HYOSUNG

HYOSUNG MOTORS & MACHINERY INC.

Comet 250 /125

SERVICE MANUAL

HYOSUNG

Comet 250
Comet 125

SERVICE MANUAL

99000-94710

BREAK-IN PROCEDURES

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows:

● Keep to these break-in procedures:

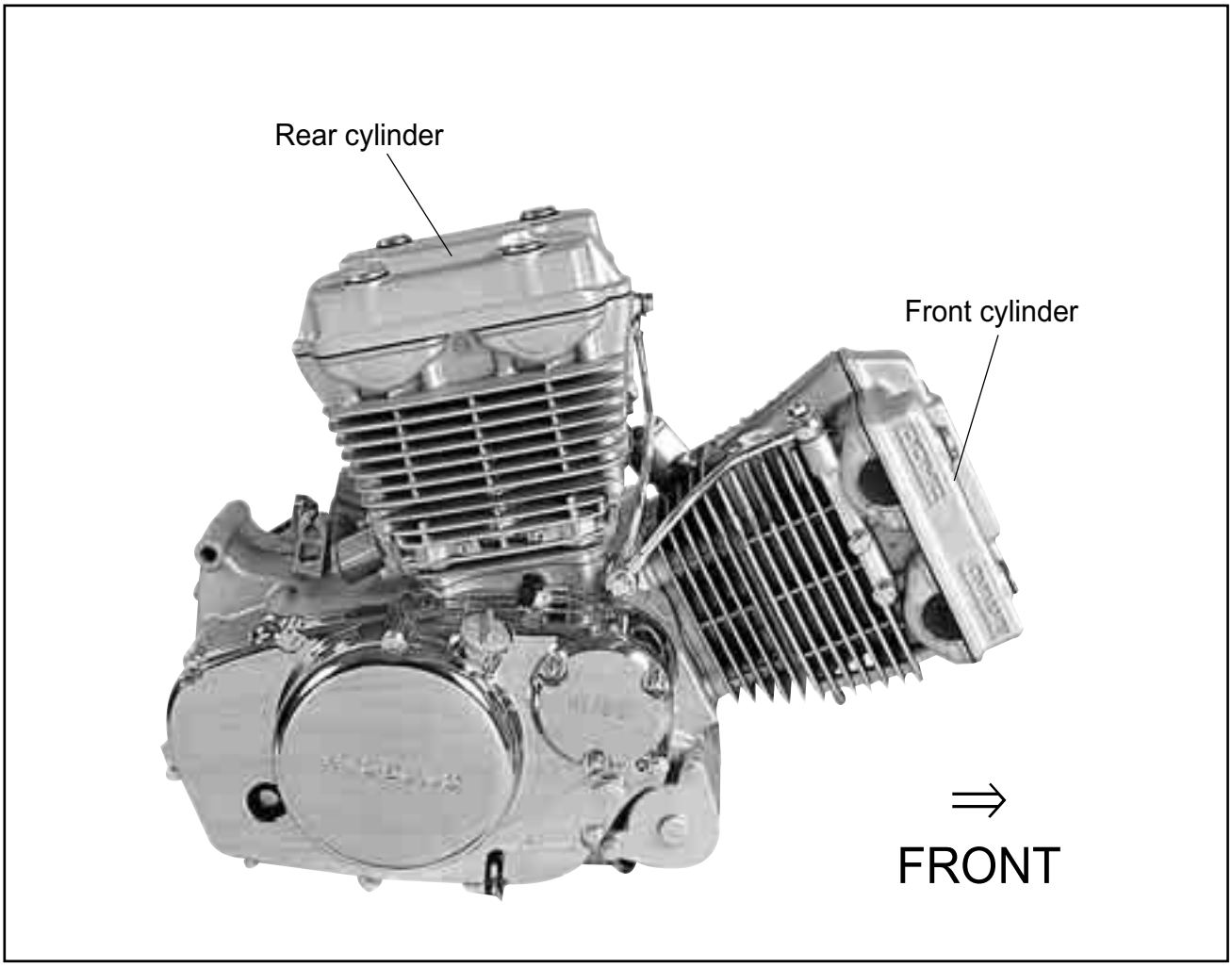
Initial 800km	**Less than 1/2 throttle**
Up to 1,600km	**Less than 3/4 throttle**

● Upon reaching an odometer reading of 1,600 km you can subject the motorcycle to full throttle operation.

● Do not maintain constant engine speed for an extended period during any portion of the break-in. Try to vary the throttle position.

CYLINDER CLASSIFICATION

The engine of 『Comet 250』/『Comet 125』is composed of the two cylinder, is classified into the front cylinder and rear cylinder as basis of the motorcycle ahead.



SPARK PLUG

Inspect Interval

Clean Initial 1,000 km and Every 4,000 km,
Replace Every 8,000 km.

- Disconnect the spark plug caps.
- Remove the spark plugs.

