

# ENGINE TUNE-UP

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Fig. 2-1 Check Oil Level

## Overall capacity:

RT, RA	5.0 liter	5.3 USqt.
RN	4.5 liter	4.8 USqt.

## Crankcase capacity:

RT, RA	4.2 liter	4.4 USqt.
RN	3.7 liter	3.9 USqt.

**ENGINE OIL****QUALITY CHECK**

Pull out the oil level gauge and examine the oil adhering on the graduated part. The oil should not be discolored or deteriorated.

**LEVEL CHECK and REPLENISHMENT**

Oil level should be up to the F line on the level gauge. If low, add oil up to the F line.

Use API service SE classification engine oil.

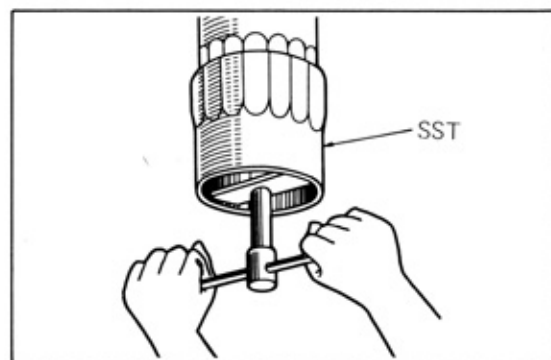


Fig. 2-2 Remove Oil Filter

**OIL FILTER REPLACEMENT**

1. Remove the oil filter by using SST [09228-44010].
2. For installation, tighten firmly the oil filter by hand.
3. Add engine oil.
4. After starting the engine, check for oil leak and recheck the oil level.

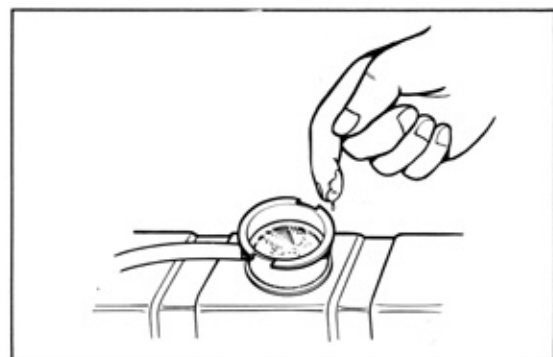


Fig. 2-3 Check Coolant Quality

**COOLING SYSTEM****COOLANT QUALITY CHECK**

There should not be any excessive deposit of rust or scales around the radiator cap or radiator filler hole, and the cooling water should also be free from oil.

Replace the cooling water if excessively dirty.

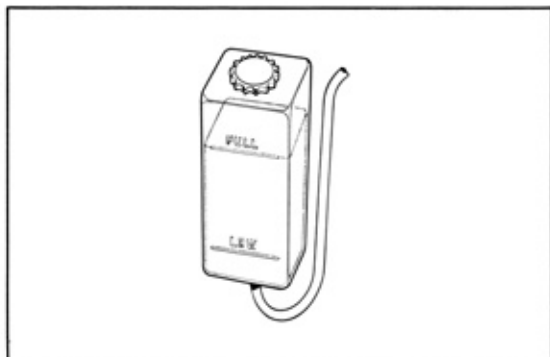


Fig. 2-4 Check Coolant Level

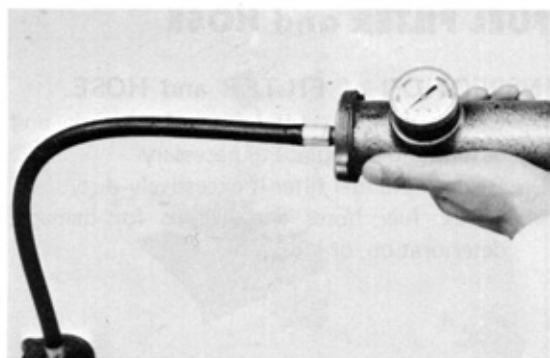


Fig. 2-5 Check Water Leakage



Fig. 2-6 Check Radiator Cap

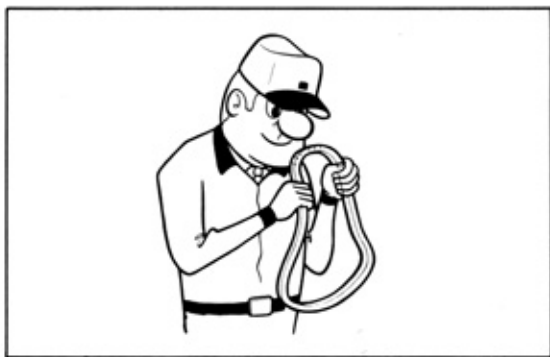


Fig. 2-7 Check Drive Belt

## COOLANT LEVEL CHECK and REPLENISHMENT

If coolant is low, add coolant up to "Full" line of reservoir tank.

