

TUNE-UP - DIESEL

1986 Isuzu Trooper II

1986 Isuzu Diesel 4 Tune-Up
TUNE-UP

P'UP 2.2L, 2.2L Turbo, Trooper II 2.2L Turbo

IDENTIFICATION

ENGINE IDENTIFICATION

Engine serial number is stamped on front part of cylinder block near water pump.

ENGINE CODES

Application	Code
P'UP	
2.2L Except Turbo	C223
2.2L Turbo	C223T
Trooper II (2.2L Turbo)	C223T

TESTING

ENGINE COMPRESSION

1) Warm engine to normal operating temperature. Remove sensing resistor, glow plug connectors, glow plugs and fuel cut solenoid connector. Disconnect fusible link wire of "Quick Start" system at harness connector.

2) Install Compression Gauge Adapter (J 29762) and compression gauge. Operate starter and read compression at 200 RPM.

COMPRESSION SPECIFICATIONS TABLE

Application	Specification
Compression Ratio	21.0:1
Compression Pressure	
Normal (New Engine)	441 psi (31 kg/cm ²)
Minimum	398 psi (28 kg/cm ²)

ADJUSTMENTS

VALVE CLEARANCE

CAUTION: Before adjusting valves, check rocker arm shaft bracket bolts for looseness. Tighten to 9-17 ft. lbs. (13-23 N.m.)

1) Rotate crankshaft until No. 1 piston is at TDC of compression stroke. Measure valve clearance between adjusting screw and valve stem end cap. With No. 1 piston at TDC, adjust intake valves on cylinders No. 1 and 2 and exhaust valves on cylinders No. 1 and 3.

2) Rotate crankshaft one complete revolution until No. 4 piston is at TDC of compression stroke. Adjust intake valves on cylinders No. 3 and 4 and exhaust valves on cylinders No. 2 and 4.

VALVE CLEARANCE SPECIFICATIONS TABLE

Application	Intake: In. (mm)		Exhaust: In. (mm)	
Hot015	(.37)	.015	(.37)
Cold016	(.40)	.016	(.40)

VALVE ARRANGEMENT

* E-I-I-E-E-I-I-E (Front-to-rear).

