1974-79 TUNE-UP PROCEDURES
Mercedes-Benz V8

450SE, 450SEL, 450SL, 450SLC, 6.9

ENGINE IDENTIFICATION

First 6 digits of engine identification number, located on tag attached to engine crankcase at left rear side of block (at front on 6.9), identify engine as follows.

1974-76 ENGINE CODES

Application	Code
450SE	117.983
450SEL	117.983
450SL	117.982
450SLC	117.982

1977-79 ENGINE CODES

Application	Code
450SEL	117.986
450SL	117.985
450SLC	117.985
6.9	100.985

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

First 6 digits of Vehicle Identification Number, located on a tag at left side of instrument panel (visible through windshield) and just left of hood latch (on rear firewall on 6.9) identify models as follows.

1974-76 VIN CODES

Application	Code
450SE	116.032
450SEL	116.033
450SL	107.044
450SLC	107.024

1977-79 VIN CODES

Application	Code
450SEL	116.033
450SL	107.044
450SLC	107.024
6.9	116.036

ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature and throttle valve fully open. Crank engine a minimum of 8 revolutions.

ENGINE COMPRESSION SPECIFICATIONS

Application	Pressure
Normal Pressure	130-144 psi (9-10 kg/cm²)
Minimum Pressure	108 psi (7.5 kg/cm²)
Maximum Variation	21 psi (1.5 kg/cm²)

VALVE CLEARANCE

Adjust valve clearance to specifications on 1974-75 models. All 1976-79 engines use hydraulic valve lifters, no adjustment is necessary.

VALVE CLEARANCE

Application	Clearance In. (mm)
Cold	
Intake	.004 (.10)
Exhaust	.008 (.20)
Hot	
Intake	.006 (.15)
Exhaust	.010 (.25)

VALVE ARRANGEMENT

450 Series
Right Bank - E-I-E-I-E-I-I-E (Front-to-rear).
Left Bank - E-I-I-E-I-E-I-E (Front-to-rear).
6.9 Models
Right Bank - I-E-I-E-I-E-I-E (Front-to-rear).
Left Bank - E-I-E-I-E-I-E-I (Front-to-rear).

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Specification
Gap	
1974-76 Models	.024" (.6 mm)
1977-79 Models	.032" (.8 mm)
Torque	18-22 ft. lbs. (24-30 N.m)

SPARK PLUG TYPE

Application	Champion No.
1974-76 Models	N9Y
1977-79 Models	N10Y

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check resistance of wires while gently twisting wire. If resistance is not to specifications, or fluctuates from infinity to any value, replace wire(s).

HIGH TENSION WIRE RESISTANCE

Application	Resistance (Ohms)
All Models	25,000-30,000

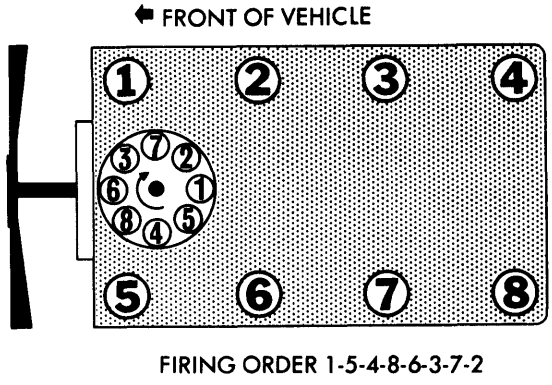

Fig. 1: Firing Order & Distributor Rotation

DISTRIBUTOR

Models are equipped with Bosch single-point distributor or Bosch electronic ignition system.

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Point Gap	.016" (.40 mm)
Dwell Angle	29-31°
Breaker Arm Spring Tension	18-22 ozs. (5000-630 g)

IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature, idle speed set to specifications and distributor vacuum lines connected. *See Fig. 2.*

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1974-79 TUNE-UP PROCEDURES
Mercedes-Benz V8 (Cont.)

IGNITION TIMING SPECIFICATIONS

Application	Timing
1974 Models	5°ATDC@800 RPM
1975-78 Models	TDC@800 RPM
1979 Models	
450 Series	TDC@750 RPM
6.9 Models	TDC@600 RPM

