SECTION INDEX

NAME	SECTION
INTRODUCTION	1
ENGINE TUNE-UP	2
ENGINE SERVICE	3
LUBRICATION SYSTEM	4
COOLING SYSTEM	5
FUEL SYSTEM	6
STARTING SYSTEM	7
IGNITION SYSTEM	8
CHARGING SYSTEM	9
SST & SERVICE SPECIFICATIONS	10

GENERAL REPAIR INSTRUCTIONS

1. Use fender, seat and floor covers to keep the car clean and prevent damage.
2. During disassembly, keep parts in order to facilitate reassembly.
3. Before performing electrical work, disconnect one of the cables from the battery terminal.
4. Always replace cotter pins, gaskets and O rings with new ones.
5. When necessary, use a sealer on gaskets to prevent leaks.
6. Carefully observe all specifications for bolt tightening torques. Always use a torque wrench.
7. Use genuine Toyota parts.
8. When replacing fuses, be sure the new fuse is the correct amperage rating. DO NOT exceed the fuse amp rating or use one of a lower rating.
9. If the vehicle is to be jacked up only at the front or rear end, be sure to block the wheels in order to ensure safety.
10. After the vehicle is jacked up, be sure to support it on stands. It is extremely dangerous to do any work on the vehicle raised on a jack alone, even for a small job that can be finished quickly.
11. Use of a special service tool (SST) may be required, depending on the nature of the repair. Be sure to use SST where specified and follow the proper work procedure. A list of SST can be found at the back of this manual.

Fig. 2-32

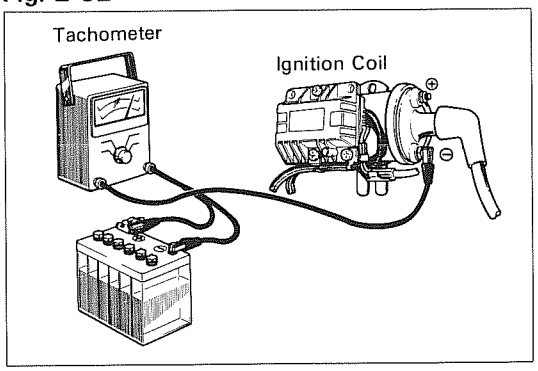


Fig. 2-33

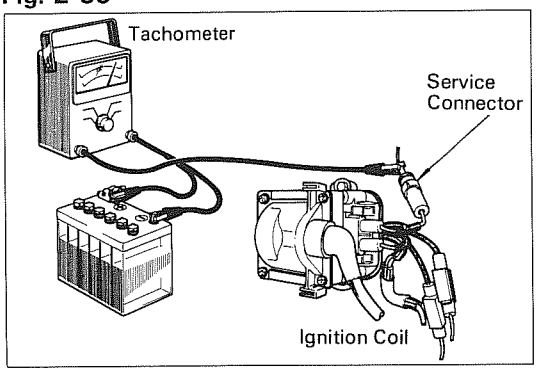


Fig. 2-34

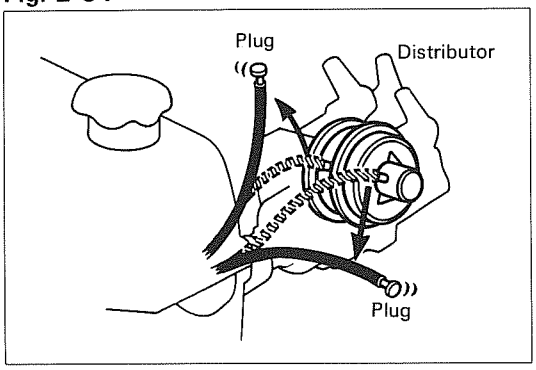
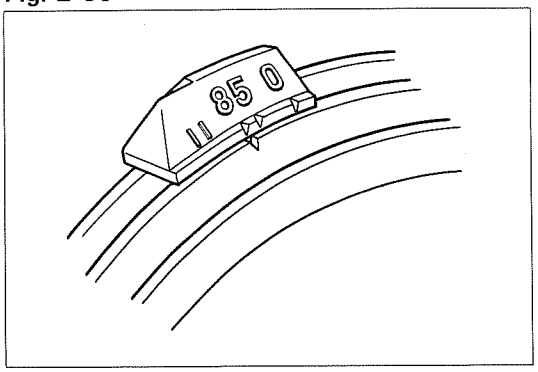


Fig. 2-35



CHECK IGNITION TIMING

1. Connect a tachometer and timing light.

– Note –

1. **For RB, USA RT, USA RA and RX, connect the tachometer (+) terminal to the ignition coil (–) terminal.**
2. **For RN, Canada RT and Canada RA, remove the rubber cap and connect the tachometer (+) terminal to the service connector from the igniter.**
3. **Do not keep the ignition switch ON for more than 10 minutes if the engine will not start.**
4. **As some tachometers are not compatible with this ignition system, it is recommended that you consult with the manufacturer.**
5. **NEVER allow the ignition coil terminals to touch ground as it could result in damage to the igniter and/or ignition coil.**
6. **Do not disconnect the battery when the engine is running.**
7. **Make sure that the igniter is properly grounded to the body.**

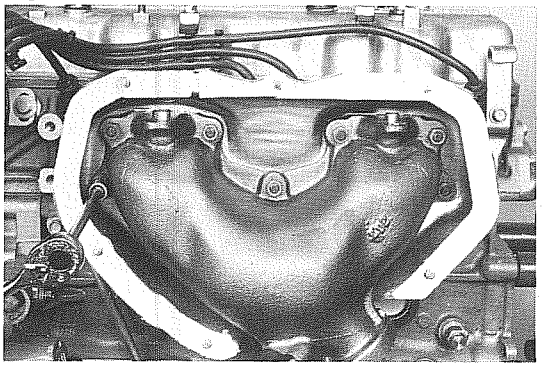
2. Warm-up the engine.
3. Disconnect the vacuum hoses from the distributor and plug the ends of them.