## INSPECTION of COOLING SYSTEM PARTS

There should be no defects such as listed below:

1. Damage, deterioration, or loose clamps in radiator hoses, water hoses.
2. Leakage due to corrosion or damage in radiator core.
3. Leakage due to loose water drain cock.
4. Leakage from water pump.

5. Faulty operation of radiator cap.

Inspect the radiator cap pressure regulating and vacuum valves for spring tension and seating condition. If the valve opens at a pressure level below the specified value or is otherwise defective, replace the radiator cap.

### Valve opening pressure limit

	<b>0.6 kg/cm<sup>2</sup> (8.5 psi)</b>
<b>Standard</b>	<b>0.9 kg/cm<sup>2</sup> (12.8 psi)</b>

## DRIVE BELT

### VISUAL CHECK

There should be no defects such as listed below:

1. Cracked, deteriorated, stretched, or worn belt.
2. Adherence of oil or grease.
3. Improper contacting of belt against the pulley.

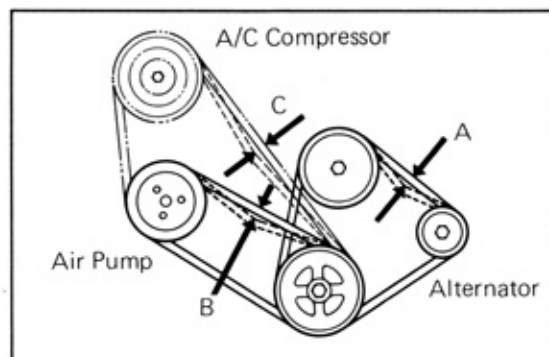


Fig. 2-8 Adjust Belt Tension

**TENSION CHECK and ADJUSTMENT**

When the belt is pressed down with 10kg (22 lb) force, the belt should deflect the specified amount.

- A,B: 8 to 13mm (0.31 to 0.51 in)  
 C: 11 to 13mm (0.43 to 0.51 in)

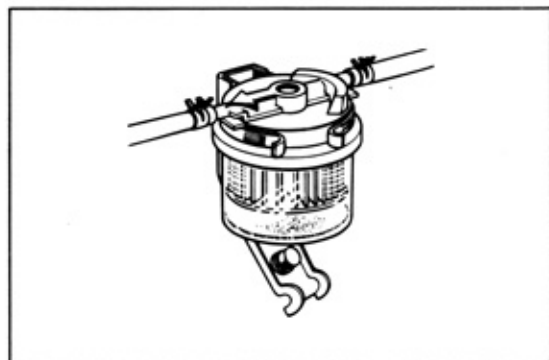


Fig. 2-9 Inspect Fuel Filter

**FUEL FILTER and HOSE****INSPECTION of FILTER and HOSE**

1. Check the fuel filter case for crack and deformation. Replace as necessary.
2. Replace the fuel filter if excessively dirty.
3. Check fuel hoses and clamps for damage, deterioration, or looseness.

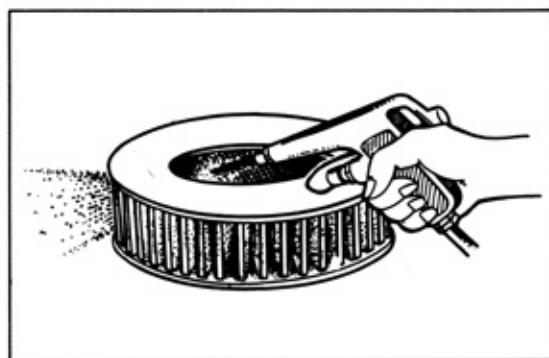


Fig. 2-10 Clean Element

**AIR CLEANER****ELEMENT CLEANING**

1. In removing the air cleaner or element, and after removal, use care not to drop dirt and dust down into the carburetor.
2. In cleaning the element, blow air from the inner side.
3. In case the element is torn or excessively dirty, replace with new element.

