1975-79 TUNE-UP PROCEDURES
Chrysler Corp. Diesel Tune-Up

1978-79 243" 6-Cylinder Diesel Engine Equipped Models

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Number is located on left front door lock pillar.

ENGINE IDENTIFICATION CODE

Engine is a 243" in-line 6 cylinder diesel. Engine Identification Number is stamped on left side of block, just above oil pan.

TUNE-UP NOTES

NOTE: Due to production changes, always refer to Engine Tune-Up decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, use decal specifications.

CAUTION: Adjustment of injectors or internal adjustment of injection pump must be performed in a properly equipped shop with a clean environment.

CAUTION: Fuel system operates under extremely high pressure. Do not allow pressurized fuel to spray against skin. Sprayed fuel may pierce flesh and poison blood stream.

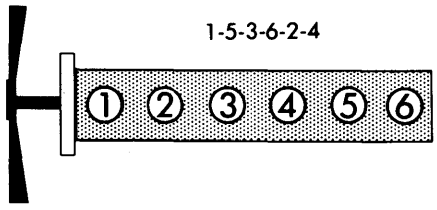
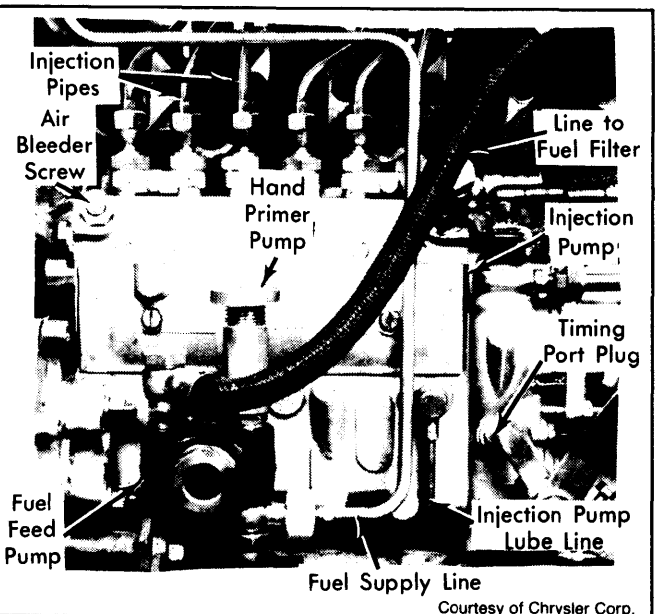


Fig. 1: 243" Diesel Firing Order



Courtesy of Chrysler Corp.

Fig. 2: Chrysler Diesel Injection Pump

ENGINE COMPRESSION

1) Disconnect injection control motor (mounted on block behind injection pump) to cut off fuel input.
2) Remove glow plug from No. 1 cylinder, install compression check adapter (31391-11101) in its place and attach compression gauge to adapter.
3) Crank engine and read compression at No. 1 cylinder. Repeat procedure for remaining cylinders.

COMPRESSION SPECIFICATIONS

Application	Specifications
Compression Ratio	20:1
Compression Pressure	
Standard	425 psi
Minimum	285 psi
Recommended Fuel	
Preferred (Above 10° F)	Diesel No. 2
Permitted (Below 10° F)	Diesel No. 1

VALVE CLEARANCE

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance
Intake & Exhaust	[1] .012"

[1] - With engine cold.

INJECTION PUMP TIMING

NOTE: Timing should be checked and adjusted, if necessary, every 24,000 miles.

1) Disconnect batteries and fuel shut off rod at stop lever. Rod end snaps over a ball stud on stop lever. Clean No. 1 delivery valve holder, injection pipe and area near pump. *See Fig. 2.*
2) Rotate crankshaft in direction of engine rotation (clockwise when viewed from engine front) until No. 1 piston is at TDC on compression stroke. Align degree lines on crankshaft damper rear face with pointer on bottom of timing gear case.

NOTE: To check that No. 1 piston is on compression stroke, remove front oil fill cap on cylinder head cover. Intake and exhaust rocker arms should be loose.

3) Rotate crankshaft in direction of engine rotation for 1¾ turns. Disconnect No. 1 injection pipe from delivery valve holder. Remove lock plates and unscrew valve holder from pump.

NOTE: Use care not to lose spring or allow dirt to enter delivery valve.

4) Remove delivery valve spring and valve. Reinstall delivery valve holder. Connect a clean plastic tube to open end of valve holder, and direct tube into container.
5) Rotate crankshaft in direction of engine rotation to approximately 30° BTDC. Unscrew cover of priming pump on fuel feed pump to unlock it. Operate pump until fuel runs from plastic tube into container.

NOTE: Injection pump control lever MUST be in idle position for steps 6) and 7). If lever return springs have been disconnected, reinstall them.

6) Rotate crankshaft 1° and operate priming pump again, observing continued fuel flow. If when rotating crankshaft, you accidentally go by desired mark, turn crankshaft backwards at least 30 degrees and then forward again to desired mark.

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Chrysler Corp. Diesel Tune-Up (Cont.)