4. Check the ignition timing with the engine idling.

Ignition timing:

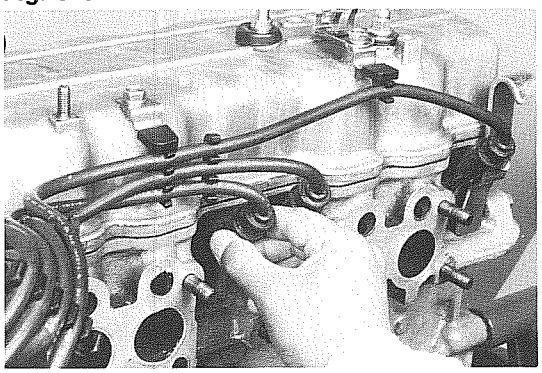
21R, 21R-C (Sweden)
8° BTDC/Max. 750 rpm
21R-C (Australia)
5° BTDC/Max. 600 rpm (M/T)
5° BTDC/Max. 650 rpm (A/T)
22R
8° BTDC/Max. 950 rpm

Fig. 3-4



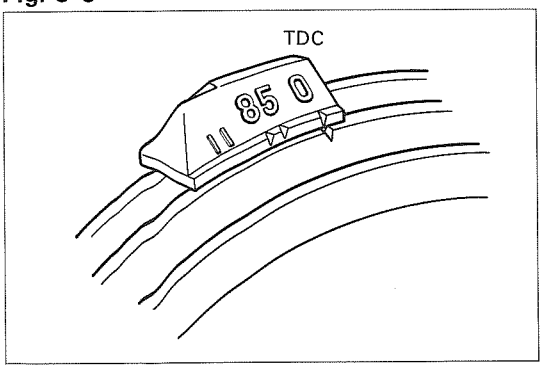
Remove the exhaust manifold.

Fig. 3-5



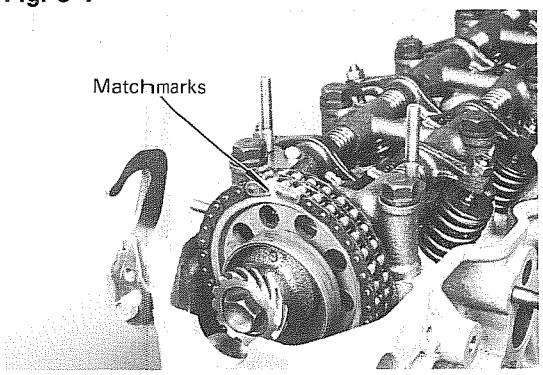
Remove the plug cords by carefully pulling on the rubber boots.

Fig. 3-6



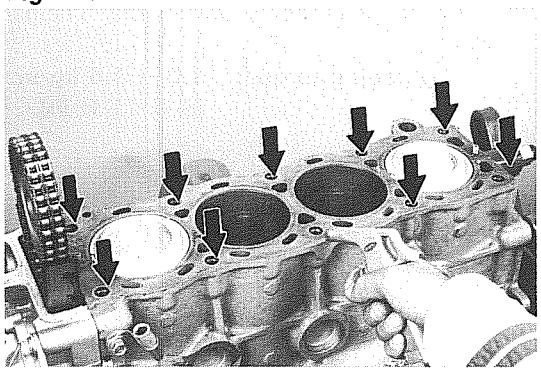
Set No. 1 cylinder to TDC/compression.

Fig. 3-7



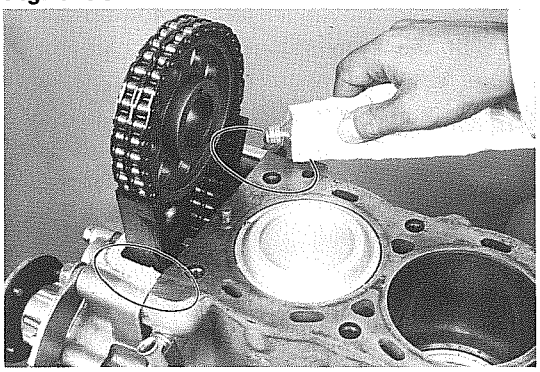
Place matchmarks on the camshaft sprocket and timing chain.

Fig. 3-65



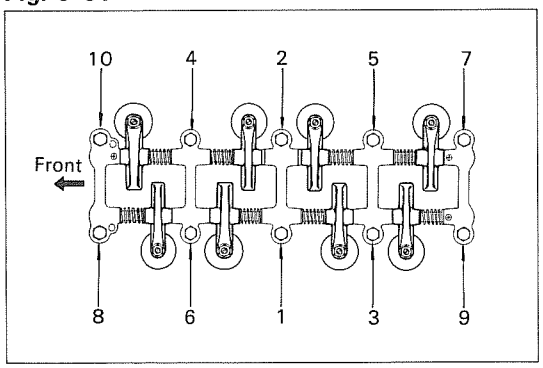
Clean the bolt holes with compressed air.

Fig. 3-66



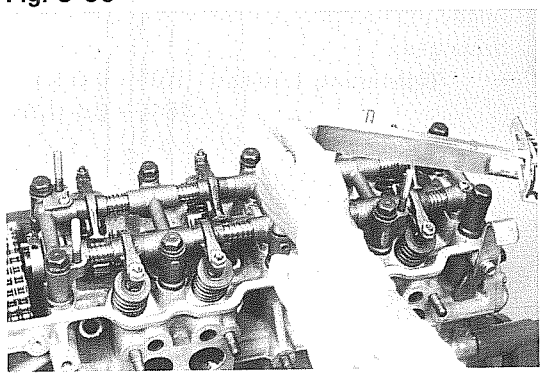
Apply liquid sealer to the cylinder head at the points shown in the figure.

Fig. 3-67



Tighten each cylinder head bolt a little at a time in the sequence shown in the figure.

