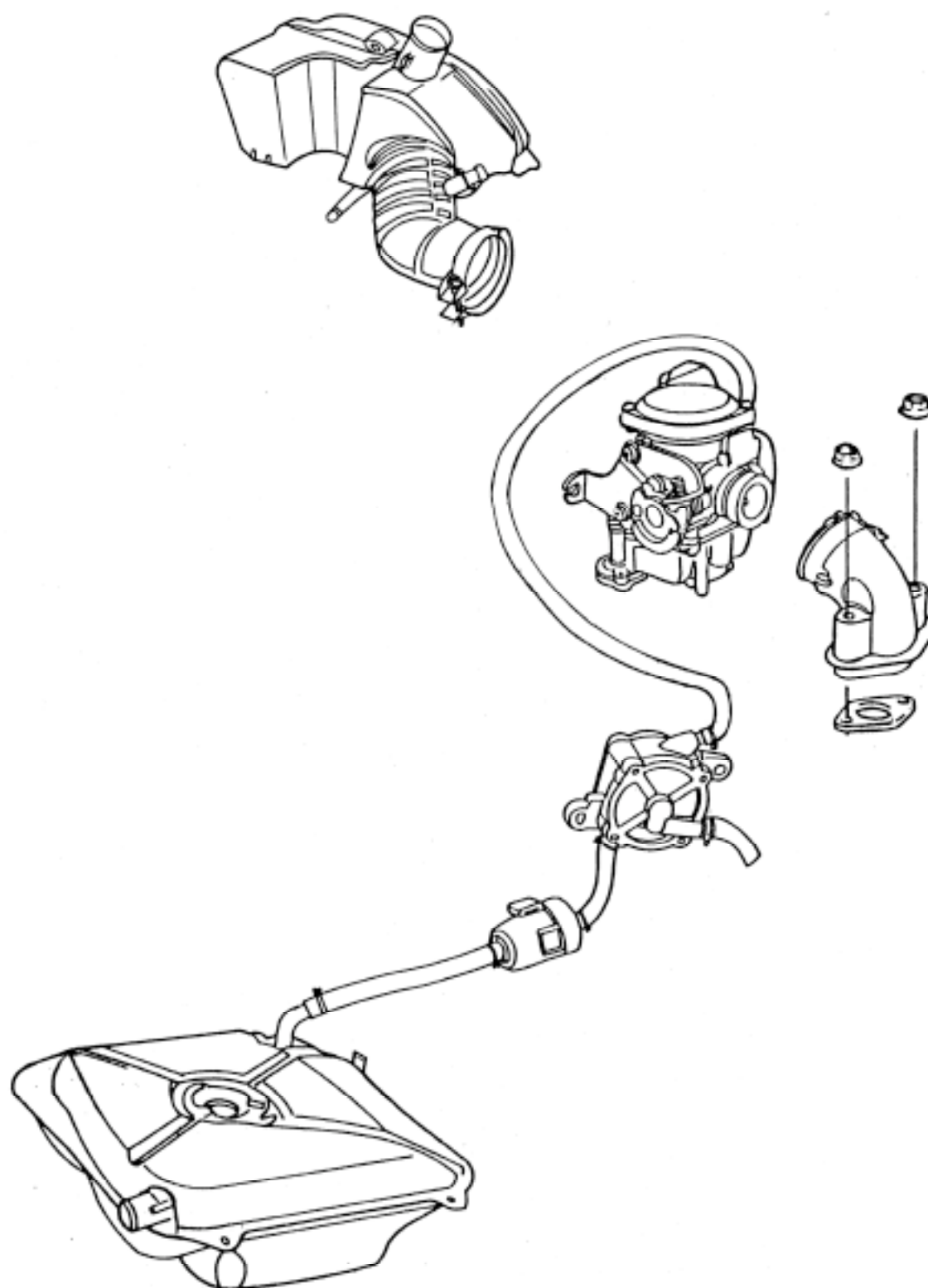


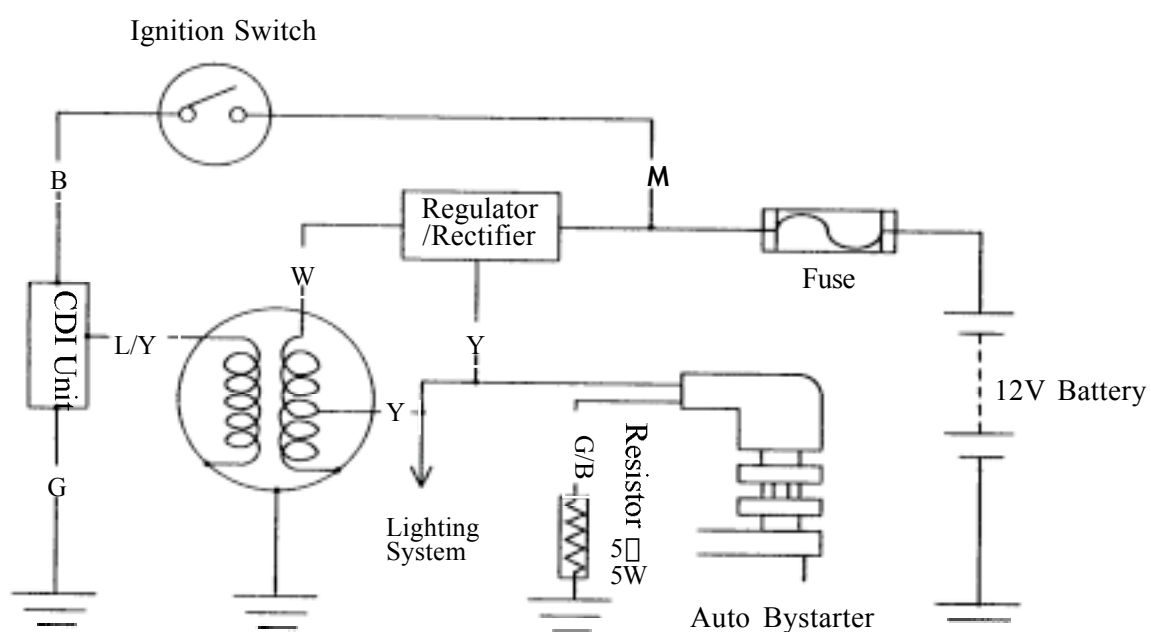
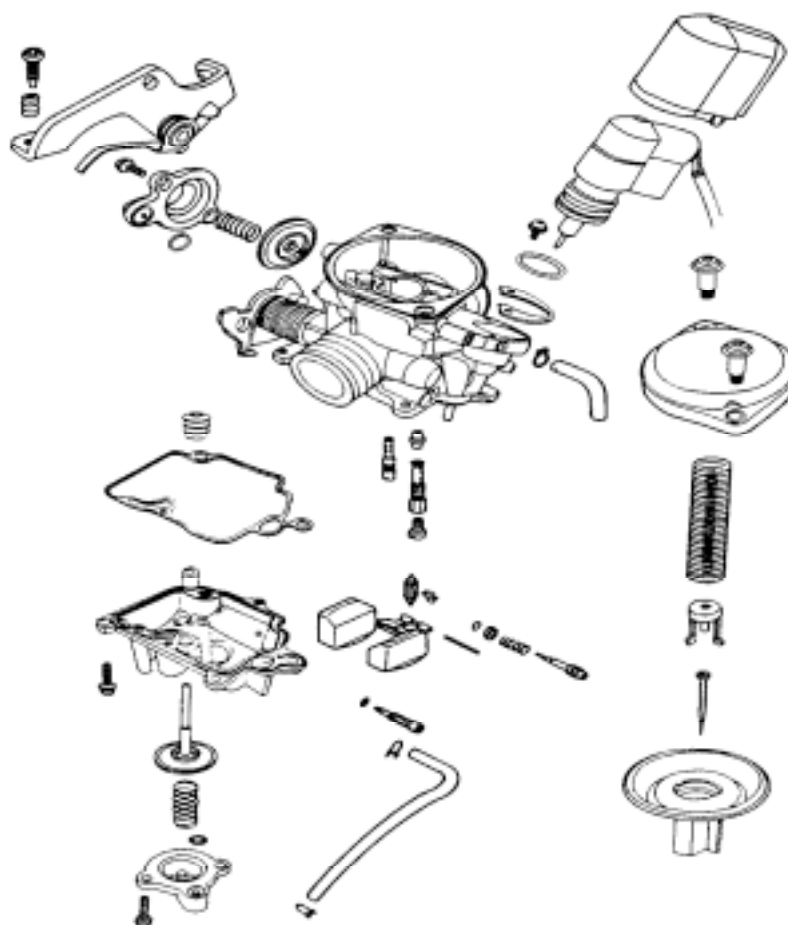
## 5. FUEL SYSTEM



