# 5. FUEL SYSTEM



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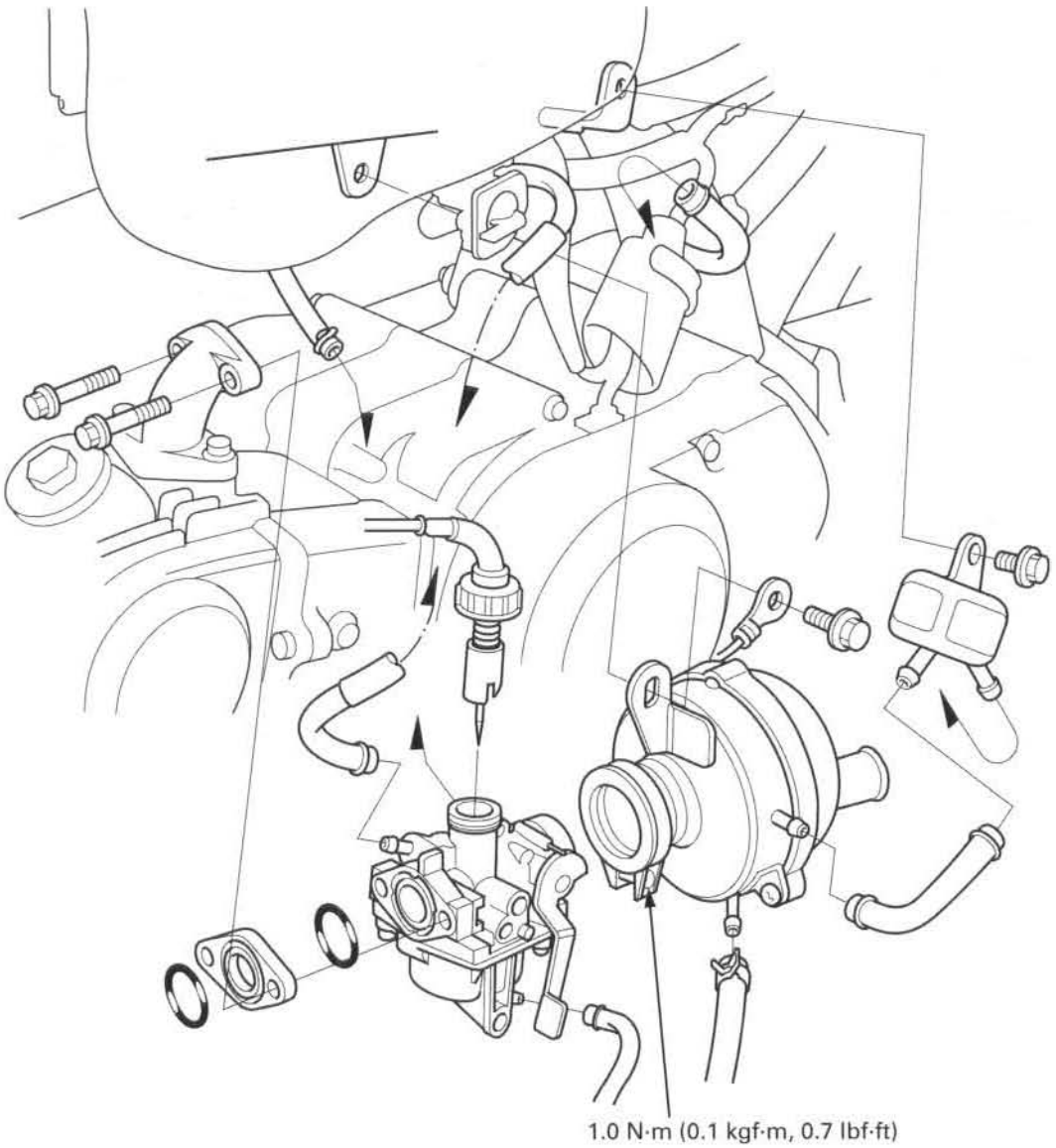
# COMPONENT LOCATION



# SERVICE INFORMATION

## GENERAL

- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.
- Refer to page 2-4 for fuel tank removal and installation.
- When disassembling fuel system parts, note the location of the O-rings. Replace them with new ones on reassembly.
- Before disassembling the carburetor, place the suitable container under the carburetor drain hose. Loosen the screw and drain the carburetor.
- After removing the carburetor, wrap the intake port of the engine with a shop towel or cover it with piece of tape to prevent any foreign material from dropping into the engine.

