



OWNER'S SERVICE MANUAL

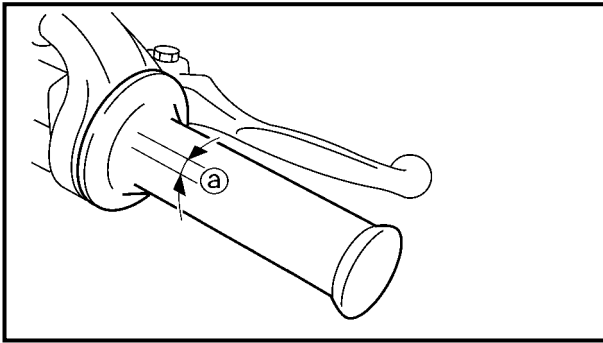
**MANUEL D'ATELIER DU
ET PROPRIETAIRE**

**FAHRER- UND
WARTUNGS-HANDBUCH**

**MANUALE DI SERVIZIO DEL
PROPRIETARIO**

WR250F(N)

5PH-28199-30

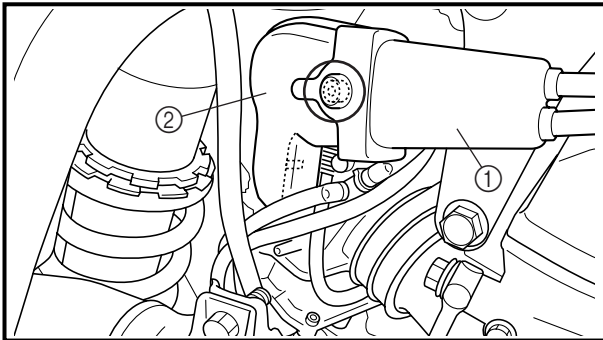


THROTTLE CABLE ADJUSTMENT

1. Check:
 - Throttle grip free play ②
 Out of specification → Adjust.



Throttle grip free play ②:
3 ~ 5 mm (0.12 ~ 0.20 in)



2. Adjust:
 - Throttle grip free play

Throttle grip free play adjustment steps:

- Remove the throttle cable cap ① and throttle cable cover ②.

NOTE:

- Before adjusting the throttle cable free play, the engine idle speed should be adjusted.
- When the motorcycle is accelerating, throttle cable #1 ③ is pulled and throttle cable #2 ④ is pushed.

1st step:

- Loosen the locknuts ⑤ on throttle cable #2.
- Adjust the free play by changing their tightening position.

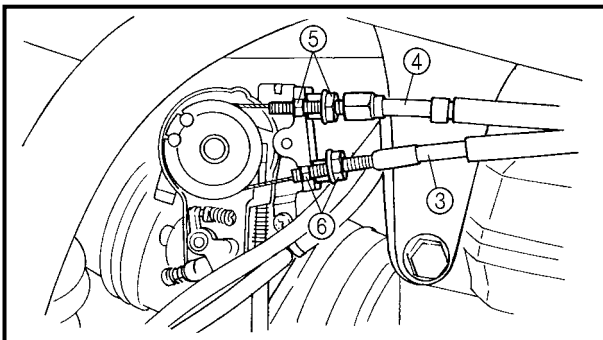
2nd step:

- Loosen the locknuts ⑥ on throttle cable #1.
- Adjust the free play by changing their tightening position.
- Tighten the locknuts.

⚠ WARNING

After adjusting, turn the handlebar to right and left and make sure that the engine idling does not run faster.

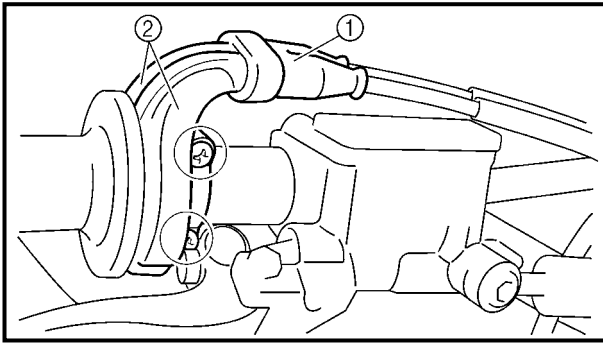
- Install the throttle cable cover and throttle cable cap.



Throttle cable cover:
4 Nm (0.4 m • kg, 2.9 ft • lb)

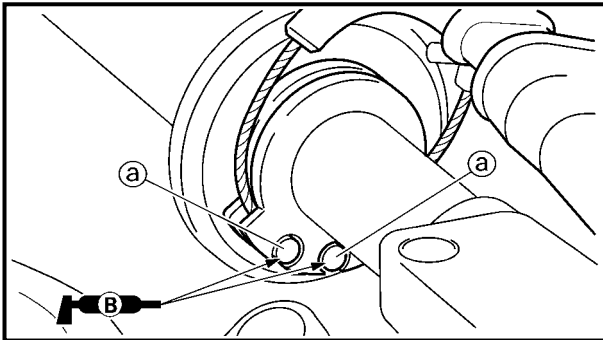
THROTTLE LUBRICATION/ DECOMPRESSION ADJUSTMENT

**INSP
ADJ**



THROTTLE LUBRICATION

1. Remove:
 - Rubber cover ①
 - Throttle grip cap ②

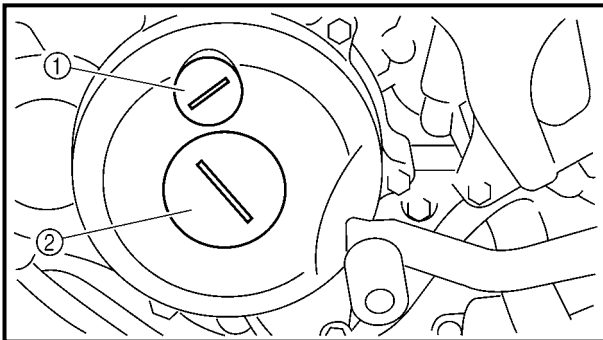


2. Apply:
 - Lithium soap base grease
On the throttle cable end (a).

3. Install:
 - Throttle grip cap
 - Screw (throttle grip cap)

4 Nm (0.4 m · kg, 2.9 ft · lb)

- Rubber cover



DECOMPRESSION ADJUSTMENT

1. Check:
 - Decompression lever free play (a)
Out of specification → Adjust.

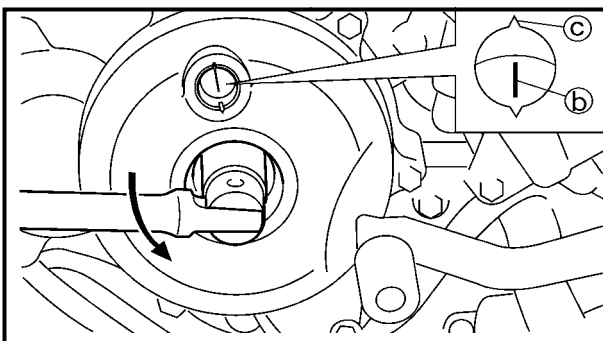
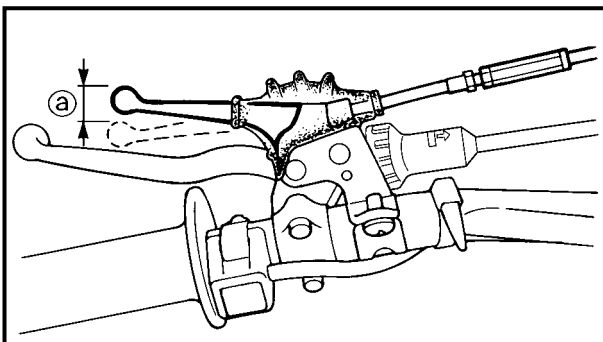
Checking steps:

- Remove the timing mark accessing screw ① and crankshaft end accessing screw ②.
- Turn the crankshaft counterclockwise with a wrench.

NOTE:

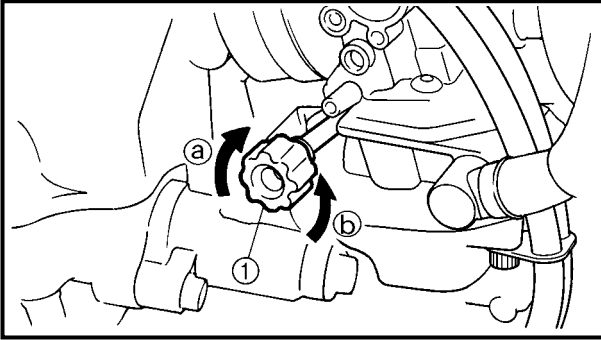
Squeezing the decompression lever allows the crankshaft to be turned easily.

- Align the T.D.C. mark (b) on the rotor with the align mark (c) on the crankcase cover when piston is at T.D.C. on compression stroke.
- Check the free play.



Free play (a):
5 ~ 9 mm (0.20 ~ 0.35 in)

ENGINE IDLING SPEED ADJUSTMENT/ VALVE CLEARANCE INSPECTION AND ADJUSTMENT



ENGINE IDLING SPEED ADJUSTMENT

1. Start the engine and thoroughly warm it up.
2. Attach:
 - Inductive tachometer
To spark plug lead.
3. Adjust:
 - Engine idling speed

Adjustment steps:

- Adjust the pilot screw.
Refer to "PILOT SCREW ADJUSTMENT" section.
- Turn the throttle stop screw ① until the engine runs at the lowest possible speed.

To increase idle speed →

Turn the throttle stop screw ① in ②.

To decrease idle speed →

Turn the throttle stop screw ① out ③.



Inductive tachometer:
YU-08036-B
Engine tachometer:
90890-03113



Engine idling speed:
1,700 ~ 1,900 r/min

VALVE CLEARANCE INSPECTION AND ADJUSTMENT

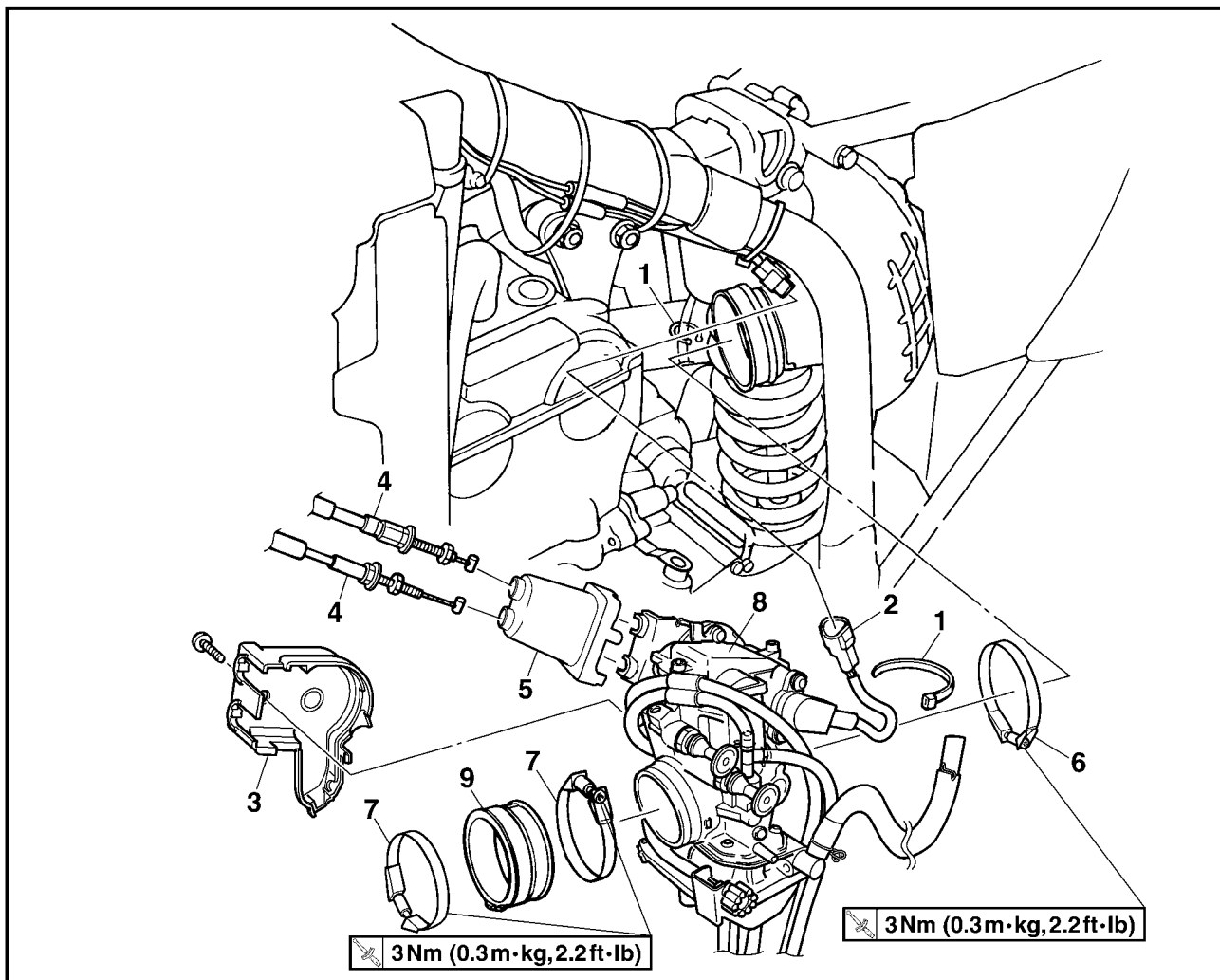
NOTE:

- The valve clearance should be adjusted when the engine is cool to the touch.
- The piston must be at Top Dead Center (T.D.C.) on compression stroke to check or adjust the valve clearance.

