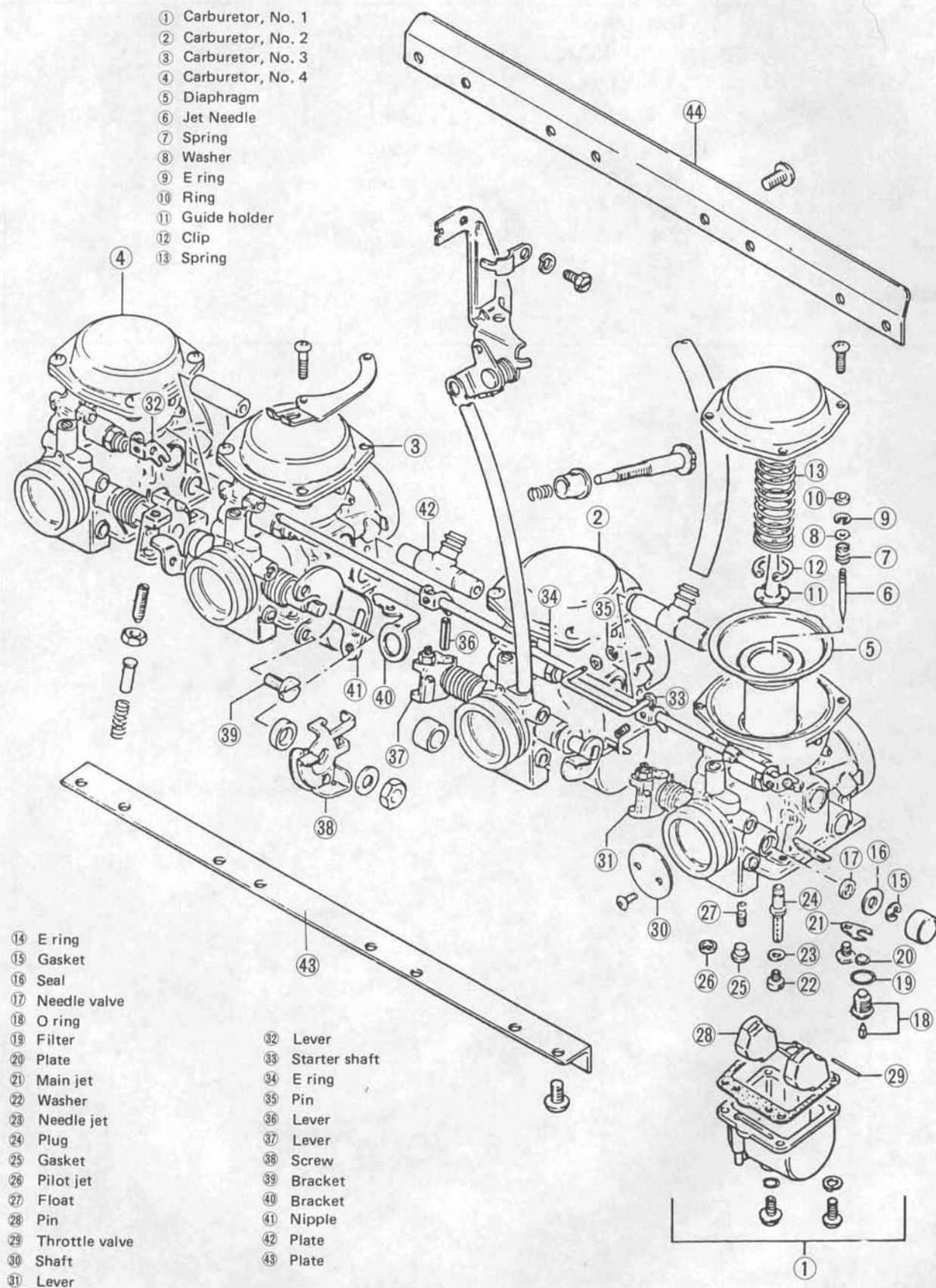


CARBURETOR



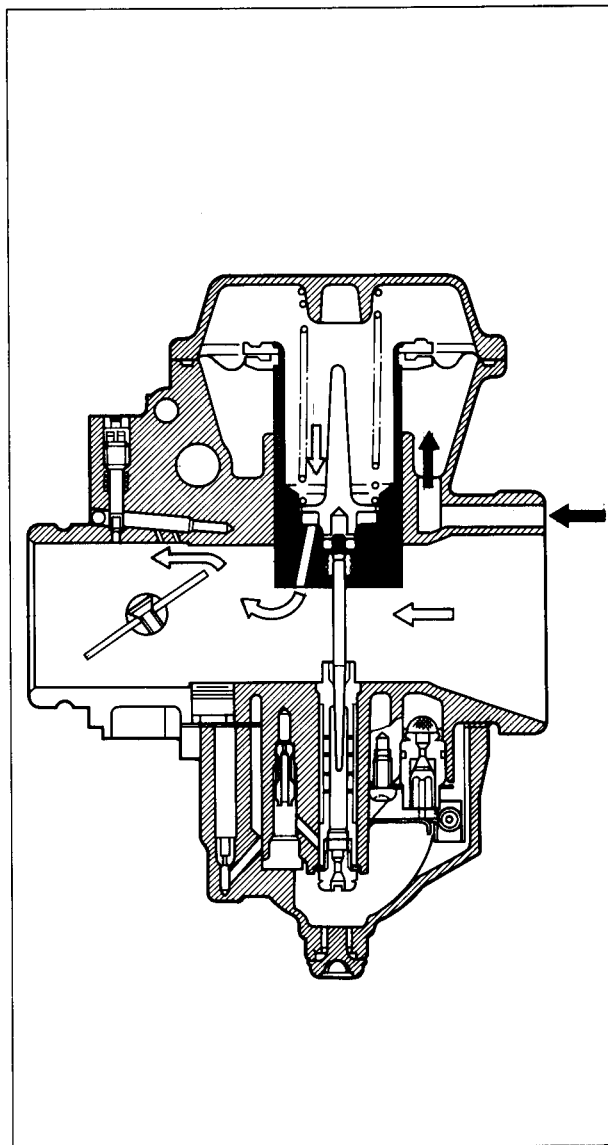
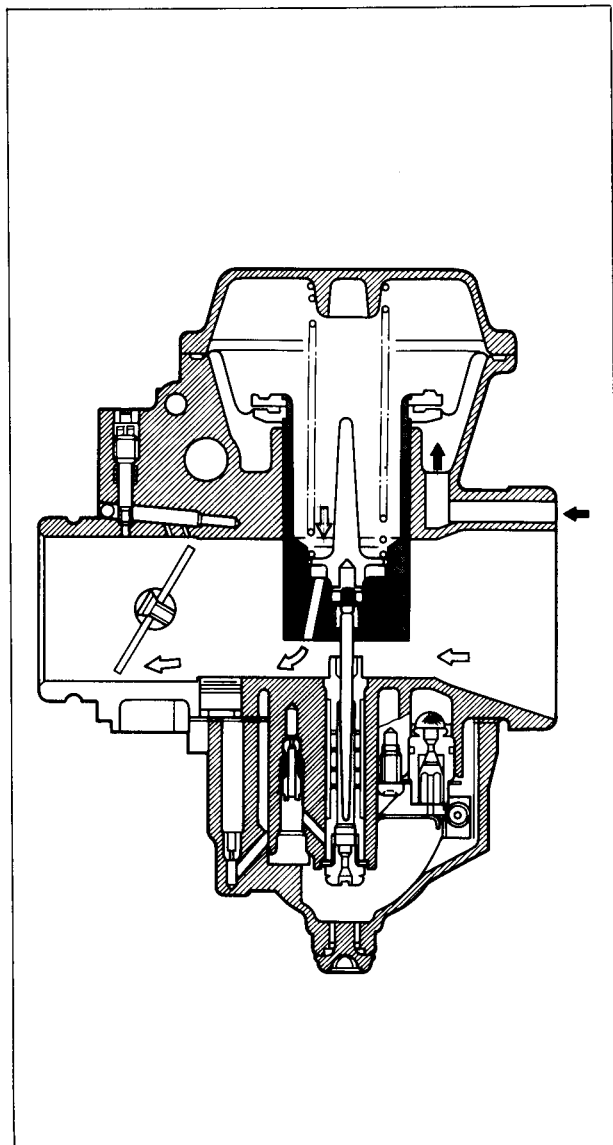
SPECIFICATIONS

