table, Passenger Cars", November 1967 edition - code - KD 00 102 32 06

c) "Winter Tires and Snow Chains, Passenger Cars", January 1968 edition - code - KD 00 102 32 07

Tables "a" and "b" supersede the January 1967 editions, which should be discarded.

NOTE: Table "c" is a new publication.

We might point out, here again, that some of the tires mentioned in the Tire Tables are not marketed in the United States.

May we also remind you that, although the tire pressure tables give pressure recommendations for cars occupied by up to six (6) persons, Mercedes-Benz models are registered as 5-passenger cars since, approximately one year ago, it was decided to no longer market the "bench-type" front seat.

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Article No.	File	Group	Application
10/70	SERVICE INFORMATION	L	PASSENGER CARS

FORT LEE, OCTOBER 1970

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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94	25	Flex-Plate Spacers - Automatic Transmissions -- Models 280 SE/9 3.5 and 300 SEL/9 3.5
95	54	Turn Signal Switch -- Models 220 D/8 to 300 SEL/8 6.3 (Except 280 SL/8)
MB-T 179	60-81 84-89	Cleaning And Care of Convertible Tops, Instructions for Sealing Leaky Seams
85	60-81 84-89	Central Locking Unit Adjustment - All Models Except SL Types
MB-T 178	83	Oil Charge/Compressor Oil Level Checks, York A/C Compressor

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Strictly Shop...

D I D Y O U K N O W . . .

. . .that brake disc cover plates are constantly being damaged during removal, installation, or when transporting a front or rear axle within the shop area? Replacement or repair involves time and added expense.

To prevent cover plate damage, the wheels can be remounted after removal, or a discarded set of rims mounted for protection.

. . .that on the Model 300 SEL/8 6.3, with factory-approved radial ply tires, a reduced pressure of 28 PSI front, and 30 PSI rear may be used up to maximum speeds of 110 MPH?

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MERCEDES-BENZ OF NORTH AMERICA, INC.
MERCEDES-BENZ OF CANADA, LTD.

No. 9/70	Ordner File Classeur Archivador SERVICE INFORMATION	Gruppe Group Groupe Grupo L	PASSENGER CARS

FORT LEE, OCTOBER 1970

CIRCULATION

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46	27	Modulator Pressure Adjustment in Automatic Transmission
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Strictly Shop...

D I D Y O U K N O W . . . . .

. . . that on new or replacement rear axles the use of a special break-in oil is not necessary anymore?

New axles may be driven immediately with one of our recommended Hypoid Gear Oils which are listed on page 235 of our Fuels & Lubricants Manual (Betriebsstoff-Vorschriften). This regulation applies for all models. Page 235.2 of this manual, which previously specified the use of special break-in oils, became obsolete some time ago.

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MB-T 192	60-81 84-89	Heatable Rear Window Pane -- Models 220/8, 220 D/8, 230/8 and 250/8
S 6	60-81 84-89	Subsequent Installation of Ski Rack -- Models 190 C to 600
S 9	60-81 84-89	Subsequent Installation of Luggage Rack -- Models 190 C to 600

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Strictly Shop...

D I D Y O U K N O W . . . . . .

. . . that the brake fluid warning light may come on for short intervals when accelerating hard on all models?

This may be caused by brake fluid swapping from the front into the rear brake fluid reservoir chamber whereby the brake warning light switch contact will temporarily close in the front chamber. While this is not a built-in shortcoming, we suggest to replenish the brake fluid reservoir.

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S 5	60-81	Outside Rear View Mirror - Models 190 C to 300 SEL/8 6.3
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Strictly Shop...

D I D Y O U K N O W . . . . .

. . . how to open the trunk lid of a Model 600 trunk compartment when the key is missing or the lock is hydraulically blocked? In such a case, proceed as follows:

1. Depressurize the entire comfort hydraulic system. This permits the pull-back spring to release the locking eye from the lock itself to the safety latch.

2. Release of safety latch: remove right side license plate lense.
   Insert long, medium sized screwdriver through the cut-out at an angle in order to reach the release bar of the lock. Actuate the release bar backwards and open trunk lid.

If operation explained under Number 2 is unsuccessful, proceed as follows:

1. Drill a 1/4" dia. hole into the horizontal chrome molding, located 1 1/4" to the right from center of lock.

2. Insert a suitable hook to reach the release bar. Then pull and release the locking eye completely and lift the trunk lid.

Time required: approximately 1.0 hours.

. . . that tubeless tire valves may become slightly leaky when they are subjected to very high temperatures? This may occur when baking a car after repainting.

In order to re-seal a leaky valve, re-tighten the valve core.

. . . that on Model 220/8, the Stromberg Carburator is connected to the engine cooling system?

When installing an A/C Compressor Mount on this car, please re-position the water hose elbow to obtain a clearance of approximately 3/16" (5 mm) to the A/C mount.

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FORT LEE, MARCH 1970

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MB-T 169	07	Modification of Stromberg Carburetor Model 220/8
MB-T 143	29	Accelerator Linkage Bell Cranks And Bushings
125	33	Noises in the Front Axle -- Models 220 D/8 through 250/8 Cp. (Model Series 114/115)
139	47/48	Fine Mesh Fuel Filter -- Models 250/8 and 280 S/8
141	60-81 84-89	Replacement of Door Strap Retainer Brackets in the Front Side Wall or Center Columns -- Models 220 D/8 to 250/8 Cp.
MB-T 154	83	300 SEL/8 6.3 - A/C Compressor Mount
E 8		Jack Lift Adaptors -- Models 220/8 to 250 C

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Strictly Shop...

D I D Y O U K N O W . . . . .

. . . . that the installation of a replacement fuel tank should be made very carefully and that all tightening screws should be torqued to 15-16 ft. lbs?

Please refer to Service Information No. 34, Group 47 of April, 1967 for further details.

. . . . that there are different size fuses to be used for accessory items? The correct sizes are as follows:

Radio (Europa): 2 amp.
Part No. 041 571 00 21 01
Radio (Mexico Grand Prix): 5 amp.
Part No. 000 545 35 34
Air Conditioning, Rear Window Defroster, and Electrically Operated Windows: 16 amp.
Part No. 000 545 43 34

The small fuse box for accessory items is located on either the right or left fender skirt.

. . . . that only pistons of the standard size diameter (86,94 - 86,96 mm dia.) or of the intermediate repair stage size (87,19 - 87,21 mm dia.) may be installed in OM 615 Diesel engines equipped with cylinder sleeves?

In case bigger pistons would have to be installed due to heavy cylinder wear, the short block has to be replaced. Cylinder sleeves are not available from our Parts Depots.

. . . . That orders for CLAIM REGISTER forms (Form MBNA 458) should be placed with MBNA, Technical Service Department. These forms are not available directly from our supplier, the Reynolds and Reynolds Co. Any requests received at their office are always forwarded to us for handling, causing unnecessary delay in shipment of your order.

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FORT LEE, FEBRUARY 1970

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126	00	Exchange of Engines for Vehicles with Power Steering Engines M 115, M 121, OM 615, OM 621
69	00	Modifications -- Models 250/8 Cp., 280 S/8, 280 SE/8, 300 SEL/8
MB-T 157	00	149° F (65° C) and 212° F (100° C) Temperature Switches, 1970 Passenger Car Engines -- USA Version
128	22-24	Rear Engine Mount -- Models 220 D/8 to 220/8 (Model Series W 115)
MB-T 164	46	Leakage on Power Steering Pump Models 220/8 through 300 SEL/8 6.3
60	60-81 84-89	Contertible Top Base -- Models 230 SL, 250 SL, 280 SL/8

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Strictly Shop...

D I D Y O U K N O W . . . . .

. . . that corrosion on the electrical plug connector of the switching unit or a loose electric contact can lead to malfunction of the engine?

. . . that a restricted or clogged engine oil supply line to the fuel injection pump can cause sticking of the rack or the elements, or even cause the pump to fail?

Please check oil supply line for restriction everytime fuel injection pump does not perform properly.

. . . that when using a second battery, for starting in cold weather, the jumper cables have to be connected from positive to positive and negative to negative?

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107	05	Valve Mechanism -- Model 600
167	09/11	Flame Arrester Screen In Rubber Connector Between Valve Cover and Air Filter
MB-T 166	27	Modification -- Models 250 Cp., 280 S/8, 280 SE/8, 300 SEL/8
MB-T 155	33	Lower A-Frame Tightening Torque-Service Maintenance -- Model Series W 108/109/111/113
145	46	Noises At The Impact Absorber Models 220 D/8 to 300 SEL/8-6.3
S 21	31	Height of Trailer Coupling Ball -- Models 220 D/8 to 250/8 Cp. (Model Series W 114/115)

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Strictly Shop...

D I D Y O U K N O W . . . . . .

. . . that, in 1970 models, if the electric motor for power windows does not operate, the cause might be the sticking of carbon brushes?

. . . that, in 1970 models, if a noise in the electric motor of the power window unit occurs, it may be caused by the plastic covering over the gear drive which connects to the electric motor? In this case, the covering should be rearranged.

. . . that, in model 600, the electric power unit for the intercom system is now located under the driver's seat? It was previously located under the front passenger seat.

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84	35	Rear Axle Model Series 114/115 -- Models 220 D/8 to 250 C/8
MB-T 122	40	Dunlop Tires
MB-T 165	41	Modification -- Models 250/8 Cp., 280 S/8, 280 SE/8, 300 SEL/8
109	42/43	New Brake Calipers For Rear Wheel Brakes And New Rear Axle Bearings -- Models 280 S/8, 280 SE/8 And 300 SEL/8 (2.8)
101	42/43	Brake System
132	54	Radiator Temperature Gauge -- Models 220 D/8 through 250/8 Cp., (Model Series 114/115)

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Strictly Shop...

D I D Y O U K N O W . . . . . .

