1982 Isuzu 4 Tune-Up

TUNE-UP

I-Mark, P'UP

ENGINE IDENTIFICATION

Engine serial number is stamped on a pad between distributor and cylinder head.

ENGINE CODE

Application	Code
1800 cc	G180Z

ENGINE COMPRESSION

Test compression with engine at normal operating temperature, spark plugs removed, throttle valve wide open and engine at cranking speed (300 RPM).

COMPRESSION SPECIFICATIONS

Compression Ratio	8.5:1
Compression Pressure	
New Engine	170 psi (12 kg/cm²)
Minimum	120 psi (8.4 kg/cm²)
Max. Variation Between Cylinders	9 psi (0.6 kg/cm²)

VALVE CLEARANCE

NOTE: Before adjusting valve clearance, ensure rocker arm shaft brackets are properly tightened to 16 ft. lbs. (22 N.m).

1) Adjust valves every 15,000 miles with engine cold. Measure valve clearance between rocker arm and valve stem.

2) Position No. 1 piston on TDC of compression stoke and adjust valves listed in table. Turn crankshaft one full turn (No. 4 piston on TDC of compression stroke) to adjust remaining valves.

VALVE ADJUSTMENT SEQUENCE

Piston On TDC	Adjust Int. Nos.	Adjust Exh. Nos.
1	1, 2	1, 3
4	3, 4	2, 4

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance In. (mm)
Intake (Cold)	.006 (.15)
Exhaust (Cold)	.010 (.25)

VALVE ARRANGEMENT

Right Side — All Intake
Left Side — All Exhaust

SPARK PLUGS

SPARK PLUG TYPE

Application	NGK No.
All Models	BPR6ES11

SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models	.040 (1.05)	18-25 (24-34)

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wire from spark plugs and from distributor cap. Using an ohmmeter, check resistance of wire while gently twisting wire. If resistance is not within specifications, or fluctuates from infinity to any value, replace wire.

WIRE RESISTANCE

Application	Ohms
All Models	31,500-73,500 per foot

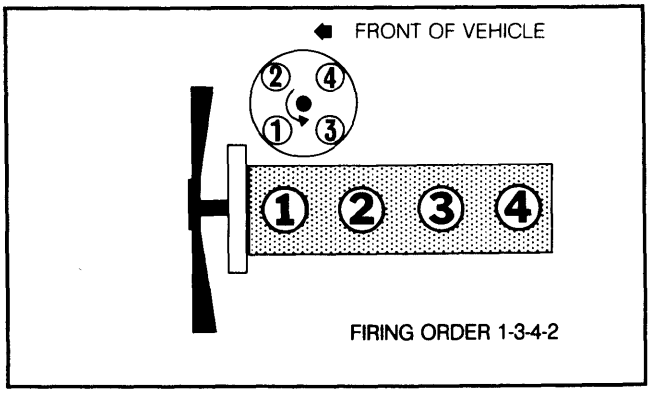
DISTRIBUTOR

All models are equipped with Nippondenso electronic ignition systems.

PICK-UP COIL AIR GAP

Application	Gap In. (mm)
All Models	.008-.016 (.2-.4)

Fig. 1: Firing Order and Distributor Rotation



IGNITION TIMING

1) Ensure engine is warmed to normal operating temperature and idle RPM is properly set. Disconnect and plug distributor vacuum hose.

2) Connect timing light to No. 1 cylinder spark plug wire. Loosen distributor clamp and turn distributor until timing is within specifications. *See Fig. 2.*

