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**FUEL SYSTEM/FUEL PUMP/  
FUEL TANK/CARBURETOR**

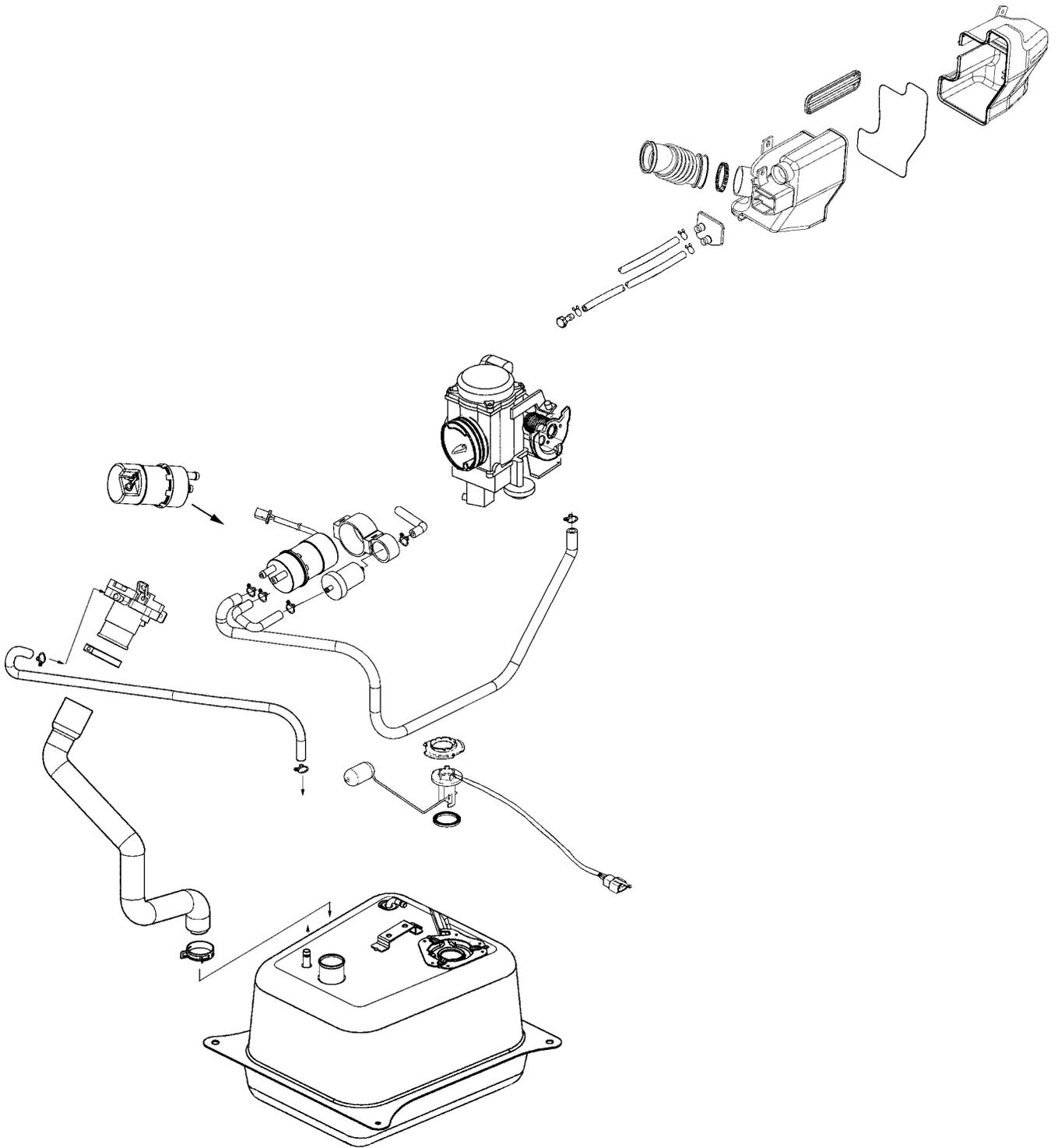
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**5**