TYPE	SPARK PLUG SPECIFICATION
Hot type	CR7E
Standard type	CR8E
Cold type	CR9E

Remove the carbon deposite with wire or pin and adjust the spark plug gap to 0.7 ~ 0.8 mm, measuring with a thickness gauge.

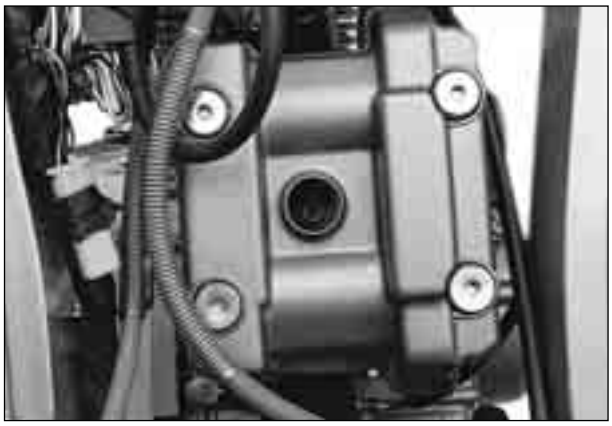
Spark plug gap	0.7 ~ 0.8 mm (0.028~0.032 in)

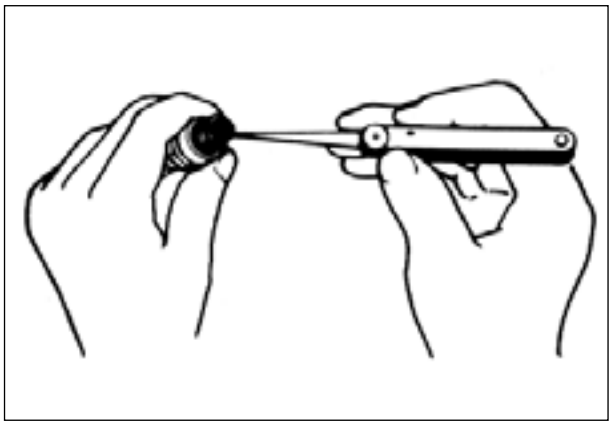
Thickness gauge : 09900-20806

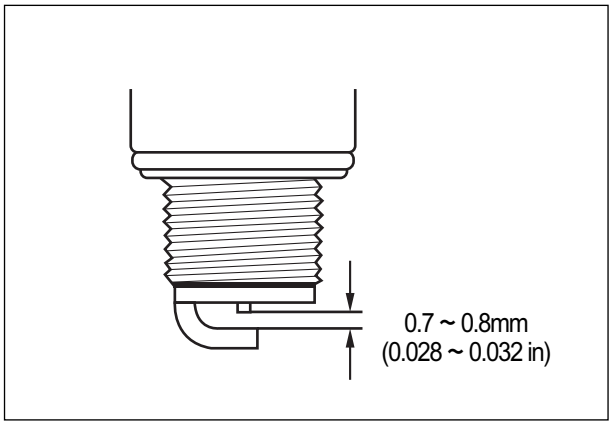
Check to see the worn or burnt condition of the electrodes.
If it is extremly worn or burnt, replace the plug.
And also replace the plug if it has a broken insulator, damaged thread, etc.

- Install the spark plug, and then tighten it to specified torque.

Spark plug : 20~25 N · m (2.0~2.5 kg · m)







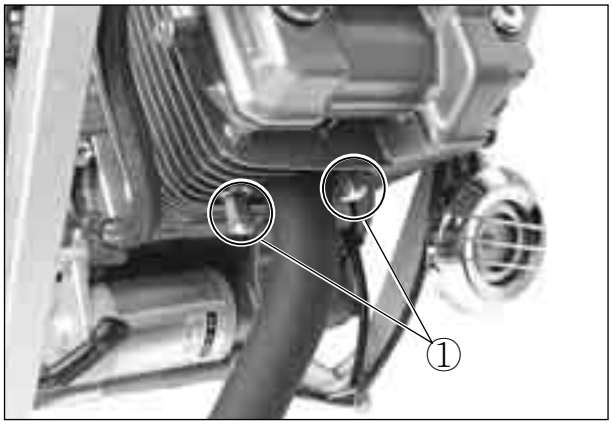
EXHAUSE PIPE NUTS AND MUFFLER MOUNTING BOLTS

Inspect Interval

Tighten Initial 1,000 km and Every 4,000 km.

- Tighten the exhaust pipe nuts ①, and muffler mounting bolts ② to the specified torque.