. . . that when replacing front Fichtel & Sachs shock absorbers with Bilstein shock absorbers, the following additional parts are required for the change-over:

		Part No.
1	hex. head nut	000 985 00 8004
1	washer (top)	115 323 06 44
1	washer (bottom)	115 323 05 67
1	rubber sleeve	115 323 04 38

See also Service Information No. 91, Group 32, of December 1968.

. . . that the clicking noise encountered on take-off or when changing the load (more pronounced on model 300 SEL/8 - 6.3), is caused by the propeller shaft flange connected to the rear axle. This can be eliminated by applying "Omnifit Type 80 red", part No. 700 350 00 99, to the six mounting screws at the propeller shaft and rear axle flange.

See Service Information No. 138, Group 35, of April 1969.

. . . that when replacing a direction signal flasher with four electrical terminals, the brown wire must be deleted or attached to the mounting screw for the flasher unit.

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110	33	Front Axle Wheel Bearing Clearance -- Models 220 D/8 to 600
85	41	Driveshafts With Clamp-Type Connections
92	41	Intermediate Drive Shaft Bearing -- Models 220/8 to 250 C/8, (Model Series W 114/115)
83	83	Air Conditioning Compressor Modifications
E 7		Cleaning of Hydraulic Clutch for the Automatic Transmission

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Strictly Shop...

D I D Y O U K N O W . . . . . .

. . . that snow tires should be mounted on all four wheels of the car? This will not only improve the steering performance in snow, but will also improve the braking performance because the front brakes are designed to have more braking power than the rear brakes.

. . . that radial tires and radial snow tires should, under no circumstances, be mixed with regular tires?

. . . that the pre-heating flap on the air filter intake pipe should be repositioned into the locked winter position for pre-heating the intake air with the approaching winter season? See Service Information No. 118, Group 00 of December 1968.

. . . that to improve the starting behavior of the engine, you should observe the precautionary measures for the improved starting of engines? See Service Information No. 116, Group 00 of December 1968, Service Information No. 115, Group 00 of January 1969, and Service Information No. 16, Group 00 of March 1969, for the model 220 D/8.

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Fort Lee, December 1969

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96	60-81 84-89	Locks and Keys -- Models 220/8 to 600
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D I D Y O U K N O W . . .

. . . that an annoying noise can be caused by the vertical accelerator linkage bar (in front of the fire wall) rattling against the partial load control rod of the automatic transmission?

In this case, the accelerator linkage rod may be bent away from the transmission control rod.

. . . that non-transistorized dwell angle meters and tachometers cannot be used when tuning 1970 cars equipped with transistorized ignition systems? Such instruments will not react and therefore will not show any readings.

. . . that the new type automatic transmission which is now used in all W 108/114/115 models and in the 300 SEL/8 is equipped with a new type bracket at the starter lock-out switch? The gear selector lever is attached to that bracket by means of a new rubber bushing, part no. 115 992 03 10 which is, of course, available from your MB Parts Depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 9/69	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, October 1969

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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MB-T 140	27	Latest Approved Transmission Fluids for Old and New Type Automatic Transmissions
MB-T 145	32	Approved Hydraulic Oils for the Self-Adjusting Leveling Device on the Rear Axle -- Models 220/8 through 250/8 (W 114/115)
40	35	Pinion and Ring Gear For The Rear Axles of Our Passenger Cars
77	35	Attachment of the Rear Axle Housing Mounting to the Rear Axle Support -- Models 220/8 through 250/8 (W 114/115)
73	42/43	Fuel Separator In The Vacuum Line
MB-T 137	83	Frigiking Air Conditioning Units -- Models 220/8, 220 D/8, 230/8 and 250/8
W 5		Spring Tensioning Tool, Part No. 115 589 00 31 00, for The Rear Springs -- Models Series W 114/115

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Fort Lee, New Jersey, U.S.A.

for distribution to Mercedes-Benz dealers

in the U.S.A. and Canada

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Strictly Shop...

D I D Y O U K N O W . . .

. . . that on some Frigiking air conditioning units (part number 700 830 14 00) for Model 280 SL/8, the baffle plate, which provides the proper air distribution for the individual air nozzles, has been left out during production?

Therefore, in case of customer complaints regarding uneven air distribution from the A/C unit of model 280 SL/8, a baffle plate, part number 700 831 05 71 (Frigiking part number 91-09176) should be subsequently installed.

. . . that the Rochester valves should be examined every 30,000 miles (50,000 km) in the scope of the routine customer services?

Many customer annoyances may be prevented if you...

1. Regularly check the valve, and
2. If necessary, replace it.

Only the proper maintenance of the Rochester valve prevents the malfunction of the exhaust emission control system.

Address any communications
relative to this issue to

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 8/69	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, August 1969

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58	20	Cooling Water Thermostat
24	29/30	Accelerator Linkage -- Model 300 SEL/8 6.3
MB-T 128	40	Firestone and Goodyear Tires

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D I D Y O U K N O W . . .

. . . that Roto Caps for the exhaust valves of model 230/8 were never installed in production - contrary to the information published in Service Information MB-T 118, Group 05, of February 1969?

However, it is still advisable to install these roto caps in case of repairs on those cars which are equipped with a Saginaw Air Pump.

Roto caps are available from our depots under part number 000 053 13 35.

. . . that all required parts and respective part numbers for the subsequent installation of the latest version safety headrest along with other pertinent information can be obtained by referring to Spare Parts Information #197, Section VII - Parts Technical, dated June 17, 1969?

. . . that the identification mark of the hex castle nut has been changed (previously marked by embossed letters or numbers on the head)? They are now identified by a Mercedes-Benz star on the head.

Therefore, when taking delivery of hex castle nuts, part no. 120 990 01 55, make sure that they bear the M-B star on the head, as only these are the correct ones.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 7/69	Ordner / File / Classeur / Archivador Service Information	Gruppe / Group / Groupe / Grupo L	Passenger Cars

Fort Lee, July 1969

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D I D Y O U K N O W . . .

. . . that an engine oil cooler and a modified radiator, designed to keep oil temperatures at a lower level, have entered production on model 220 D/8? Details regarding this modification and other technical changes in production on some of our models can be found in Service Information MB-T 129, Group 00, of July 1969.

. . . that on the heating and ventilating systems of models 220/8 through 250/8, the rate of air flow from the side annular nozzles can be controlled by moving the lever (next to each nozzle) either up or down, i.e., to reduce the flow of air, move the lever DOWNWARD (closed) and to increase the flow of air, move the lever UPWARD (opened).

NOTE: This information was incorrectly stated in the illustration copy on page 2 of Service Information No. 28, Group 83, of May 1969.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 6/69	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, June 1969

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D O Y O U K N O W . . .

. . . the part number of a replacement automatic transmission for a 220 SEb Sedan or any other model -- that is, do you know where to find that part number or rather if there is a replacement transmission available at all under our exchange program?

All pertinent information about ordering, prices and conditions for replacement automatic transmissions is contained in "SPARE PARTS INFORMATION", No. 185, File Group V - Exchange Program of February 26, 1969. Please check this listing for your information.

D I D Y O U K N O W . . .

. . . that the Service and Maintenance worksheets "A" and "B" (forms MBNA 439 and MBNA 440) have just been revised and are available to all dealers? They come padded 25 sheets per pad. The price per pad is $.50 as before.

NOTE: Samples of the revised worksheets are enclosed with Service Information No. 32, Group 35, of June 1969, which has been released with this issue.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 5/69	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

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30	35	Differential Gear with Limited Slip
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D O Y O U K N O W . . .

. . . the remedies for eliminating the various types of noises which may be caused by the windshield wipers because of too much or too little contact pressure on the windshield and/or by twisted windshield wiper arms? The remedial measures can be found in our Service Information No. 58, Group 82, of July 1968.

D I D Y O U K N O W . . .

. . . that for some time now Fichtel & Sachs shock absorbers are being used in series production in addition to the Bilstein shock absorbers which were used exclusively before? This information plus additional hints regarding shock absorbers was published with Service Information No. 91, Group 32, of December 1968.

. . . that in Service Information No. 16, Group 00, of March 1968, we advised you to use premium grade SAE 30 engine oils during the summer months in passenger cars being operated in areas where ambient temperatures above 32° F (0° C) prevail? The summer season is fast approaching, so why not take a few moments out to review this very informative article.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 4/69	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, April 1969

CIRCULATION

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W 1		Cleaning the Hydraulic Clutch

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D O Y O U K N O W . . .

. . . the correct towing procedure for transporting damaged or reconditioned vehicles of models 220/8 through 250/8 (W 114/115) between workshop areas? This information can be found in our Service Information No. 103, Group 00, of December 1968, which was published in MBNA issue 11/68.

D I D Y O U K N O W . . .

. . . that the wheel mounting bolts on the model 600 require a considerably higher tightening torque than those on all other models?

TIGHTENING TORQUES (cold wheels):

Model 600: 120 ft. lbs. (16-17 kpm)

All other models: 70 ft. lbs. (9-10 kpm)

Please make sure that the bolts are retightened approximately 300 to 600 miles after each reinstallation of the wheels.

In this connection, please refer to Service Information No. 103, Group 40, of November 1967.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 3/69	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, February 1969

CIRCULATION

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129	46	Steering Idler Arm -- Model 280 SL/8
94	60-81 84-89	Paint Jobs on Hub Caps, Part No. 115 400 00 25, for Passenger Car Models as of January 1968

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D I D Y O U K N O W . . .

. . . that Mercedes-Benz cars will start much better in cold weather if the starter motor stays engaged for even up to 10 or 15 seconds after the first firing has occurred?

Also, to improve cold weather starts, it helps to slightly depress the accelerator pedal a few times after the engine is running.

NOTE: DO NOT pump the accelerator pedal prior to starting the engine.