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# 5. FUEL SYSTEM / FUEL PUMP / FUEL TANK / CARBURETOR

## SCHEMATIC DRAWING

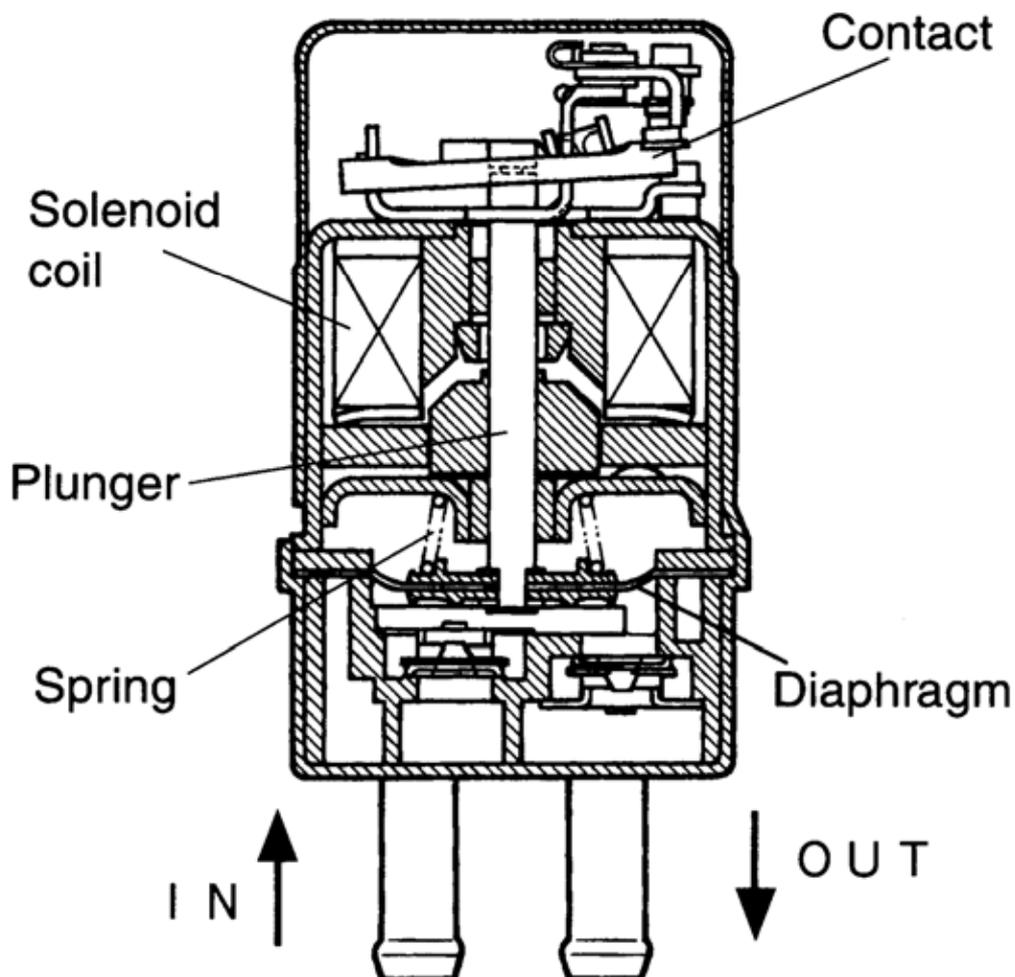


### FUEL SYSTEM

The fuel pump is operated by an electromagnetic force and its electrical energy is supplied from the battery. The fuel sent under pressure by the fuel pump flows into the float chamber when the float of the carburetor has dropped and the needle valve is open. When the needle valve closes, the pressure of the fuel in the hose connecting the carburetor and the fuel pump increases, and when the set pressure is reached, the operation of the fuel pump is stopped by the fuel pressure to prevent excessive supply.

### FUEL PUMP CONSTRUCTION

When voltage is applied between the fuel pump terminals, current flows into the solenoid coil which then pulls up the plunger together with the diaphragm allowing fuel to be drawn into the pump. At this time, the contact which is linked with the plunger opens and interrupts current causing the coil to be de-energized. This allows the diaphragm to go down by the spring force, thereby pressurizing and delivering fuel to the outlet. When the fuel pressure builds up and overcomes the spring force, the plunger stops at pulled up position with the contact in open position.



## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- When working with gasoline, keep away from sparks and flames.
- Note the locations of O-rings when disassembling and replace them with new ones during assembly.
- Before float chamber disassembly, drain the residual gasoline from the float chamber.
- Do not try to disassemble the automatic choke.
- When assembling the vacuum chamber and air cut-off valve, be careful not to damage the diaphragms.
- All cables, fuel lines and wires must be routed and secured at correct locations.
- When removing the fuel tank, keep sparks and flames away from the working area.
- When removing the fuel tank, the remaining fuel in the tank must be lower than 1/2 of the fuel tank capacity to avoid gasoline overflowing.
- Fuel tank capacity: 12.8 liters

### SPECIFICATIONS

	XCITING 500
Type	CVK
Carburetor identification number	15F8 SD8
Size of bore (mm)	Ø36
Main jet	#108
Slow jet	#38
Idle speed	1400±100
Pilot screw opening	3½ ± ½ turns out
Fuel pump flow (at 12V)	370 ml (12.6 US oz, 13 Imp oz)/min

### TROUBLESHOOTING

#### Engine does not start

- No fuel in tank
- Restricted fuel line
- Too much fuel getting to cylinder
- Clogged air cleaner
- Contaminated fuel
- Faulty fuel pump

#### Throttle does not open fully, so engine stalls

- Damaged vacuum piston diaphragm
- Clogged diaphragm hole

#### Lean mixture

- Clogged fuel jets
- Clogged fuel tank cap breather hole
- Clogged fuel filter
- Bent, kinked or restricted fuel line
- Faulty float valve
- Float level too low
- Faulty fuel pump or insufficient output

#### Engine is hard to start

- No fuel in tank
- Restricted fuel line
- Clogged fuel strainer
- Faulty fuel pump
- Broken or clogged vacuum tube
- Faulty or clogged charcoal canister

#### Lean mixture

- Clogged charcoal canister
- Bent, kinked or restricted fuel line
- Clogged fuel strainer
- Float level too low

#### Engine idles roughly, stalls or runs poorly

- Incorrect idle speed
- Rich mixture
- Lean mixture
- Clogged air cleaner
- Intake air leak
- Contaminated fuel
- Faulty air-cut off valve
- Damaged vacuum tube and connectors
- Damaged carburetor insulator

#### Rich mixture

- Automatic valve opens excessively
- Faulty float valve
- Float level too high
- Clogged air jets
- Automatic choke valve set plate installed in the wrong groove
- Clogged air cleaner

## CARBURETOR

### REMOVAL

Remove the luggage box (page 2-3)

Loosen the air cleaner clamp screw.  
Loosen the carburetor clamp screw.  
Disconnect the vacuum hose from the carburetor.

Pull the carburetor out from the air cleaner and intake manifold.

Carburetor Clamp Screw



Air Cleaner Clamp Screw

Vacuum Hose

Disconnect the fuel hose from the carburetor.  
Disconnect the carburetor heater connector.

Fuel Hose



Carburetor Heater Connector

Disconnect the throttle cables.  
Disconnect the automatic choke connector.  
Disconnect the T.P.S connector.  
Remove the carburetor.

T.P.S Connector

Throttle Cables



Automatic Choke Connector

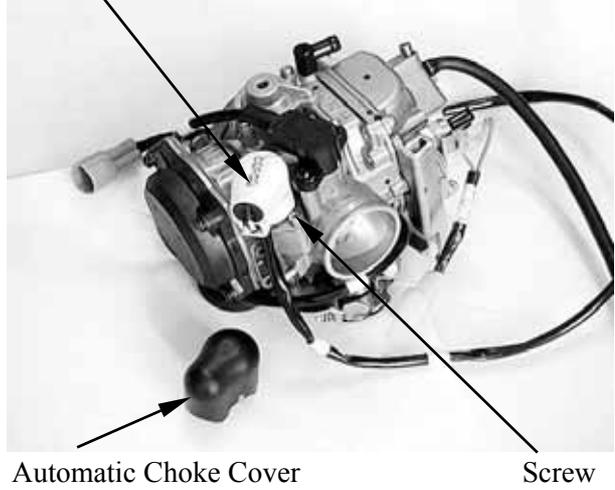
# 5. FUEL SYSTEM/FUEL PUMP /FUEL TANK/CARBURETOR

### DISASSEMBLY

With the automatic choke cover removed, remove the screw and automatic choke assembly.