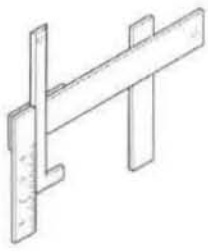
## SPECIFICATIONS

| ITEM | | SPECIFICATIONS |
|---|---|---|
| Carburetor identification number | '04 and '05 U.S.A., '04 – '07 Canada: | PA42A |
| | '06 and '07 U.S.A: | PA42B |
| | After '07: | PA42C |
| Main jet | | #58 |
| Slow jet | | #35 x #35 |
| Jet needle clip position ('04 and '05 U.S.A., '04 – '07 Canada) | | 2rd groove from top |
| Air screw initial opening | | 1-1/2 turns out |
| Float level | | 12.7 mm (0.50 in) |
| Idle speed | | 1,700 ± 100 rpm |
| Throttle grip freeplay | | 2.0 – 4.0 mm (1/16 – 3/16 in) |

## TORQUE VALUES

| | |
|---|---|
| Connecting boot band screw | 1.0 N·m (0.1 kgf·m, 0.7 lbf·ft) |

## TOOL

| | | |
|---|---|---|
| Carburetor float level gauge<br>07401-0010000<br>  | Pilot screw wrench (D type)<br>07KMA-MS60101<br> <br>or 07KMA-MN9A100 (U.S.A. only) | Pilot screw wrench guide<br>07PMA-MZ20110<br> |

# TROUBLESHOOTING

**Engine cranks but won't start**
- Too much fuel getting to the engine
  - Air cleaner clogged
  - Flooded carburetor
- Intake air leak
- Fuel contaminated/deteriorated
- No fuel to carburetor
  - Fuel strainer clogged
  - Fuel hose clogged
  - Float level misadjusted
  - Fuel tank breather hose clogged

**Lean mixture**
- Fuel jets clogged
- Float valve faulty
- Float level too low
- Fuel line restricted
- Carburetor air vent hose clogged
- Clogged fuel strainer screen
- Intake air leak
- Throttle valve faulty

**Rich mixture**
- Choke lever in CLOSE position
- Float valve faulty
- Float level too high
- Air jets clogged
- Air cleaner element contaminated
- Flooded carburetor

**Engine stalls, hard to start, idles roughly**
- Fuel line restricted
- Ignition malfunction
- Fuel mixture too lean/rich
- Fuel contaminated/deteriorated
- Intake air leak
- Idle speed misadjusted
- Float level misadjusted
- Fuel tank breather hose clogged
- Air screw misadjusted
- Slow circuit clogged

**Afterburn when engine braking is used**
- Lean mixture in slow circuit

**Backfiring or misfiring during acceleration**
- Ignition system malfunction
- Fuel mixture too lean

**Poor performance (driveability) and poor fuel economy**
- Fuel system clogged
- Ignition system malfunction

# AIR CLEANER HOUSING

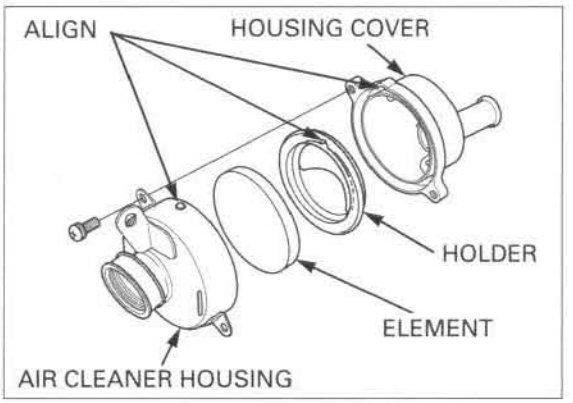
## REMOVAL/INSTALLATION

- Refer to page 3-7 for air cleaner element service.

Disconnect the crankcase breather hoses.
Loosen the connecting boot band screw.
Remove the bolt and the air cleaner housing assembly.

*At installation, secure the ground eyelet with the air cleaner housing mounting bolt.*

Installation is in the reverse order of removal.