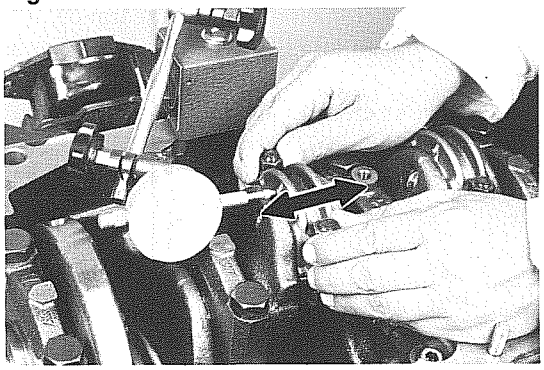
Fig. 3-68



Tighten the cylinder head bolts to specified torque.

Tightening torque: 7.2 – 8.8 kg-m (53 – 63 ft-lb)

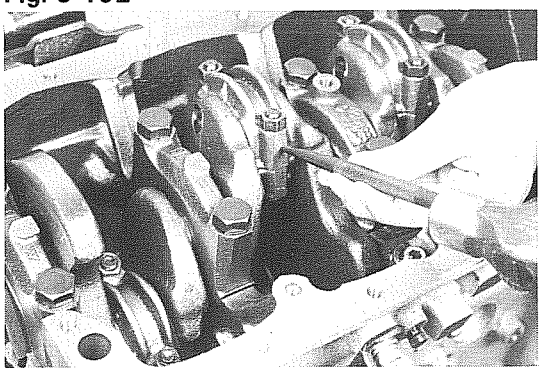
Fig. 3-101



Measure the connecting rod thrust clearance. If it exceeds the limit, replace the connecting rod.

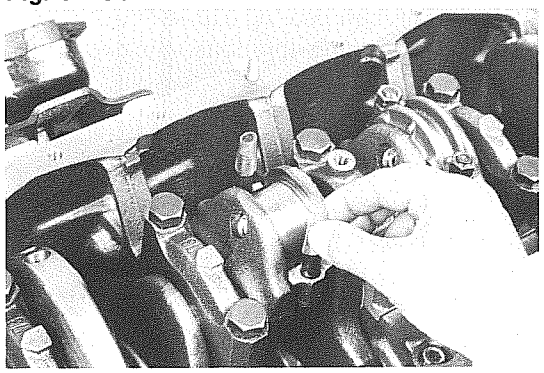
Thrust clearance:
Limit 0.3 mm (0.012 in.)

Fig. 3-102



Place the matchmarks on the cap and connecting rod.

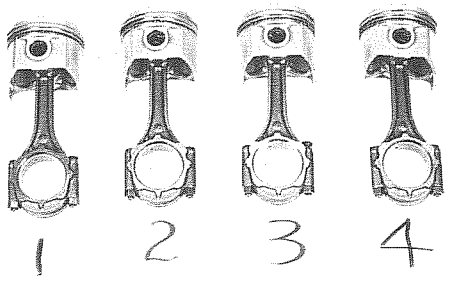
Fig. 3-103



Cover the rod bolts with short pieces of hose.

— Note —
To prevent the crankshaft pin and cylinder bore from damage, this step must be performed before removing the pistons.

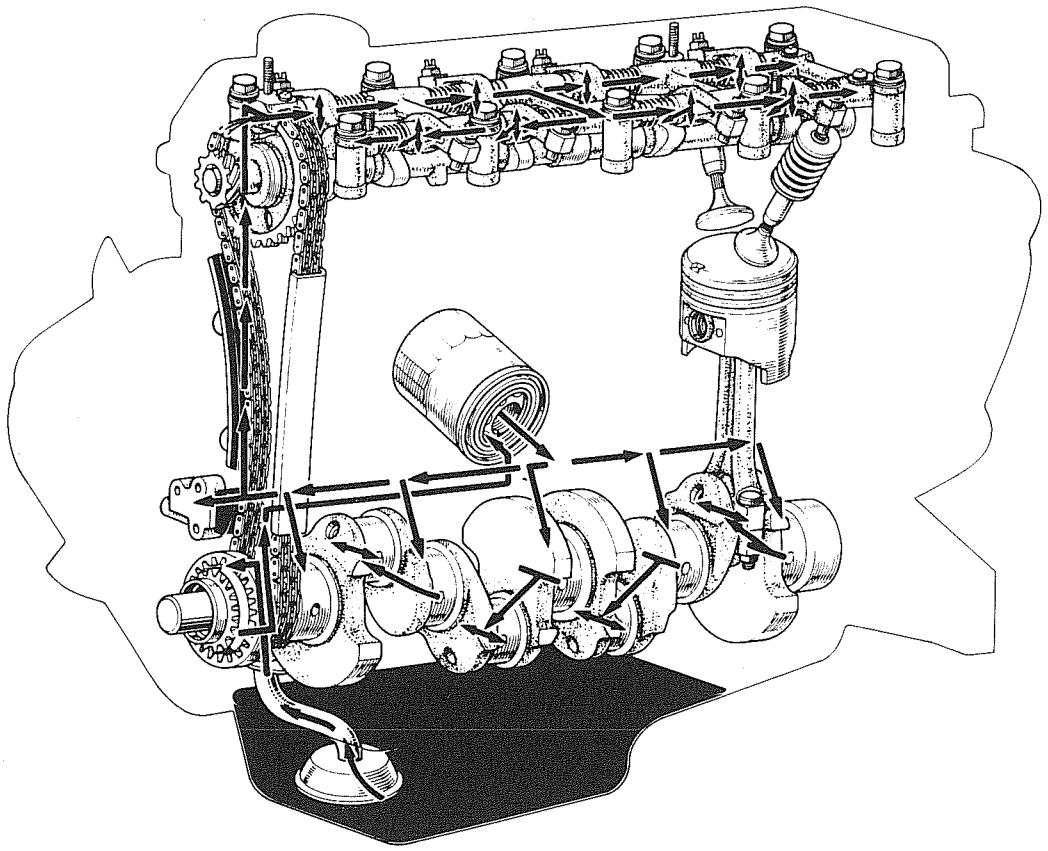
Fig. 3-104



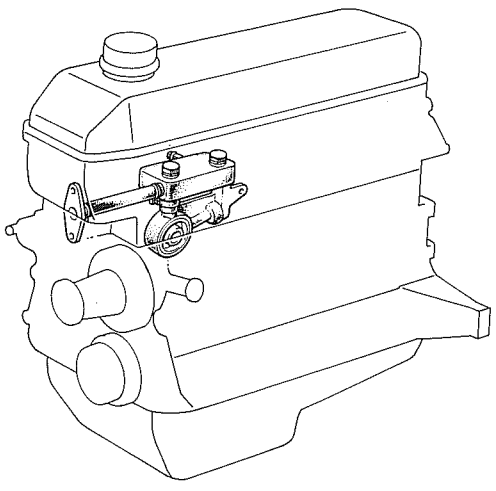
Arrange the piston and connecting rod caps in order.