1. Remove:
 - Seat
 - Fuel tank
Refer to "SEAT, FUEL TANK AND SIDE COVERS" section in the CHAPTER 4.
2. Drain:
 - Coolant
Refer to "COOLANT REPLACEMENT" section.



CARBURETOR



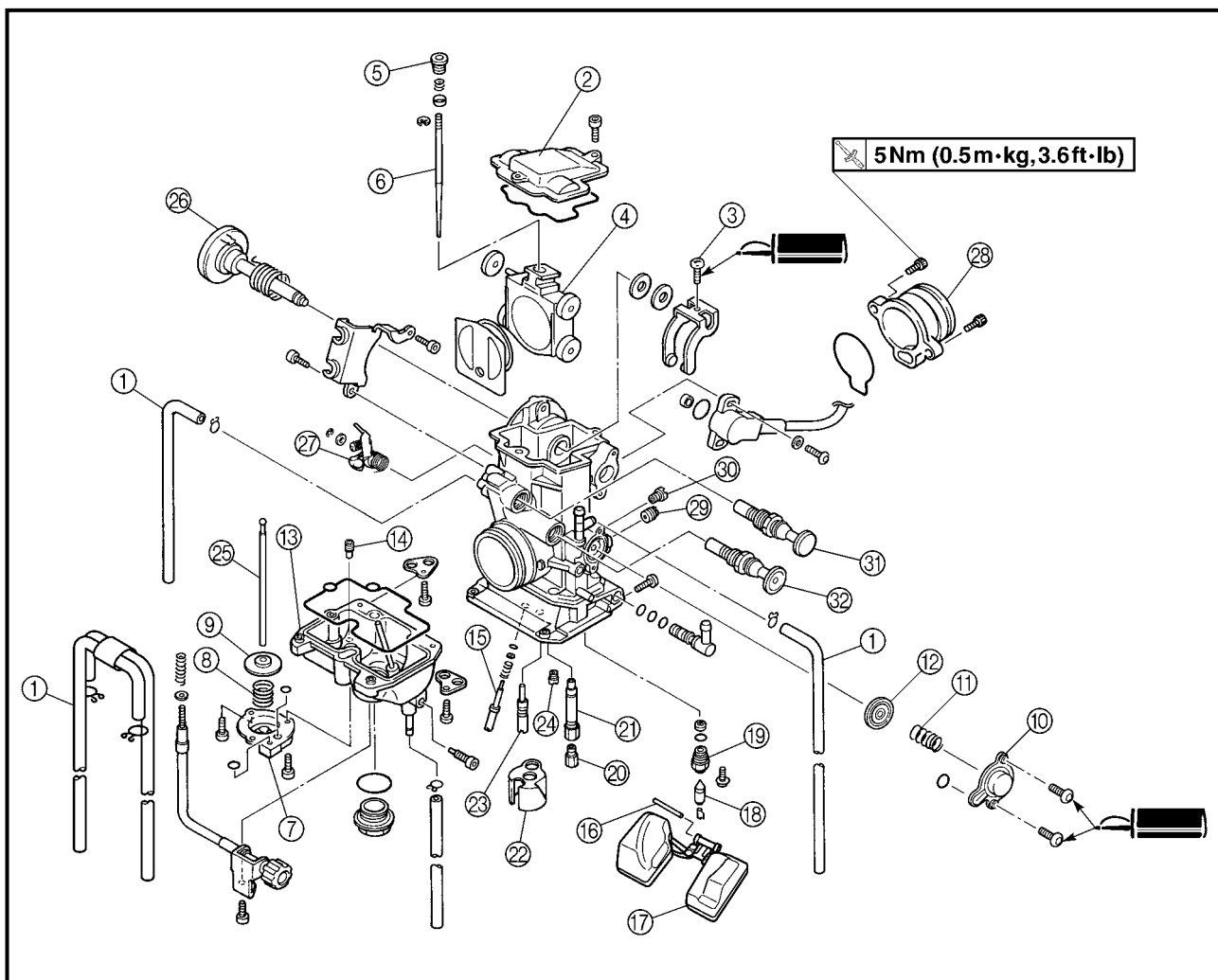
Extent of removal: ① Carburetor removal

Extent of removal	Order	Part name	Q'ty	Remarks
CARBURETOR REMOVAL				
Preparation for removal		Seat and fuel tank		Refer to "SEAT, FUEL TANK AND SIDE COVERS" section.
	1	Clamp	2	Loosen the screw (air filter joint). Loosen the screws (carburetor joint).
	2	Throttle position sensor lead coupler	1	
	3	Throttle cable cover	1	
	4	Throttle cable	2	
	5	Throttle cable cap	1	
	6	Clamp (air filter joint)	1	
	7	Clamp (carburetor joint)	2	
	8	Carburetor assembly	1	
	9	Carburetor joint	1	



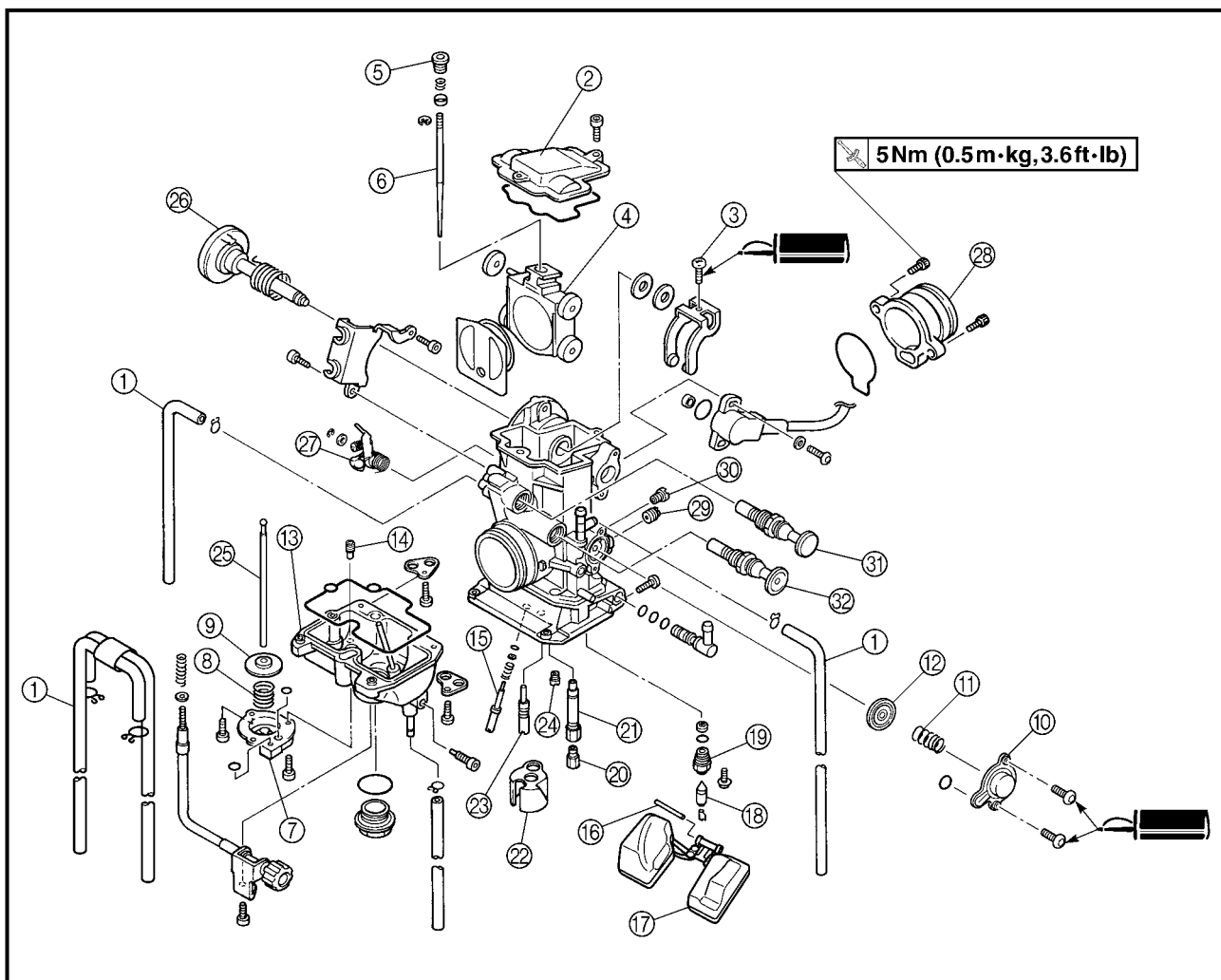
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CARBURETOR DISASSEMBLY

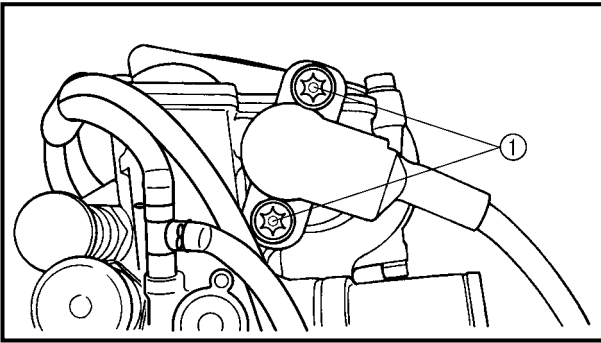


Extent of removal: ① Carburetor disassembly

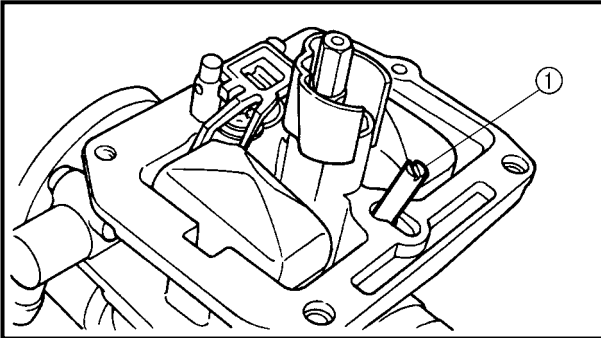
Extent of removal	Order	Part name	Q'ty	Remarks
	CARBURETOR DISASSEMBLY			
	①	Carburetor breather hose	4	
	②	Valve lever housing cover	1	
	③	Screw (throttle shaft)	1	
	④	Throttle valve	1	
	⑤	Needle holder	1	
	⑥	Jet needle	1	
	⑦	Accelerator pump cover	1	
	⑧	Spring	1	
	⑨	Diaphragm (accelerator pump)	1	
	⑩	Air cut valve cover	1	
	⑪	Spring (air cut valve)	1	
	⑫	Diaphragm (air cut valve)	1	
	⑬	Float chamber	1	
	⑭	Leak jet	1	
	⑮	Pilot screw	1	Refer to "REMOVAL POINTS".
⑯	Float pin	1		