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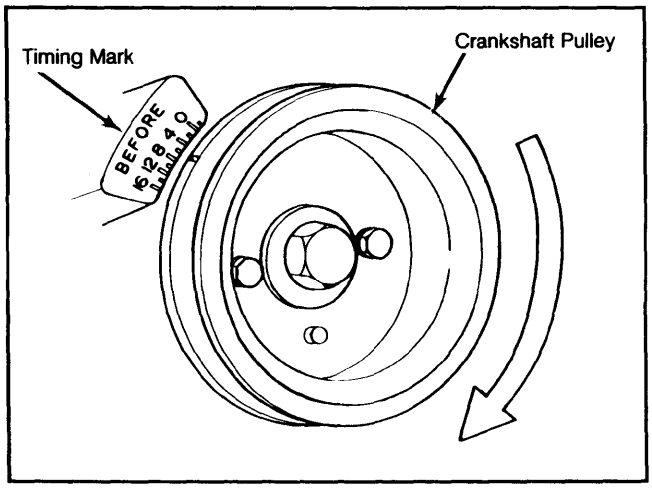
Fig. 2: Ignition Timing Mark Location



Adjust ignition timing with engine at proper idle RPM.

IGNITION TIMING (Degrees BTDC @ RPM)

Application	[1] Timing
I-Mark	6@900
P'UP	
Federal Man. Trans.	6@800
All Others	6@900

[1] — Distributor vacuum hose disconnected and plugged.

IDLE SPEED & MIXTURE

IDLE SPEED

1) Set parking brake and block drive wheels. Place transmission in Neutral. Be sure engine is at normal operating temperature, choke open, A/C off and air cleaner installed.

2) Disconnect and plug distributor and EGR vacuum hoses and canister purge hose. Disable idle compensator by bending rubber vacuum hose and securing in bent position. Turn idle adjusting screw to obtain specified idle RPM.

3) If A/C equipped, turn on controls to maximum cool and high blower. Open throttle about one-third to allow speed-up solenoid to extend, then close throttle. Turn speed-up solenoid screw to obtain 850-950 RPM.

IDLE SPEED

Application	Idle RPM
I-Mark	900
P'UP	
Fed. Man. Trans.	850
All Other Models	900

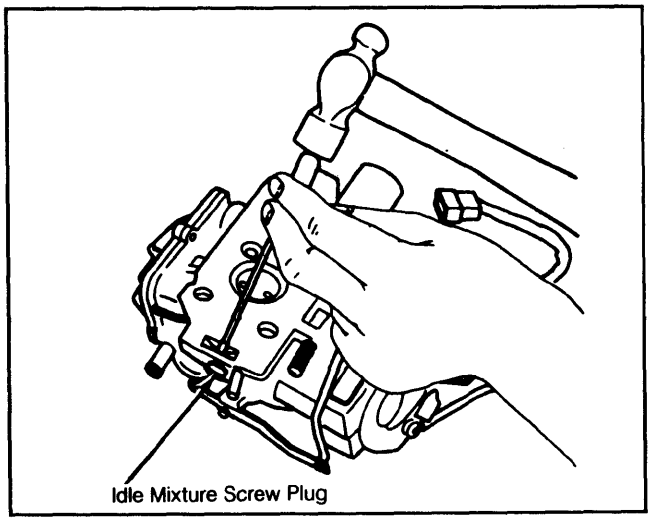
IDLE MIXTURE

NOTE: Mixture adjustment is NOT a part of normal tune-up procedure and should not be performed unless carburetor is overhauled or vehicle fails emissions testing.

I-Mark & Calif. P'UP Models

1) Set parking brake and block drive wheels. Place transmission in Neutral. Remove carburetor from engine and remove idle mixture screw plug from throttle body. *See Fig. 3.* Install carburetor and adjust idle speed.

Fig. 3: Removing Mixture Screw Plug



Carefully remove plug from recess in throttle body to gain access to mixture screw.

2) Connect positive lead of a dwell meter (set in 4-cyl. scale) to the duty monitor, or connect a duty meter to the duty monitor. Attach dwell meter negative lead to ground.

3) Turn mixture screw fully in, then back out 1½ turns. Turn idle adjusting screw to obtain specified idle RPM. Needle on dwell meter or duty meter should fluctuate.

4) Adjust mixture screw to obtain an average reading of 36° on dwell meter, or 40% on duty meter. Reset idle adjusting screw to obtain specified idle RPM. Reinstall mixture screw plug.

