MERCEDES-BENZ

service

Passenger Car Models
450 SE - 450 SEL
450 SL - 450 SLC

Owner's Emission Systems Manual—1974

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450 SE - 450 SEL
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For 1974, the legislative requirements for emission control by the State of California differ from those for all other states. This necessitated the use of different systems on some models. Throughout the text of this booklet, these differences are pointed out where applicable.

Contents

Introduction

The Clean Air Act requires that purchasers of 1974 passenger cars are supplied with all the service and maintenance literature reasonable and necessary for the Emission Control System to function properly for a period of 5 years, or a distance of 50,000 miles, whichever occurs first. In compliance with these provisions, the Emission System Manual contains all the information which you will require for the operation and maintenance of the factory installed Emission Control System of your 1974 Mercedes-Benz passenger car with gasoline engine.

The Environmental Protection Agency has certified that the Emission Control System of your vehicle meets exhaust emission standards for 1974 vehicles. To be certain that the Emission Control System functions for 5 years or 50,000 miles as designed, regular maintenance is necessary for all components of the vehicle which affect exhaust emission composition. The required service work is given in the section "Mercedes-Benz Emission Systems Maintenance" **(see pages 8 to 17)**.

The Emission System Warranty will remain in effect only when you can verify that all requirements regarding maintenance, fuels, and lubricants have been met. The Conditions of Warranty are on page 25 of this brochure.

Please keep the Emission System Manual together with the Owner's Manual and other documents concerning your vehicle, so that future owners will have access to this literature if you should sell the car.

Under favorable conditions, the exhaust of a gasoline engine is composed primarily of carbon dioxide (CO_2) and water vapor. Depending on the engine load (idle or full-throttle) and operating temperature, small quantities of other gases may be produced, specifically unburned hydrocarbons (HC), carbon monoxide (CO) and nitric oxide (NOx). Unburned hydrocarbons may also escape from the fuel system in the form of evaporated fuel.

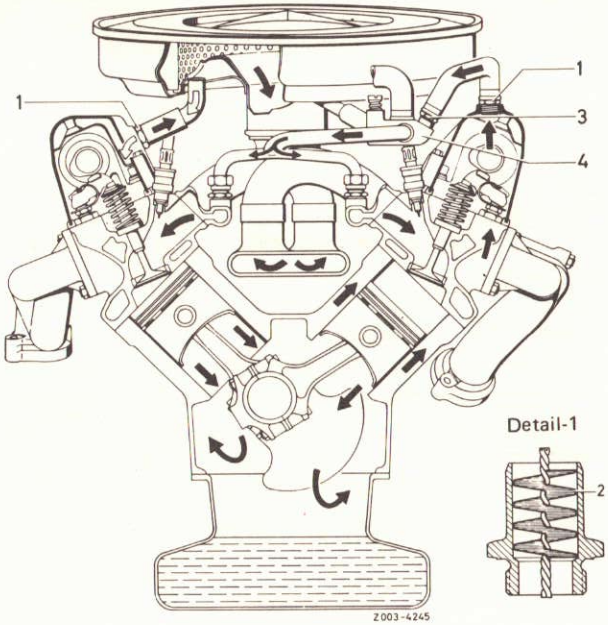
In the interests of maintaining clean air, the amount of these emissions should be as low as possible. This may be achieved on the one hand through engine design, and on the other by additional equipment which can regulate fuel mixtures and combustion, so that emission levels remain within permissible limits. The Environmental Protection Agency regulates the permissible emission limits.

Your Mercedes-Benz has an engine equipped with an electronically controlled fuel injection system. This engine is designed to reduce exhaust emissions to a minimal level. Therefore, only the following additional emission control equipment is installed in your Mercedes-Benz vehicle:

1. Ignition Switch-Over

To reduce exhaust emissions during coasting or idling, the ignition is retarded by a vacuum unit on the distributor.

For better engine cooling at coolant temperatures above 100°C (212°F), the ignition retard is canceled by a switch-over valve, which breaks the vacuum connection. The idle is raised about 200 RPM by this; the auxiliary fan is simultaneously actuated.



2. Crankcase Ventilation

The engine is equipped with a closed crankcase ventilation system. Crankcase vapors are not emitted into the atmosphere. Instead, they are drawn out of the crankcase through a vacuum line depending on operating conditions. From here, they re-enter the combustion chambers through the idling system.

