

## SECTION INDEX

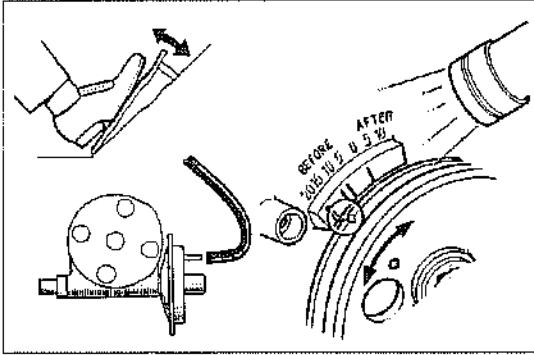
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## ABBREVIATIONS USED IN TOYOTA REPAIR MANUALS

For convenience, the following abbreviations are used in Toyota repair manuals.

Abbreviation	Term	Abbreviation	Term
A/T	Automatic Transmission	RH	Right-hand
BDC	Bottom Dead Center	RHD	Right-hand Drive
BTDC	Before Top Dead Center	SST	Special Service Tool
EX	Exhaust	STD	Standard
IN	Intake	T	Tightening Torque
LH	Left-hand	TDC	Top Dead Center
LHD	Left-hand Drive	U/S	Undersize
MP	Multipurpose	W/	With
M/T	Manual Transmission	W/O	Without
OPT	Option	TVSV	Thermostatic Vacuum Switching Valve
O/S	Oversize	HAC	High Altitude Compensation
BVSV	Bi-metal Vacuum Switching Valve		

Fig. 2-39

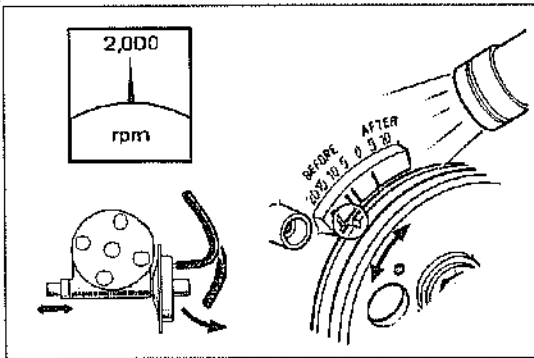


## DISTRIBUTOR

### GOVERNOR ADVANCER OPERATIONAL INSPECTION

Start the engine and disconnect the vacuum hose from the distributor. The timing mark should vary in accordance with the engine rpm.

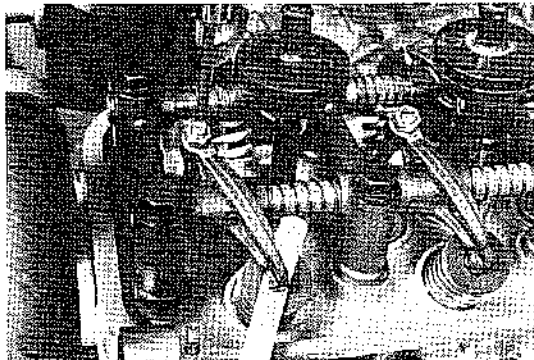
Fig. 2-40



### VACUUM ADVANCE OPERATIONAL INSPECTION

With the engine running at about 2,000 rpm, disconnect and connect the vacuum hose and insure that the timing mark moves.

Fig. 2-41



## VALVE CLEARANCE

With the engine hot, run at idle rpm. Valve clearance is measured between valve stem and rocker arm.

Valve clearance:	IN	0.20 mm (0.008 in.)
	EX	0.33 mm (0.013 in.)

- (2) Calculate thickness of new pad so valve clearance comes within specified valve.

T ..... Thickness of pad used

A ..... Valve clearance measured

**Intake side**

**New pad thickness**

$$= T + (A - 0.29 \text{ mm})$$

(0.011 in.)

**Exhaust side**

**New pad thickness**

$$= T + (A - 0.34 \text{ mm})$$

(0.013 in.)

- (3) Select a pad with a thickness as close as possible to the valve calculated. Pads are available in 41 sizes, in increments of 0.05 mm (0.002 in.), from 1.00 mm (0.039 in.) to 3.00 mm (0.118 in.).

Fig. 3-53

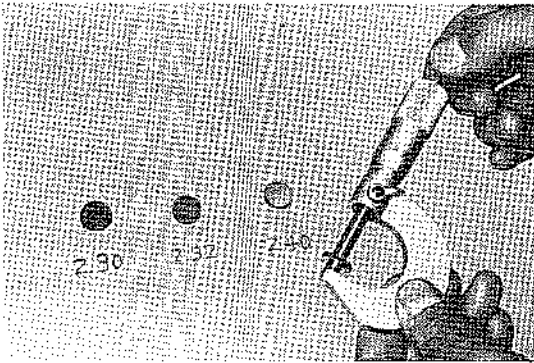
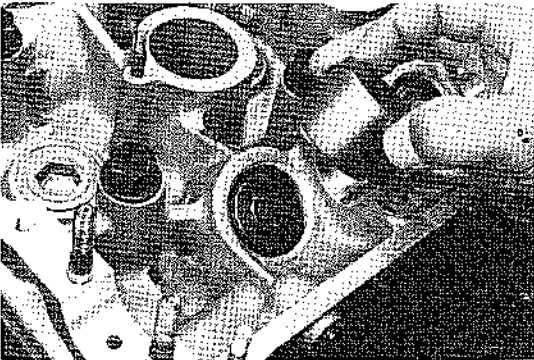
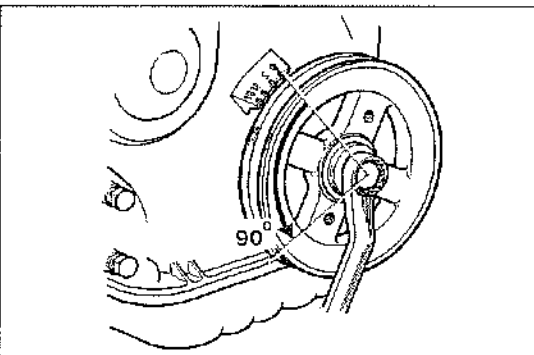