7) Repeat step **6)** until fuel no longer flows. Read crankshaft position to obtain injection timing.
8) If observed value differs from specified timing, loosen 4 pump-to-flange plate nuts and rotate pump in amount of difference between observed and specified timing. *See Fig. 3.* Turning pump toward crankcase advances timing; away retards. The crankshaft angle varies by 6° for each division on flange plate scale.

NOTE: If observed value was 21° BTDC (value should be 18° BTDC), rotate injection pump away from crankcase 3° or ½ division on flange plate scale.

9) Tighten pump-to-flange nuts and repeat step **3)** and then steps **5)** through **8)**. Remove plastic tube. Clean and reinstall spring and delivery valve. Tighten valve holder to 18-25 ft. lbs. Reinstall lock plates.
10) Reconnect No. 1 injection pipe to delivery valve holder and tighten. Reinstall oil fill cap, lock priming pump handle and reconnect fuel shut off rod and batteries. Start engine and check visually for fuel leaks.

HOT (SLOW) IDLE RPM

1) Remove cover and gasket from tachometer take-off on right side of engine in front of oil filter assembly. Install tachometer adapter and attach mechanical tachometer and drive cable.
2) Turn hand throttle counterclockwise and pull out fully. Depress accelerator pedal to floor and hold it there after engine starts. Allow engine to warm up until 1250-1500 RPM is reached. Release accelerator pedal slowly until engine runs smoothly. As engine warms up, turn hand throttle clockwise to reduce engine speed to idle.
3) After ensuring governor control lever is in idle position, check tachometer. Speed should be 600-700 RPM.
4) If idle speed must be adjusted, loosen lock nut and turn adjusting screw clockwise to increase speed, counterclockwise to decrease speed. *See Fig. 4.*

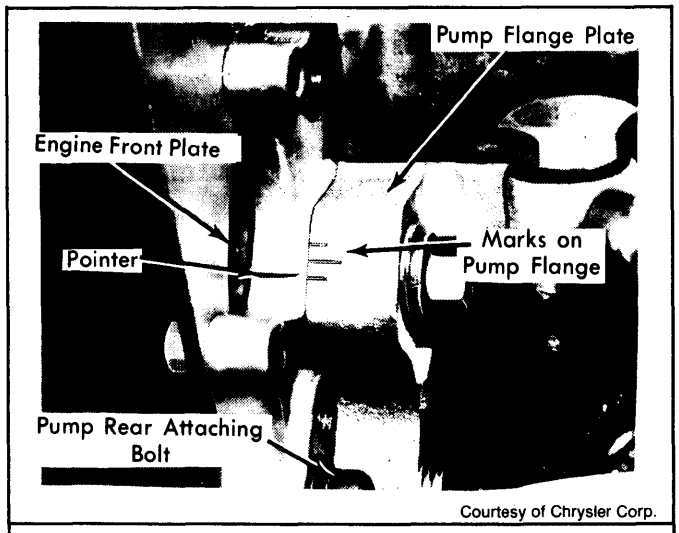

Fig. 3: Injection Pump Timing Scale

CAUTION: When installing new injection pump, do not operate engine above 1300 RPM. If engine races, engine damage can occur.

5) When speed is as specified, tighten lock nut. Recheck speed to ensure it has not shifted.

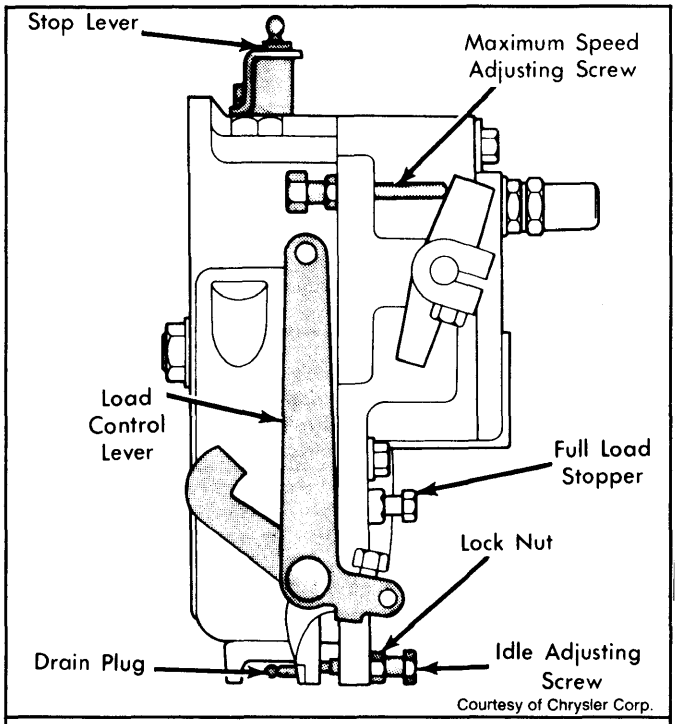

Fig. 4: Idle Screw Adjustment

FUEL PUMP

FUEL PUMP

Application	Type
All	Gear Driven Mechanical Fuel Injection Pump (High-Pressure Plunger Type)

Other Data & Specifications – See Chrysler Corp. Diesel Fuel Injection article in FUEL SYSTEMS section.