



CHAPTER 6. CARBURETORS

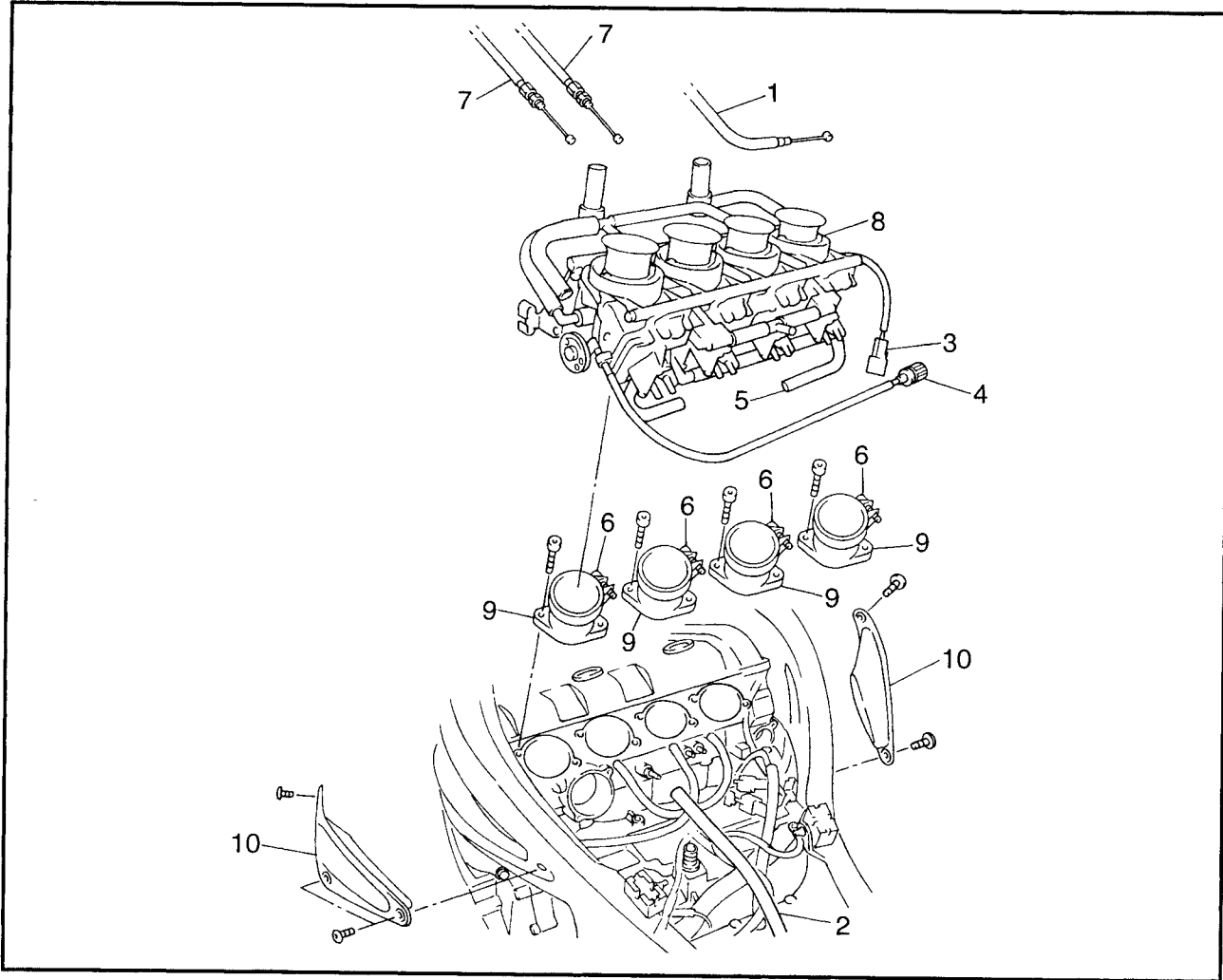
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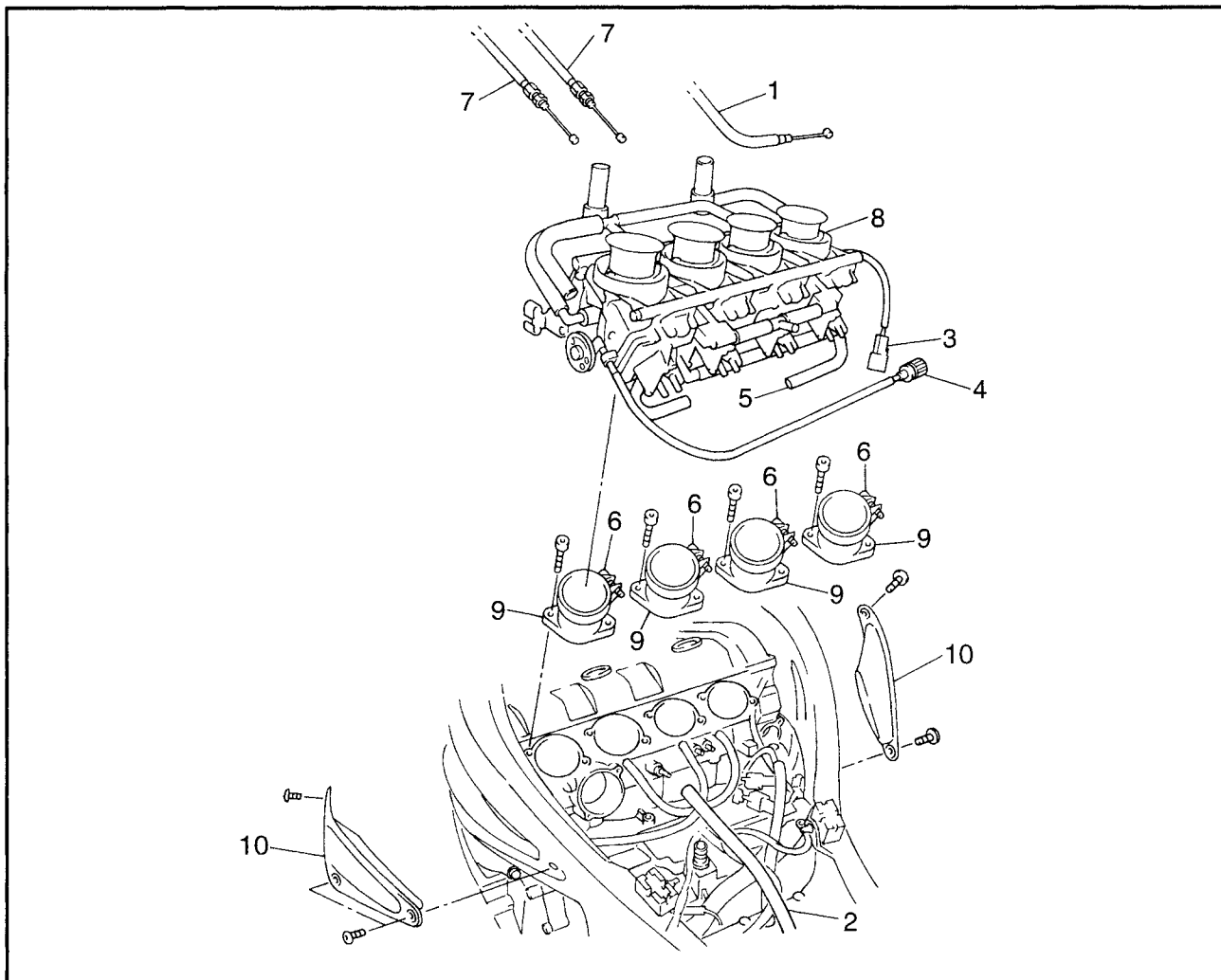
EAS00481