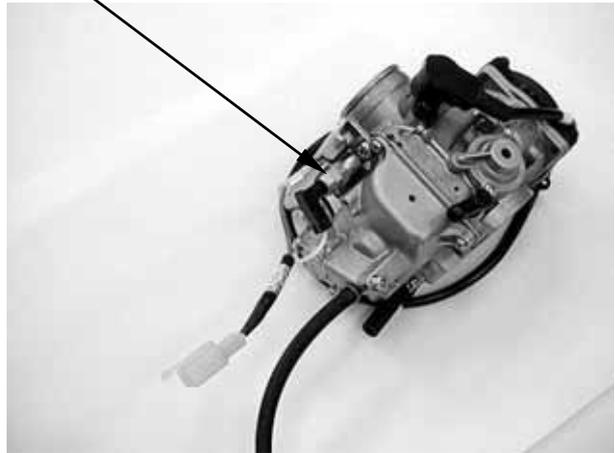
\* The automatic choke assembly is a non-disassemblable type

Automatic Choke Assembly



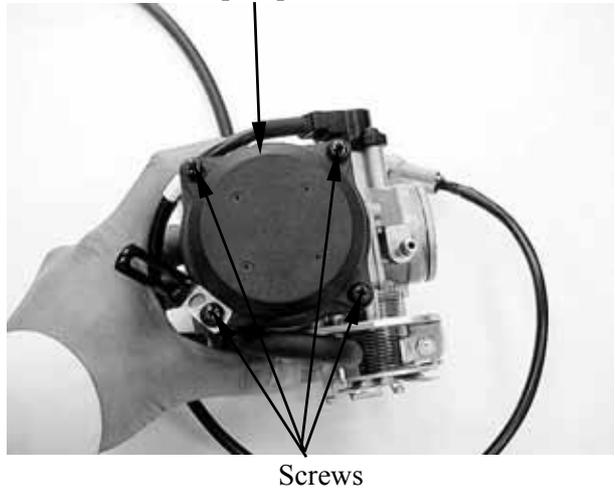
Remove the carburetor heater.

Carburetor Heater

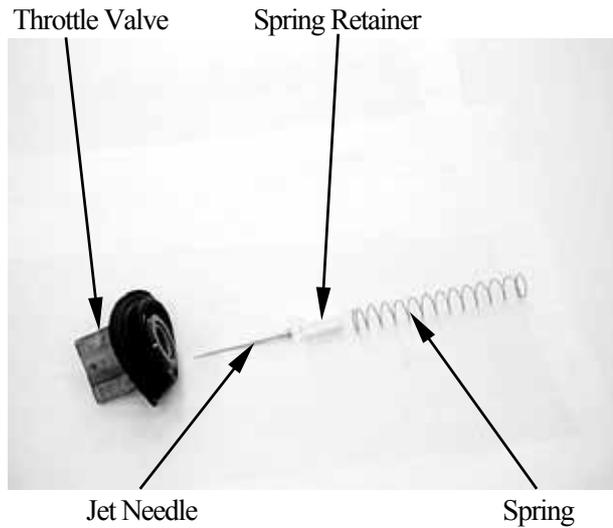


Remove the four screws and top cap.

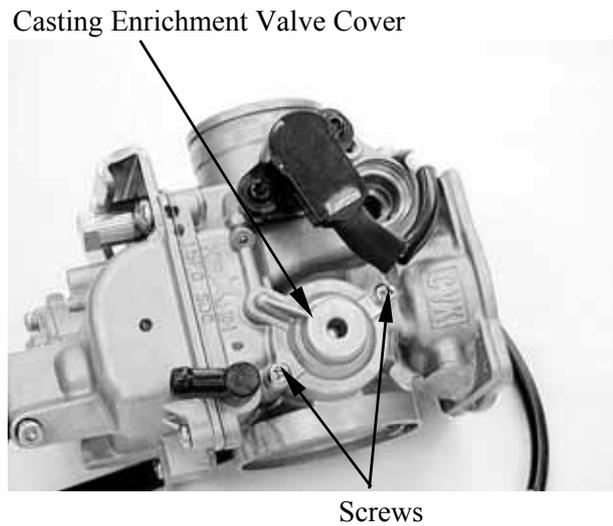
Top Cap



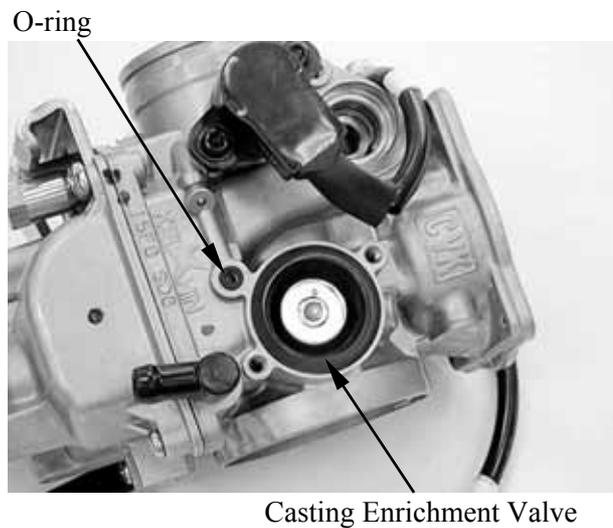
Remove the spring , spring retainer, jet needle and throttle valve.



Remove the two screws and casting enrichment valve cover and then take out the spring.

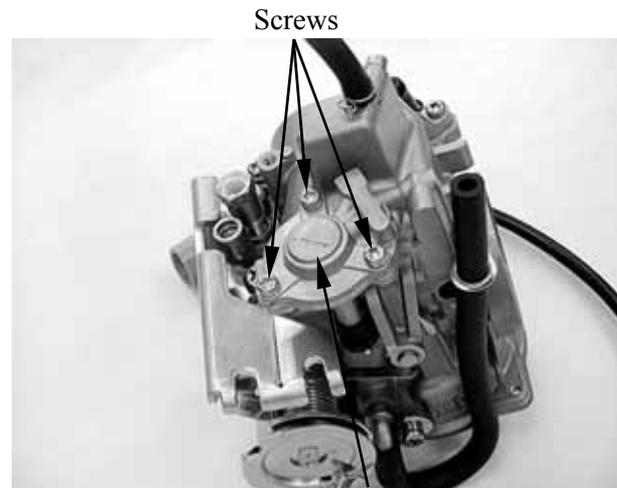


Remove the casting enrichment valve and O-ring.