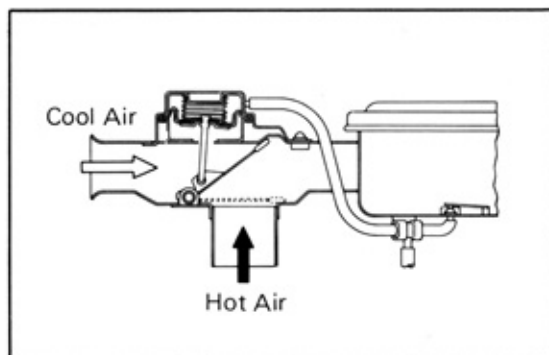


Fig. 2-11 Inspect HAI

**INSPECTION of HOT AIR INTAKE**

Check air control valve operation with engine idling.

Valve should close cold air intake when cold, hot air intake when warm.

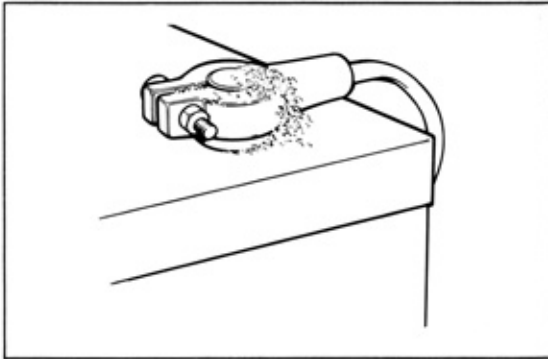


Fig. 2-12 Inspect Battery

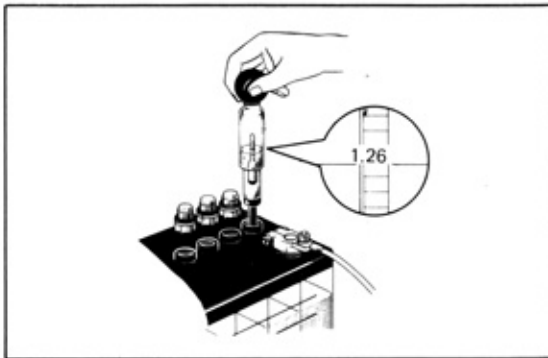


Fig. 2-13 Measure Specific Gravity

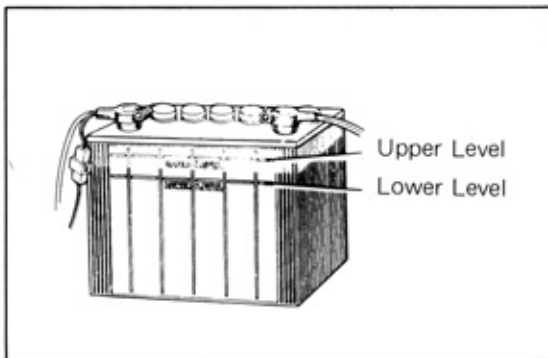


Fig. 2-14 Check Level

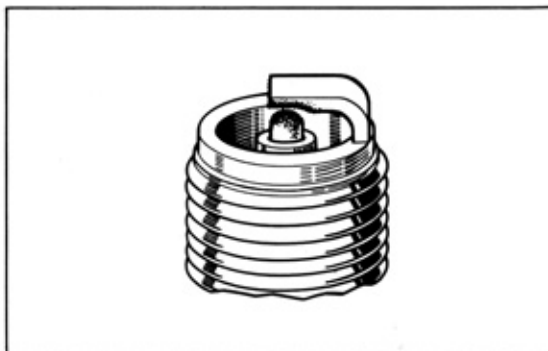


Fig. 2-15 Inspect Spark Plug

## BATTERY

### VISUAL CHECK

If very dirty, remove and clean before checking. There should be no defects such as listed below:

1. Rusted battery mounting hardware.
2. Damage or leakage in battery.
3. Loose connection, rusting, deterioration, or corrosion of battery terminals.