Extent of removal	Order	Part name	Q'ty	Remarks
	⑰	Float	1	Pull the push rod.
	⑱	Needle valve	1	
	⑲	Valve seat	1	
	⑳	Main jet	1	
	㉑	Needle jet	1	
	㉒	Spacer	1	
	㉓	Pilot jet	1	
	㉔	Starter jet	1	
	㉕	Push rod	1	
	㉖	Throttle shaft assembly	1	
	㉗	Push rod link lever assembly	1	
	㉘	Intake joint	1	
	㉙	Pilot air jet	1	
	㉚	Main air jet	1	
	㉛	Cold starter plunger	1	
	㉜	Hot starter plunger (red)	1	

**HANDLING NOTE****CAUTION:**

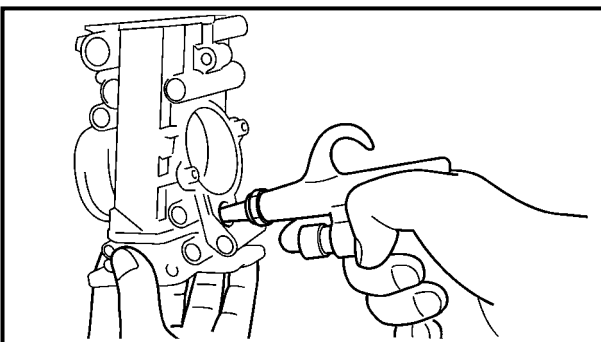
Do not loosen the screws (throttle position sensor) ① except when changing the throttle position sensor due to failure because it will cause a drop in engine performance.

**REMOVAL POINTS****Pilot screw**

1. Remove:
 - Pilot screw ①

NOTE:

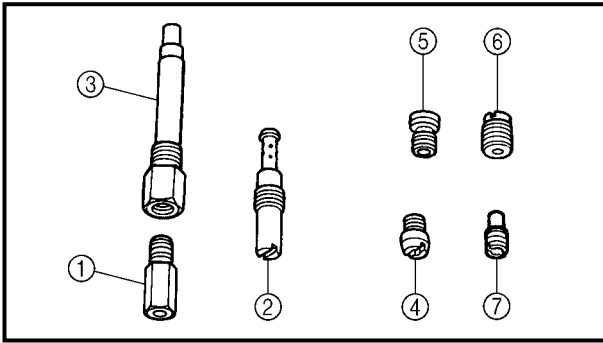
To optimize the fuel flow at a small throttle opening, each machine's pilot screw has been individually set at the factory. Before removing the pilot screw, turn it in fully and count the number of turns. Record this number as the factory-set number of turns out.

**INSPECTION****Carburetor**

1. Inspect:
 - Carburetor bodyContamination → Clean.

NOTE:

- Use a petroleum based solvent for cleaning. Blow out all passages and jets with compressed air.
- Never use a wire.



2. Inspect:

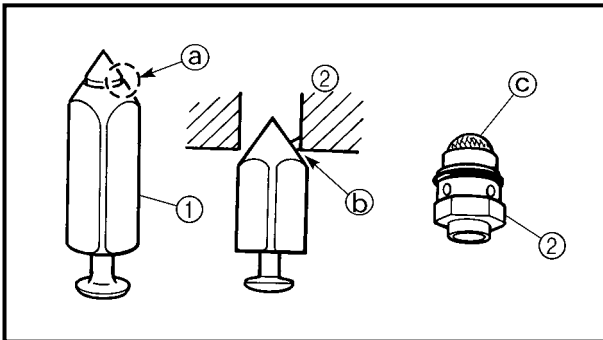
- Main jet ①
- Pilot jet ②
- Needle jet ③
- Starter jet ④
- Main air jet ⑤
- Pilot air jet ⑥
- Leak jet ⑦

Damage → Replace.

Contamination → Clean.

NOTE:

- Use a petroleum based solvent for cleaning. Blow out all passages and jets with compressed air.
- Never use a wire.



Needle valve

1. Inspect:

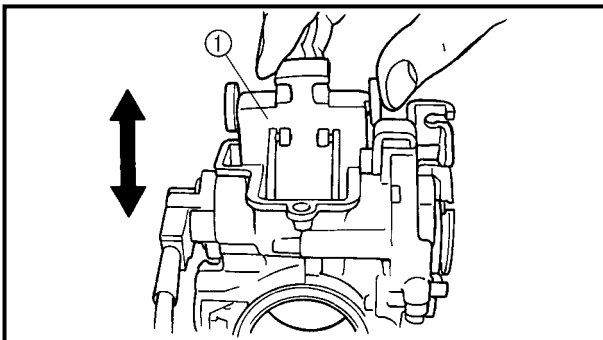
- Needle valve ①
- Valve seat ②

Grooved wear (a) → Replace.

Dust (b) and (c) → Clean.

NOTE:

Replace the needle valve and valve seat as a set.



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Throttle valve

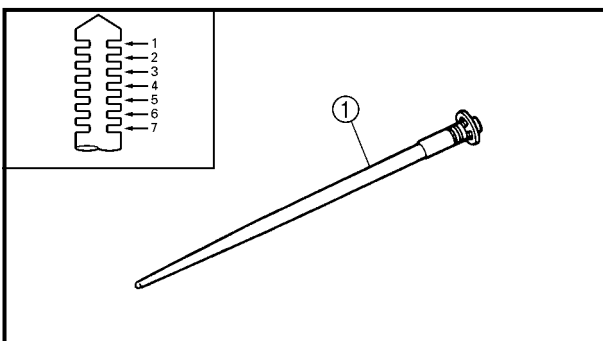
1. Check:

- Free movement

Stick → Repair or replace.

NOTE:

Insert the throttle valve ① into the carburetor body, and check for free movement.



EC464401

Jet needle

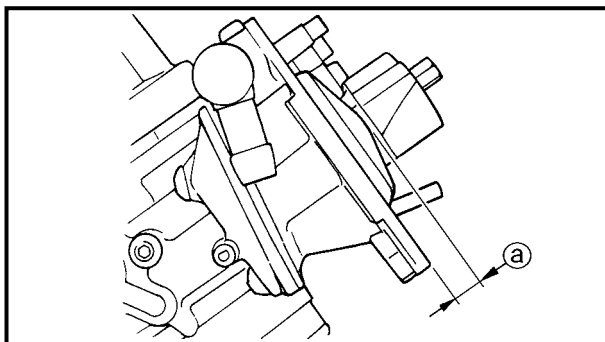
1. Inspect:

- Jet needle ①
- Bends/wear → Replace.
- Clip groove
- Free play exists/wear → Replace.
- Clip position

	<p>Standard clip position: No.3 Groove *, ** No.4 Groove</p>
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* For EUROPE

** For CDN, ZA, AUS and NZ



Float height

1. Measure:
 - Float height ①
 Out of specification → Adjust.



Float height:
8.0 mm (0.31 in)

Measurement and adjustment steps:

- Hold the carburetor in an upside down position.

NOTE:

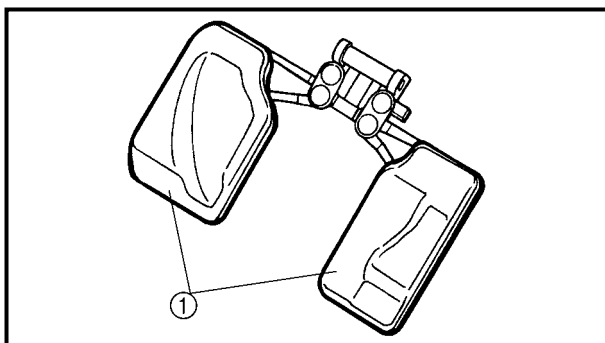
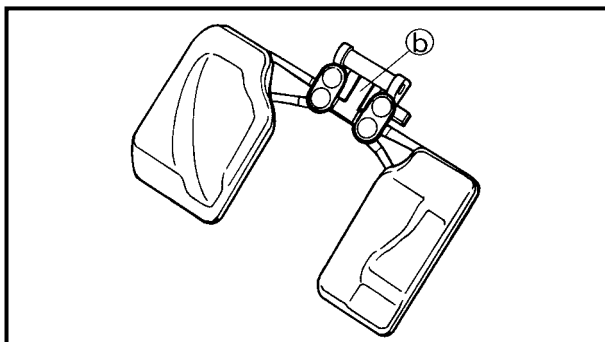
- Slowly tilt the carburetor in the opposite direction, then take the measurement when the needle valve aligns with the float arm.
- If the carburetor is level, the weight of the float will push in the needle valve, resulting in an incorrect measurement.

- Measure the distance between the mating surface of the float chamber and top of the float using a vernier calipers.

NOTE:

The float arm should be resting on the needle valve, but not compressing the needle valve.

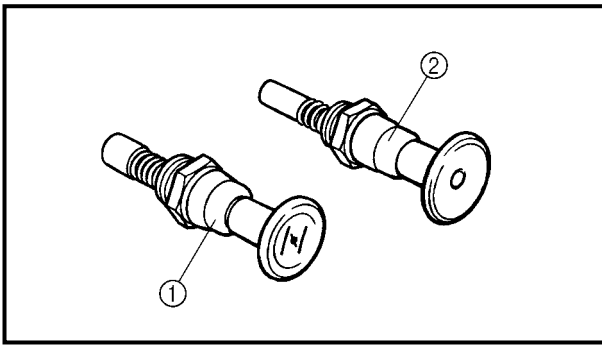
- If the float height is not within specification, inspect the valve seat and needle valve.
- If either is worn, replace them both.
- If both are fine, adjust the float height by bending the float tab ② on the float.
- Recheck the float height.



EC464600

Float

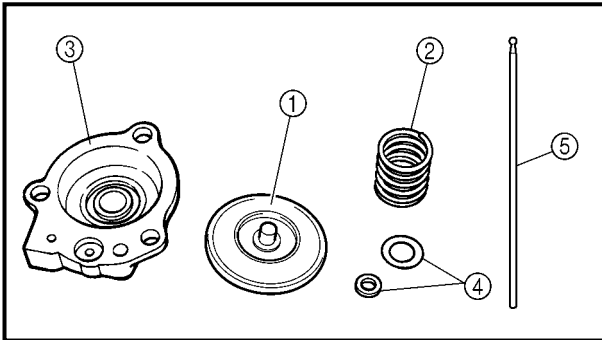
1. Inspect:
 - Float ①
 Damage → Replace.



Starter plunger

1. Inspect:

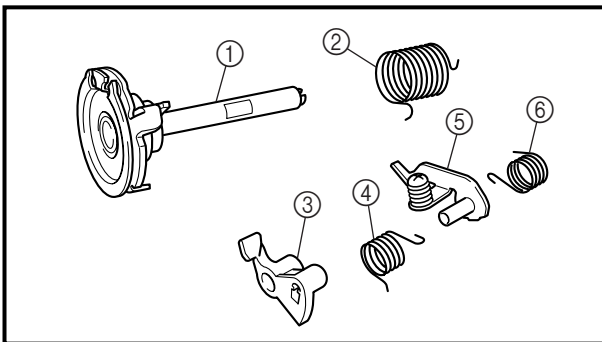
- Cold starter plunger ①
 - Hot starter plunger (red) ②
- Wear/damage → Replace.