. . . that in issue MBNA 2/69 we published a feature article in which we stressed the importance of the Spring/Fall Inspections and their advantages to both you and your customers?

Just a reminder that Spring is "right around the corner" and that means NOW is the time to start preparing (as outlined in our Feature Article) for your Spring/Fall Inspection, to ensure its success!

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No. 2/69	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

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MB-T 93	83	Air Conditioning -- Model 220 D/8

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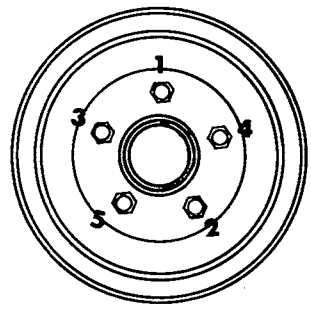
D O Y O U K N O W . . .

. . . the proper installation procedure of the electro-magnetic clutch on the air conditioning compressor? The installation instructions are provided for you in the clutch "package" which also contains the torque specifications for tightening the bolt.

. . . how to tighten lug nuts correctly? If you will always tighten lug nuts according to the sequence illustrated below you should have no problems with unintentionally introducing "lateral or radial run-out", or in causing a wheel to take a "set" by improperly tightening lug nuts with an impact wrench. Tighten lug nuts evenly and a little at a time.

LUG NUT TIGHTENING SEQUENCE



D I D Y O U K N O W . . .

. . . that in Service Information No. MB-T 57, Group 09, of April 1968, we advised you that on models 200 D and 220 D/8 only, a plastic breather tube may be used in case of cold weather difficulties with the crankcase ventilation system? The breather tube is available under part no. 129 016 01 30 from your M-B parts depot.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 1/69	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, January 1969

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124	40	Tire Pressure and Toe-In of Front Wheels - Models 220/8 through 250/8 (W 114/115)
104a	42/43	Brake Booster - Models 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8
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135	60-81 84-89	Safety Grip on Vehicle Keys
123	82	Rear Light Unit - Models 220/8 through 250/8 (W 114/115)
MB-T 97	83	New Alternator V-Belt for All 6-Cylinder Engine Models

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D I D Y O U K N O W . . .

. . . that as of serial number 011 429 on model 250/8, the engine oil cooler is no longer installed?

. . . that any measurements you mark on the plastic adjustment diagram chart for the camber and caster of the front wheels (which you received earlier this year - see Service Information No. 64, Group L, of July 1968) can be easily erased by using a damp cloth?

. . . that when ambient temperatures below 32°F (0°C) prevail, winter oil SAE 10 W, of an MS or S 1 quality or an equivalent multigrade oil 5 W/30 or 10 W/30 should be used? In this connection we suggest you review Service Information No. 55, Group 00, of August 1968.

D O Y O U K N O W . . .

. . . what the approved hypoid gear oil to be used in the rear axle of model 230 SL is? A complete index on fuels, lubricants, etc. for all Mercedes-Benz products can be found in the "Specifications for Service Products" (Betriebsstoff-Vorschriften) booklet which was sent to you under separate cover in conjunction with Service Information MB-T 89, Group L, of October 1968.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

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113	42/43	Cast-Iron Brake Calipers on Model 600
75	83	Magnetic Hot Water Valve - Model 600
S 5	60-81 84-89	Installation of Ski Racks - Models 190 C through 600

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Strictly Shop...

D I D Y O U K N O W . . .

. . . that is is mandatory to replace the oil filter paper element with full flow and by-pass filter elements during the "A" service inspection on models with a 6.3 litre engine; namely models 300 SEL/8 6.3 and 600? (See "Mercedes-Benz 600" service booklet, page 42, item 154.)

. . . that in Service Information No. 124, Group 00, of December 1967, we offered you various information and advice regarding winter operation of M-B passenger cars? (In this connection also refer to Service Information No. 2, Group 00, of February 1968.) With the winter season here, might we suggest that you take a few moments to review this very informative article?

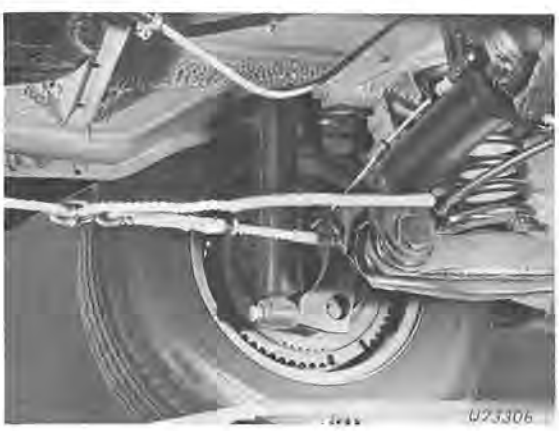
D O Y O U K N O W . . .

. . . where to attach a tow rope or tow chain* to the rear of an M-B (<u>without</u> towing lugs at the rear) when towing another car?

NOTE: As of the Phase II/68 models, towing lugs at the front and rear are standard equipment.

A rope or chain may be attached around the thrust rod support bracket (between the left thrust rod and the rear axle) as shown on the illustration. Be sure to clear brake lines and hoses!

*In states permitting towing of cars by rope or chain.



Address any communications relative to this issue to

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Attention: Technical Service Department

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service information

MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 10/68	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, November 1968

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK – Initial	Date	Wish to discuss during regular shop meeting (✓)
Dealer/General Manager			
Service Manager			
Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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No.	Group	Subject
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95	00	Additional Service Jobs To Be Carried Out During Inspections -- Model 600
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76	05	Timing Chain Noises -- Model 220/8
85	22-24	V-Belt Drive -- Model 600
86	40	Caster Adjustment -- Model 600
MB-T 91	60-81 84-89	Adjustment of Manually Operated Windows -- Models 230 SL, 250 SL and 280 SL - Coupe and Convertible
96	82	Anti-Static Interference Suppressors -- Models 190 C through 600
87	83	Heating -- Models 220/8 through 250/8 (W 114/115)
S 11	51/52	Installation of Protective Underplates -- Models 220/8, 220 D/8, 230/8 and 250/8

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Fort Lee, New Jersey, U.S.A.

for distribution to Mercedes-Benz dealers

in the U.S.A. and Canada

MBNA 10/68

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D I D Y O U K N O W . . .

. . . that the windshield washer system has recently been improved on on the W 114/115 models? Two jet sprays are now being used which are mounted on the hood in front of the windshield wiper axle.

. . . that the Michelin X tires listed in the "Tires for Passenger Cars", November 1967 booklet (which was released with Service Information No. 47, Group L, of July 1968, issue MBNA 7/68) are available in black-wall version and white-wall version?

. . . that previously we had pointed out in Service Information MB-T 66, Group 0, of May 1968, that we (in the Technical Service Department) would not use the model designation "280 SEL/8". (The currently used designation is "280 SE/8 with long wheelbase".)

Effective immediately, the designation "280 SEL/8" is to be used by all dealerships on all correspondence, reports, orders, etc. Likewise, any written material sent out by the Technical Service Department will also indicate the model designation 280 SEL/8, when applicable.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 9/68	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, October 1968

CIRCULATION

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Parts Manager			
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73	00	Cranking the Engine During Service and Repair Work
MB-T 84	00	Anti-Freeze - M-B Passenger Cars
MB-T 87	03	Replacement Short Blocks
69	07	Fuel Line Noises -- Model 220 D/8
MB-T 77	27	Hydraulic Oil Pressure Noise -- Models 250/8, 280 S/8, and 280 SE/8
45	60-81 84-89	Mounting of Chrome Moldings on the Side Windows -- Models 220 SEB Cp/Conv. through 300 SE Cp/Conv.
67	60-81 84-89	Door Lock Assembly -- Models 220/8 through 250/8
S 8	51/52	Installation of Protective Underplates -- Model 600
W 3		Adjusting Gauge for Windshield Wiper Linkage for Our Passenger Cars

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Strictly Shop...

D I D Y O U K N O W . . .

. . . that stumbling on cars equipped with a Zenith carburetor can be caused by a leak on the crankcase ventilation by-pass hose between the carburetor cover and the intake manifold?

. . . that an insufficient amount of accelerator pump discharge fuel can be caused by a restriction in the discharge nozzle?

. . . that the booklet "Technical Data Passenger Cars" issue 1966, is also available in the German language? This unique aid for your German speaking mechanics is priced at only $4.80.

. . . that the test values for the various brake pressure regulators are given in Service Information No. 7, Group 42/43, of March 1968?

. . . that temporarily, brake pads with Jurid 220 linings are installed in models 220/8 through 300 SEL/8? For more detailed information and a list of the approved brake pads available for disc brakes, make a point to read Service Information No. 54, Group 42/43, of August 1968.

. . . that on models 220/8 through 250/8 (W 114/115) the rear axle center section, as well as the right or left rear axle shafts can be removed and replaced individually? Details regarding this job can be reviewed by referring to Service Information No. 59, Group 35, of August 1968.

D O Y O U K N O W . . .

. . . which type wheel rims are suitable for our passenger cars? The up-to-date list of approved wheel rims can be found in Service Information No. 131, Group 40, of December 1967.

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relative to this issue to

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 8/68	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, August 1968

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

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55	00	Changing Winter Oil (SAE 10 W) to Summer Oil (SAE 30)
63	00	Plastic Vacuum Lines
30	05	Chain Guides Between Crankshaft Drive Gear and Injection Timer -- Models 190 DC and 200 D
59	35	Diagonal Pivot Swing Axle -- Models 220/8 through 250/8 (W 114/115)
54	42/43	Brake Pads for Disc Brakes On Our Passenger Cars
MB-T 80	60-81 84-89	Adhesive For Interior Trim Materials
MB-T 83	82	Electrically Operated Windows
S 1	20	Cooling Water Preheater -- Models 190 C through 300 SEL/8

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Strictly Shop...