LUBRICATION SYSTEM CIRCUIT

Fig. 4-1



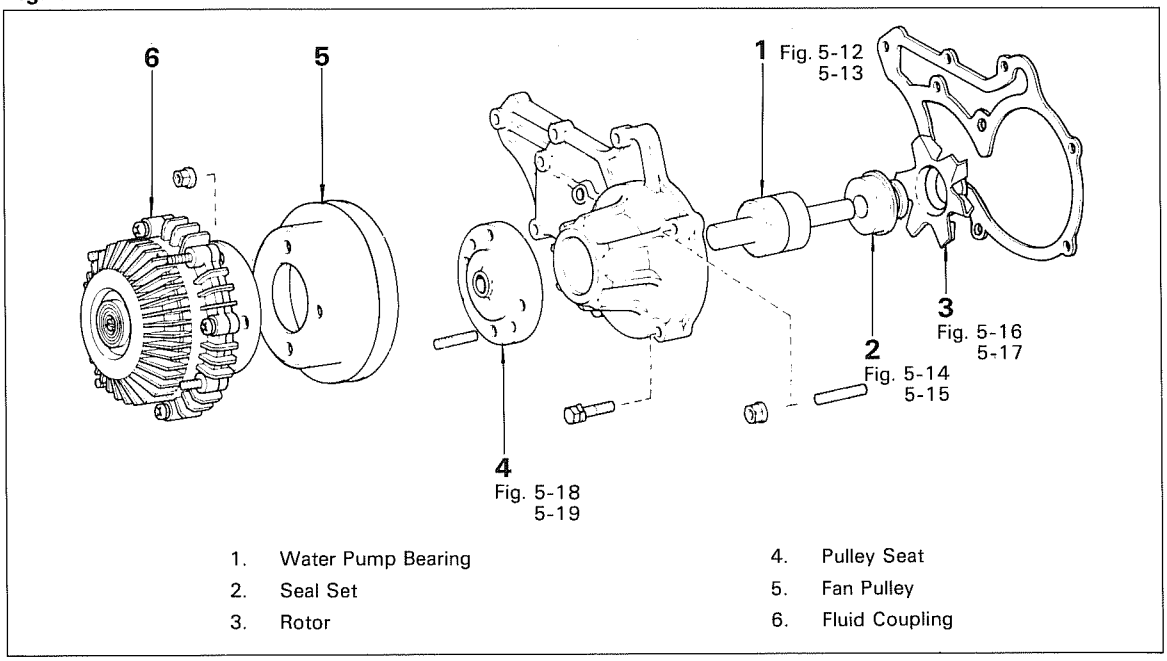
Oil Cooler (RB13 Series)



ASSEMBLY

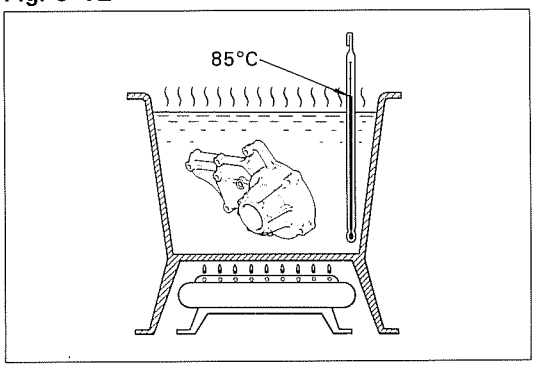
Assemble the parts in the numerical order shown in the figure.

Fig. 5-11



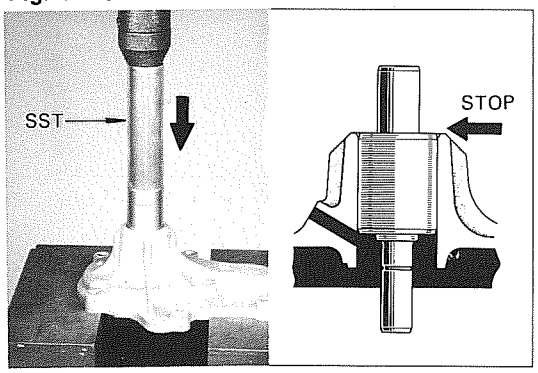
1. Water Pump Bearing
2. Seal Set
3. Rotor
4. Pulley Seat
5. Fan Pulley
6. Fluid Coupling

Fig. 5-12



Heat the water pump body to about 85°C (185°F).

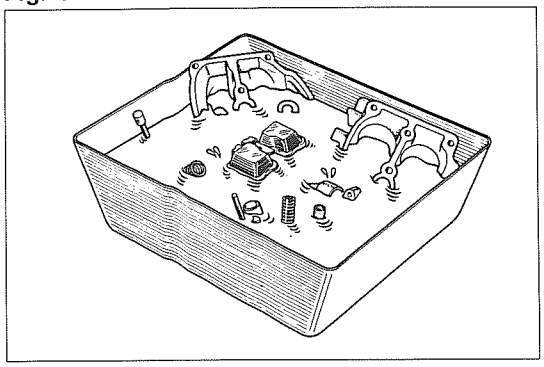
Fig. 5-13



Press in the bearing with SST.
SST (09236-28011) of set [09236-00100]

— Note —
The bearing end face should be flush with the body top surface.