Exhaust pipe nut
: 18~28 N · m (1.8~2.8 kg · m)
Muffler mounting bolt
: 20~30 N · m (2.0~3.0 kg · m)



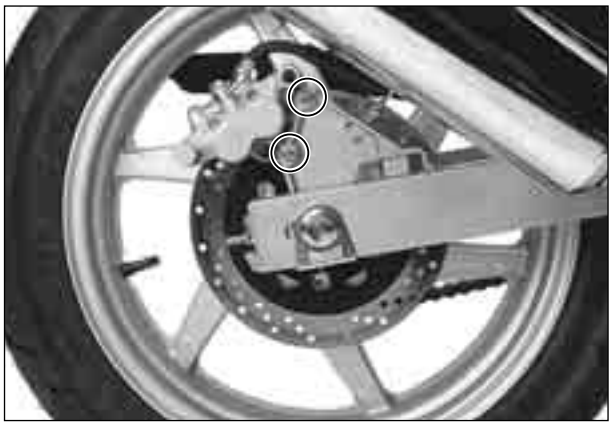
[Front Cylinder]

⊙ FRONT AND REAR BRAKE FLUID REPLACEMENT

- Place the motorcycle on a level surface and keep the handlebars straight.
- Remove the master cylinder reservoir cap and diaphragm.
- Suck up the old brake fluid as much as possible.
- Fill the reservoir with new brake fluid.

Specification and Classification
: DOT 3 or DOT 4

- Connect a clear hose ① to the air bleeder valve and insert the other end of the hose into a receptacle.



[Rear Brake]

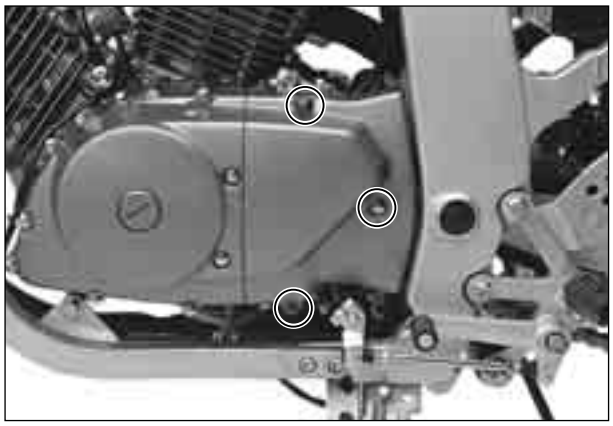
- Loosen the air bleeder valve and pump the brake lever until the old brake fluid is completely out of the brake system.

- Close the air bleeder valve and disconnect the clear hose. Fill the reservoir with new brake fluid to the upper line.
- Replace the rear brake's fluid with the same manner of the front brake.

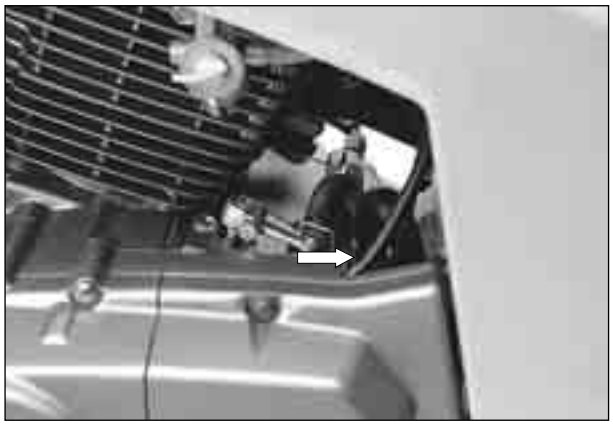
Front brake caliper air bleeder valve
:6~9 N · m (0.6~0.9 kg · m)
Rear brake caliper air bleeder valve
:6~9 N · m (0.6~0.9 kg · m)

⊙ ENGINE SPROCKET

● Remove the engine sprocket cover.

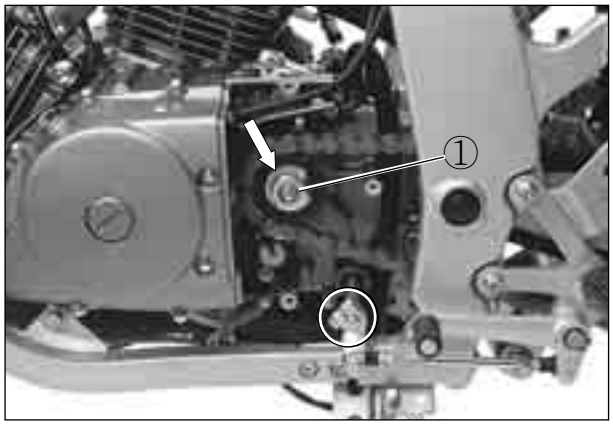


● Remove the breather hose.



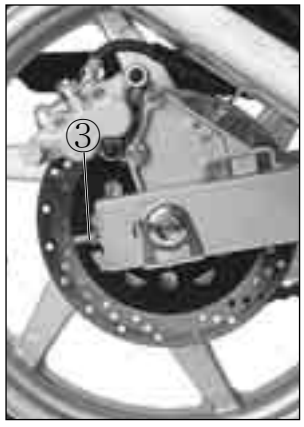
● Loosen the bolt and remove the link rod.
● Flatten the lock washer.
● Remove the engine sprocket nut ① and washer.

NOTE
When loosening the engine sprocket nut, depress the brake pedal.