**5**

## 5. FUEL SYSTEM

FILLY LX 50



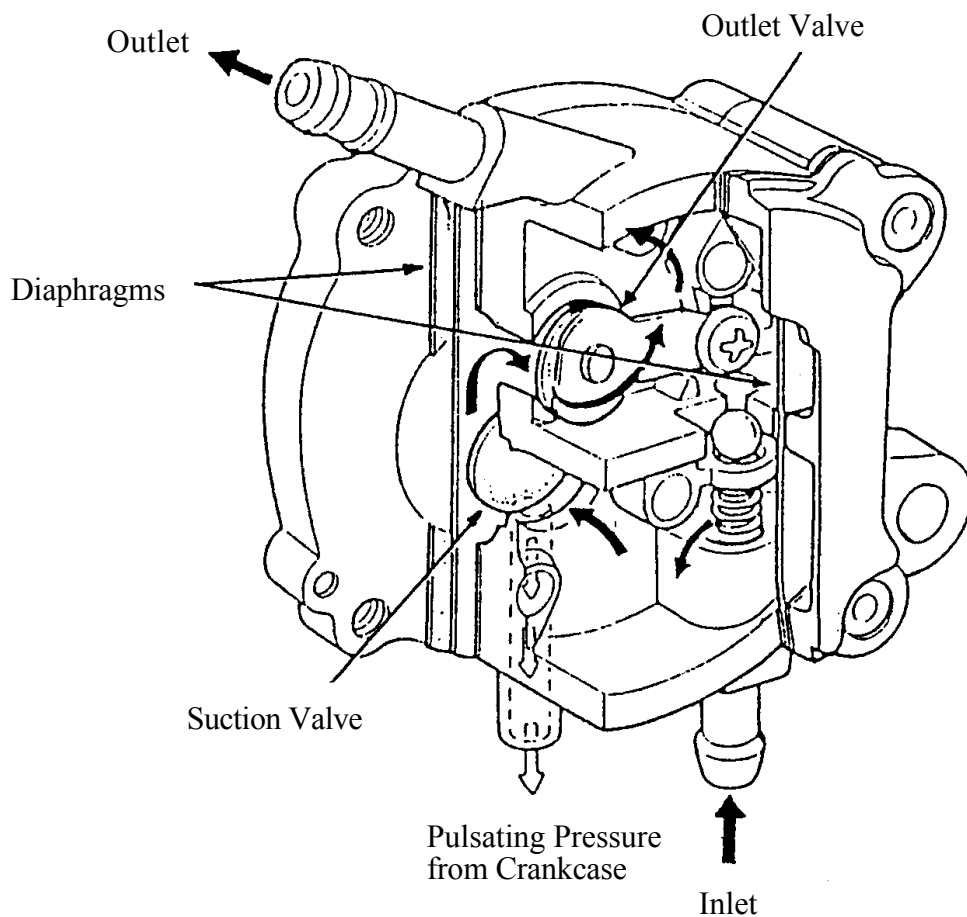
## 5. FUEL SYSTEM

### FUEL PUMP

#### CONSTRUCTION:

The fuel pump adopted for this model is a vacuum-type fuel pump which utilizes the positive and negative pulsating pressures produced by the engine crankcase to control the oil pump diaphragms and deliver fuel from the fuel tank to the carburetor through the suction valve and outlet valve.

#### FUEL PUMP CONSTRUCTION



## 5. FUEL SYSTEM

|                           |     |                               |      |
|---------------------------|-----|-------------------------------|------|
| SERVICE INFORMATION ..... | 5-3 | ACCELERATING PUMP .....       | 5-11 |
| TROUBLESHOOTING .....     | 5-4 | CARBURETOR INSTALLATION ..... | 5-12 |
| CARBURETOR REMOVAL .....  | 5-5 | PILOT SCREW ADJUSTMENT .....  | 5-13 |
| AUTO BYSTARTER .....      | 5-5 | FUEL TANK .....               | 5-14 |
| AIR CUT-OFF VALVE .....   | 5-7 | AUTO FUEL VALVE .....         | 5-15 |
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| FLOAT CHAMBER .....       | 5-9 | AIR CLEANER .....             | 5-18 |

### SERVICE INFORMATION

#### GENERAL INSTRUCTIONS



Gasoline is very dangerous. When working with gasoline, keep sparks and flames away from the working area.

Gasoline is extremely flammable and is explosive under certain conditions. Be sure to work in a well-ventilated area.

- When disassembling the carburetor, be sure to service the vacuum piston and float chamber.
- Do not bend or twist control cables. Damaged control cables will not operate smoothly.
- When disassembling fuel system parts, note the locations of O-rings. Replace them with new ones during assembly.
- Before float chamber disassembly, loosen the drain screw to drain the residual gasoline into a clean container.
- After the carburetor is removed, plug the intake manifold side with a clean shop towel to prevent foreign matters from entering.
- Remove the vacuum diaphragm before cleaning the carburetor air and fuel passages with compressed air to avoid damaging the vacuum diaphragm.
- When the motorcycle is not used for over one month, drain the residual gasoline from the float chamber to avoid erratic idling and clogged slow jet due to deteriorated fuel.

#### SPECIFICATIONS

| Item                    | Standard    |
|-------------------------|-------------|
| Venturi dia. (mm)       | 20          |
| Type                    | CVK         |
| Float level (mm)        | 17          |
| Main jet                | #85         |
| Slow jet                | #35         |
| Idle speed              | 1900rpm     |
| Throttle grip free play | 2 _ 6mm     |
| Pilot screw opening     | 2 $\pm$ 1/2 |

## **5. FUEL SYSTEM**

---

### **TROUBLESHOOTING**

#### **Engine is hard to start**

- No spark at plug (⇒ Section 15)
- Compression too low
- No fuel to carburetor
  - Clogged fuel filter
  - Restricted fuel line
  - Faulty float valve
  - Incorrectly adjusted float level
- Engine flooded with fuel
  - Clogged air cleaner
  - Fuel overflowing
- Intake air leak
- Contaminated fuel
- Faulty auto bystarter
- Clogged idle system or auto bystarter passages

#### **Rich mixture**

- Faulty auto bystarter
- Faulty float valve
- Float level too high
- Clogged air jets
- Dirty air cleaner
- Flooded carburetor

#### **Backfiring at deceleration**

- Lean mixture in idle system
- Improper air cut-off valve operation

#### **Misfiring during acceleration**

- Faulty ignition system
- Lean mixture
- Faulty accelerating pump

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

- Clogged fuel system
- Ignition malfunction
- Rich or lean mixture
- Contaminated fuel
- Intake air leak
- Incorrect idle speed
- Incorrectly adjusted pilot screw
- Clogged idle system or auto bystarter passages
- Incorrectly adjusted float level

