

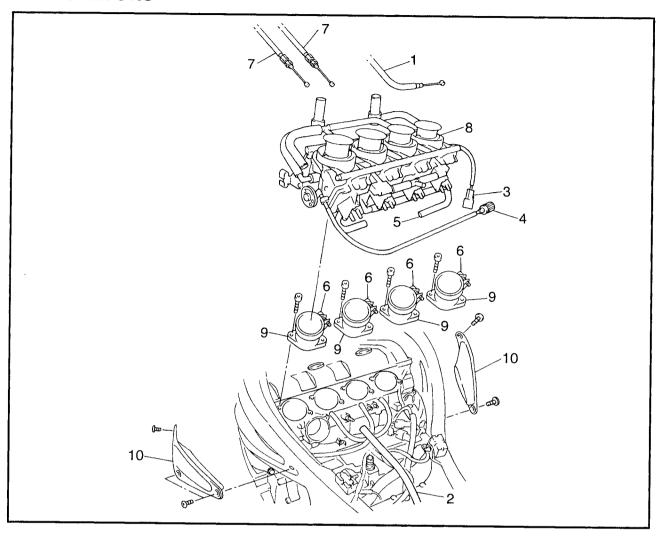
# CHAPTER 6. CARBURETORS

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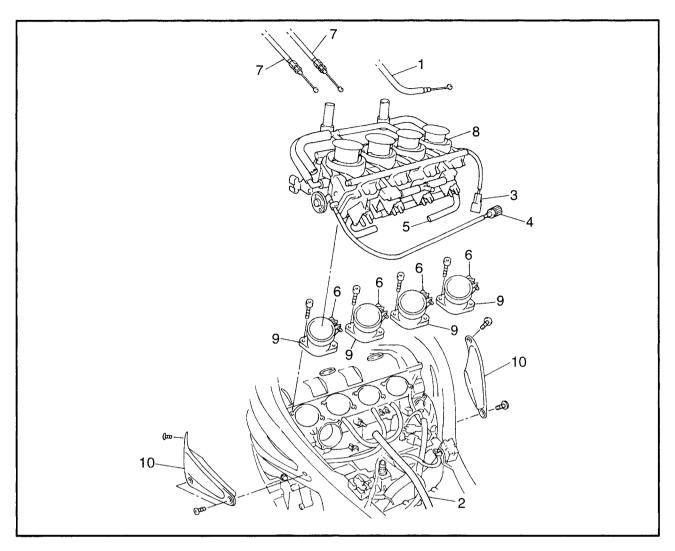
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# **CARBURETORS**

