

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 ¹	Code
240D (4-Cyl.)	616.912
300D, 300CD & 300TD (5-Cyl.)	617.952
300SD (5-Cyl.)	617.951

¹ — All models except 240D are turbocharged.

ENGINE COMPRESSION

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

COMPRESSION SPECIFICATIONS

Compression Ratio	
240D	21.0:1
All Other Models	21.5:1
Compression Pressure	
Normal	
240D	319-348 psi (22.4-24.5 kg/cm ²)
All Other Models	348-435 psi (24.4-30.6 kg/cm ²)
Minimum	218 psi (15.3 kg/cm ²)
Maximum Variation	
Between Cylinders	44 psi (3.1 kg/cm ²)

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	Clearance In. (mm)
240D (4-Cyl.)	
Cold	
Intake004 (.10)
Exhaust011 (.30)
Hot	
Intake006 (.15)
Exhaust014 (.35)
All Other Models (5-Cyl.)	
Cold	
Intake004 (.10)
Exhaust014 (.35)
Hot	
Intake006 (.15)
Exhaust016 (.40)

VALVE ARRANGEMENT

240D (4-Cyl.)
E-I-I-E-E-I-I-E (Front-to-Rear)
All Other Models (5-Cyl.)
E-I-I-E-E-I-I-E-E-I (Front-to-Rear)

Fig. 1: 240D Firing Order Illustration

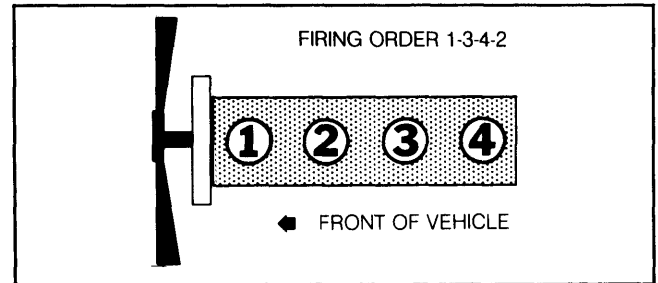
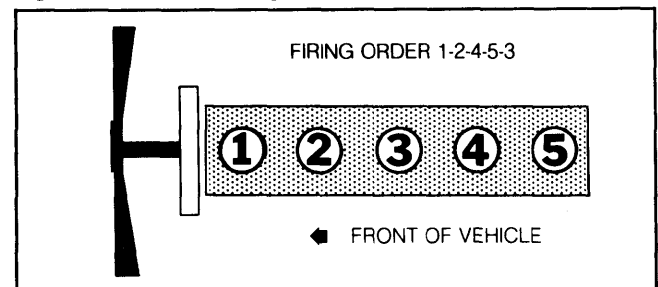


Fig. 2: 300 Series Firing Order Illustration



GLOW PLUGS

GLOW PLUG SPECIFICATIONS

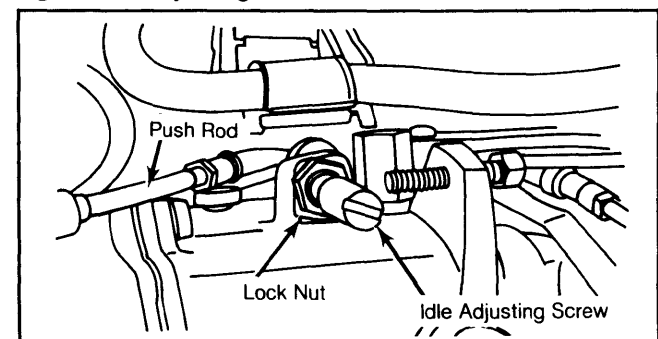
Make & Type	Bosch 0 100 221 107
Tightening Torque	15-22 ft. lbs. (20-30 N.m)

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

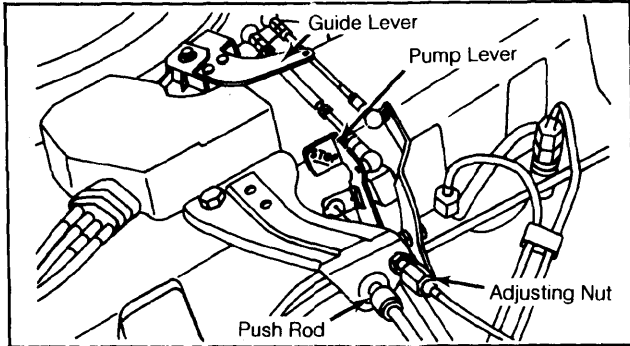


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TUNE-UP (Cont.)

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 ("STOP") lever 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.

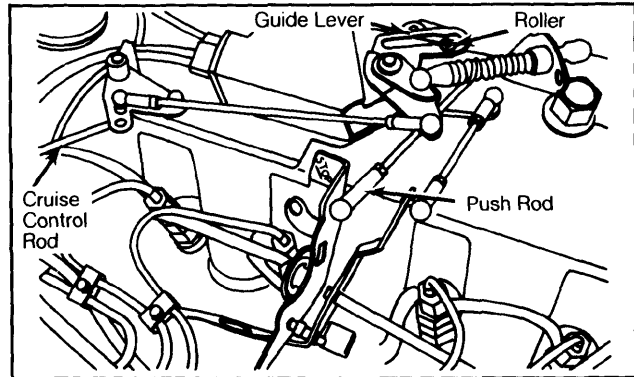
Fig. 4: Injection Linkage Adjustment (Non-Turbo Models)



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.

Fig. 5: Injection Linkage Adjustment (Turbo Models)



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 (4-Cyl.)	700-800
All Other Models (6-Cyl.)	650-850

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

FUEL SYSTEM

All Models are equipped with Bosch Diesel Fuel Injection systems.

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Amp. Hr. Rating
All Models	90

STARTER

All models are equipped with Bosch starters.

STARTER SPECIFICATIONS

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

ALTERNATOR

All models are equipped with Bosch alternators, which have integral regulators.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
All Models	55

ALTERNATOR REGULATOR

All models are equipped with Bosch alternator regulators, which are integral with alternator and non-adjustable.

REGULATOR OPERATING VOLTAGE @ 68°F (20°C)

Application	Voltage
All Models	13.0-14.5

SERVICE SPECIFICATIONS

BELT ADJUSTMENT

Application	Deflection In. (mm)
Power Steering Belt	.4 (10)
All Other Belts	.2 (5)

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

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GENERAL SERVICING (Cont.)

REPLACEMENT INTERVALS

Component	Miles
Oil Filter	5000
Air Filter	30,000
Fuel Filter	30,000
Auto. Trans. Filter	30,000

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	
240D (4-Cyl.)	6.9 qts. (6.5L)
All Other Models (5-Cyl.)	7.9 qts. (7.5L)
Cooling System	
240D (4-Cyl.)	10.6 qts. (10.0L)
All Other Models (5-Cyl.)	13.2 qts. (12.5L)
Man. Trans. (SAE 10W-20)	2.8 pts. (1.3L)
Auto. Trans. (Dexron)	
240D (4-Cyl.)	10.0 pts. (4.7L)
All Other Models (5-Cyl.)	13.0 pts. (6.2L)
Rear Axle (SAE 90)	2.2 pts. (1.0L)
Power Steering (Dexron)	
300SD	2.6 pts. (1.2L)
All Other Models	3.0 pts. (1.4L)
Fuel Tank	
240D	17.2 gals. (65.1L)
300CD & 300D	21.1 gals. (79.9L)
300SD	20.3 gals. (76.8L)
300TD	18.5 gals. (70.0L)