Fig. 3-54



8. Install the pad and valve lifter.

Fig. 3-55



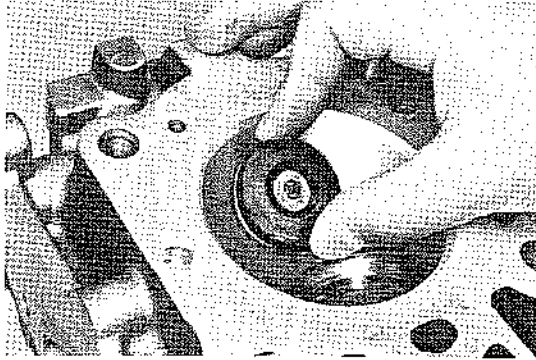
9. Install the camshaft.

- (1) Rotate the crankshaft about 90° the reverse direction.

– Caution –

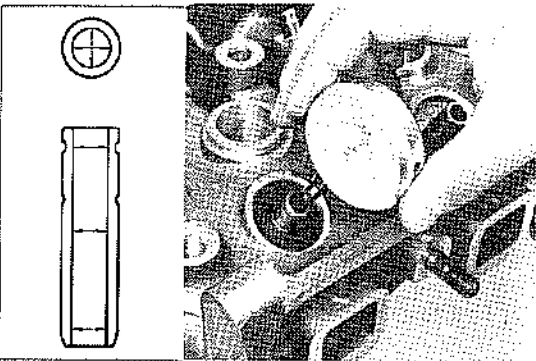
**Lower piston to prevent interference of piston head and valve.**

Fig. 4-17



2. Check the valve stem to valve guide clearance of each valve by inserting the valve stem into the guide and moving back and forth as shown in the figure.

Fig. 4-18



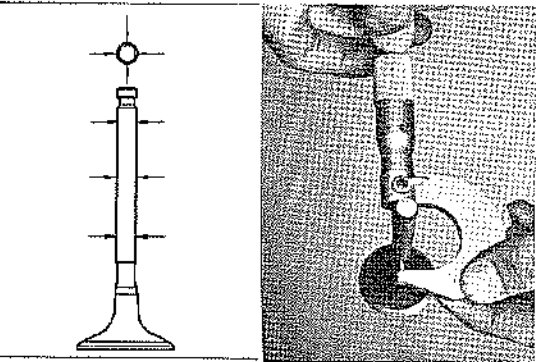
3. Measure the valve stem oil clearance.
  - (1) Measure the inside diameter of the valve guide at several places with an inside dial gauge.
  - (2) Measure the valve stem diameter.
  - (3) Calculate the clearance between the valve stem and valve guide by subtracting the difference where the clearance is the largest.

**Stem oil clearance:**

Limit	IN	0.08 mm (0.003 in.)
	EX	0.10 mm (0.004 in.)

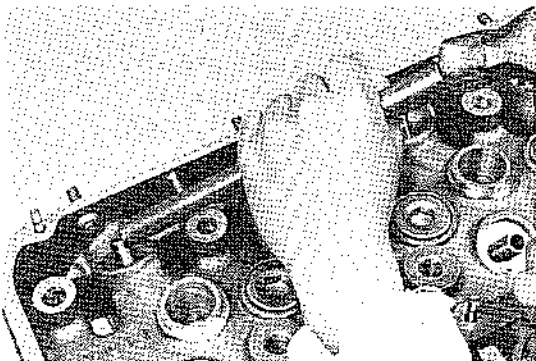
If the clearance exceeds the limit, replace both valve and guide.

Fig. 4-19



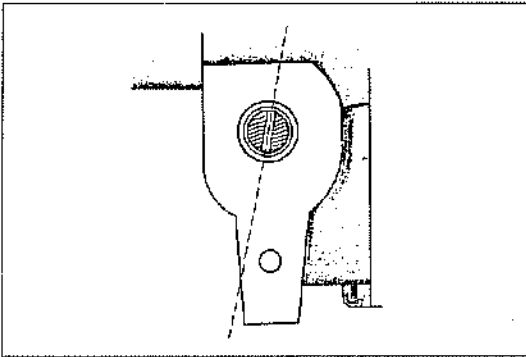
—Note —  
Measure at several places and use the maximum wear for calculation.