A rising number of complaints regarding damage to the convertible tops on models 230 SL, 250 SL, and 280 SL/8, causes us to urge you once again to explain to your customers the correct way of opening and closing these tops. This is fully described in the Owner's Manual, but you also might refer to the following Service Informations: No. 57, of August 1967, No. 138, of January 1968, and No. 17, of April 1968, all located in Group 60-81/84-89.

Most Important . . . . when opening (putting down) the top, first the lower rear top bow must be folded upward to the rear cross bow and locked in the snap-in position with a short jerk. Failure to do this will result in damage to the top.

D O Y O U K N O W . .

. . . .that in Service Information No. 3, Group 15, dated May 1968, which informed you of the new distributor rotor, that the rotor with the part number 000 158 20 31 is used on models 200 through 280 S/SE/8 (with the exception of model 220/8) and is identified by the Bosch number 1 234 332 088, and that the rotor, part number 000 158 21 31 for model 220/8 is identified with the Bosch number 1 234 332 109.

. . . .that some of the tires approved for use on the model 600 are in stock and available from our parts depots? These are the FULDA Nylon Diadem (part no. 002 401 90 10) and the winter tire VEITH-PIRELLI Cortina - with spikes (part no. 000 400 20 60) or without spikes (part no. 001 400 20 60). In this connection please refer to the tire table booklets enclosed with Service Information No. 47, Group L, of July 1968, which was published in our Service Information Issue MBNA 7/68. Just for clarification we might mention that as before, the snow chains are not in stock but can be ordered by special request only (allow 4-6 weeks for delivery).

. . . .that Service Information MB-T 45, Group 27, dated January 1968, which was published in Service Information Issue MBNA 1/68, deals ONLY with the oil seal ring on the front shaft of the automatic transmission? We advised you that in the event of an oil leakage at this seal ring, the complete transmission should be replaced. Please refer to the illustration mentioned in this Service Information to be sure which specific seal ring is meant. ALL OTHER seal rings in the transmission may be replaced individually as required.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No. 7/68	Ordner File Classeur Archivador Service Information	Gruppe Group Groupe Grupo L	Passenger Cars

Fort Lee, July 1968

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

Name	OK — Initial	Date	Wish to discuss during regular shop meeting (✓)
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Parts Manager			
All articles filed according to M-B group system.		Date	Initial

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64	L	Adjustment Diagram for Camber and Caster of Front Wheels -- Models 200/8 through 250/8
19	00	Tightening of Stretch Screws
MB-T 72	00	Shell Rotella T Motor Oil
53	46	Power Steering Oil Pump
22	60-81 84-89	Sliding Roof -- Model 600
23	60-81 84-89	Central Locking System Vacuum Elements
58	82	Windshield Wiper Noises
S 3	60-81 84-89	Luggage Rack -- Models 190 C through 600

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Strictly Shop...

D O Y O U K N O W . . . .

. . . . that front wheel adjustment on models 220/8 through 250/8 can be performed very easily by using the new adjustment diagram referred to in this issue ?

. . . . what stretch screws are and how they should be tightened ? For details, please refer to this issue as well as to the feature article in Service Information Issue MBNA 3/68.

. . . . that the belt drive on model 600 was modified ? Full story in Service Information No. 4, Group 22-24, of March 1968.

. . . . that the master brake cylinder and the brake booster on model 600 was modified ? See Service Information No. 6, Group 42/43 of March 1968.

. . . . how to check a hydropneumatic compensating spring for proper operation ? See test procedure in Service Information No. 44, Group 32, of August 1967.

. . . . how important proper maintenance of the oil-bath air filters for satisfactory service life of the engine is ? It just takes minutes to review Service Information No. 87, Group 09/11, of November 1967.

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No. 4/68	Ordner / File / Classeur / Archivador: Service Information	Gruppe / Group / Groupe / Grupo: L	Passenger Cars

Fort Lee, April 1968

CIRCULATION

M-B Service Manager: Please circulate this issue among your service personnel and, when applicable, to parts and sales managers.

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All articles filed according to M-B group system.		Date	Initial

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113	00	Remedy for "Diesel Knock"
9	07	Adjustment of Fuel Injection Pumps on Gasoline Engines with Exhaust Gas Analyzers
MB-T 61	07	By-passing Series Resistor for Ignition Coil -- All 6-Cylinder Models
141	07	Modified Gasket for INAT Carburetors -- Types 230, 230 S, and 250 S
MB-T 57	09	Crankcase Ventilation System -- Types 200 D and 220 D/8
21	20	Cooling Water Thermostat
13	27	Subsequent Installation of Illuminated Gear Shift Quadrant in Cars with Automatic Transmission and Floor-Mounted Selector Lever -- Models 200, 200 D, 230, 230 S, 250 S, and 250 SE
17	60-81 84-89	Repairing Damaged Convertible Tops -- Type 230 SL (from chassis end No. 019020) and Types 250 SL and 280 SL (from beginning of series)
MB-T 56	60-81 84-89	Side Reflex Reflectors -- 1968 Phase I and II Types
MB-T 59	83	Replacement of Water Pump Pulley when Installing an Air Cond. Unit - Type 280S

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MBNA 4/68

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Strictly Shop...

O I L C O N S U M P T I O N is not just affected by the condition of the engine, but may increase:

a. with an overfilled crankcase because of the formation of foam,
b. during short distance driving (which causes carbonizing of the piston rings), or
c. during prolonged high speed driving.

O I L C H A N G E I N T E R V A L S should not only be determined by mileage but also by individual operating conditions. Under heavy-duty conditions; i.e., short distance driving, cold weather, or prolonged driving in very dusty areas, we recommend changing the oil more often; if necessary, up to every two months.

D O Y O U K N O W . . .

. . . that, under certain conditions, some types of exhaust gas analyzers may show rich exhaust values even though an engine is operating extremely lean? Details in this issue.

. . . that, to date, only two brands of automatic transmission fluid have been released for use in the automatic transmissions of models 200/8, 220 D/8, 230/8, and 250/8? For details, see Service Information No. 20, Group 00, of March 1968.

. . . that four brands of engine oil are specified for use in the diesel engine of model 220 D/8? They are given in Service Information No. 14, Group 42/43, of January 1968.

. . . that the service intervals for checking valves on model 600 have been altered? Details in this issue.

. . . that starting behavior at low temperatures can be further improved by bypassing the series resistor for the ignition coil during cranking, thus using the full battery capacity for the ignition? Details in this issue.

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MERCEDES-BENZ OF NORTH AMERICA, INC.

No.	MB-T 171	Ordner File Classeur Archivador	SERVICE INFORMATION	Gruppe Group Groupe Grupo	L	

FORT LEE, JANUARY L970

This Service Information
supersedes Service Information
No. 60, Group L, of June 1968

TO OUR MERCEDES-BENZ DEALERS

SUBJECT: NEW LIST OF VALID MERCEDES-BENZ SERVICE INFORMATION BULLETINS

With this Service Information, we are including a new list of our valid Service Information bulletins. This list covers all articles up through the end of 1969; namely, MBNA 12/69. Those bulletins which are not included in the new list have been superseded by publication in Workshop Manuals or other publications and should therefore be removed from your binders.

If, as you check your Service Information binders against the new list of valid articles, you find that some valid articles are missing, please request them from:

Technical Service Department
Mercedes-Benz of North America, Inc.
158 Linwood Plaza P.O. Box 318
Fort Lee, New Jersey 07024

Enclosure

MERCEDES-BENZ OF NORTH AMERICA, INC.
Service Department

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Index of Valid
SERVICE INFORMATION Bulletins
Published Up Through Issue
MBNA 12/69

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11/69	Nov. 69	Contents Index
10/69	Dec. 69	Contents Index
MB-T 159	Nov. 69	Data Recorder Machine Adjustment For MBNA Form 470 - DEALER WARRANTY REPAIR ORDER
MB-T 153	Oct. 69	New Service Booklet
9/69	Oct. 69	Contents Index
8/69	Aug. 69	Contents Index
7/69	July 69	Contents Index
6/69	June 69	Contents Index
1	May 69	Summer and Winter Tire Table Booklets for Our Passenger Cars

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No.	Date	Subject
5/69	May 69	Contents Index
4/69	April 69	Contents Index
3/69	Feb. 69	Contents Index
120	Feb. 69	AIR CONDITIONING -- Operating and Servicing Booklets
2/69	Jan. 69	Contents Index
1/69	Jan. 69	Contents Index
11/68	Dec. 68	Contents Index
10/68	Nov. 68	Contents Index
MB-T 89	Oct. 68	Fuels and Lubricants -- ("Betriebsstoff-Vorschriften")
9/68	Oct. 68	Contents Index
MB-T 88	Oct. 68	Diesel Station Directories - Request Form 489
MB-T 86	Sept. 68	Revised Data Chart - MBNA #430 "Engine Test Data and Tune-Up Specifications"
8/68	Aug. 68	Contents Index
MB-T 75	July 68	Service Charts for Passenger Cars
47	July 68	Tire Tables
7/68	July 68	Contents Index
MB-T 78	July 68	Special Tool Catalog for Passenger Cars
4/68	Apr. 68	Contents Index
MB-T 49	Feb. 68	A) Modification of Vehicle Production Data Card B) Modification of Customer Follow-Up Folder (Customer Repair File) C) Helpful Hint About Use of Older Customer Follow-Up Folder