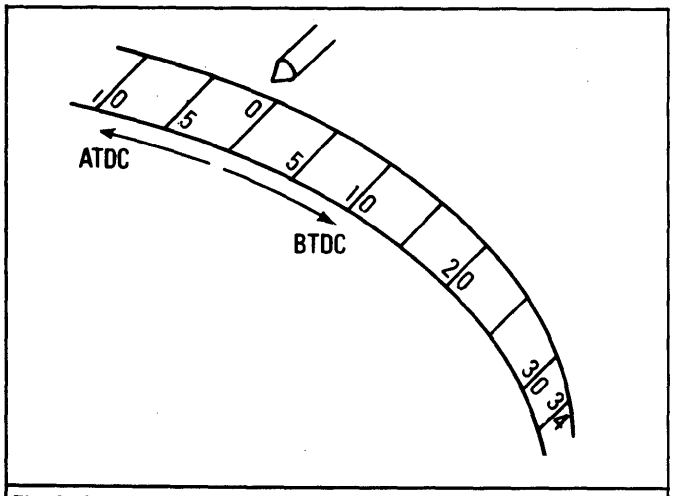

Fig. 2: Ignition Timing Marks

IDLE SPEED & MIXTURE

1974 Models - 1) Make sure spark plug gap and ignition timing are set to specifications before adjusting idle speed and CO% level. With engine at normal operating temperature and air cleaner removed, connect tachometer and exhaust gas analyzer to vehicle.
2) Set idle speed to specifications by turning idle speed air screw. Adjust CO% level to specification by turning idle mixture screw on electronic control unit (behind glove box). Electronic control unit is accessible after loosing panel below glove box.
1975 Models - 1) Warm engine to normal operating temperature. Ensure that auxiliary air regulator is completely closed by pulling off hose between intake duct and regulator (covering opening with hand).
2) Idle speed should not differ to any extent from previous speed. If idle speed does differ significantly, engine is either not warm enough or regulator is faulty. Repair if necessary.
3) Adjust idle speed to specifications, with hose from air cleaner removed, by means of throttle stop screw. Reconnect hose from air cleaner.
4) To adjust CO% level, disconnect plug of temperature switch and connect wiring to ground (to cancel air injection). Switch is located on front, right side of engine compartment.
5) If necessary, adjust CO% level to specification by turning idle mixture screw on electronic control unit (behind glove box).

1974 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
With Air Injection	700-800	1.0 Max.
Without Air Injection	700-800	0.5-2.0

1976 Models - 1) Remove air cleaner. Make sure throttle valve rests against throttle stop. If not, adjust control rod so that throttle valve returns to throttle stop when control rod is released. Adjust idle speed to specification.
2) Check CO% level with air injection disconnected. To disconnect air injection, remove Blue/Purple vacuum hose from Blue thermo-vacuum valve. Plug vacuum hose and thermo valve.
3) Remove plug (between fuel distributor and air sensor plate housing) and insert an Allen wrench in opening. Turn wrench clockwise for a richer mixture, counterclockwise for a leaner mixture.
4) After adjustment, accelerate engine and recheck readings. Place transmission in Drive, turn air conditioner on, and turn steering wheel to a full-lock position. Engine should run smoothly. If not, readjust idle speed. Reconnect vacuum hose and install air cleaner.

1975-76 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO% [1]
All Models	700-800	0.2-1.5

[1] - With air injection disconnected.

1977-79 Models - 1) Make sure spark plug gap and ignition timing are set to specifications. Check air intake system for leaks. Turn off air conditioning system when making adjustments.
2) Warm engine to normal operating temperature, oil reaches 140-176°F (60-80°C). Remove air cleaner. Be sure cruise control cable rests tension-free against throttle lever. If necessary, adjust screw.
3) Disconnect control rod at bellcrank. Check that throttle valve is at idle speed stop. Reconnect control rod so that it is tension-free. Use idle speed air adjusting screw to set correct idle speed.

1977 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
450 Series		
Federal	750	[1] 0.5-2.0
Calif.	750	[2] 0.5-2.0
High Alt.	750	[1] 0.5-1.2
6.9 Models		
Federal	600	[2] 0.5-2.0
Calif.	600	[2] 0.5-1.2
High Alt.	600	[2] 0.5-2.0

[1] - With air injection.
[2] - Without air injection.

4) Using Adapter (700 589 07 07 00), connect exhaust gas analyzer to exhaust pick-up tube in front of catalyst. Remove Blue/Purple vacuum hose on the straight connection of the Blue thermo-vacuum valve to disable air injection (if equipped). Plug valve connection and check CO% level.
5) To adjust CO% level, remove plug from center of mixture control unit. Insert Allen wrench into idle mixture adjusting screw. Turn screw counterclockwise to lean out mixture; clockwise to richen. Then, plug adjusting screw bore, accelerate engine briefly, and check CO% level at idle speed. Readjust as necessary.
6) Install air cleaner. Recheck idle RPM and CO% level. Readjust if necessary. Remove air cleaner and reconnect vacuum hose to thermo-vacuum valve. Place automatic transmission in Drive, turn on air conditioning, and turn steering wheel to a full-lock position. Engine should run smoothly. Readjust idle RPM if necessary.

1978-79 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
450 Series		
Federal	750	[1] 0.5-2.0
Calif.	750	[2] 0.5-2.0
6.9 Models	600	[2] 0.5-2.0

[1] - With air injection.
[2] - Without air injection.

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
1974-75 Models	
Pressure	28.4-29.9 psi (2.0-2.1 kg/cm²)
Volume	2.1 pts. in 30 sec.
1976-79 Models	
Primary Pressure	75-84 psi (5.2-5.8 kg/cm²)
Control Pressure	49-55 psi (3.4-3.8 kg/cm²)
Volume	1.06 qt.(1.0 L) in 30 sec.

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1974-79 TUNE-UP PROCEDURES
Mercedes-Benz V8 (Cont.)

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION SYSTEM

DISTRIBUTOR

Models are equipped with Bosch single-point distributor or Bosch electronic ignition system.

Other Data & Specifications - See appropriate Bosch ignition system article in DISTRIBUTORS & IGNITION SYSTEMS section.

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Resistance (Ohms)
Primary	.33-.46
Secondary	7000-12,000

FUEL SYSTEM

FUEL INJECTION

Models are equipped with Bosch electronic fuel injection or Bosch Continuous Injection System (CIS) fuel injection.

Other Data & Specifications - See appropriate Bosch fuel injection article in FUEL SYSTEMS section.

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