#### **Lean mixture**

- Clogged fuel jets
- Faulty float valve
- Float level too low
- Clogged fuel system
- Intake air leak
- Improper vacuum piston operation
- Improper throttle operation

## 5. FUEL SYSTEM

### CARBURETOR REMOVAL

Remove the frame right side cover. (⇒2-4)  
 Disconnect the auto bystarter wire connector.  
 Remove the met-in box. (⇒2-3)



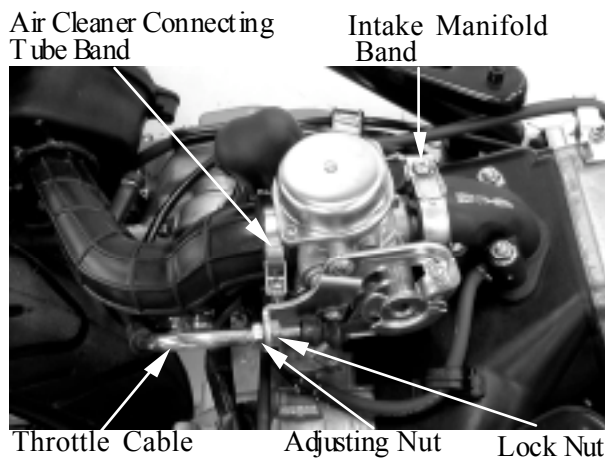
Auto Bystarter Wire

Loosen the drain screw and drain the fuel from the float chamber.  
 Disconnect the fuel tube and vacuum tube at the carburetor.



Fuel Tube

Loosen the throttle cable adjusting nut and lock nut, and disconnect the throttle cable from the carburetor.  
 Loosen the carburetor intake manifold band and air cleaner connecting tube band screws and then remove the carburetor.



### AUTO BYSTARTER

#### OPERATION INSPECTION

Measure the resistance between the auto bystarter wire terminals.

**Resistance:** 10Ω max. (10 minutes minimum after stopping the engine)

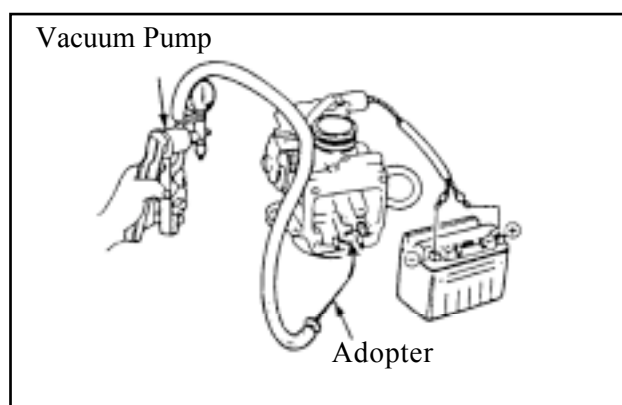
If the reading is not within the limit, replace the auto bystarter with a new one.



## 5. FUEL SYSTEM

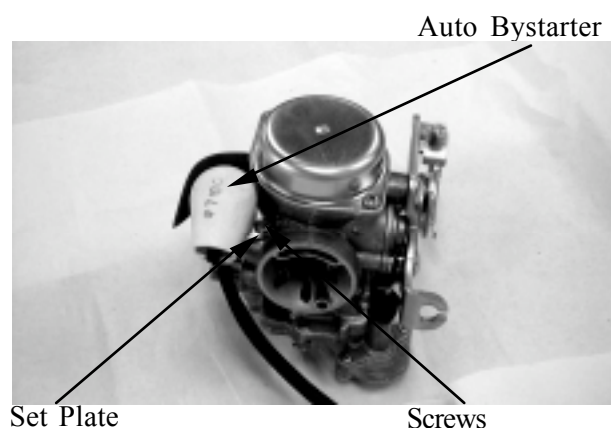
Connect a hose to the fuel enriching circuit of the carburetor. Connect the auto bystarter yellow wire to the positive (+) terminal of a battery and green wire to the negative (-) terminal. Wait 5 minutes and blow the hose with mouth or vacuum pump. If the passage is blocked, the auto bystarter is normal.

Disconnect the auto bystarter from the battery. Wait 30 minutes and blow the hose with mouth or vacuum pump. If air can be blown into the hose, the auto bystarter is normal.



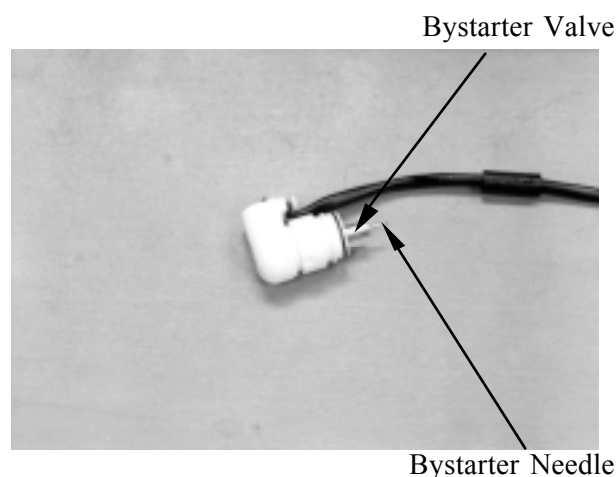
### REMOVAL

Remove the set plate screws and set plate. Remove the auto bystarter from the carburetor.



### AUTO BYSTARTER INSPECTION

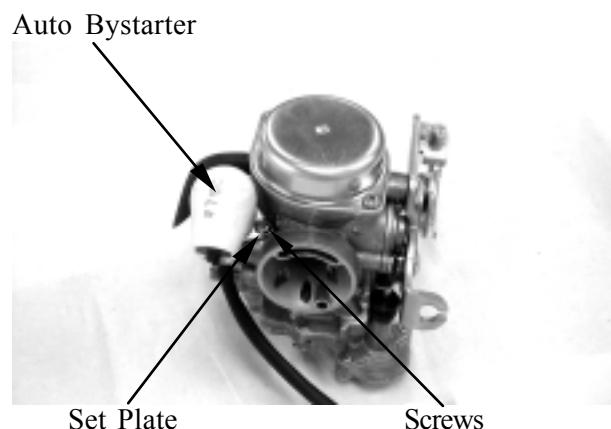
Check the auto bystarter valve and needle for nicks, wear or damage. If any faulty part is found, replace the auto bystarter as a set.



### INSTALLATION

Insert the auto bystarter into the carburetor body until it bottoms. Position the set plate into the groove in the auto bystarter and tighten the screws.

- \* • Be sure to install the auto bystarter and set plate properly.
- Install the set plate with its bottom face facing down.