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No.	Date	Subject
MB-T 55	March 68	1968/II Passenger Car Program
112	Feb. 68	Supplementary Booklet on Exhaust Emission Control Systems
Group 0		
MB-T 161	Dec. 69	Summary of 1970 Registration and Licensing Data
95	Dec. 69	Maintenance Service Beyond 100,000 Miles
MB-T 34	Aug. 69	Relocation of the U.S. Certification-Identification Tag
MB-T 124	May 69	D-B Standard Text Book and D-B Operation Time Guide
MB-T 101	Feb. 69	Alteration of the Crankcase Ventilation System and Installation of Extended Air Correction Jets in the Zenith Carburetors to Improve Cold Start and Warm-Up Operation
88	Dec. 68	Additional Maintenance Jobs for Model 300 SEL/8 6.3
27	Dec. 68	Replacement of Steering Lock Components and Warranty Procedure for Same -- All Models except Model 600
MB-T 90	Sept. 68	Time Allowances for Service Jobs According to the Service Booklet and Service and Maintenance Sheets "A" Through "E" Including Exhaust Emission Control Systems
MB-T 67	May 68	Cut-Off Chassis End Numbers for Out-of-Production Models

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No.	Date	Subject
147	March 68	Trouble-Shooting Guide for Car Radios
139	Feb. 68	Service Booklet for Passenger Cars Up To 1968
MB-T 34	Nov. 67	Polishing New Cars
93	Nov. 67	Tire Guarantee
MB-T 28	Sept. 67	Exhaust Emission Control System
69	Jan. 67	Checking Screws During Service Jobs
66	Oct. 64	Service Jobs on Type 600
Group 00		
121	Dec. 69	Electrostatical Charging
67	Nov. 69	Timing of Delivery From The Fuel Injection Pump -- Model 220 D/8
MB-T 136	Oct. 69	Technical Changes -- Models 280 S/8, 280 SE/8, 280 SE/8 Cp. Cv., 280 SEL/8, 300 SEL/8 and 300 SEL/8 6.3
88	Oct. 69	New Exhaust Valve Clearance For Gasoline Engines -- Models 200 through 300 SEL/8
MB-T 129	July 69	Technical Changes In Production -- Models 220 D/8 to 300 SEL/8 (W 108/109/115)
MB-T 125	June 69	Approved Lubricants For Use on All M-B Passenger Car Models
47	June 69	Exhaust Emission Control System -- Model 230/8
25a	June 69	Improved Starting Ability of Passenger Cars with Gasoline Engines
16	March 69	Important Hints for Cold Start Improvement -- Model 220 D/8

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No.	Date	Subject
70	Jan. 69	Tightening of Connecting Rod Bolts and Flywheel Bolts on Engines of Passenger Car Models as of January 1968
115	Jan. 69	Measures for Improved Winter Operation
MB-T 92	Dec. 68	Use of Automatic Transmission Fluids (ATF)
118	Dec. 68	Pre-heating of Intake Air for Carburetor Engines Models 220/8, 220 B, 220 SB, 230, 230 S, and 250 S
116	Dec. 68	Precautionary Measures for the Improved Starting of Gasoline Passenger Car Engines
103	Dec. 68	Towing of Vehicles Damaged in Accidents -- Models 220/8 through 250/8 (W 114/115)
95	Nov. 68	Additional Service Jobs to Be Carried Out During Inspections Model 600
72	Nov. 68	Cylinder Leakage Test
73	Oct. 68	Cranking the Engine During Service and Repair Work
68	Oct. 68	Hypoid Gear Oils
63	Aug. 68	Plastic Vacuum Lines
55	Aug. 68	Changing Winter Oil (SAE 10 W) to Summer Oil (SAE 30)
MB-T 72	July 68	Shell Rotella T Motor Oil
19	July 68	Tightening of Stretch Screws
51	June 68	Engine Oil Change -- Models 250/8, 280 S/8, 280 SE/8, 280 SE/8/Cp./Conv., 280 SL/8, and 300 SEL/8 (2.8 and 6.3 litre-engines)
MB-T 68	May 68	Wash Primer (Metal Preparation)

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No.	Date	Edi	Subject
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113	Apr. 68		Remedy for Diesel Knock
10	Apr. 68		Service Intervals for Checking Valves Type 600
136	March 68		Rear Axle Oil Change
16	March 68		Modification of Engine Oil Viscosity Specification - All Passenger Cars
8	March 68		A) Checking and Evaluation Diesel Fuel Injection Nozzles B) Policy for Handling Warranty Claims
14	Feb. 68		Engine Oils for Diesel Engine OM 615
121	Jan. 68		Oil Drip Pan for Sliding Roof Hydraulic Element -- Type 600
106	Nov. 67		Diesel Fuels With Anti-Smoke Additives
82	Sept. 67		Valve-Clearance on Engine OM 621 (Installed In Passenger Cars -- Types 180 DC, 190 D, DB, DC, 200 D - Trucks L 319 D, L 406 - Busses O 319 D, 0 309 D)
50	July 67		Welding Work on the Frame Floor Unit
MB-T 13	June 67		Instructions for Refinishing Two-Coat Metallic Paint
MB-T 12	June 67		Original and Repair Paint - MB Passenger Cars, Adjustment of Paint Viscosity At Different Temperatures for M-B Materials
33	Apr. 67		Break-In Oils for Engines
Group 01			
80	Dec. 69		Rear Crankshaft Seal - OM 636
37	June 69		Closed Crankcase Breather System -- Model 220 D/8
45	June 69		Cylinder Head Cover -- Model 220 D/8

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No.	Date	Subject
80	Nov. 68	Elimination of Engine Number Plate-- Phase II Passenger Car Models
137	Jan. 68	Reinforced Mounting Brackets for Cylinder Head-Cover -- Type 200, 230, 230 S, and 250 S/SE/SL
23	June 67	Examination and Evaluation of Engine Cylinder Bores
13	Apr. 67	Engine OM 621 - Modification of Water Passage Holes and Valid Cylinder-Head Gaskets
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44	Aug. 69	3-Ring Pistons for Model 220 D/8
MB-T 117	Apr. 69	Piston Clearance - Present Passenger Car Models
MB-T 110	Feb. 69	Modification of Timing Pointer and Counter-Weight for All 6-Cylinder Engines
MB-T 87	Oct. 68	Replacement Short Blocks
118	Dec. 67	Front Seal Ring on Crankshaft - Types 230, 230 S, 230 SL, 250 S, 250 SE, and 250 SL
Group 05		
5	Aug. 69	Rocker Arm Mounting -- Models 220/8, 250/8, 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8
MB-T 121	July 69	Camshafts -- Present Production Models
29	May 69	Installation of OM 615 Engine Components Into the OM 621 Engine
MB-T 118	Feb. 69	Roto Caps for the Exhaust Valves -- Model 230/8 (M 114)

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No.	Date	Subject
MB-T 58	Jan. 69	Intake Valves
76	Nov. 68	Timing Chain Noises -- Model 220/8
30	Aug. 68	Chain Guides Between Crankshaft Drive Gear and Injection Timer -- Models 190 DC and 200 D
MB-T 46	Jan. 68	Timing Chain Tensioner Spring -- Type 200
104	Nov. 67	Valve Guide and Valve Stem Seal for Exhaust Valves - Types 200, 230, 230 S, 250 S, 250 SE, and 250 SL
Group 07		
MB-T 148	Dec. 69	Modification of the Crankcase Ventilation System -- Model 300 SEL/8 6.3
31	Nov. 69	Zenith Carburetor -- Model 230/8, 250/8, and 280 S/8
MB-T 126	June 69	Intermediate Version of Exhaust Emission Control System -- Models 280 SE/8, 280 SE/8 Cp/Conv. and 300 SEL/8
112	Feb. 69	New Two-Stage Starting Solenoid -- Model 600
133	Jan. 69	Air Filter Mounting on Zenith Carburetors Models 230/8, 250/8, 280 S/8 and 1968 250 S
90	Jan. 69	Steps to Take After Prolonged Storage of Gasoline Injection Pumps
MB-T 103	Jan. 69	Model 230/8 Without Saginaw Air Pump
MB-T 105	Dec. 68	Oil Check Valve -- 6-Cylinder Injection Engines
MB-T 99	Dec. 68	Solex Carburetor 38 PDSI -- Model 220/8

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No.	Date	Subject
69	Oct. 68	Fuel Line Noises -- Model 220 D/8
MB-T 53	May 68	Engine Test Specification Sheets for Tests of Exhaust Emission Control Systems - Models 220/8 Through 300 SEL/8
141	Apr. 68	Modified Gasket for INAT Carburetors - Types 230, 230 S, 250 S
MB-T 61	Apr. 68	By-Passing Series Resister For Ignition Coil All 6-Cylinder Models
9	Apr. 68	Adjustment of Fuel Injection Pumps on Gasoline Engine With Exhaust Gas Analyzers
MB-T 54	Mar. 68	Zenith Carburetor Adjustments - Types 230, 230 S, and 250 S
MB-T 50	Mar. 68	Modification of Carburetor Accelerator Lever 1968 Types 230, 230 S, 250 S (Phase I)
125	Feb. 68	Fuel Injection System - Types 250 SE, 250 SL, 300 SEB, 300 SEL, and 300 SE Cp/Conv.
107	Dec. 67	Vacuum Governor (Vacuum-Operated RPM Stabelizer) Type 230 S with INAT Carburetor 230 S, 250 S
MB-T 31	Oct. 67	New Engine Test Specification Sheets for Tests of Exhaust Emission Control Systems
MB-T 25	Aug. 67	Exhaust Emission Control System On M-B Passenger Cars
43	Aug. 67	Installation of a Time Switch - Type 250 SE, SL
17	July 67	Carburetor Types 200, 230, (180.945 Engine) Solex Carburetor 38 PDSI