5) If equipped with A/C, follow procedure set forth under step **3)** of Idle Speed to make further adjustments.

Federal P'UP

1) Perform step **1)** as for I-Mark and Calif. Pickup. Turn idle adjusting screw to obtain idle of 800 RPM (or 900 RPM if A/C equipped). Turn idle mixture adjusting screw fully in, then back out 2 turns.

2) Turn idle adjusting screw to obtain 800 RPM. Turn idle mixture screw to obtain highest RPM. Reset idle adjusting screw to obtain 850 RPM. Turn idle mixture adjust screw clockwise (lean) to obtain 800 RPM. Replace idle mixture screw plug.

3) If equipped with A/C, follow procedure set forth under step **3)** of Idle Speed to make further adjustment.

COLD (FAST) IDLE RPM

NOTE: Fast idle speed is determined by opening angle of throttle valve on carburetor. It is not set by adjusting engine speed.

1) Remove carburetor from engine. Turn throttle stop screw all the way in before measuring

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clearance. Adjust throttle valve opening with fast idle screw on first step of fast idle cam.

2) Close choke valve completely and measure primary throttle valve opening angle. Adjust opening angle with fast idle adjusting screw. Install carburetor.

3) With engine at normal operating temperature, distributor, idle compensator and EGR valve vacuum hoses disconnected and plugged, fast idle speed should be about 3200 RPM.

FAST IDLE SPEED

Application	Throttle Valve Opening Angle
Man. Trans.	15-17°
Auto. Trans.	17-19°

AUTOMATIC CHOKE

Automatic choke setting is preset at factory and is non-adjustable.

FUEL PUMP PRESSURE

FUEL PUMP PERFORMANCE

Application	Pressure psi (kg/cm²)
All Models	3.56 (.25)

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with a Nippondenso electronic distributor.

DISTRIBUTOR PICK-UP COIL RESISTANCE

Application	Resistance (Ohms)
All Models	140-180

IGNITION COIL

RESISTANCE Ohms @ 68°F (20°C)

Application	Primary	Secondary
All Models	1.13-1.53	10,200-13,800

FUEL SYSTEM

CARBURETOR

Application	Model
All Models	Hitachi DCH 340 2-Bbl.

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Amp. Hr. Rating
All Models	50

STARTER

All models are equipped with Hitachi starters.

STARTER SPECIFICATIONS

Application	Volts	Amps	Test RPM
All Models	12	70	6000

ALTERNATOR

All models use Hitachi alternators.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
All Models	50

ALTERNATOR REGULATOR

All models use Hitachi alternator regulators.

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

Application	Voltage
All Models	13.8-14.8

SERVICE SPECIFICATIONS

REPLACEMENT INTERVALS

Component	Miles
Oil Filter	15,000
Air Filter	30,000
Fuel Filter	30,000
Oxygen Sensor	30,000
Spark Plugs	30,000

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GENERAL SERVICING (Cont.)

BELT ADJUSTMENT

Application	[1] Deflection In. (mm)
All Belts	.4 (10)

[1] - Moderate hand pressure applied midway between pulleys on longest belt run.

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	3.8 qts. (3.6L)
Cooling System	
Man. Trans.	7.2 qts. (6.8L)
Auto. Trans.	7.1 qts. (6.7L)
Auto. Trans. (Dexron II)	6.7 qts. (6.3L)
Man. Trans. (SAE 30)	
4-Spd.	2.7 pts. (1.3L)
5-Spd.	
I-Mark	3.3 pts. (1.6L)
P'UP	2.7 pts. (1.3L)
Rear Axle (SAE 90)	
I-Mark	2.5 pts. (1.2L)
P'UP	2.7 pts. (1.3L)
Front Axle (SAE 90)	1.7 pts. (0.8L)
Transfer Case (SAE 30)	5.2 pts. (2.5L)
Fuel Tank	
I-Mark	13.7 gals. (52.0L)
P'UP	
Long Bed	19.1 gals. (72.6L)
All Others	13.2 gals. (50.2L)