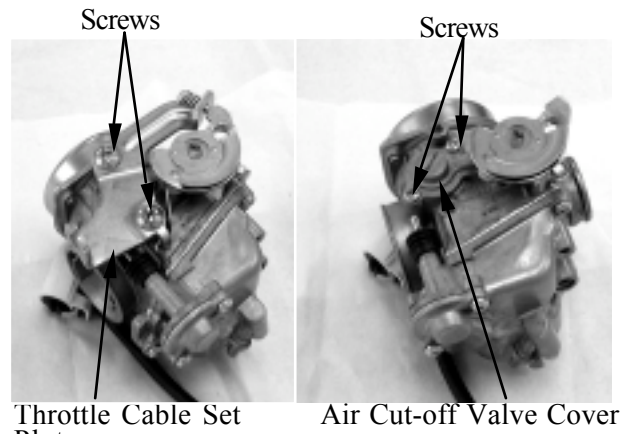


## 5. FUEL SYSTEM

### AIR CUT-OFF VALVE

#### DISASSEMBLY

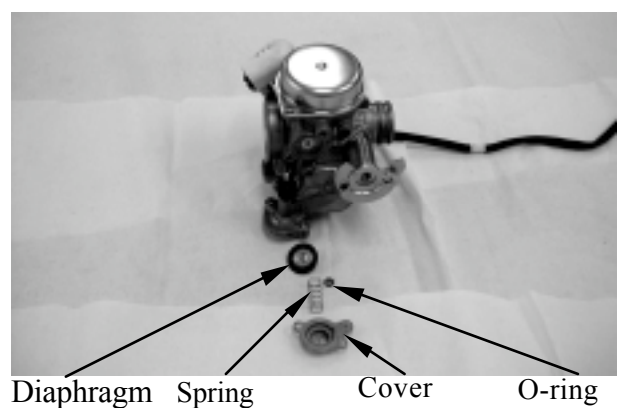
Remove the two screws attaching the throttle cable set plate and the set plate.  
Remove the two screws attaching the air cut-off valve.  
Remove the spring and vacuum diaphragm.  
Check the vacuum diaphragm for cracks or damage and check each passage for clogging.



#### ASSEMBLY

Install the vacuum diaphragm onto the carburetor.  
Install the spring and air cut-off valve cover.  
Install the throttle cable set plate and tighten the two screws.

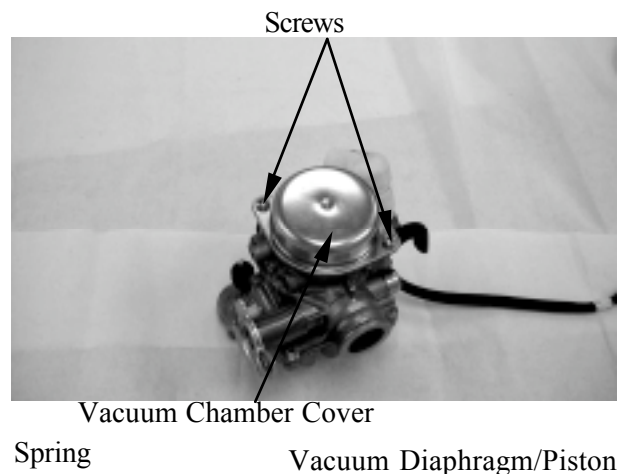
- \* • Be sure to set the vacuum diaphragm lip into the groove on the carburetor.  
• When installing the air cut-off valve cover, make sure that the vacuum diaphragm is properly installed.



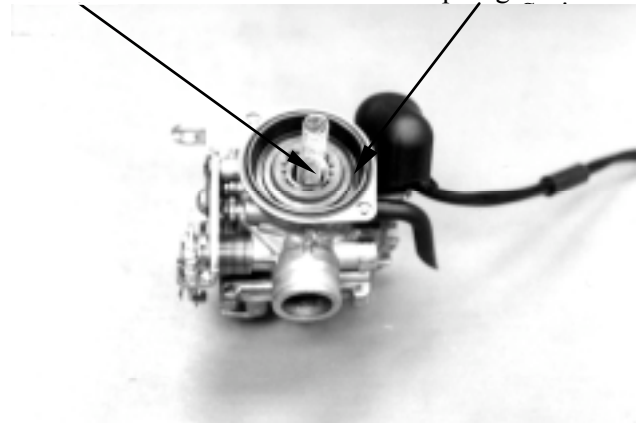
### VACUUM CHAMBER

#### DISASSEMBLY

Remove the two vacuum chamber cover screws and the cover.



Remove the spring and vacuum diaphragm/piston.

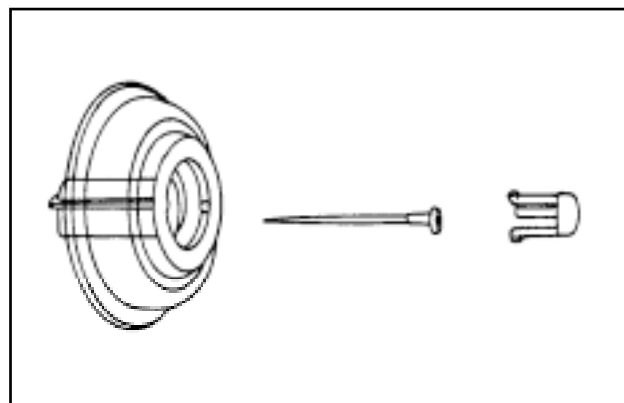




## 5. FUEL SYSTEM

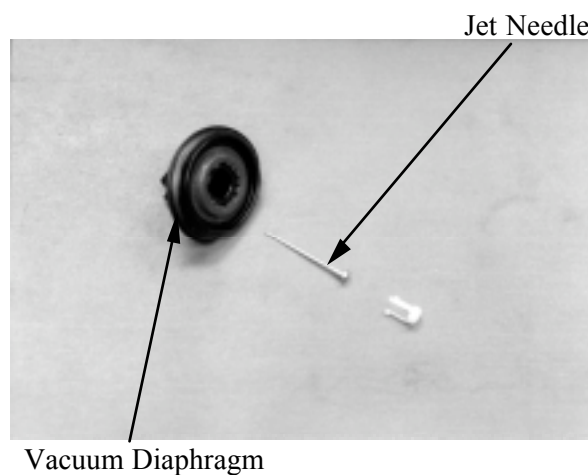
Remove the needle holder and jet needle.

- \* Be careful not to damage the vacuum diaphragm.



### INSPECTION

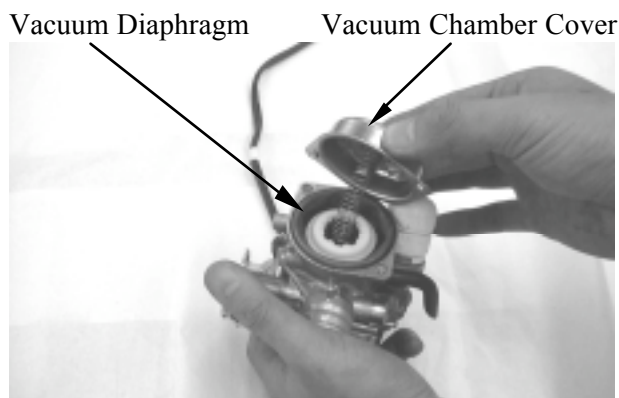
Inspect the needle for stepped wear.  
Inspect the vacuum piston for wear or damage.  
Inspect the diaphragm for deterioration and tears.



### ASSEMBLY

Install the vacuum piston/diaphragm in the carburetor body.  
Install the spring and then install the vacuum chamber cover.  
Tighten the two screws.

- \*
  - Be careful not to damage the diaphragm.
  - Hold the vacuum piston while tightening the vacuum chamber cover.