### SPECIFIC GRAVITY MEASUREMENT

Hold the hydrometer so that the float will not contact against the cylinder wall and read the graduation.

**Specific gravity**

**1.25 to 1.27**

### ELECTROLYTE LEVEL CHECK and REPLENISHMENT

The electrolyte level should be up to the upper level. If low, add distilled water (or purified water).

## SPARK PLUG

### VISUAL CHECK

Condition is good if none of the following defects are present:

1. Cracks or damages in the threads or insulator.
2. Wear in the electrodes.
3. Damaged or deteriorated gaskets.
4. Burnt condition of electrode and undesirable carbon deposit.

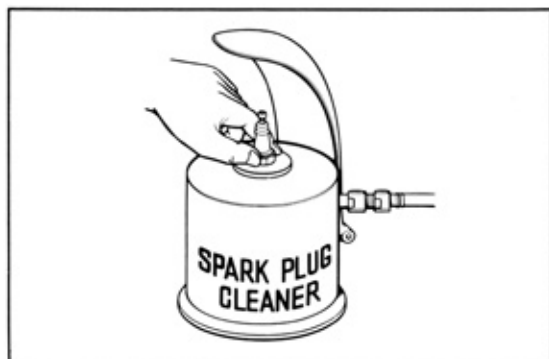


Fig. 2-16 Clean Spark Plug



Fig. 2-17 Adjust Plug Gap

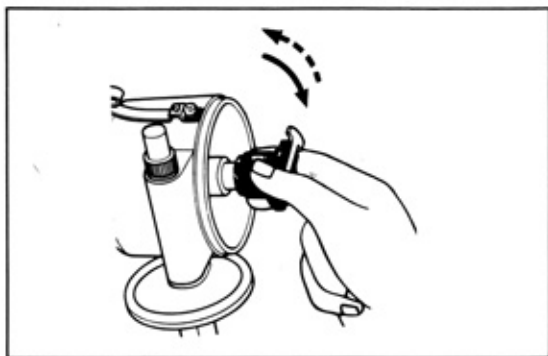


Fig. 2-18 Check Governor Operation

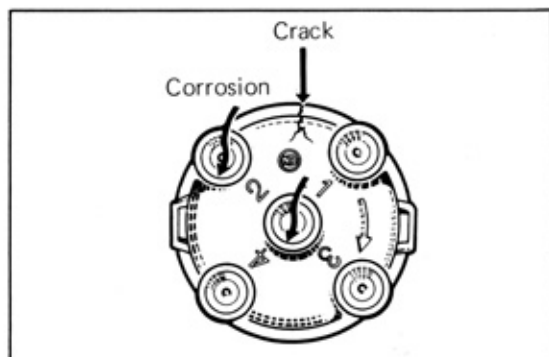


Fig. 2-19 Inspect Distributor Cap

## CLEANING

1. Do not use spark plug cleaner longer than necessary.
2. Blow off cleaning compound and carbon on the threads thoroughly with air.
3. Clean off the dirt from the outer surface of insulator and threads.

## GAP ADJUSTMENT

Check the plug gap with plug gap gauge. If not to specified value, adjust by bending the ground (outer) electrode.

<b>Plug gap</b>	<b>0.8mm (0.03 in)</b>
<b>Recommended spark plug</b>	<b>NGK: BP5ES-L</b>
	<b>ND: W16EP</b>

## DISTRIBUTOR

— Caution —

Do not remove the points shield to keep the points clean.

## GOVERNOR OPERATIONAL INSPECTION

1. Rotor should return slightly when turned clockwise by hand and released.
2. Rotor should be free from excessive looseness.

## CAP INSPECTION

Clean the distributor cap and the rotor, and inspect for crack, carbon track, and burnt or corroded terminals.

Replace them if necessary.