Fig. 4-20



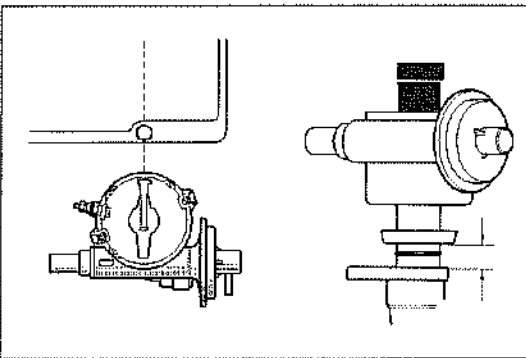
4. Replace the valve guide.
  - (1) Bend the bushing.

Fig. 4-109



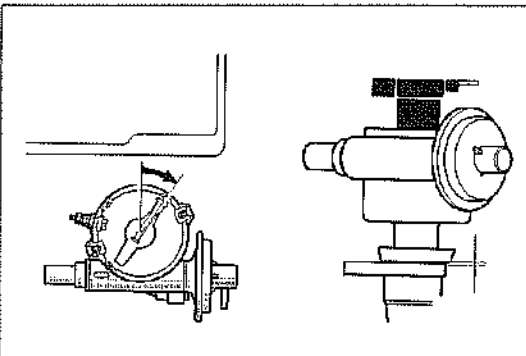
2. Set the oil pump shaft slot in the direction shown in the figure.

Fig. 4-110



3. Before inserting the distributor, position the rotor and diaphragm as shown in the figure.

Fig. 4-111



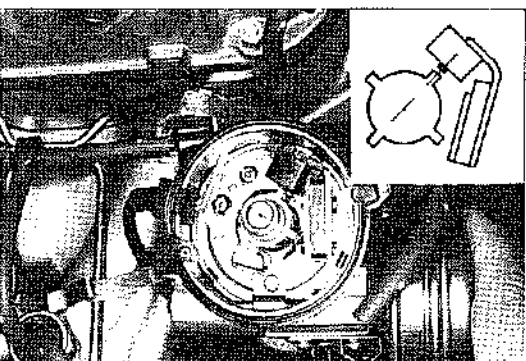
4. When fully installed, rotor should point in the direction shown in the figure.



— Note —

Turn the distributor housing and adjust to the position just before the points open.

Fig. 4-112

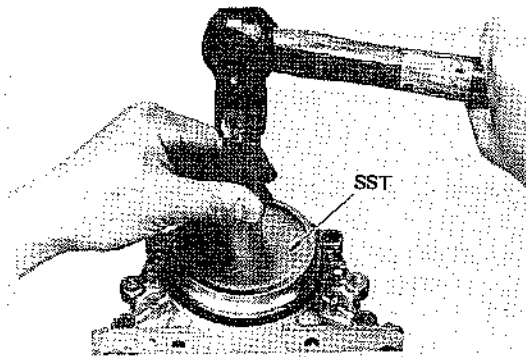


For USA

— Note —

Turn the distributor housing so that the signal rotor will just begin to cut the lines of flux and tighten the set bolt.

Fig. 4-159

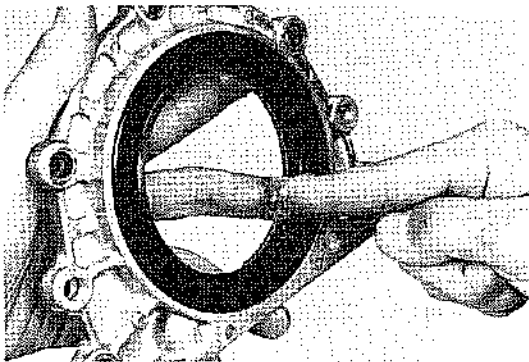


3. Install a new oil seal with SST.  
SST[09250-10011]

– Note –

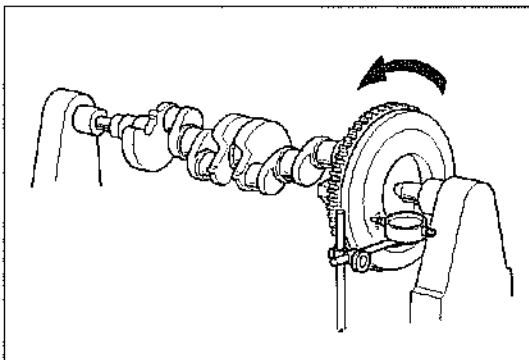
Be careful not to install the oil seal slantwise.

Fig. 4-160



4. After driving in the seal, lightly coat the seal lip with MP grease.

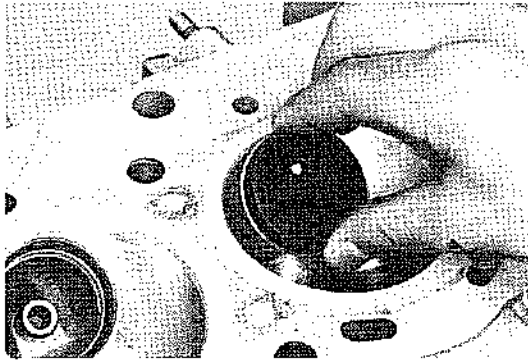
Fig. 4-161



### Flywheel

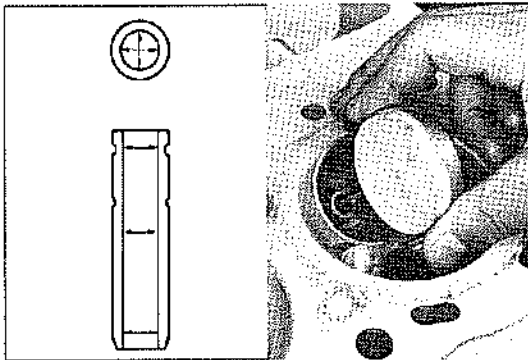
1. Inspect the surface contacting the clutch disc.
2. Measure the runout of the surface contacting the clutch disc.  
**Runout limit: 0.1 mm (0.004 in.)**
3. Inspect the ring gear.