Item	Specification	Item	Specification
Type	MIKUNI BS32SS	Needle jet	X-5
Bore size	32 mm (1.26 in)	Pilot jet	#40
I.D. No.	45110	By pass	1.0, 0.8, 0.8
Idle r/min	1 050 ± 100 r/min	Pilot outlet	0.7
Fuel level	50 ± 0.5 mm (0.20 ± 0.02 in)	Valve seat	2.0
Float height	22.4 ± 1.0 mm (0.88 ± 0.04 in)	Starter jet	# 32.5
Main jet	# 115	Pilot screw	PRE-SET
Jet needle	5D50		

DIAPHRAGM AND PISTON OPERATION

The carburetor is of a variable-venturi type, whose venturi cross section area is increased or decreased automatically by the piston according to the vacuum present on the downstream side of the venturi. Vacuum is admitted into the diaphragm chamber through an orifice provided in the piston.

Rising vacuum overcomes the spring force, causing the piston to rise to increase the said area and thus to prevent the air velocity from increasing. Therefore, air velocity in the venturi passage is kept relatively constant for improved fuel atomization and for securing an optimum ratio of fuel to air in the mixture.

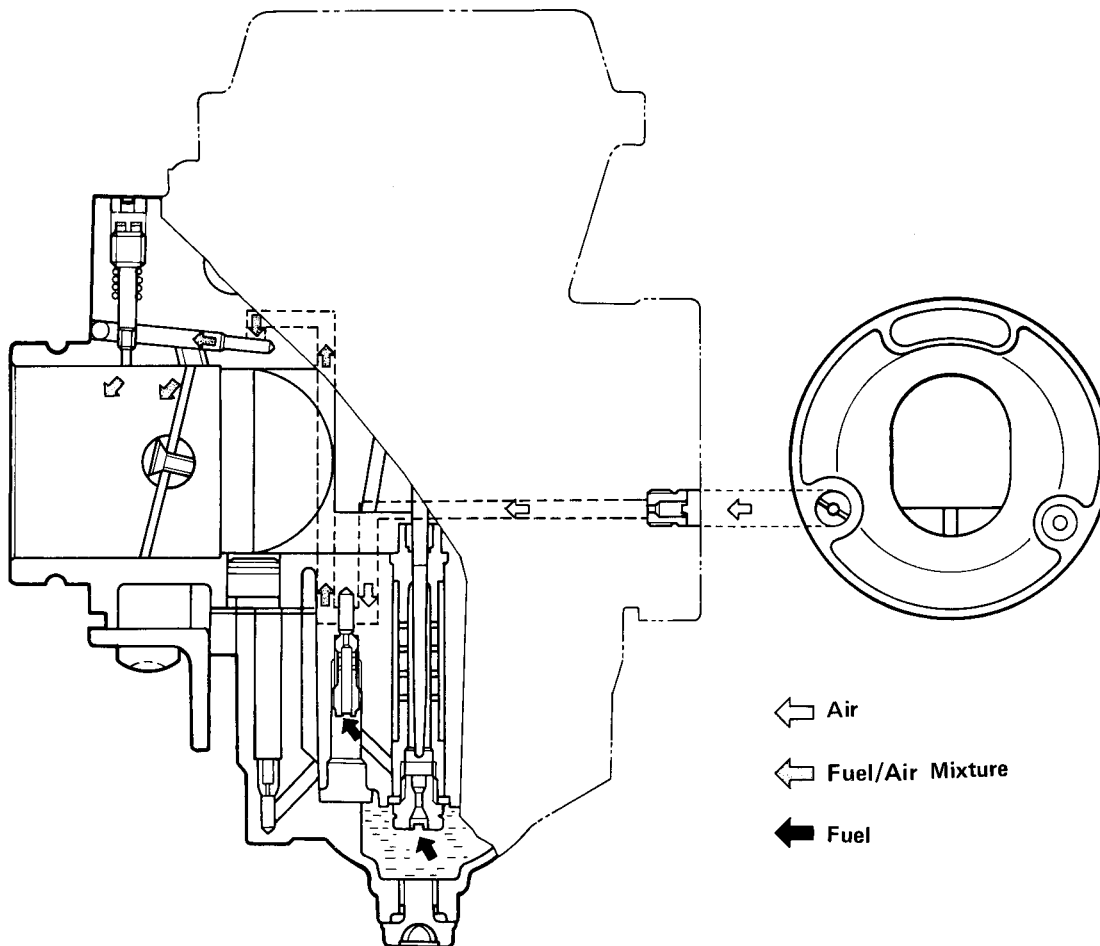


SLOW SYSTEM

This system supplies fuel during engine operation with throttle valve closed or slightly opened.