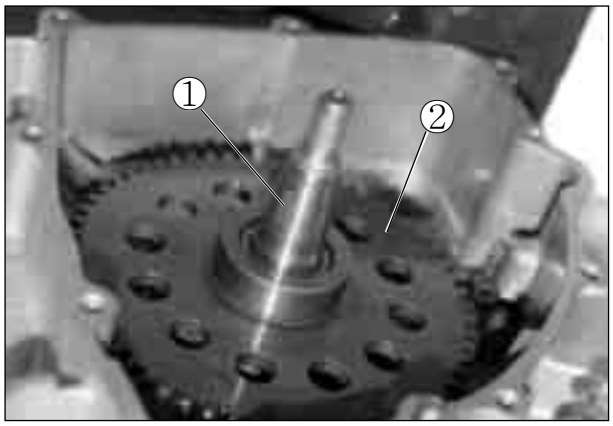


● Remove the engine sprocket.

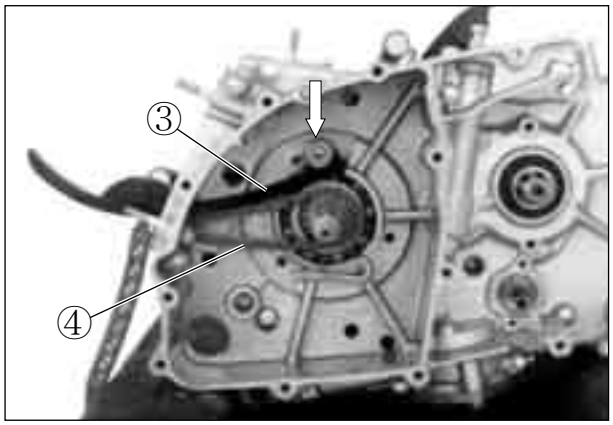
NOTE
If it is difficult to remove the engine sprocket, loosen the rear axle nut, chain adjusters ② · ③ to provide additional chain slack.(Refer to page 2-11)



● Remove the key ①.
● Remove the starter driven gear ②.

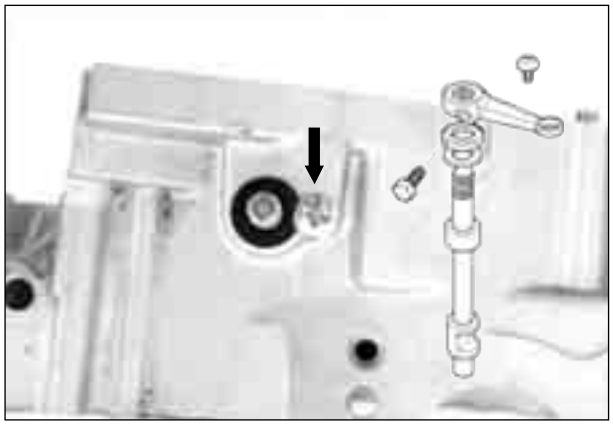


● Remove the cam chain tensioner ③ and cam chain ④.

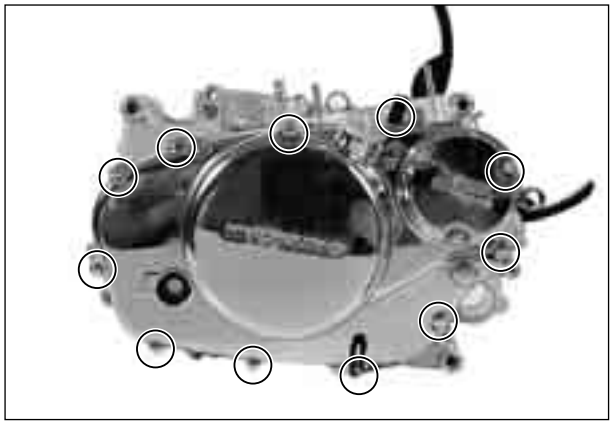


CLUTCH COVER

● Remove the clutch release arm .



● Remove the clutch cover bolts.
● Remove the clutch cover.

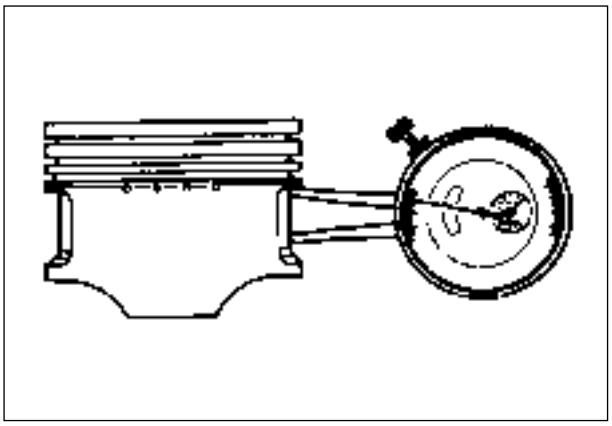


⊙ PISTON PIN HOLE BORE

Using a dial calipers, measure the piston pin hole bore both in the vertical and horizontal directions.
If the measurement exceeds the service limit, replace the piston.

