

# 6. FUEL SYSTEM

BF8•BF9.9•BF10

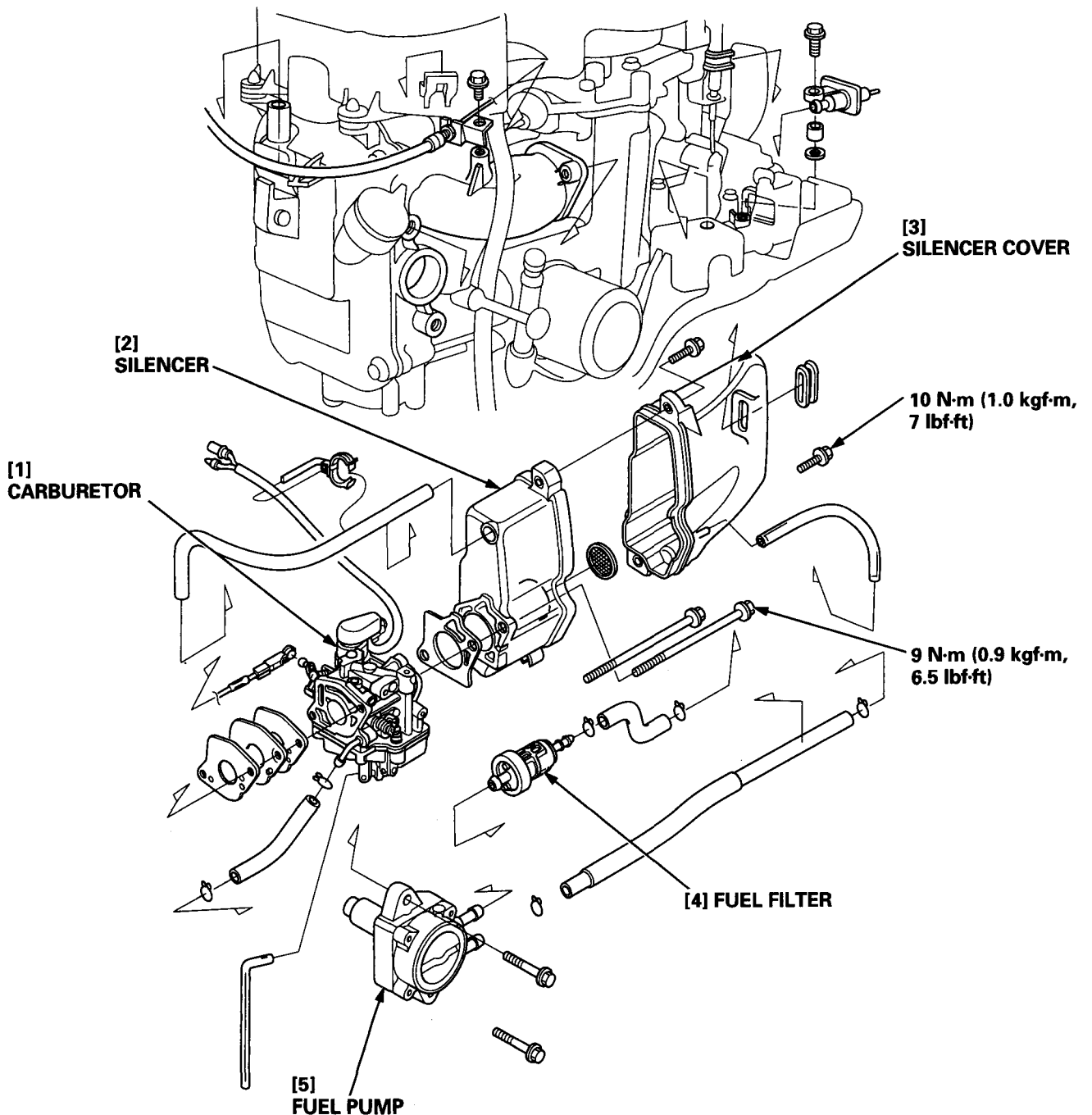
- 1. CARBURETOR
- 2. CHOKE CABLE

- 3. FUEL PUMP/FUEL FILTER
- 4. FUEL TANK

**▲ WARNING**

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



# 1. CARBURETOR

## a. REMOVAL

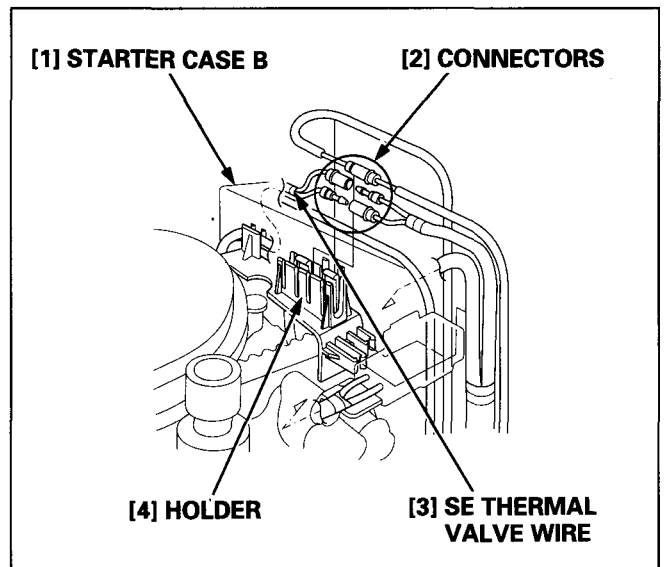
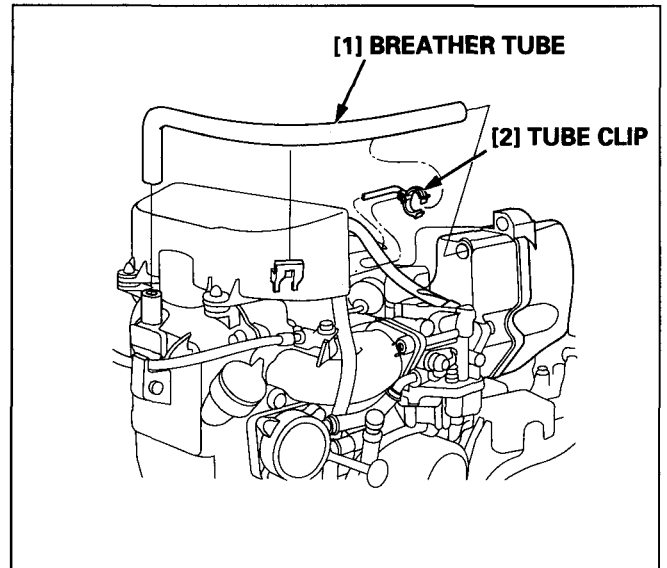
Before removal, drain the gasoline into a suitable container from the carburetor by loosening the drain screw.

**▲ WARNING**

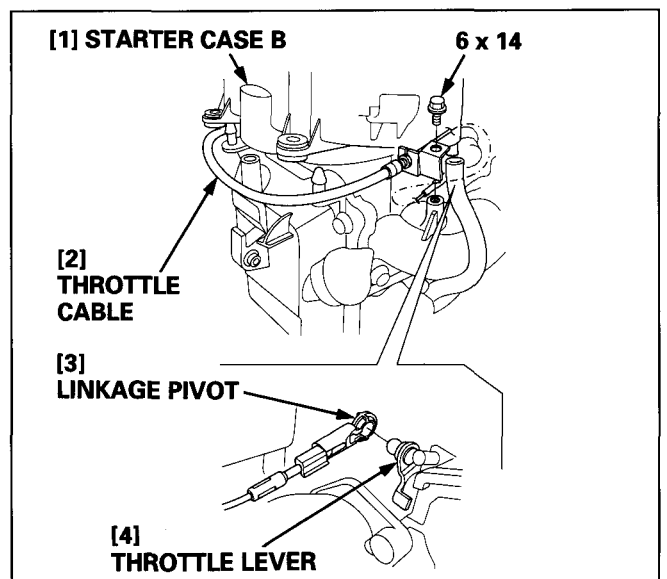
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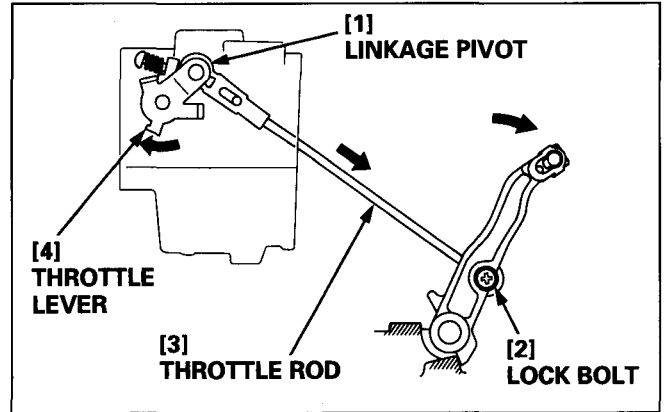
- 1) Remove the engine cover and right engine under cover (P. 5-3).
- 2) Open the tube clip (Electric starter type) and disconnect the crankcase breather tube from the silencer.
  - Check the breather tube for deterioration, cracks or other damage. Clean or replace if necessary.
- 3) Disconnect the starting enrichment (SE) thermal valve wire connectors and remove the wire from the holders on the starter case B (Electrical starter type).



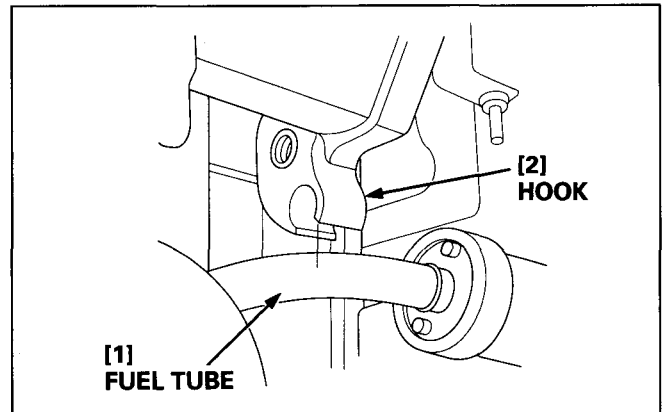
- 4) Disconnect the drain tube from the starter case B.
- 5) Remove the 6 x 14 mm flange bolt and remove the throttle cable holder, and then disconnect the throttle cable linkage pivot from the throttle lever (Tiller handle type).