Fig 5-27



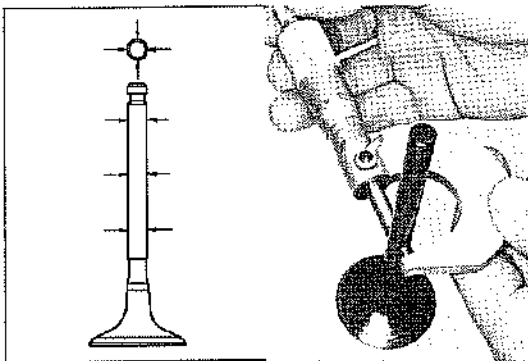
2. Check the valve stem to valve guide clearance of each valve by inserting the valve stem into the guide and moving back and forth as shown in the figure.

Fig. 5-28



3. Measure the valve stem oil clearance.
  - (1) Measure the inside diameter of the valve guide at several places with an inside dial gauge.

Fig. 5-29



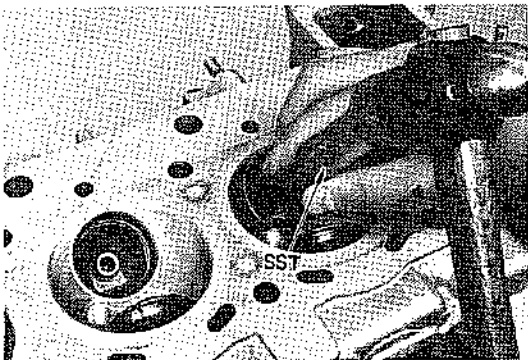
- (2) Measure the valve stem diameter.
- (3) Calculate the clearance between the valve stem and valve guide by subtracting the difference where the clearance is the largest.

**Stem oil clearance:**

Limit	IN	0.08 mm (0.003 in.)
	EX	0.10 mm (0.004 in.)

If the clearance exceeds the limit, replace both valve and guide.

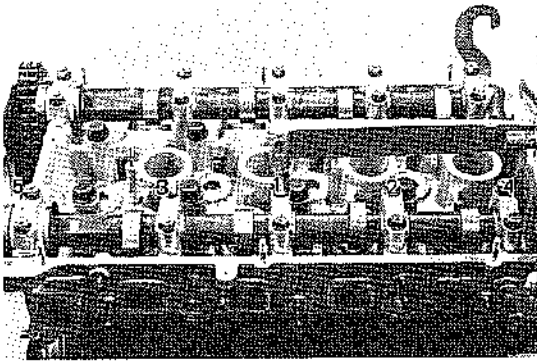
Fig. 5-30



4. Replacing valve guide.
  - (1) Heat the cylinder head to about 80 – 100°C (176 – 212°F).
  - (2) From the top, drive out the guide toward the combustion chamber with SST.  
SST[09201-60011]



Fig. 5-94



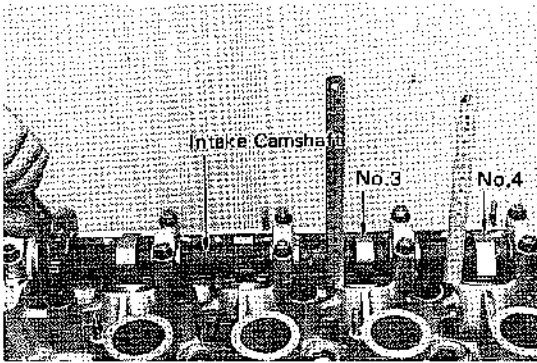
Then install the No.1 bearing cap.  
Tighten the cap nuts to specified torque.

**Tightening torque: 1.6 – 2.2 kg-m**  
**(12 – 15 ft-lb)**

– Note –

if the No.1 bearing cap will not go in, move the camshaft back and forth until the cap goes in smoothly.

Fig. 5-95

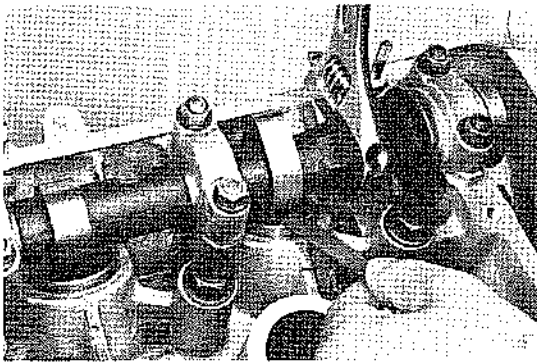


### Recheck The Valve Clearance

Measure the valve clearance.

1. Intake valve lifter No.3 and No.4 should protrude the same amount.

Fig. 5-96



2. Measure the exhaust side valve clearance while turning the camshaft with a tool.

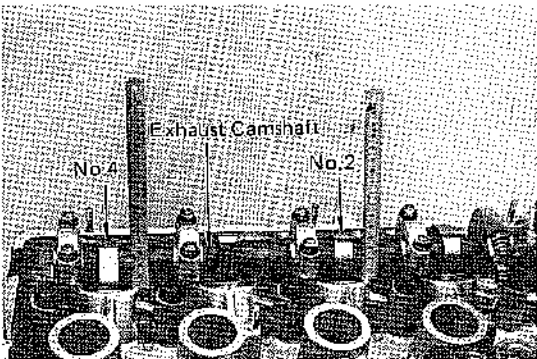
**Exhaust valve clearance:**

**0.29 – 0.39 mm**

**(0.011 – 0.015 in.)**

If outside the specified value, choose another pad.