Fig. 6-17

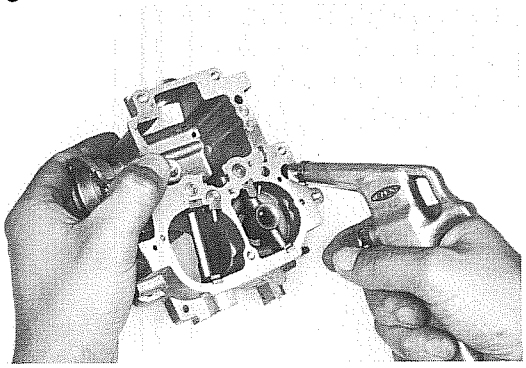


INSPECTION

– Precaution –

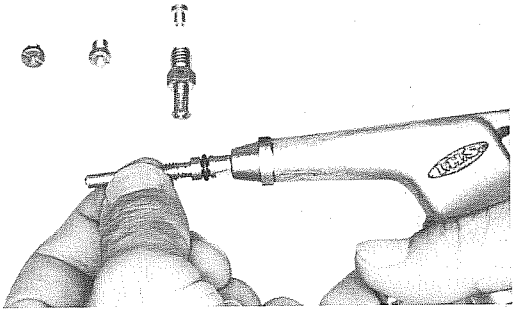
1. **Before inspection, wash all parts thoroughly with gasoline.**

Fig. 6-18



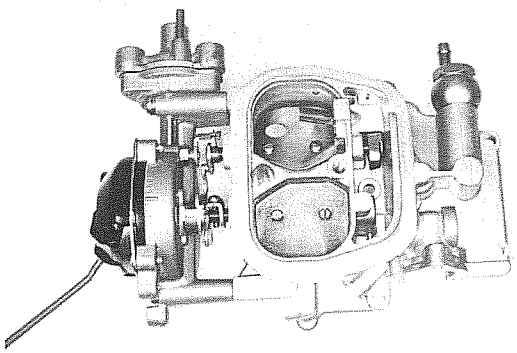
2. **Using compressed air, blow all dirt and other foreign matter from the jets and similar parts, and from the fuel passages and apertures in the body.**

Fig. 6-19



3. **Never clean the jets or orifices with wire or a drill. This could enlarge the openings and result in excessive fuel consumption.**

Fig. 6-20



Inspect the following parts and replace any part damaged.

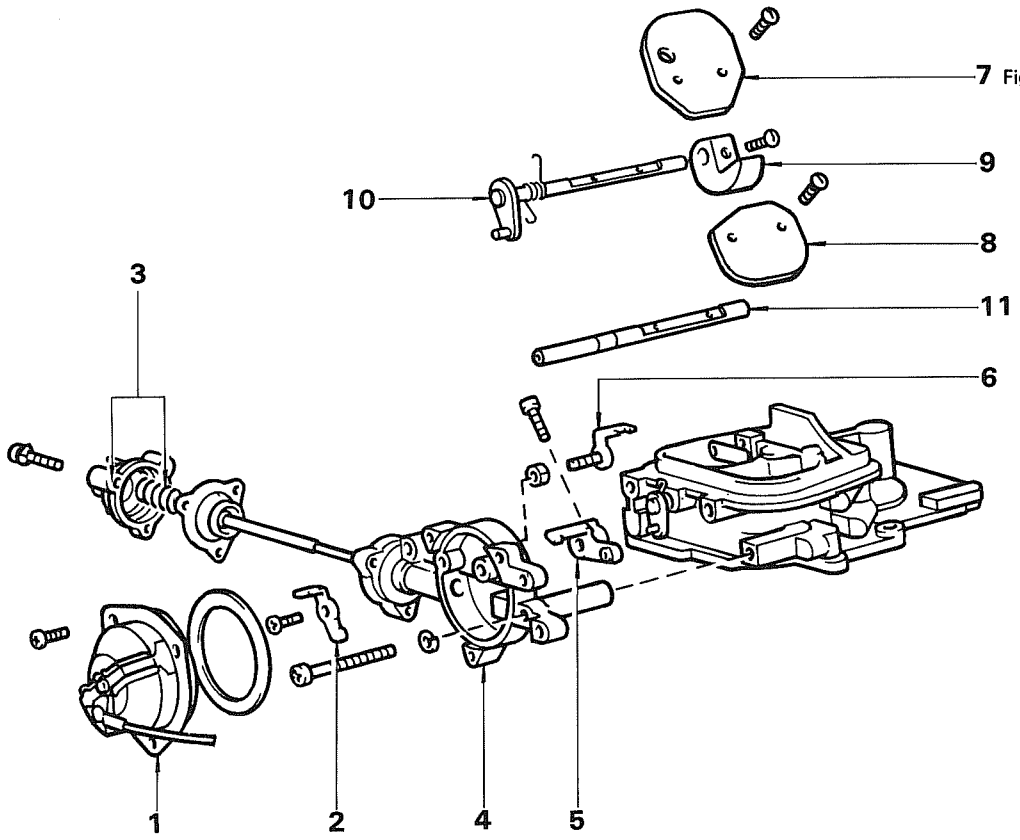
Air Horn Parts

1. Air horn: Check for cracks, damages and excessive deformation of the air valve and choke valve.

Choke System

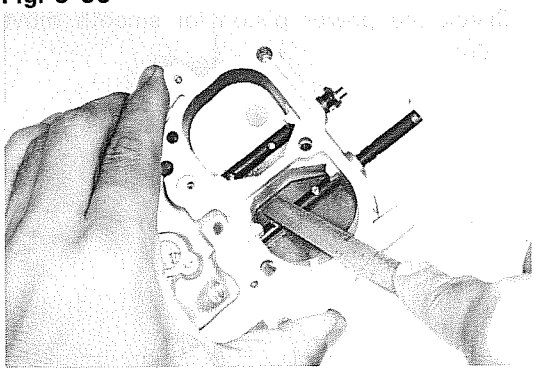
Disassemble the parts in the numerical order shown in the figure.