Accelerator pump

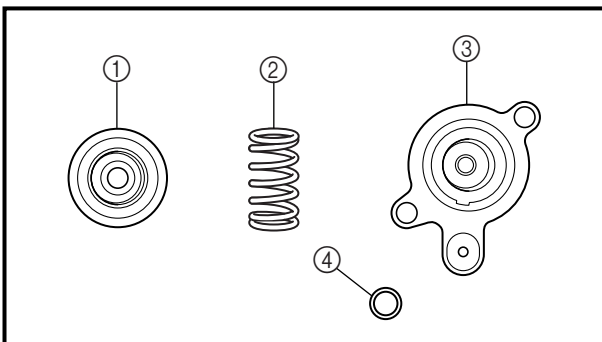
1. Inspect:

- Diaphragm (accelerator pump) ①
 - Spring (accelerator pump) ②
 - Accelerator pump cover ③
 - O-ring ④
 - Push rod ⑤
- Tears (diaphragm)/damage → Replace.
Dirt → Clean.



2. Inspect:

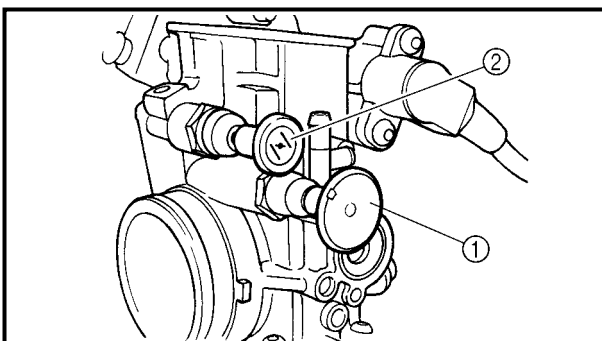
- Throttle shaft ①
 - Spring ②
 - Lever 1 ③
 - Spring 1 ④
 - Lever 2 ⑤
 - Spring 2 ⑥
- Dirt → Clean.



Air cut valve

1. Inspect:

- Diaphragm (air cut valve) ①
 - Spring (air cut valve) ②
 - Air cut valve cover ③
 - O-ring ④
- Tears (diaphragm)/damage → Replace.

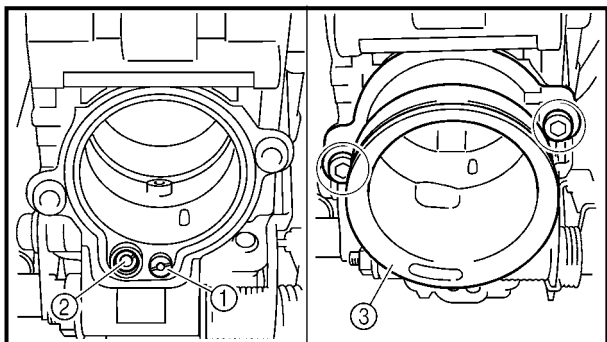


ASSEMBLY AND INSTALLATION

Carburetor

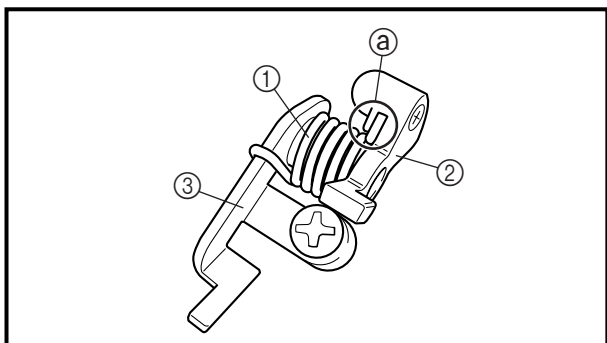
1. Install:

- Hot starter plunger (red) ①
- Cold starter plunger ②



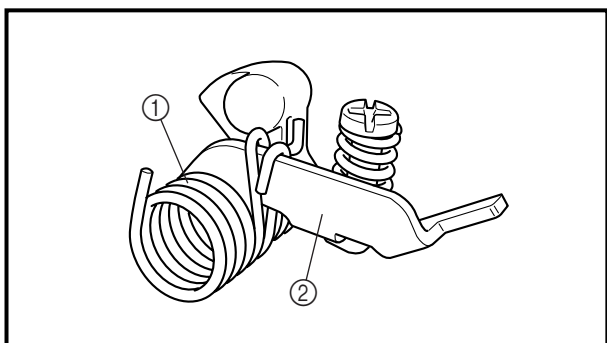
2. Install:
- Main air jet ①
 - Pilot air jet ②
 - Intake joint ③

5 Nm (0.5 m · kg, 3.6 ft · lb)

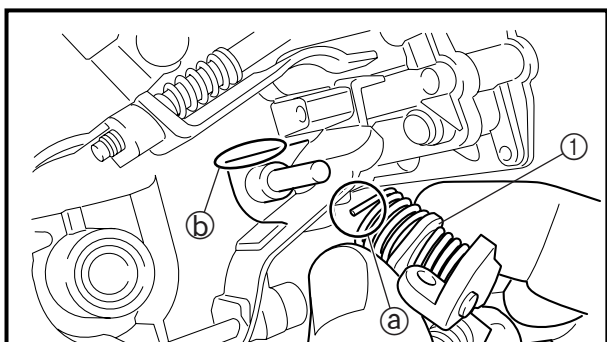


3. Install:
- Spring 1 ①
 - Lever 1 ②
 - To lever 2 ③.

NOTE: _____
 Make sure the spring 1 fits on the stopper (a) of the lever 2.

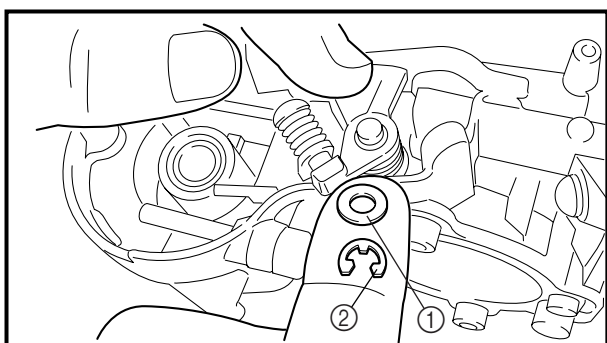


4. Install:
- Spring 2 ①
 - To lever 2 ②.

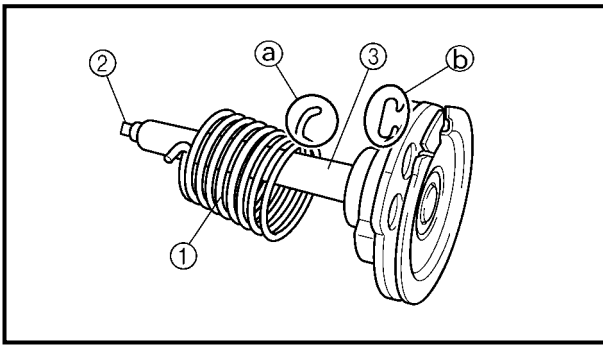


5. Install:
- Push rod link lever assembly ①

NOTE: _____
 Make sure the stopper (a) of the spring 2 fits into the recess (b) in the carburetor.

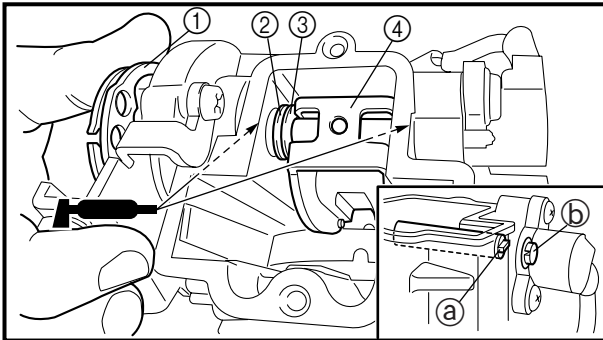


6. Install:
- Washer ①
 - Circlip ②



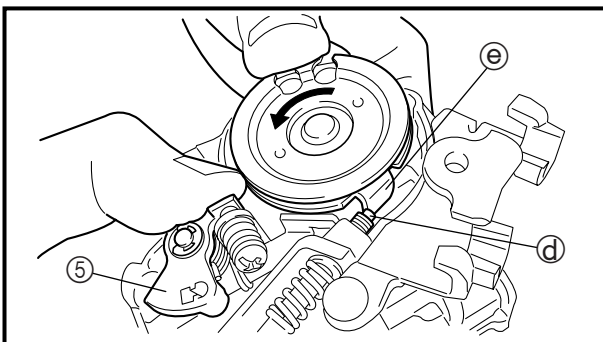
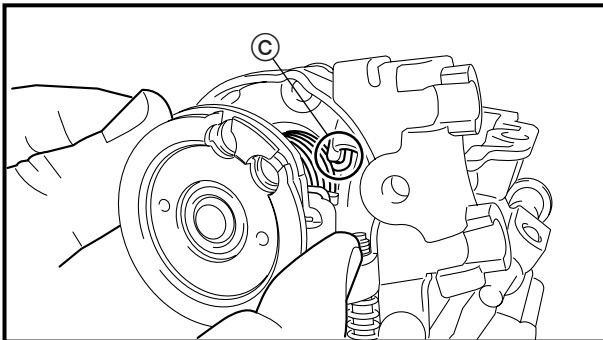
7. Install:
- Spring ①
 - Joint collar ②
- To throttle shaft ③.

NOTE: _____
 Install the bigger hook ① of the spring fits on the stopper ② of the throttle shaft pulley.



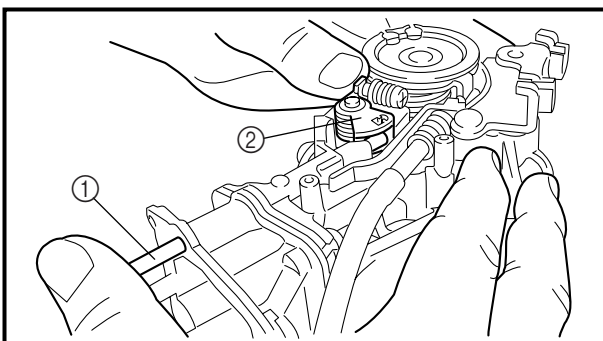
8. Install:
- Throttle shaft assembly ①
 - Washer (metal) ②
 - Washer (resin) ③
 - Valve lever ④

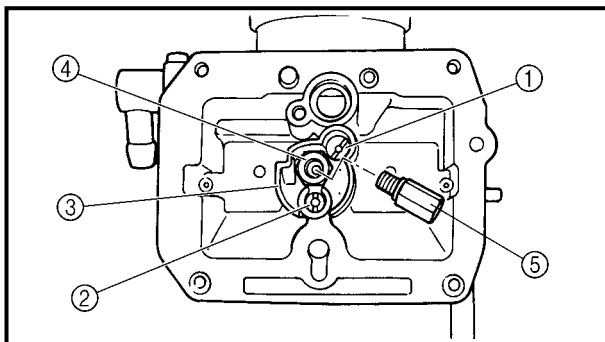
NOTE: _____
 ● Apply the fluorochemical grease on the bearings.
 ● Fit the projection ① on the throttle shaft assembly into the slot ② in the throttle position sensor.
 ● Make sure the stopper ③ of the spring fits into the recess in the carburetor.
 ● Turn the throttle shaft assembly left while holding down the lever 1 ④ and fit the throttle stop screw tip ⑤ to the stopper ⑥ of the throttle shaft assembly pulley.



9. Install:
- Push rod ①

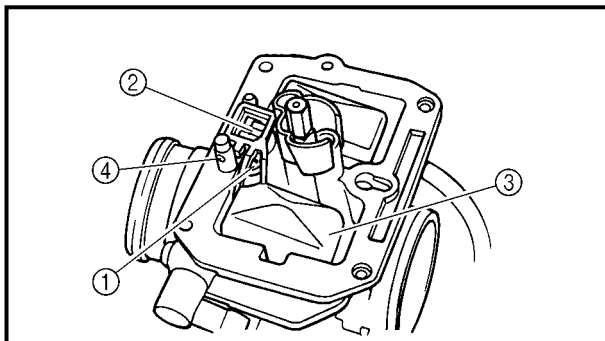
NOTE: _____
 While holding down the lever 1 ②, insert the push rod farthest into the carburetor.