Fig. 5-97

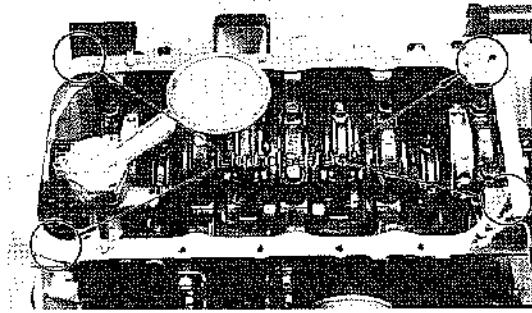


3. Exhaust valve lifter No.2 and No.4 should protrude the same amount.

**Approx: 1.6 mm**

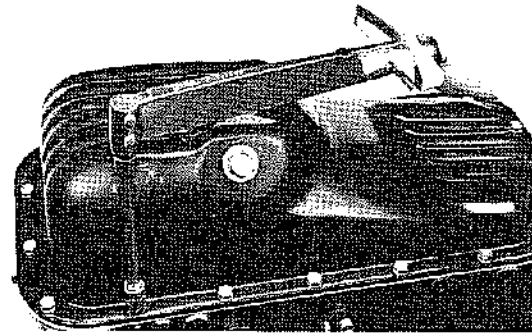
**(0.06 in.)**

Fig. 5-167



Apply sealer to the areas indicated in the figure.

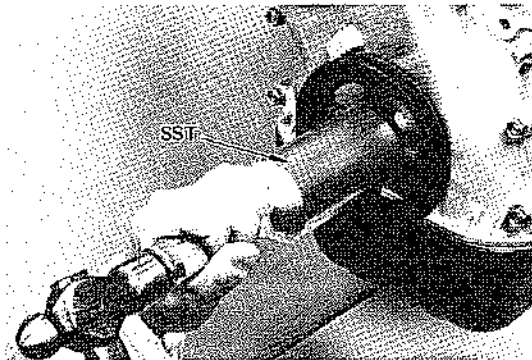
Fig. 5-168



Install the oil pan.

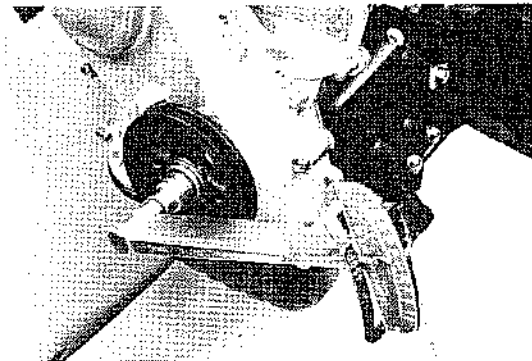
**Tightening torque:** 0.4 – 0.8 kg-m  
(3 – 5 ft-lb)

Fig. 5-169



Drive in the crankshaft pulley with SST.  
SST [09214-60010]

Fig. 5-170



Tighten the claw nut.