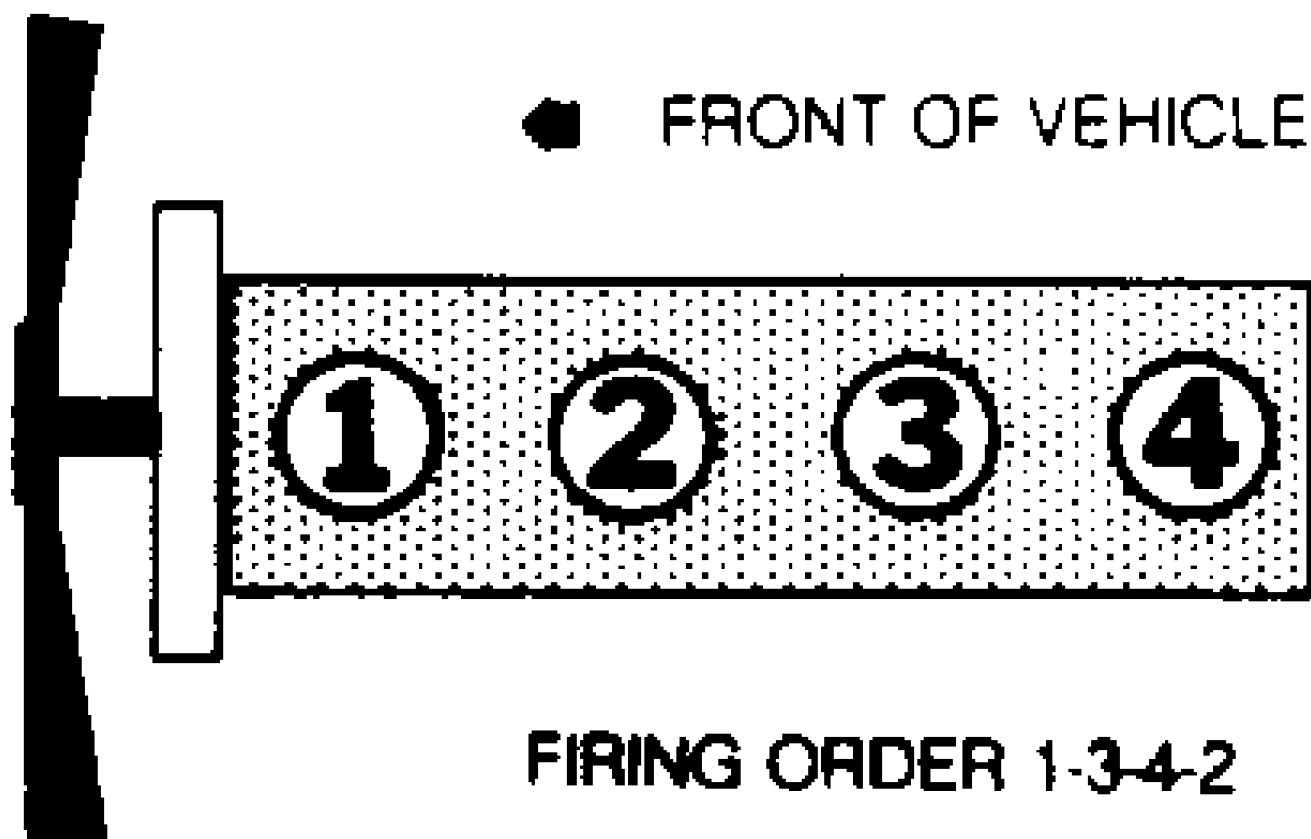
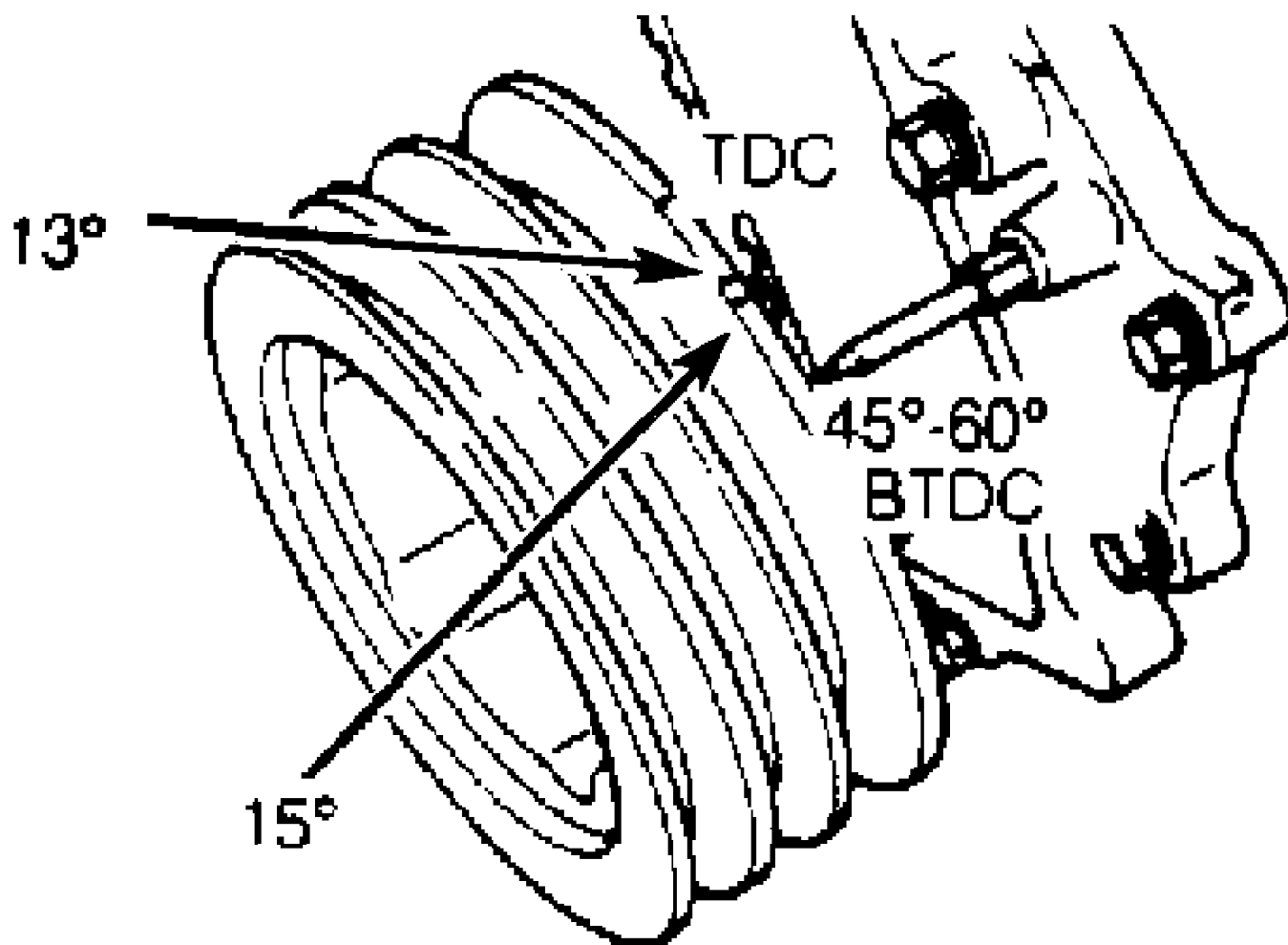


