1974-79 TUNE-UP PROCEDURES
Mercedes-Benz 4-Cylinder

230

ENGINE IDENTIFICATION

First 6 digits of engine identification number identify engine. Number is located on a tag at the rear, left side of engine crankcase.

ENGINE CODES

Application	Code
1974-76 Models	115.951
1977-78 Models	115.954

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

First 6 digits of Vehicle Identification Number identify model. Number is located on a tag on left, front window post (visible through windshield) and on rear firewall in engine compartment.

VIN CODES

Application	Code
1974-76 Models	115.017
1977-78 Models	123.023

ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature and throttle valve fully open. Crank engine through at least 8 revolutions.

COMPRESSION PRESSURE SPECIFICATIONS

Application	Pressure
Normal	128-142 psi (9-10 kg/cm²)
Minimum	107 psi (7.5 kg/cm²)

VALVE CLEARANCE

VALVE CLEARANCE SPECIFICATIONS

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

VALVE ARRANGEMENT

E-I-I-E-E-I-I-E - Front-to-rear.

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Specification
Gap	
1974-76 Models	.024" (0.6 mm)
1977-78 Models	.032" (0.8 mm)
Torque	
1974-76 Models	22-25 ft. lbs. (30-34 N.m)
1977-78 Models	18-22 ft. lbs. (24-30 N.m)

SPARK PLUG TYPE

Application	Champion No.
1974-76 Models	N9Y
1977-78 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 them.

HIGH TENSION WIRE RESISTANCE

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

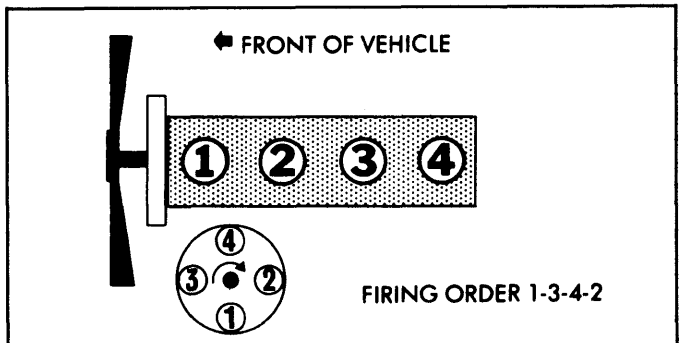

Fig. 1: Firing Order & Distributor Rotation

DISTRIBUTOR

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

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Point Gap	.016-.020" (.40-.50 mm)
Dwell Angle	46-53°
Breaker Arm Spring Tension	18-22 ozs. (500-630 g)

IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature, idle speed set to 850 RPM, and vacuum lines connected.

IGNITION TIMING SPECIFICATIONS

Application	Timing
230	10°BTDC

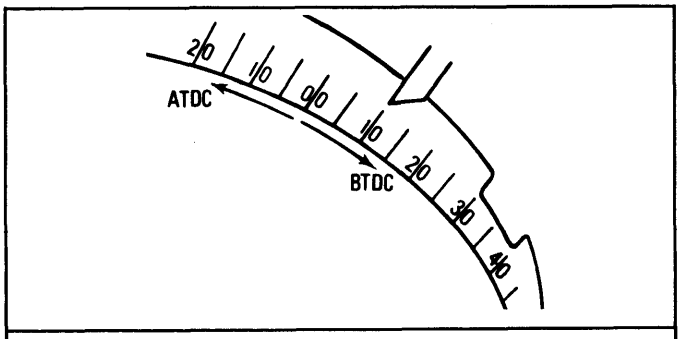

Fig. 2: Ignition Timing Marks

IDLE SPEED & MIXTURE

1974 Models - 1) Warm engine to normal operating temperature. Place manual transmission in Neutral or automatic transmission in Park. Connect tachometer and exhaust gas analyzer to vehicle. Check carburetor damper oil level (should be level with upper edge of piston cylinder).

2) Set idle speed to specification. Adjust CO% level to specification by turning fuel regulating screw (electric fuel shut-off valve). To adjust, hold valve base hex firmly, loosen lock nut and turn fuel shut-off valve.

NOTE: Accelerate engine briefly after each adjustment and recheck idle speed and CO% level.

1974-79 TUNE-UP PROCEDURES
Mercedes-Benz 4-Cylinder (Cont.)

1975-76 Models - 1) With engine at normal operating temperature, connect tachometer and exhaust gas analyzer to vehicle. Adjust idle speed to specification by means of lower idle adjusting screw.
2) With idle set to specification, disconnect and plug Blue/Purple (center) vacuum hose from air injection switchover valve. Adjust fuel cut-off solenoid, located on bottom of fuel bowl, until CO% level is within specification. If idle speed increases during adjustment, reset idle to specification.
1977-78 Models - 1) Check spark plug gap and ignition timing. Check for leaks in intake system. Warm engine to normal operating temperature. DO NOT disconnect air injection hose. Ensure all accessories are off.
2) Ensure that cruise control cable rests tension-free against throttle lever. Adjust if necessary. Adjust idle speed using idle mixture screw. Using Adapter (700 589 07 07 00), connect exhaust gas analyzer to pick-up tube in front of catalyst.
3) Adjust idle CO% level with idle air adjusting screw. Briefly accelerate engine and recheck CO% level and idle speed. Readjust if necessary. If correct, adjust linkage at idle speed so that it is free of play in extended position.
4) With engine running at idle, remove hose from vacuum governor and adjust screw on throttle valve lever to obtain 1200-1400 RPM. *See Fig. 3.* Reinstall vacuum hose. Clearance between lever and screw should be .020" (0.5 mm). If necessary, adjust clearance by turning large adjustment nut.
5) Place automatic transmission in Drive. Turn steering wheel to full-lock position and turn A/C system on. Engine should run smoothly. If not, readjust idle speed at governor.