10. Install:

- Starter jet ①
- Pilot jet ②
- Spacer ③
- Needle jet ④
- Main jet ⑤

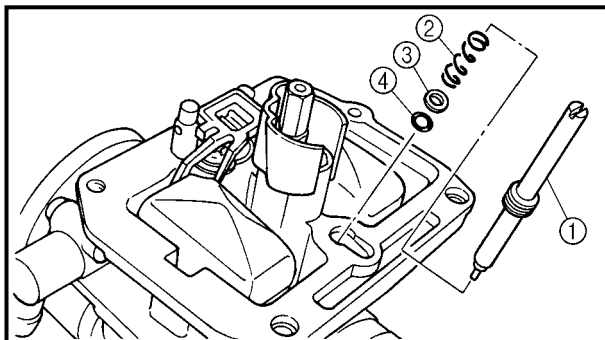


11. Install:

- Valve seat
- Screw (valve seat) ①
- Needle valve ②
- Float ③
- Float pin ④

NOTE:

- After installing the needle valve to the float, install them to the carburetor.
- Check the float for smooth movement.



12. Install:

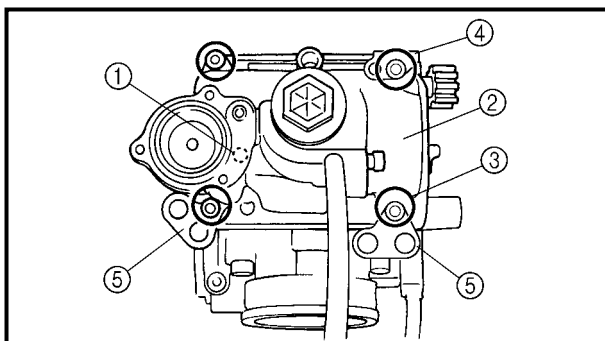
- Pilot screw ①
- Spring ②
- Washer ③
- O-ring ④

Note the following installation points:

- Turn in the pilot screw until it is lightly seated.
- Turn out the pilot screw by the number of turns recorded before removing.

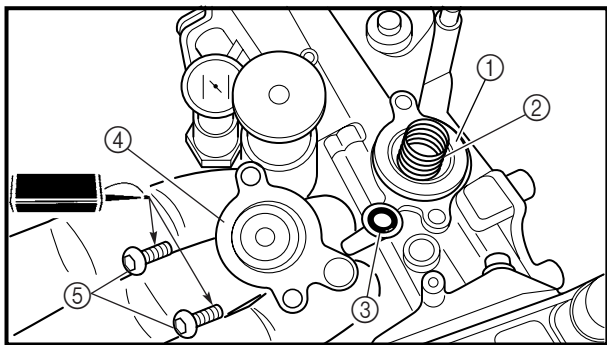


**Pilot screw:
1-3/4 turns out (example)**



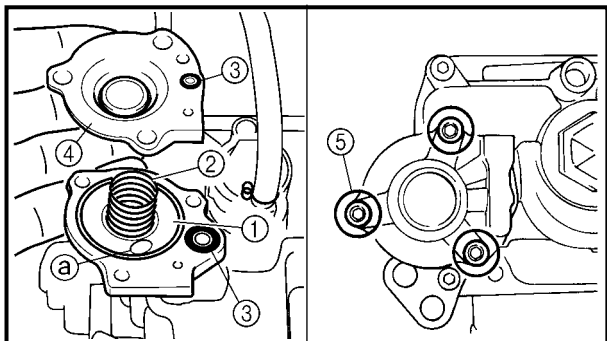
13. Install:

- O-ring
- Leak jet ①
- Float chamber ②
- Bolt (float chamber) ③
- Cable holder (throttle stop screw cable) ④
- Hose holder (carburetor breather hose) ⑤



14. Install:

- Diaphragm (air cut valve) ①
- Spring (air cut valve) ②
- O-ring ③
- Air cut valve cover ④
- Screw (air cut valve cover) ⑤

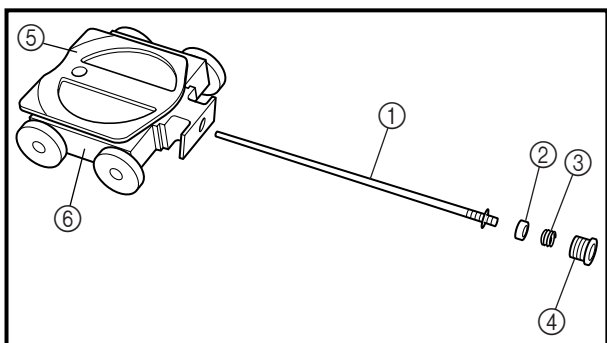


15. Install:

- Diaphragm (accelerator pump) ①
- Spring ②
- O-ring ③
- Accelerator pump cover ④
- Bolt (accelerator pump cover) ⑤

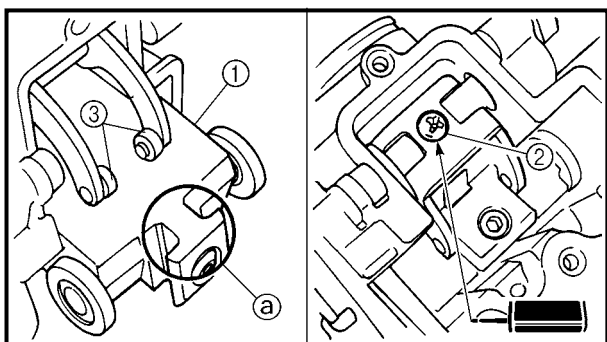
NOTE:

Install the diaphragm (accelerator pump) with its mark (a) facing the spring.



16. Install:

- Jet needle ①
- Collar ②
- Spring ③
- Needle holder ④
- Throttle valve plate ⑤
- To throttle valve ⑥.

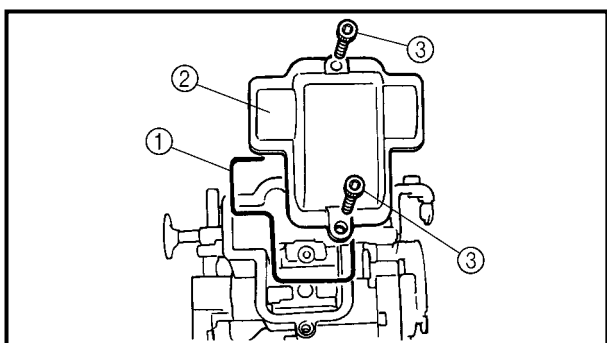


17. Install:

- Throttle valve assembly ①
- Screw (throttle shaft) ②

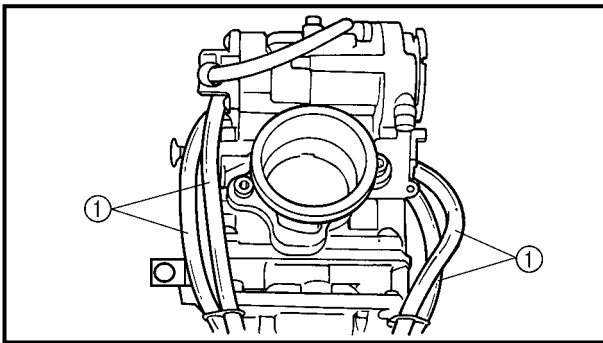
NOTE:

Install the valve lever rollers ③ into the slits (a) of the throttle valve.



18. Install:

- O-ring ①
- Valve lever housing cover ②
- Bolt (valve lever housing cover) ③

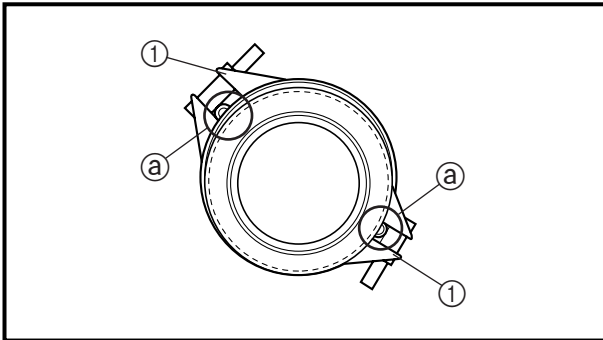


19. Install:

- Carburetor breather hose ①

NOTE:

Install the carburetor breather hoses to the carburetor so that the hoses do not bend near where they are installed.



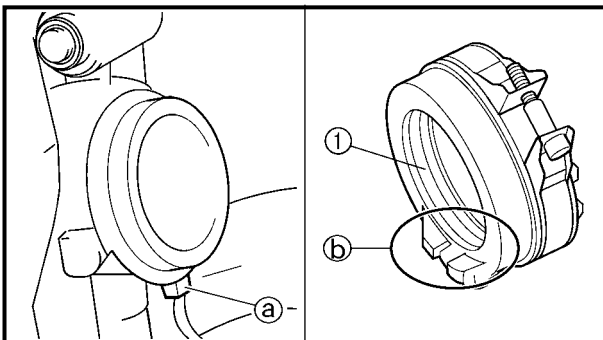
Carburetor installation

1. Install:

- Clamp ①

NOTE:

Install the projections (a) on the carburetor joint between the clamp ends.



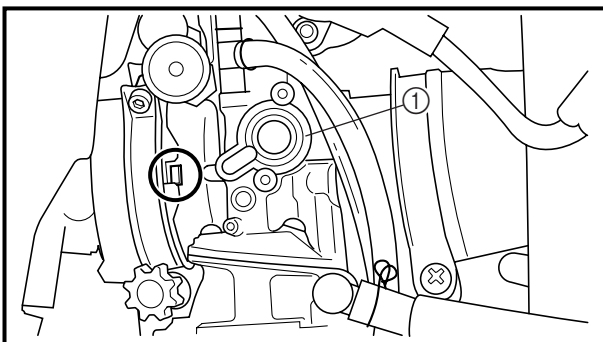
2. Install:

- Carburetor joint ①

3 Nm (0.3 m · kg, 2.2 ft · lb)

NOTE:

Install the projection (a) on the cylinder head between the carburetor joint slots (b).

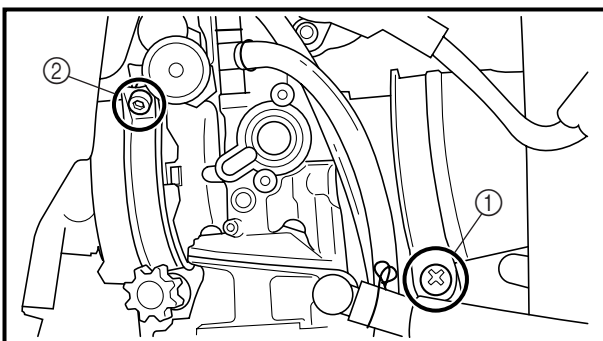


3. Install:

- Carburetor ①

NOTE:

Install the projection between the carburetor joint slots.