3. Fuel Evaporation Control System

Your vehicle is equipped with a fuel evaporation control system, wh[illegible]revents the emission of fuel vapors into the atmosphere.

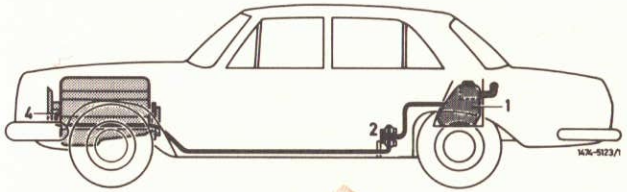
1 Connectors
2 Flame Arrester
3 By-pass valve
4 Idle Air control

⇦ Fresh Air
⬅ Crankcase Vapors

The fuel evaporation control system consists of the following:

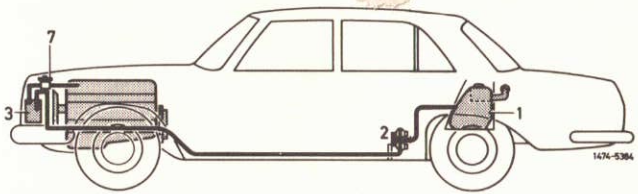
ON STANDARD U.S. VERSION CARS:

Fuel tank with expansion tank (1), valve (2), and a line leading to the crankcase connection (4).



ON CALIFORNIA VERSION CARS:

Fuel tank with expansion tank (1), valve (2), charcoal canister (3), and evaporation control valve (7).



At high temperatures, the fuel expands and flows into the expansion tank.

The vapors from the expansion tank pass through a valve to the engine crankcase and are drawn into the engine by the crankcase ventilation system for combustion.

On California version cars, the vapors pass through the valve to the charcoal canister where they are stored when the engine is not in operation. When the engine is running, and depending on the intake manifold vacuum, the vapors are drawn from the charcoal canister into the intake manifold.

The following two systems (4 and 5) are only installed on California version vehicles, i.e. EGR and Afterburning Systems.

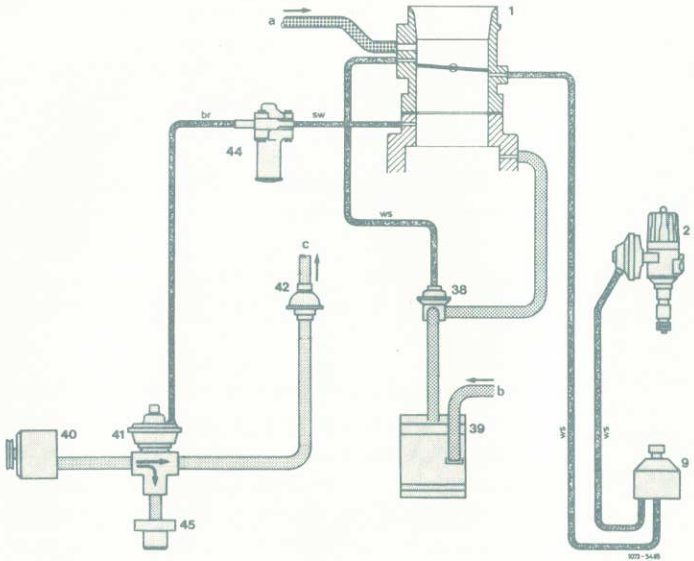
4. Exhaust Gas Recirculation (EGR)

To reduce the emission of nitric oxides (NOx), exhaust gas is recirculated into the intake manifold, depending on throttle valve position and intake manifold vacuum.

5. Afterburning System

An afterburning system is used to reduce the emission of carbon monoxide (CO) and unburned hydrocarbons (HC). The afterburning system consists of an air supply pump (40), a diverter control valve (44), diverter valve (41), and a check valve (42).

The air supply pump delivers the air directly into the exhaust ports in the cylinder head depending on the intake manifold vacuum. If the manifold vacuum is sufficient to open the diverter valve, the air is exhausted via a filter.