CARBURETORS

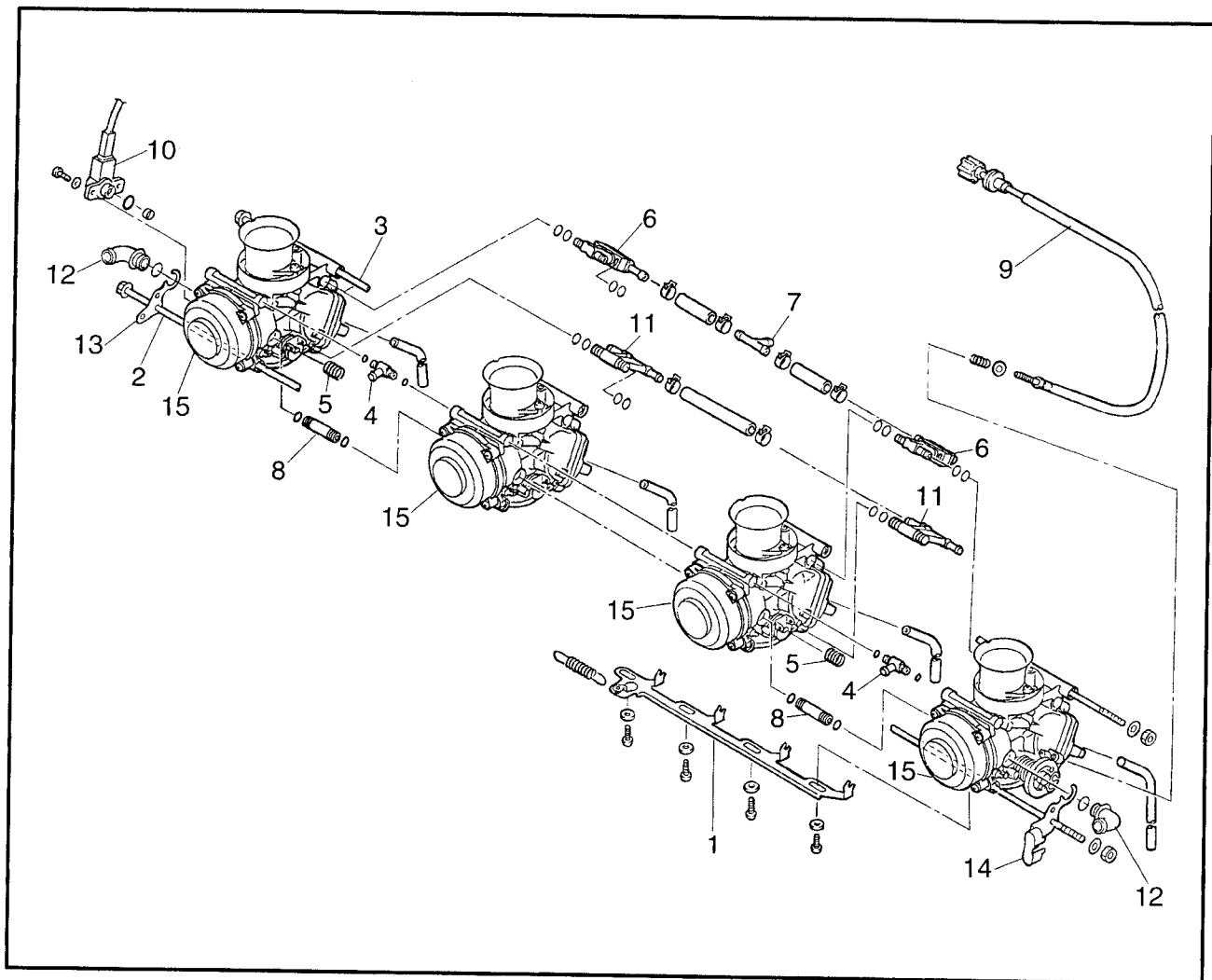
CARBURETORS



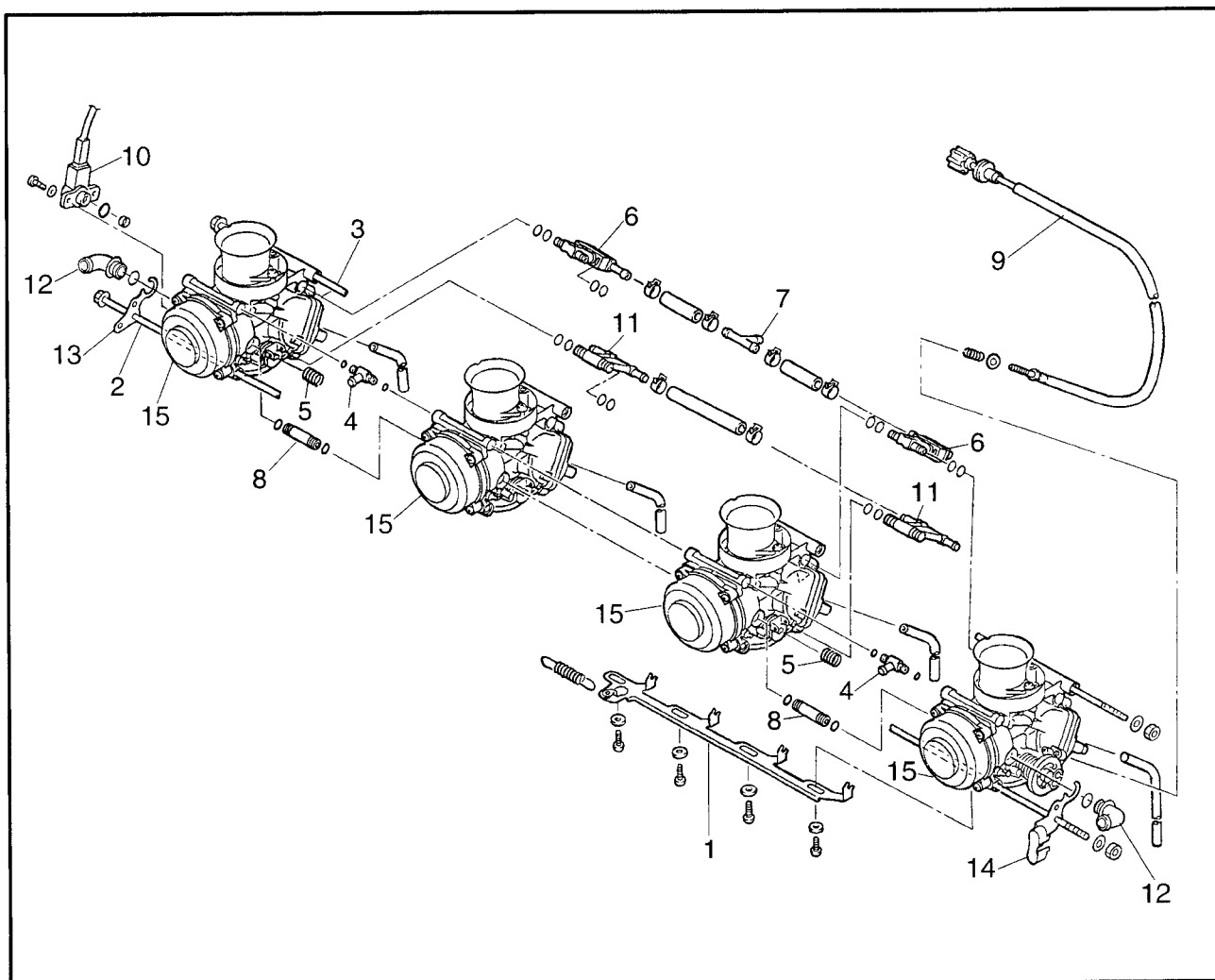
Order	Job/Part	Q'ty	Remarks
	Removing the carburetors		
	Rider seat and fuel tank		Remove the parts in the order listed. Refer to "Seats" and "FUEL TANK" in chapter 3.
	Air filter case and heat protector plate		Refer to "AIR FILTER CASE AND IGNITION COILS" in chapter 3.
1	Starter cable	1	
2	Fuel hose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