Fig. 6-68



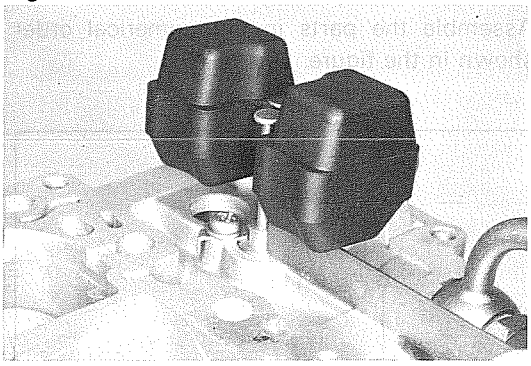
1. Coil Housing
2. Choke Lever
3. Choke Breaker Cover & Spring
4. Thermostat Case with Diaphragm
5. Connecting Lever
6. Relief Lever
7. Air Valve
8. Choke Valve
9. Metering Needle Cam
10. Air Valve Shaft
11. Choke Valve Shaft

Fig. 6-69



File off the set screw ends to remove the air valve and choke valve.

Fig. 6-116

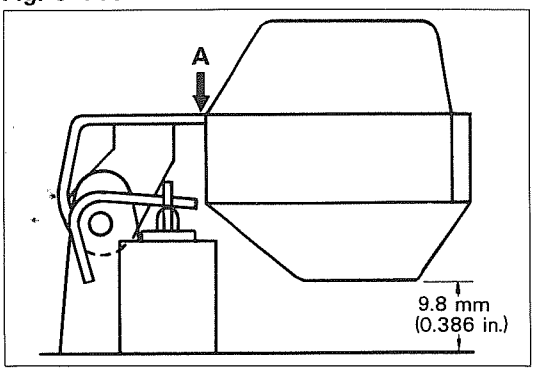


Adjust the float level.
Allow the float to hang down by its own weight.
Check the clearance between the float top and air horn with SST.
SST [09240-00014]

Float level: 9.8 mm (0.386 in.)

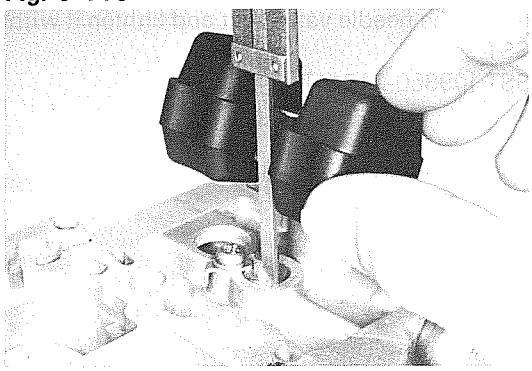
— Note —
Measure the clearance without a gasket on the air horn.

Fig. 6-117



Adjust by bending the part of the float indicated by A in the figure.

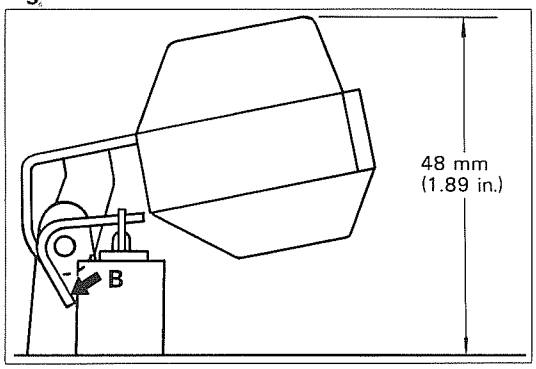
Fig. 6-118



Lift up the float and check the distance between the needle valve plunger and the float lip with vernier calipers.

Float level (lowered position):
48 mm
(1.89 in.)

Fig. 6-119



Adjust by bending the part of the float indicated by B in the figure.

Fig. 6-152

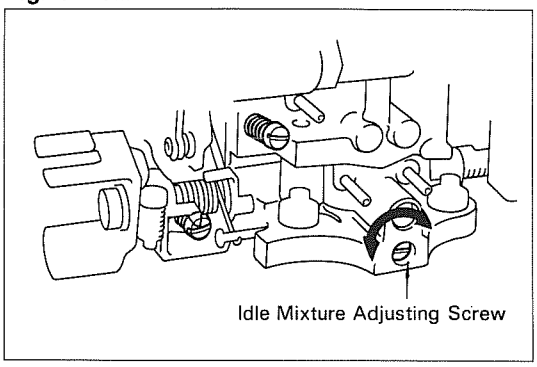


Fig. 6-153

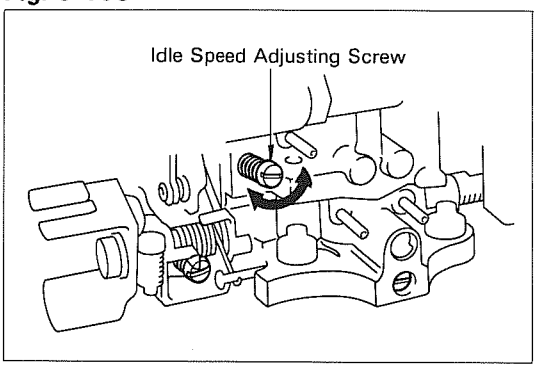


Fig. 6-154

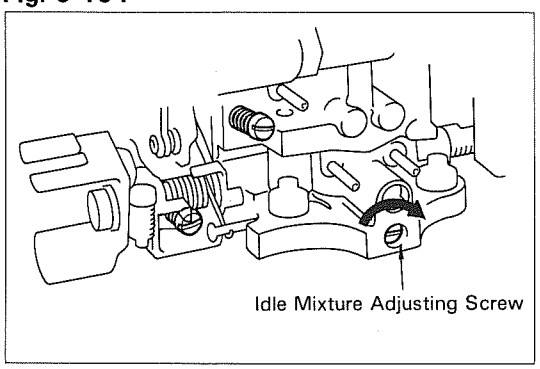
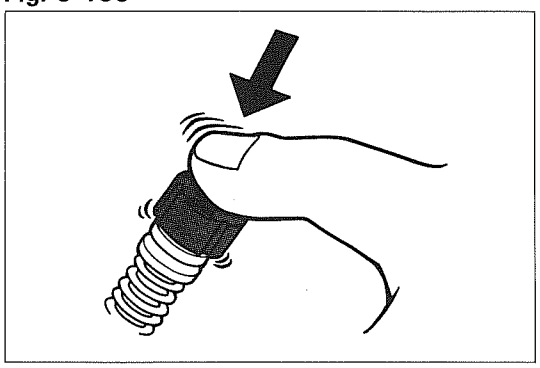