1 Throttle Valve
2 Ignition Distributor
9 Switch-over Valve, Ignition
38 Evaporation Control Valve
39 Charcoal Canister
40 Air Supply Pump
41 Diverter Valve
42 Check Valve
44 Diverter Control Valve

45 Air Filter
a EGR Line
b Fuel Evaporation Line
c Air Injection Line

This Manual contains all the maintenance jobs which directly or indirectly influence the function of the Emission Control System and the composition of the exhaust emissions. These maintenance jobs must be performed at customer expense regularly and completely in order to assure adherence to emission control standards.

The maintenance requirements for the emission system of your vehicle are specified for normal driving conditions. For operation under more severe conditions (frequent short trips, trailer towing, frequent operation on dusty roads, use of leaded gasoline, for instance), it becomes necessary to perform certain maintenance jobs at shorter intervals. This is especially true for the following points:

Engine Oil Change
If your vehicle is used primarily for short trips, or if it is operated under extremely dusty conditions, the engine oil should be changed (without filter) every 3,000 miles.

Air Filter
For operation under extremely dusty conditions, the air filter should be changed every 10,000 miles.

Spark Plugs
If leaded fuel is used, more frequent spark plug changes may be necessary.

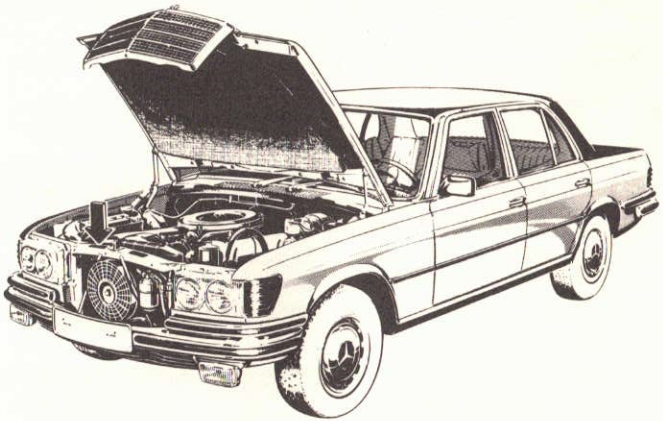
Some of the maintenance jobs for the emission control system are included in the regular "Mercedes-Benz Maintenance System." To be certain that the emission control system is fully maintained, however, the complete performance of the "Mercedes-Benz Emission Systems Maintenance" is essential. It is therefore advisable to simul-

taneously perform the regular maintenance, correspondingly reduced. In this way, you will be sure that the vehicle is completely and properly maintained. Both maintenance jobs are due at the same time or mileage intervals:

- between 200 - 600 miles
- after 5,000 miles
- after 10,000 miles and then once after each additional 10,000 miles, or at least once a year.

The chart on page 11 gives the mileage or time interval of each emission system maintenance job for normal vehicle operation. This chart is arranged in a natural sequence of maintenance jobs, and for each job, there is a code number.

Explanations of each maintenance job are given in numerical order on pages 13 to 17 .

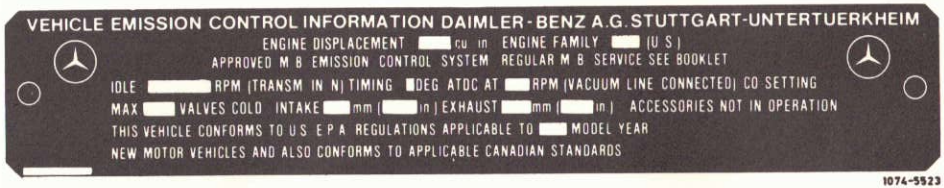


ARROW: Position of Emission Control Information Plate. Specifications on this plate must be observed when performing maintenance jobs on the engine.

Tune-up specifications for the emission control system are given on page 21 under "Engine Specifications." These specifications are also given on the emission control information plate, located under the hood of each vehicle.