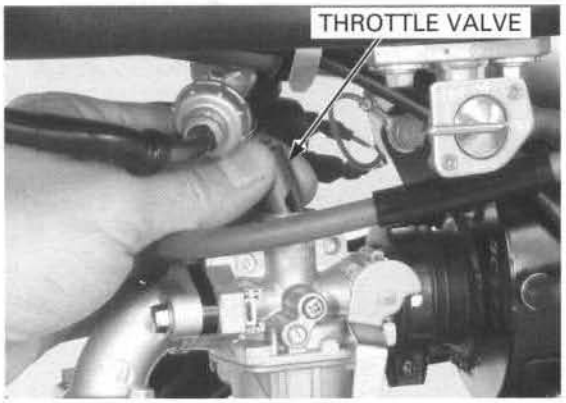

# CARBURETOR REMOVAL

## THROTTLE VALVE

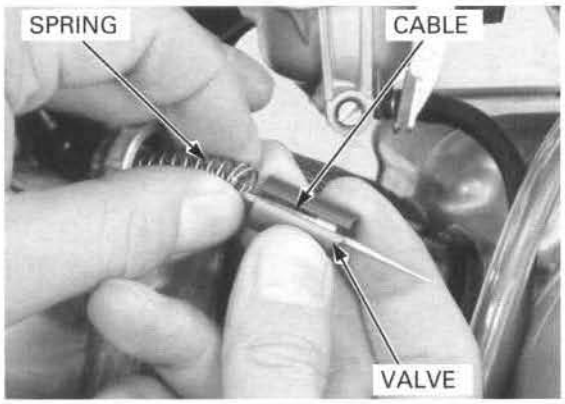
Remove the seat/shrouds/side cover/rear fender assembly (page 2-3).

Loosen the carburetor top.

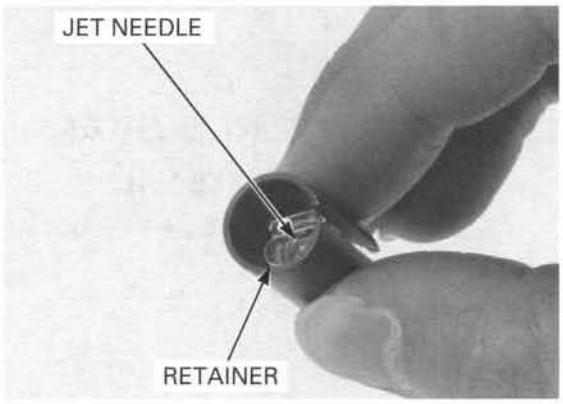
Remove the carburetor top and throttle valve from the carburetor.



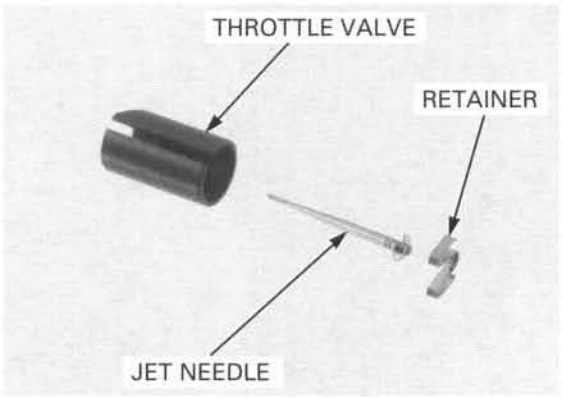

Remove the throttle cable from the throttle valve while compressing the throttle valve spring.




Remove the jet needle retainer and jet needle.



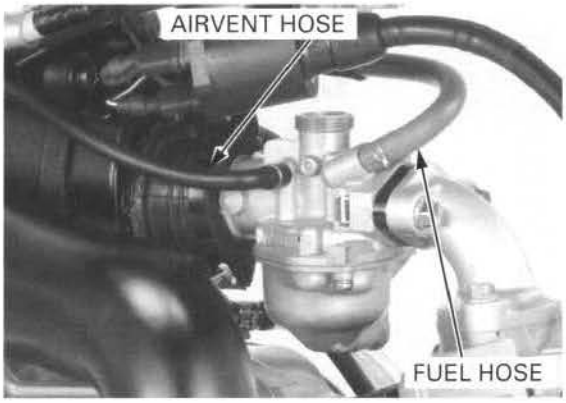

Check the throttle valve and jet needle for scratches, wear or damage.



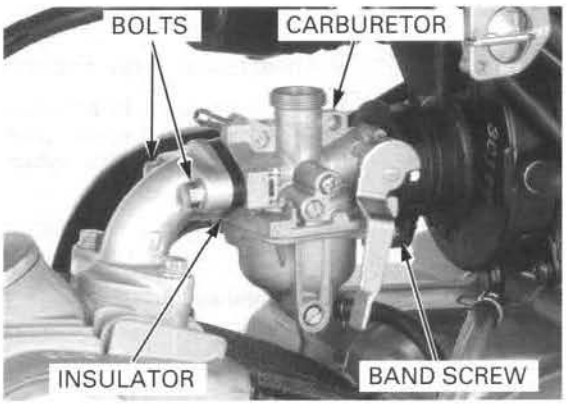
## CARBURETOR BODY

Loosen the drain screw and drain the fuel from the float chamber into an approved gasoline container.

Disconnect the fuel hose, air vent hose and from the carburetor body.



