

TUNE-UP

240D
300 Diesel Series

ENGINE IDENTIFICATION

First six digits of engine identification number, located on a tag at the rear, left side of engine crankcase, identify engines as follows:

Engine Code

Application	Code
240D	616.912
300D & 300CD	617.912
300SD (Turbocharged)	617.951
300TD (Turbocharged)	617.952

COMPRESSION PRESSURE

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 psi (kg/cm ²)
Normal	319-348 (22.5-24.5)
Minimum	218 (15.0)
Maximum Variation Between Cylinders	44 (3.0)

VALVE CLEARANCE

Valves must be adjusted at ignition TDC and in firing order of individual cylinders. With engine cold, measure clearance between rocker arm and base circle of cam. Adjust valves to following specifications:

Valve Clearance Specifications

Application	Intake In. (mm)	Exhaust In. (mm)
240D, 300D & 300CD		
Cold .....	.004 (10)	.012 (30)
Warm .....	.006 (15)	.014 (35)
300SD & 300TD		
Cold .....	.004 (10)	.014 (35)
Warm .....	.006 (15)	.016 (40)

VALVE ARRANGEMENT

4-Cylinder

E-I-I-E-E-I-I-E (front-to-rear)

5-Cylinder

E-I-I-E-E-I-I-E-E-I (front-to-rear)

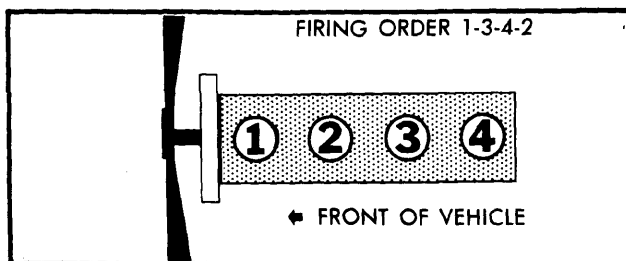


Fig. 1 240D Firing Order Illustration

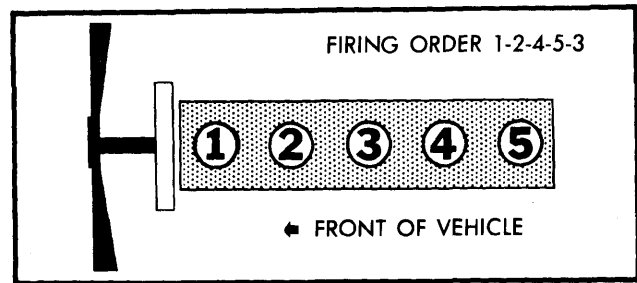


Fig. 2 300 Series Firing Order Illustration

GLOW PLUGS

Type	Bosch 0 100 221 107
Torque	15-22 ft. lbs. (20-30 N·m)

IDLE SPEED ADJUSTMENT

- 1) Start engine and run until normal operating temperature is reached, at least 176° F (80° C) oil temperature. If equipped, turn idle adjusting knob on dashboard clockwise to stop.
- 2) Disconnect throttle linkage push rod at angle lever. Check idle speed. If necessary, loosen lock nut and adjust with idle adjusting screw.

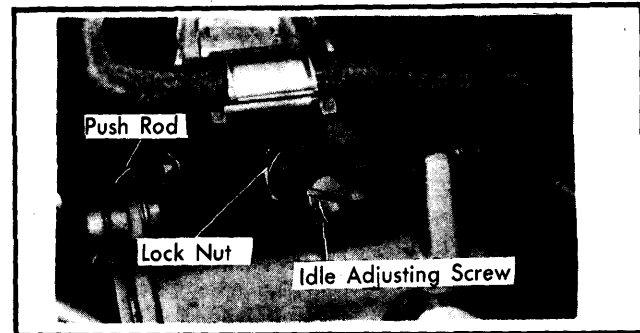


Fig. 3 Idle Adjusting Screw Location

- 3) On non-Turbo models, adjust push rod so guide lever cam is just resting against switch-over valve lever (free of tension). Injection pump lever should be resting against idle speed stop. Push shutoff lever ("STOP") and ensure cruise control cable is not too tight. Adjust by turning cable nut. When lever is released, a slight amount of clearance should be present. See Fig. 4.