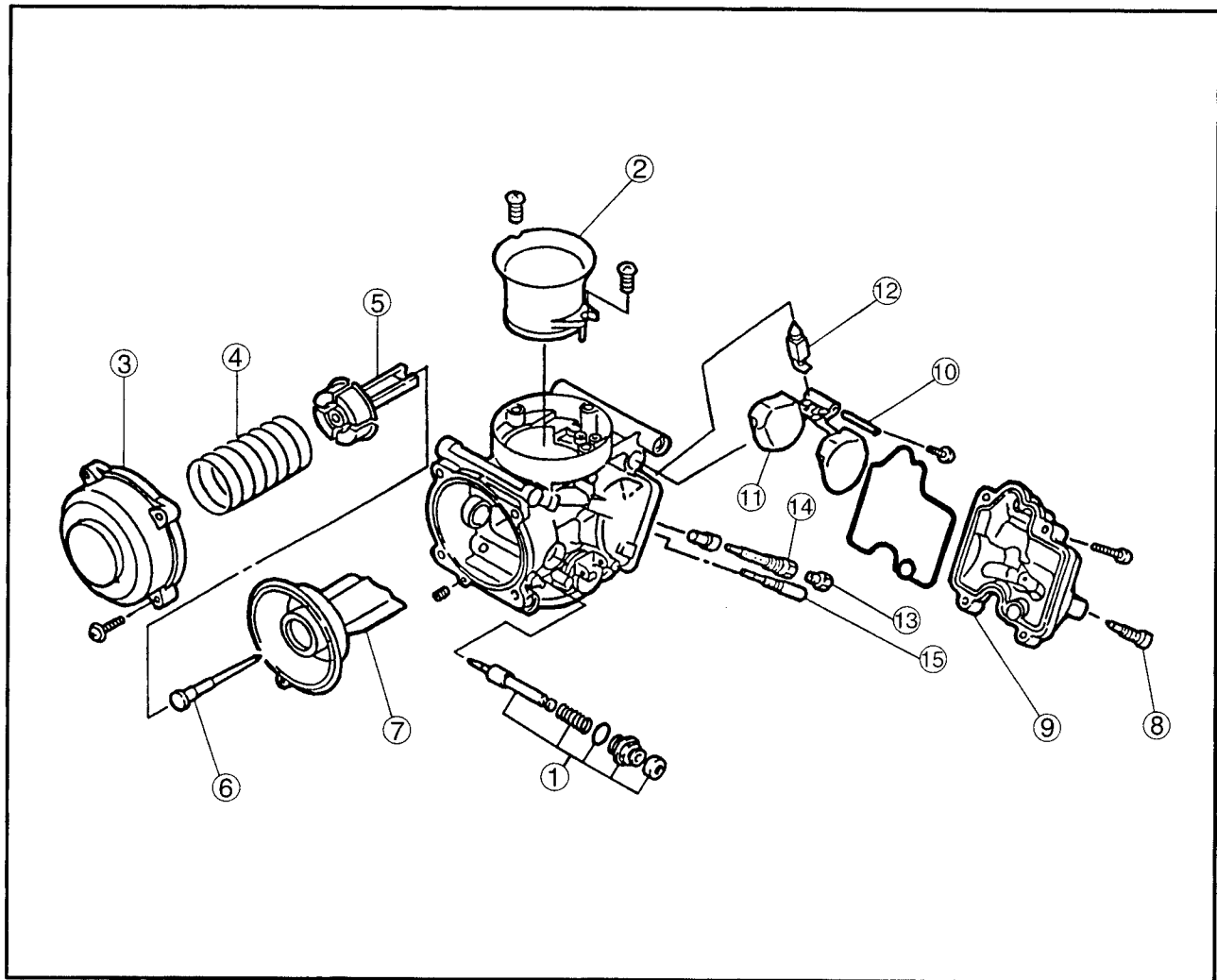
Order	Job/Part	Q'ty	Remarks
5	Therm bypass hose	2	For installation, reverse the removal procedure.
6	Carburetor joint clamp screw	4	
7	Throttle cable	2	
8	Carburetor assembly	1	
9	Carburetor joint	4	
10	Side cover	2	



