

# 1980 Volkswagen Diesel 4 Tune-Up 1-109

## TUNE-UP

Dasher  
Rabbit  
Rabbit Pickup

### VALVE ARRANGEMENT

All Models - E-I-E-I-I-E-I-E

### ENGINE IDENTIFICATION

First 2 letters of engine identification code are used to identify engine models. Code is stamped on cylinder block below No. 3 glow plug and is as follows:

Application	Code
All Models .....	CK

### COMPRESSION PRESSURE

Remove electrical wire from fuel shut-off solenoid on injection pump. Insulate wire end and remove injection pipes. Disconnect fuel return hoses. Remove injectors with tool US 2775 (or equivalent). Remove heat shields from injectors and place in cylinder as it is being tested. Install test gauge adapter (VW 1323/2) and test gauge (VW 1323) to glow plug hole, operate starter and read compression. Install new injector heat shields when reinstalling injectors.

Application	Pressure
New .....	483 psi (34 kg/cm <sup>2</sup> )
Wear Limit .....	398 psi (28 kg/cm <sup>2</sup> )
Maximum Variation .....	71 psi (5 kg/cm <sup>2</sup> )

### VALVE CLEARANCE

**CAUTION** - When adjusting valves, pistons **MUST NOT** be at TDC. Turn crankshaft 1/4 turn past TDC so valves do not hit pistons when tappets are depressed.

**CAUTION** - When adjusting valves, do not rotate crankshaft by turning camshaft pulley. This will stretch the drive belt. Place vehicle in 4th gear and push to turn crankshaft.

1) Valves must be checked with engine warm, coolant above 95° F (35° C). Check valve clearance in firing order, 1-3-4-2.

2) Measure between cam lobes and adjusting disc, when both lobes to be checked point upward. Adjust clearance to specifications by changing disc thickness. Twenty six discs are available in thicknesses from .118-.167" (3.00-4.25 mm).

3) To remove adjusting discs, use a 10-208 removal tool, while holding cam follower down with special tool VW 546 (10-209).

### Valve Clearance Specifications

Application	Clearance
Engine Warm	
Intake .....	.008-.012" (.20-.30)
Exhaust .....	.016-.020" (.40-.50)

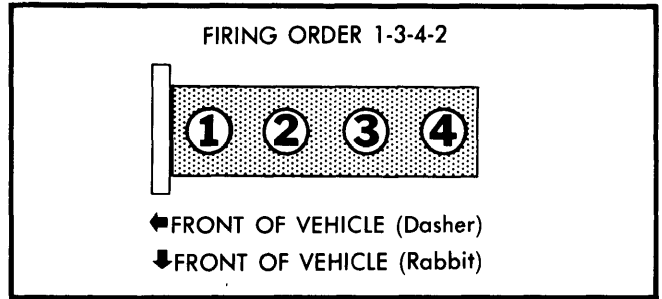


Fig. 1 Diesel Firing Order Illustration

### IDLE SPEED ADJUSTMENT

Run engine until warm. Mount tachometer sensor (US 1324) on valve cover and connect to battery. Attach tachometer to sensor and check idle speed. If adjustment is needed, loosen locknut on idle screw. Turn in to increase idle, out to decrease. Apply thread sealer and tighten locknut.

### Idle Speed Specifications

Application	Idle RPM
All Models .....	800-850

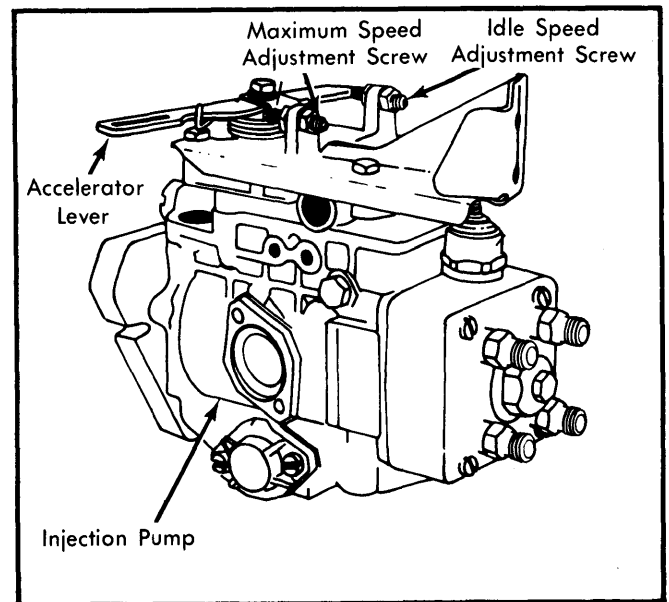


Fig. 2 Idle and Maximum Speed Adjustment

### MAXIMUM SPEED ADJUSTMENT

Run engine until warm and install tachometer sensor (US 1324). Connect tachometer and set idle speed. Accelerate

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## TUNE-UP (Cont.)

engine briefly to full throttle. If maximum speed does not match specifications, loosen speed locknut and adjust. Turning screw out raises speed, turning screw in lowers speed. Apply thread sealer and tighten locknut.

### Maximum Speed Specifications

Application	Maximum RPM
All Models .....	5500-5600

## GENERAL SERVICING

### FUEL SYSTEMS

#### FUEL INJECTION

All models use Bosch Diesel Fuel Injection.

**Other Data & Specifications** — See *Tune-Up and Bosch Diesel Fuel Injection* in **FUEL SYSTEMS** Section.

### ELECTRICAL

#### BATTERY

**Battery Location** — Battery is located in engine compartment.

Application	Amp. Hr. Rating
All Models .....	63

#### STARTER

All models are equipped with Bosch Starters.

#### ALTERNATOR

Application	Rated Amp. Output
All Models .....	55

#### ALTERNATOR REGULATOR

Bosch & Motorola — Non-Adjustable; integral with alternator.

### FILTERS

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

### CAPACITIES

Application	Quantity
Crankcase (Includes Filter) .....	① 3.7 qts.
Cooling System	
Dasher .....	6.3 qts.
Rabbit .....	7.3 qts.
Manual Transaxle (SAE 80W-90)	
4-Speed .....	1.6 qts.
5-Speed .....	2.1 qts.
Fuel Tank	
Dasher .....	11.9 gals.
Rabbit .....	10.5 gals.

① — 3.2 quarts without filter.

### BELT ADJUSTMENT

Application	① Deflection
All Belts .....	$\frac{3}{8}$ - $\frac{5}{8}$ " (10-15 mm)

① — Measured between longest span and depressed with firm thumb pressure.