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108/540/

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No.	Date	Subject
63	Feb. 67	Starting Device on Gasoline Injection Engines
44	Aug. 66	Carburetors - Type 200
81	Nov. 65	A) Idling Adjustment Types 200, 230, 230 S, 250 S B) Instructions for the Elimination of Carburetor Defects
Group 09/11		
111	Dec. 69	Air Filter -- Models 230/8 - 250/8, 250 S, 280 S/8
MB-T 67	Apr. 68	Crankcase Ventilation System Types 200 D, 220 D/8
127	Jan. 68	Seal Ring for Fuel Filter Element on Fuel Injection Engines
87	Nov. 67	Oil-Bath Air Filter in Passenger Car Engines
MB-T 8	May 67	Modification of Crankcase Ventilation System on Types 300 SEB Sedan, 300 SEL Sedan and 300 SE Cp/Conv.
MB-T 3	Oct. 66	Flame Arrester Screen in Air Cleaner Breather Line Intake
MB-T 1	Nov. 66	Modification of Crankcase Ventilation System on Types 230 SL, 250 SE Sedan/ Cp/Conv.
48	Sept. 64	Fuel Pump of Types 170 S - 220 SB
Group 13		
MB-T 19	Sept. 67	Scoop for Air Compressor Type 600 (Replacement for #25 June 66)

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No.	Date	Subject
Group 14		
MB-T 111	Apr. 69	Installation of the Crankcase Emission By-Pass Hose
MB-T 37	Nov. 67	Exhaust Manifold Type 200
Group 15		
4	Apr. 69	Alternator with Screw-On Type Electric Terminals on Replacement Engines
MB-T 107a	Mar. 69	Starter Motor with 1.4 HP -- Models 220/8 through 300 SEL/8 (with exception of 220 D/8)
MB-T 81	Dec. 68	Protective Cover for the Distributor on 4 and 6-cylinder Engines (except 3.0 litre engines)
93	Dec. 68	Ignition Distributor Rotor for Passenger Car Models 1968
3	May. 68	Ignition Distributor Cap and Ignition Distributor Rotor
143	Mar. 68	Type 600 1) Measurement and Adjustment of Dwell Angle and Contact Breaker Point Gap 2) Adjustment of Ignition Points
60	Jan. 67	Wiring Connection for Alternator
55	Jan. 67	Alternator
Group 18		
98	Dec. 69	Removal of Lower Part of Oil Filter Housing On Cars With Power Steering But Without Engine Oil Cooler -- Model 220/8
33	May 69	Oil Relief Valve -- Models 250/8, 250 Coupe, 280 S/8, 280 SE/8, 280 SL/8, and 300 SEL/8

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No.	Date	Subject
101	Nov. 67	Drive for Oil Pump, Distributor and Injection Pump, Passenger Cars
73	Sept. 67	Oil-Filters for Passenger Cars
Group 20		
82	Dec. 69	Removal of Coolant Thermostats
58	Aug. 69	Cooling Water Thermostat
MB-T 131	July 69	Year Around Anti-Freeze
MB-T 123	May 69	Fan Noise -- Models 230/8 and 250/8
82	Jan. 69	Cooling Water Thermostat
38	May 68	Radiator Shroud -- Models 220/8 through 250/8
21	Apr. 68	Cooling Water Thermostat
MB-T 38	Feb. 68	Three-Groove Water Pump Pulley - Type 250 SL
116	Dec. 67	Viscous Fan Coupling
115	Nov. 67	V-Belts, Passenger Cars
83	Sept. 67	Radiator Mounting - Types 200/200 D and 190 C/190 DC
18	Apr. 67	Hydraulic Fan Coupling
Group 22-24		
85	Nov. 68	V-Belt Drive -- Model 600
4	Mar. 68	Belt Drive Modification on Type 600
Group 25		
MB-T 52	Mar. 68	Procedure for Bleeding Hydraulic Clutch Actuating System

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No.	Date	Subject
108	Dec. 67	Standard Clutch Types 200 to 300 SE
Group 26		
43	June 69	Water Entering Into The Transmission -- Models 220/8 through 250/8 with Standard Transmission
26	Apr. 67	Clutch-Housing for Standard Transmission Exchange Type 300 SE Series
Group 27		
103	Dec. 69	Installation of Fluid Clutch of 3-Planetary Gear Set Transmission in Models 220 D/8 to 250/8 (from beginning of series) and 280 S/8 to 300 SEL/8 (from April 1969)
MB-T 40	Oct. 69	Latest Approved Transmission Fluids For Old and New Type Automatic Transmissions
19	June 69	Automatic Transmission - Models 220/8 through 250/8
20	May 69	Automatic Transmission -- Models 220/8 through 250/8
MB-T 77	Oct. 68	Hydraulic Oil Pressure Noise -- Models 250/8, 280 S/8, and 280 SE/8
35	June 69	Work Instructions for the Disassembly and Reassembly of the Valve Body Assembly -- Models 220/8, 220 D/8, 230/8, and 250/8
34	May 68	Tow-Starting of Cars With Automatic Transmission - Models 220/8 through 250/8
MB-T 63	May 68	Automatic Transmission Protective Cover -- Models 200 - 230
13	Apr. 68	Subsequent Installation of Illuminated Gearshift Quadrant in Cars With Automatic Transmission and Floor-Mounted Selector Lever - Models 200, 200 D, 230, 230 S, 250 SE

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No.	Date	Subject
MB-T 45	Jan. 68	Oil Sealring On Front Shaft Of Automatic Transmission
56	Sept. 67	Replacement and Maintenance Instruction For Automatic Transmission With Oil-Filter
MB-T 24	Aug. 67	Automatic Transmission Modulator Pressure
40	Aug. 67	Pressure Test Connections on the Automatic Transmission
2	Feb. 67	Hydraulic Clutch of Types 230, 230 S, 230 SL, 250 S and 250 SE
5	Jan. 66	Up and Down Stroke Solenoid of Automatic D-B Transmission
70	Oct. 65	Oils Released for Automatic Transmission Type 600
26	June 64	Standard Automatic Transmissions for Types 190 C, 220 B, 220 SB, and SEB
13	Mar. 64	Automatic Transmission in Type 190 C
1	Jan. 64	Automatic D-B Transmission As Standard Transmission
29	May 63	Automatic D-B Transmission - Brief Inspection Instruction
Group 29/30		
24	Aug. 69	Accelerator Linkage -- Model 300 SEL/8 6.3
128	Apr. 69	A. Accelerator Pedal -- Models 220/8 through 250/8 (W 114/115) B. Spring-loaded Control Linkage -- Models 220/8 and 220 D/8
37	May 65	Bleeding the Hydraulic Clutch Control of Our Passenger Cars With Inner Master Cylinders

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No.	Date	Subject
42	Aug. 64	Complaints About Transmissions Caused By Incorrect Adjustment of Clutch Act
Group 32		
MB-T 151	Nov. 69	Replacement of Rear Shock Absorbers
MB-T 145	Oct. 69	Approved Hydraulic Oils for the Self-Adjusting Leveling Device on the Rear Axle -- Models 220/8 through 250/8 (W 114/115)
MB-T 138	Oct. 69	Removal of Auxiliary Rubber Buffers -- Models 300 SEL/8 6.3 and 600 (W 109/100)
38	June 69	Noises in the Front Axle -- Models 220/8 through 250/8 (W 114/115)
97	May 69	Connecting Rods for Level Control Valves on Vehicles with an Air Suspension System
91	Dec. 68	Shock Absorbers. Make: FICHTEL & SACHS -- Models 220/8 through 250/8 (W 114/115)
MB-T 39	Dec. 67	Loss of Air From Air-Suspension - Types 300 SE, Sedan/Cpe/Conv., 300 SEL, 600
44	Aug. 67	Test Procedure for Hydropneumatic Compensating Spring (BOGE Suspension Unit)
53	Sept. 63	Air Cushioning for Types 300 SE
Group 33		
110	Dec. 69	Front Axle Wheel Bearing Clearance -- Models 220 D/8 to 600
23	July 69	Front Axle Lower A-Arms -- Models 300 SEL/8 and 300 SEL/8 6.3
70	Sept. 67	Sealing Rings for Front Wheel Bearings

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No.	Date	Subject
Group 35		
77	Oct. 69	Attachment of the Rear Axle Housing Mounting to the Rear Axle Support -- Models 220/8 through 250/8 (W 114/115)
40	Oct. 69	Pinion and Ring Gear For The Rear Axles of Our Passenger Cars
32	June 69	Rear Axle Suspension -- Models 220/8 through 250/8 (W 114/115)
30	May 69	Differential Gear with Limited Slip
138	Apr. 69	Remedies for "Clicking" Noise in the Rear Axle -- Models 220 D/8 to 300 SEL/8 (W 108 through 115)
59	Aug. 68	Diagonal Pivot Swing Axle -- Models 220/8 through 250/8 (W 114/115)
MB-T 16	Aug. 67	Rear Axle Ratios - Type 250 SL
20	Apr. 67	Rear Axle Suspension of Types 230, 230 S
33	June 63	Rear Axles of Types 300 SE
Group 40		
MB-T 149	Dec. 69	Adjustment Diagram for Camber and Caster of Front Wheels -- Models 220/8, 220 D/8, 230/8, and 250/8
MB-T 147	Nov. 69	Standardizing of Radial Ply Tires
MB-T 144	Oct. 69	High Speed Vibrations -- Model 300 SEL/8 6.3
MB-T 128	Aug. 69	FIRESTONE AND GOODYEAR TIRES
49	July 69	Notification of Additionally Released Tires for Models 220/8 through 250/8
124	Jan. 69	Tire Pressure and Toe-In of Front Wheels -- Models 220/8 through 250/8 (W 114/115)