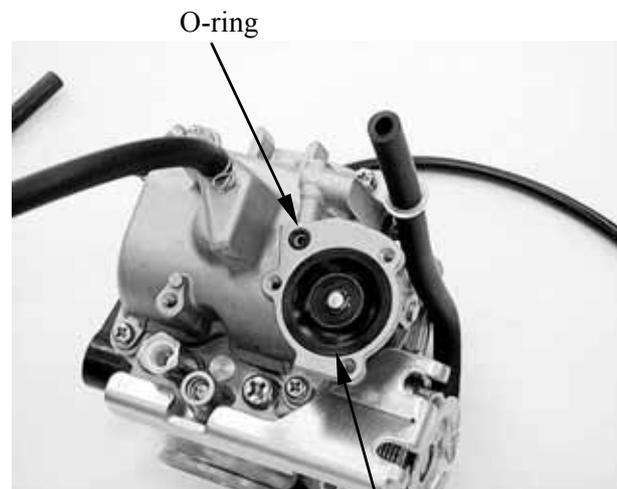
## 5. FUEL SYSTEM/FUEL PUMP /FUEL TANK/CARBURETOR

Remove the three screws and accelerating pump cover.



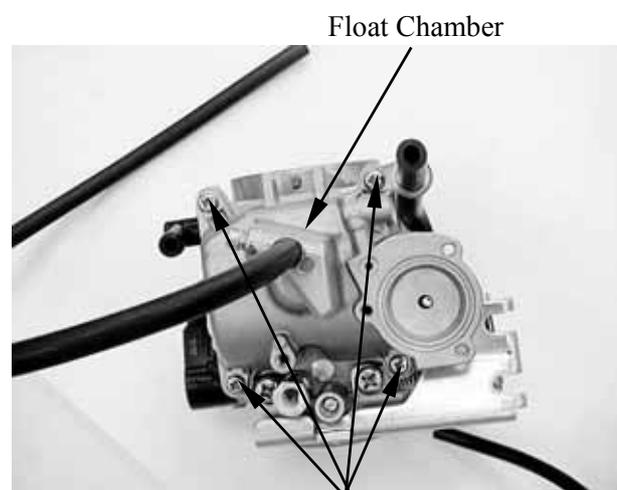
Accelerating Pump Cover

Remove the accelerating pump diaphragm and O-ring.



Accelerating Pump Diaphragm

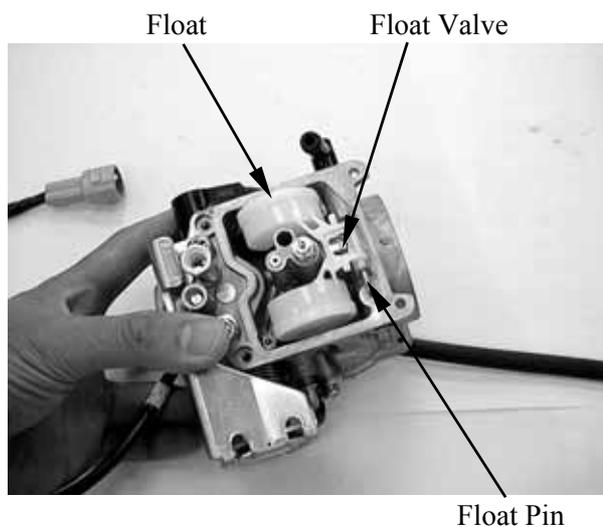
Remove the four screws and float chamber.



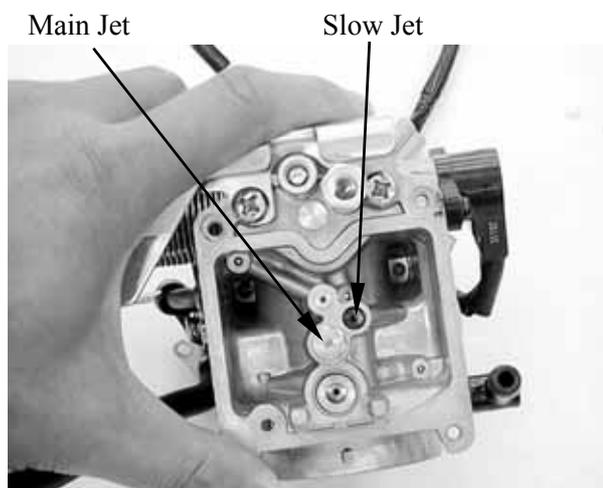
Screws

## 5. FUEL SYSTEM / FUEL PUMP / FUEL TANK / CARBURETOR

Pull float pin out, then remove the float and float valve.



Remove the slow jet.  
Remove the main jet.

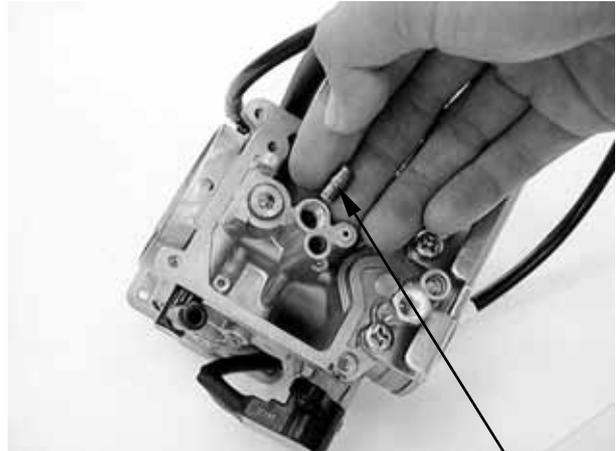


Remove the needle jet holder.



## 5. FUEL SYSTEM/FUEL PUMP /FUEL TANK/CARBURETOR

Remove the needle jet.