Piston pin hole bore	Service limit	
	『Comet 250』	『Comet 125』
	15.030 mm (0.5917 in)	13.030 mm (0.513 in)

TOOL **Dial calipers : 09900-20605**

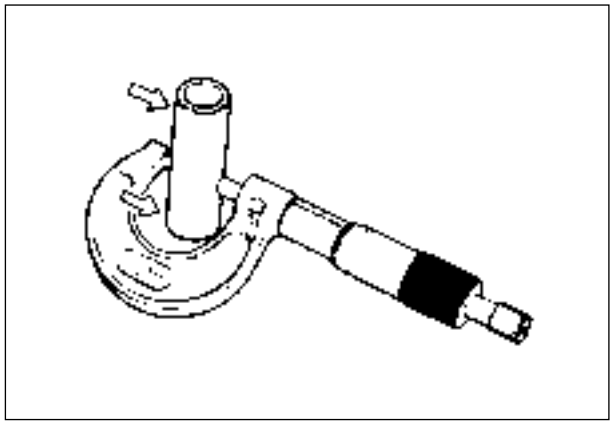


⊙ PISTON PIN DIAMETER INSPECTION

Using a micrometer, measure the piston pin outside diameter at three position, both the ends and the center.
If any of the measurements is founds less than the service limit, replace the pin.

Piston pin diameter	Service limit	
	『Comet 250』	『Comet 125』
	14.980 mm(0.5898 in)	13.980 mm(0.550 in)

TOOL **Micrometer(0~25 mm) : 09900-20201**



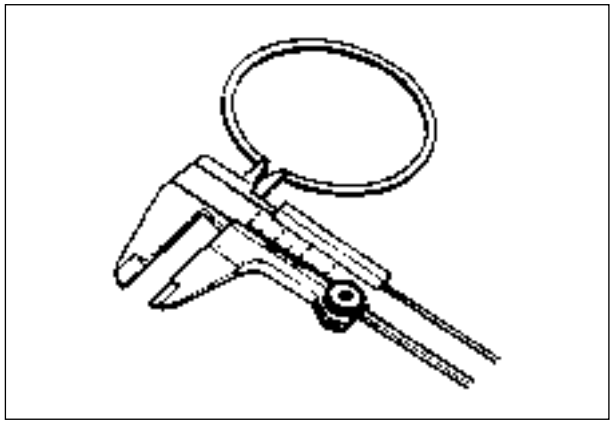
⊙ PISTON RING FREE END GAP INSPECTION

Before installing piston rings, measure the free end gap of each ring using vernier calipers. If the gap is less than the service limit, replace the ring.

Piston ring free end gap	Standard	
	『Comet 250』	『Comet 125』
1st	7.2 mm (0.284 in)	5.0 mm (0.197 in)
2nd	5.8 mm (0.228 in)	6.0 mm (0.236 in)

Piston ring free end gap	Service limit	
	『Comet 250』	『Comet 125』
1st	5.7 mm (0.224 in)	4.0 mm (0.158 in)
2nd	4.6 mm (0.181 in)	4.8 mm (0.189 in)

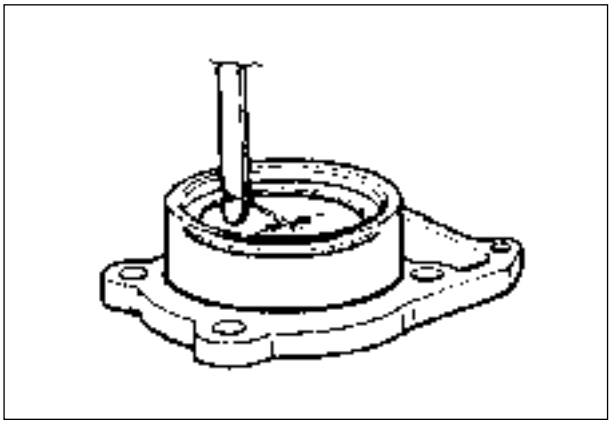
TOOL **Vernier calipers : 09900-20101**



⊙ PISTON RING END GAP INSPECTION

Insert the piston ring squarely into the cylinder using the piston head.
Measure the end gap with a thickness gauge.
If the gap exceeds the service limit, replace the piston ring.

Piston ring end gap (Assembly condition)	Standard	
	『Comet 250』	『Comet 125』
1st	0.20~0.32 mm (0.008~0.013 in)	0.10~0.25 mm (0.004~0.010 in)
2nd	0.20~0.32 mm (0.008~0.013 in)	0.25~0.40 mm (0.010~0.016 in)



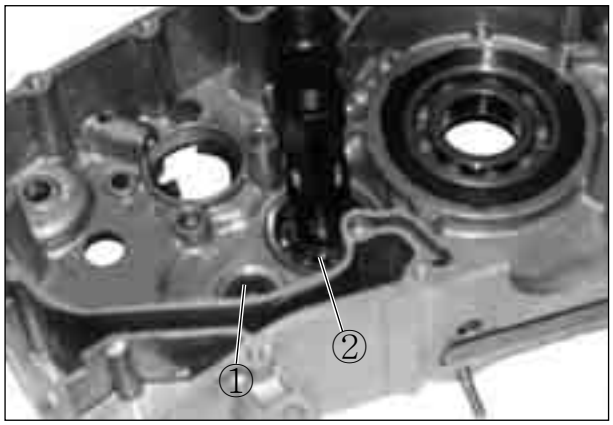
■ **DISASSEMBLY**

★ **RIGHT CRANKCASE BEARING**

● Remove the bearing retainer.