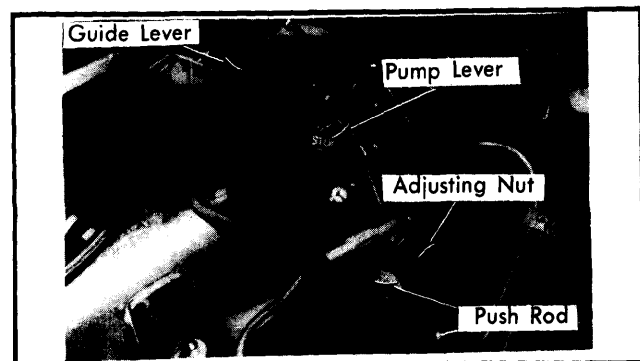


Fig. 4 Injection Linkage Adjustment (Non-Turbo Models)

1981 Mercedes-Benz 4 & 5 Tune-Up 1-67

TUNE-UP (Cont.)

4) On Turbo models, adjust push rod so roller in guide lever rests free of tension against end stop. Disconnect cruise control connecting rod and push lever against idle speed stop. Reattach connecting rod so lever has .039" (1 mm) clearance from stop. See Fig. 5.

5) On all models, place transmission in "D", turn on air conditioning and turn wheels to full lock. Engine must run smoothly. If not, readjust idle speed slightly higher.

CAUTION — If engine speed is adjusted too high, it will be above governor control range and could increase to maximum RPM when engine is not loaded.

Idle Speed Specifications

Application	Idle RPM
240D, 300D & 300CD	700-800
300SD & 300TD	650-850

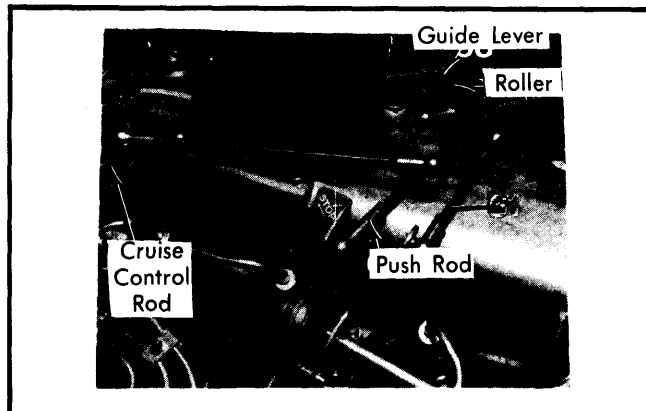


Fig. 5 Injection Linkage Adjustment (Turbo Models)

GENERAL SERVICING

FUEL SYSTEMS

FUEL INJECTION

All Models use Bosch Diesel Fuel Injection.

ELECTRICAL

BATTERY

Application	Amp. Hr. Rating
All Models	88

STARTER

All models are equipped with Bosch Starters.

Starter Specifications

Application	Volts	Amps	Test RPM
All Models	11.5	65-95	6500

ALTERNATOR

Application	Rated Amp. Output
All Models	55

ALTERNATOR REGULATOR

Bosch — Non-Adjustable; integral with alternator.

BELT ADJUSTMENT

Application	Deflection
Power Steering Belt .....	.40" (10 mm)
All Other Belts .....	.20" (5 mm)

① — Deflection is with a pressure of 13 lbs. (6 kg) applied midway on longest belt run.

FILTERS

Filter	Service Interval (Miles)
Oil Filter	Replace every 5000
Air Filter	Replace every 30,000
Fuel Filter	Replace every 30,000

CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	
240D	7.0 qts.
300SD & 300TD	7.5 qts.
Cooling System (Includes Heater)	
240D	10.6 qts.
300D & 300CD	11.6 qts.
300SD & 300TD	12.5 qts.
Man. Trans. (SAE 10W-20)	3.4 pts.
Auto. Trans. (Dexron)	
240D, 300D & 300CD	5.0 qts.
300SD & 300TD	7.3 qts.
Rear Axle (SAE 90)	
240D, 300D & 300CD	2.1 pts.
300SD	2.6 pts.
300TD	2.0 pts.
Fuel Tank	
240D	17.2 gals.
300D & 300CD	21.1 gals.
300SD	22.4 gals.
300TD	20.2 gals.