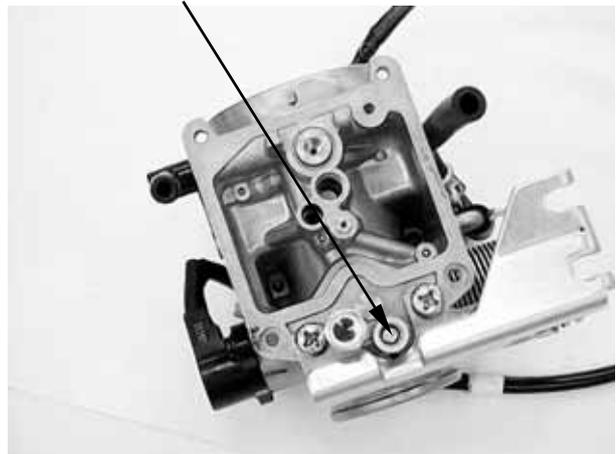


Needle Jet

Remove the pilot screw, spring, washer and O-ring.

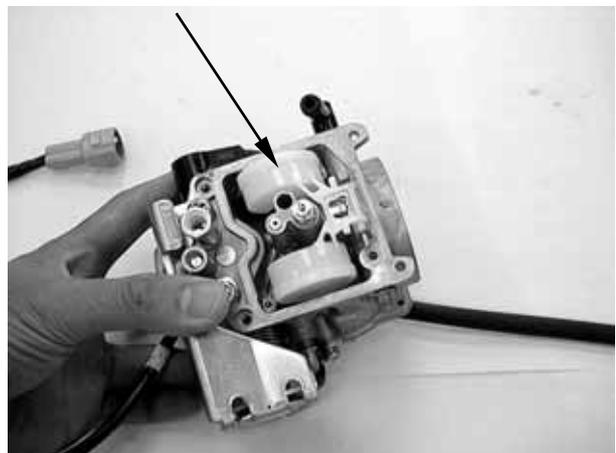
\* Before pilot screw removal, slowly turn the pilot screw clockwise and count the number of turns until the screw is lightly seated. Make a note of how many turns were made so the screw can be reset correctly.

Pilot Screw

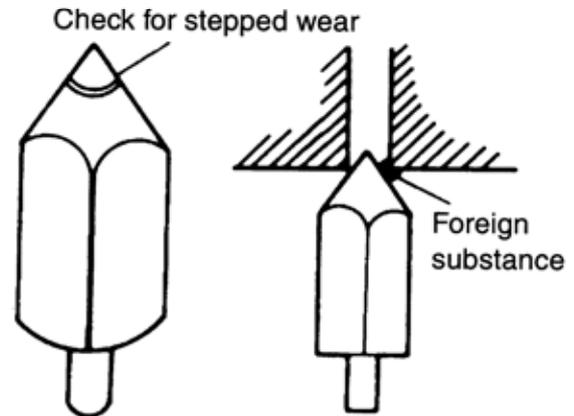


**FLOAT/FLOAT VALVE INSPECTION**  
Inspect the float for deformation or damage.

Float



Check the float valve and valve seat for foreign substance, clogging or damage.  
Check the tip of the float valve, where it contacts the valve seat, for stepped wear or contamination.  
Check the operation of the float valve.



### CARBURETOR BODY/JETS INSPECTION AND CLEANING

Check carburetor body and each jet for wear or damage.

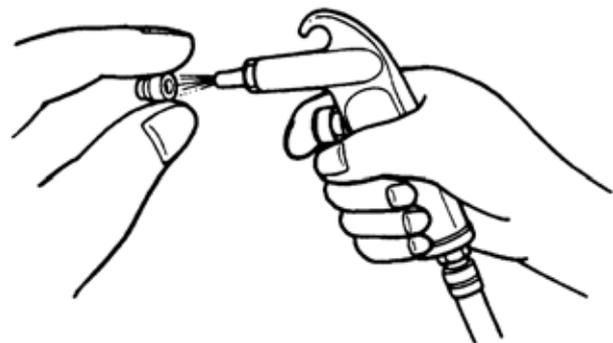
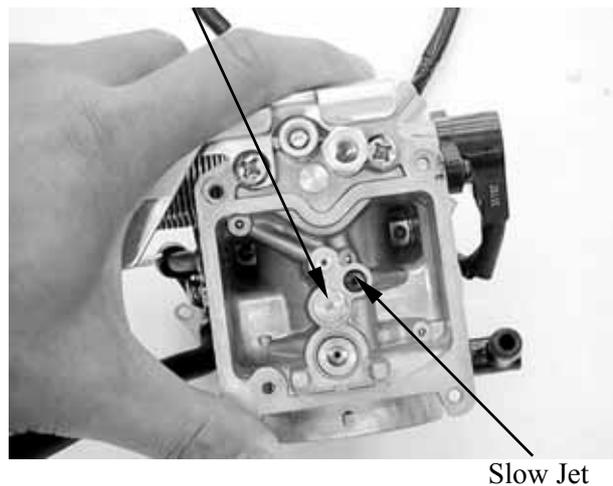
Clean all jets with a spray-type carburetor cleaner and dry them using compressed air.

Clean all circuits of the carburetor thoroughly-not just the perceived problem area. Clean the circuits in the carburetor body with a spray-type cleaner and allow each circuit to soak, if necessary, to loosen dirt and varnish. Blow the body dry using compressed air.

★

- Some carburetor cleaning chemicals, especially dip type soaking solutions, are very corrosive and must be handled carefully. Always follow the chemical manufacturer's instructions on proper use, handling and storage.
- Do not use a wire to clean the jets or passageways. A wire can damage the jets and passageways. If the components cannot be cleaned with a spray cleaner it may be necessary to use a dip-type cleaning solution and allow them to soak. Always follow the chemical manufacturer's instructions for proper use and cleaning of the carburetor components.

Main Jet/Needle Jet Holder/Needle Jet



After cleaning, reassemble the carburetor with new seals.