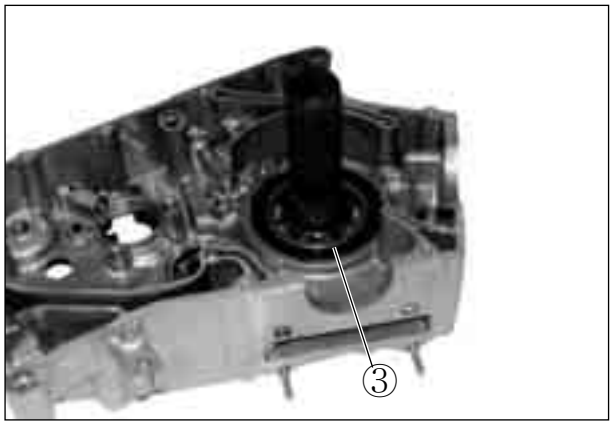
● Remove the bearings ① and ②.

TOOL **Bearing remover(17 mm) : 09923-73210**
Bearing remover(20~35 mm) : 09923-74510



● Remove the bearing ③.

TOOL **Bearing installer : 09913-76010**



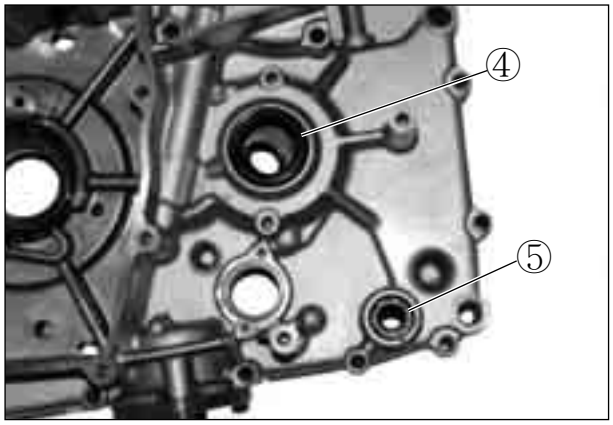
⚠ CAUTION

The removed bearing should be replace with a new one.

★ **LEFT CRANKCASE BEARING**

● Remove the oil seals ④ and ⑤.

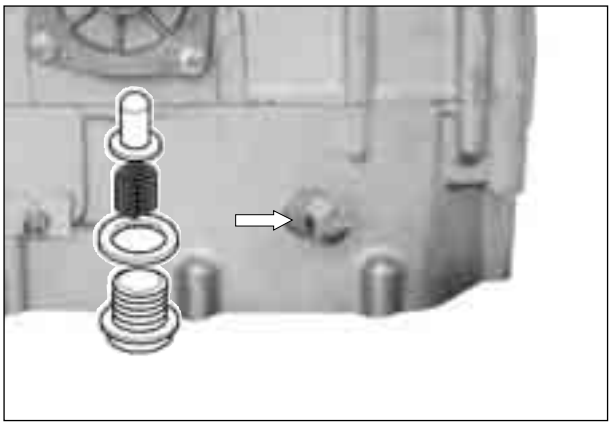
TOOL **Oil seal remover : 09913-50121**



⊙ NEUTRAL CAM STOPPER

● Put in the neutral cam stopper, spring and washer, tighten the cam stopper plug to the specified torque.

Neutral cam stopper plug
: 20~25 N · m(2.0~2.5 kg · m)



⊙ OIL DRAIN PLUG

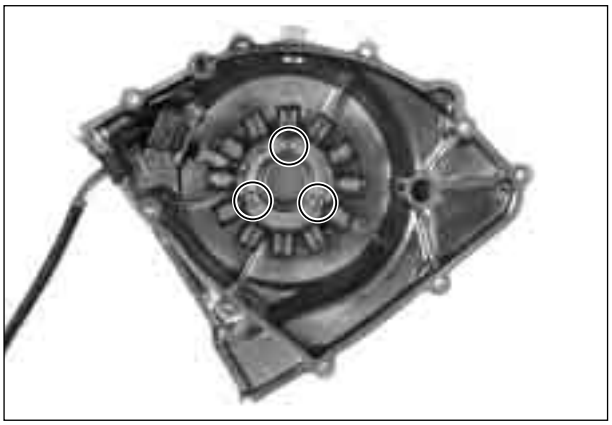
● Tighten the oil drain plug to the specified torque.

Engine oil drain plug
: 18~20 N · m(1.8~2.0 kg · m)

⊙ STATOR

● Apply a small quantity of THREAD LOCK "1324" to the threaded parts of screws.