**Tightening torque:** 6.0 – 7.0 kg-m  
(44 – 50 ft-lb)

**ASSEMBLY**

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

Fig. 8-4

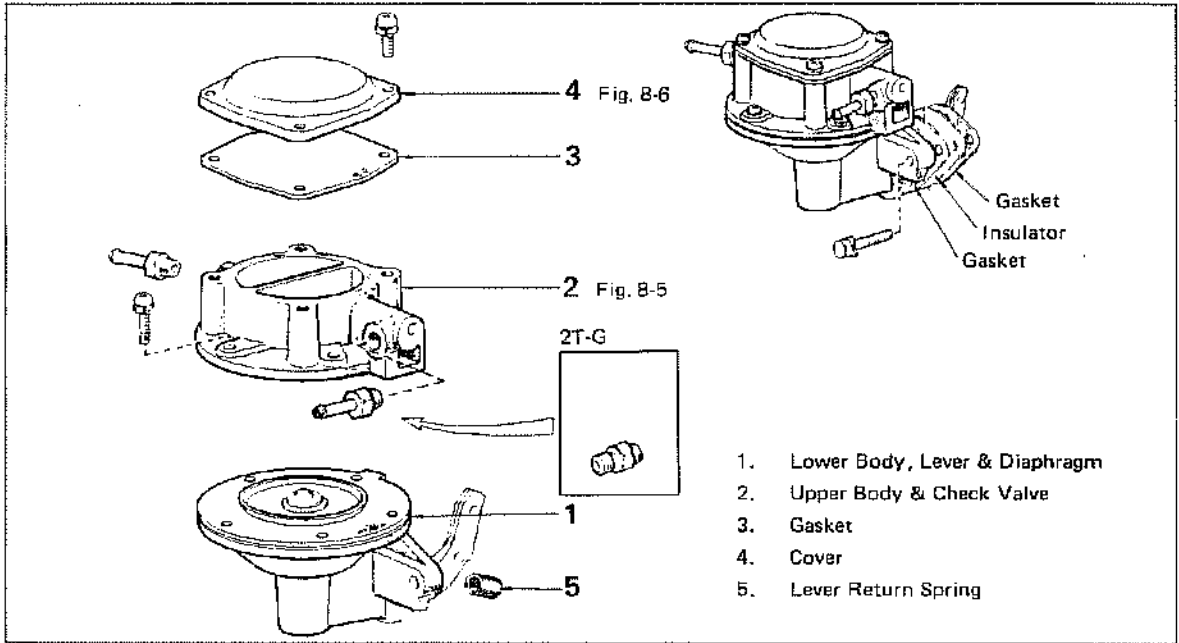
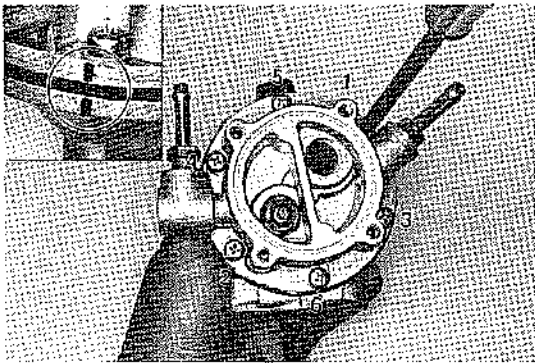
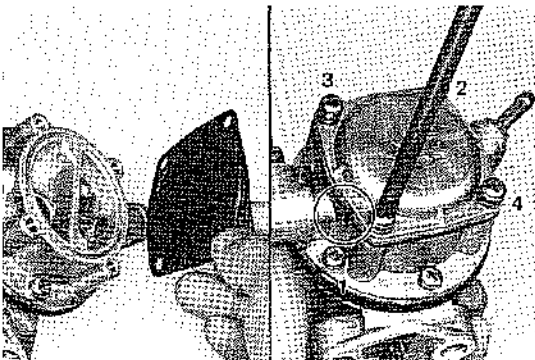


Fig. 8-5



Assemble the lower and upper body in the direction shown in the figure.

Fig. 8-6



Assemble the upper body and cover over the diaphragm. Inlet and outlet chamber separating walls should be aligned.

**Choke System**

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

Fig. 8-61

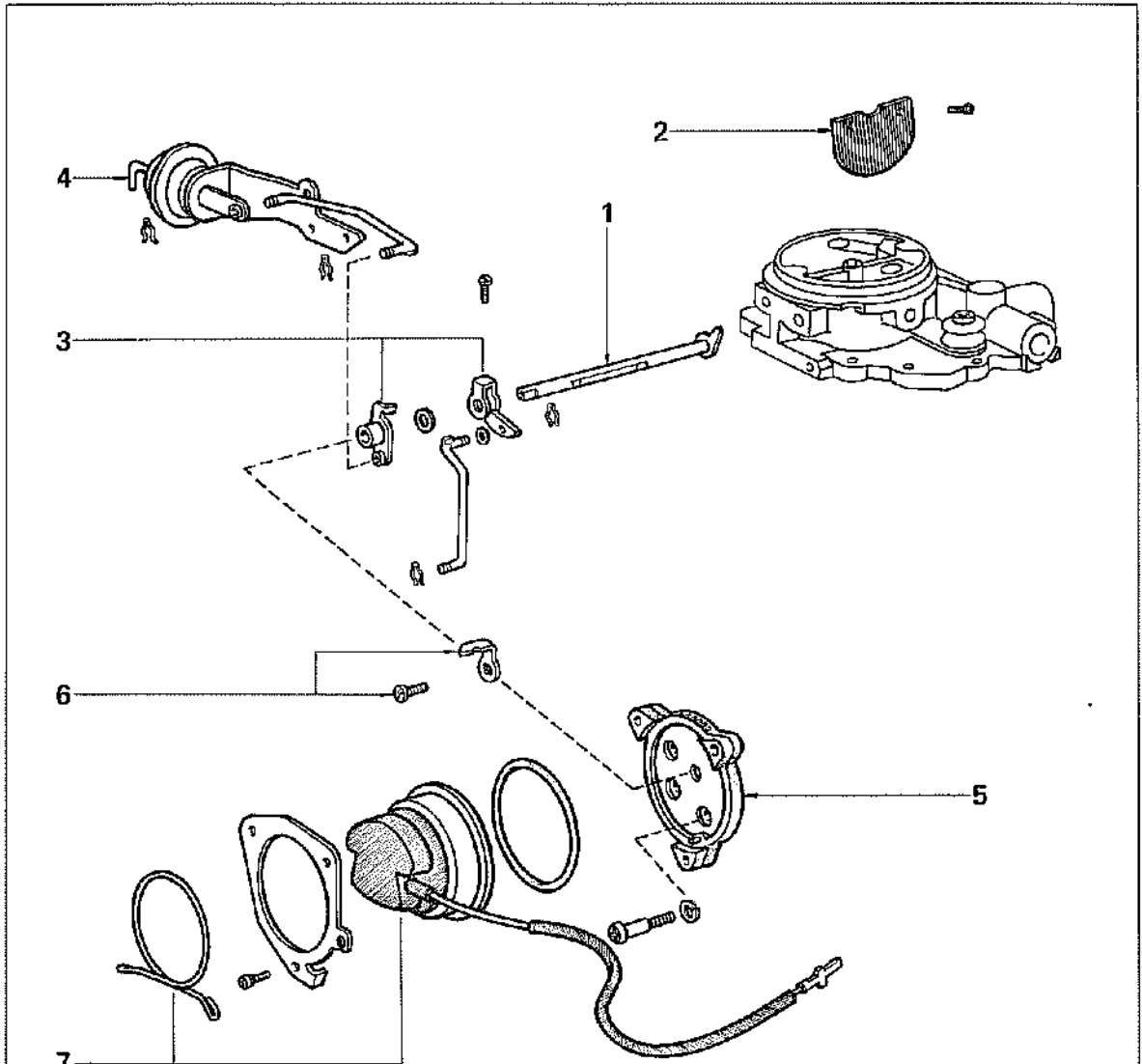
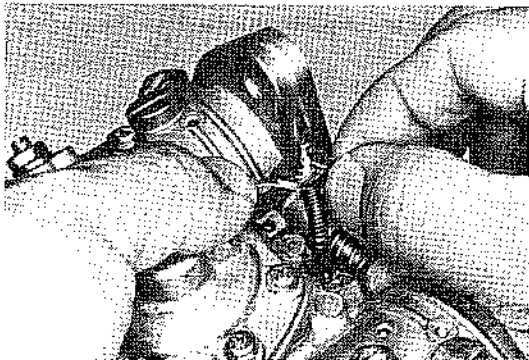