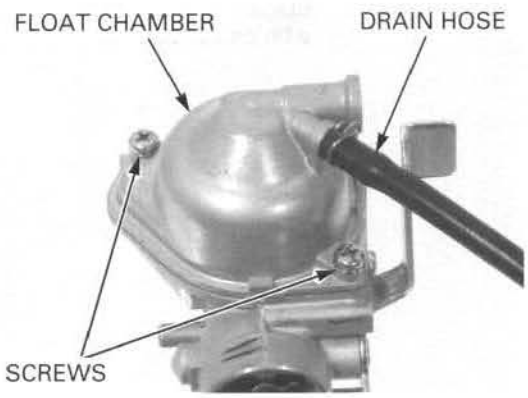

Loosen the carburetor connecting boot band screw. Remove the carburetor mounting bolts, carburetor and insulator.



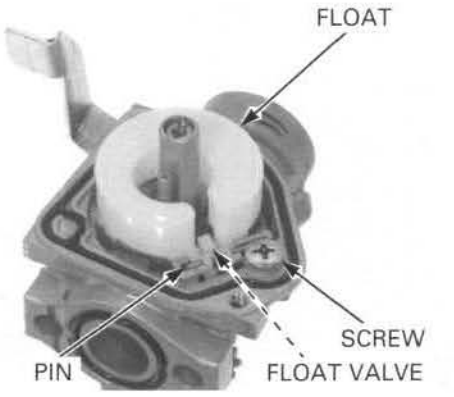

# CARBURETOR DISASSEMBLY

Remove the drain hose.

Remove the screws and float chamber.



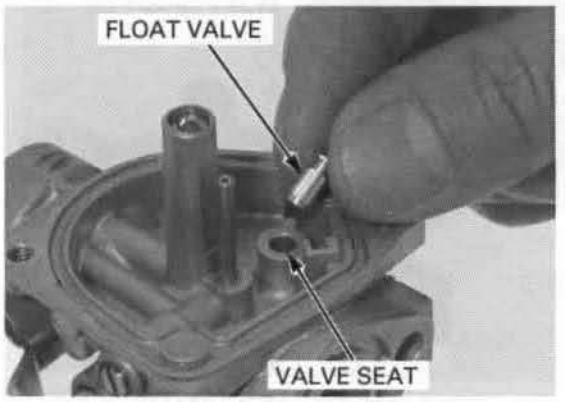

Remove the screw.
Remove the float pin, float and float valve.
Inspect the float for deformation or damage.



Inspect the float valve seat for scores, scratches, clogging and damage.

Check the tip of the float valve where it contacts the valve seat for stepped wear or contamination.
Replace the valve if the tip is worn or contaminated

Check the operation of the float valve.




*Handle all jets with care. They can easily be scored or scratched.*

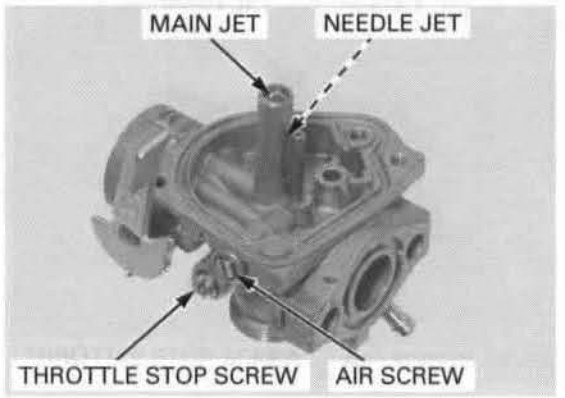
Remove the following:

- Main jet
- Needle jet
- Throttle stop screw and spring

*Damage to the air screw seat will occur if the air screw is tightened against the seat.*

Turn the air screw in and carefully count the number of turns until it seats lightly. Make a note of this to use as a reference when reinstalling the air screw.

Remove the air screw and spring.