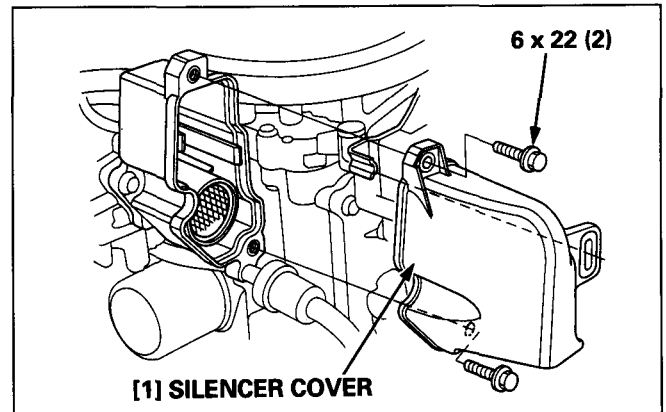
- 6) Loosen the throttle rod lock bolt and disconnect the linkage pivot from the carburetor throttle lever (Remote control type).



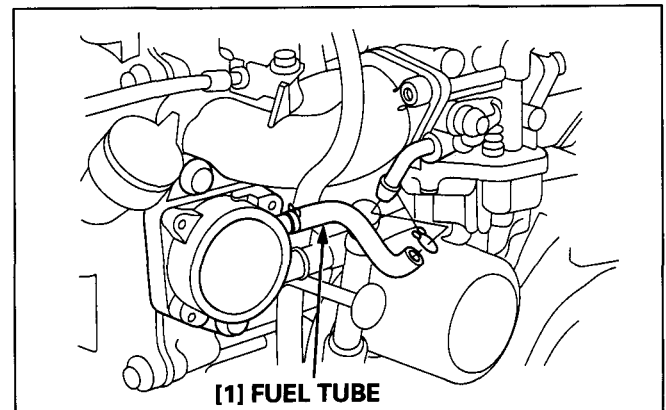
- 7) Remove the fuel tube from the hook of the silencer cover.



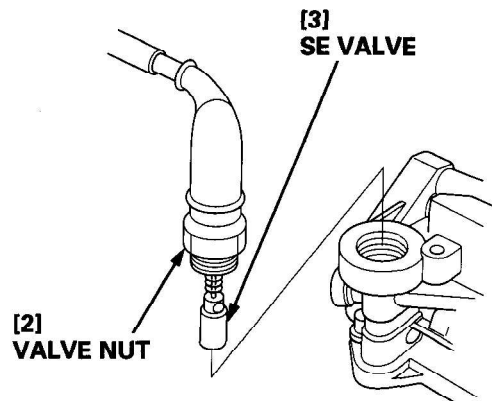
- 8) Remove the two 6 x 22 mm flange bolts and silencer cover.



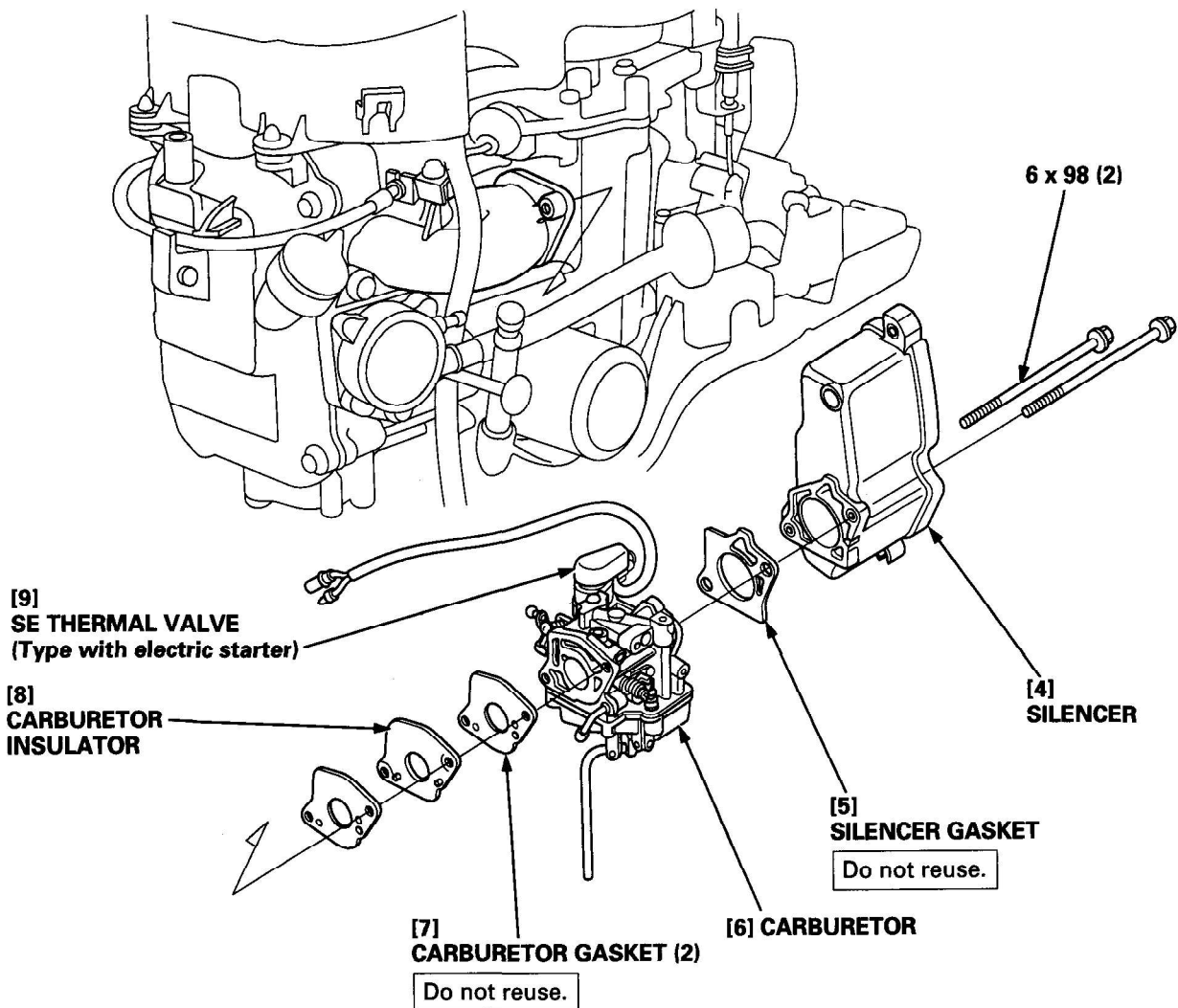
- 9) Disconnect the fuel tube between the fuel pump and carburetor from the carburetor.



- 10) Remove the two 6 x 98 mm flange bolts, silencer, carburetor, gasket and carburetor insulators.
- Replace the carburetor gasket and insulator gaskets with new ones when disassembly. Do not reuse.
- 11) Loosen the valve nut and remove the SE valve (Type without electric starter).



[1] Type without electric starter



**b. DISASSEMBLY**

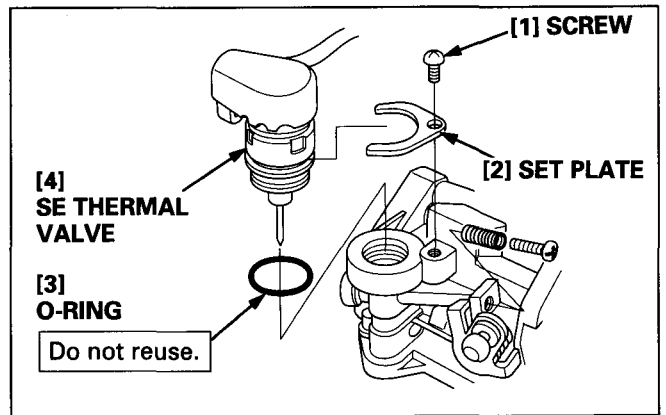
- Before disassembly, completely drain the carburetor by loosening the drain screw. Clean the outside of the carburetor before disassembly.

**▲ WARNING**

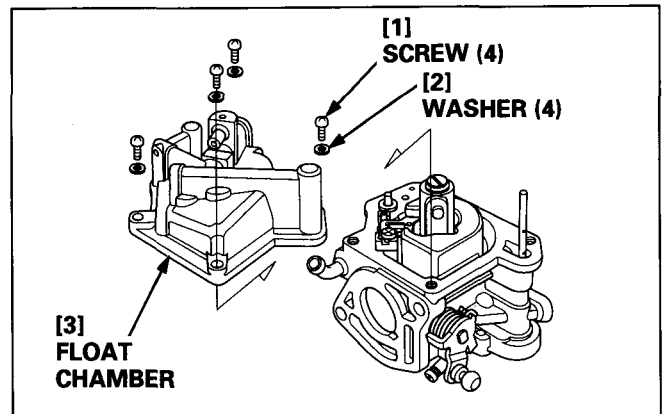
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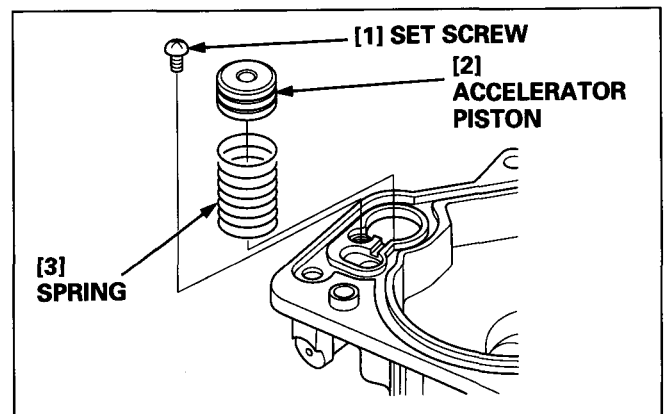
- 1) Remove the screw and set plate, then remove the auto SE thermal valve and O-ring (Electrical starter type).
- 2) Remove the drain tube from the float chamber.



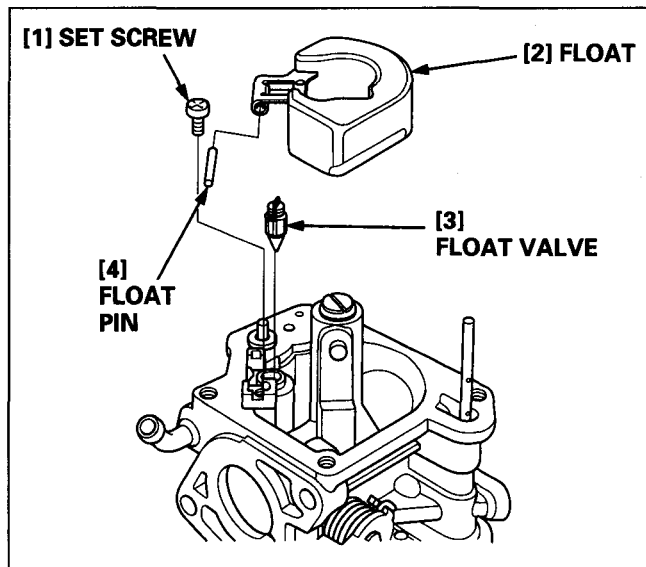
- 3) Remove the four washers and screws and remove the float chamber and O-ring.