Fig. 8-62  
8-64

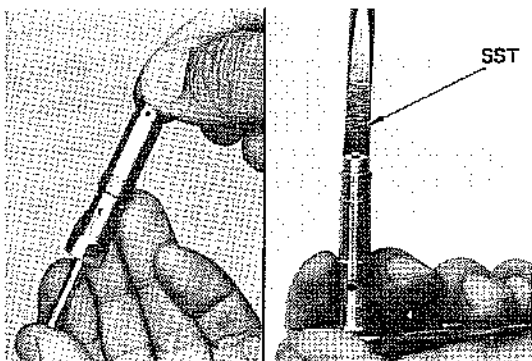
- |                      |                             |
|----------------------|-----------------------------|
| 1. Choke Valve Shaft | 5. Thermostat Case & Gasket |
| 2. Choke Valve       | 6. Choke Lever              |
| 3. Relief Lever      | 7. Coil Housing             |
| 4. Choke Breaker     |                             |

Fig. 8-151



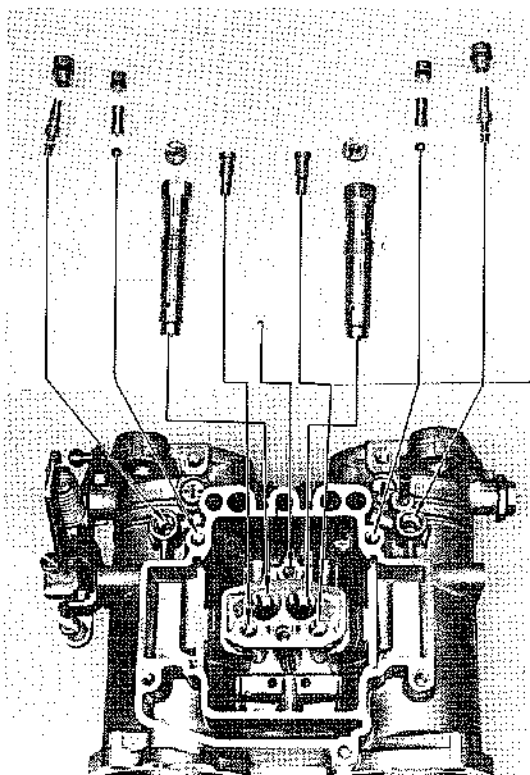
Install the cotter pin in the third hole from the tip of the pump rod.

Fig. 8-152



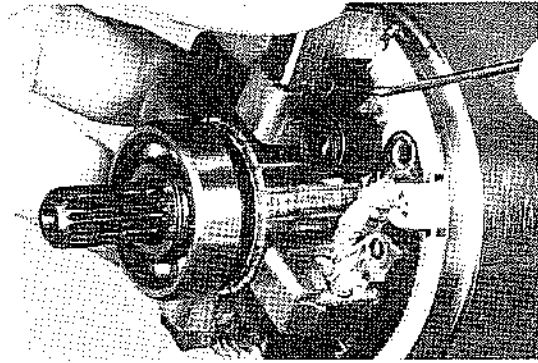
Before installing the main jet holder, assemble the sleeve and main jet into the holder with SST.  
SST[09860-11011]

Fig. 8-153



Install the jets, air bleeds, valves and plugs as shown in the figure.

Fig. 9-81

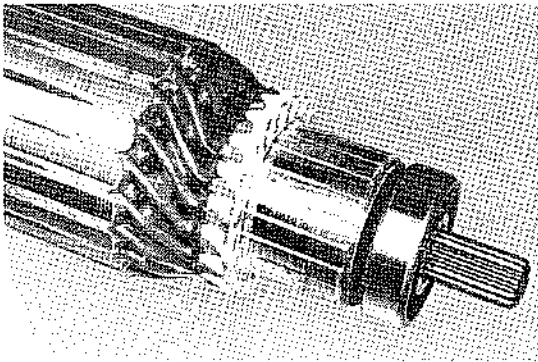


Lift up the brush spring and pull out the brush from the brush holder.

