

TUNE-UP

4000 Diesel
5000 Diesel

ENGINE IDENTIFICATION

Engine number is stamped into left side of block near number 3 cylinder.

Engine Code

Application	Code
4000 (4-Cylinder)	CR
5000 (5-Cylinder)	CN

COMPRESSION PRESSURE

Remove electrical wire from fuel shut-off solenoid on injection pump. Remove injector pipes, injectors and heat shields. Insert old heat shield into head, then adapter (VW 1323/2) and compression tester. Check compression after cranking engine through at least 6 strokes.

Compression Pressure Specifications

Application	Pressure psi (kg/cm ²)
Normal (New Engine)	406-493 (28-34)
Minimum	400 (28)
Maximum Variation	73 (5)

VALVE CLEARANCE

1) Turn engine clockwise until camshaft lobes for valves to be checked point upwards. Check valve clearance. If not within tolerance, adjusting disc must be changed.

2) Turn crankshaft 1/4 turn after TDC (so valves will not hit piston top). Depress cam followers with tool (VW 2078), then remove disc with pliers (VW 4476). Calculate thickness of disc needed, coat with oil and install with marks down.

NOTE — Discs are available in thicknesses from .120" (3.00 mm) to .167" (4.25 mm) in increments of .002" (0.05 mm).

3) Check valve clearance on remaining cylinders, proceeding in firing order. Be sure to check valve clearance at TDC, then turn 1/4 turn after TDC before depressing valves.

Valve Clearance Specifications

Application	Clearance In. (mm)
Checking	
Cold	
Intake006-.010 (.15-.25)
Exhaust014-.018 (.35-.45)
Warm	
Intake008-.012 (.20-.30)
Exhaust016-.020 (.40-.50)
Adjustment	
Cold	
Intake008 (.20)
Exhaust016 (.40)
Warm	
Intake010 (.25)
Exhaust018 (.45)

VALVE ARRANGEMENT

4000 Diesel — E-I-E-I-I-E-I-E (Front-to-rear)
5000 Diesel — E-I-E-I-I-E-I-E-I-E (Front-to-rear)

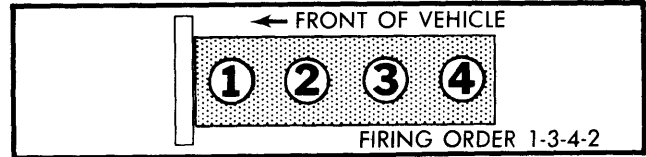


Fig. 1 4000 Diesel Firing Order Illustration

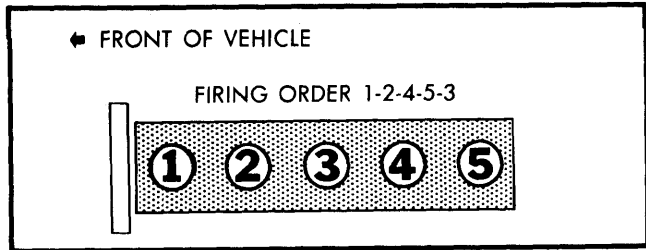


Fig. 2 5000 Diesel Firing Order Illustration

GLOW PLUGS

Glow Plug Type

Application	Bosch
All Models	N 019 100 6

IDLE SPEED ADJUSTMENT

1) With engine at normal operating temperature, turn idle speed control knob on dash panel counterclockwise to stop.

2) Connect diesel tachometer (VW 1367) according to instructions from manufacturer. Adjust speed to specifications with idle adjusting screw. Tighten lock nut. See Fig. 3.

3) Open throttle fully and quickly adjust maximum speed to specifications using maximum RPM screw. Tighten lock nut.

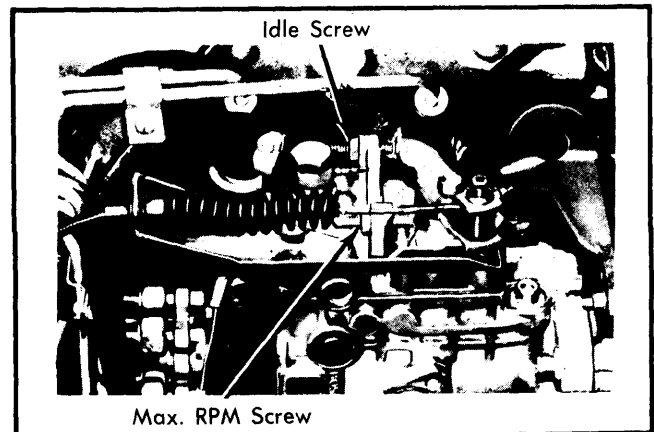


Fig. 3 Adjusting Idle Speed and Maximum Speed

Idle Speed Specifications

Application	Idle RPM	Maximum RPM
4000 Diesel	770-870	5300-5400
5000 Diesel	720-880	5350-5450

GENERAL SERVICING**FUEL SYSTEMS****FUEL INJECTION**

All models use Bosch mechanical diesel fuel injection.

ELECTRICAL**BATTERY**

Application	Amp. Hr. Rating
All Models	88

Battery Location — Right front of engine compartment.

STARTER

All models are equipped with Bosch Starters.

ALTERNATOR

All models are equipped with Bosch alternators.

Application	Rated Amp. Output
All Models	75

ALTERNATOR REGULATOR

All models are equipped with Bosch non-adjustable voltage regulators with operating voltage of 13.9-14.8 volts.

BELT ADJUSTMENT

Adjust belts for deflection of $\frac{3}{8}$ – $\frac{9}{16}$ " (10-15 mm) when depressed firmly, halfway between pulleys.

FILTERS

Filter	Service Interval (Miles)
Oil Filter	Replace every 15,000
Fuel Filter	Drain every 7500
Air Filter	Replace every 30,000

CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	4.8 qts.
Cooling System	9.9 qts.
Man. Transaxle (SAE 80)	2.0 qts.
Auto. Trans.	3.2 qts.
Fuel Tank	19.8 gals.