- 4) Remove the set screw and remove the accelerator piston and spring.

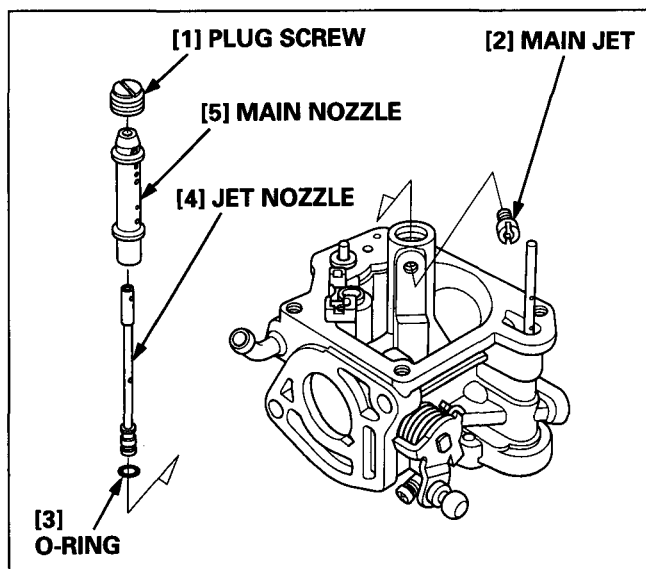


5) Remove the set screw, then pull out the float pin and remove the float and float valve.



6) Remove the main jet with care not to damage the main jet.

7) Remove the plug screw, main nozzle and jet nozzle taking care not to damage them.



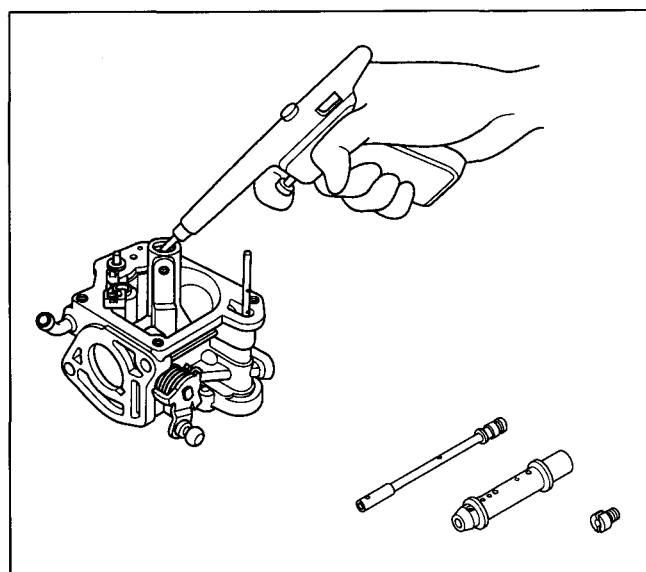
**c. CLEANING**

**CAUTION:**

- Some commercially available chemical cleaners are caustic. These cleaners may damage plastic parts such as O-rings, float and float valve. Check the container for instructions. If you are in doubt, do not use these products to clean carburetor.
- High air pressure may damage the carburetor. Use low pressure setting when cleaning the passages and parts.

1) Clean the carburetor body, removed parts and float chamber with cleaning solvent.

2) Use low air pressure and blow off the removed jets, nozzles and passages of the carburetor body and float chamber.



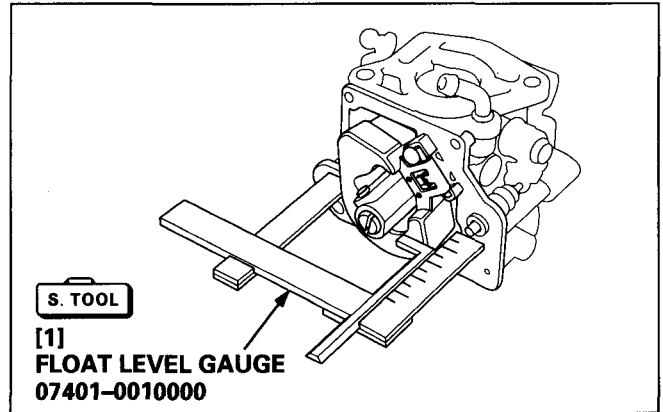
**d. INSPECTION**

**• Float Level Height**

Place the carburetor in the position shown and measure the distance between the float top and carburetor body when the float just contacts the seat without compressing the valve spring.

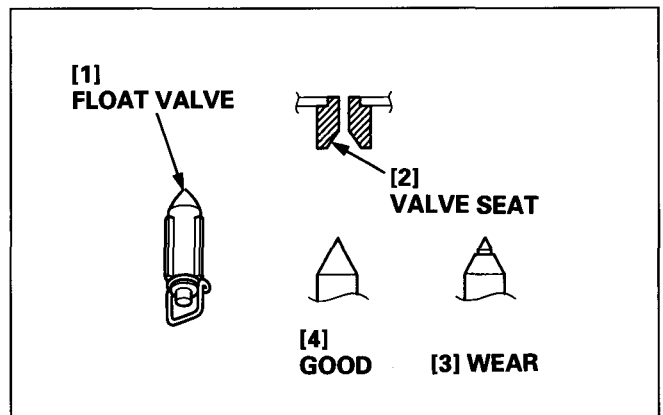
Standard float height	13.5 mm (0.53 in)
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If the height is out of specification, adjust the float height by bending the float mounting tab carefully.



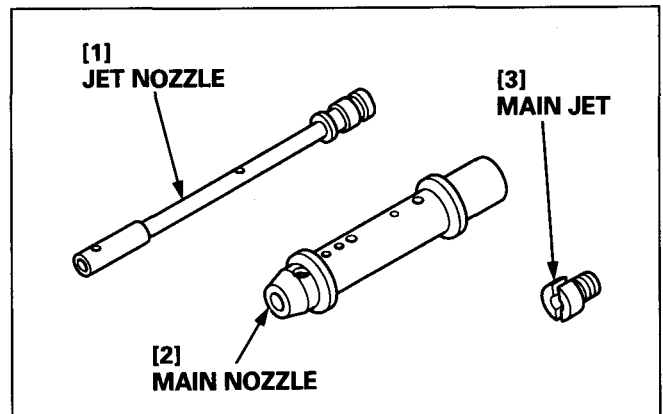
**• Float/Float Valve/Float Valve Seat**

- 1) Check the float for crack or damage. Replace if necessary.
- 2) Check the float valve for wear or damage, replace if necessary.



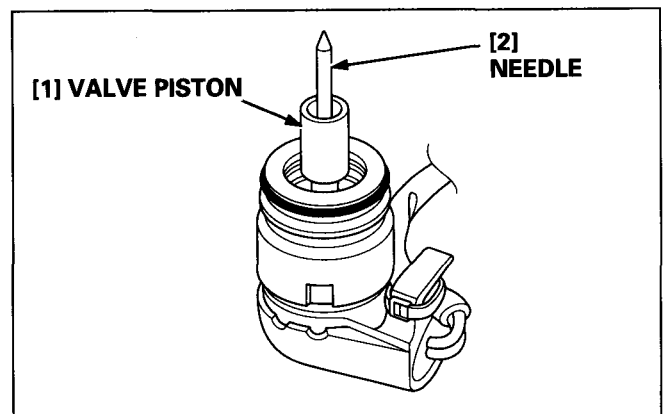
**• Nozzles/Jets**

Check the main jet, main nozzle and jet nozzle for clog or damage. Replace if necessary.



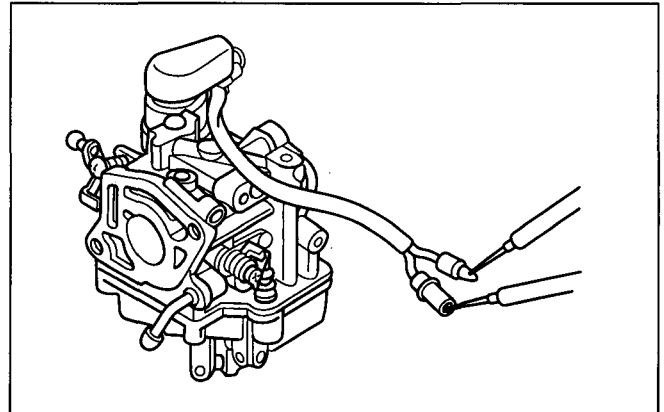
**• SE Thermal Valve**

- 1) Check the valve piston and needle for wear or scratch, replace as assembly, if necessary.

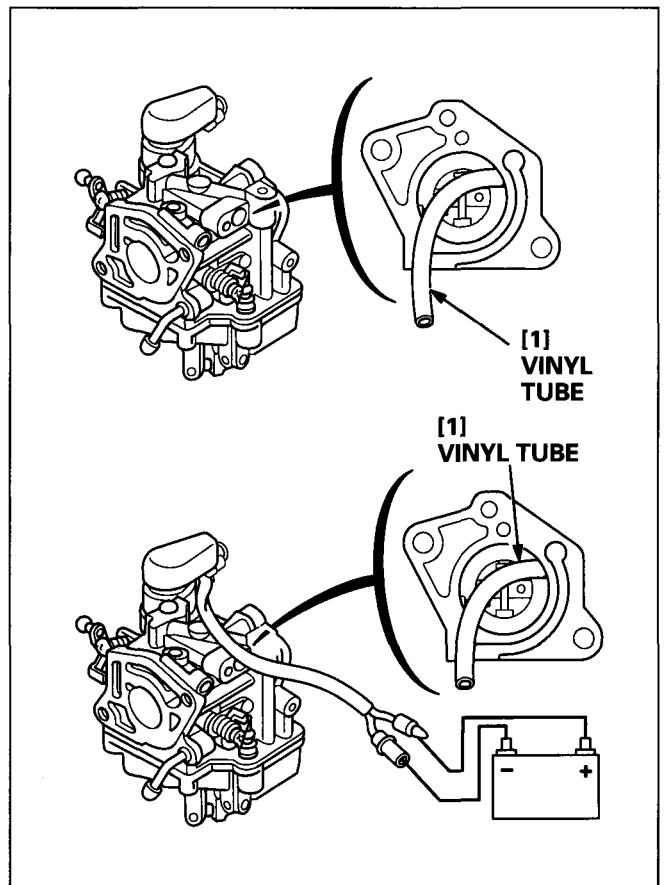


- 2) Measure the resistance between the terminals
- This test can be made with the carburetor installed on the motor.

Resistance	15.8 – 24.2 Ω
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- 3) Install a vinyl tube as shown.
- 4) At room temperature, make sure that breath passes through passage.
- 5) Connect the 12V battery positive terminal to the Brown/white terminal and negative to Black/green terminal for about five minutes. Then check that breath does not pass through.