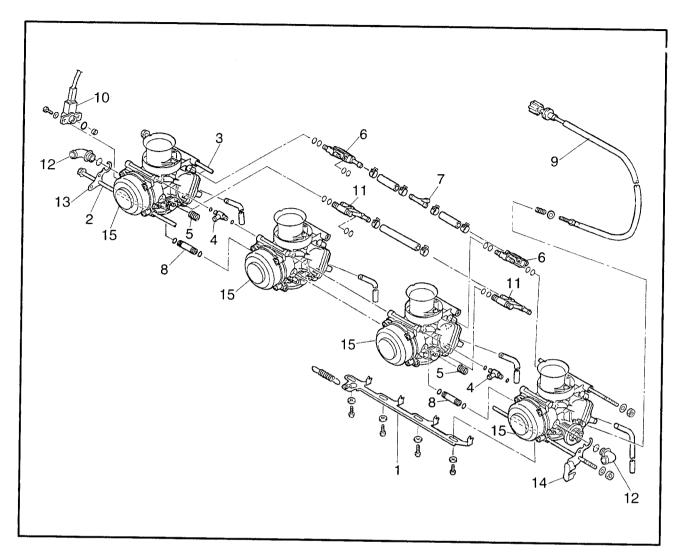
# **CARBURETORS**



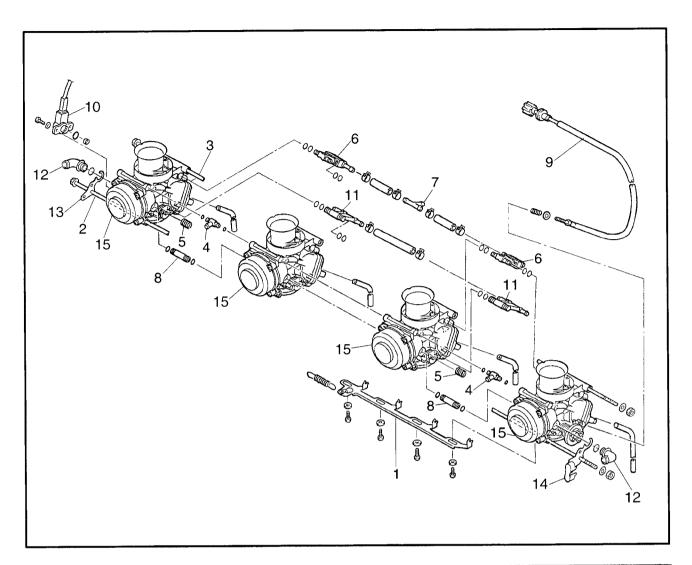
Order	Job/Part	Q'ty	Remarks
	Removing the carburetors Rider seat and fuel tank Air filter case and heat protector plate		Remove the parts in the order listed. Refer to "Seats" and "FUEL TANK" in chapter 3. Refer to "AIR FILTER CASE AND
1	Starter cable	1	IGNITION COILS" in chapter 3.
2	Fuel hose	1	
3	Throttle position sensor coupler	1	Disconnect
4	Throttle stop screw	1	Biodofficot



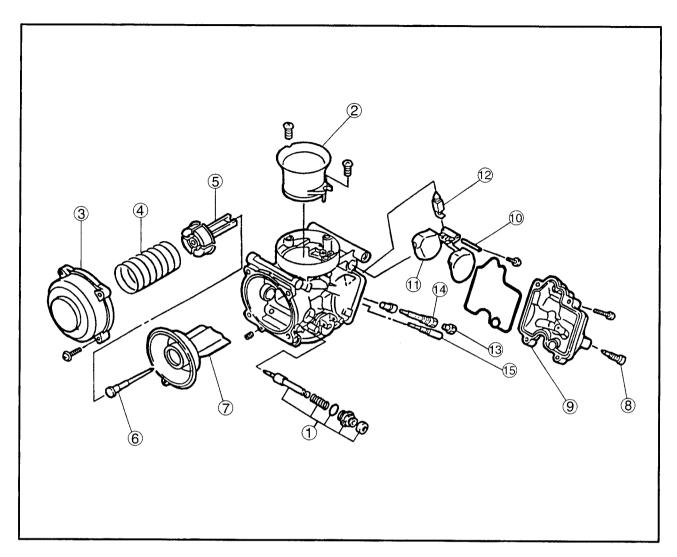
Order	Job/Part	Q'ty	Remarks
5	Therm bypass hose	2	
6	Carburetor joint clamp screw	4	
7	Throttle cable	2	
8	Carburetor assembly	1	
9	Carburetor joint	4	
10	Side cover	2	
:			For installation, reverse the removal procedure.



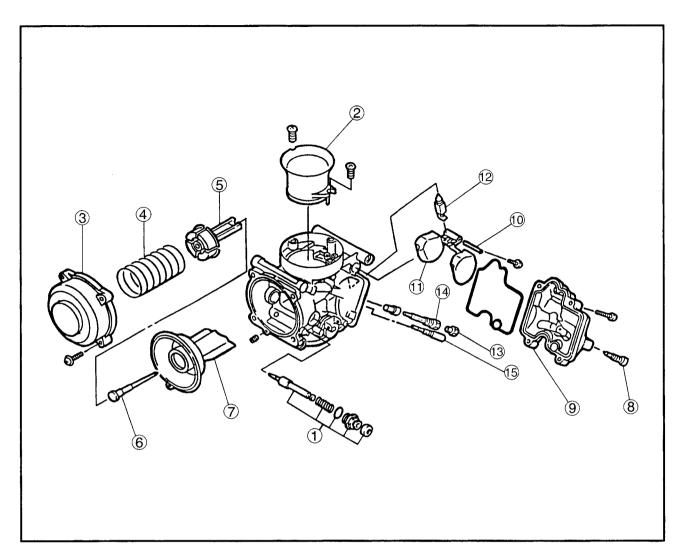
Order	Job/Part	Q'ty	Remarks
1 2 3 4 5 6 7 8 9 10	Separating the carburetors Starter plunger link Connecting bolt Connecting bolt Hose joint Spring  Fuel feed pipe Fuel feed pipe Pipe Throttle stop screw Throttle position sensor Water pipe	1 - 1 1 - 2 2 2 1 2 1 1 2	Remove the parts in the order listed.  Refer to "ASSEMBLING THE CARBURETORS"  Refer to "ASSEMBLING THE CARBURETORS"