## PILOT SCREW INSPECTION

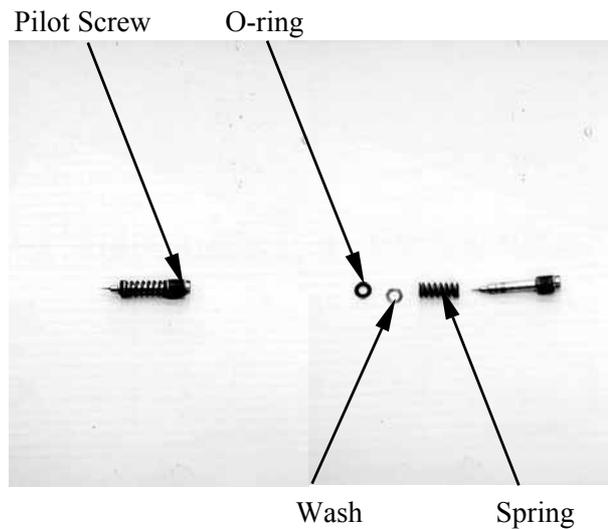
Remove the O-ring from the pilot screw.

Check the pilot screw for wear or damage.

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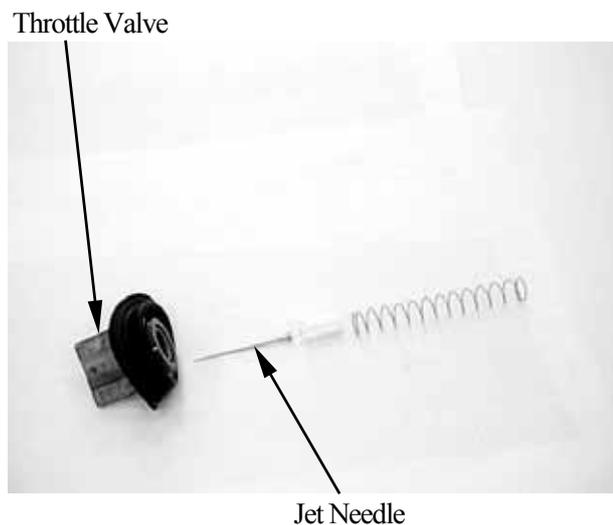
The pilot screw is factory pre-set and should not be removed unless the carburetor is overhauled.

Damage to the pilot screw is tightened against the seat.



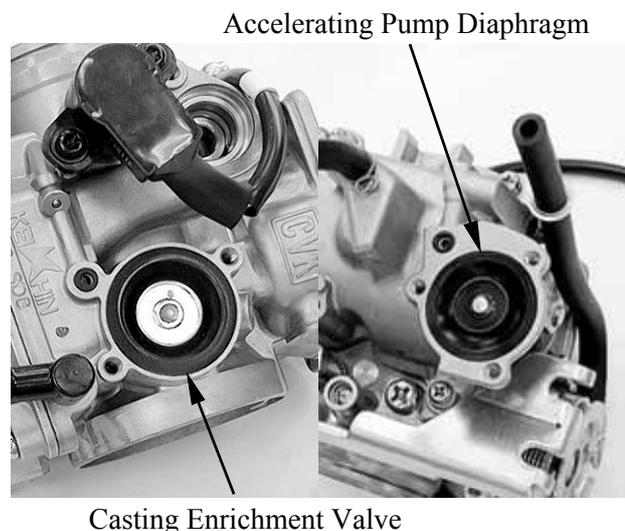
## THROTTLE VALVE/JET NEEDLE INSPECTION

Check the throttle valve and jet needle for scratches, wear or damage.



## CASTING ENRICHMENT VALVE/ACCELERATING PUMP DIAPHRAGM INSPECTION

Check the casting enrichment valve/accelerating pump diaphragm for damage and clogging. If any abnormal condition is found, wash the part clean. If damage or clogging is found, replace the part with a new one.



### FLOAT LEVEL INSPECTION

Check the float level after checking the float valve, valve seat and float.

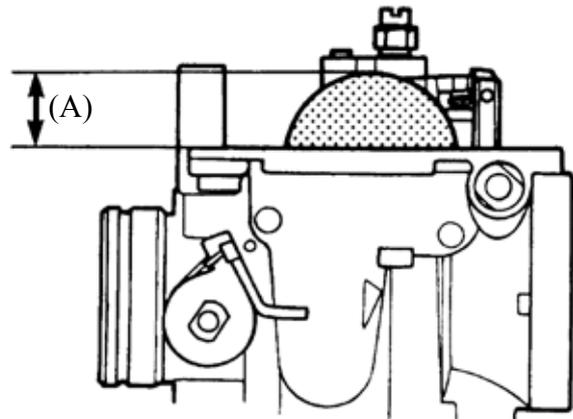
Set the carburetor so that the float valve end just contacts the float arm lip. Make sure the float valve tip is securely in contact with the valve seat.

Measure the float level with the float level gauge.

**Float level (A): 18.5mm (0.74 in)**

The float level cannot be adjusted.

Replace the float assembly if the float level is out of specification.



### AUTO-BYSTARTER INSPECTION

Disconnect the connector.

Remove the automatic choke cover.

Connect the positive (+) terminal of a 12 V battery to Yellow lead and the negative (-) terminal to the other Yellow lead.

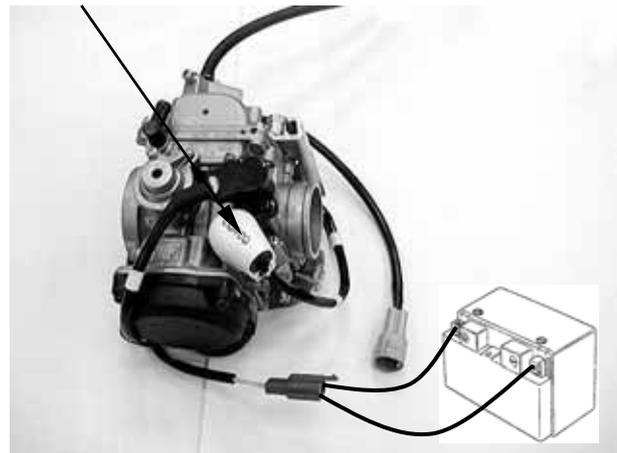
Check that the automatic choke section is heated in 5 minutes after the battery has been connected.

To inspect the function, check for change of temperature from the cold condition.

\*

Do not attempt to disassemble the automatic choke for the purpose of checking temperature.