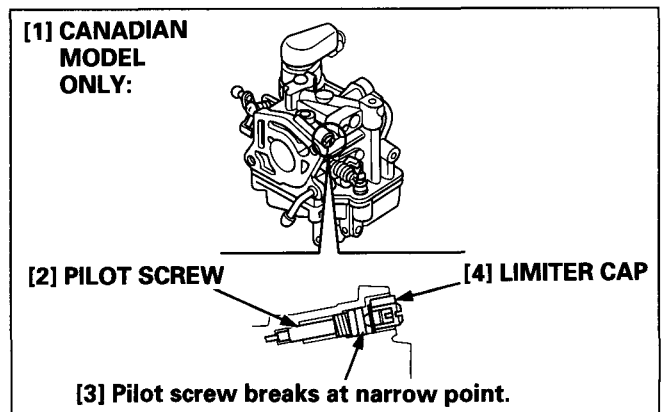
**e. PILOT SCREW REPLACEMENT**

**Canadian models only:**

Leave the pilot screw and limiter cap in place during carburetor cleaning. Remove only if necessary for carburetor repair.

Removal of the limiter cap requires breaking the pilot screw. A new pilot screw and limiter cap must be installed.

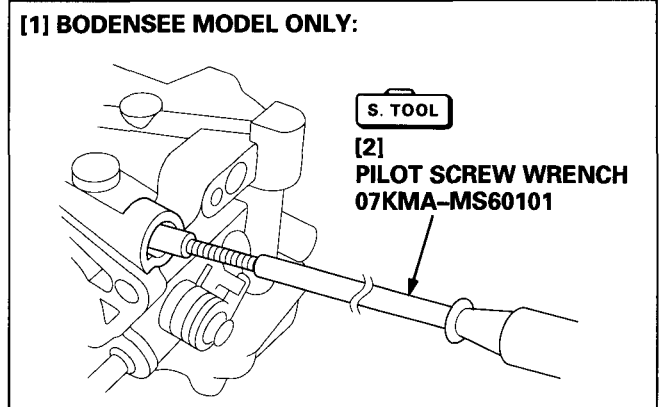
- 1) When the limiter cap has been broken off, remove the broken pilot screw.





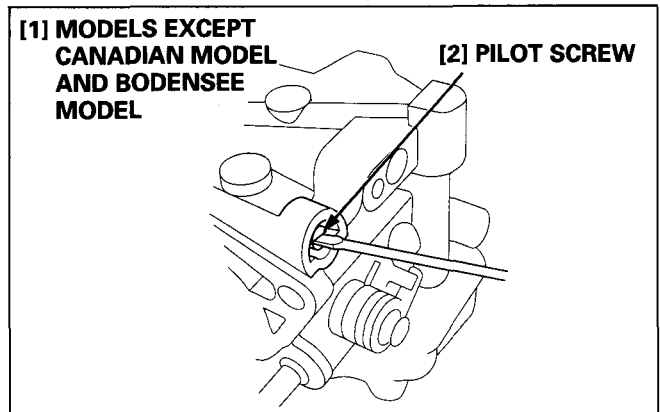
**Bodensee model only:**

- Do not remove the pilot screw except for cleaning.  
 2) Remove the pilot screw using the special tool as shown.



**Models except canadian model and bodensee model:**

- Do not remove the pilot screw except for cleaning.  
 3) Remove the pilot screw.



**All models:**

- 4) Place a new O-ring on the replacement pilot screw, and install it on the carburetor.  
 5) Turn the pilot screw in until it is fully seated, then turn the screw out the required number of turns.

Pilot screw opening	BF8D, BF8B, BFP8D, BFP8B	2 – 1/2 turns out
	BF9.9D, BF10D, BFP9.9D, BFP10D	[*1]: 2 – 3/8 turns out [*2]: 2 – 7/8 turns out
	BF10B, BFP10B	[*1]: 2 – 1/4 turns out [*2]: 2 – 1/2 turns out

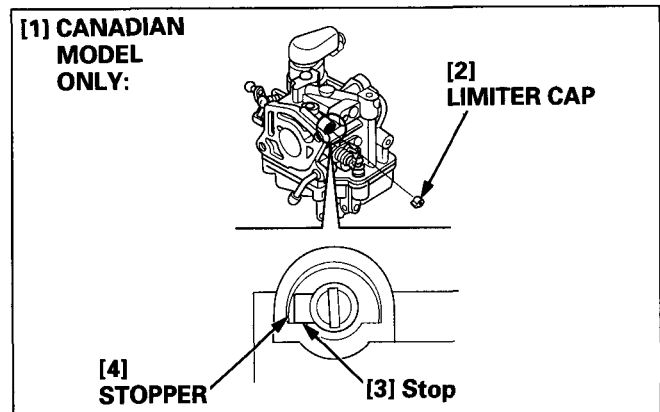
[\*1]: Type with SE valve

[\*2]: Type with SE thermal valve

**Canadian models only:**

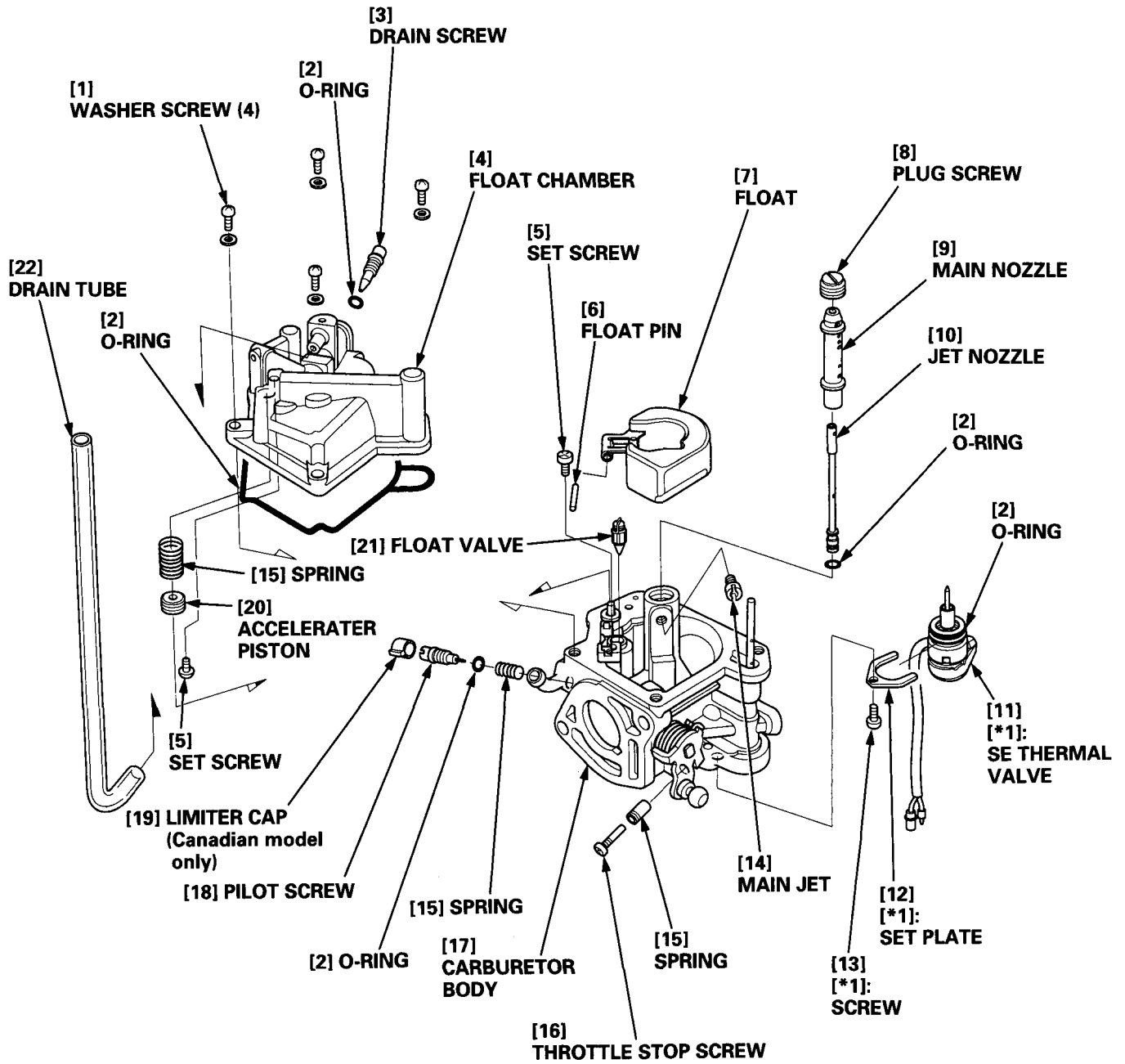
- 6) Apply LOCTITE® 638 to the inside of the limiter cap, then install the cap so its stop prevents the pilot screw from turning counterclockwise.

Be careful to avoid turning the pilot screw while installing the limiter cap. The pilot screw must stay at its required setting position.