THREAD LOCK "1324"



⊙ STARTER CLUTCH

● When installing the starter clutch and rotor, apply the THREAD LOCK "1324" to the bolts and tighten to the specified torque.

THREAD LOCK "1324"

Starter clutch bolt
: 15~20 N · m(1.5~2.0 kg · m)

⊙ MAGNETO ROTOR

● Fit the key in the key slot on the crankshaft.

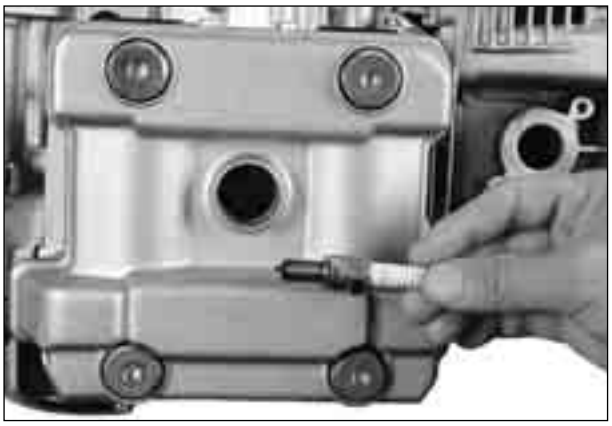
● With the magneto rotor, install the starter clutch on the crankshaft.

● Apply a small quantity of THREAD LOCK "1324" to the threaded parts of crankshaft.

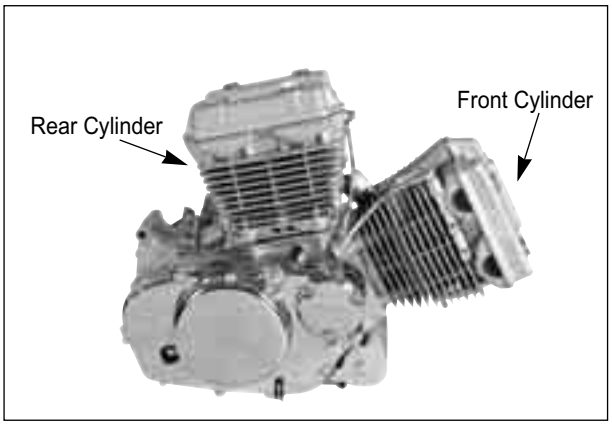
THREAD LOCK "1324"

⊙ SPARK PLUG

● Install the spark plug.(Refer to page 2-5)



● Install the rear cylinder head and cylinder with the same manner which installed the front cylinder head and cylinder.

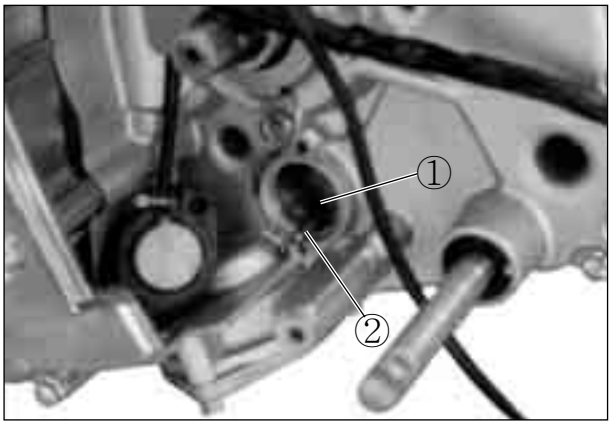


⊙ GEAR POSITION SWITCH

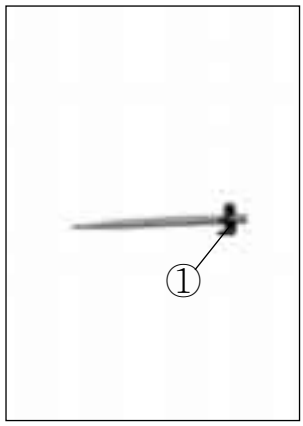
● Install the spring ① and contact ②.

● Apply SUPER GREASE "A" to the O-ring and install the gear postion switch.

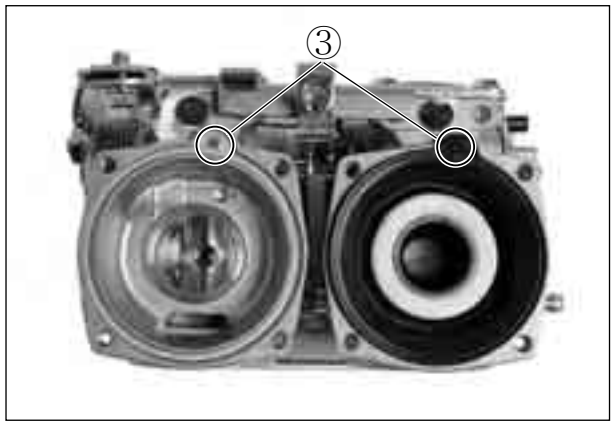
SUPER GREASE "A"