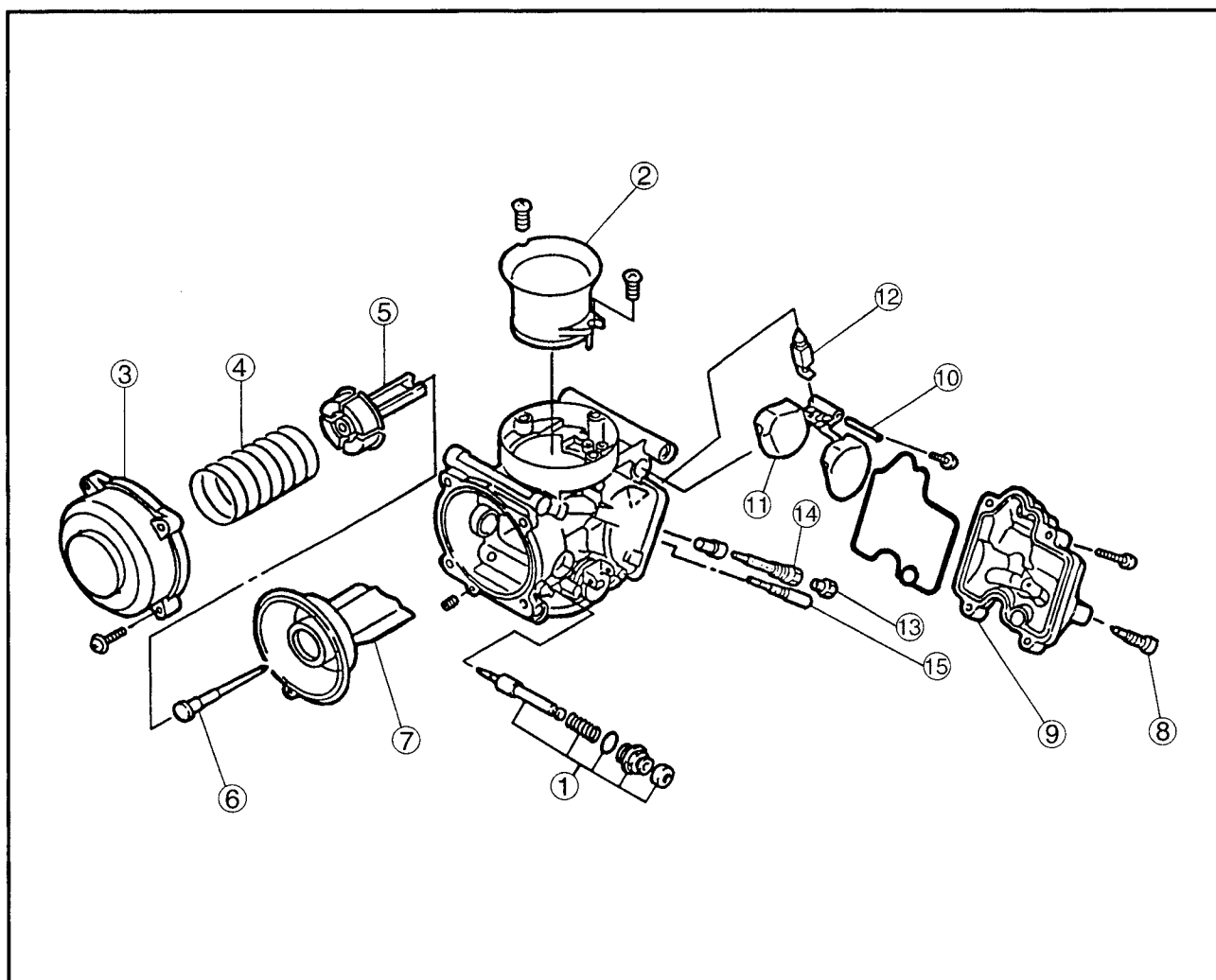
Order	Job/Part	Q'ty	Remarks
	Separating the carburetors		
1	Starter plunger link	1	Remove the parts in the order listed.
2	Connecting bolt	1	
3	Connecting bolt	1	
4	Hose joint	2	Refer to "ASSEMBLING THE CARBURETORS"
5	Spring	2	
6	Fuel feed pipe	2	Refer to "ASSEMBLING THE CARBURETORS"
7	Fuel feed pipe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



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. NOTE: _____ The following procedure applies to all of the carburetors.
①	Starter plunger	1	Refer to "ASSEMBLING THE CARBURETORS."
②	Air funnel	1	
③	Vacuum chamber cover	1	
④	Piston valve spring	1	
⑤	Jet needle holder	1	
⑥	Jet needle kit	1	
⑦	Piston valve	1	
⑧	Fuel drain bolt	1	
⑨	Float chamber	1	
⑩	Float pivot pin	1	



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

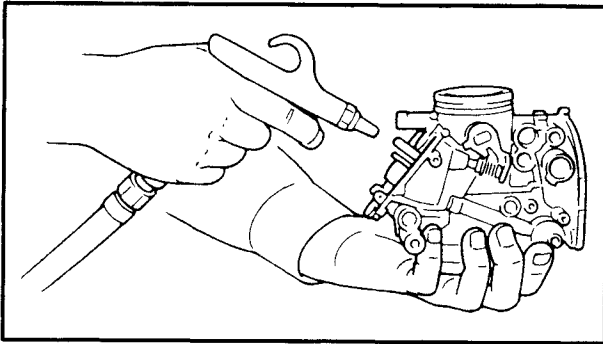


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CHECKING THE CARBURETORS

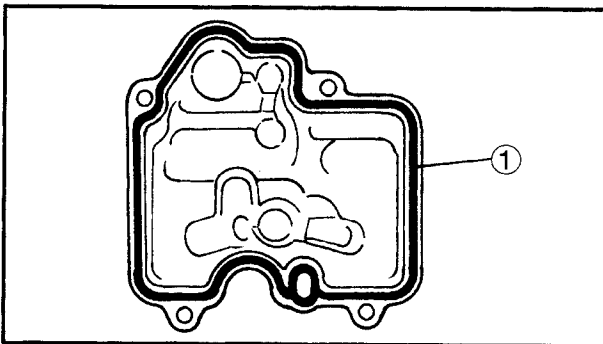
The following procedure applies to all of the carburetors.

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

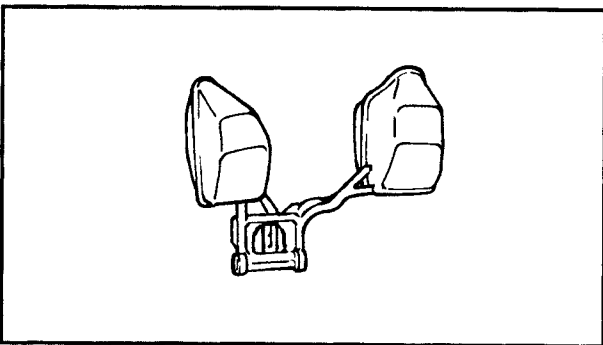


2. Check:
- fuel passages
Obstruction → Clean.

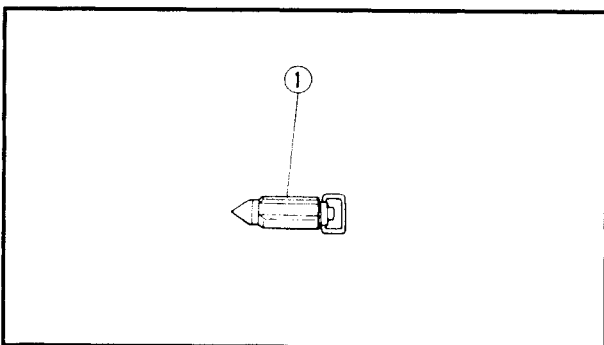
- a. Wash the carburetor in a petroleum-based solvent. Do not use any caustic carburetor cleaning solution.
- b. Blow out all of the passages and jets with compressed air.