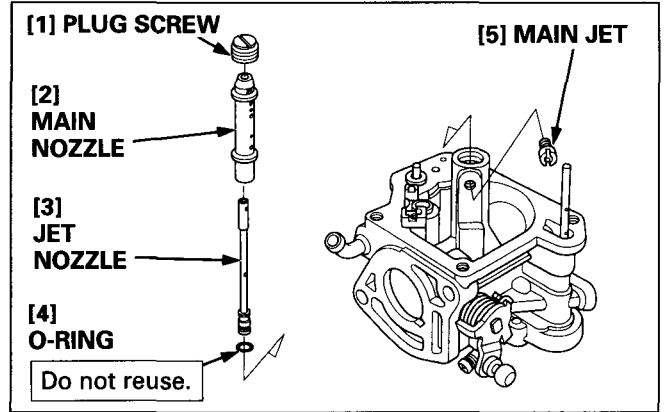


f. CARBURETOR ASSEMBLY

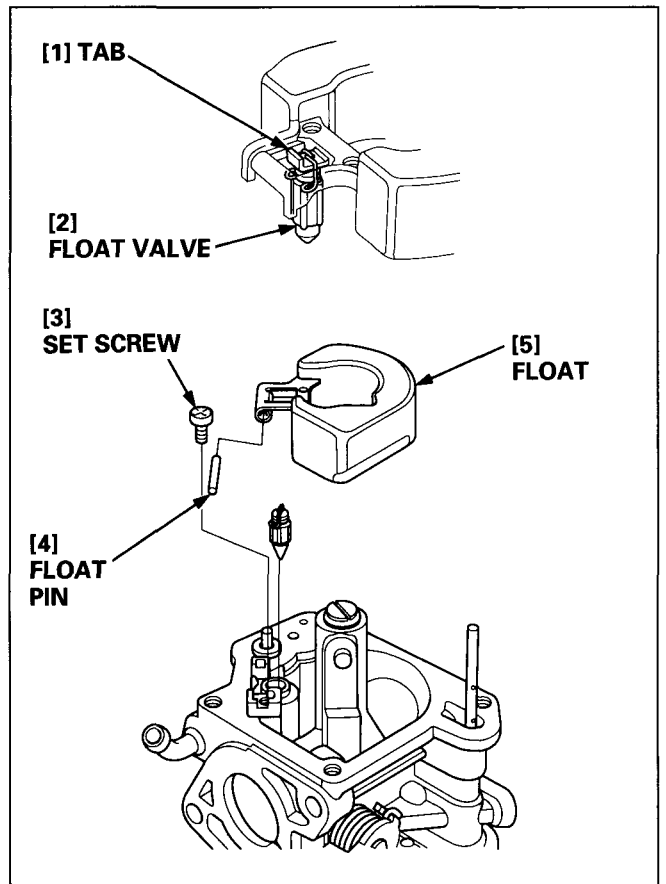
[\*1]: Electric starter type only



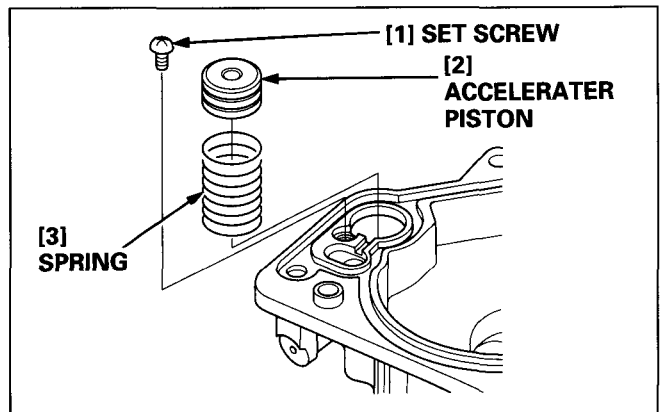
- 1) Install a new O-ring on the jet nozzle.
- 2) Install the jet nozzle and main nozzle and secure them with the plug screw.
- 3) Install the main jet.
  - Take care not to damage the jet and nozzle when handling them.



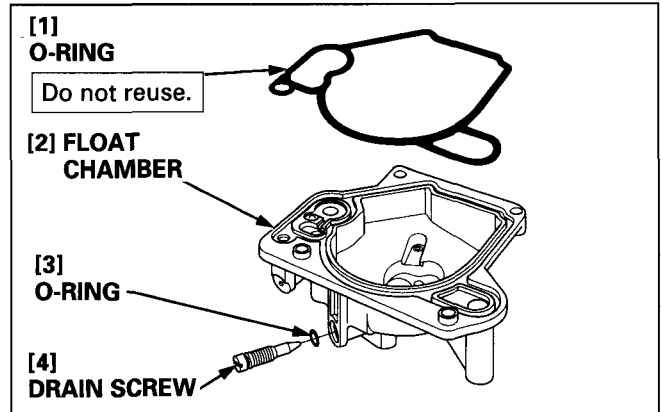
- 4) Install the float valve on the float tab as shown.
- 5) Insert the float pin into the float and set them on the carburetor body. Secure them with the set screw.



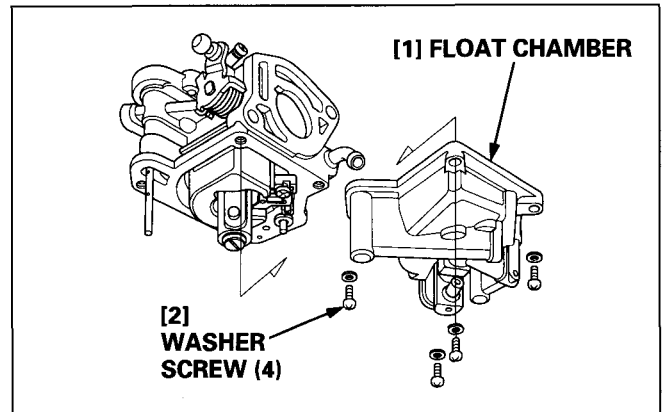
- 6) Install the spring and accelerator piston and secure the piston with the set screw.



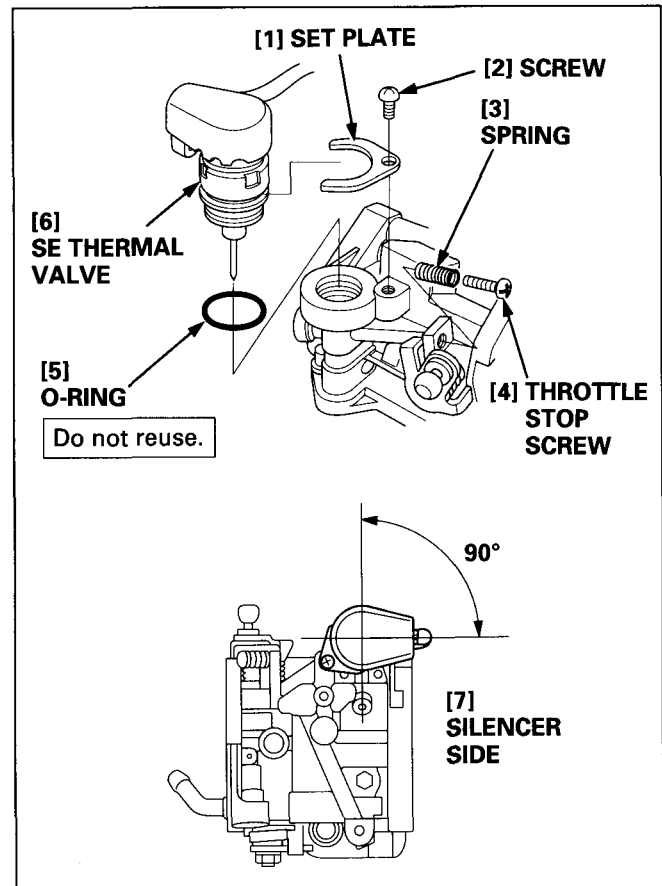
- 7) Install a new O-ring on the drain screw and install the drain screw in the float chamber.
- 8) Install a new O-ring (float chamber seal) on the float chamber.



- 9) Install the float chamber on the carburetor body and tighten the four washer screws securely.

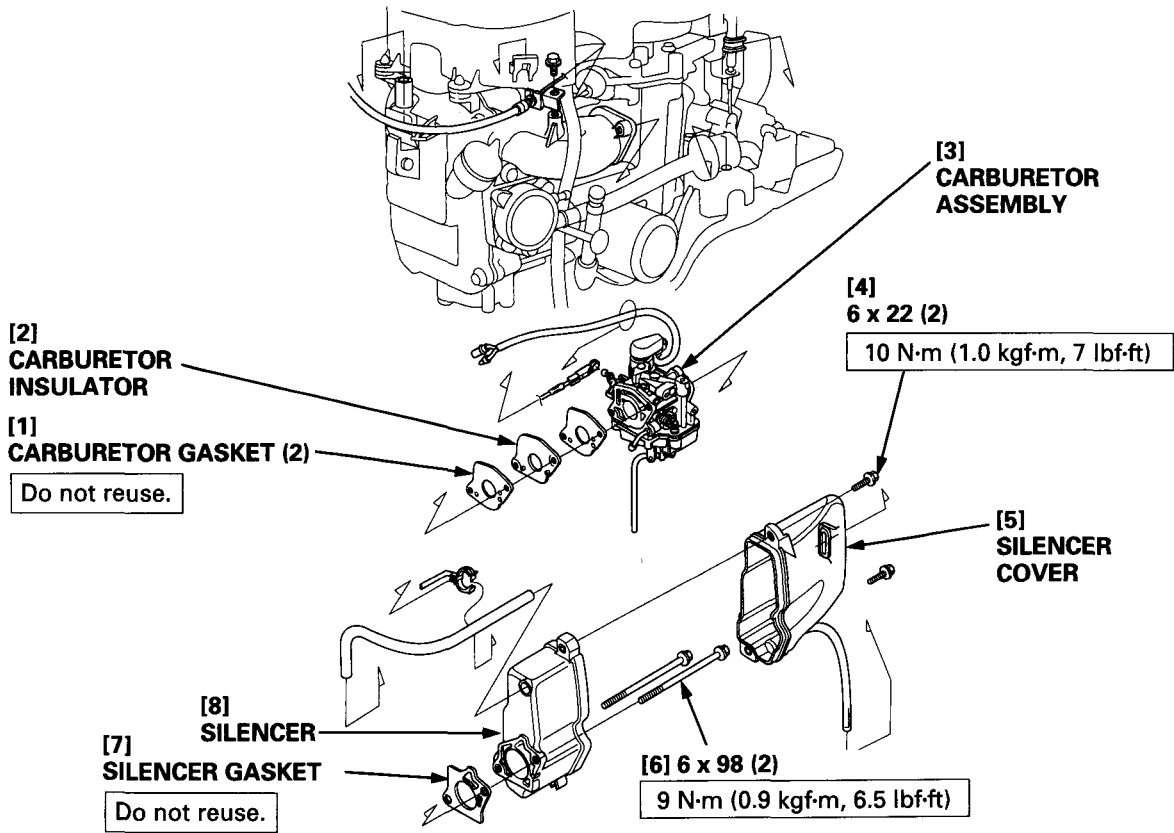


- 10) Install the throttle stop screw and spring.
- 11) Install a new O-ring on the SE thermal valve and install the SE thermal valve with the setting plate and loosely install the setting screw.
- 12) Set the SE thermal valve as shown noting the direction and tighten the set screw securely.



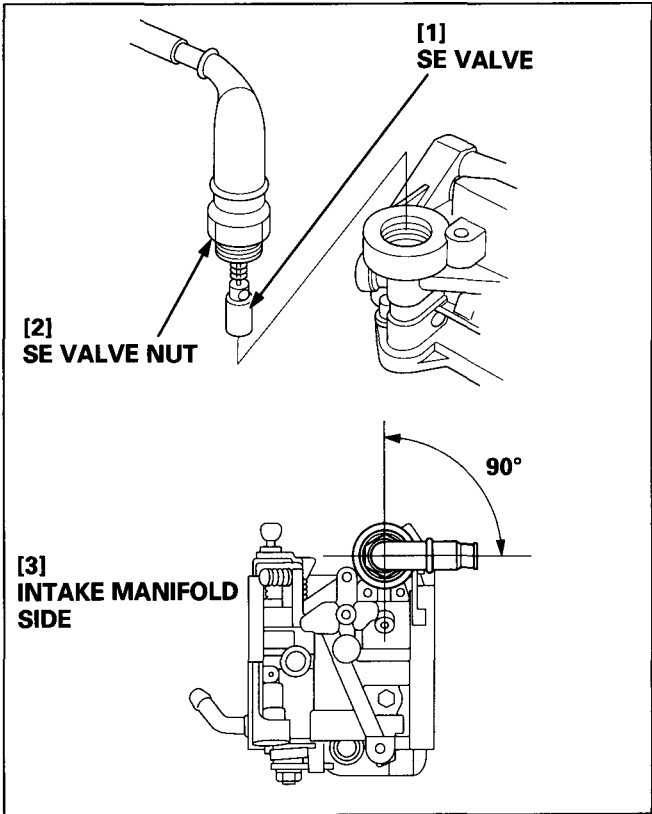
**g. INSTALLATION**

- Take care to prevent foreign material from entering the engine.