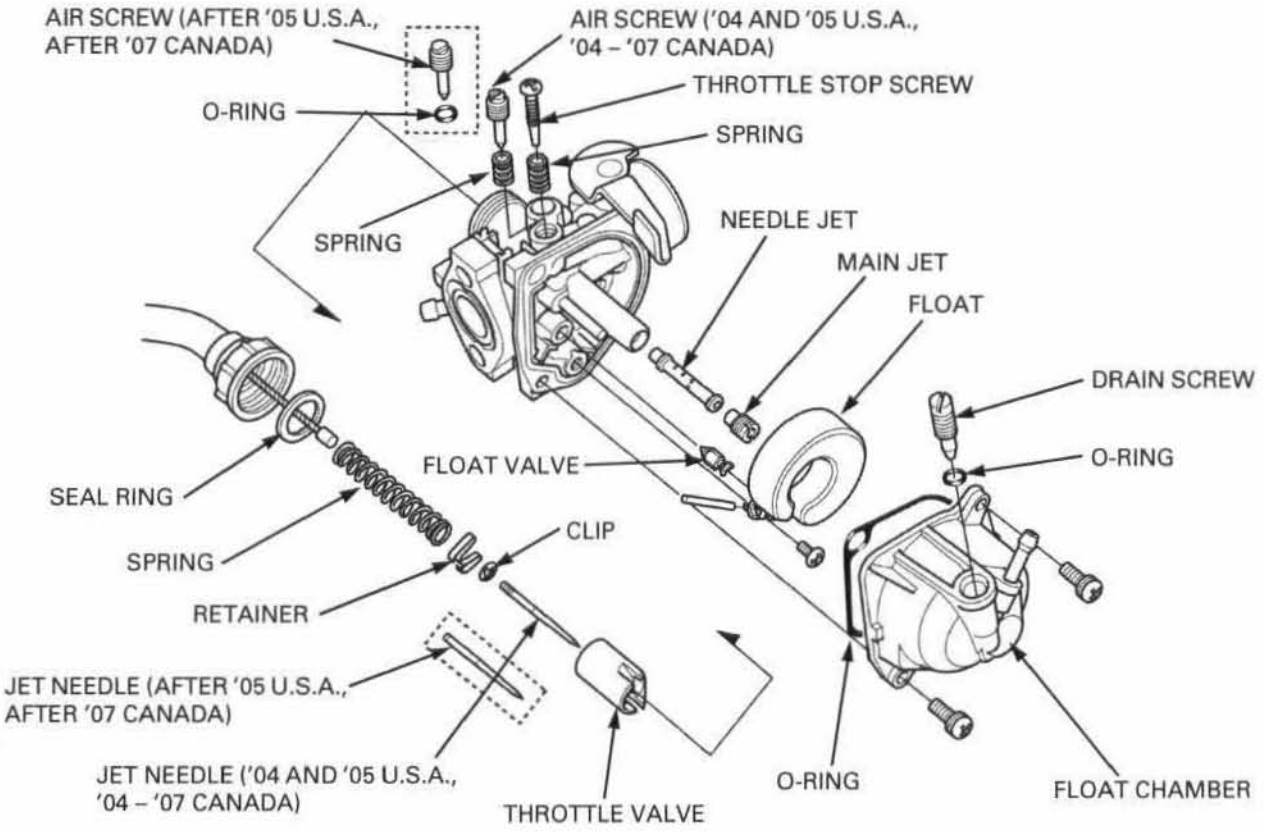

*After '05 U.S.A., After '07 Canada:*

**TOOLS:**

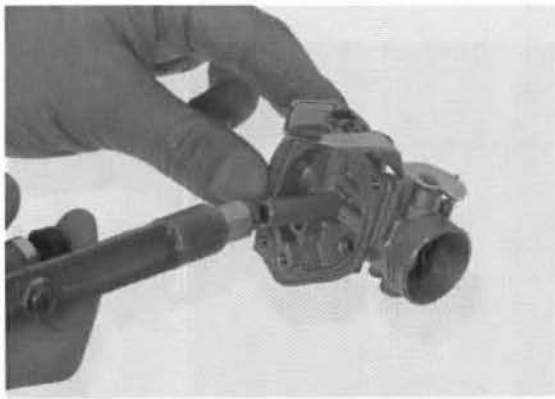
| | |
|---|---|
| **Pilot screw wrench (D type)** | **07KMA-MS60101 or 07KMA-MN9A100 (U.S.A. only)** |
| **Pilot screw wrench guide** | **07PMA-MZ20110** |

Inspect each jet for wear or damage and replace if necessary.
Clean the jets with cleaning solvent and blow open with compressed air.

# CARBURETOR ASSEMBLY




Blow open each air and fuel passage in the carburetor body with compressed air.

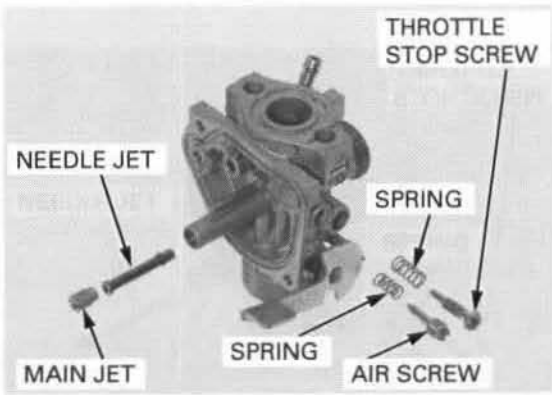


*Handle all jets with care. They can easily be scored or scratched.*

Install the following:

- Throttle stop screw and spring
- Needle jet
- Main jet

Install the air screw with the spring and return it to its original position as noted during removal.