Fig. 1: Diesel Firing Order
Courtesy of Isuzu Motor Co.

INJECTION PUMP TIMING

1) Ensure line on injection pump flange is aligned with line on injection pump front bracket. Bring piston in No. 1 cylinder to TDC of compression stroke. With timing belt cover removed, ensure timing belt is properly tensioned and timing marks are aligned.

2) Disconnect injection pipe from pump. Remove distributor head screw and gasket. Install Dial Indicator (J 28827) on pump. Adjust lift to approximately .04" (1 mm). Bring piston in No. 1 cylinder to a point 45-60 degrees BTDC.



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Fig. 2: Injection Pump Timing Marks
Courtesy of Isuzu Motor Co.

3) Calibrate dial indicator to Zero. Turn crankshaft (in direction of normal rotation) until 15 degrees BTDC (13 degrees BTDC for Calif. models) notch on damper pulley is in alignment with pointer. Read dial indicator.

4) Dial indicator reading must be .020" (.5 mm). If reading is not within specifications, hold crankshaft at 15 degrees BTDC (13 degrees BTDC for Calif. models). Loosen nuts on injection pump flange. Move injection pump until dial indicator reading is .020" (.5 mm)

IDLE SPEED

1) Set parking brake, block drive wheels and place transmission in "NEUTRAL" or "PARK". With A/C off (if equipped) and air cleaner installed, start engine and run until normal operating temperature is reached.

2) Connect tachometer and check idle speed. If idle speed is correct, loosen idle speed adjusting screw lock nut and turn adjusting screw to reach correct idle speed. Tighten lock nut.