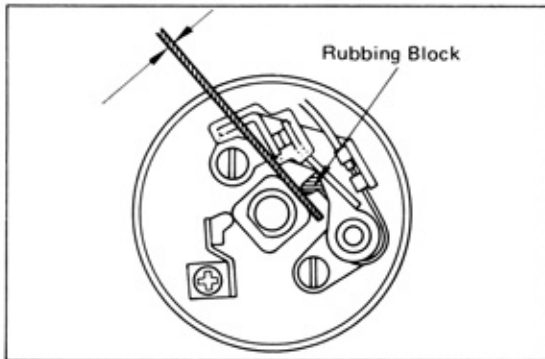


Fig. 2-20 Adjust Point Rubbing Block Gap

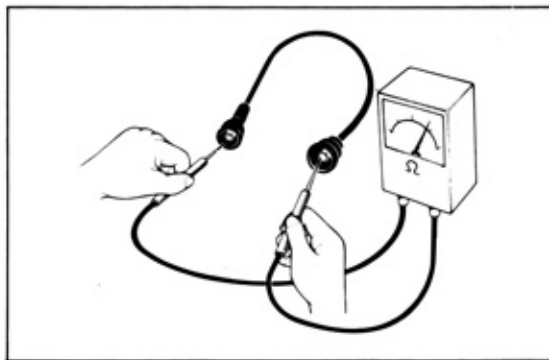


Fig. 2-21 Measure Resistance

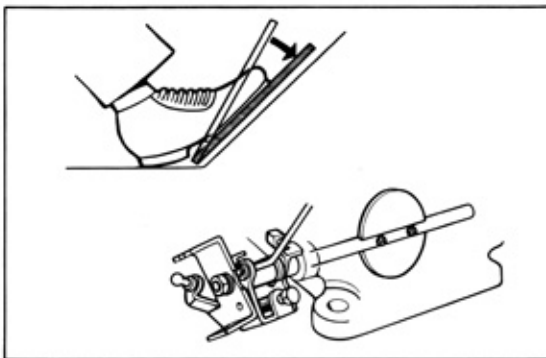


Fig. 2-22 Check Throttle Valve Full Open

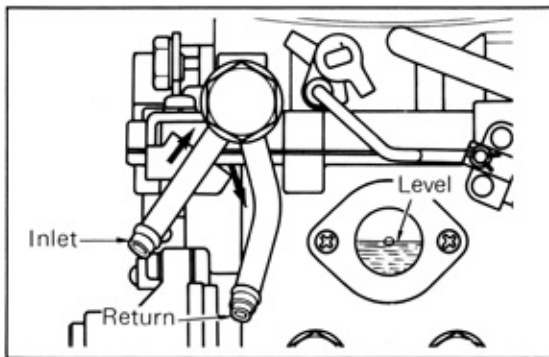


Fig. 2-23 Check Float Level

## POINT GAP ADJUSTMENT

1. If the points are excessively burnt or pitted, replace the breaker points.
2. Adjust point rubbing block gap.

**Point rubbing block gap 0.45mm (0.018 in)**  
(Reference only)

3. Finally, check the dwell angle. If not as specified, correct it by adjusting the point rubbing block gap.

**Dwell angle 50 to 54°**

## HIGH TENSION CORD

### RESISTANCE CHECK

1. Remove carefully high tension cords by pulling the rubber boot.
2. Do not bend cords so as to conductor from broken.
3. Using circuit tester, measure the resistance between the high tension cord terminals. If resistance measured exceeds the limit, replace the cord.

**Limit 25kΩ**

## CARBURETOR

### LOOSENESS and OPERATIONAL CHECK

1. The various set screws, plugs, and union bolts should be in properly tightened state and in correctly installed state.
2. The links should be free from excessive wear, the snap rings (ring pins) should all be present, and the throttle shaft should not be worn.
3. The throttle valve should open fully when the accelerator pedal is stepped all the way down.

### FLOAT LEVEL CHECK

Float level is satisfactory if the fuel level is up to the standard line when the engine is idling.

— Note —

1. When removing the carburetor, drain coolant approx. 2 liters (2.1 USqts.) to prevent the coolant from being flown into intake manifold.
2. The arrow marks are stamped at the clamp plate. When connecting the fuel hoses to the tube, be careful not to connect them reversely each other. Return tube is equipped only for RT and RA models.