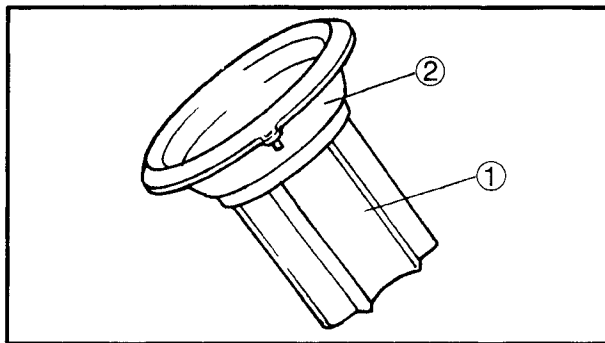
3. Check:
 - float chamber body
Dirt → Clean.
4. Check:
 - float chamber rubber gasket ①
Cracks/damage/wear → Replace.



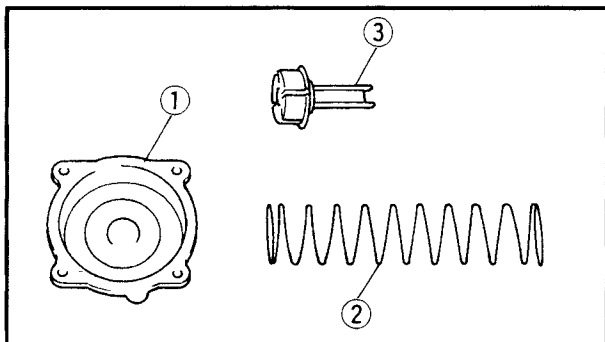
5. Check:
• float
Damage → Replace.



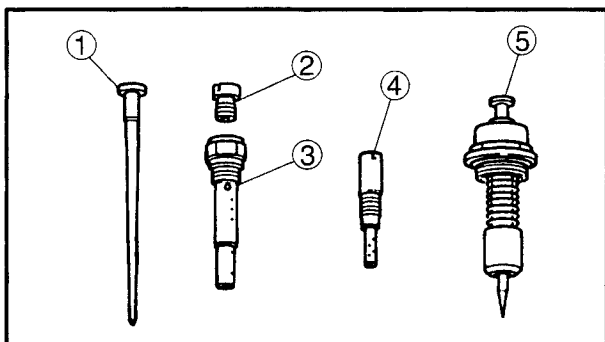
6. Check:
- needle valve ①
- Damage/obstruction/wear → Replace the needle valve, needle valve seat and O-ring as a set.



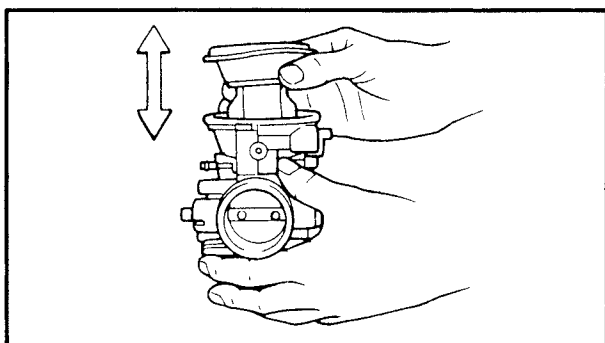
7. Check:
- piston valve ①
Damage/scratches/wear → Replace.
 - piston valve diaphragm ②
Cracks/tears → Replace.



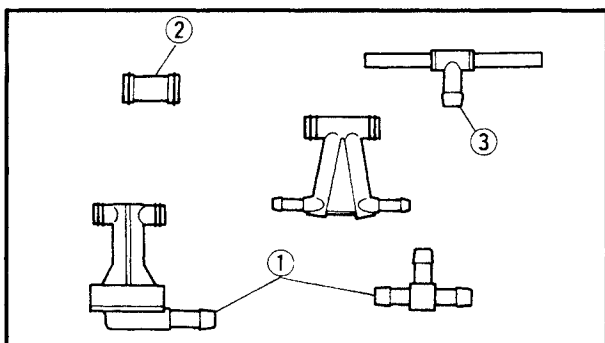
8. Check:
- vacuum chamber cover ①
 - piston valve spring ②
 - jet needle holder ③
Cracks/damage → Replace.



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.

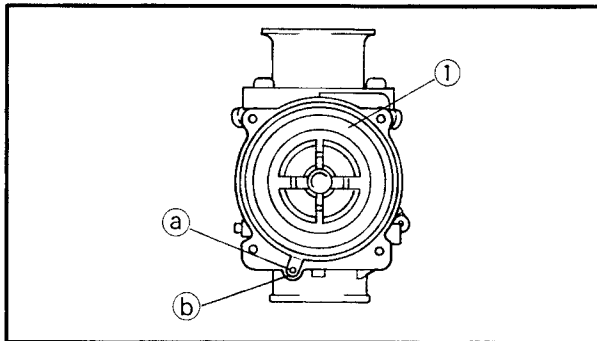
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ASSEMBLING THE CARBURETORS

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.



1. Install:

- 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 ① on the piston valve diaphragm with the recess ② in the carburetor body.

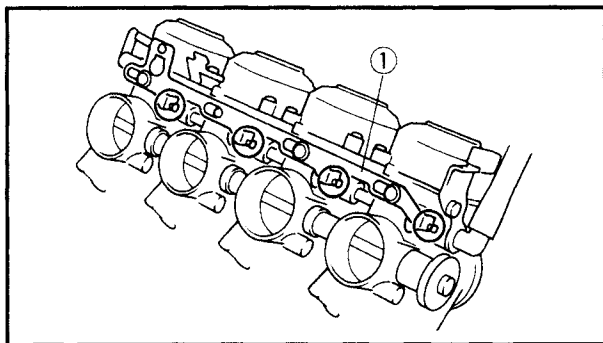
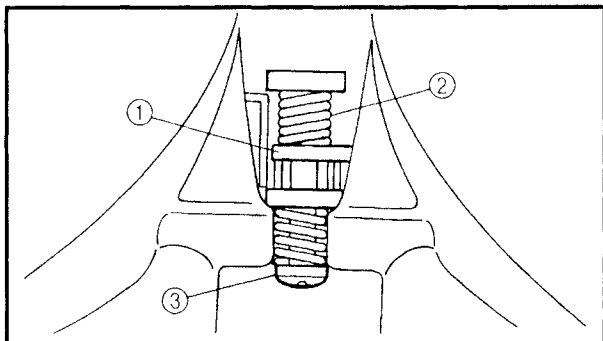


2. Install:

- 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

NOTE:

- 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.



3. Install:

- starter plunger link ①

NOTE:

Install the starter plunger link ① onto each starter plunger.

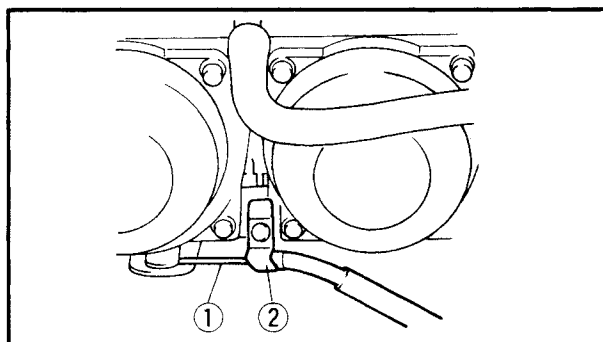
4. Tighten:

- 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.