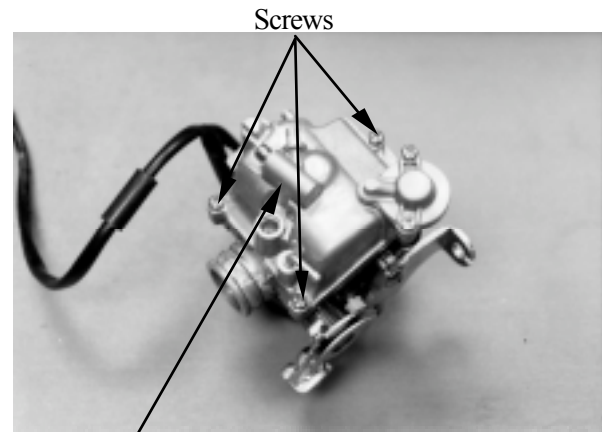


## 5. FUEL SYSTEM

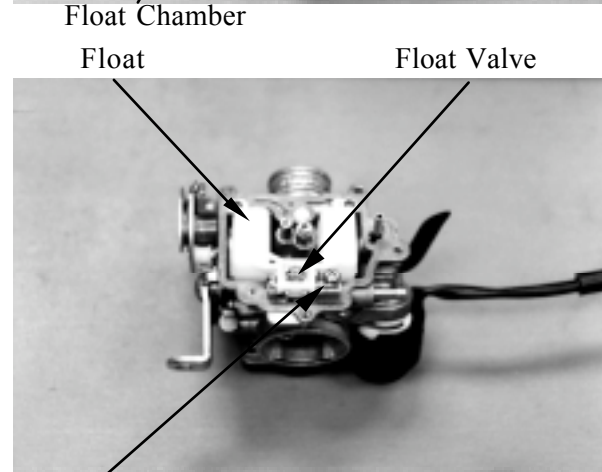
### FLOAT CHAMBER

#### DISASSEMBLY

Remove the three float chamber screws and the float chamber.

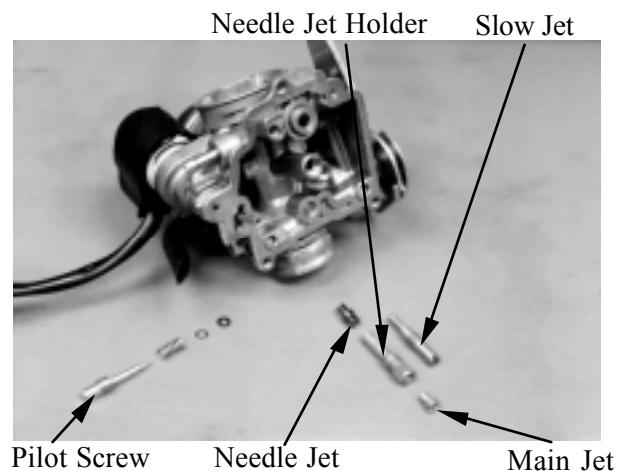


Loosen the float pin screw.  
Remove the float pin, float and float valve.

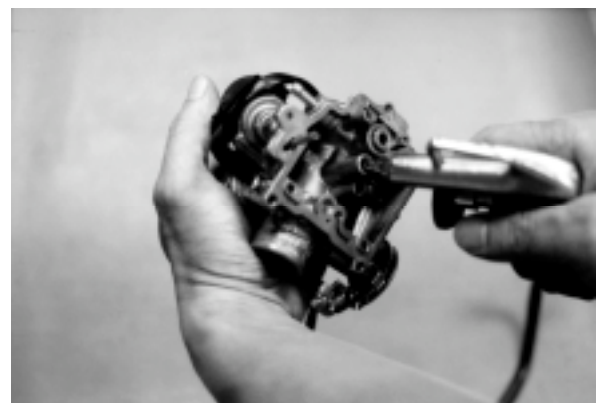


Remove the main jet, needle jet holder, needle jet, slow jet and pilot screw.

- \***
- Be careful not to damage the fuel jets and pilot screw.
  - Before removing, turn the pilot screw in and carefully count the number of turns until it seats lightly and then make a note of this.
  - Do not force the pilot screw against its seat to avoid seat damage.



Clean the removed fuel jets with detergent oil and blow them open with compressed air.  
Blow compressed air through all passages of the carburetor body.



## 5. FUEL SYSTEM

### INSPECTION

Inspect the float valve and valve seat for damage or clogging.

Inspect the float valve and valve seat contact area for stepped wear or contamination.

- \* Worn or contaminated float valve and valve seat must be replaced because it will result in float level too high due to incomplete airtightness.

### ASSEMBLY

Install the slow jet, needle jet, needle jet holder, main jet and pilot screw.

- \* Return the pilot screw to the original position as noted during removal.

**Standard Opening:**  $2\pm\frac{1}{2}$  turns

Install the float valve, float and float pin. Secure the float pin with the screw.

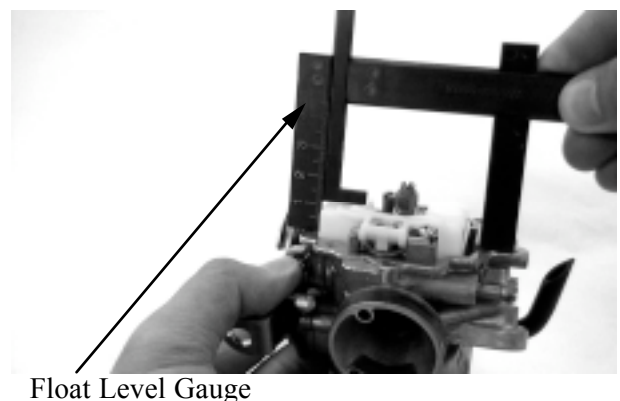
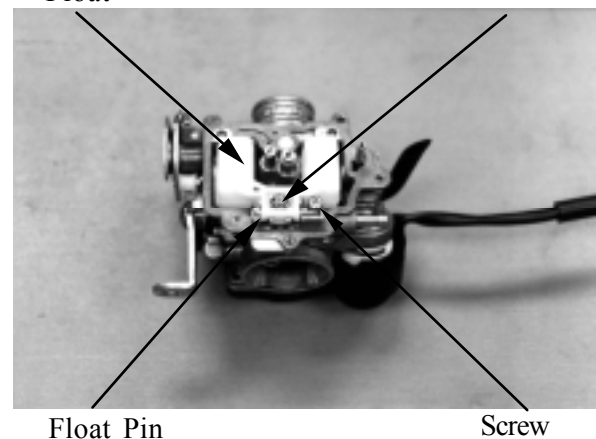
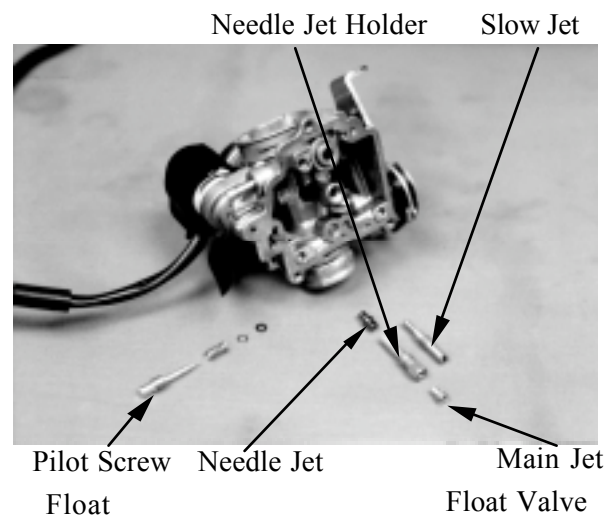
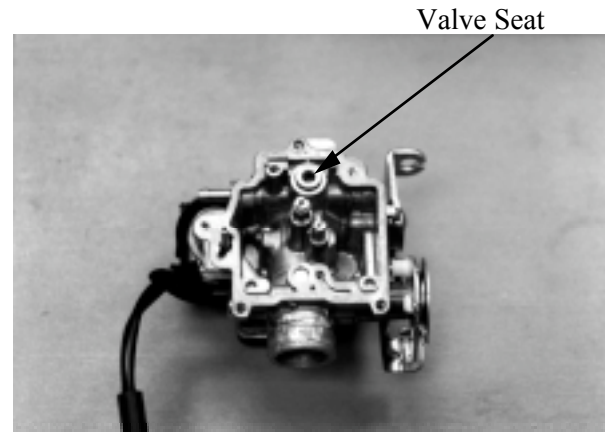
### FLOAT LEVEL INSPECTION

- \* • Check the operation of the float valve and float before this inspection.
- Measure the float level by placing the float level gauge on the float chamber face parallel with the main jet.