Order	Job/Part	Q'ty	Remarks
12	Balance pipe	2	For installation, reverse the removal procedure
13	Balance pipe bracket	1	
14	Throttle cable bracket	1	
15	Carburetor	4	



Order	Job/Part	Q'ty	Remarks
	Disassembling the carburetor		Disassemble the parts in the order listed. <b>NOTE:</b>
		:	The following procedure applies to all of the carburetors.
1234567 899	Starter plunger Air funnel Vacuum chamber cover Piston valve spring Jet needle holder Jet needle kit Piston valve  Fuel drain bolt Float chamber Float pivot pin	1 1 1 1 1 1 1 1 1	Refer to "ASSEMBLING THE CARBURETORS."



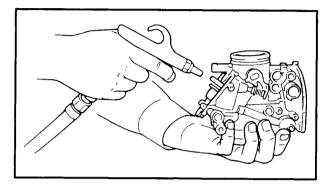
Order	Job/Part	Q'ty	Remarks
11 (12) (13) (14) (15)	Float Needle valve Main jet Main jet holder Pilot jet	1 1 1 1	For assembly, reverse the disassembly procedure.

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### **CHECKING THE CARBURETORS**

The following procedure applies to all of the carburetors.

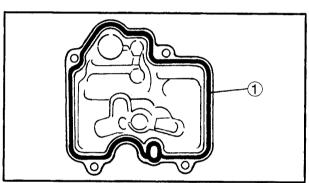
- 1. Check:
  - carburetor body
  - float chamber Cracks/damage → Replace.



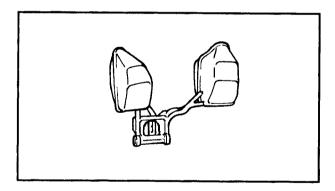


fuel passages
 Obstruction → Clean.

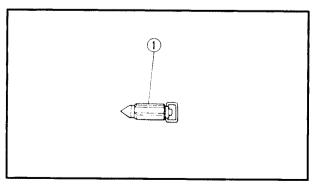
- a. Wash the carburetor in a petroleum-based solvent. Do not use any caustic carburetor cleaning solution.
- b. Blow out all of the passages and jets with compressed air.



- 3. Check:
  - float chamber body
     Dirt → Clean.
- 4. Check:
  - float chamber rubber gasket ①
    Cracks/damage/wear → Replace.



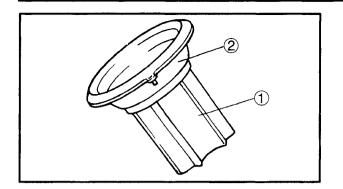
- 5. Check:
  - float
     Damage → Replace.



- 6. Check:
  - needle valve ①
     Damage/obstruction/wear → Replace the needle valve, needle valve seat and O-ring as a set.

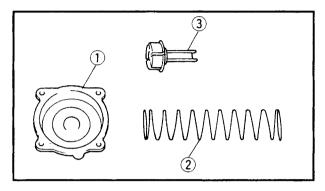






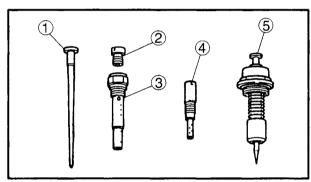
#### 7. Check:

- piston valve ①
   Damage/scratches/wear→ Replace.
- piston valve diaphragm ②
   Cracks/tears → Replace.



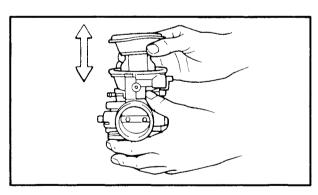
#### 8. Check:

- vacuum chamber cover ①
- piston valve spring ②
- jet needle holder ③
  Cracks/damage → Replace.



#### 9. Check:

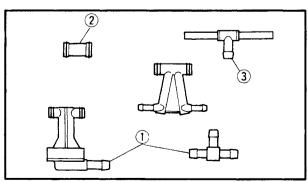
- jet needle kit 1
- main jet ②
- main jet holder ③
- pilot jet (4)
- starter plunger ⑤
   Bends/damage/wear → Replace.
   Obstruction → Clean.
   Blow out the jets with compressed air.



#### 10. Check:

piston valve movement
 Insert the piston valve into the carburetor body and move it up and down.

 Tightness → Replace the piston valve.



# 11. Check:

- fuel feed pipes 1
- pipes ②
- hose joint ③

Cracks/damage → Replace.