*After '05 U.S.A., After '07 Canada:*

**TOOLS:**

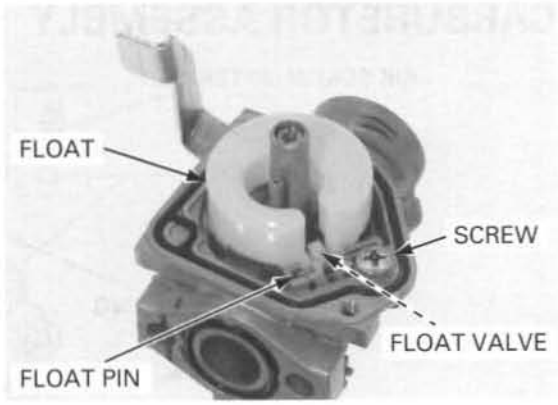
| | |
|---|---|
| **Pilot screw wrench (D type)** | **07KMA-MS60101 or 07KMA-MN9A100 (U.S.A. only)** |
| **Pilot screw wrench guide** | **07PMA-MZ20110** |

Perform the air screw adjustment procedure if a new air screw is installed (page 5-13).

Hang the float valve onto the float arm lip.

Install the float pin through the float, then install the float/float pin to the groove on the carburetor body.

Install and tighten the screw.



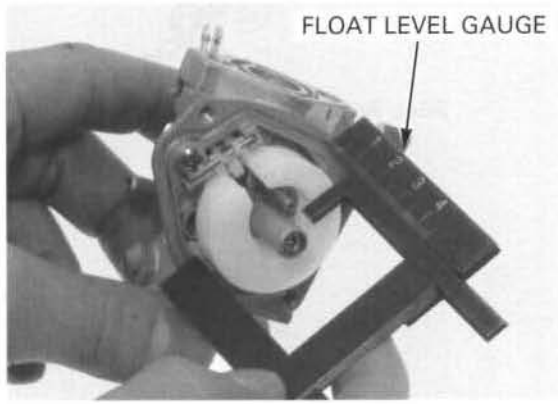

## FLOAT LEVEL INSPECTION

- Set the float level gauge so that it is perpendicular to the float chamber face and in line with the main jet.

With the float valve seated and the float arm just touching the valve, measure the float level with the special tool as shown.

**TOOL:**
**Carburetor float level gauge 07401-0010000**

**FLOAT LEVEL: 12.7 mm (0.50 in)**



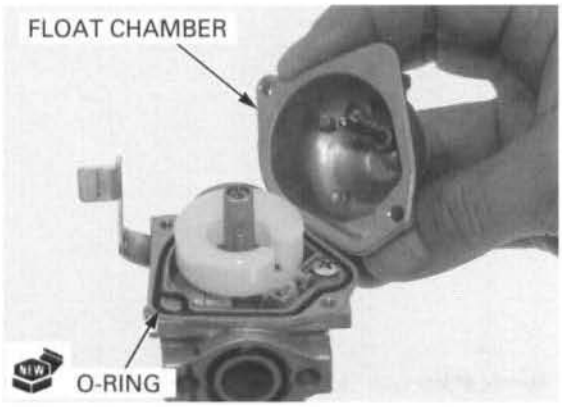

The float cannot be adjusted.

If the float level is out of specification, Inspect the float valve and valve seat.

If the float valve and valve seat are normal, replace the float assembly.

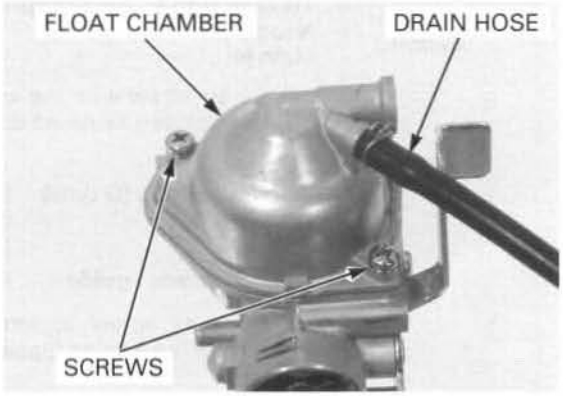
If the float valve and valve seat are abnormal, replace them and recheck the float level.