Measure the float level.

**Float Level:** 17.0mm

This installation sequence is the reverse of removal.



## 5. FUEL SYSTEM

### ACCELERATING PUMP

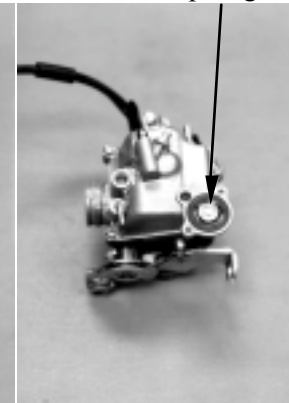
#### DISASSEMBLY

Remove the two accelerating pump cover screws and accelerating pump cover.  
Remove the spring and accelerating pump diaphragm.

Screws

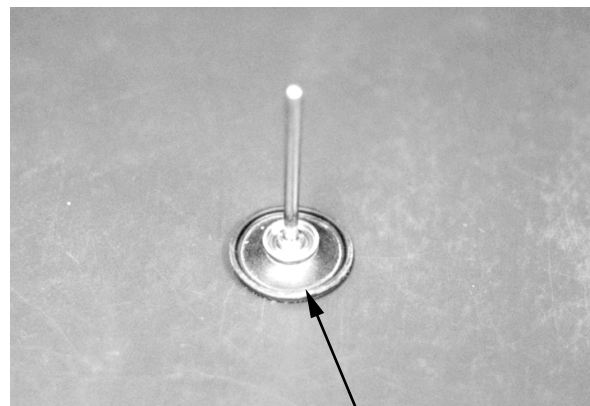


Diaphragm



#### INSPECTION

Inspect the accelerating pump diaphragm for cracks, damage or deterioration. Replace if necessary.

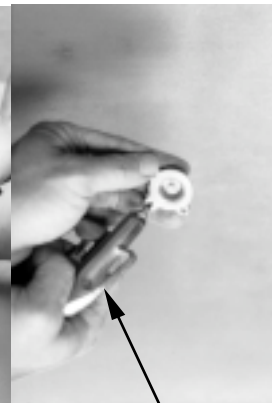


Diaphragm

Check each accelerating pump fuel passage for clogging.  
Clean and blow them open with compressed air.



Compressed Air



Compressed Air

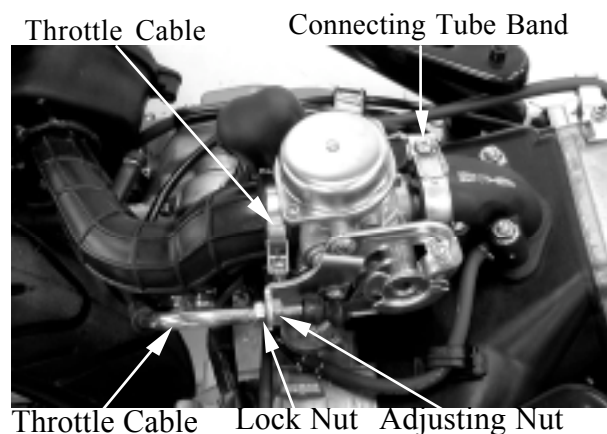
Install the accelerating pump in the reverse order of removal.

\* Be careful not to damage the diaphragm during installation.

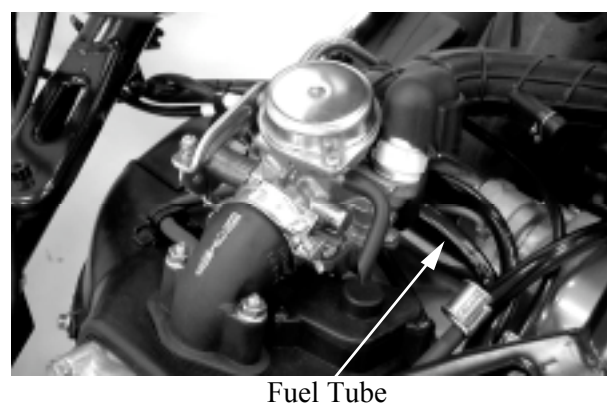
## 5. FUEL SYSTEM

### CARBURETOR INSTALLATION

Tighten the drain screw.  
 Install the carburetor onto the intake manifold, aligning the tab on the carburetor with the cutout in the intake manifold.  
 Tighten the intake manifold band screw.  
 Install the air cleaner connecting tube and tighten the band screw.  
 Connect the throttle cable to the throttle wheel on the carburetor.  
 Tighten the lock nut.



Connect the fuel tube and vacuum tube to the carburetor.



Connect the auto bystarter wire connector.  
 Perform the following inspections and adjustments:

- Throttle grip free play (⇒3-3)
- Carburetor idle speed (⇒3-5)



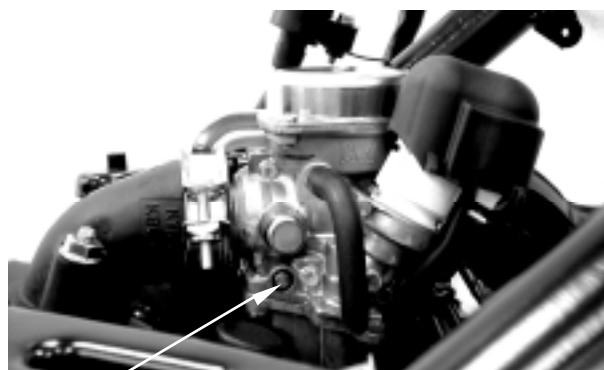


## 5. FUEL SYSTEM

### PILOT SCREW ADJUSTMENT

#### \* ADJUSTMENT

- \*
  - The pilot screw is factory pre-set and no adjustment is necessary. During carburetor disassembly, note the number of turns of the pilot screw and use as a reference when reinstalling it.
  - Place the motorcycle on its main stand on level ground for this operation.



Pilot Screw

A tachometer must be used when adjusting the engine speed.

Turn the pilot screw clockwise until it seats lightly and back it out to the specification given.

**Standard Opening:**  $2 \pm 1/2$  turns

- \*
  - The carburetor must be adjusted when the engine is warm and the auto bystarter is closed.
  - Do not force the pilot screw against its seat to prevent damage.

Warm up the engine and adjust the throttle stop screw to obtain the specified idle speed.

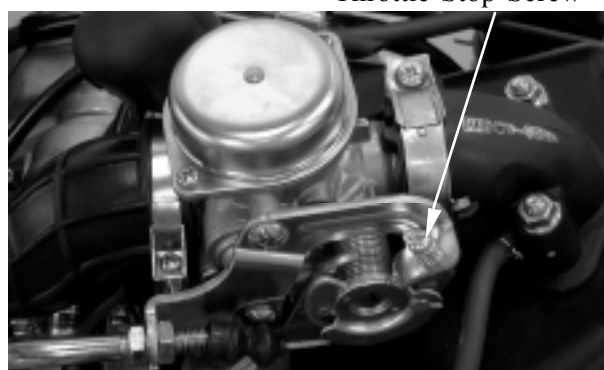
**Idle Speed:**  $1900 \pm 100$ rpm

Turn the pilot screw in or out slowly to obtain the highest engine speed.

Slightly accelerate several times to make sure that the idle speed is within the specified range.

If the engine misses or runs erratic, repeat the above steps.