Obstruction → Clean.

Blow out the pipes with compressed air.



- 12. Check:
- fuel hoses

Cracks/damage/wear → Replace.

Obstruction → Clean.

Blow out the hoses with compressed air.

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#### **ASSEMBLING THE CARBURETORS**

The following procedure applies to all of the carburetors.

# CAUTION:

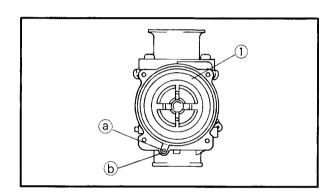
- Before assembling the carburetors, wash all of the parts in a petroleumbased solvent.
- · Always use a new gasket.



- piston valve (1)
- jet needle
- jet needle holder
- piston valve spring
- vacuum chamber cover

#### NOTE: -

- Install the end of the piston valve spring onto the spring guide on the vacuum chamber cover.
- Align the tab (a) on the piston valve diaphragm with the recess (b) in the carburetor body.



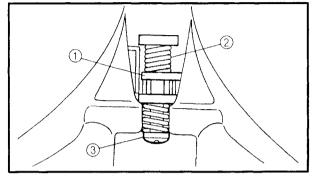




- 2. Install:
  - pipes
  - fuel feed pipes
  - vacuum chamber pipe
  - vacuum chamber air vent hose
  - springs
  - float chamber air vent hoses
  - hose joint
  - spacers
  - copper washer
  - connecting bolts



- Do not tighten the connecting bolts yet.
- Install the throttle valve lever ① onto carburetors #2, #3, and #4 between the spring ② and synchronizing screw ③.

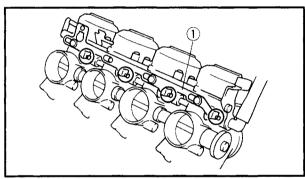




• starter plunger link (1)

NOTE: -

Install the starter plunger link ① onto each starter plunger.



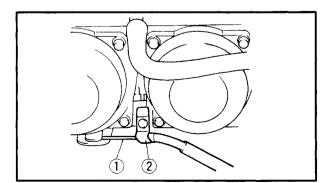
4. Tighten:

connecting bolts

7 Nm (0.7 m•kg, 5.1 ft•lb)

NOTE: -

- Place the carburetor assembly on a surface plate with the intake manifold side down.
   Then, tighten the connecting bolts while pushing down the carburetor assembly with an even force.
- After tightening the connecting bolts, check that the throttle valve lever and starter plunger link operate smoothly.



5. Install:

• starter cable (1)

NOTE: -

Install the starter cable holder ② onto the starter cable.

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# **INSTALLING THE CARBURETORS**

- 1. Adjust:
  - carburetor synchronization Refer to "SYNCHRONIZING THE CARBU-RETORS" in chapter 3.
- 2. Adjust:
  - engine idling speed



Engine idling speed 1250 ~ 1350 r/min

Refer to "ADJUSTING THE ENGINE ID-LING SPEED" in chapter 3.

- 3. Adjust:
  - throttle cable free play



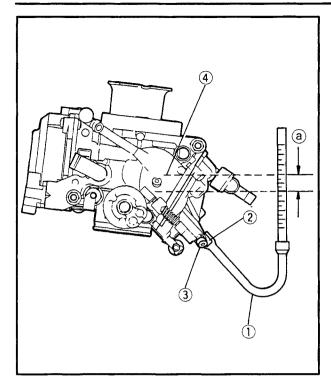
Throttle cable free play (at the flange of the throttle grip)

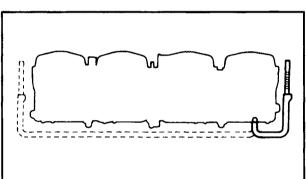
 $6 \sim 8 \text{ mm } (0.24 \sim 0.31 \text{ in})$ 

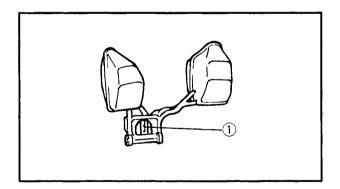
Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY" in chapter 3.











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# MEASURING AND ADJUSTING THE FUEL LEVEL

- 1. Measure:
  - fuel level (a)
     Out of specification → Adjust.



Fuel level (below the mark on the body)

 $17.5 \sim 18.5 \text{ mm} (0.69 \sim 0.73 \text{ in})$ 

- a. Stand the motorcycle on a level surface.
- b. Place the motorcycle on a suitable stand to ensure that the motorcycle is standing straight up.
- c. Install the fuel level gauge ① onto the fuel drain pipe ②.