EMISSION CONTROL INFORMATION PLATES

On Standard U.S. Version Cars - - -



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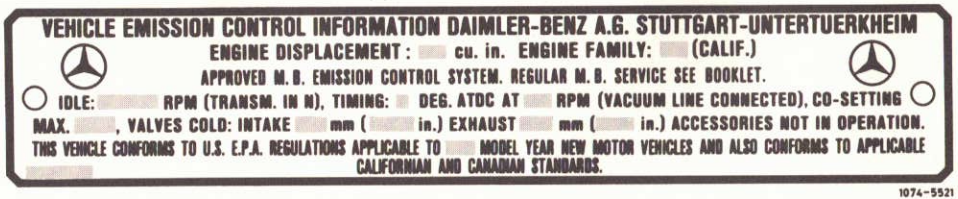
On California Version Cars - - -



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Required Owner's Emission Systems Maintenance

Position	Maintenance Job	Intervals mileage / month whichever occurs first			
		at 200-600	at 5,000	every 10,000/12	every 30,000/36
151	Engine oil and filter	R	R	R+	
170	Automatic transmission fluid				R
174	Automatic transmission filter				R
752	Cylinder head bolts	A			
773	Distributor points			R	
041	Fuel hoses and pipes	I	I	I	
766	Throttle valve (Cal.)			I	
762	Flame arrester			I	
202	Air filter element			I	R
757/756	Drive belts	A		I	
415/813	Engine control linkage		L	L	I/L
990	Radiator	L	L	L	
871	Intake and exhaust manifold and exhaust pipe flange	A			A
840	Fuel filter or filter element				R

Position	Maintenance Job	Intervals mileage / month whichever occurs first			
		at 200-600	at 5,000	every 10,000/12	every 30,000/36
753	Valve clearances	A		A	
751	Engine cylinder compression			I	
770	Spark plugs			R++	
781	Dwell angle	I	I		
782	Dwell angle and ignition timing			A	
772	Ignition timing	A	A		
774	Ignition switch-over			I	
764	Fuel Evaporation System in Engine Comp. (Cal.)			I	
765	Air Injection System (Cal.)			I	
763	Exhaust recirculation (Cal.)			I	
832	Ignition system			I	
798	Idle speed and adjustment-CO test	A	A	A	
120	Automatic transmission	L	L	L	

+ Every 5,000 miles, at least twice a year

++ If leaded fuel is used, more frequent spark plug changes may be necessary.

R = Replace. A = Adjust, retorque. L = Lubricate or top off.

I = Inspect, clean, correct or replace if necessary.

(Cal.)= California Version only

We recommend that all maintenance jobs be performed by your authorized Mercedes-Benz Dealer. He is equipped with the tools, instruments and literature necessary for correct and systematic performance of these jobs. Only Mercedes-Benz spare parts should be used for maintenance and repair work, since these parts will always meet the manufacturer's specifications. It is also important that only those fuels and lubricants be used which have been recommended by Daimler-Benz AG. Regarding this, see also page 18 of this brochure.

A small sticker attached to the door post of the driver's door by the service station personnel is to remind you when the next Emission System Maintenance is due.

Please have the performance of the "Mercedes-Benz Emission Systems Maintenance" verified in the vouchers provided on pages 23 and 24. The vehicle owner is responsible for the regular maintenance of the emission control system according to the provisions of this manual. Proof of regular emission system maintenance is a condition for the emission systems warranty to remain in effect.

If you should desire further information concerning tune-up specifications or emission control system maintenance jobs, we recommend a special Maintenance Manual. This manual will be available at a minimal cost from either your Mercedes-Benz Dealer, or directly from Mercedes-Benz of North America, Inc.

Description of Emission System Maintenance Jobs

The composition of exhaust emissions is influenced not only by the special emission control equipment, but also by nearly every engine component and adjustment. Therefore, emission system maintenance must include the entire engine. Some maintenance jobs are actually only tests. They are important however, because they allow early detection of discrepancies which can later lead to increased emissions from the exhaust. It is more economical for you to have such items adjusted immediately, because adjustments at an early stage are generally less expensive.

The maintenance intervals have been determined so that the vehicle, under normal conditions, should operate problem-free between maintenance services. In regard to engine smoothness before and after the maintenance work, it must be taken into consideration that an engine with an emission control system cannot be operated in all RPM- ranges with the most favorable ignition timing and gasoline mixture. Therefore, the engine will not show optimal running characteristics at all speeds. In the interests of cleaner air, this sort of compromise is unavoidable.

EMISSION SYSTEM MAINTENANCE JOBS:

041 - Check Fuel System for Leaks - General Condition
Check the fuel tank, fuel lines and hoses for leaks or damage which could cause leaks.

120 - Automatic Transmission Fluid Level
Check the fluid level of the automatic transmission at every engine oil change; add if necessary.