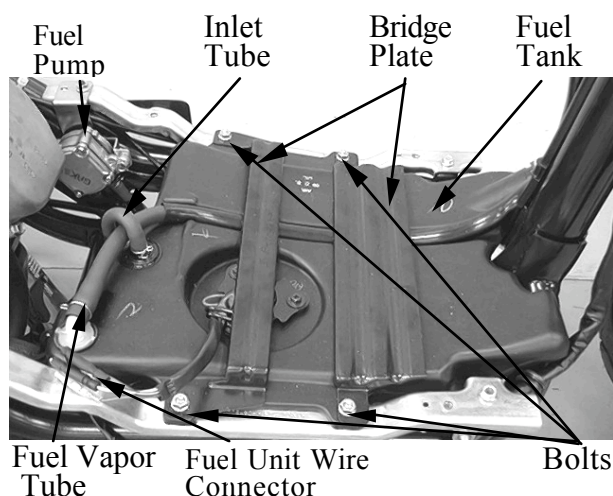
Throttle Stop Screw



## 5. FUEL SYSTEM

### FUEL TANK REMOVE

Remove the net-in box. (⇒2-3)  
 Remove the frame center cover.  
 Remove the frame body cover. (⇒2-3)  
 Remove the floor board. (⇒2-4)  
 Remove the leg shield. (⇒2-5)  
 Remove the four bolts on the fuel tank, take the upper bridge plate off.  
 Remove the fuel tube between the fuel tank and the fuel filler.  
 Disconnect the fuel vapor tube.  
 Remove the inlet tube on the fuel pump.  
 Disconnect the fuel unit wire connector.  
 Remove the fuel tank.  
 The installation sequence is the reverse of removal.



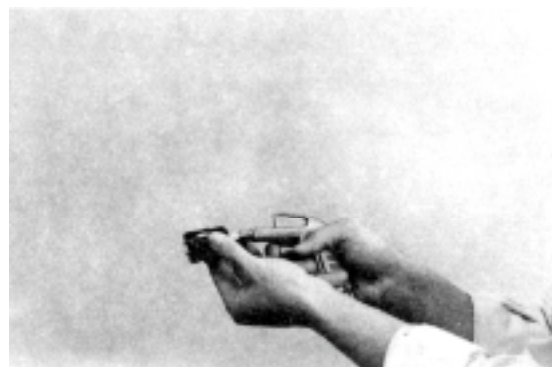
### FUEL STRAINER REMOVAL

Remove the fuel strainer from the fuel tank.

#### INSPECTION

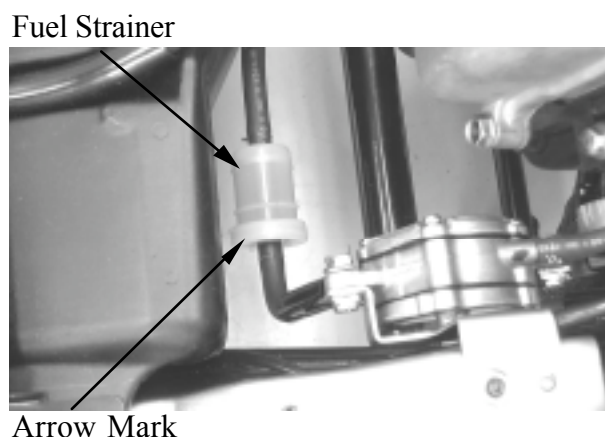
Inspect if the fuel strainer is clogged and clean it with compressed air.

- \***
- When removing the fuel strainer, do not allow flames or sparks near the working area and drain the residual gasoline into a container.



#### INSTALLATION

Install the fuel strainer with its arrow mark toward the fuel pump.





## 5. FUEL SYSTEM

### FUEL PUMP REMOVAL

Remove the met-box. (⇒2-3)

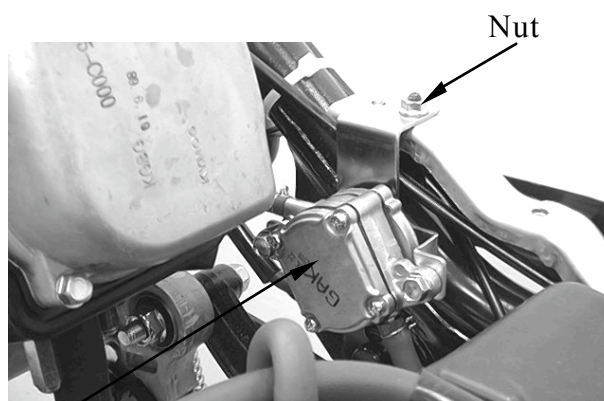
Remove the frame center cover. (⇒2-3)

Remove the floor board. (⇒2-4)

Disconnect the fuel pump inlet, outlet and vacuum tubes.

Remove the fuel pump attaching bolts and the fuel pump.

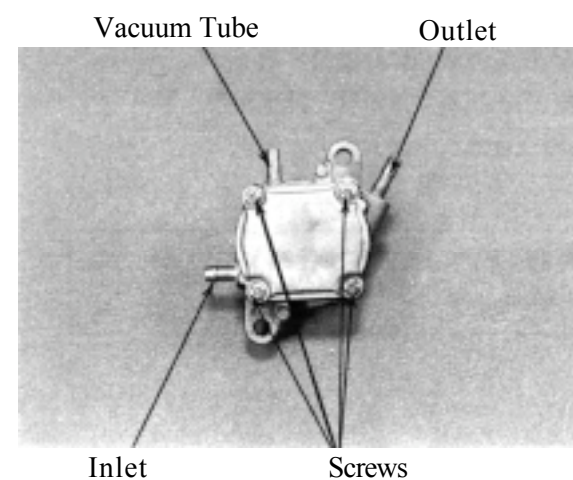
Remove the fuel pump.



Fuel Pump

### FUEL PUMP DISASSEMBLY

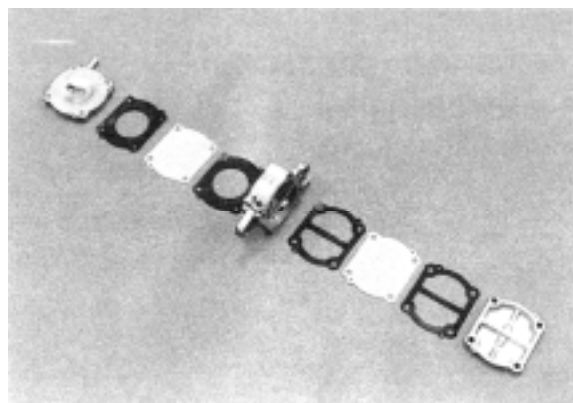
Remove the four fuel pump body screws.



Inlet

Screws

Disassemble the fuel pump.



## 5. FUEL SYSTEM

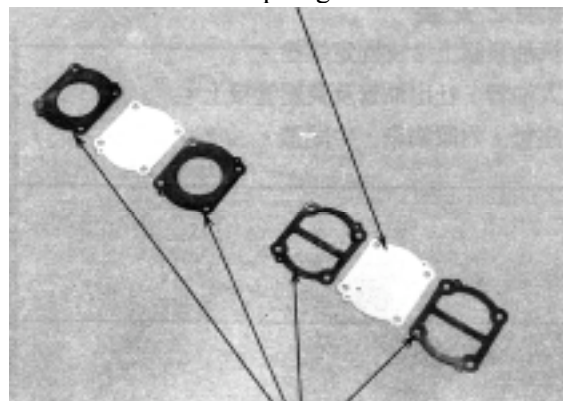
### FUEL PUMP INSPECTION

Inspect the fuel pump diaphragms A and B for damage.