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No.	Date	Subject
MB-T 102	Jan. 69	Continental Radial Tires
MB-T 96a	Jan. 69	Snow Tires and Snow Chains -- Model 300 SEL/8 6.3
86	Nov. 68	Caster Adjustment -- Model 600
131	Dec. 67	Wheel Rins for M-B Passenger Cars
119	Dec. 67	Mounting of Hubcaps and Chrome Wheel Rings on 14" Wheels
103	Nov. 67	Mounting of Disc Wheels - Passenger Cars
67	Sept. 67	Vibration of Wheels At High Speeds
MB-T 20	Aug. 67	Ply Rating of Tires
19	June 67	Radial-Ply Tires for M-B Passenger Cars
MB-T 11	May 67	New Measuring Sheet for Wheel Alignment
21	Apr. 67	Rotating Tires on Passenger Cars
29	June 66	Vehicles In Paint Drying Ovens
59	Oct. 64	Tires With Spikes on Test Stands
22	May 64	Michelin X Tires for Types 190 C, DC, 220 B, SB, and 220 SEB Sedan and Coupe
Group 41		
92	Dec. 69	Intermediate Drive Shaft Bearing -- Models 220/8 to 250 C/8, (Model Series 114/115)
85	Dec. 69	Driveshafts With Clamp-Type Connections
MB-T 50	Oct. 69	Exchange Program on Driveshaft -- Model 280 SE/8 Convertible

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No.	Date	Subject
Group 42/43		
73	Oct. 69	Fuel Separator In The Vacuum Line
145 a	Sept. 69	Brake Pads for Disc Brakes - Passenger Cars
MB-T 132	Aug. 69	Inspection of the Master Brake Cylinder Model 600
MB-T 127	July 69	Anti-Squeak Plates for Installations On Girling Dual-Piston Calipers ONLY
2	May 69	Brake System -- Model 600
104 a	Jan. 69	Brake Booster -- Models 280 S/8, 280 SE/8, 280 SL/8 and 300 SEL/8
113	Dec. 68	Cast-Iron Brake Calipers on Model 600
54	Aug. 68	Brake Pads for Disc Drakes on our Passenger Cars
46	May 68	Foot-Operated Parking Brake -- Models 220/8 through 250/8
142	March 68	Vacuum Pump - Types 200 D and 220 D/8
7	March 68	Brake Pressure Regulator - Types 250 s, 250 SE, 250 SE/Cp/Conv., 250 SL, 300 SEB, 300 SEL
130	Jan. 68	Girling Dual-Piston Calipers (17/2) Installation of Anti-Squeak Plates
98	Nov. 67	Checking Brake System for Proper Functioning
63	Nov. 67	Checking and Repairing the Brake System
47	Sept. 67	Vacuum Check Valve for Brake Boosters T 51/100 and T 51/200
59	Aug. 67	Brake Pads for Disc-Brakes On Passenger Cars
49	Aug. 67	Girling Brake Calipers
48	Aug. 66	Front Axle Brake Calipers Type 600

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No.	Date	Subject
1	Jan. 66	Separate Check Valve For Types 190 DC, 200 D
90	Dec. 65	Repairing Calipers
61	Sept. 65	Type 600 Brakes, Repairing the Parking Brake Calipers, Removing and Re-Installing the Brake Calipers
56	Aug. 65	Hand-Brakes of Types 200, 200 D, and 230
52	Aug. 65	Separate Vacuum Non-Return Valve for Booster Brake T 51
46	July 65	Foor-Operated Parking Brake - Type 600
Group 46		
46	June 69	Steering Wheel Lock - Installation and Warranty Handling - All Models except Model 600
117	Feb. 69	Maintenance-free Bearing of the Steering Idler Arm -- Models 250 S through 300 SEL/8 6.3 (Model Series W 108/109,111 Cp/ Cv and 113)
129	Feb. 69	Steering Idler Arm -- Model 280 SL/8
114	Jan. 69	Power Steering -- Models 220/8, 220 D/8, 230/8, 250/8, 250 SL and 280. SL/8 (W 113/114/115)
53	July 68	Tie Rods and Ball Joints for Tie Rods
41	May 68	Steering Gear Box - Clicking Noises in Full Lock Position
100	Nov. 67	Power Steering Modifications
99	Nov. 67	Steering Gear Boxes of Vehicles Involved in Accidents
MB-T 23	Sept. 67	Modification os Steering Gear Box -- Type 600
58	Aug. 67	Tie-Rod Type 600

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No.	Date	Subject
58	Oct. 66	Contact of Steering Tie-Rod Against the Oil Filter - Type 200
50	Sept. 66	Power Steering and Pump - Type 600
Group 47/48		
34	Apr. 67	A) 65 Litre Fuel-Tank Types 200, 200 D, 220 B/SB/SEB, 220 SEB Cpe/Conv., 230, 230 S, and 300 SE (Up Through Chassis # 003083) B) Installation of Fuel Tank
MB-T 2	Oct. 66	Fuel-Filter Element - Type 600
Group 49		
MB-T 42	Jan. 68	Mounting Screws (Hub-Bolts) for Drive Pulley Saginaw Air Pump
29	June 67	Exhaust Manifold - Type 230 SL
40	July 66	Exhaust Pipe Bracket Types 190 C/DC, 200 D
Group 50		
MB-T 119	Mar. 69	Engine Oil Cooler Exchange -- Model 280 SL/8
MB-T 109	Feb. 69	Engine Oil Cooler Exchange -- Model 280 SL/8
18	Mar. 65	Cooling Water Pipes - Types 190 C-300 SE
71	Dec. 63	Cooling Water Drain Plug On Pas-Senger Cars
Group 54		
MB-T 160	Nov. 69	Fog Lights on Model 250/8 Coupe

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No.	Date	Subject
MB-T 152	Oct. 69	Revised Circuit Arrangement for the 212° F Thermo Switch Controlling the Auxiliary Fan -- Reference: Service Introduction Book "Model Year 1970 Passenger Cars USA Version" - page 11
MB-T 94	Oct. 68	Modification of Hazard Warning Light Switch and Flasher -- Models 220/8, 220 D/8, 230/8 and 250/8
MB-T 17	Aug. 67	Instructions for Subsequent Installation of Hazard Warning Lights - Types 190 C/DC, 220 B/SB/SEB Cpe /Conv., 230 SL, 300 SE Cpe/Conv., 300 SEL
15	June 67	Damage to Engine Hood by Negative Pole of Battery Types 300 SEB/SEL
Group 58/59		
(none)		
Group 60-81 84-89		
96	Dec. 69	Locks and Keys -- Models 220/8 to 600
48	Juen 69	Mounting of the Armrest on the Driver's Door -- Models 220/8 through 250/8 (W 114/115)
94	Feb. 69	Paint Jobs on Hub Caps, Part No. 115 400 00 25, for Passenger Car Models as of January 1968
127	Jan. 69	Mounting of Ornamental Chrome Bar on the Drip Rail -- Models 220/8 through 250/8
136	Jan. 69	Safety Measure When Performing Repair Work on the Front End Assembly

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No.	Date	Subject
126	Jan. 69	Modification of the Tunnel Covering with Tray -- Models 220/8 through 250/8 (W 114/115)
135	Jan. 69	Safety Grip on Vehicle Keys
MB-T 91	Nov. 68	Adjustment of Manually Operated Windows Models 230 SL, 250 SL, and 280 SL - Coupe and Convertible
MB-T 80	Aug. 68	Adhesive for Interior Trim Materials
45	Oct. 68	Mounting of Chrome Moldings on the Side Windows -- Models 220 SEB Cp/Conv. Through 300 SE Cp/Conv.
67	Oct. 68	Door Lock Assembly -- Models 220/8 through 250/8
22	July 68	Sliding Roof -- Model 600
23	July 68	Central Locking System Vacuum Elements
17	Apr. 68	Repairing Damaged Convertible Tops - Type 230 SL (From Chassis End No. (19020) and types 250 SL and 280 SL (from beginning of series)
MB-T' 48	Feb. 68	M-B Kar Kare Kit
MB-T 43	Jan. 68	Adjustment of Doors - Current Models
85	Nov. 67	Front Axle Lateral Support - Type 600
71	Nov. 67	Front Side Member Types 190 C to 300 SEL
69	Sept. 67	Cleaning of Water Drain Valves Type 600
68	Sept. 67	Repair Work on Spare Tire Well Type 600
66	Aug. 67	Roof Panel For Vehicles With Electrically or Manually Operated Sliding Roof Types 190 C/DC, 200, 200 D, 220 B/SB/SEB, 230, 230 S

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No.	Date	Subject
38	July 67	Ventilation Windows - Types 250 S, 250 SE, 300 SEb, and 300 SEL
31	Apr. 67	Lubricating KESO Door and Trunk Safety Locks
MB-T 10	Apr. 67	Instructions for Sealing Leaky Seams of Roadster Tops
32	Apr. 67	Position of Actuation Lever of Fresh Air (Summer) Ventilation System During Paint Jobs - Types 250 S, 250 SE, 300 SEb, and 300 SEL
10	Apr. 67	Electrically Operated Sliding Roof
33	July 66	Electrically Operated Sliding Roof - Types 250 S, 250 SE, 250 SE Cpe., 300 SEB, 300 SEL, and 300 SE Cpe.
73	Nov. 65	Sliding Roof Type 600
63	Sept. 65	Type 600 - Pump for Special Hydraulic System
13	Feb. 65	Modification of the Built-In Headlights of Types 190 C and DC
14	Mar. 64	Repairing the Frame Floor Unit and Measuring Vehicles Damaged in an Accident
37	June 63	Damage To Glass Panes
Group 82		
94	Dec. 69	Power Window Motors
MB-T 116	Apr. 69	Hella K 11145 Fog Light for Installation on Models 220/8, 220 D/8, 230/8, 250/8 (W 114/115) and 190 C, 190 DC, 200, and 200 D
134	Jan. 69	Windshield Washing System -- Model 600
123	Jan. 69	Rear Light Unit -- Models 220/8 through 250/8 (Model Series W 114/115)

