TUNE-UP

DL
GL
GLF

ENGINE IDENTIFICATION

Engine can be identified by a combination letter-number code stamped on machined pad on front right side of engine, near distributor.

Engine Code

Application	Code
1600	
4-Spd.	EA71A
5-Spd.	EA71G
1800	
2-WD	
Man. Trans.	
4-Spd.	EA81A
5-Spd.	EA81G
Auto. Trans.	
Hardtop & Sedan	EA81T
Station Wagon	EA81M
4-WD	
Brat	
DL	EA81J
GL	EA81K
All Other Models	
DL & Standard	EA81W
GL	EA81P

COMPRESSION PRESSURE

Check pressure with engine warm, plugs removed, throttle valve wide open and engine at cranking speed.

Compression Pressure @350 RPM

Application	Pressure psi (kg/cm²)
Normal (New Engine)	
1600	175 (12.3)
1800	171 (12.0)
Minimum	128 (9)
Maximum Variation	7 (0.5)

VALVE CLEARANCE

With engine cold, bring piston to be checked to top dead center of compression stroke. Loosen lock nuts and turn adjusting screws to proper clearance. Adjust valves in firing order sequence using valve clearance adjusting tool 498767000 (or equivalent).

Valve Clearance Specifications①

Application	Intake In. (mm)	Exhaust In. (mm)
All Models	.010 (.25)	.014 (.35)

① — Set with engine cold.

VALVE ARRANGEMENT

I-E-E-I (both banks, front to rear).

SPARK PLUGS

Application	Gap In. (mm)	Torque Ft. Lbs. (N·m)
All Models	.040 (1.0)	15 (20)

Spark Plug Type

Application	NGK	Nippondenso
All Models	BP6ES-11	W20EP-11

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and ignition coil. Remove distributor cap with wires still in place. Using an ohmmeter, check high tension wire resistance between free end of wire and distributor cap electrode. If resistance is not to specifications, or fluctuates from infinity to any value, replace high tension wire(s).

Resistance (Ohms) Per Wire

Application	Ohms
All Models	25,000

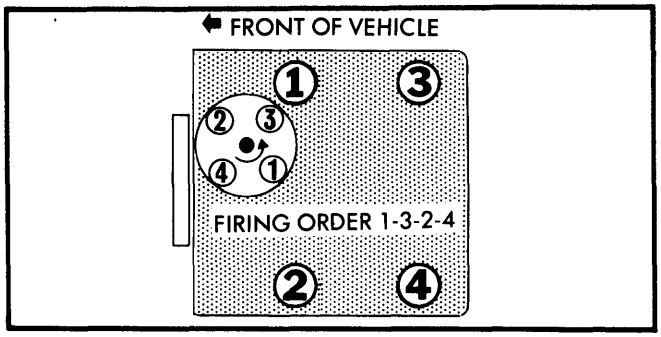

Fig. 1 Firing Order and Distributor Rotation

DISTRIBUTOR

All models are equipped with breakerless, electronic ignition systems. Nippondenso distributors are used in 2-WD models and Hitachi distributors are used in 4-WD models.

Air Gap Specifications

Application	Gap In. (mm)
Hitachi	.012-.020 (.3-.5)
Nippondenso	.008-.016 (.2-.4)

IGNITION TIMING

Adjust timing with engine at normal operating temperature and transmission in neutral. Disconnect and plug vacuum hoses at distributor. With engine at idle, check timing and turn distributor to adjust.

Ignition Timing Specifications (Degrees BTDC @ RPM)

Application	Man. Trans.	Auto. Trans.
All Models	8@700	8@800

TUNE-UP (Cont.)

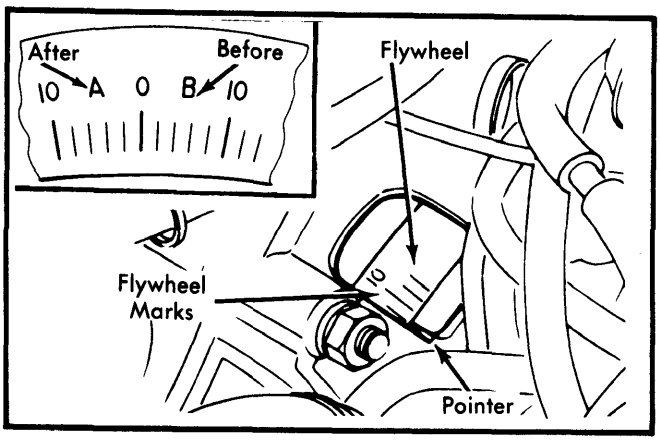

Fig. 2 Subaru Timing Mark Location

IDLE SPEED & MIXTURE

NOTE – *Ignition timing and valve clearances must be correct and engine must be at normal operating temperature prior to adjusting idle speed and mixture.*

1) Disconnect canister purge hose at check valve near intake manifold. Plug hose, then start engine and warm up for at least 5 minutes. Adjust idle speed with transmission in neutral.