IDLE SPEED SPECIFICATIONS TABLE

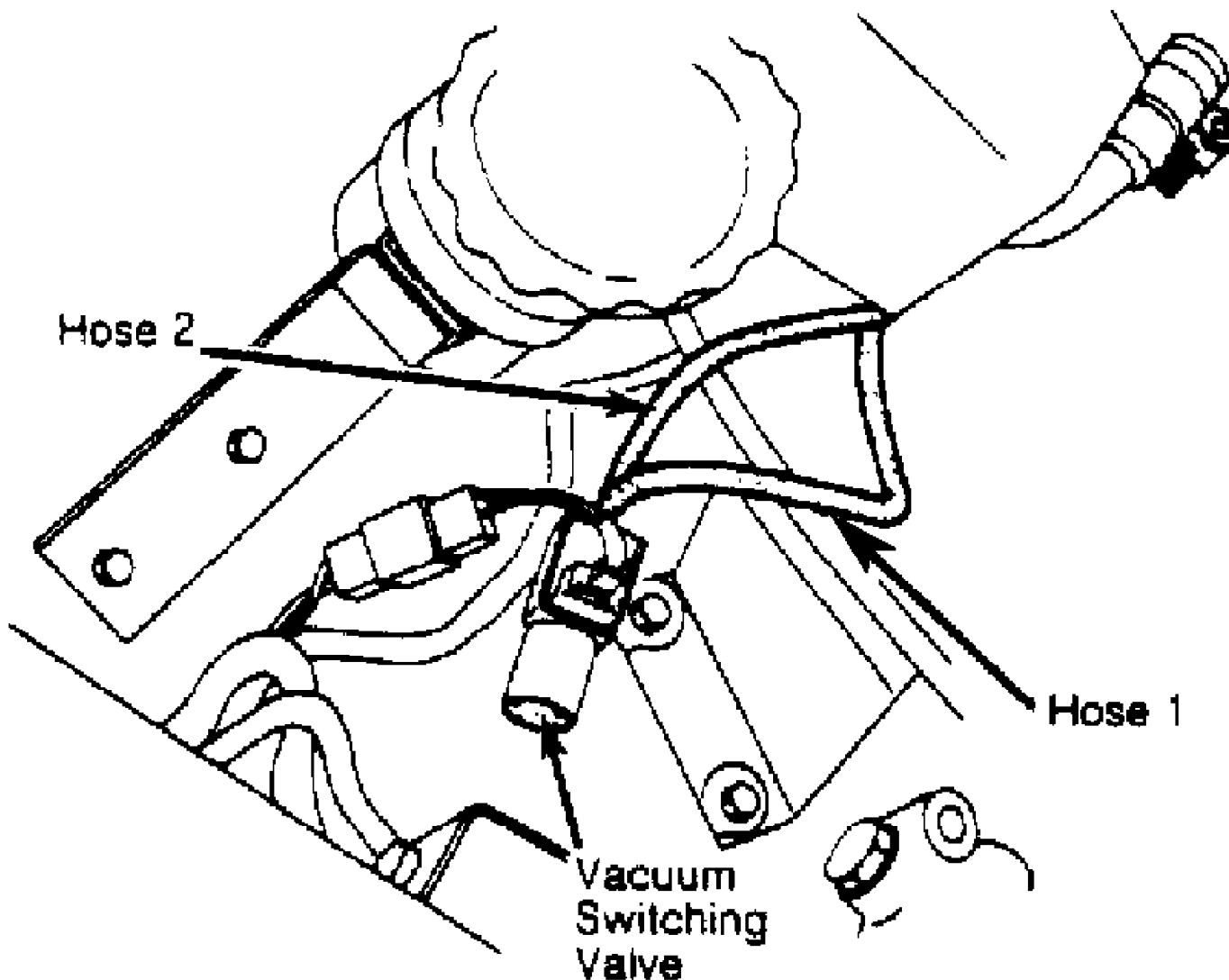
Application

RPM

Man. Trans.	700-800
Auto. Trans.	800-900

FAST IDLE

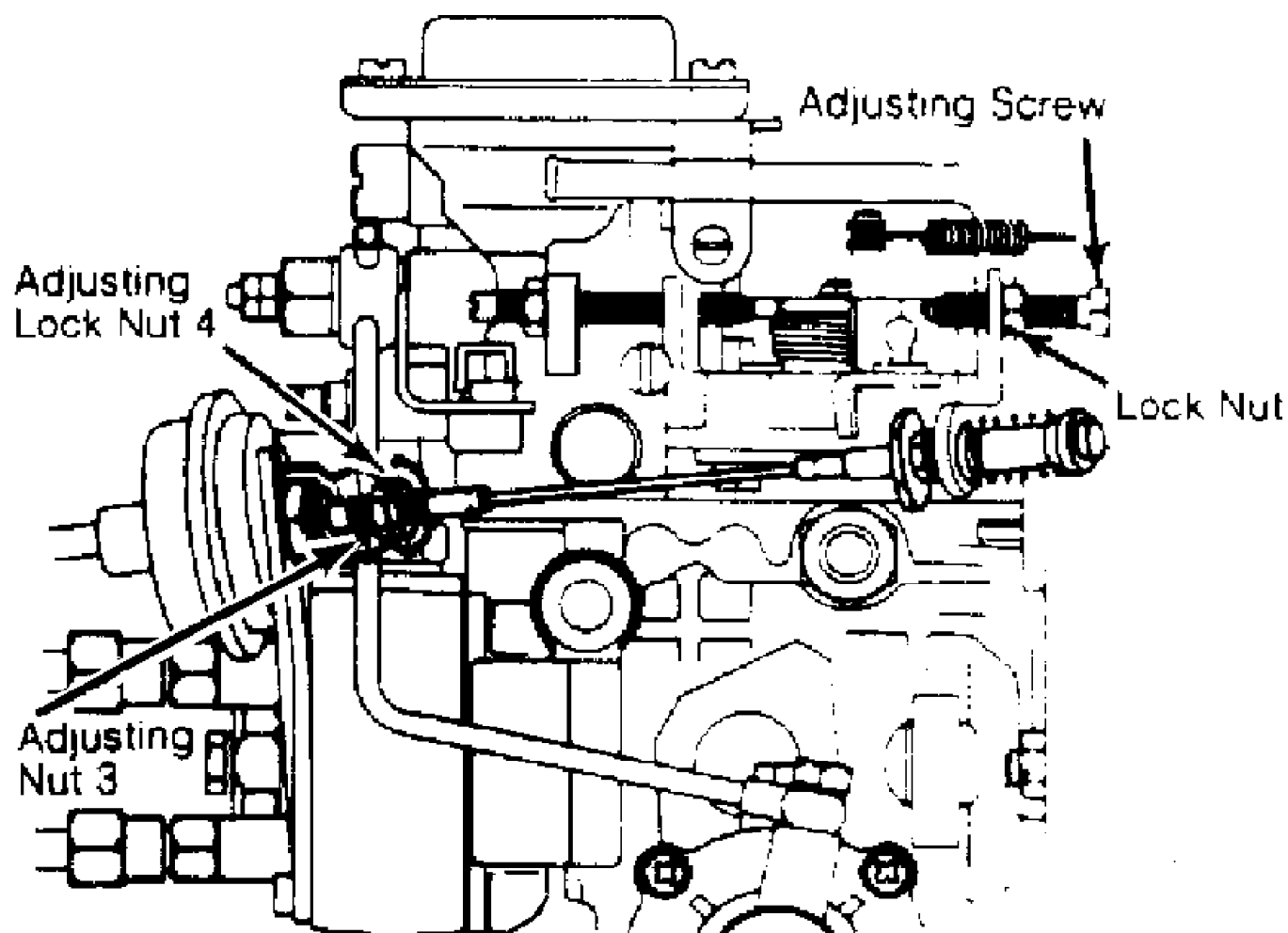
1) Start engine and run until normal operating temperature is reached. Connect Tachometer (J 28885). Disconnect hose Nos. 1 and 2 from vacuum switch valve. See Fig. 3. Connect hoses together using a pipe or tube.