151 - Engine Oil and Filter Change

Change the engine oil and oil filter every 5,000 miles, or at least twice a year (Spring and Fall). Under severe operating conditions (frequent short trips, heavy dust, etc.), change the oil correspondingly earlier (3,000 miles for instance). If oil consumption should increase, determine the cause and take necessary corrective steps.

170 - Renew Automatic Transmission Fluid

Under normal conditions, change the transmission fluid and filter every 30,000 miles, as specified in the "Mercedes-Benz Maintenance System." For vehicles which operate under more severe conditions (when driven primarily in the city, or with a trailer, for example), an extra oil change between regular intervals should be performed.

174 - Renew Oil Filter for Automatic Transmission

The filter for the automatic transmission is changed with the automatic transmission fluid every 30,000 miles.

202 - Clean Air Filter

Under normal conditions, clean the air filter every 10,000 miles. Change the air filter every 30,000 miles. Under severe dust conditions, change the air filter every 10,000 miles. A dirty air filter causes poor gas mileage and high emission levels.

415 - Lubricate Engine Control Rods and Linkage

All moving parts of the engine control rods and linkage must be regularly lubricated with specially tested hydraulic fluid. Beyond the regular maintenance intervals, this must be performed after every engine cleaning, and frequently during winter operation when road salt has been spread.

751 - Engine Compression Check

The compression of the individual cylinders is an indication of the condition of the cylinder walls, the piston rings and the valves.

If the compression is very low, or if there are large differences between the individual cylinders, determine the cause and take necessary corrective steps.

752 - Re-Torque Head Bolts

Head bolts must be re-torqued in the specified sequence during the first maintenance service, because new cylinder head gaskets are seated after this period of operation.

753 - Adjust Valves

The valves are subject to extreme mechanical and thermal stresses. To assure proper functioning of the valves despite these stresses, it is necessary to check or adjust them regularly.

If the valve clearance is too low, the result can be damage to the valves and poor cold-starting.

756 - Tighten V-Belts

New V-belts stretch during use and must be re-tightened after a short period of operation (first maintenance service).

757 - Check V-Belt Condition and Tightness

V-belts are subject to wear and aging. They must be regularly checked for cracks, wear and proper tension. Renew as necessary.

762 - Clean Flame Arrester

For proper functioning of the crankcase ventilation system, the flame arrester in the cylinder head must be kept clean.

763 - Exhaust Recirculation (Cal.)

The exhaust recirculation system has significant influence on emission composition. It must be checked regularly for proper functioning.

764 - Check Fuel Evaporation System in Engine Compartment (Cal.)

To prevent the escape of fuel vapors into the atmosphere, check that fuel vapors are drawn out of the charcoal canister.

765 - Check of Air Injection System (Cal.)

For proper operation of theemission control system it is necessary to check the air injection system at regular intervals.

766 - Cleaning of Throttle Valve (Cal.)

Due to exhaust gas recirculation, deposits may form in the throttle valve. This necessitates regular cleaning of the throttle valve at 10,000 mile intervals.

770 - Renew Spark Plugs

Spark plugs are subject to corrosion and must be changed every 10,000 miles.

If leaded fuel is used, more frequent spark plug changes may be necessary, since lead deposits on the electrodes can cause misfiring.

772 - Set Timing

The timing must be checked and adjusted as necessary during the first and second maintenance services.

773 - Renew Contact Points

Contact points are subject to corrosion and must be renewed every 10,000 miles.

The condition of the contact points is an essential factor in the proper functioning of the ignition system.

774 - Check Ignition Switch-Over

After adjusting the dwell and the timing, the ignition switch-over must be checked under various conditions for proper functioning.

781 - Check Dwell

The dwell and the ignition timing (pos. 772) must be checked during the first and second services.

(Cal.) = California vehicles only.

782 - Adjust Dwell and Timing
After renewing the contact points, the dwell and ignition timing must be adjusted.

798 - Check the Idle with a CO Tester; Adjust
As a final engine adjustment, check the idle speed and the CO value at idle with the engine at operating temperature. The specifications are given on the Emission Control Information Plate located on the crossmember in front of the radiator.

813 - Throttle Control Linkage
Check the bell cranks, the bearings of the throttle linkage, and the actuator lever for wear and condition every 30,000 miles. Renew worn parts.