The fuel from float chamber is first passed through main jet and metered by pilot jet where it mixes with air coming in through pilot air jet.

This mixture, rich with fuel, then goes up through pilot pipe to pilot screw. A part of the mixture is discharged into the main bore out of bypass port. The remainder is then metered by pilot screw and sprayed out into the main bore through pilot outlet.



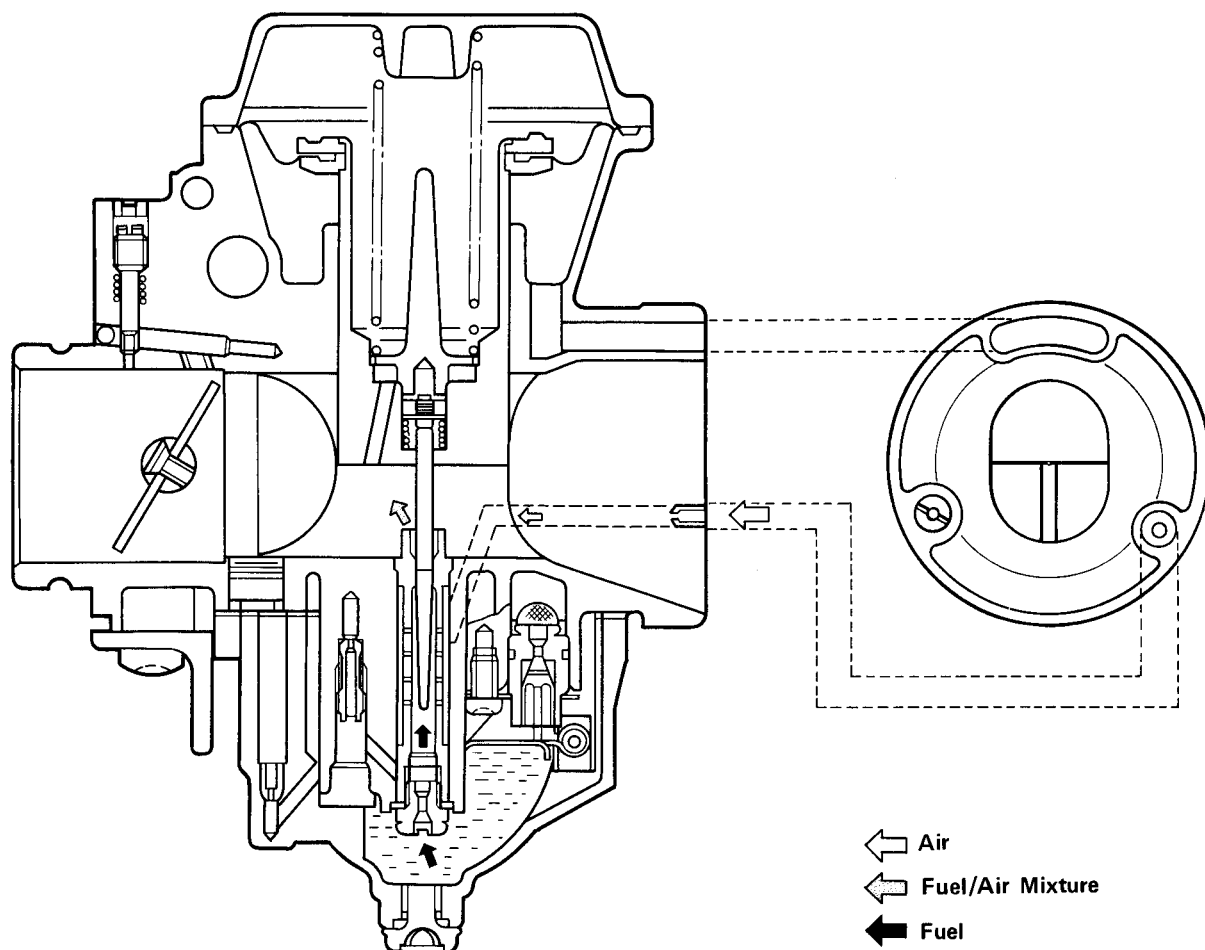
MAIN SYSTEM

As throttle valve is opened, engine speed rises, and this increases vacuum in the venturi. Consequently the piston valve moves upward.

Meanwhile, the fuel in float chamber is metered by main jet, and the metered fuel enters needle jet, in which it mixes with the air admitted through main air jet to form an emulsion.

The emulsified fuel then passes through the clearance between needle jet and jet needle and is discharged into the venturi, in which it meets main air stream drawn by the engine.

Mixture proportioning is accomplished in needle jet; the clearance through which the emulsified fuel must flow is either large or small depending ultimately on throttle position.

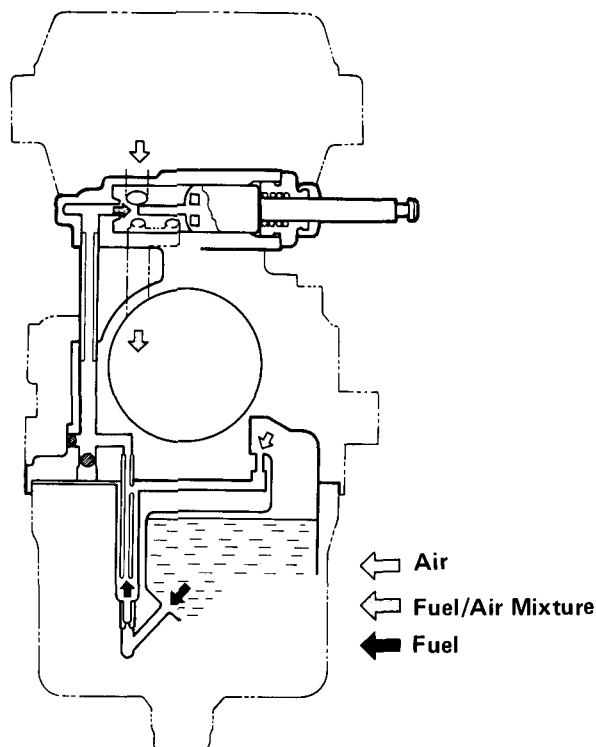


STARTER SYSTEM

Pulling up the choke knob slides starting plunger to draw fuel into the starter circuit from the float chamber through starter jet.

Starter jet meters this fuel, which then flows into starter pipe and mixes with the air coming from the float chamber. The mixture, rich in fuel content, reaches starting plunger and mixes again with the air coming through a passage extended from behind the diaphragm.