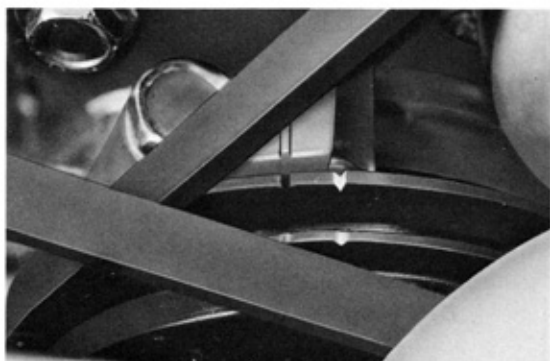


Fig. 2-24 Set Timing Mark

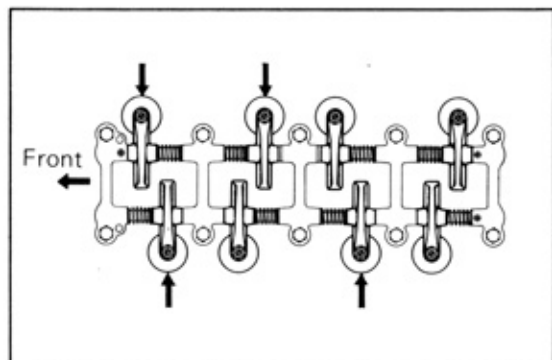


Fig. 2-25 Adjust Valve Clearance

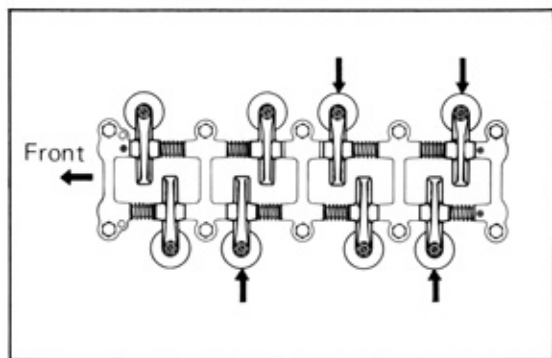


Fig. 2-26 Adjust Valve Clearance

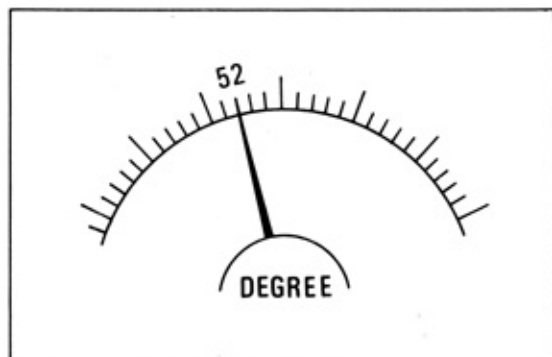


Fig. 2-27 Measure Dwell Angle

## VALVE CLEARANCE

### ADJUSTMENT

1. Warm up engine, then stop.
2. Set No.1 cylinder to TDC/compression. At TDC compression position, rocker arms on No.1 cylinder should be loose and rockers on No.4 should be tight.

3. Adjust valve clearance.  
Valve clearance is measured between valve stem and rocker arm.  
Adjust valves indicated by arrows only.

<b>Intake</b>	<b>0.2mm (0.008 in)</b>
<b>Exhaust</b>	<b>0.3mm (0.012 in)</b>

4. Rotate crankshaft 360°  
Turn crankshaft one complete revolution and align timing marks at pulley. Adjust remaining valve as indicated by arrows.

## DWELL ANGLE

### MEASUREMENT

Check if dwell angle is within the specified value when the engine is running at low and high speed.

<b>Dwell angle</b>	<b>50 to 54°</b>
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— Caution —

Do not connect dwell tacho tester lead to distributor terminal, but to ignition coil terminal to prevent misfire.