- 1) Install the SE valve noting the direction, and secure the valve nut (Type without electric starter).

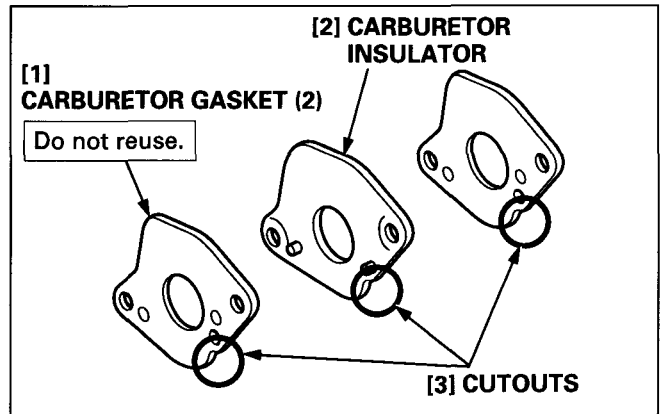
**TORQUE: 2 N-m (0.2 kgf-m, 1.4 lbf-ft)**



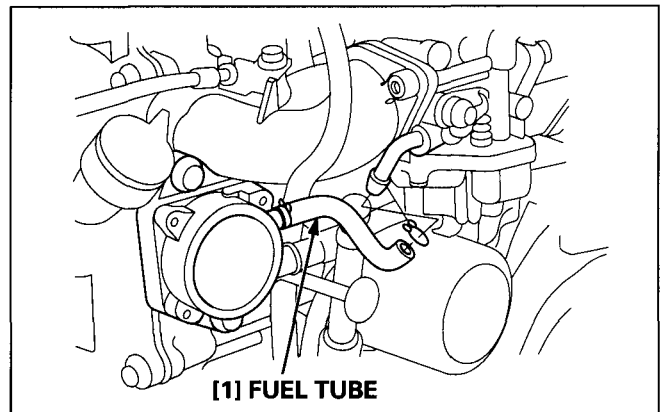
- 2) Install the carburetor, silencer, carburetor insulator, new carburetor gaskets and a silencer gasket.
- Align the cutouts of the carburetor insulator and carburetor gaskets.

- 3) Tighten the two 6 x 98 mm flange bolt to the specified torque.

**TORQUE: 9 N·m (0.9 kgf·m, 6.5 lbf·ft)**



- 4) Connect the fuel tube to the carburetor.

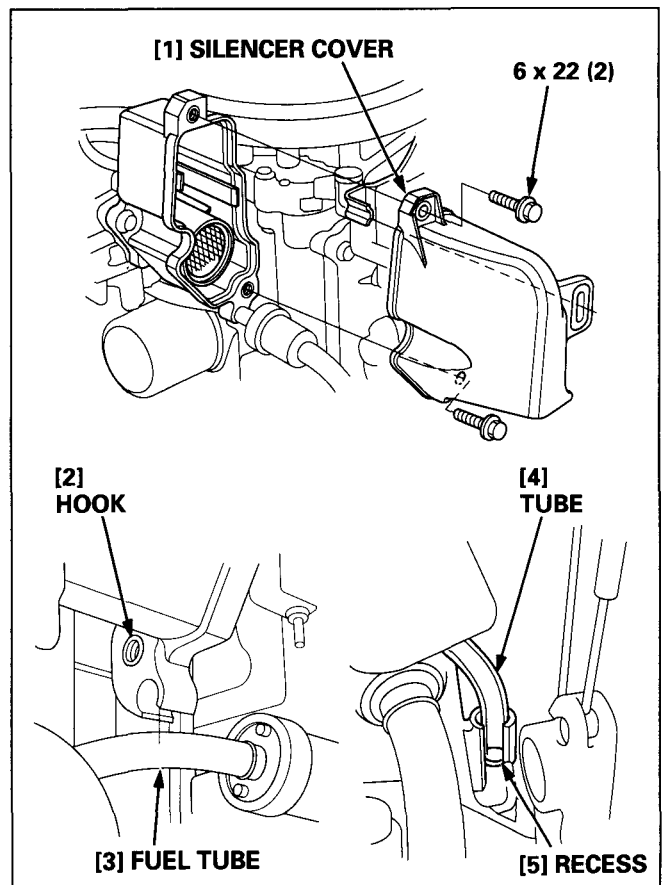


- 5) Install the silencer cover and tighten the 6 x 22 mm flange bolts to the specified torque.

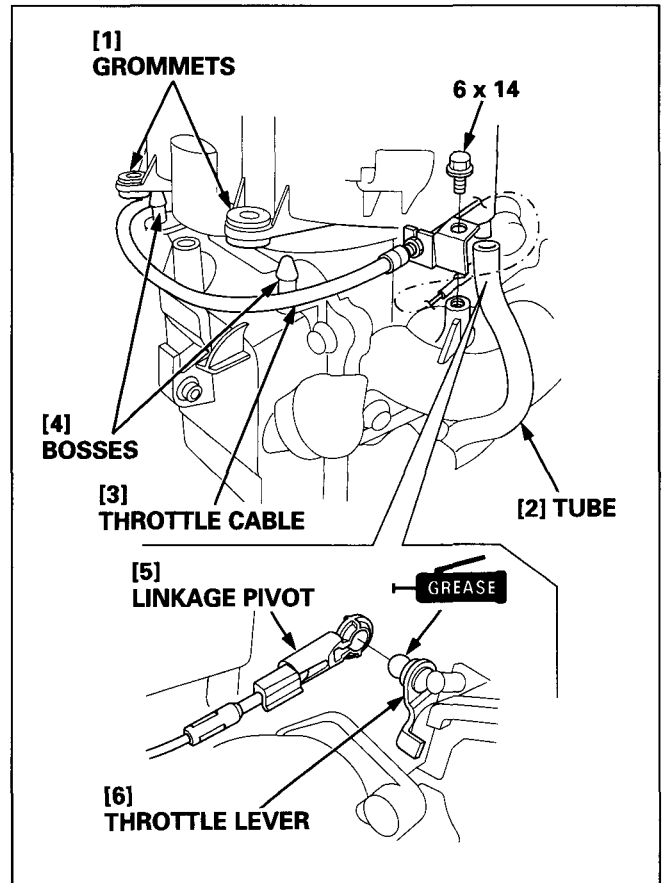
**TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)**

- 6) Insert the tube end into the recess of the oil case as shown.

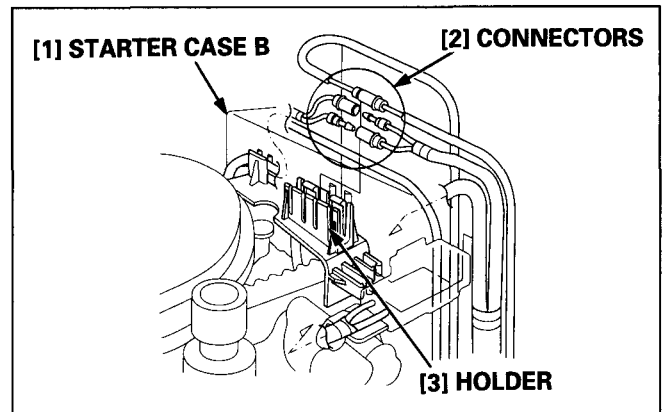
- 7) Clamp the fuel tube with the hook of the silencer cover.



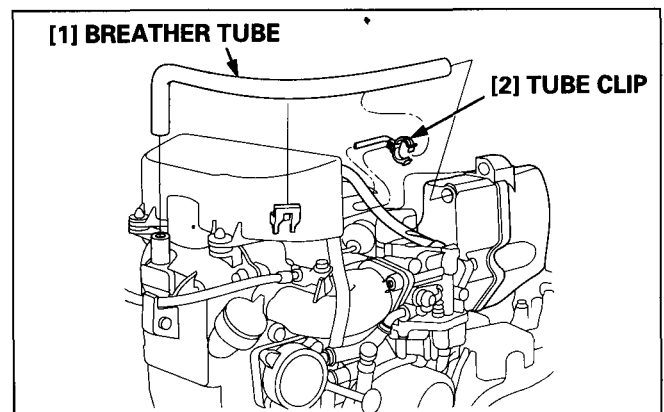
- 8) Connect the linkage pivot to the carburetor throttle lever.
- 9) Install the throttle cable stay with the 6 x 14 mm flange bolt (Tiller handle type). After installation, adjust the throttle linkage (P. 3-13).
- 10) Connect the tube to the tube joint of the starter case B, and set the starter case B securely by setting the grommets to the bosses of the cylinder head cover.
- 11) Connect the throttle control cable to the throttle arm (Remote control type). After installation, adjust the throttle linkage (P. 3-14).



- 12) Connect the SE thermal valve wire connectors and secure the wires with the clamp on the starter case B (Electric starter type).



- 13) Install the breather tube between the silencer and cylinder head cover.
- 14) Clamp the tube with the 13 mm tube clip (Electric starter type).
- 15) Reinstall the right engine under cover (P. 5-3) and engine cover.



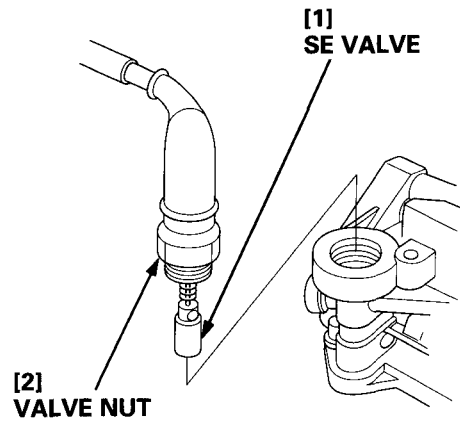
## 2. CHOKE CABLE

(Type without electric starter)

- Take care to prevent foreign material from entering the carburetor.