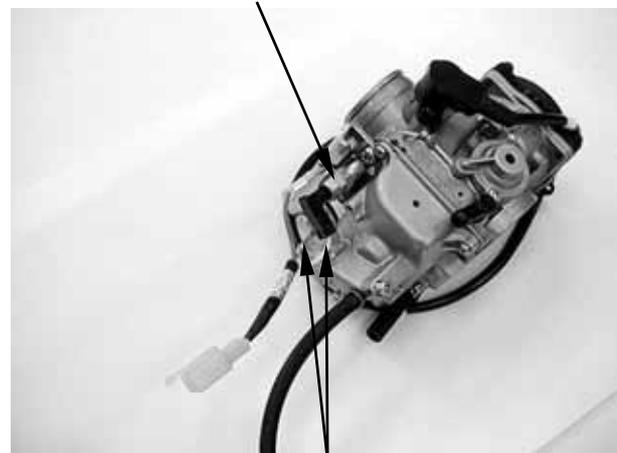
Automatic Choke



### CARBURETOR HEATER INSPECTION

Disconnect the carburetor heater terminal leads.

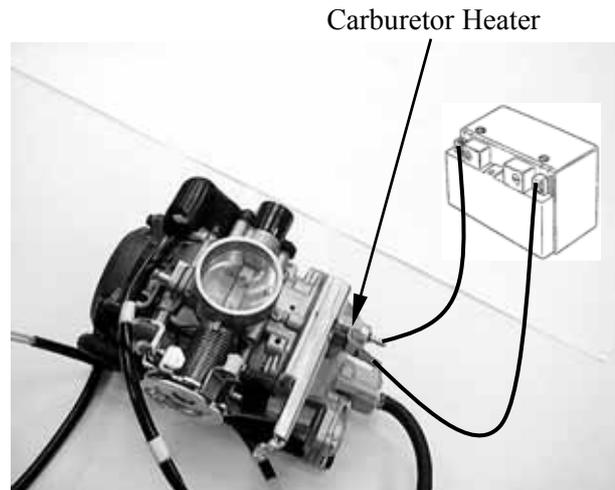
Carburetor Heater



Carburetor Heater Terminal Leads

## 5. FUEL SYSTEM/FUEL PUMP /FUEL TANK/CARBURETOR

Connect the positive (+) terminal of a 12 V battery to the terminal of the carburetor heater and the battery negative (-) terminal to the terminal.  
Check that the heater section is heated in 5 minutes after the battery has been connected.



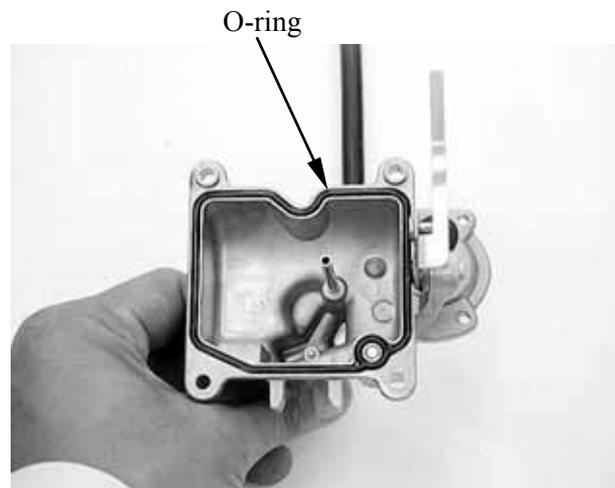
### REASSEMBLY

Carburetor reassembly can be performed in the reverse order of disassembly. When reassembling, carefully observe the following instructions.

\*

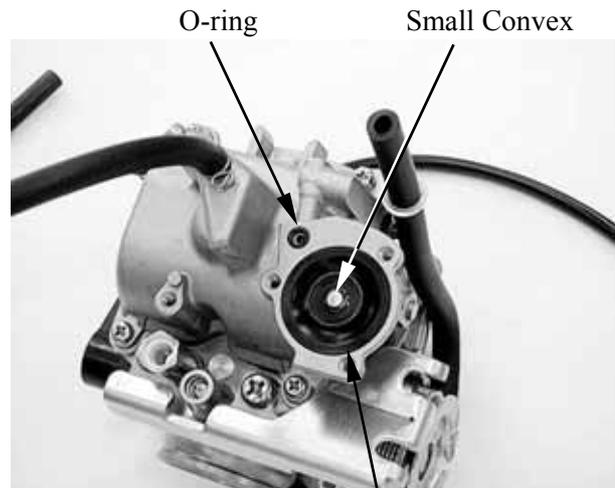
- Assemble the parts taking consideration of their function.
- Replace O-rings and seals with new ones.

Fit a new O-ring in to the float chamber groove securely.



Assemble the accelerating pump diaphragm and new O-ring.

- \* Install the accelerating pump diaphragm with the small convex facing up.



Accelerating Pump Diaphragm

Assemble the coasting enrichment valve and new O-ring.

Assemble the jet needle, spring retainer, spring and throttle valve



Casting Enrichment Valve

Apply thermo-grease to the threads and tighten the carburetor heater securely.

After cleaning, reinstall the pilot screw to the original setting by turn the screw in until it lightly seats, and then backing it out the same number of turns counted during disassembly.

- \* Replace the O-ring with a new one.

After the assembly and installation on the engine have been completed, perform the following adjustment.

Throttle cable adjustment (page 3-5)

Idle speed adjustment (page 3-14)

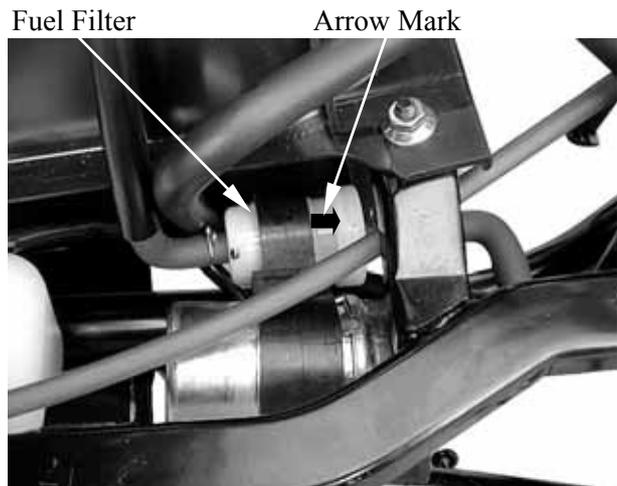
### INSTALLATION

Installation is in the reverse order of removal.