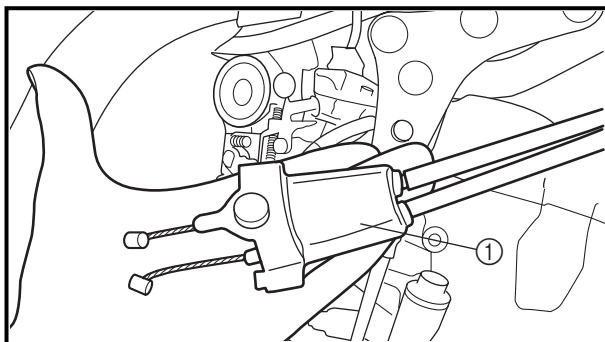
4. Tighten:

- Screw (air filter joint) ②

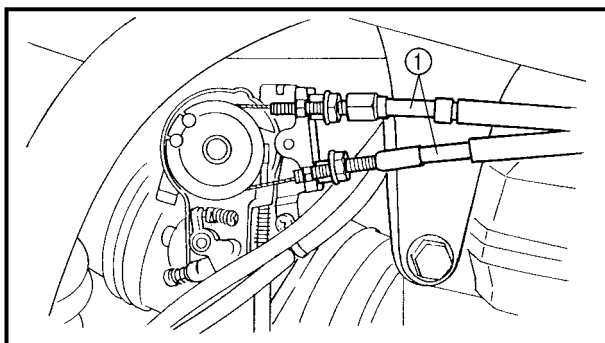
3 Nm (0.3 m · kg, 2.2 ft · lb)

- Screw (carburetor joint) ②

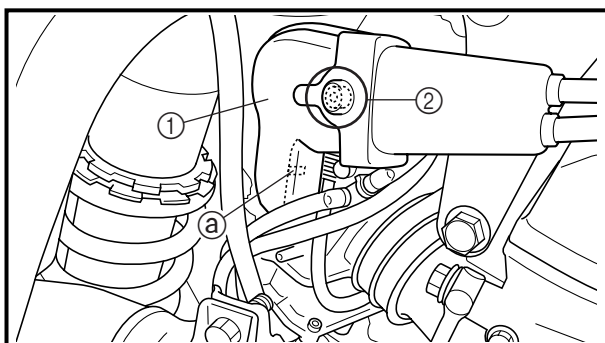
3 Nm (0.3 m · kg, 2.2 ft · lb)



5. Install:
- Throttle cable cap ①



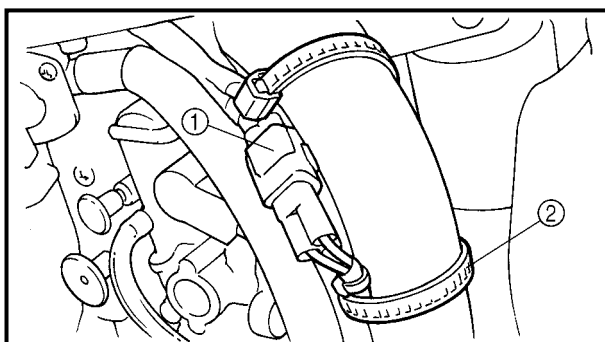
6. Install:
- Throttle cable ①
7. Adjust:
- Throttle grip free play
- Refer to “THROTTLE CABLE ADJUSTMENT” section in the CHAPTER 3.



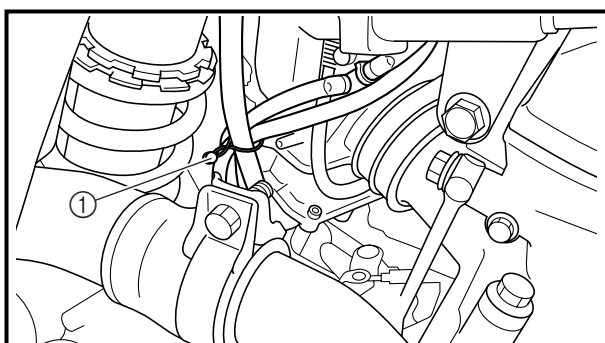
8. Install:
- Throttle cable cover ①
 - Screw (throttle cable cover) ②

4 Nm (0.4 m · kg, 2.9 ft · lb)

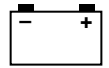
NOTE: Install the throttle cable cover with its pawl ① hung on the carburetor.



9. Install:
- Throttle position sensor lead coupler ①
 - Clamp ②
- Refer to “CABLE ROUTING DIAGRAM” section in the CHAPTER 2.



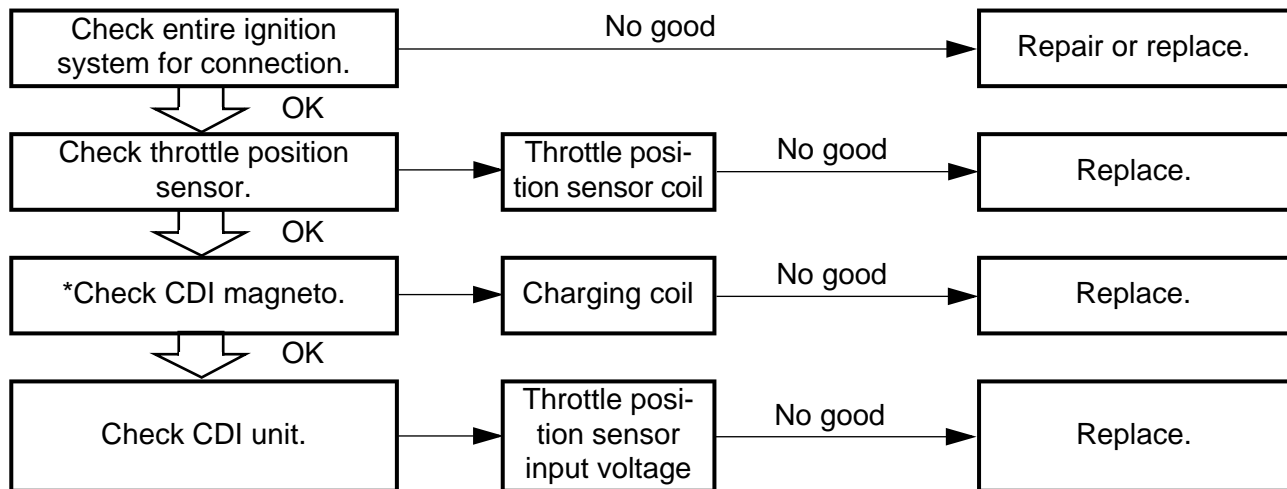
10. Install:
- Clamp ①
- Refer to “CABLE ROUTING DIAGRAM” section in the CHAPTER 2.



THROTTLE POSITION SENSOR SYSTEM

INSPECTION STEPS

If the throttle position sensor will not operate, use the following inspection steps.



*marked: Refer to "IGNITION SYSTEM" section.

NOTE:

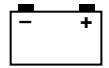
- Remove the following parts before inspection.
 - 1) Seat
 - 2) Fuel tank
- Use the following special tools in this inspection.



Pocket tester:
YU-3112-C/90890-03112



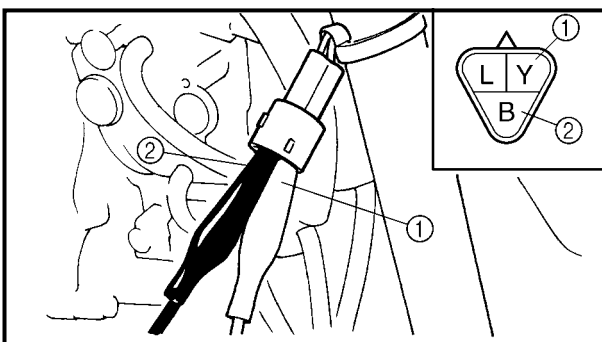
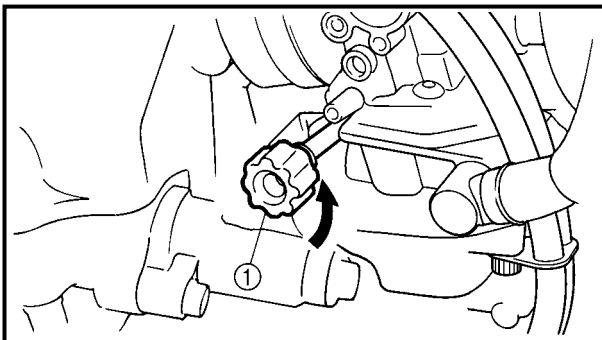
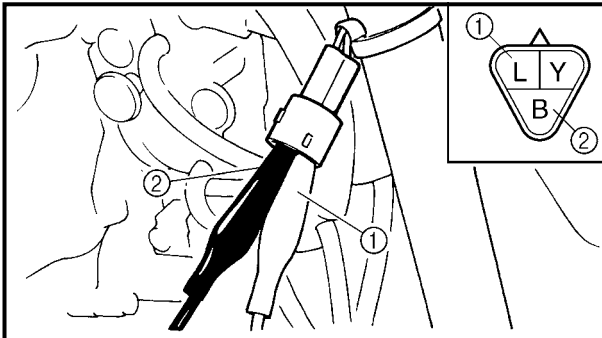
Inductive tachometer:
YU-08036-B
Engine tachometer:
90890-03113



EC624000

COUPLERS AND LEADS CONNECTION INSPECTION


1. Check:
 - Couplers and leads connection
Rust/dust/looseness/short-circuit → Repair or replace.



THROTTLE POSITION SENSOR COIL INSPECTION

1. Inspect:
 - Throttle position sensor coil resistance
Out of specification → Replace.

Tester (+) lead → Blue lead ①
Tester (-) lead → Black lead ②

	Throttle position sensor coil resistance	Tester selector position
	4 ~ 6 kΩ at 20 °C (68 °F)	kΩ × 1


2. Loosen:
 - Throttle stop screw ①

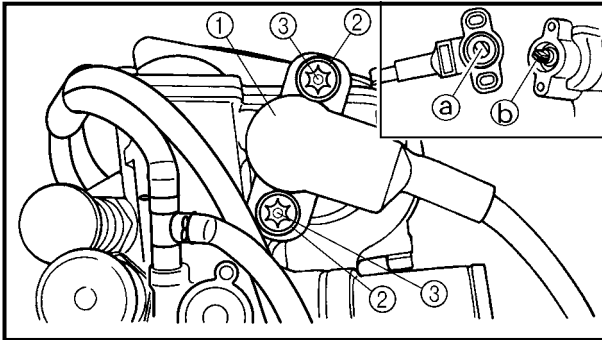
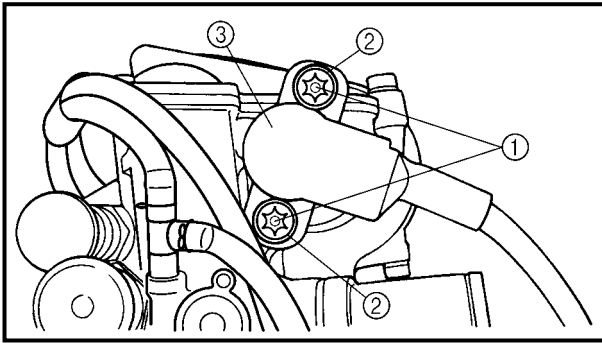
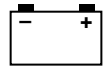
NOTE:

Turn out the throttle stop screw until the throttle shaft is in the full close position.

3. Inspect:
 - Throttle position sensor coil variable resistance
Check that the resistance is increased as the throttle grip is moved from the full close position to the full open position.
Out of specification → Replace.

Tester (+) lead → Yellow lead ①
Tester (-) lead → Black lead ②

	Throttle position sensor coil variable resistance		Tester selector position
	Full closed	Full opened	kΩ × 1
	Zero ~ 3 kΩ at 20 °C (68 °F)	4 ~ 6 kΩ at 20 °C (68 °F)	



THROTTLE POSITION SENSOR REPLACEMENT AND ADJUSTMENT

1. Remove:
 - Throttle position sensor coupler
 - Screw (throttle position sensor) ①
 - Washer ②
 - Throttle position sensor ③

NOTE:

Loosen the screws (throttle position sensor) using the T20 bit (tamper resistant fastener type).

2. Replace:
 - Throttle position sensor
3. Install:
 - Throttle position sensor ①
 - Washer ②
 - Screw (throttle position sensor) ③

NOTE:

- Align the slot (a) in the throttle position sensor with the projection (b) on the carburetor.
- Temporarily tighten the screws (throttle position sensor).

4. Adjust:
 - Engine idling speed
Refer to "ENGINE IDLE SPEED ADJUSTMENT" section in the CHAPTER 3.
5. Calculate:
 - Throttle position sensor coil resistance at idle speed

Throttle position sensor coil resistance at idle speed:

$$\text{Throttle position sensor coil resistance} \times (0.13 \sim 0.15)$$

<Example>

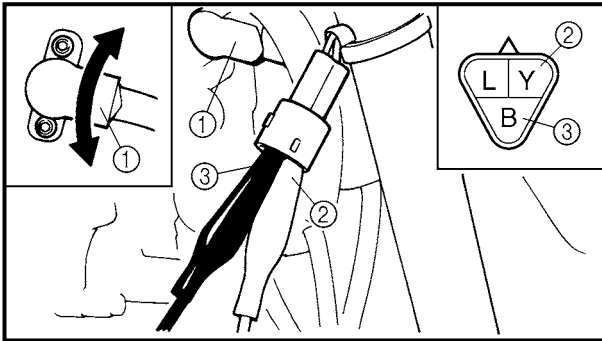
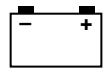
If the throttle position sensor coil resistance is 5 k Ω , then the throttle position sensor coil resistance at idle speed is:

$$5 \text{ k}\Omega \times (0.13 \sim 0.15) = 650 \sim 750 \Omega$$

Refer to "THROTTLE POSITION SENSOR COIL INSPECTION" section about the throttle position sensor coil resistance.