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No.	Date	Subject
96	Nov. 68	Anti-Static Interference Suppressors -- Models 190 C through 600
MB-T 83	Aug. 68	Electrically Operated Windows
58	July 68	Windshield Wiper Noises
120	Feb. 68	Auxiliary High-Beam Headlights -- Passenger Cars
144	Feb. 68	Electrically Powered Windows on Our Passenger Cars -- Trouble-Shooting and Repair of Malfunctioning
Group 83		
83	Dec. 69	Air Conditioning Compressor Modifications
MB-T 137	Oct. 69	Frigiking Air Conditioning Units -- Models 220/8, 220 D/8, 230/8 and 250/8
MB-T 142	Sept. 69	Installation of A/C Wire Harness in 1969 and Later 280 S/8; 280 SE/8, 280 SEL/8, 280 SE/8 Cp./Cv.; 300 SEL/8 and 280 SL/8 Models Equipped with New Type Automatic Transmission (Part No. 108 270 11 01)
MB-T 135a	Sept. 69	Installation of an Auxiliary Electric Fan Into 1970 Vehicles Equipped with Factory-Installed Wiring Harness and Electrical Components -- Models 250/8, 280 S/8, 280 SE/8, 280 SEL/8 and 300 SEL/8
MB-T 139	Aug. 69	Modification of the Air Conditioning System -- Models 220/8 through 250/8 (W 114/115) 1970 Models
137	May 69	Modification of Bowden Cables and Water Tap (Control Valve) for Heating System of Models 220/8 to 250/8 (W 114/115)
28	May 69	Operation of the Heating and Ventilation System -- Models 220/8 through 250/8 (W 114/115)

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No.	Date	Subject
MB-T 114	Feb. 69	Frigiking Air Conditioning Kit -- Models 280 S/8 and 280 SE/8
MB-T 112	Feb. 69	Air Conditioning -- All 1969 Models With Six Cylinder Engines
MB-T 115	Jan. 69	Air Leaks on Frigiking and Thermo King Air Conditioning Units -- Models 220/8 through 250/8
MB-T 97	Jan. 69	New Alternator V-Belt for All 6-Cylinder Engine Models
MB-T 93	Jan. 69	Air Conditioning -- Model 220 D/8
75	Dec. 68	Magnetic Hot Water Valve -- Model 600
87	Nov. 68	Heating - Models 220/8 through 250/8 (W 114/115)
MB-T 74	July 68	Supplementary Installation Procedure for Frigiking Air Conditioning Unit -- Models 220/8, 220 D/8 and 250/8
MB-T 73	June 68	Uncontrolled Increase of Air Conditioner Blower Motor Speed in Low and Medium Positions -- Models 220/8 through 250/8 with Frigiking, Thermo king, and Behr Air Conditioning
MB-T 71	June 68	Supplementary Installation Procedure for Thermo King Air Conditioning Unit AAC 176/177, -- Models 220/8, 220 D/8, 230/8 and 250/8
40	May 68	Water Entering Car through Ventilation System -- Models 220/8 through 250/8
MB-T 70	May 68	Air Conditioning -- Models 230/8 and 250/8

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No.	Date	Subject
MB-T 69	May 68	Supplementary Installation Procedure for Thermo King Air-Conditioning Unit AAC 170 SN 2 -- Models 280 S/8, 280 SE/8, and 300 SEL/8
MB-T 62	May 68	Subsequent Installation of Air-Conditioning Unit Compressor Mount -- Models 230/8, 250/8, 280 S/8, 280 SE/8, and 300 SEL/8
MB-T 59	Apr. 68	Replacement of Water Pump Pulley when Installing an Air-Conditioning Unit-- Type 280 S
MB-T 51	Mar. 68	Service Tools for Thermo King Auto Air-Conditioning Units
MB-T 47	Mar. 68	Operating Difficulties with Heater Control Cables -- Types 250 S and 250 SE
MB-T 27	Sept. 67	Thermo King and Frigiking Air-Conditioning Units
MB-T 18	Sept. 67	Modification of Idler Pulley for Air Conditioner Compressor Drive Belt -- Type 600
48	Aug. 67	Supplementary Instructions for Removal of Engine from Vehicles Equipped with Air-Conditioning Unit
MB-T 14	June 67	Air Conditioning Unit Label of Certification
MB-T 15	May 67	Subsequent Installation of Frigiking Air Conditioner, Type 250 SL
Group 91-97		
36	May 69	Location of the Backrest Adjustment Control Knob -- Models 220/8 through 250/8

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SPECIAL VERSIONS

No.	Date	Subject
Group L		
(none)		
Group 00		
(none)		
Group 7		
(none)		
Group 20		
S 12	Jan. 68	Subsequent Installion of Viscous Fan Coupling Types 200, 200 D, 230, and 230 S
Group 26		
S 4	Jan. 66	Center Floor-Shift (Mechanical Transmission)
Group 31		
(none)		
Group 32		
S 8	May 63	Additional Air Cushioning Types 190 c, 190 Dc, 220 B, 220 SB, 220 SEB
Group 40		
(none)		
Group 42/43		
(none)		
Group 46		
(none)		
Group 47/48		
(none)		

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No.	Date	Subject
Group 51/52		
S 11	Nov. 68	Installation of Protective Underplates -- Models 220/8, 220 D/8, 230/8 and 250/8
S 8	Oct. 68	Installation of Protective Underplates -- Model 600
S 2	May 68	Protective Underplates for Rear Axle -- Models 300 SE, 300 SEL, and 300 SE Cpe./Conv.
S 13	May 68	Installation of Protective Underplates -- Types 230 SL, 250 SL, and 280 SL/8
S 14	Apr. 68	Installation of Protective Underplates for Sedan Types 190 C, 190 Dc, 220 B/ SB/SEb, 200, 200 D, 230, 230 S, 250 S/SE, 300 SE/SEb, and 300 SEL. Coupe/Conv. Types 220 SEb, 250 SE, and 300 SE
S 10	July 62	Installation of an Additional Plate for Protection of the Fuel Lines of Types 190 c, 190 Dc, 220 B and 220 Sb
Group 54		
S 11	June 63	SA No. 10 524 - Battery 12 V 84 AH in Type 190 Dc
S 4	Feb. 63	SA No. 10524 - Battery 12 Volt 84 Ah, DcType 190 Dc
Group 60-81 84-89		
S 5	Dec. 68	Installation of Ski Racks -- Models 190 C through 600
S 3	July 68	Luggage Rack -- Models 190 C through 600
S 16	Mar. 68	Subsequent Conversion of Types 230 SL - 250 SL or 280 SL Cp. into a Convertible
S 15	Feb. 68	Subsequent Installation of a Hard Top on Convertible Types 230 SL and 250 SL

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No.	Date	Subject
S 2	Aug. 67	Subsequent Mounting of Ornamental Moldings on Types 230 SL and 250 SL Hardtop
MB-S 1	Dec. 66	Installation Instructions for Front Seat Belts in Cars of Our Previous Production Program
S 5	May 65	Placing Special Suitcases in the Rear of Models 190 D/DC, 220 B/SB/SEB, 230 SL, 300 SE, 600
Group 82		
S 7	Apr. 63	Subsequent Installation of A Step-in Light In Type 220 SEb and 300 SE Convertible
Group 83		
S 5	Nov. 67	Heatable Rear Window Pane Types 190 C/DC, 220 B/SB/SEB SEd/Cpe, 300 SE SED/Cpe., 200, 200 D, 230, 230 S, 250 S/SE Sed/Cpe, 300 SEB/SEL
S 11	Dec. 61	Heating System
Group 91-97		
S 13	May 66	Subsequent Installation of a Foldable Arm Rest - Types 200, 200 D, 230, 230 S, 250 S/SE, 300 SEB

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TOOLS, WORKSHOP EQUIPMENT

Tools

No.	Date	Subject
MB-T 130	July 69	Standard Tool Board for Special Tools
W 9	Aug. 67	Drilling Templates for Mounting Lower Windshield Molding
W 7	July 67	Templates for Checking Windshield and Rear Window Openings of Passenger Cars starting August 1965
W 5	July 67	Assembly Work on Door Linings - Types 200 through 300 SEL
W 5	June 67	Drilling and Marking Templates as of Introduction of New Models
W 3	Apr. 66	New Tools for Passenger Cars Supplied from Unterturkheim
W 2	Mar. 66	New Body Tools for Passenger Cars
W 1	Jan. 66	Adaptor for Headlight Opening Type 230 SL
W 7	Nov. 65	Measuring Device for Adjusting Door and Rear Lid Locks on Type 600
W 6	Sept. 65	New Special Tools
W 5	Aug. 65	Maintenance Tools for Type 600
W 4	July 65	Test Devices for Wishbone Position
W 1	Jan. 62	Extended Application of Wishbone Checking Device 120 589 04 21 for new types
W 21	Dec. 61	Supplementary Tool Set to be kept in the Car.
W 8	June 61	Adjustment of the Bevel Gear Drive of the Types 220 B,SB and SEB

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Workshop Equipment

No.	Date	Subject
E 7	Dec. 69	Cleaning of Hydraulic Clutch for the Automatic Transmission
E 6	Dec. 69	Checking Wheel Balancing Machines - Easy Method
MB-T 98	Nov. 68	Lifting M-B Passenger Cars with Jack Lift Adapters - Models 220/8, 220 D/8, 230/8 and 250/8
E 1	Apr. 68	Masking Covers for Paint Repair Work
E 4	Apr. 68	Lifting M-B Passenger Cars with Frame Contact Lifts, Two-Post Lifts, and Other Lifting Devices
E 5	Aug. 66	Flusher for Cleaning the Hydraulic Clutch of the Automatic DB Transmission
E 3	June 66	Testing Set for the Air Suspension System
E 1	Jan. 66	New Roller-Type Brake Test Stands built according the the Unit-Construction Principle
E 2	Aug. 64	Roller Brake Test Stand
E 4	Aug. 63	Frame Floor Gauge 111 589 14 23 00
E 4a	Oct. 62	Frame Floor Gauges
E 4	Sept. 62	Frame Floor Gauges and Straightening and measuring Table for Frame Floor Units and Bodies
E 2	May 62	Timing of Injection Pumps of Passenger Cars - Diesel Engines

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