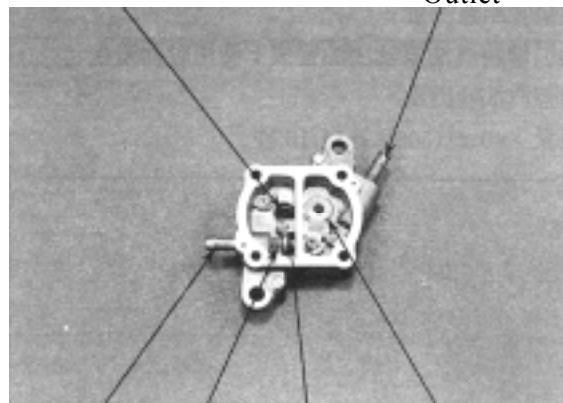
Inspect each gasket for damage.

Inspect the suction valve, outlet valve and relief valve in the fuel pump body for damage, cracks or foreign matters.

Diaphragm A



Suction Valve Gaskets Outlet



Inlet Spring Relief Valve Outlet Valve

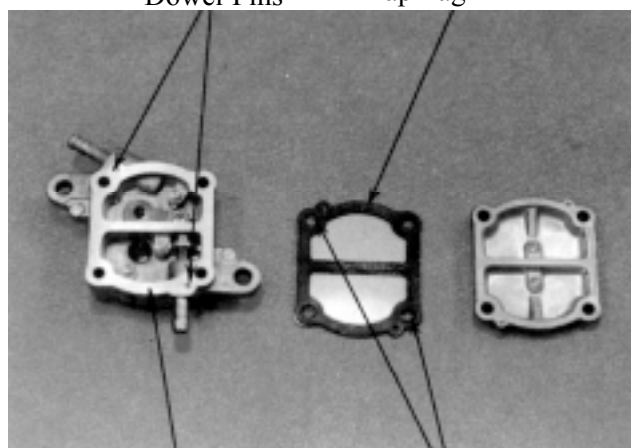
### FUEL PUMP ASSEMBLY

Assemble the fuel pump in the reverse order of disassembly.

**\***

- During assembly, be sure to install the gaskets and diaphragms properly to avoid damage.
- Do not allow any foreign matter to enter the fuel pump during assembly.

Dowel Pins Diaphragm B



Fuel Pump Body Dowel Pin Holes

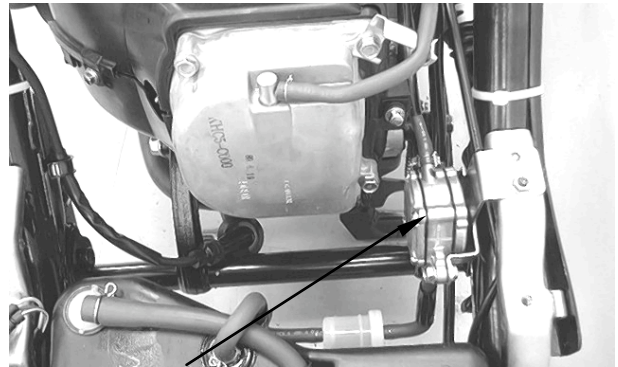
## 5. FUEL SYSTEM

### FUEL PUMP INSTALLATION

Install the fuel pump and secure it with the bolts.

Connect the fuel pump inlet, outlet and vacuum tubes.

Install the floor board, met-in box and frame center cover.



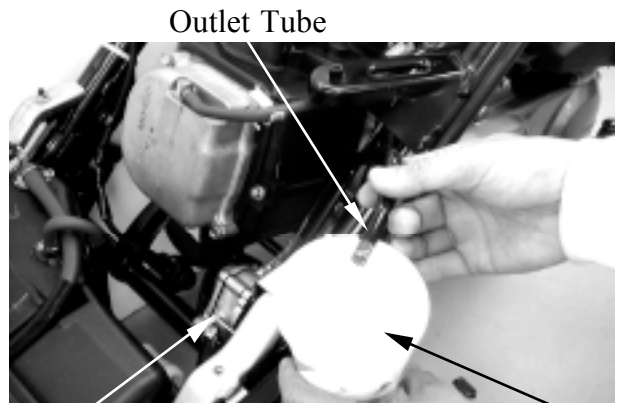
Fuel Pump

### MEASURE THE FUEL PUMP OUTPUT

Start the engine and disconnect the fuel outlet tube and place a clean container under the tube to check the fuel output.

**Output:** 9cc/1700rpm/10 seconds .

22cc/4000rpm/10 seconds .



Fuel Pump

Container

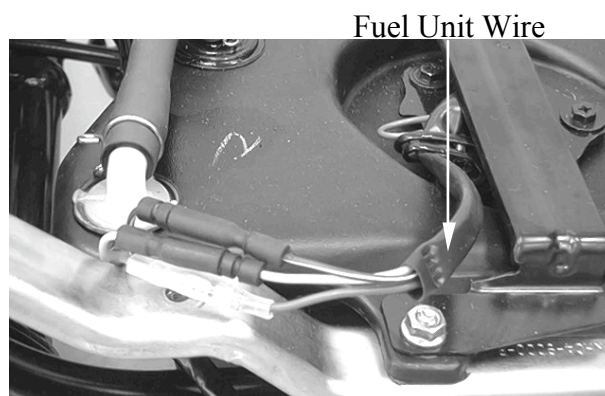
## 5. FUEL SYSTEM

### FUEL UNIT

#### REMOVAL

Remove the related parts.  
Disconnect the fuel unit wire connector.  
Turn the fixed plate on the fuel unit left, take the fuel unit off.

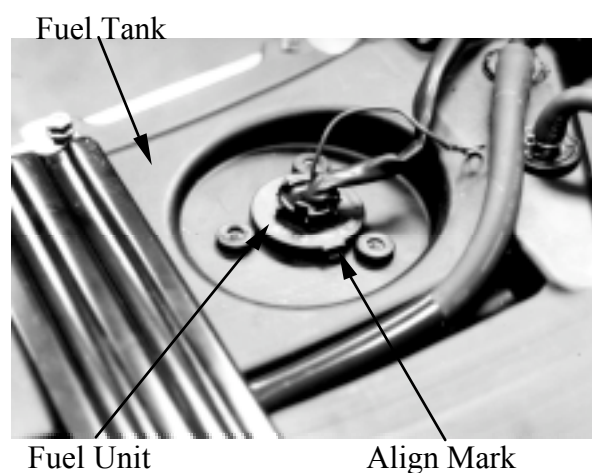
- \* Do not bend the float arm on the fuel unit, otherwise the figure on the fuel meter will not correct.



#### INSTALLATION

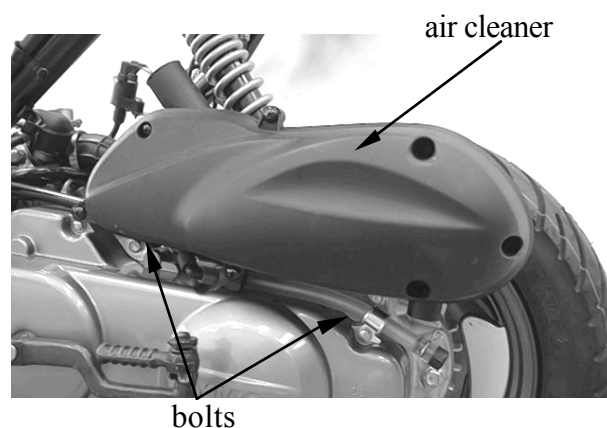
Inspect if the fuel unit is damaged, or hardened.  
Assemble the fuel unit in the reverse order of disassembly.

- \* Align the groove on the fuel unit with the angle on the fuel tank.
- \* Inspect if the fuel tank leaked after installing and filling the gasoling.



### AIR CLEANER

Loosen the air cleaner connecting tube band screw.  
Disconnect the clinhead cover breather tube from the air cleaner.  
Remove the two bolts and air cleaner case.



**FILLY LX 50**

The installation sequence is the reverse of removal.