EAS00493

INSTALLING THE CARBURETORS

1. Adjust:

- carburetor synchronization

Refer to "SYNCHRONIZING THE CARBURETORS" in chapter 3.

2. Adjust:

- engine idling speed



Engine idling speed
1250 ~ 1350 r/min

Refer to "ADJUSTING THE ENGINE IDLING SPEED" in chapter 3.

3. Adjust:

- throttle cable free play



Throttle cable free play (at the flange of the throttle grip)
6 ~ 8 mm (0.24 ~ 0.31 in)

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



EAS00497

MEASURING AND ADJUSTING THE FUEL LEVEL

1. Measure:

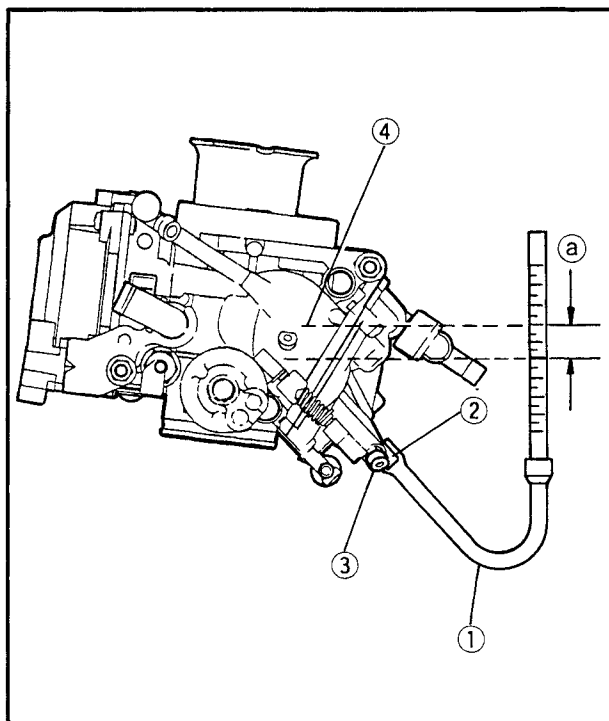
- fuel level ①

Out of specification → Adjust.



Fuel level (below the mark on the body)

17.5 ~ 18.5 mm (0.69 ~ 0.73 in)



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



Fuel level gauge

90890-01312, YM-01312-A

- Loosen the fuel drain bolt ③.
- Hold the fuel level gauge vertically next to the line ④ on the float chamber.
- Measure the fuel level ①.

NOTE:

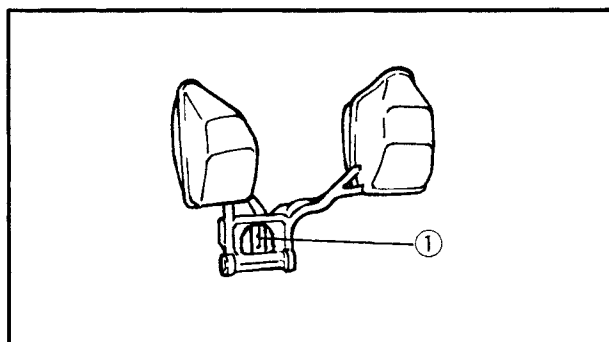
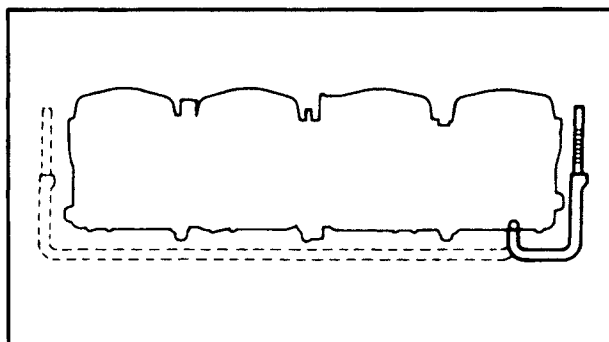
Fuel level readings should be equal on both sides of the carburetor assembly.

2. Adjust:

- fuel level



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



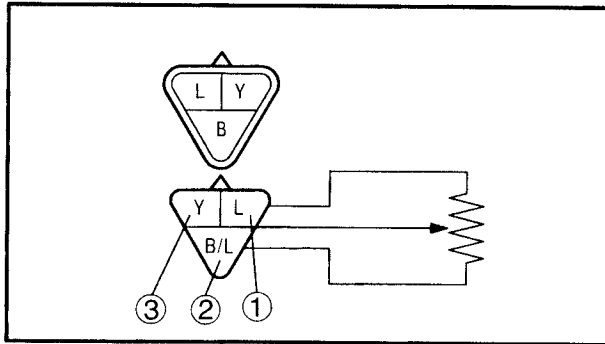


EAS00502

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 ($\Omega \times 1k$) 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 → Replace the throttle position sensor.



Throttle position sensor maximum resistance

**4.0 ~ 6.0 k Ω at 20°C (68°F)
(blue – black/blue)**

d. Connect the pocket tester ($\Omega \times 1k$) 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 → Go to step (2).



Throttle position sensor resistance

**0 ~ 5 ± 1.0 k Ω at 20°C (68°F)
(yellow – black/blue)**

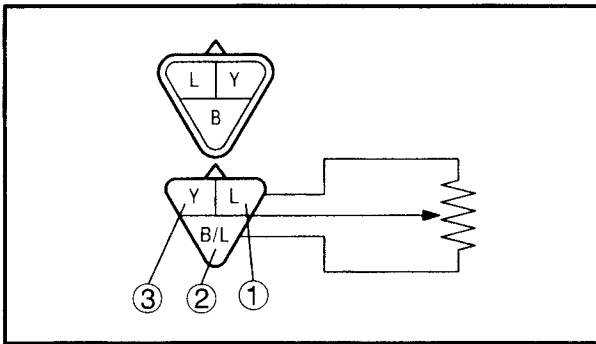


2. Check:

- throttle position sensor
(removed from the carburetor)



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



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

- Measure the throttle position sensor maximum resistance.
Out of specification → Replace the throttle position sensor.



Throttle position sensor maximum resistance

4.0 ~ 6.0 k Ω at 20°C (68°F)
 (blue – black/blue)

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

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

- 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 → Replace the throttle position sensor.
 The slot is worn or broken → 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 ~ 5 ± 1.0 k Ω at 20°C (68°F)
 (yellow – black/blue)





3. Adjust:
 - throttle position sensor angle

- a. Set the main switch to "ON".
- b. Disconnect the throttle position sensor coupler.
- c. Reconnect the throttle position sensor coupler.