Install a new O-ring into the carburetor groove properly.
Install the float chamber.




Install and tighten the float chamber screws.

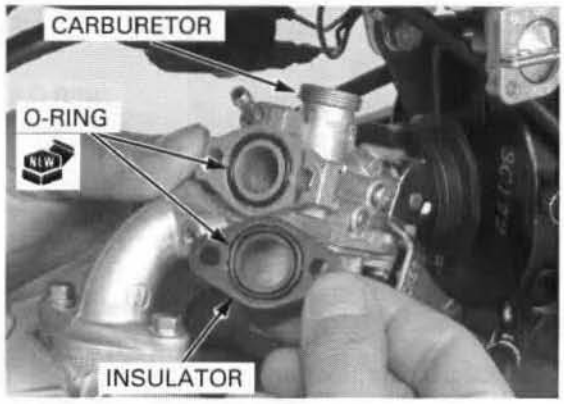
Install the drain hose.



# CARBURETOR INSTALLATION

## CARBURETOR BODY

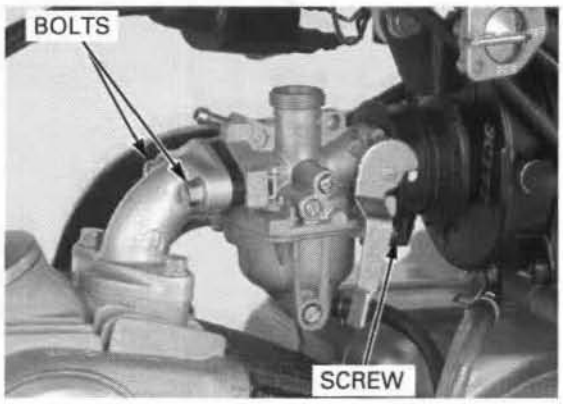
Install the new O-rings into the insulator and carburetor body grooves.



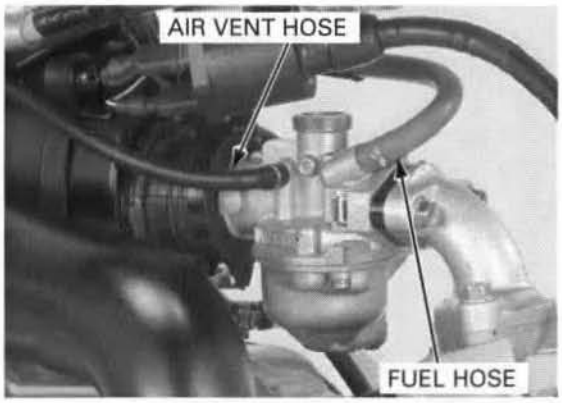

Install the carburetor body to the air cleaner connecting boot and the insulator between the manifold and carburetor, then install the mounting bolts. Tighten the connecting boot band screw.

**TORQUE: 1.0 N·m (0.1 kgf·m, 0.7 lbf·ft)**

Tighten the mounting bolts.




Connect the fuel hose and air vent hose.




## THROTTLE VALVE

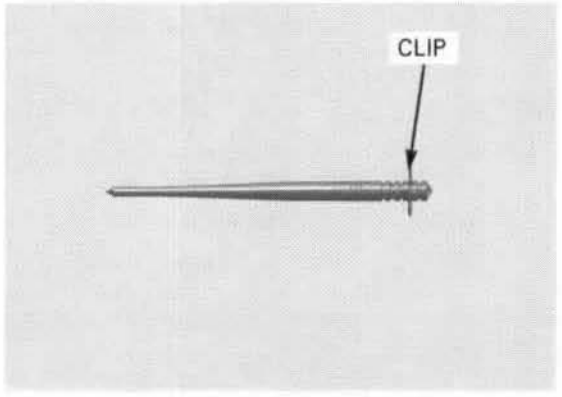
Install the needle clip on the jet needle.

*'04 and '05 U.S.A., '04 – '07 Canada:*

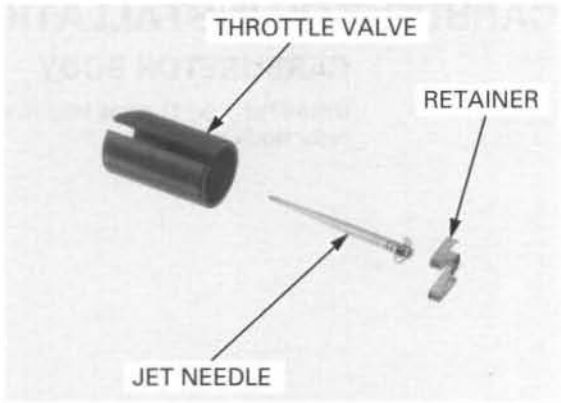
**STANDARD POSITION: 2rd groove from top**

*After '05 U.S.A., After '07 Canada:*

After '05 U.S.A. and After '07 Canada models can not adjust the needle clip position.