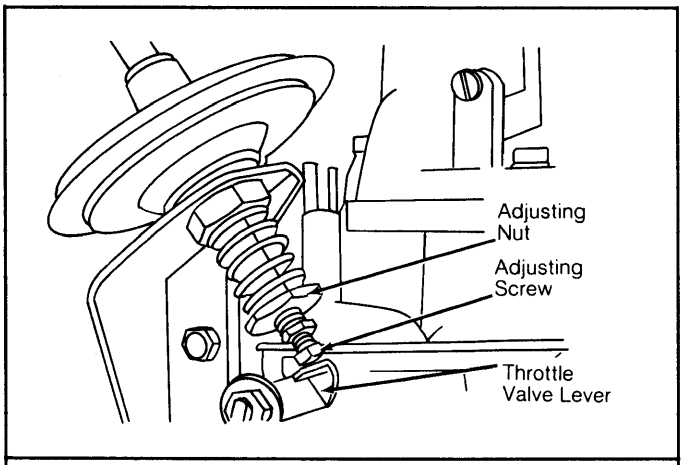

Fig. 3: 1977-78 Vacuum Governor Adjustment

IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	RPM	CO%
All Models	850	0.4-1.5

BASIC IDLE SPEED ADJUSTMENT

NOTE: Perform basic idle speed adjustment ONLY IF idle speed and mixture adjustment values CANNOT be obtained using IDLE SPEED & MIXTURE adjustment procedure.

1977-78 Models - 1) Warm engine to normal operating temperature. Turn idle mixture adjusting screw counterclockwise until highest speed is obtained.
2) Remove plastic cap from throttle valve adjusting screw and adjust to 1000 RPM. Reinstall plastic cap. Adjust idle speed to 800-900 RPM with idle mixture screw, then turn idle air adjusting screw clockwise to stop.
3) On Federal models, turn fuel adjusting screw until an idle CO% level of 3.5 percent is obtained. Now turn idle air adjusting screw to obtain a CO% level of 0.4-2.0 percent.
4) On California models, remove mixture limiter cap. Turn fuel adjusting screw until an idle CO% level of 3.5 percent is obtained. Install new mixture limiter cap. Now turn idle air adjusting screw to obtain a CO% level of 0.4-2.0 percent.

COLD (FAST) IDLE RPM

1974 Models - 1) With engine at normal operating temperature, raise throttle linkage slightly. At the same time, insert a small screwdriver through slot in choke housing.
2) Release throttle linkage and remove screwdriver to position actuating lever on upper notch of fast idle cam. Ensure fast idle speed is 2600-2800 RPM. If necessary, shorten or lengthen choke connecting rod.
1975-76 Models - 1) With engine at normal operating temperature, raise throttle linkage slightly. At the same time, insert a small screwdriver through slot in choke housing.
2) Push against engaging lever in direction of engine until lever is against stop on pull-down diaphragm to position engaging lever on second step of fast idle cam. DO NOT force lever against stop, since this will damage choke piston.
3) Release throttle linkage, but continue to hold engaging lever against stop. Disconnect and plug Blue/Purple (center) vacuum hose to air injection switchover valve. Check fast idle RPM.
4) If necessary, adjust fast idle speed to specifications by means of upper idle adjusting screw. With fast idle set to 1600-1800 RPM, check CO% level. If necessary, turn mixture screw to obtain a 5.0-8.0 percent CO% level.
1977-78 Models - 1) With engine at normal operating temperature and engaging lever on second step of fast idle cam, check fast idle speed. If necessary, turn idle mixture screw to obtain 1800 RPM.
2) Attach exhaust gas analyzer to vehicle and check CO% level. If necessary, use auxiliary air adjusting screw on automatic choke housing to obtain a CO% level of 6.0-7.0 percent.

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	3.6-5.4 psi (.25-.38 kg/cm²)

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION SYSTEM

DISTRIBUTOR

Models are equipped with Bosch single-point distributors or Bosch electronic ignition system.
Other Data & Specifications - See appropriate Bosch article in DISTRIBUTORS & IGNITION SYSTEMS section.

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Resistance (Ohms)
Primary	.38-.45
Secondary	8000-11,000

FUEL SYSTEM

CARBURETOR

CARBURETORS

Application	Model
All Models	Zenith-Stromberg 1-Bbl.

Other Data & Specifications - See appropriate Zenith-Stromberg Carburetor article in FUEL SYSTEMS section.