Fig. 6-155



3. Start the engine and set to the maximum speed by turning the idle mixture adjusting screw.

4. Set to the idle mixture speed by turning the idle speed adjusting screw.

Idle mixture speed:

All M/T	**740 rpm**
USA RA, RT, RN w/ A/T (Ex. Fed. RN w/ 4-speed A/T)	**790 rpm**
Fed. RN w/ 4-speed A/T	**740 rpm**
Canada RA, RT w/ A/T	**890 rpm**
Canada RN w/ A/T	**790 rpm**

– Note –

Before moving to the next step, continue the adjustments 3 and 4 until the maximum speed will not rise any further no matter how much the IDLE MIXTURE ADJUSTING SCREW is adjusted.

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

Idle speed:

All M/T	**700 rpm**
USA RA, RT, RN w/ A/T (Ex. Fed. RN w/ 4-speed A/T)	**750 rpm**
Fed. RN w/ 4-speed A/T	**700 rpm**
Canada RA, RT w/ A/T	**850 rpm**
Canada RN w/ A/T	**750 rpm**

– Note –

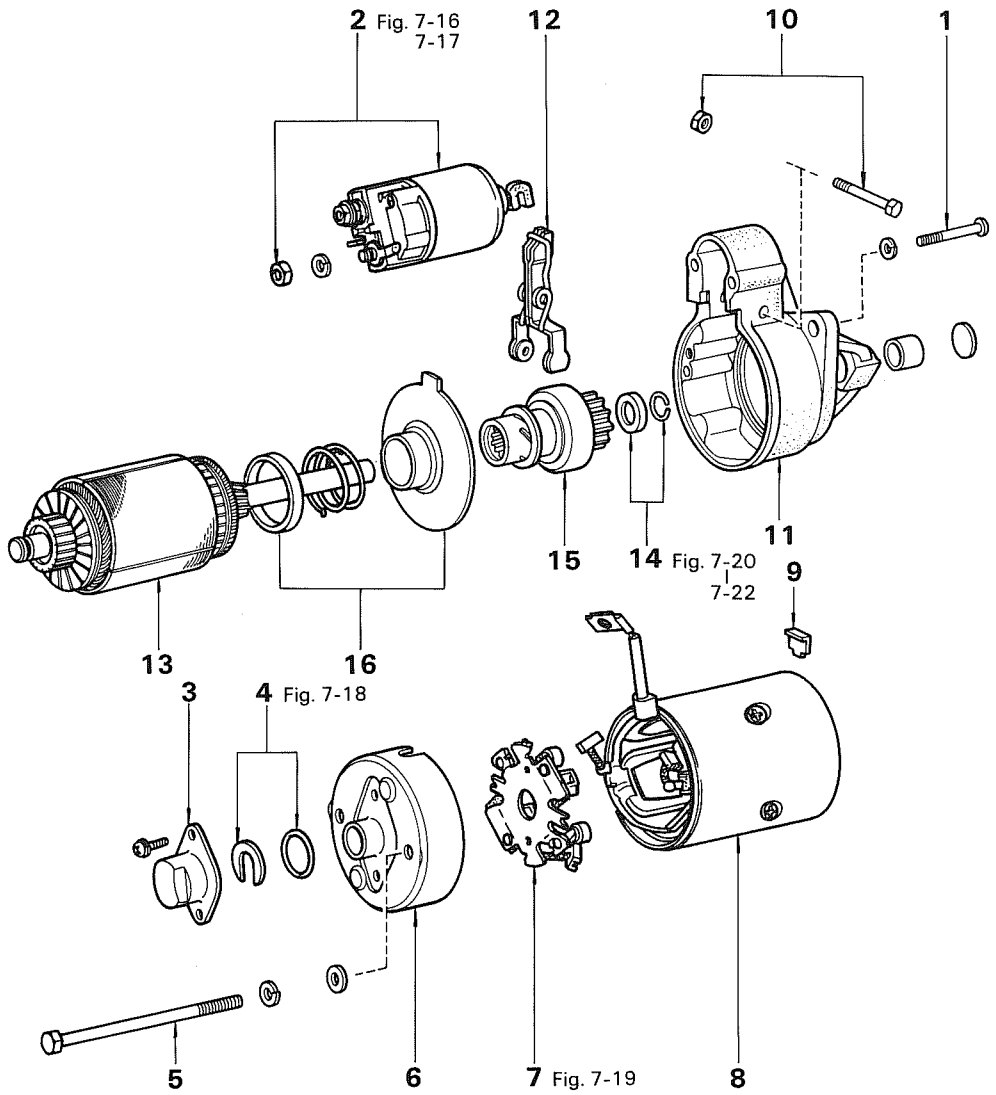
This is the "Lean Drop Method" for setting idle speed and mixture.

6. Install a new limiter cap on the idle speed adjusting screw if one was installed.

2. Disassemble the parts in the numerical order shown in the figure.

Fig. 7-15

[1.0 kw Type]



1. Magnetic Switch Set Bolt
2. Magnetic Switch Assembly
3. Bearing Cover
4. Lock Plate, O Ring & Rubber
5. Bolt
6. Commutator End Frame
7. Brush Holder
8. Yoke
9. Seal
10. Bolt
11. Drive Housing
12. Drive Lever
13. Armature
14. Snap Ring & Stop Collar
15. Clutch with Pinion Gear
16. Spring, Spring Holder & Center Bearing