832 - Check Ignition System/Scope Engine
Carefully clean the ignition wiring, the spark plug connectors and the distributor cap; check for cracks, wear and corrosion. Replace defective parts. Cracks, wear, and corrosion may be easily detected with an oscillograph.

840 - Renew Fuel Filter
Renew the fuel filter every 30,000 miles.

871 - Intake and Exhaust Manifold; Exhaust Pipe Flange-Check for Tightness
The intake manifold, exhaust manifold and exhaust pipe flange are subjected to extremely high temperatures. They must be checked for tightness during the first maintenance, and then every 30,000 miles. Tighten bolts when necessary.

990 - Check the Coolant Level in the Radiator
Frequent checking of the engine coolant assures proper functioning of the cooling system. If losses are noted, determine the cause and take necessary corrective steps.

Engine Oils

Engine oils are specifically tested for their suitability in our engines. Therefore, you should use only engine oils recommended by us. Information on recommended brands is available at any MERCEDES-BENZ service station.

A new or reconditioned engine is filled with an initial operation oil in the factory or in a MERCEDES-BENZ service station. This oil is specially developed for the specific operating conditions during the first 200 - 600 miles (300 - 1,000km).

A recommended engine oil may be used for topping off if the oil level drops to the dipstick minimum mark prior to the first service (200 - 600 miles = 300 to 1,000km).

Fuels

For ping-free engine operation, gasoline with a minimum research octane rating (RON) of 91 must be used. Due to the fact that lead deposits on spark plugs will lead to misfiring and in turn will cause pollution of the air, we recommend the use of unleaded or low lead fuels.

Coolants

Cooling Water:

Use clean water with low mineral content, if possible. If necessary, use thoroughly filtered tap water.

The year-round factory-fill coolant is a mixture of an anti-corrosive additive solution and antifreeze offering protection down to -22°F (-30°C).

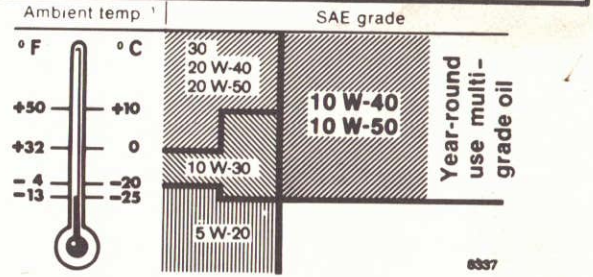
Models: 450 SE; 450 SEL; 450 SL; 450 SLC

ANTIFREEZE PROTECTION	
PROTECTION DOWN TO	ANTIFREEZE
+14° F − 4° F −22° F −40° F	6.3 Pints 11.2 Pints 14.3 Pints 16.4 Pints

ENGINE OIL CAPACITIES		
MODELS	CRANKCASE	OIL FILTER
450 SE 450 SEL 450 SL 450 SLC	MIN. MAX. 11.6 15.9 PINTS	1.6 PINTS

ENGINE OIL VISCOSITIES

RECOMMENDED ENGINE OILS



¹ SAE 40 may be used if ambient temperatures constantly exceed +86° F (+30 C).

Formation of scale and corrosion which will lower the efficiency of the system and may even harm it is thus no longer possible.

To treat the cooling water, use no more than 1% of recommended corrosion inhibitor. If cooling water leaks from the system, replenish the missing quantity with water plus corrosion inhibitor. For normal topping off (loss due to evaporation of water) tap water is acceptable.

Antifreeze:

The cooling water mixed with antifreeze may remain in the engine throughout the year. It should, however, be renewed after 2 years at the latest. The coolant and antifreeze mixture should be checked several times during cold weather.

Information on recommended corrosion inhibitors and antifreezes can be obtained at any MERCEDES-BENZ service station.

Engine Specifications

Engine Type M 117

Engine type	M 117
Work cycle	4-cycle fuel injection
No. of cylinders	8
Bore	3.62 ins. (92 mm)
Stroke	3.35 ins. (85 mm)
Total piston displacement	275.8 cu. ins. (4,520 cm^3)
Compression ratio	8:1
Idle speed	700 - 800 rpm
Max. perm. speed	5,800 rpm
Valve clearance (cold engine) Intake	0.003 ins. (0.08 mm)
Valve clearance (cold engine) Exhaust	0.008 ins. (0.20 mm)
Firing order	1-5-4-8-6-3-7-2
Spark plugs	Beru D 175/14/3 A, Bosch W 175 T 30, Champion N9 Y
Electrode gap	0.023 ins. (0.6 mm)
Dwell angle at idle speed	30^o - 34^o
Ignition timing with vacuum at 800 rpm	5 ATDC

Owner's Registration

Owner's Name Terry Ford Leasing , Inc.