THROTTLE POSITION SENSOR SYSTEM

ELEC

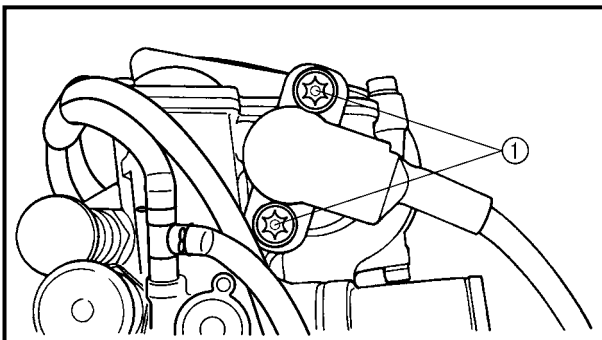


6. Adjust:
- Throttle position sensor coil resistance at idle speed

Adjustment steps:

Adjust the angle of the throttle position sensor ① to obtain the resistance calculated (example: 650 ~ 750 Ω)

Tester (+) lead → Yellow lead ②
 Tester (-) lead → Black lead ③

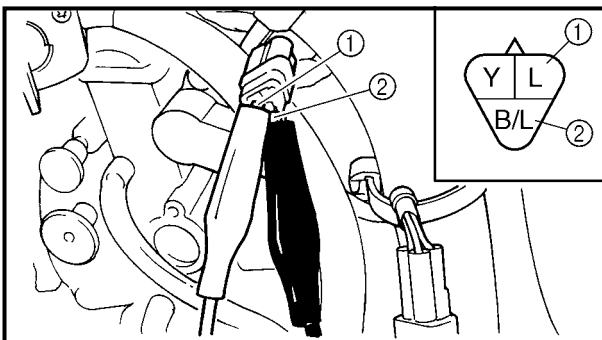


7. Tighten:
- Screw (throttle position sensor) ①

NOTE:

Tighten the screws (throttle position sensor) using the T20 bit (tamper resistant fastener type).

8. Install:
- Throttle position sensor coupler



THROTTLE POSITION SENSOR INPUT VOLTAGE INSPECTION

1. Disconnect the throttle position sensor coupler.
2. Start the engine.
3. Inspect:
 - Throttle position sensor input voltage
 Out of specification → Replace the CDI unit.

Tester (+) lead → Blue lead ①
 Tester (-) lead → Black/Blue lead ②

	Throttle position sensor input voltage	Tester selector position
	4 ~ 6 V	DCV-20



EC700000

TUNING

EC710000

ENGINE

Carburetor setting

- The air/fuel mixture will vary depending on atmospheric conditions. Therefore, it is necessary to take into consideration the air pressure, ambient temperature, humidity, etc., when adjusting the carburetor.
- Perform a test run to check for proper engine performance (e.g., throttle response) and spark plug(-s) discoloration or fouling. Use these readings to determine the best possible carburetor setting.

NOTE:

It is recommended to keep a record of all carburetor settings and external conditions (e.g., atmospheric conditions, track/surface conditions, lap times) to make future carburetor setting easier.

⚠ WARNING

- **The carburetor is a part of the fuel line. Therefore, be sure to install it in a well-ventilated area, away from flammable objects and any sources of fire.**
- **Never look into the carburetor intake. Flames may shoot out from the pipe if the engine backfires while it is being started. Gasoline may be discharged from the accelerator pump nozzle when the carburetor has been removed.**

**CAUTION:**

- The carburetor is extremely sensitive to foreign matter (dirt, sand, water, etc.). During installation, do not allow foreign matter to get into the carburetor.
- Always handle the carburetor and its components carefully. Even slight scratches, bends or damage to carburetor parts may prevent the carburetor from functioning correctly. Carefully perform all servicing with the appropriate tools and without applying excessive force.
- When the engine is stopped or when riding at no load, do not open and close the throttle unnecessarily. Otherwise, too much fuel may be discharged, starting may become difficult or the engine may not run well.
- After installing the carburetor, check that the throttle operates correctly and opens and closes smoothly.

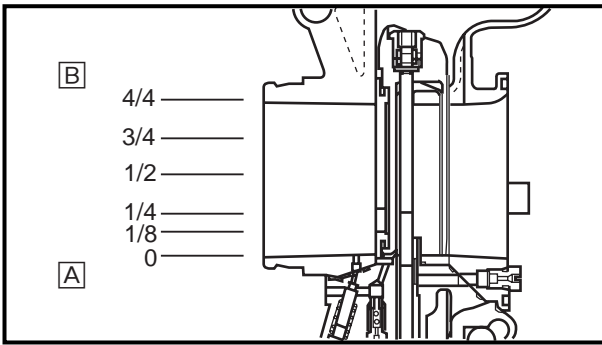
Atmospheric conditions and carburetor settings

Air temp.	Humidity	Air pressure (altitude)	Mixture	Setting
High	High	Low (high)	Richer	Leaner
Low	Low	High (low)	Leaner	Richer

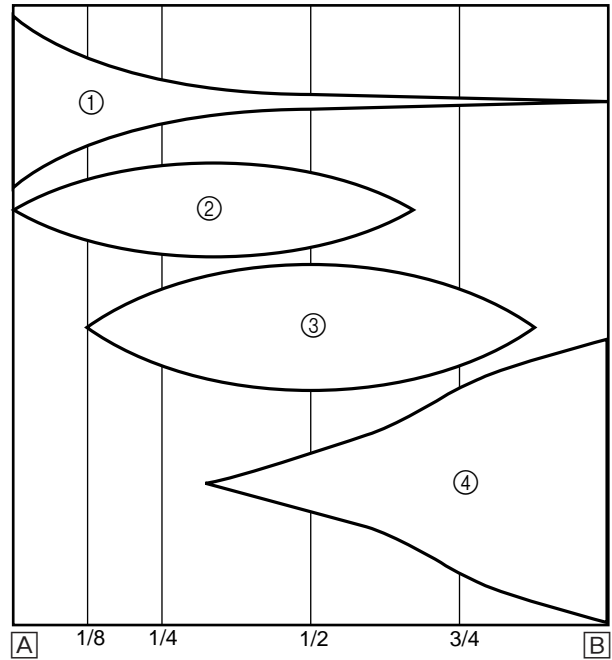
The air density (i.e., concentration of oxygen in the air) determines the richness or leanness of the air/fuel mixture. Therefore, refer to the above table for mixture settings.

That is:

- Higher temperature expands the air with its resultant reduced density.
- Higher humidity reduces the amount of oxygen in the air by so much of the water vapor in the same air.
- Lower atmospheric pressure (at a high altitude) reduces the density of the air.



Effects of the setting parts on the throttle valve opening



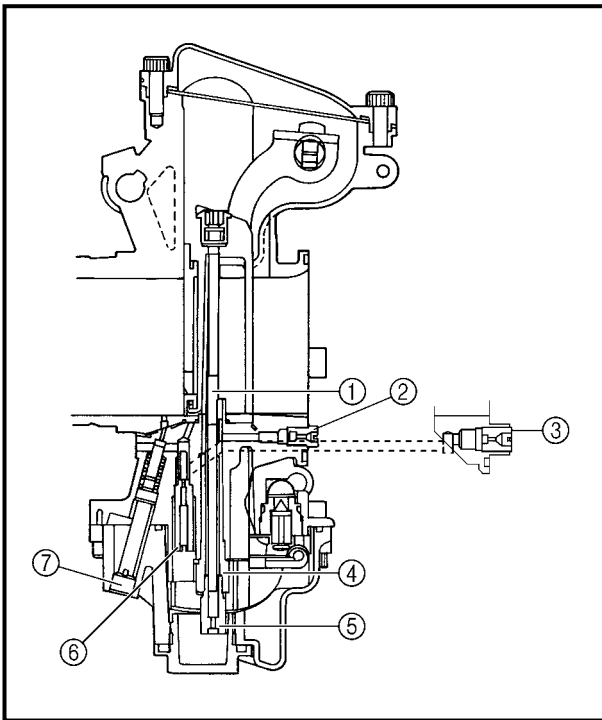
- [A] Closed
- [B] Fully open
- ① Pilot screw/pilot jet
- ② Throttle valve cutaway
- ③ Jet needle
- ④ Main jet

Main system

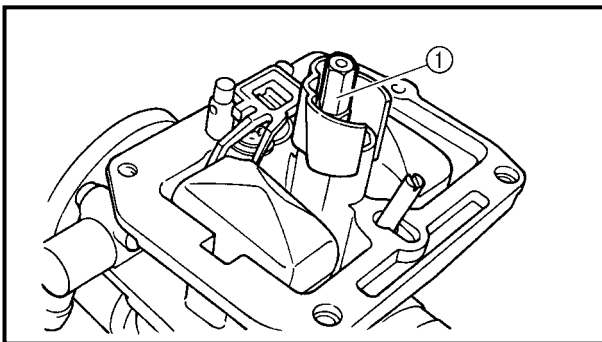
The FLATCR carburetor has a primary main jet. This type of main jet is perfect for racing motorcycles since it supplies an even flow of fuel, even at full load. The main air jet has almost no effect on the air-fuel mixture. Use the main jet and the jet needle to set the carburetor.

Pilot system

The FLATCR carburetor is manufactured with a pilot screw. The pilot screw adjustment ranges from fully closed throttle to 1/4 open throttle.



- ① Jet needle
- ② Main air jet
- ③ Pilot air jet
- ④ Needle jet
- ⑤ Main jet
- ⑥ Pilot jet
- ⑦ Pilot screw



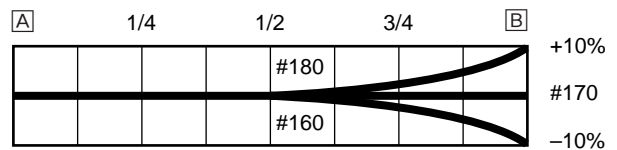
Main jet adjustment

The richness of the air-fuel mixture at full throttle can be set by changing the main jet ①.

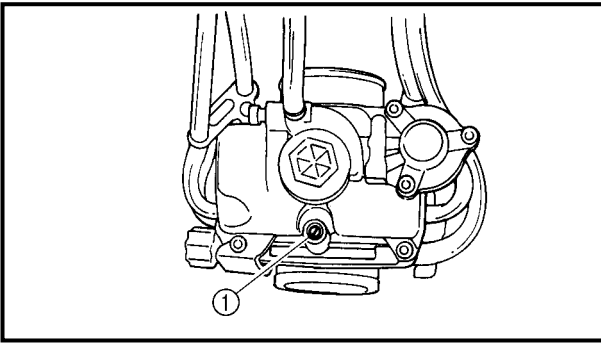
Standard main jet	#170
--------------------------	-------------

If the air-fuel mixture is too rich or too lean, the engine power will drop, resulting in poor acceleration.

Effects of changing the main jet (reference)



- [A] Idle
- [B] Fully open



Pilot screw adjustment

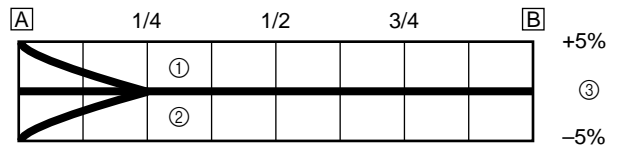
The richness of the air-fuel mixture with the throttle fully closed to 1/4 open can be set by turning the pilot screw ①. Turning in the pilot screw will make the mixture lean at low speeds, and turning it out will enrich it.