## FUEL FILTER/FUEL PUMP FUEL FILTER INSPECTION

Visually check the fuel filter. If accumulation of sediment or clogging is found, replace the fuel filter with a new one.

Install the fuel filter with the arrow mark facing forward.

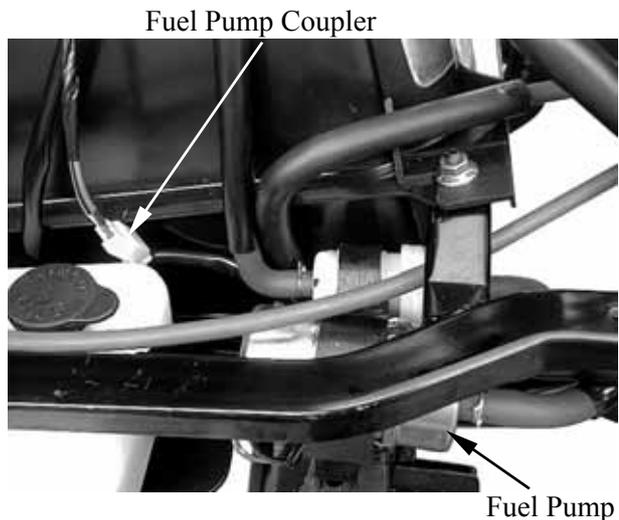


## FUEL PUMP INSPECTION

Measure resistance between the terminals of fuel pump lead wire coupler.

If the measurement is out of specification replace the fuel pump.

**Fuel pump resistance:** 1 - 2.5Ω



As shown in the right illustration, connect the battery to the fuel pump and measure the pump discharge amount per minute using kerosene.

Battery (+) to Black/Red

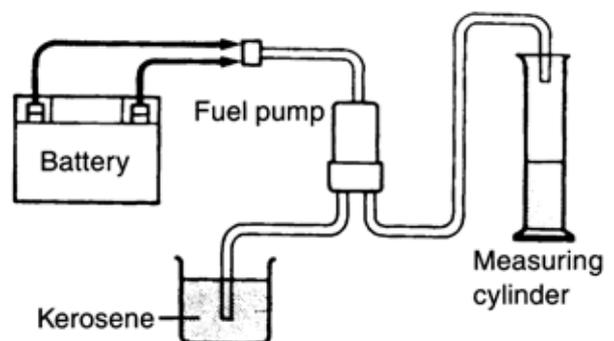
Battery (-) to Green

**Discharge amount per minute:**

370 ml (12.6 US oz, 13 Imp oz)

If the measurement is less than the standard value, replace the fuel pump with a new one.

\* Do not use gasoline in this test as its highly combustible.

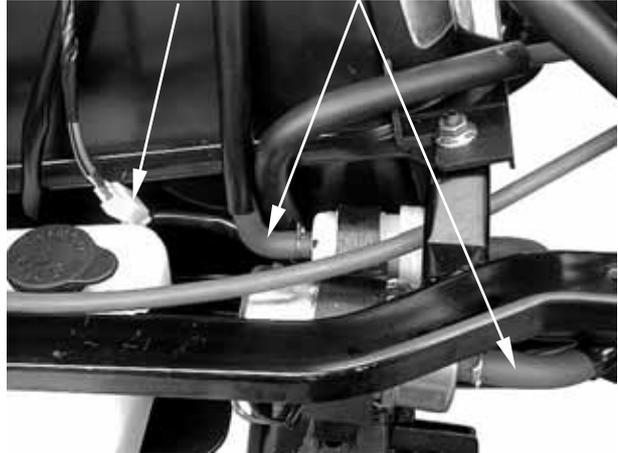


### REMOVAL

Remove the floorboard (page 2-6)

Disconnect the fuel hoses.  
Disconnect the fuel pump connector.  
Remove the fuel pump and filter.

Fuel Pump Connector Fuel Hoses



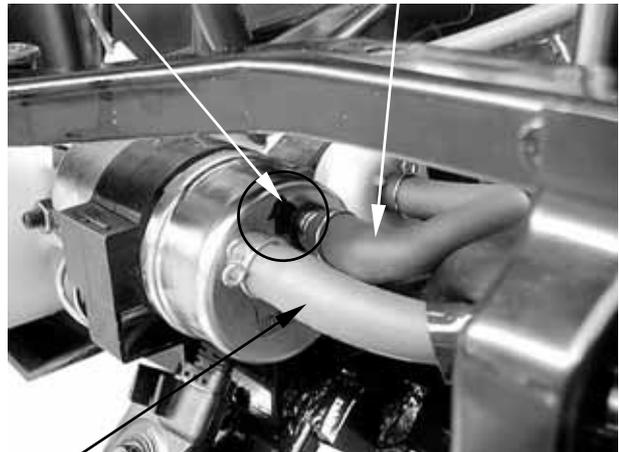
### INSTALLATION

Installation is in the reverse order of removal.

\*

- Install the fuel pump with the arrow mark facing up.
- Connect the fuel inlet hose between the inlet duct of the fuel pump and fuel filter.
- Connect the fuel outlet hose between the outlet duct of the fuel pump and carburetor.

“Arrow” Mark Inlet Duct



Outlet Duct

### FUEL TANK

#### REMOVAL

Remove the floorboard (page 2-6).  
Remove the inner cover (page 2-14).  
Remove the front lower cover (page 2-15).  
Remove the fuel pump and fuel filter (page 5-17).

Remove the front heat insulation cover.



Heat Insulation Cover

## 5. FUEL SYSTEM/FUEL PUMP /FUEL TANK/CARBURETOR

Disconnect the fuel unit connector.

Remove the four nuts from the fuel tank.

Fuel Unit Connector



Nuts

Disconnect the ground wire connector.  
Disconnect the fuel filler cap open cable.

Ground Wire Connector



Fuel Filler Cap Open Cable

Remove the two nuts and left floorboard set holder from the frame.  
Remove the AICV control solenoid valve from the left floorboard set holder.

ACIV Control Solenoid Valve



Nuts

## 5. FUEL SYSTEM / FUEL PUMP / FUEL TANK / CARBURETOR

Remove the fuel tank from the frame left side.



Fuel Tank

### INSTALLATION

Installation is in the reverse order of removal.