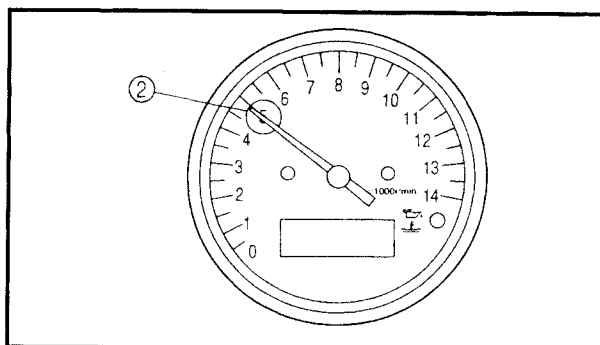
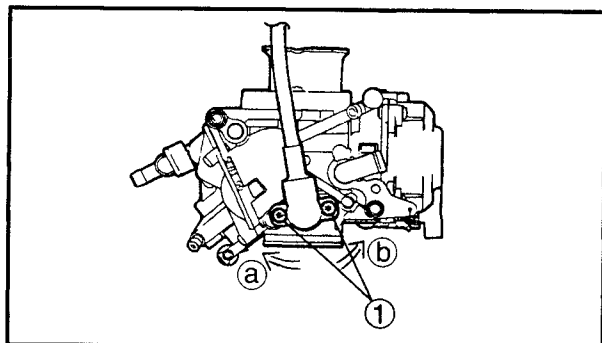
NOTE:

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.

NOTE:

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

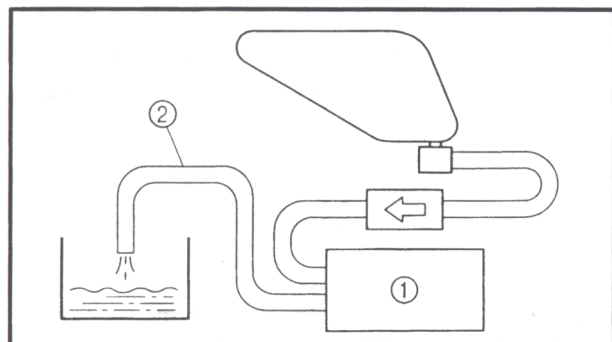


Tachometer Reading	Throttle position sensor angle	Adjustment direction
5000 rpm ②	Correct	—
0 rpm	Incorrect	①
10000 rpm	Incorrect	②

- f. 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".



FAS00504

CHECKING THE FUEL PUMP

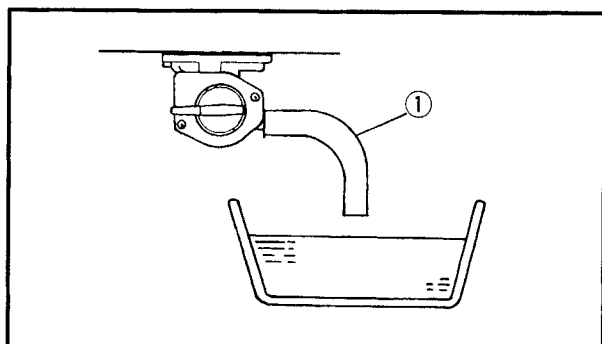
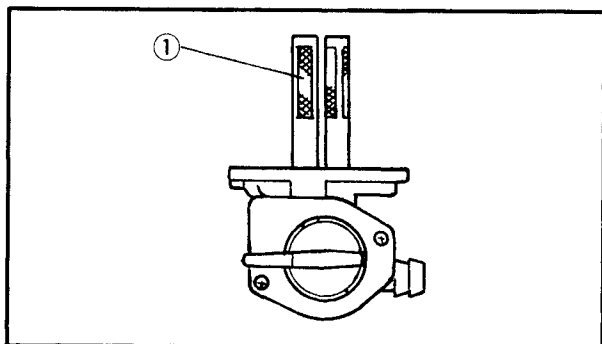
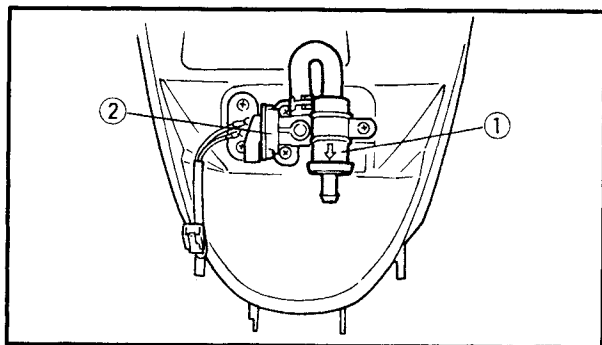
1. Check:
- fuel pump ①

- Remove the fuel tank.
Refer to “FUEL TANK” in chapter 3.
- Disconnect the fuel-pump-to-carburetor fuel hose ② from the carburetor.
- Connect the fuel-tank-to-fuel-pump fuel hose to the fuel tank and then set the fuel cock to “ON”.
- Place a container under the end of the fuel hose ②.
- Start the engine and check if fuel flows from the fuel hose ②.

Fuel flows.	Fuel pump is OK.
Fuel does not flow.	Replace the fuel pump.

- f. Stop the engine and check if the fuel stops flowing from the fuel hose ②.

Fuel stops flowing.	Fuel pump is OK.
Fuel flows.	Replace the fuel pump.



EAS00505

CHECKING THE FUEL COCK

1. Remove
 - fuel tank
 - fuel filter (1)
 - fuel cock (2)
2. Check:
 - fuel cock
 - Cracks/damage/wear → Replace.
3. Check:
 - fuel cock strainer (1)
 - (with compressed air)
 - Dirt/obstruction → Clean.
 - Damage → Replace.
4. Install
 - fuel cock
 - fuel filter
 - fuel tank

EAS00506

CHECKING THE FUEL COCK OPERATION**NOTE:**

After installing the fuel cock, check its operation.

1. Check that the fuel cock lever is turned to "ON" or "OFF".
2. Place a container under the end of the fuel hose.
3. Check:
 - fuel cock operation
 - a. Suck on the end of the vacuum hose.

Fuel flows.
Fuel cock is OK.
Fuel does not flow.
Replace the fuel cock.



EAS00507

AIR INDUCTION SYSTEM**AIR INJECTION**

The air induction system burns unburned exhaust gases by injecting fresh air (secondary air) into the exhaust port, reducing the emission of hydrocarbons.

When there is negative pressure at the exhaust port, the reed valve opens, allowing secondary air to flow into the exhaust port. The required temperature for burning the unburned exhaust gases is approximately 600 to 700°C (1112 to 1292°F).

EAS00508

AIR CUTOFF VALVE

The air cutoff valve is operated by the intake gas pressure through the piston valve diaphragm. Normally, the air cutoff valve is open to allow fresh air to flow into the exhaust port. During sudden deceleration (the throttle valve suddenly closes), negative pressure is generated and the air cutoff valve is closed in order to prevent after-burning.

Additionally, at high engine speeds and when the pressure decreases, the air cutoff valve automatically closes to guard against a loss of performance due to self-EGR.

(This "low-boost close" function is the same as on the FZR600 (3HW).)

VIEW 1. (NO FLOW)

When decelerating (the throttle closes), the valve will close.