# Fuel level gauge 90890-01312, YM-01312-A

- d. Loosen the fuel drain bolt 3.
- e. Hold the fuel level gauge vertically next to the line (4) on the float chamber.
- f. Measure the fuel level (a).

#### NOTE: -

Fuel level readings should be equal on both sides of the carburetor assembly.

# 2. Adjust:

• fuel level

- a. Remove the carburetor assembly.
- b. Check the needle valve seat and needle valve.
- c. If either is worn, replace them as a set.
- d. If both are fine, adjust the float level by slightly bending the float tang ①.
- e. Install the carburetor assembly.
- f. Measure the fuel level again.
- g. Repeat steps (a) to (f) until the fuel level is within specification.



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# CHECKING AND ADJUSTING THE THROTTLE POSITION SENSOR

NOTE: .

Before adjusting the throttle position sensor, the engine idling speed should be properly adjusted.

- 1. Check:
  - throttle position sensor (installed on the carburetor)
- a. Disconnect the throttle position sensor coupler.
- b. Connect the pocket tester ( $\Omega \times 1$ k) to the throttle position sensor.

Tester positive probe → blue ①
Tester negative probe → black/blue ②

c. Measure the throttle position sensor maximum resistance.

Out of specification  $\rightarrow$  Replace the throttle position sensor.



**(2) (1)** 

Throttle position sensor maximum resistance

4.0  $\sim$  6.0 k $\Omega$  at 20°C (68°F) (blue – black/blue)

d. Connect the pocket tester ( $\Omega \times 1$ k) to the throttle position sensor.

Tester positive probe → yellow ③
Tester negative probe → black/blue ②

e. While slowly opening the throttle, check that the throttle position sensor resistance is within the specified range.

NOTE: -

Check mainly that the resistance changes gradually when turning the throttle, since the readings (from closed to wide-open throttle) may differ slightly from those specified.

Out of specification or the resistance changes abruptly  $\rightarrow$  Go to step (2).

\*\*\*\*



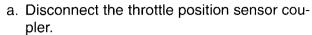
Throttle position sensor resistance  $0\sim5\pm1.0~k\Omega$  at  $20^{\circ}C$  (68°F) (yellow – black/blue)





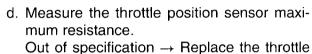


 throttle position sensor (removed from the carburetor)



- b. Remove the throttle position sensor from the carburetor.
- c. Connect the pocket tester ( $\Omega \times 1$ k) to the throttle position sensor.

Tester positive probe → blue ①
Tester negative probe → black/blue ②



position sensor.



Throttle position sensor maximum resistance

4.0  $\sim$  6.0 k $\Omega$  at 20°C (68°F) (blue – black/blue)

e. Connect the pocket tester ( $\Omega \times {\rm 1k})$  to the throttle position sensor coupler.

Tester positive probe → yellow ③ Tester negative probe → black/blue ②

f. While slowly opening the throttle, check that the throttle position sensor resistance is within the specified range.

The resistance does not change or it changes abruptly  $\rightarrow$  Replace the throttle position sensor. The slot is worn or broken  $\rightarrow$  Replace the throttle position sensor.

#### NOTE: -

Check mainly that the resistance changes gradually when turning the throttle, since the readings (from closed to wide-open throttle) may differ slightly from those specified.



Throttle position sensor resistance  $0 \sim 5 \pm 1.0 \text{ k}\Omega$  at  $20^{\circ}\text{C}$  (68°F) (yellow – black/blue)







- 3. Adjust:
  - throttle position sensor angle



- b. Disconnect the throttle position sensor coupler.
- c. Reconnect the throttle position sensor coupler.



After reconnecting the throttle position sensor coupler, the tachometer switches to the throttle position sensor adjustment mode.

- d. Loosen the throttle position sensor screws (1).
- e. Adjust the throttle position sensor angle according to the following table.



The angle of the throttle position sensor is indicated by the r/min which are displayed on the tachometer.

Tachometer Reading	Throttle position sensor angle	Adjustment direction	
5000 rpm ②	Correct		
0 rpm	Incorrect	a	
10000 rpm	Incorrect	b	

 After adjusting the throttle position sensor angle, tighten the throttle position sensor screws.

NOTE: -

To exit the throttle position sensor adjustment mode, start the engine or set the main switch to "OFF".

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