Standard pilot screw position	1-3/4 (example)
--------------------------------------	------------------------

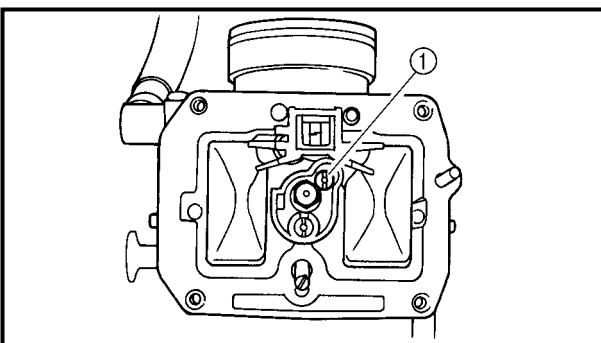
NOTE:

- If the engine idling speed fluctuates, turn the pilot screw only 1/2 of a turn in either direction.
- To optimize the fuel flow at a smaller throttle opening, each machine's pilot screw has been individually set at the factory. Before adjusting the pilot screw, turn it in fully and count the number of turns. Record this number as the factory-set number of turns out.

Effects of adjusting the pilot screw (reference)



- A Idle
- B Fully open
- ① 2-1/4 turns out
- ② 1-1/4 turns out
- ③ 1-3/4 turns out



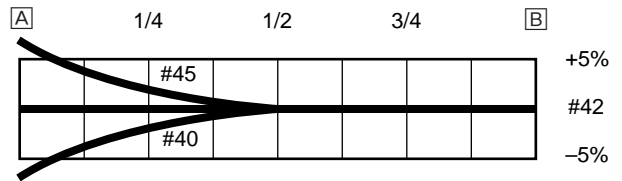
Pilot jet adjustment

The richness of the air-fuel mixture with the throttle open 1/4 or less can be set by adjusting the pilot jet ①.

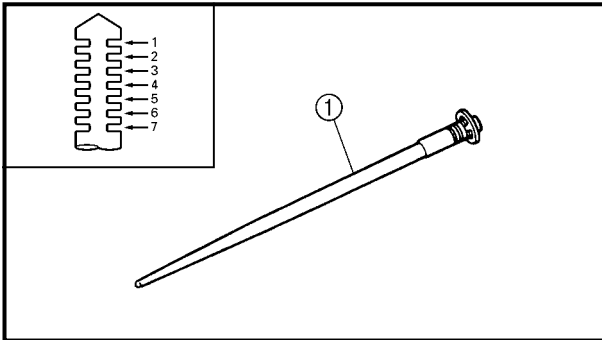
Standard pilot jet	#42
---------------------------	------------



Effects of adjusting the pilot jet (reference)



- A Idle
- B Fully open



Jet needle groove position adjustment

Adjusting the jet needle ① position affects the acceleration when the throttle is 1/8 to 3/4 open.

1. Too rich at intermediate speeds
Rough engine operation is felt and the engine will not pick up speed smoothly. In this case, step up the jet needle clip by one groove and move down the needle to lean out the mixture.
2. Too lean at intermediate speeds
The engine breathes hard and will not pick up speed quickly.
Step down the jet needle clip by one groove and move up the needle to enrich the mixture.

Standard clip position	No.3 groove *, ** No. 4 groove
-------------------------------	---

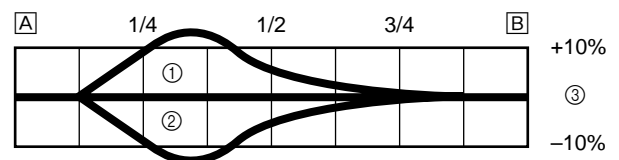
* For EUROPE

** For CDN, ZA, AUS and NZ

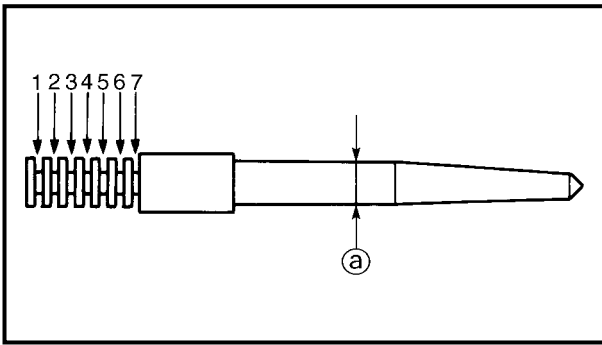
NOTE:

It is recommended that in the summer the clip position be changed from the 4th (STD) to the 2nd groove for a leaner air-fuel mixture. (For AUS and NZ only)

Effects of changing the jet needle groove position (reference)



- A Idle
- B Fully open
- ① No.4 groove
- ② No.2 groove
- ③ No.3 groove



Jet needle adjustment

The jet needle is adjusted by changing it.

Standard jet needle	OBELP *OBEGP **OBEHP
----------------------------	-----------------------------------

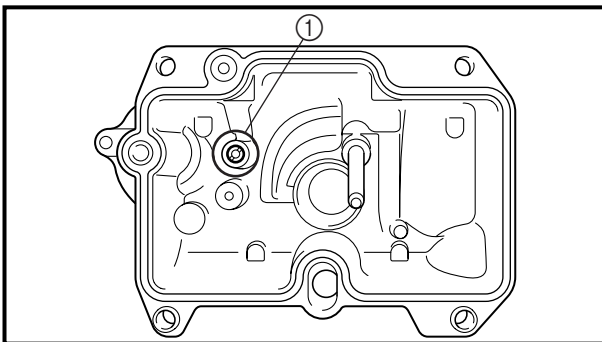
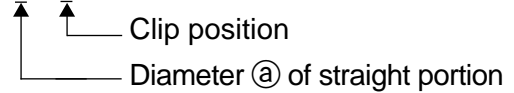
* For EUROPE

** For CDN, ZA, AUS and NZ

The tapered sections of all jet needles have the same starting positions, but the needles are available with different straight-portion diameters.

<Example>

OBELP - 4



Leak jet adjustment (accelerator pump adjustment)

The leak jet ① is a setting part that adjusts the flow of fuel discharged by the accelerator pump. Since the accelerator pump operates only when throttle is open, the leak jet is used to adjust a fuel mixture ratio for quick throttle opening and is therefore different from other setting parts that adjust a fuel mixture for each throttle opening (each engine speed).

1. The engine breathes hard in quick throttle opening.

Select a leak jet having lower calibrating No. than standard to enrich the mixture.

<Example> #105 → #95

2. Rough engine operation is felt in quick throttle opening.

Select a leak jet having higher calibrating No. than standard to lean out the mixture.

<Example> #105 → #115

Standard leak jet	#60 *, ** #105
--------------------------	--------------------------

* For EUROPE

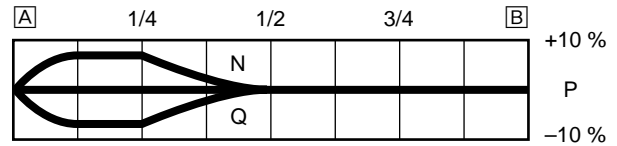
** For CDN, ZA, AUS and NZ



Effects of changing the jet needle (reference)

(Diameter of the straight portion)

Changing the diameter of the straight portion adjusts the air-fuel mixture when the throttle is 1/8 to 1/4 open.



A Idle

B Fully open

Relationship with throttle opening

The flow of the fuel through the carburetor main system is controlled by the main jet and then, it is further regulated by the area between the main nozzle and the jet needle.

The fuel flow relates to the diameter of the straight portion of the jet needle with the throttle 1/8 to 1/4 open and relates to the clip position with the throttle 1/8 to 3/4 open.

Therefore, the fuel flow is balanced at each stage of throttle opening by the combination of the jet needle straight portion diameter and clip position.



EC71Q000

Carburetor setting parts

Part name	Size	Part number
Main jet (STD)	Rich	#185 4MX-14943-44
	▲	#182 4MX-14943-94
	▲	#180 4MX-14943-43
	▲	#178 4MX-14943-93
	▲	#175 4MX-14943-42
	▲	#172 4MX-14943-92
	▲	#170 4MX-14943-41
	▲	#168 4MX-14943-91
	▲	#165 4MX-14943-40
	▼	#162 4MX-14943-90
	▼	#160 4MX-14943-39
Lean		
Pilot jet (STD)	Rich	#50 4MX-14948-07
	▲	#48 4MX-14948-06
	▲	#45 4MX-14948-05
	▲	#42 4MX-14948-04
	▲	#40 4MX-14948-03
	▼	#38 4MX-14948-02
	▼	#35 4MX-14948-01
Lean		
Jet needle (STD)	Rich	OBELL 5NL-14916-EL
	▲	OBELM 5NL-14916-EM
	▲	OBELN 5NL-14916-EN
	▲	OBELP 5NL-14916-EP
	▲	OBELQ 5NL-14916-E1
	▲	OBELR 5NL-14916-ER
	▲	OBELS 5NL-14916-ES
	Lean	
*Jet needle (STD)	Rich	OBEGL 5NL-14916-GL
	▲	OBEGM 5NL-14916-GM
	▲	OBEGN 5NL-14916-GN
	▲	OBEGP 5NL-14916-GP
	▲	OBEGQ 5NL-14916-G1
	▲	OBEGR 5NL-14916-GR
	▲	OBEGS 5NL-14916-GS
	Lean	
** Jet needle (STD)	Rich	OBEHL 5NL-14916-HL
	▲	OBEHM 5NL-14916-HM
	▲	OBEHN 5NL-14916-HN
	▲	OBEHP 5NL-14916-HP
	▲	OBEHQ 5NL-14916-H1
	▲	OBEHR 5NL-14916-HR
	▲	OBEHS 5NL-14916-HS
	Lean	
Leak jet (STD) (* , ** STD)	Rich	#35 4JT-1494F-01
	▲	#40 4JT-1494F-03
	▲	#50 4JT-1494F-07
	▲	#60 4JT-1494F-11
	▲	#70 4JT-1494F-15
	▲	#75 4JT-1494F-17
	▲	#80 4JT-1494F-19
	▲	#85 4JT-1494F-21
	▲	#90 4JT-1494F-23
	▲	#95 4JT-1494F-25
	▲	#105 4JT-1494F-28
	▲	#115 4JT-1494F-30
	▲	#125 4JT-1494F-32
	▼	#135 4JT-1494F-34
Lean		

* For EUROPE

** For CDN, ZA, AUS and NZ



Examples of carburetor setting depending on symptom

Symptom	Setting	Checking
At full throttle Hard breathing Shearing noise Whitish spark plug ↓ Lean mixture	Increase main jet calibration no. (Gradually)	Discoloration of spark plug → If tan color, it is in good condition. If cannot be corrected: Clogged float valve seat Clogged fuel hose Clogged fuel cock Check that the accelerator pump operates smoothly.
At full throttle Speed pick-up stops Slow speed pick-up Slow response Sooty spark plug ↓ Rich mixture	Decrease main jet calibration no. (Gradually)	Discoloration of spark plug → If tan color, it is in good condition. If cannot be corrected: Clogged air filter Fuel overflow from carburetor
Lean mixture	Lower jet needle clip position. (1 groove down)	
Rich mixture	Raise jet needle clip position. (1 groove up)	
1/4 ~ 3/4 throttle Hard breathing Lack of speed	Lower jet needle clip position. (1 groove down)	
1/4 ~ 1/2 throttle Slow speed pick-up Poor acceleration	Raise jet needle clip position. (1 groove up)	
Closed to 1/4 throttle Hard breathing Speed down	Use jet needle with a smaller diameter.	
Closed to 1/4 throttle Poor acceleration	Use jet needle with a larger diameter. Raise jet needle clip position. (1 groove up)	Slow-speed-circuit passage Clogged → Clean. Overflow from carburetor
Poor response in the low to intermediate speeds	Raise jet needle clip position. If this has no effect, lower the jet needle clip position.	
Poor response when throttle is opened quickly	Check overall settings. Use main jet with a lower calibration no. Raise jet needle clip position. (1 groove up) If these have no effect, use a main jet with a higher calibration no. and lower the jet needle clip position.	Check air filter for fouling. Check that the accelerator pump operates smoothly.

* This should be taken simply for an example. It is necessary to set the carburetor while checking the operating conditions of the engine.



YAMAHA

YAMAHA MOTOR CO., LTD.

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