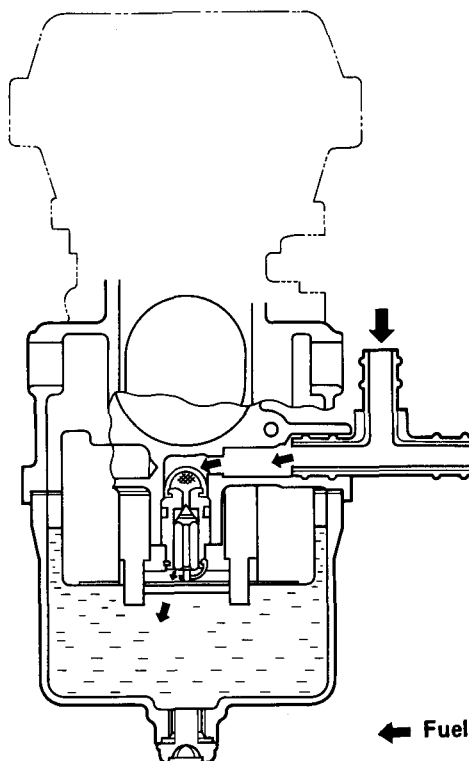
The two successive mixings of fuel with air are such that a proper fuel/air mixture for starting is produced when the mixture is sprayed out through starter outlet into the main bore.



FLOAT SYSTEM

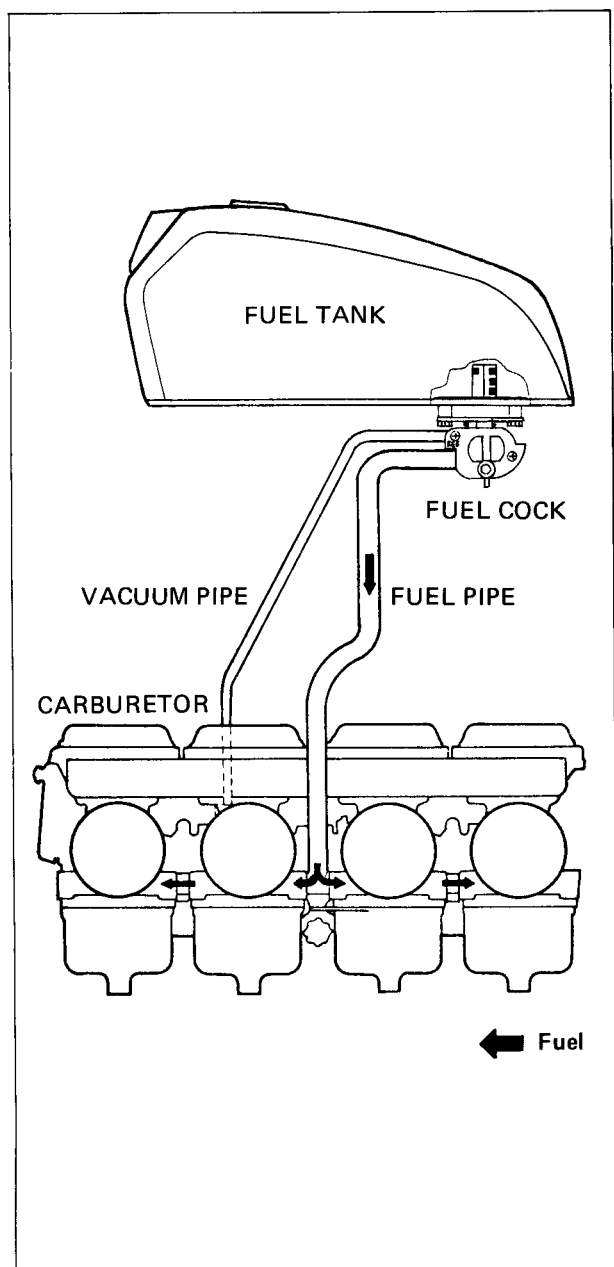
Floats and needle valve are associated with the same mechanism, so that, as the floats move up and down, the needle valve too moves likewise. When fuel level is up in float chamber, floats are up and needle valve remains pushed up against valve seat. Under this condition, no fuel enters into the float chamber.

As the fuel level falls, floats go down and needle valve unseats itself to admit fuel into the chamber. In this manner, needle valve admits and shuts off fuel alternately to maintain a practically constant fuel level inside the float chamber.



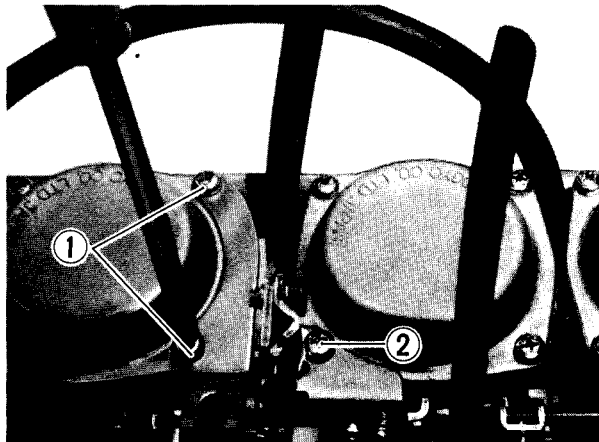
FUEL SYSTEM

When turning starter motor, negative pressure is generated in the combustion chamber. This negative pressure works on the diaphragm of fuel cock through passageway provided in the carburetor main bore and vacuum pipe, and diaphragm builds up a negative pressure which is higher than the spring pressure. Fuel valve is forced to open due to diaphragm operation, and thus allow fuel to flow into carburetor float chamber.