Fig. 7-58

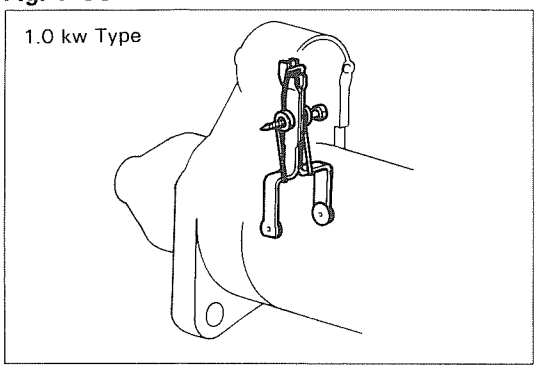
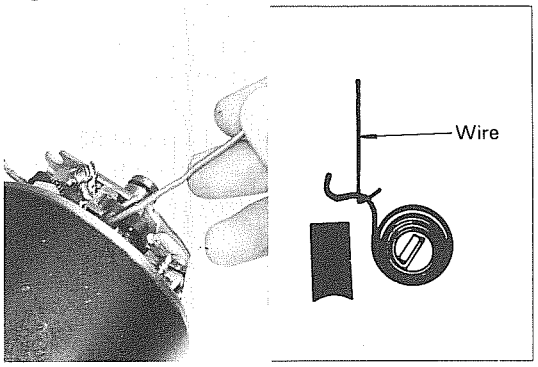
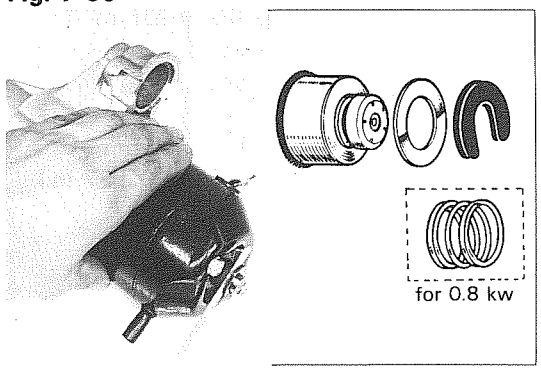


Fig. 7-59



Assemble the brushes with a bent wire, being careful not to damage them.

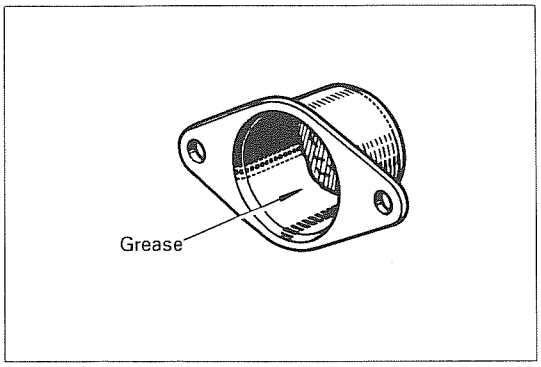
Fig. 7-60



Install the lock plate and measure the armature shaft thrust clearance. If clearance exceeds the specified value, correct by increasing the number of shims.

Thrust clearance:
STD 0.05 – 1.00 mm
(0.0020 – 0.0394 in.)
Limit 1.00 mm
(0.0394 in.)
Adjusting shim thickness:
0.5 mm
(0.020 in.)

Fig. 7-61



Install the bearing cover.

– Note –
Refill the cover about 1/4 full with grease.

IGNITION SYSTEM CIRCUIT

Fig. 8-1

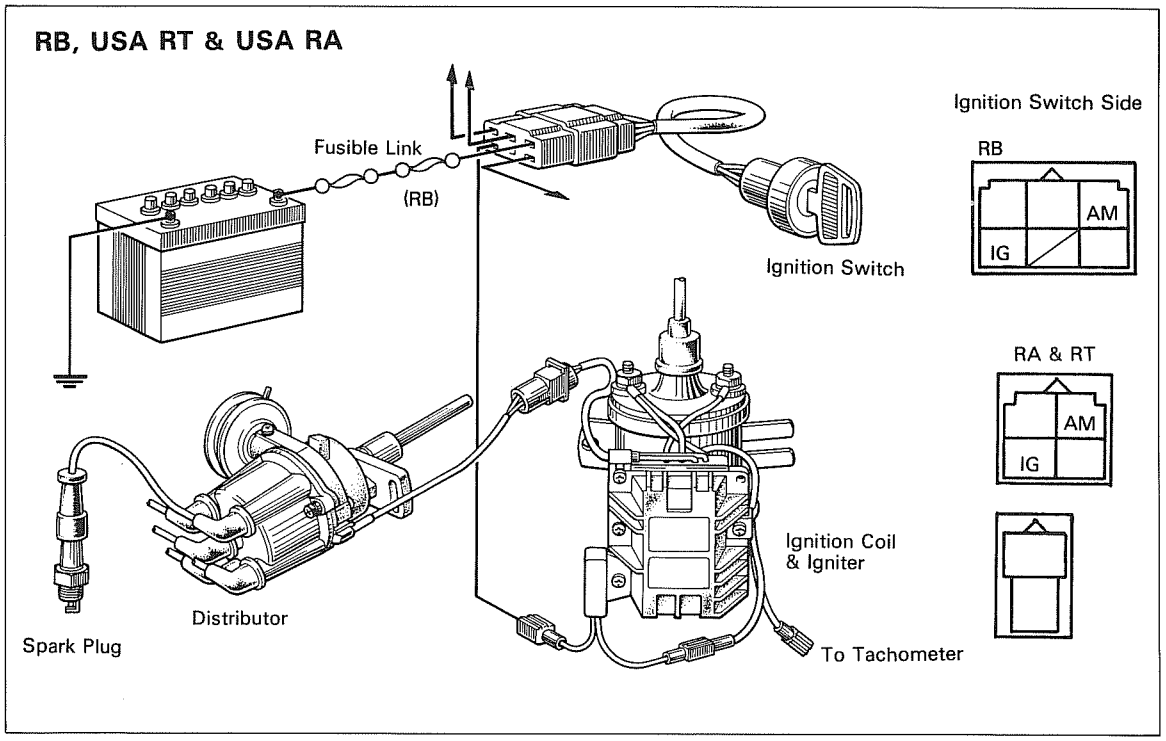


Fig. 8-2