### a. REMOVAL

- 1) Remove the engine cover and right engine under cover (P. 5-2).
- 2) Remove the recoil starter (P. 7-2).
- 3) Loosen the valve nut, then disconnect the SE valve from the carburetor.
- 4) Remove the SE valve and spring.
- 5) Loosen the cable nut and remove the choke cable from the oil case.

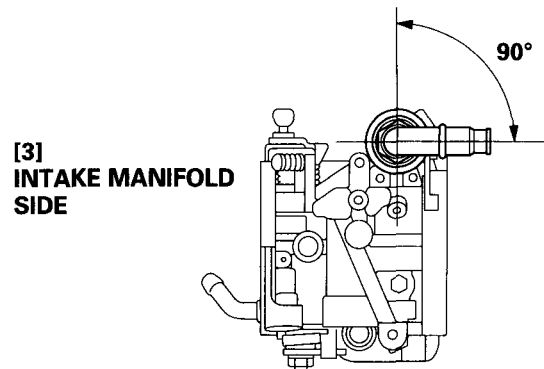


### b. INSTALLATION

- 1) Completely loosen the cable holder nut and install the choke cable.
- 2) Secure the cable by tightening the nut.
- 3) Install the spring and SE valve.
- 4) Install the SE valve to the carburetor and loosely tighten the valve nut.

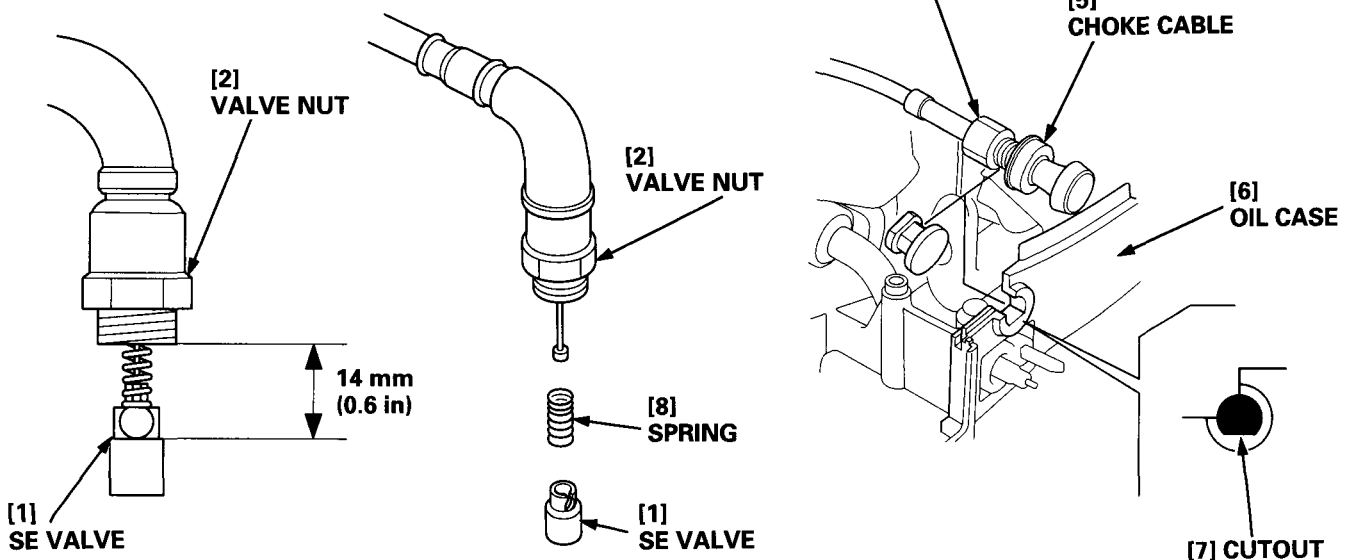
**TORQUE: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)**

Adjust the cable direction as shown and tighten the valve nut securely.



### c. ADJUSTMENT

Check the distance from the end of the valve nut to the stepped surface of the SE valve. It should be 14 mm (0.6 in).





### 3. FUEL PUMP/FUEL FILTER

SHOP MANUAL NEWS

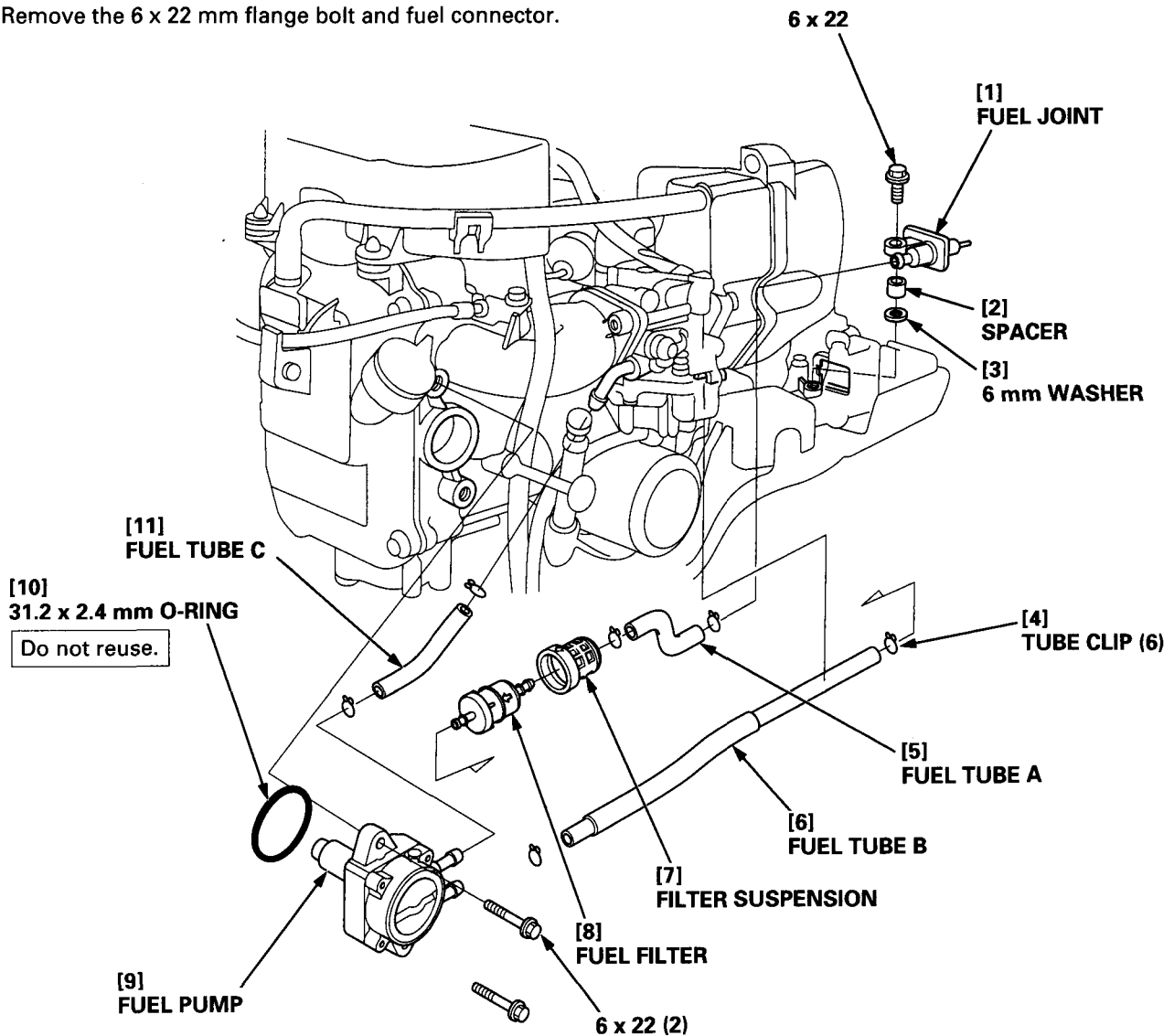
#### a. REMOVAL

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- Keep heat, sparks, and flame away.
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- Wipe up spills immediately.

- 1) Remove the engine cover and right engine under cover (P. 5-2).
- 2) Slide the tube clips and disconnect the fuel tubes.
  - Wipe up the spilled gasoline immediately.
- 3) Remove the two 6 x 22 mm flange bolts and fuel pump.
  - Take care to prevent foreign material from entering the engine.
- 4) Remove the 6 x 22 mm flange bolt and fuel connector.



**b. INSPECTION**

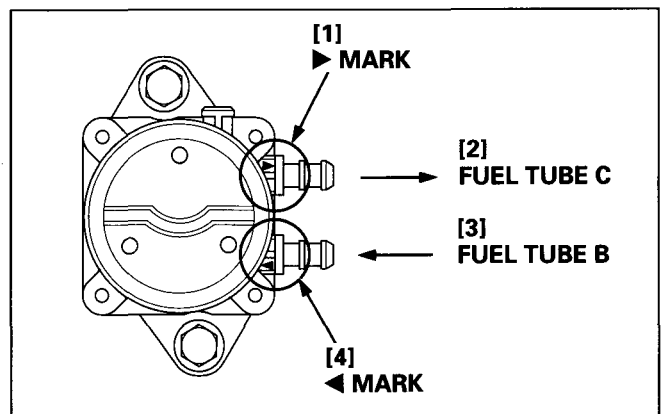
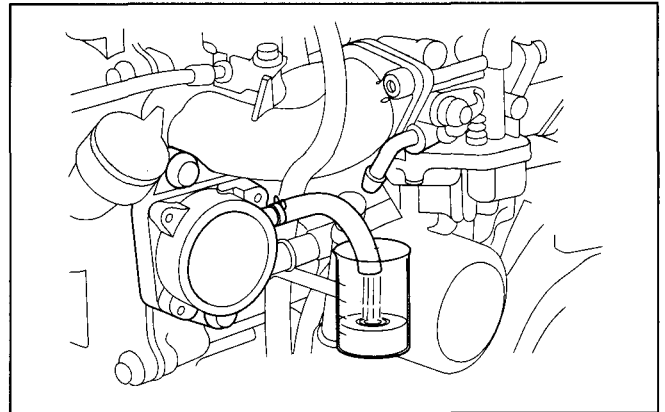
**• FUEL PUMP**