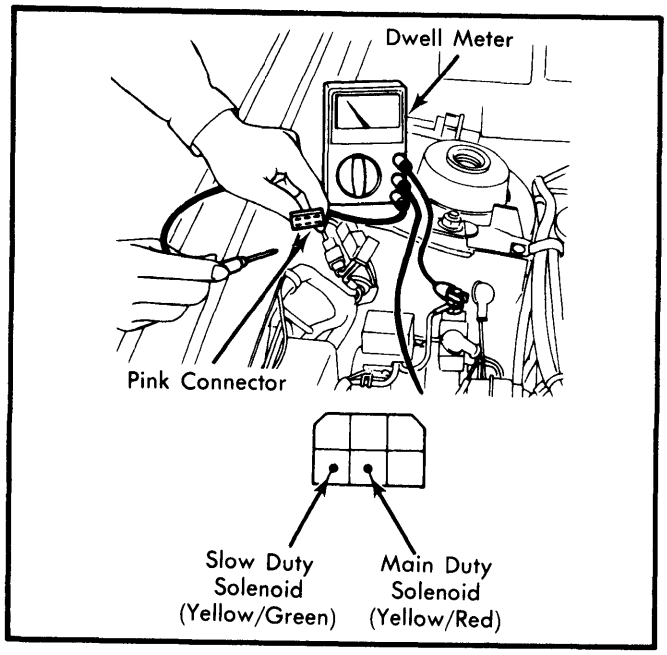

Fig. 3 Idle Mixture Test Connections

NOTE – *Idle mixture should not need adjustment unless carburetor has been removed and disassembled. Roll pin must be removed from in front of idle mixture screw before adjustments can be made.*

2) Connect a dwell meter to Yellow/Red wire in Pink connector near right front shock tower. Set meter on 4 cylinder scale and observe needle movement with engine idling. See *Fig. 3*.

3) Dwell meter needle should move up and down within a 30-40° range. If not moving, run engine at 2000-3000 RPM for at least 2 minutes, then recheck. After noting movement, move dwell meter lead to Yellow/Green wire in Pink connector and repeat check.

4) If dwell meter needle movement is not within specified range, adjust idle mixture screw until needle movement is between 27-36°. Repeat adjustment and check with both solenoid wires in Pink test connector. Recheck idle speed, then remove test equipment, reconnect purge hose and install roll pin.

Idle Speed Specifications

Application	Man. Trans.	Auto. Trans.
All Models	600-800	①700-900

① – In neutral.

FAST IDLE ADJUSTMENT

With cam adjusting lever on first step of fast idle cam, primary throttle valve opening angle and clearance should be as follows. If not, adjust fast idle screw.

Fast Idle Specifications

Application	Throttle Valve Opening Angle	Clearance Valve-to-Body
1600	17°	.046" (1.17mm)
1800	19°	.054" (1.38mm)

FUEL PUMP PRESSURE & VOLUME

Pressure	1.3-2.1 psi (.095-.145 kg/cm²)
Volume	1.0 pts./min.

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTORS

Breakerless, electronic ignition systems are used on all models. Hitachi systems are used on four-wheel-drive models, and Nippondenso systems are used on all other models.

IGNITION COIL

Coil Resistance (Ohms@68°F)

Application	Primary	Secondary
Hitachi	1.04-1.27	7,360-11,040
Nippondenso	1.06-1.30	12,150-14,850

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GENERAL SERVICING (Cont.)

FUEL SYSTEMS

CARBURETORS

Hitachi DCP 2-Bbl. Zenith-Stromberg type carburetors are used on all models.

ELECTRICAL

BATTERY

Application	Amp. Hr. Capacity
Man. Trans. w/o Power Steering	60
All Other Models	65

Battery Location – Engine compartment; front.

STARTER

All vehicles use Nippondenso starters.

Application	Type
Man. Trans.	Magnetic Switch
Auto. Trans.	Gear Reduction

Starter Specifications

Application	Volts	Amps	Test RPM
Man. Trans.	11.0	50	5000
Auto. Trans.	11.5	90	4100

ALTERNATOR

Application	Rated Amp. Output
All Models	55

ALTERNATOR REGULATOR

All models are equipped with Hitachi alternator regulators with an operating voltage of 14.0-14.5 volts.

BELT ADJUSTMENT

Application	①Deflection
All Belts	.51-.55" (13-14 mm)

① – Deflection is with 22 lbs. (10 kg) pressure applied midway on longest belt run.

FILTERS

Filter	Service Interval (Miles)
Oil Filter	Replace every 7500
Air Filter	Replace every 30,000
Fuel Filter	Replace every 15,000

CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	
1600	3.7 qts.
1800	4.2 qts.
Cooling System	
1600	5.6 qts.
1800	5.8 qts.
Man. Transaxle (SAE 85W-90)	
2-WD	2.9 pts.
4-WD	3.2 pts.
Auto. Transaxle (Dexron)	5.9-6.3 qts.
Differential (SAE 85W-90)	
Front	2.6 pts.
Rear (4-WD)	1.6 pts.
Fuel Tank	
2-WD	13.2 gals.
4-WD	11.9 gals.