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Fig. 3: Isuzu Diesel Fast Idle Vacuum Hose Removal
Courtesy of Isuzu Motor Co.

2) Check fast idle speed. If fast idle speed is incorrect, loosen adjusting lock nut 4. See Fig. 4. Adjust screw.



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Fig. 4: Isuzu Diesel Fast Idle Speed Adjustment Locations
Courtesy of Isuzu Motor Co.

FAST IDLE SPEED SPECIFICATIONS TABLE

Application	RPM
All Models	900-950

SERVICING

EMISSION CONTROL

See EMISSIONS Section.

SPECIFICATIONS

FUEL SYSTEM

Fuel Injection

All Isuzu diesel models use Bosch mechanical diesel fuel injections

BATTERY

BATTERY SPECIFICATIONS TABLE

Application	Amp Hr. Rating
All Models	50

STARTER

All Isuzu diesel models use Hitachi starters.

STARTER SPECIFICATIONS TABLE

Application	Volts	Amps	Test RPM
All Models	11.5	120	4000

ALTERNATOR

All Isuzu diesel models use Hitachi alternators.

ALTERNATOR SPECIFICATIONS TABLE

Application	Rated Amp Output
All Models	50

ALTERNATOR REGULATOR

All Isuzu diesel models use Hitachi alternator regulators.

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

Application	Voltage
All Models	14.0-14.6

SERVICE INTERVALS

REPLACEMENT INTERVALS

Component	Interval (Miles)
Air Filter	30,000
Fuel Filter	30,000
Oil Filter	7500

BELT ADJUSTMENT

BELT ADJUSTMENT

Application	(1) Deflection: In. (mm)
All Belts	3/8 (10)

(1) - Measured between longest span and depressed with firm thumb pressure.

CAPACITIES

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	6.3 qts. (6.0L)
Cooling System	
Man. Trans.	9.5 qts. (9.0L)
Auto. Trans.	11.2 qts. (10.6L)
Man. Trans. (SAE 30)	
4-Speed	2.7 pts. (1.3L)
5-Speed	3.3 pts. (1.6L)
Auto. Trans. (Dexron II)	6.7 qts. (6.3L)
Transfer Case (SAE 30)	5.3 pts. (2.5L)
Rear Differential (SAE 90)	2.7 pts. (1.3L)
Front Differential (SAE 90)	1.7 pts. (.8L)
Fuel Tank	
P'UP	
Short Bed	13.2 gals. (50.0L)
Long Bed	19.1 gals. (72.4L)
Trooper II	21.9 gals. (86.7L)