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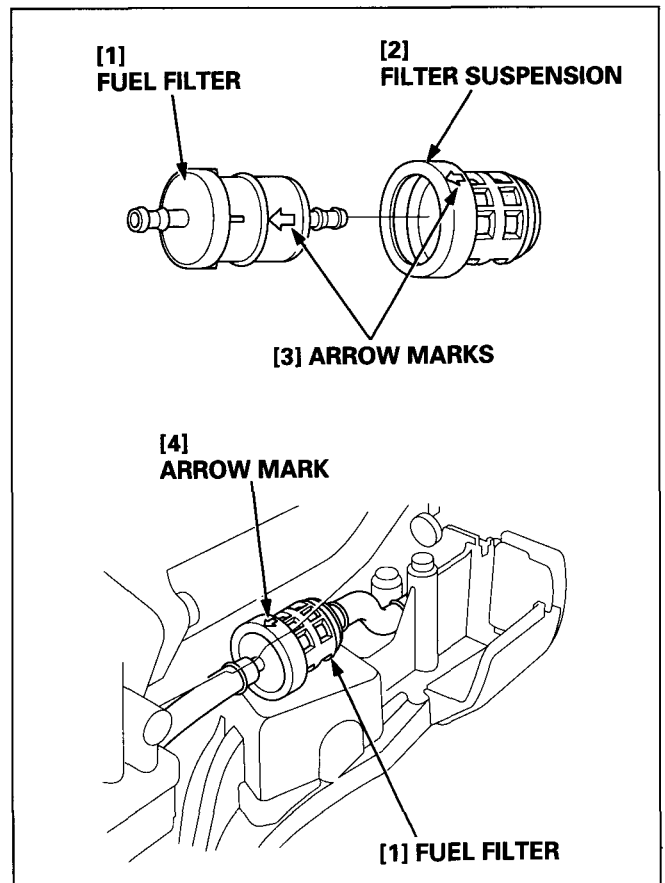
- 1) Remove the spark plugs from the No. 1 and 2 cylinder.
- 2) Connect the fuel tube from the fuel tank to the fuel connector.
- 3) Disconnect the fuel tube C from the carburetor.
- 4) Squeeze the primer bulb until the fuel reaches to the fuel pump.
  - Receive the flowing fuel with suitable container.
- 5) Turn the camshaft by operating the recoil starter several times, and check for fuel flow.
- 6) After inspection, reconnect the fuel tube C to the carburetor and make sure that there is no fuel leak.



**c. INSTALLATION**

- Before installation check the fuel tubes for deterioration, cracks, and other damage. Replace if necessary.

- 1) Apply oil to a new O-ring and install it to the fuel pump.
- 2) Install the fuel pump with the tube joints facing the carburetor side and tighten the 6 x 22 mm flange bolts securely.
- 3) Connect the fuel tube B to the lower joint (◀ mark) and fuel tube C to the upper joint (▶ mark).
- 4) Install the fuel filter into the filter suspension so the arrow mark points to the same direction as shown. Install them so the arrow mark on the filter suspension points toward the fuel pump side.
- 5) After installation, connect the fuel hose connector to the outboard motor. Pump the primer bulb, and make sure that there is no fuel leaks.



# 4. FUEL TANK

## a. DISASSEMBLY/REASSEMBLY

Drain the fuel tank and fuel line completely before disassembly.

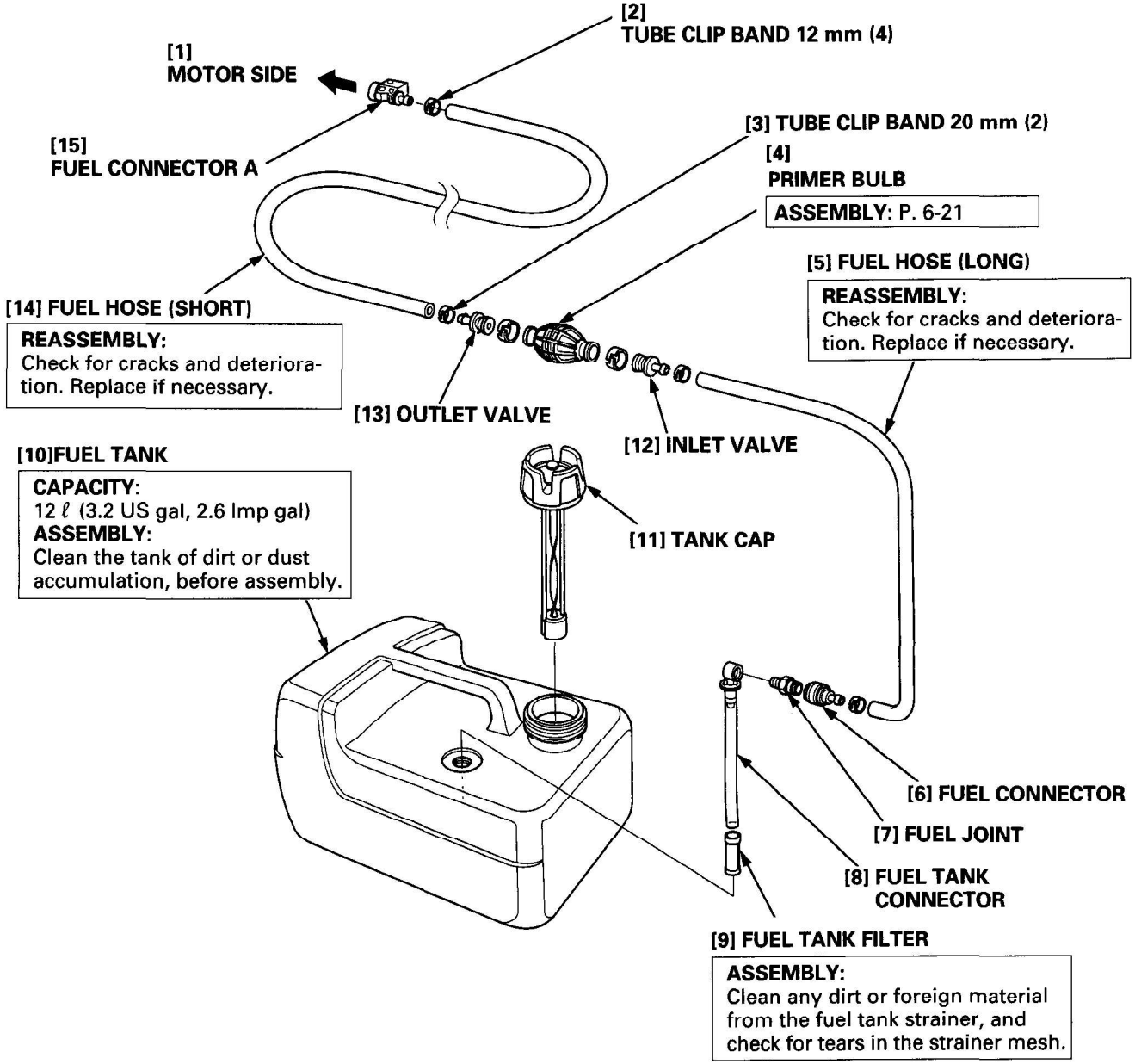
**⚠ WARNING**

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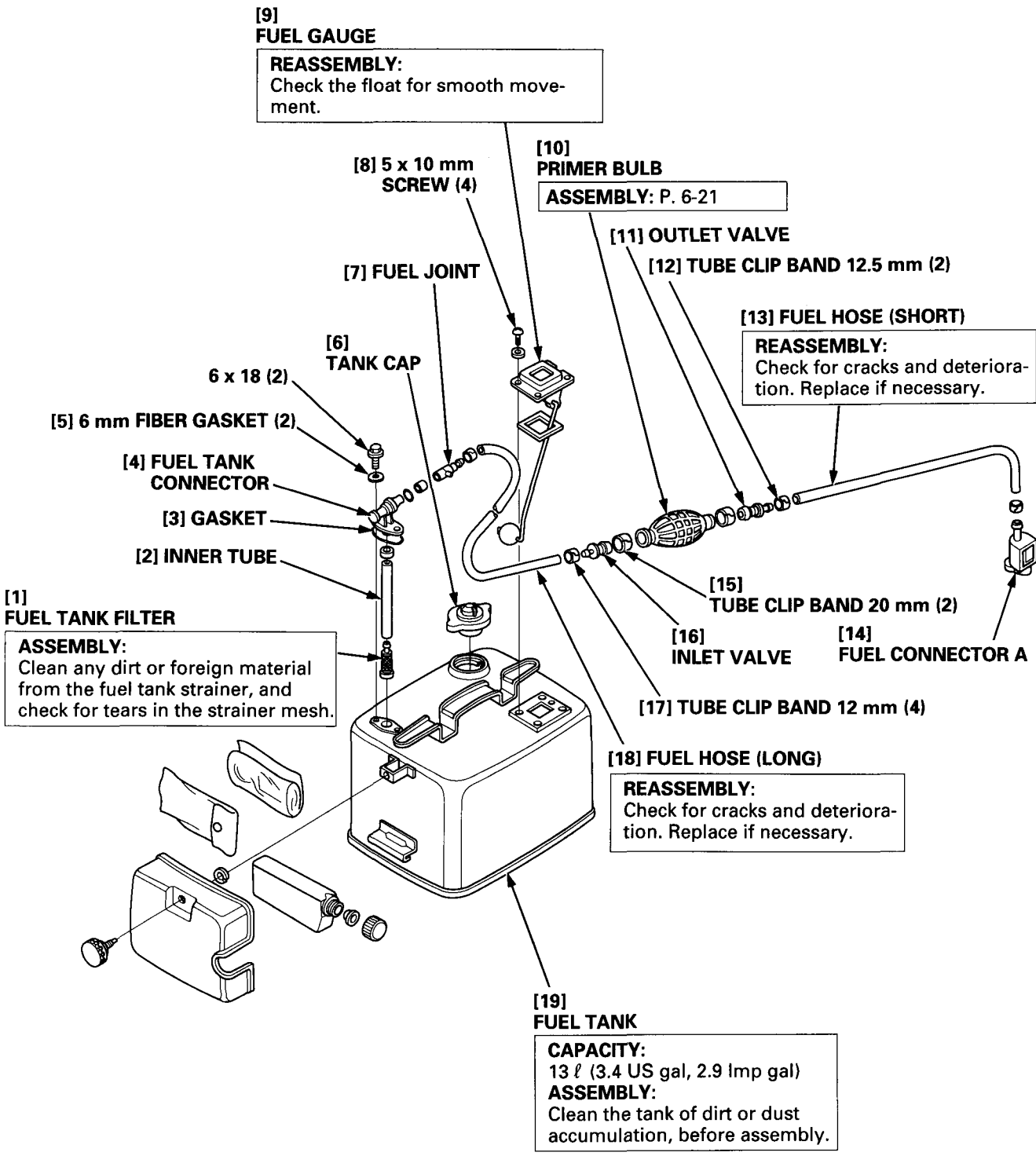
- Keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

- Remove any dirt or foreign material from the fuel tank strainer, and check for tears in the strainer mesh. Replace the strainer if necessary.

### • Plastic Tank



• Steel Tank



**• INLET/OUTLET VALVE INSTALLATION**

- 1) Install the inlet valve (has the pin) at the side marked with "➔" on the priming bulb.
- 2) Install the outlet valve (has the valve seat) at the other side.
  - Do not confuse the inlet valve with the outlet valve.
  - Install the priming bulb with the "➔" mark toward the motor side.