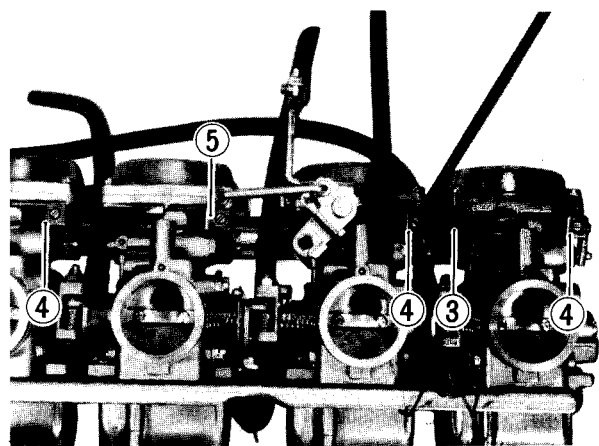


DISASSEMBLY

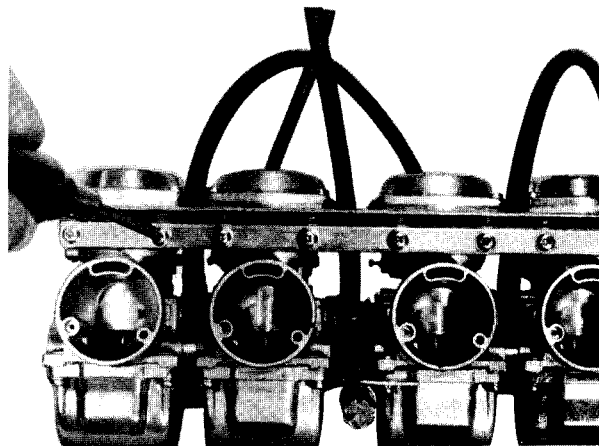
- Remove two throttle bracket screws ① and starter bracket screw ②, and remove bracket.



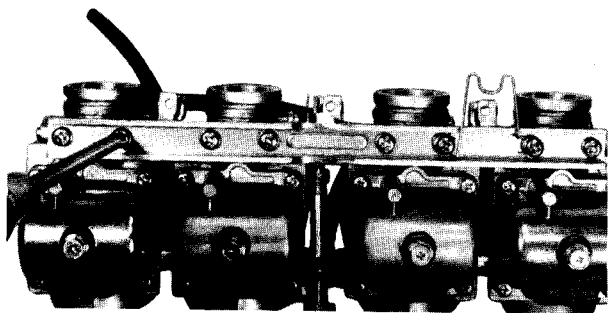
- Loosen four screws, and remove starter shaft ③, three levers ④ and starter bracket and lever ⑤.



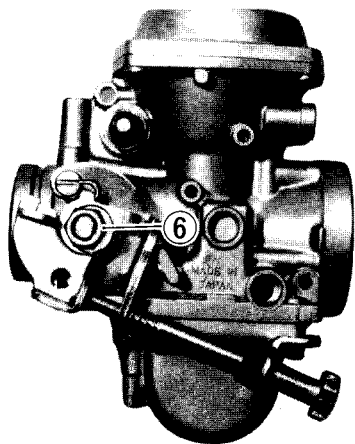
- Remove eight screws and remove the plate.



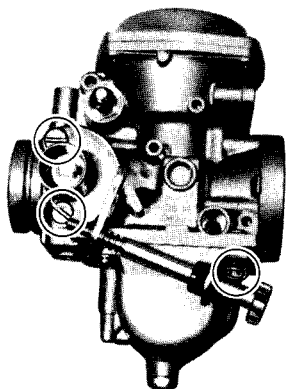
- Remove eight screws and remove the plate.



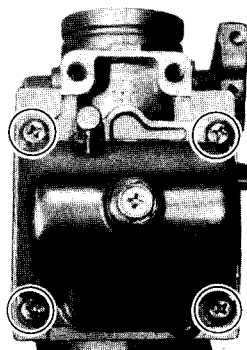
- Separate four carburetors, remove nut ⑥ and remove adjuster lever.



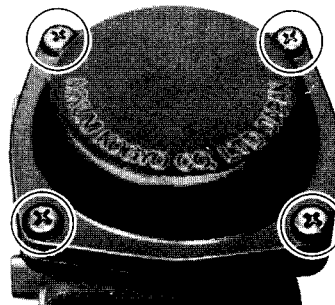
- Remove three screws, and remove adjuster bracket.



- Remove four screws and remove float chamber.



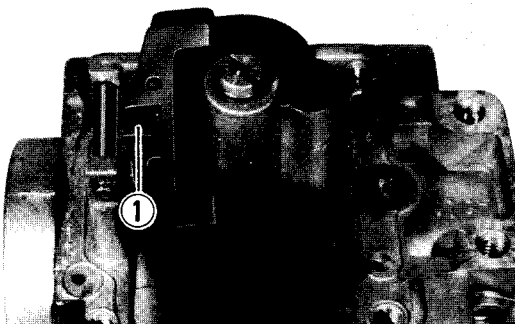
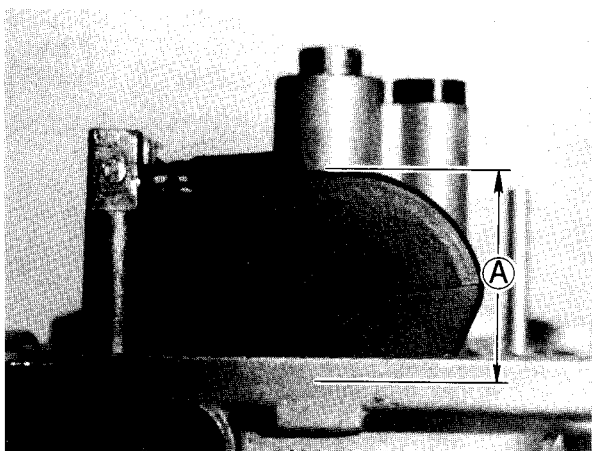
- Remove four screws and remove carburetor cap.



INSPECTION**FLOAT HEIGHT ADJUSTMENT**

To check the float height, invert the carburetor body. With the float arm kept free, measure the height **A** while float arm is just in contact with needle valve by using the caliper. Bend the tongue **①** as necessary to bring the height **A** to this value.

Float height A	$22.4 \pm 1.0 \text{ mm}$ ($0.88 \pm 0.04 \text{ in}$)
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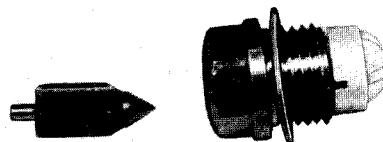
**NOTE:**

Be sure to remove the gasket before measuring the height.

NEEDLE VALVE

If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn out beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber.

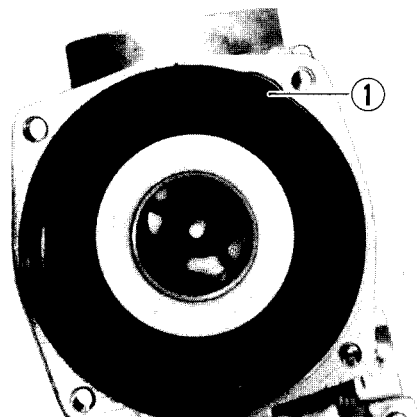
Remove the carburetor, float chamber and floats, and clean the float chamber and float parts with gasoline. If the needle is worn as shown below, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.