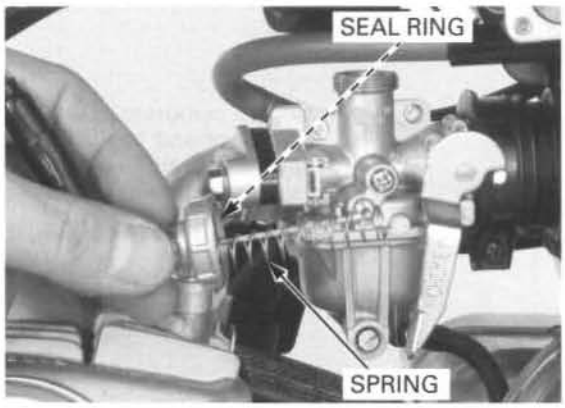


Install the jet needle into the throttle valve and secure it with the needle retainer.

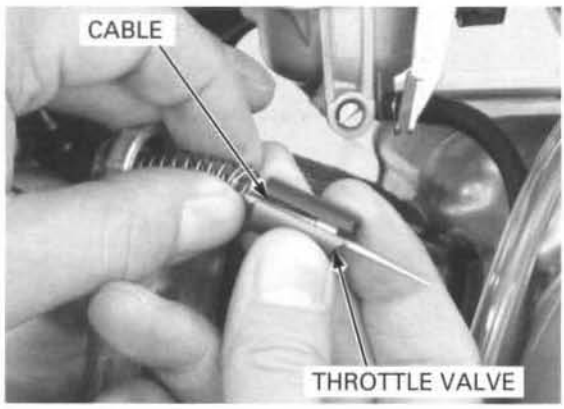



Check the seal ring is in good condition, replace if necessary.

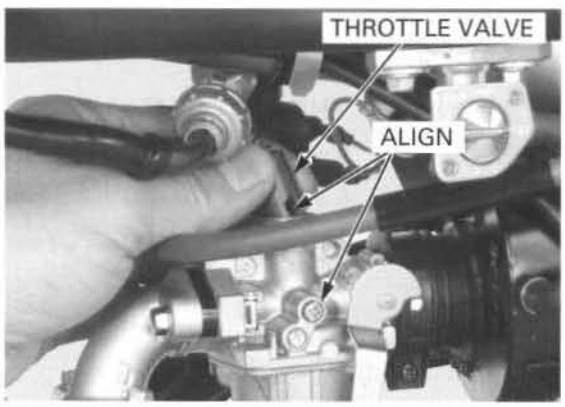
Install the throttle valve spring onto the throttle cable.




Connect the throttle cable to the throttle valve while compressing the throttle valve spring.




Install the throttle valve into the carburetor body, aligning its cut-out with the throttle stop screw.



Tighten the carburetor top securely.

After installing the carburetor, check for the following:

- Engine idle speed (page 3-13)
- Throttle grip free play (page 3-6)

# AIR SCREW ADJUSTMENT

## IDLE DROP PROCEDURE

- The air screw is factory pre-set. Adjustment is not necessary unless the carburetor is overhauled or new air screw is installed.
- The engine must be warm for accurate adjustment. Ten minutes of stop-and-go riding is sufficient.
- Use a tachometer with graduations of 50 rpm or smaller that will accurately indicate 50 rpm change.

*After '05 U.S.A., After '07 Canada:*

Adjust the air screw using the following tools.

**TOOLS:**

| | |
|---|---|
| **Pilot screw wrench (D type)** | **07KMA-MS60101 or 07KMA-MN9A100 (U.S.A. only)** |
| **Pilot screw wrench guide** | **07PMA-MZ20110** |

*Damage to the air screw seat will occur if the air screw is tightened against the seat.*

1. Turn the air screw clockwise until it seats lightly, and then back it out to the specification given.
   **INITIAL OPENING: 1-1/2 turns out**
2. Warm the engine up to operating temperature.
3. Stop the engine and connect a tachometer according to the tachometer manufacturer's instructions.
4. Start the engine and adjust the idle speed with the throttle stop screw.
   **IDLE SPEED: 1,700 ± 100 rpm**
5. Turn the air screw in or out slowly to obtain the highest engine speed.

# CRANKCASE BREATHER

Remove the crankcase breather hose plug and empty any deposits if the deposit level can be seen in the breather hose.

Install the crankcase breather hose plug and secure it with the clip securely.