# 1975-79 TUNE-UP PROCEDURES
# International Harvester Diesel Tune-Up

## 1976-79 6-Cylinder Diesel

## ENGINE IDENTIFICATION

### VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number (VIN) is located on left front frame rail and on a plate on the right door hinge pillar. Engine is identified by 5th character of VIN code.

### ENGINE IDENTIFICATION CODE

Engine serial number is stamped on left rear corner of cylinder head cover.

## 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 the decal specifications.***

***NOTE: Adjustment of injectors or internal adjustments of injection pump must be done in a properly equipped injector shop with perfectly clean environment.***

## ENGINE COMPRESSION

Remove all nozzle lines and holder assemblies. Place transmission in Neutral and install Compression Gauge (SE-2482). Crank engine and check pressure at 200 RPM.

*ENGINE COMPRESSION SPECIFICATIONS*

| Application | Specification |
|---|---|
| Compression Ratio | 22:1 |
| Compression Pressure | 375-425 psi |
| Maximum Pressure Variation | 50 psi |
| Recommended Fuel | No. 2 Diesel |

## VALVE CLEARANCE

*VALVE CLEARANCE SPECIFICATIONS*

| Application | Clearance |
|---|---|
| Intake & Exhaust | .014" |

## GLOW PLUG RESISTANCE

Measure resistance of glow plugs and replace those which do not meet specifications. Resistance should be 1.5-1.7 ohms.

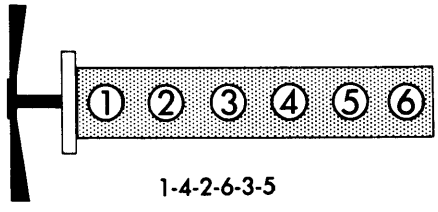


*Fig. 1: 198" Diesel Firing Order Identification*

## INJECTION PUMP TIMING

**1)** Remove No. 1 cylinder pumping element delivery valve holder, delivery valve and spring. Reinstall delivery valve holder. Install drip spout (made from injection line). Secure control lever in forward position.

**2)** Bring No. 1 piston to 20 degrees BTDC by aligning first mark (in direction of normal rotation) on crankshaft pulley with cast pointer on engine front cover. Supply fuel to injection pump by manually priming pump.

**3)** One drop of fuel should flow from drip spout every 3 to 5 seconds. If not, loosen pump retaining nuts and rotate pump assembly as required to achieve fuel drops at 3 to 5 second intervals. After adjustment, tighten pump in place.

**4)** Check alignment of injection pump with front end plate marks at front of pump. If provided marks are not aligned, scribe new mark (horizontal line) on front end plate opposite injection pump original (vertical line) mark.

**5)** Remove injection pump delivery holder and reinstall spring and valve. Install holder and tighten to 22-25 ft. lbs. Reinstall fuel line. Start engine and check for leaks.

## HOT (SLOW) IDLE RPM

Normal curb idle speed is adjusted with low idle adjusting screw at rear of fuel injection pump. To adjust, start engine and run at normal operating temperature. Observe tachometer. If not within specifications (700-750 RPM), back out buffer screw and loosen lock nut on low idle adjustment. Turn low idle adjusting screw to obtain correct idle speed. Tighten lock nut on low idle adjustment. Turn buffer screw in until it touches and takes affect. Using buffer screw, increase engine speed 10-25 RPM above specified speed. Back off one full turn. Then tighten lock nut.

***NOTE: After adjustment, accelerate engine two or three times. Allow engine to return to idle speed and check tachometer. If idle is not within specified range, check accelerator linkage for binding and back off buffer adjustment one full turn.***

*HOT (SLOW) IDLE RPM SPECIFICATIONS*

| Application | RPM |
|---|---|
| All Models | 700-750 |

## COLD (FAST) IDLE RPM

**1)** After initial fast idle adjustment on a calibration stand, on-vehicle adjustments may be made by turning high idle screw at rear of governor housing.

**2)** With engine at normal operating temperature, push control lever forward against full load stop bolt. Read tachometer and note highest RPM. If not within specified speed range, loosen lock nut and adjust high idle screw. Turning clockwise increases RPM. Tighten lock nut and recheck high idle speed. Reseal lock nut when speed is within specifications.

*COLD (FAST) IDLE RPM SPECIFICATIONS*

| Application | RPM |
|---|---|
| All Models | 3800-4150 |

## FUEL PUMP

*FUEL PUMP SPECIFICATIONS*

| Application | Specification |
|---|---|
| Pressure | 15-23 psi |
| Volume In 15 Sec. (at 1000 RPM) | .63 pts. |

## FUEL SYSTEM

All engines are equipped with Diesel fuel injection.

**Other Data & Specifications** - See International Harvester Diesel Fuel Injection article in FUEL SYSTEMS section.