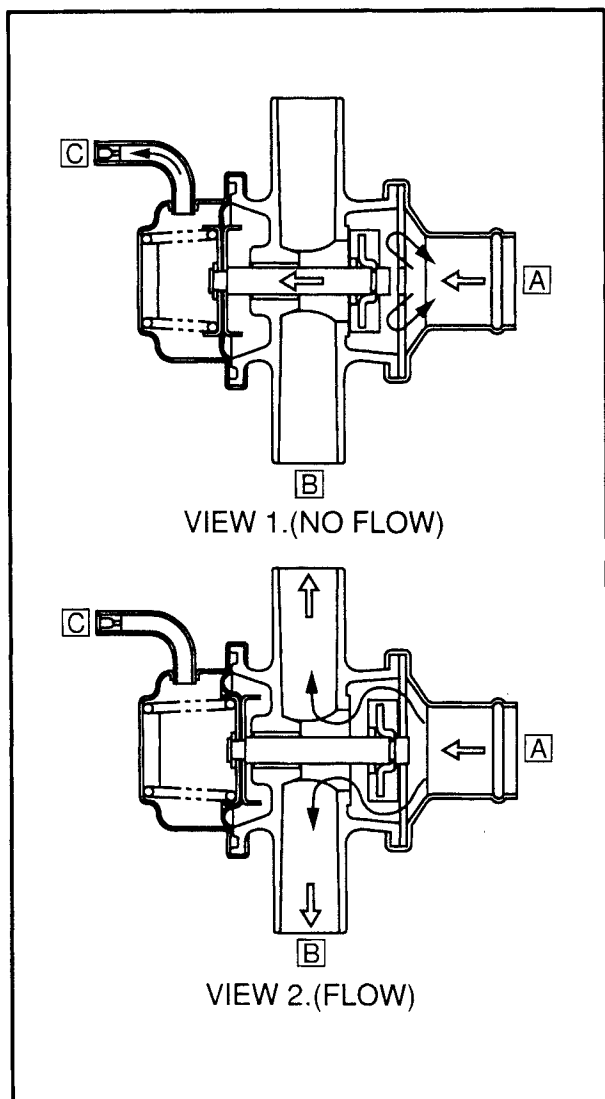
VIEW 2. (FLOW)

During normal operation the valve is open.

A From the air filter

B To the reed valve

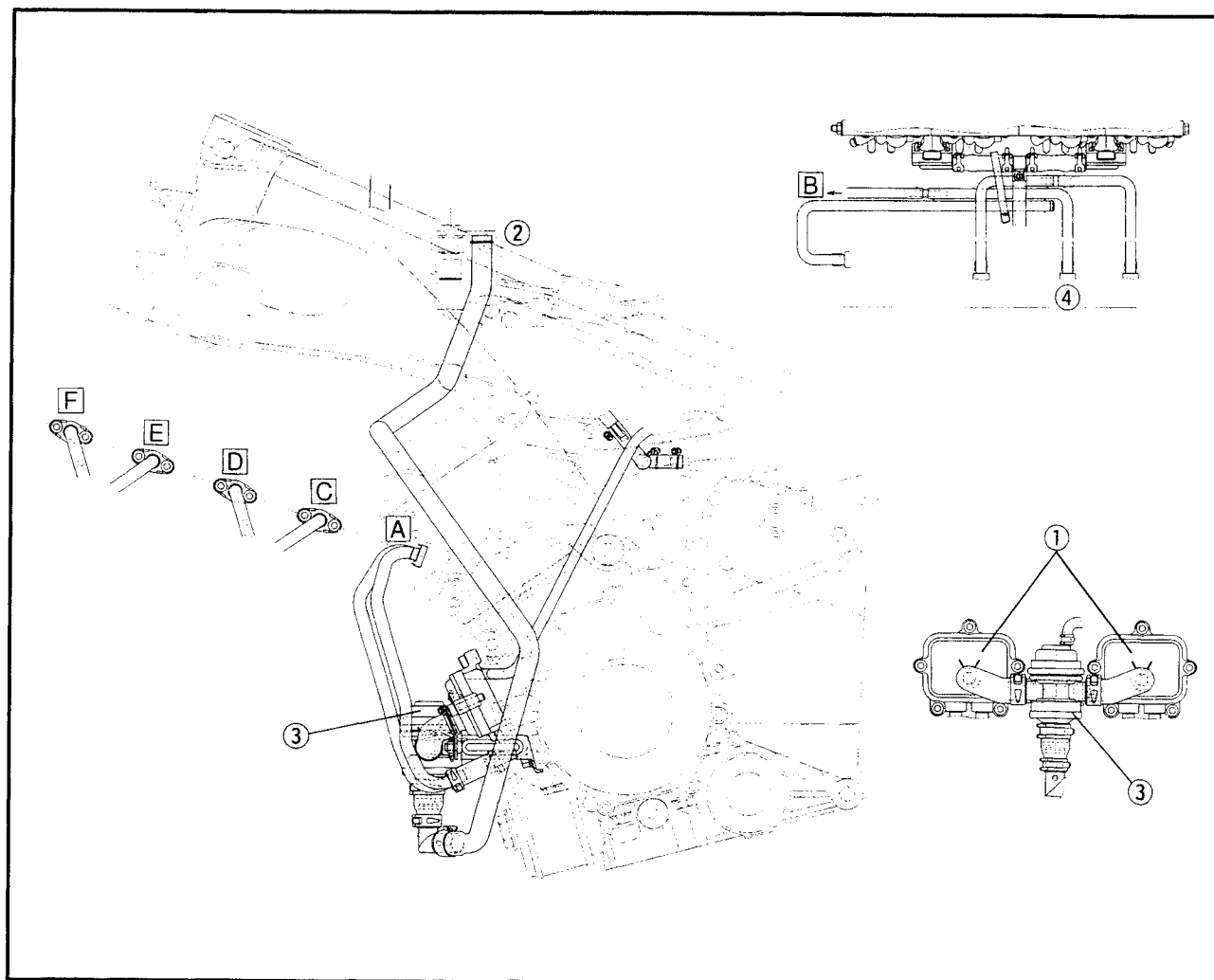
C To the carburetor joint





EAS00509

AIR INDUCTION SYSTEM DIAGRAMS



- ① Reed valve
- ② Air cleaner
- ③ Air cutoff valve
- ④ Carburetor joint (cylinder #3)

- A To the cylinders
- B To the air cutoff valve
- C To cylinder #1
- D To cylinder #2
- E To cylinder #3
- F To cylinder #4



EAS00510

CHECKING THE AIR INDUCTION SYSTEM

1. Check:

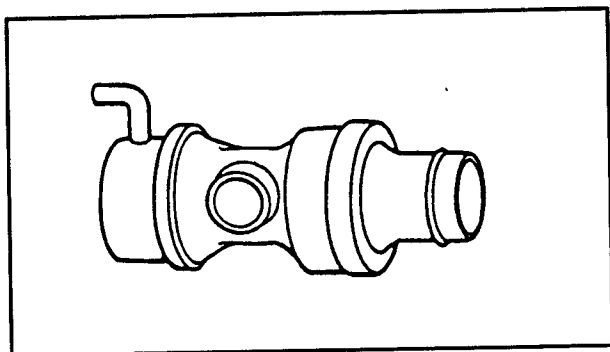
- hoses

Loose connection → Connect properly.

Cracks/damage → Replace.

- pipes

Cracks/damage → Replace.



2. Check:

- air cutoff valve

Cracks/damage → Replace.