- Check following items for any damage or clogging.
- * Pilot jet
- * Main jet
- * Main air jet
- * Pilot air jet
- * Needle jet air bleeding hole and O-ring
- * Float
- * Needle valve mesh
- * Diaphragm
- * Gasket
- * Throttle valve shaft oil seals
- * Drain plug O-ring
- * Starter chamber gasket
- * Pilot outlet and bypass holes

REASSEMBLY

- Place tongue ① of diaphragm to carburetor body properly.



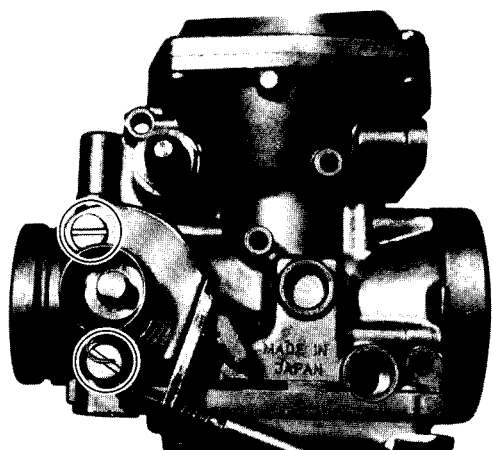
- Secure carburetor cap and float chamber with screws.

Tightening torque	0.25 - 0.45 kg·m (1.8 - 3.0 lb·ft)
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- Secure adjuster bracket to No. 3 carburetor with two screws.
Before tightening the screws, coat them with **THREAD LOCK CEMENT**.

Thread lock cement	99000-32040
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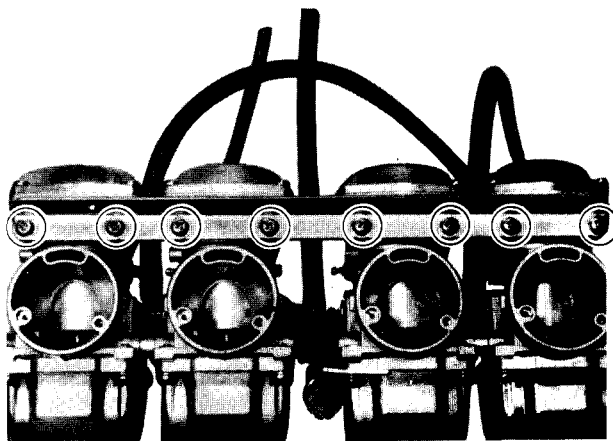
Tightening torque	0.25 - 0.45 kg·m (1.8 - 3.0 lb·ft)
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- Secure adjuster lever with nut.

- Connect the carburetors correctly, and secure top of each carburetor to the plate with screws.

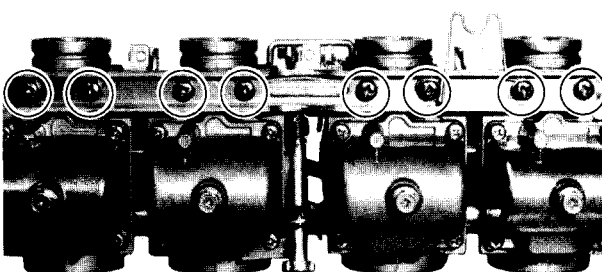
Tightening torque	0.25 - 0.45 kg·m (1.8 - 3.0 lb·ft)
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- Secure bottom of each carburetors to the plate with screws. Before tightening the screws, coat it with **THREAD LOCK CEMENT**.

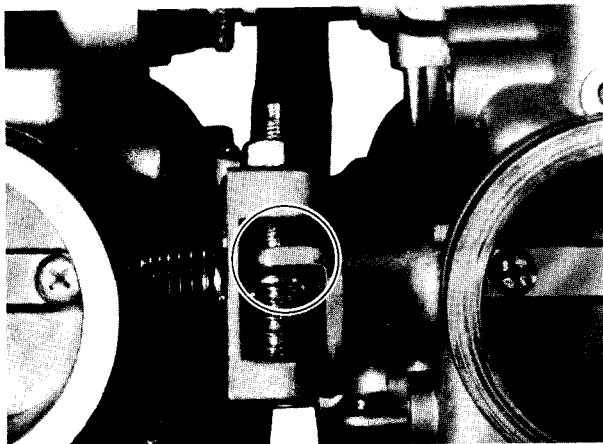
Thread lock cement	99000-32040
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Tightening torque	0.4 - 0.6 kg·m (3.0 - 4.5 lb·ft)
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CAUTION:

Make sure the throttle shaft lever is installed as shown in photo.

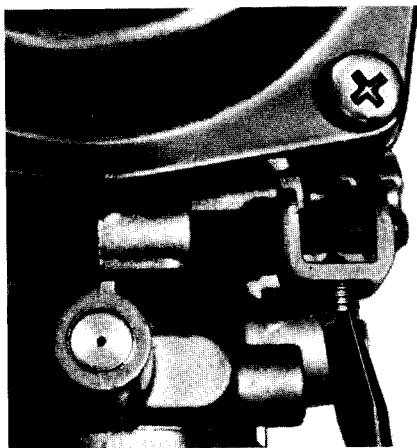


- Pass starter shaft through carburetors and starter levers, and secure starter lever with screws.

Before tightening the screws, coat it with **THREAD LOCK CEMENT**.

CAUTION:

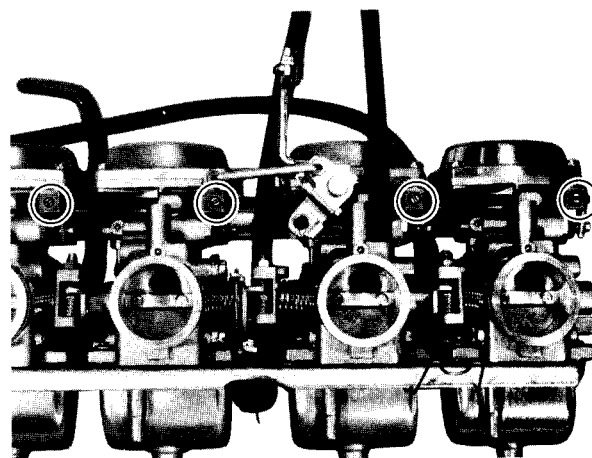
Align the end of screw with recess in starter shaft.