Street Address 5810 N. Federal Hwy

City, State, Zip Code Ft.Lauderdale, Fla.

Vehicle Chassis No. 10704412-02 1362 Engine No. _____

Model _____ Delivery Date 9/20/74

Selling Dealer's Stamp

AUTOHAUS MART INC

Dealer's Signature

Your Mercedes-Benz Dealer will write your name, address, vehicle information and the delivery date of your Mercedes-Benz in the spaces above. If you purchased this vehicle as a used car, we request that you notify the Warranty Department of Mercedes-Benz of North America, Inc. A form for this purpose is provided in the Owner's Service and Warranty Policy Booklet.

Maintenance Vouchers

Service at 200 - 600 miles

Mileage 9312

Date 10-15-74 (Rubber stamp)

Signature

AUTOHAUS MART, INC.
744 N. Federal Hwy.
Pompano Beach Fla. 33062

Service at 10,000 miles

Mileage

Date (Rubber stamp)

Signature

Service at 5,000 miles

Mileage 6580

Date 5-9-75 (Rubber stamp)

Signature

AUTOHAUS MART, INC.
744 N. Federal Hwy.
Pompano Beach Fla. 33062

Service at 20,000 miles

Mileage

Date (Rubber stamp)

Signature

Maintenance Vouchers

Service at 30,000 miles with additional work Mileage _____ Date _____ (Rubber stamp) Signature _____	Service at 50,000 miles Mileage _____ Date _____ (Rubber stamp) Signature _____
Service at 40,000 miles Mileage _____ Date _____ (Rubber stamp) Signature _____	

Emission Systems Warranty — Passenger Cars

In accordance with the requirements of the Federal Clean Air Act as amended, Dealer warrants to the original and each subsequent owner of a 1974 Mercedes-Benz gasoline-powered passenger car that: (1) the vehicle was designed, built and equipped so as to conform at the time of sale to the original owner with the then applicable regulations issued by the Federal Environmental Protection Agency under authority of the Federal Clean Air Act as amended: and (2) the emission system of such vehicle is free from defects in materials and workmanship at the time of sale which would cause it not to conform with those regulations within a period of five years or 50,000 miles from the date of initial operation of the vehicle whichever occurs first.

This warranty does not apply to:

1. The vehicle itself or any part of the vehicle not included in the emissions system.

2. Malfunctions which are a result of misuse, negligence, alterations, accidents by the owner or user of the vehicle, use of fuels, fluids, or lubricants not recommended by Mercedes-Benz, or lack of required maintenance of the emission system.

3. The replacement of expendable maintenance items such as ignition points, spark plugs, filters, hoses, gaskets, belts, battery and exhaust system.

4. Any vehicle on which the odometer mileage has been altered and the vehicles' actual mileage cannot be readily determined.

5. Loss of time, inconvenience, loss of the use of the vehicle or other similar incidental or consequential damages.

The warranty will be performed by an authorized Mercedes-Benz Dealer—repairing, replacing or adjusting at his discretion, upon delivery of the vehicle to his place of business without charge for parts and labor, using Mercedes-Benz service parts, any part or adjustment of the emission system. Parts replaced under this warranty become the property of the warrantor.

This warranty is available on a car purchased in the continental United States or in any U.S. possession governed by U.S. law.

In all other countries, defective parts will be repaired and replaced free of charge only in accordance with the terms and limitations of the warranty for new Mercedes-Benz vehicles in effect at the time in such countries.

WITH RESPECT TO EMISSION SYSTEMS, THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF THE WARRANTOR. WARRANTOR NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH SUCH EMISSION SYSTEMS.

The following stickers are attached to the door jamb of the driver's door by your Mercedes-Benz service station.

They are meant to remind you when the next Emission System Maintenance is due.

50 000

30 000

40 000

20 000

MBNA 2019 (7-73)

Mercedes-Benz of North America, Inc.

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