— Caution —

Use care not to damage the brush and commutator. Also avoid getting oil or grease on them.

Fig. 9-82



## INSPECTION & REPAIR

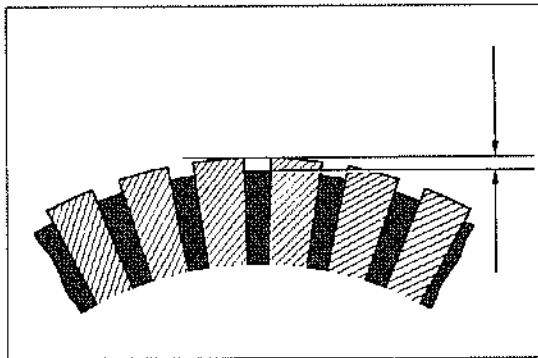
Wipe off dirt and gease from the disassembled parts.

### Commutator

Inspect for the following items and repair or replace as necessary.

1. Dirty or burnt surface:  
Correct with sandpaper or a lathe if necessary.

Fig. 9-83



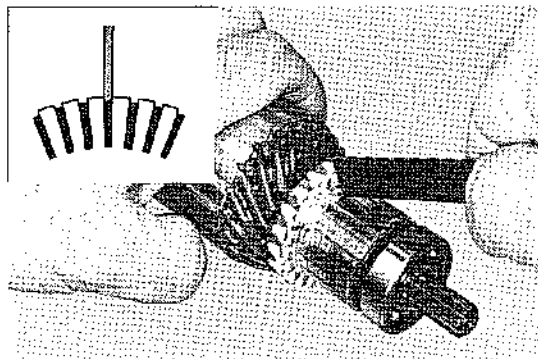
2. Depth of segment (Mica depth):

#### Mica depth:

STD 0.45 – 0.75 mm  
(0.018 – 0.030 in.)

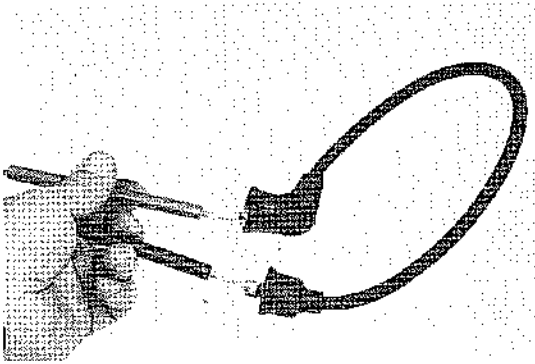
Limit 0.2 mm  
(0.01 in.)

Fig. 9-84



3. If the mica depth is below the limit, correct with a hacksaw blade.

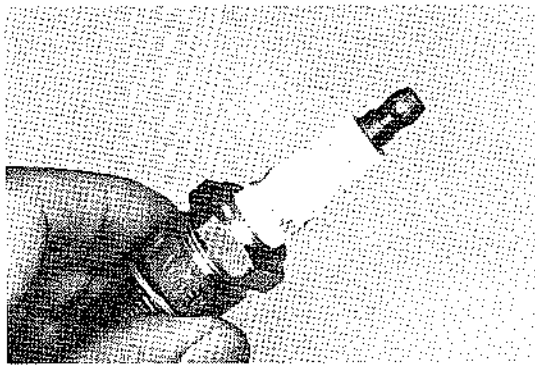
Fig. 10-77



2. Check the resistance of each cord between both ends. If the reading exceeds the limit, replace the cord.

**Resistance: Less than 25 k $\Omega$**

Fig. 10-78



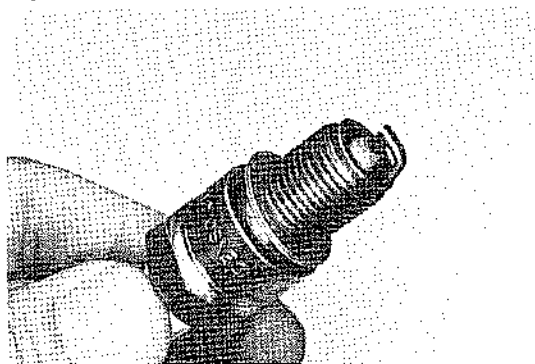
## SPARK PLUG

### INSPECTION

Inspect for the following items. Clean or replace the plugs if necessary.

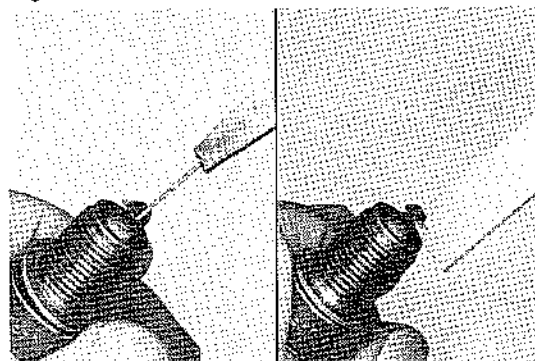
1. Cracks or damages in the threads or insulator.
2. Damaged or deteriorated gaskets.

Fig. 10-79



3. Wear on the electrodes.
4. Burnt condition of electrode and the amount of carbon deposit.

Fig. 10-80



### GAP ADJUSTMENT

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

**Spark plug gap:**

**0.7 – 0.8 mm**

**(0.028 – 0.031 in.)**