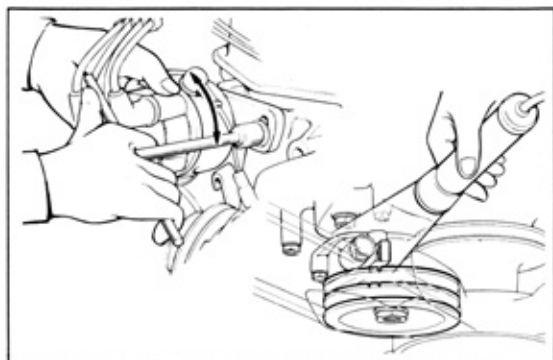


Fig. 2-28 Adjust Ignition Timing



Fig. 2-29 Location of Adjusting Screws

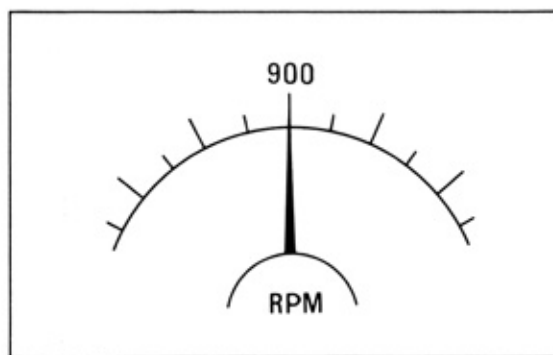


Fig. 2-30 Adjust Idle mixture Speed

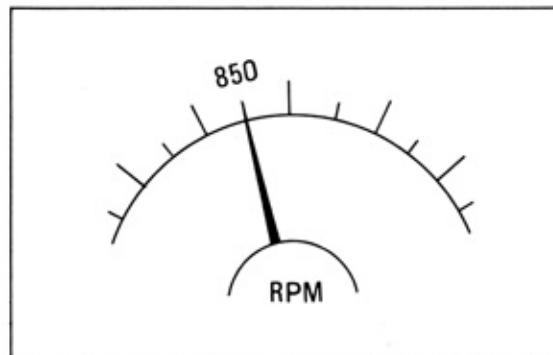


Fig. 2-31 Adjust Initial Idle Speed

## IGNITION TIMING

### ADJUSTMENT

Set the engine revolution at idle speed, and inspect the ignition timing using a timing light, and then adjust so that the timing pointer will align with V groove painted white on the crankshaft pulley.

— Note —

For vehicle equipped with the HAC system, adjust it after disconnecting the hose from the distributor sub-diaphragm.

Ignition timing

8° BTDC

## INITIAL IDLE SPEED

### ADJUSTMENT

- Check following items beforehand.
  - Coolant temperature. . . . . Thoroughly warmed
  - Choke valve . . . . . Full open
  - Accessory parts . . . . . All switched off
  - Vacuum lines . . . . . All lines connected
  - Transmission . . . . . In neutral

- Set to the maximum speed by turning the idle mixture adjusting screw.
- Set to the idle mixture speed by turning the idle speed adjusting screw.
- Keep on repeating the adjustments (2) and (3) until the maximum speed will not rise any further no matter how much the idle mixture adjusting screw is adjusted before moving to the next step.

#### Idle mixture speed

- '75, '76 Model-900 rpm
- '77 Model — M/T 870 rpm
- '77 Model — A/T 920 rpm

- Set to the initial idle speed by screwing in the idle mixture adjusting screw.

#### Initial idle speed

- '75, '76 Model-850 rpm
- '77 Model — M/T 800 rpm
- '77 Model — A/T 850 rpm



Fig. 2-32 Disconnect Hose From EGR Valve



Fig. 2-33 Location of Fast Idle Adjusting Screw



Fig. 2-34 Remove All Spark Plugs



Fig. 2-35 Measure Compression Pressure

## FAST IDLE

### ADJUSTMENT

1. Stop engine and disconnect vacuum hose from EGR valve.
2. With the throttle valve slightly open, close the choke valve with finger, and then close the throttle valve.
3. For 1977 year model, pinch the hose on the carburetor advancer port.
4. Start engine without stepping on the accelerator pedal.
5. Check the engine speed to see if it is at the specified fast idle rpm. If not, correct by turning the fast idle adjusting screw.

**Fast idle speed** **2400 rpm**

6. After adjustment, reconnect the vacuum hose to EGR valve and release the pinched hose.

## COMPRESSION PRESSURE

### PRESSURE MEASUREMENT

Measure compression pressures in the following manners.

1. Remove all spark plugs, and disconnect the high tension cord from the ignition coil to cut-off the secondary circuit.
2. Insert a compression gauge into the spark plug hole, open the throttle valve fully, and measure the compression pressure of each cylinder while cranking the engine with the starter motor.
3. Always use a fully charged battery to obtain the engine revolution of more than 250 rpm.

**Compression pressure** **11kg/cm<sup>2</sup> (156 psi)**  
**Limit** **9kg/cm<sup>2</sup> (128 psi)**