Thread lock cement

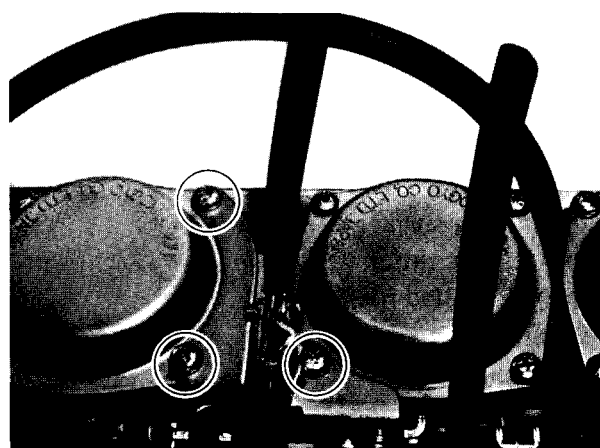
99000-32040

Tightening torque

0.06 - 0.10 kg·m
(0.4 - 0.7 lb·ft)

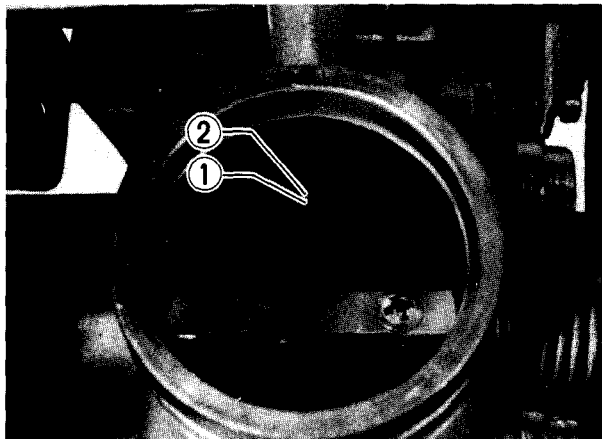
- Secure throttle bracket to No. 3 carburetor, and secure starter bracket to No. 2 carburetor cap, using screws.

Tightening torque

0.25 - 0.45 kg·m
(1.8 - 3.0 lb·ft)

BALANCING FOUR CARBURETORS

Set each throttle valve in such a way that its top end ① meets the foremost bypass ②. This is accomplished by turning throttle valve stop screw and balance screw.



FUEL LEVEL MEASUREMENT

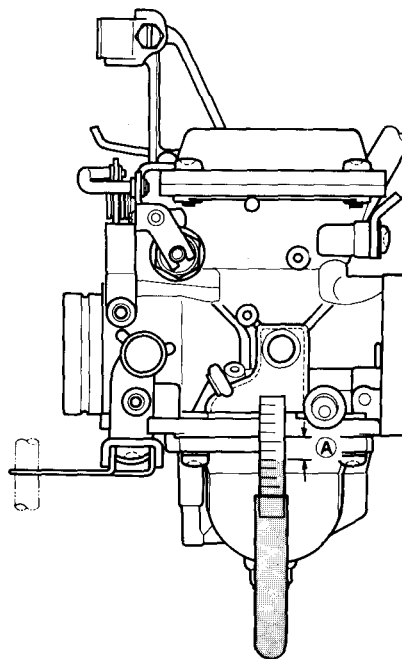
To check the fuel level, proceed as follows:

Checking fuel level in each float chamber

1. Leave fuel cock lever in "ON" or "RES" position.
2. Place machine on center stand.
3. Remove float chamber screw and install the special tool.
4. Move fuel cock lever to "PRI" position to admit fuel into float chamber.
5. With the float chamber filled with fuel, turn the cock lever back to "ON" position, and start up the engine.
6. Run the engine at the idling speed (950 – 1 150 r/min), and measure distance ① with the middle line of the level gauge aligned with the mating surface of the float bowl as shown in the illustration ① should be within the range specified here.

Fuel level gauge	09913- 14511
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Distance ① :	4.5 - 5.5 mm (0.18 - 0.22 in)
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NOTE:

When checking the fuel level, place the machine on the center stand. The fuel level should be center of the float chamber.

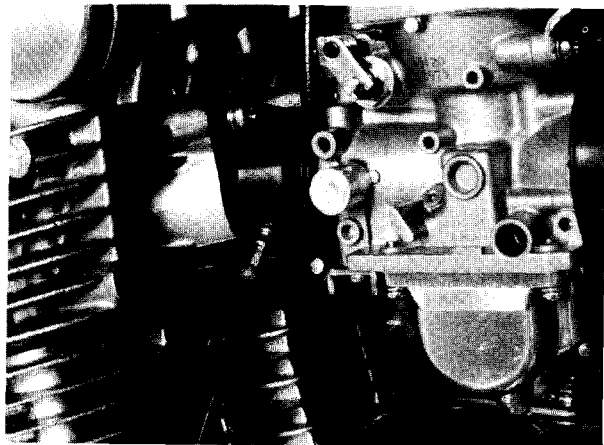
Fuel level adjustment

If distance ① is not within the specified range, it means that float height is off the specification, to adjust this height, as shown page 14-35.

BALANCING THE CARBURETORS

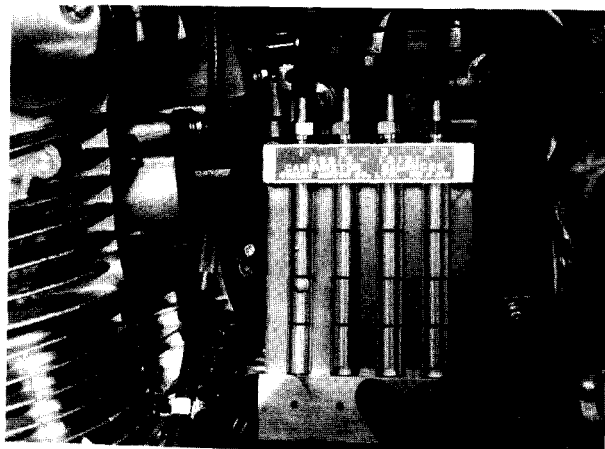
When any carburetor has been disassembled or replaced, check that the negative pressures (vacuum) in four carburetors are well balanced, using the carburetor balancer set in the following manner:

1. Place machine on center stand.
2. After warming up the engine completely, remove either No. 1 or No. 4 vacuum inlet screw, using a 4-mm hexagon wrench.

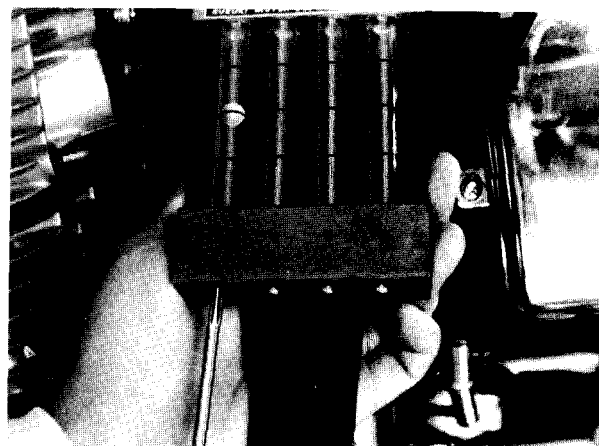


3. Insert one of the four carburetor balancer hoses into vacuum inlet.
4. Start up the engine, and keep it running at 1 500 - 2 000 r/min.

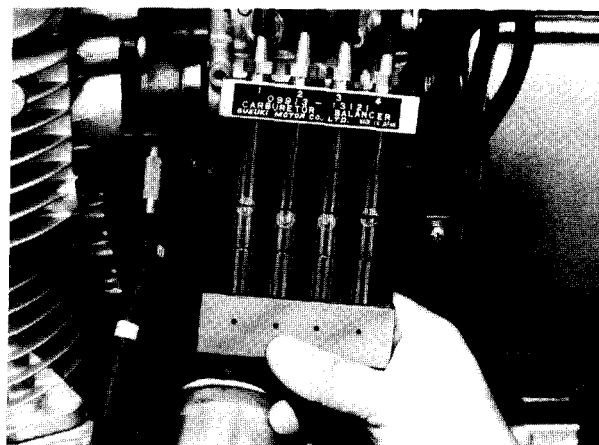
Carburetor balancer set	09913-13121
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5. Turn the air screw of the gauge so that the vacuum acting on the tube of that hose will bring the steel ball in the tube to the center.



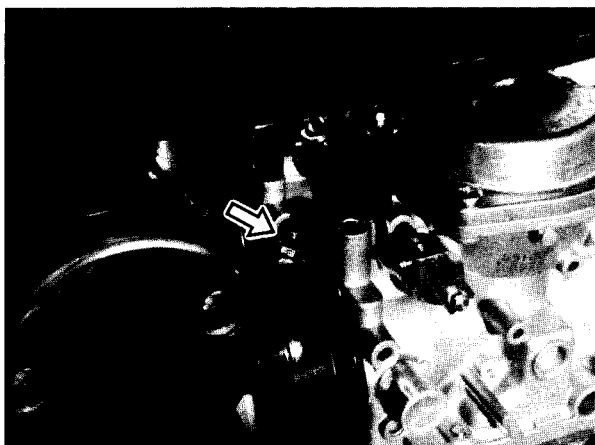
6. On the three other screws, follow the same procedure as above.
7. Remove the respective vacuum inlet screws and insert the adapters in the holes. Connect the balancer gauge hoses to these adapters, one hose to one adapter, and balancer the four carburetors as follows:
8. When the balls in No. 1 and No. 4 carburetor balancers are on the same level and the other balls are on the lower position as shown below, all the four carburetors are well balanced.



If the balls in No. 1 and No. 4 or in No. 2 and No. 3 carburetor balancers are off more than the radius of the ball, make an adjustment as follows:

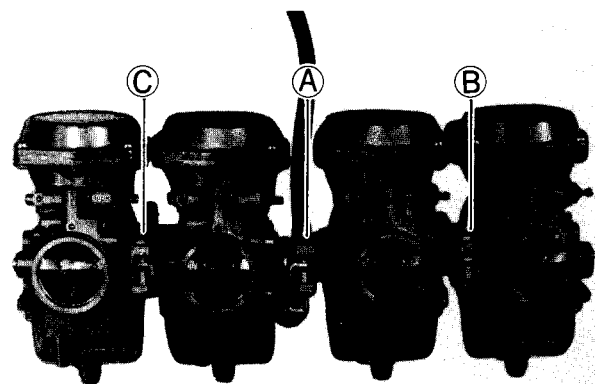
1. Loosen throttle valve balancing screw lock nut, and by turning balancing screw with special tool, adjust the position of steel ball in balancer gauge.

09913-14910	Throttle valve adjust wrench
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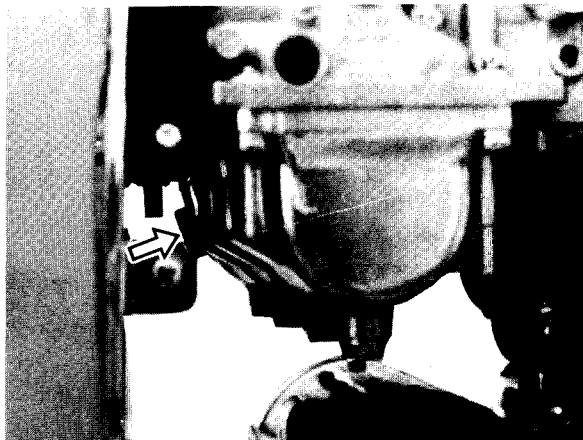
Adjusting order

Ⓐ(for No. 2 carb) → Ⓑ(for No. 1) → Ⓒ(for No. 4)



2. After adjusting, tighten throttle valve balancing screw lock nut.

3. After this adjustment, adjust the idling speed to somewhere between 950 and 1 150 r/min with throttle stop adjusting screw.

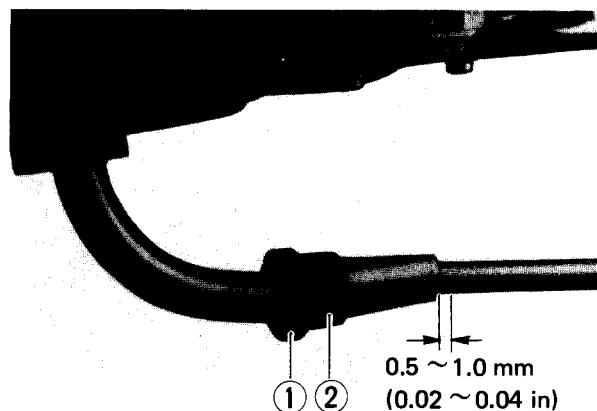


CAUTION:

This check should be done as quick as possible. If adjustment requires a longer time, it is advisable to cool the engine by sending air to prevent engine overheating.

THROTTLE CABLE ADJUSTMENT

1. Loosen lock nut ①.
2. Adjust the cable slack by turning adjuster ② in or out to obtain the correct slack 0.5 - mm (0.02 - 0.04 in).



3. After adjusting the slack, tighten the lock nut.