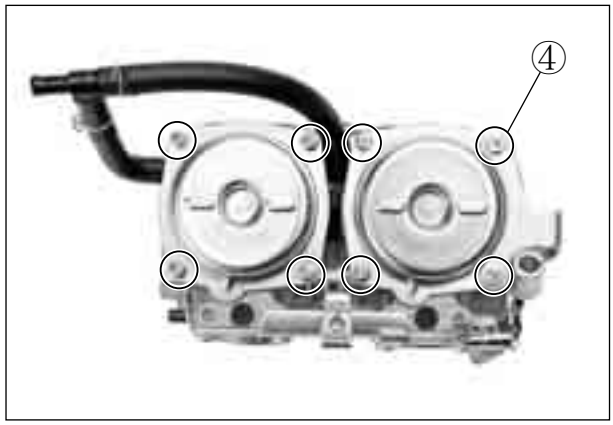
● Install the jet needle with the pin ① on the spacer securely engaged with the hole ② on the piston valve.



● Align the hole ③ of the diaphragm with passage way on the carburetor body.

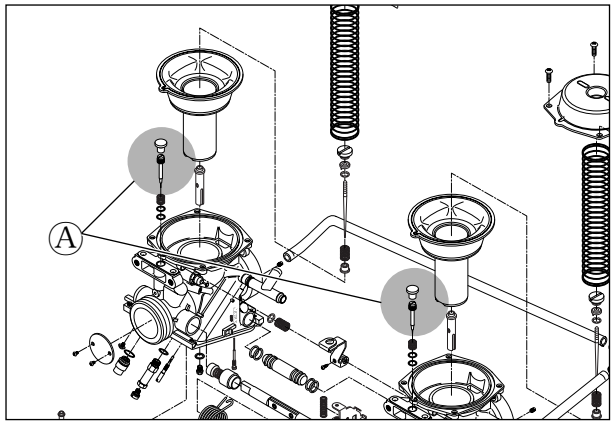


● Install the eight screw ④.



⚠ CAUTION

Never adjust "CO adjust screw" Ⓐ of the carburetor. If adjust at discretion, have a bad influence upon output of the engine as the two carburetor is disharmonious.



● After the assembly and installation on the engine have been completed, perform the following adjustment.

Throttle cable adjustment. (Refer to page 2-7)

Idle speed adjustment. (Refer to page 2-7)

⊙ INSPECTION

■ CHARGING OUTPUT CHECK

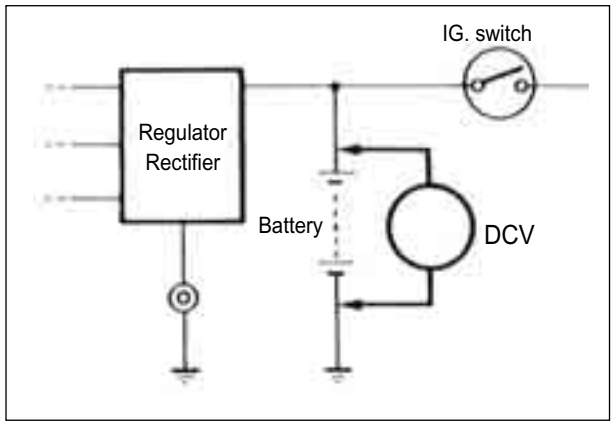
Start the engine and keep it running at 5,000 rpm.
Using the pocket tester, measure the DC voltage between the battery terminal ⊕ and ⊖.
If the tester reads under 14.0 V or over 15.0 V, check the magneto no-load performance and regulator / rectifier.

⚠ CAUTION

When making this test, be sure that the battery is full-charged condition.

TOOL **Pocket tester : 09900-25002**

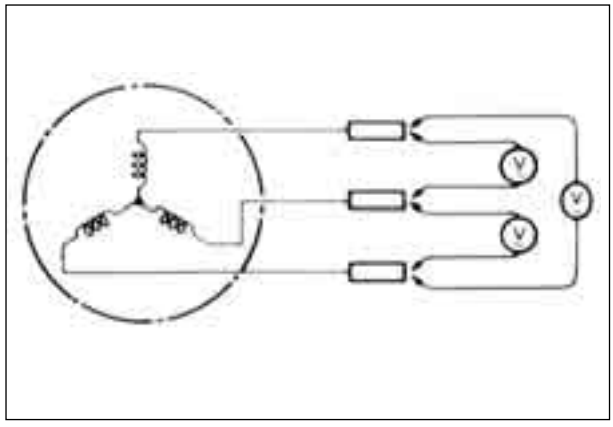
Standard charge	14.0～15.0 V (at 5,000 rpm)

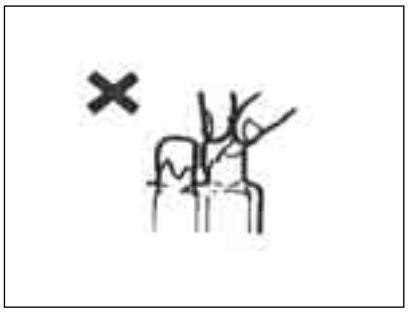


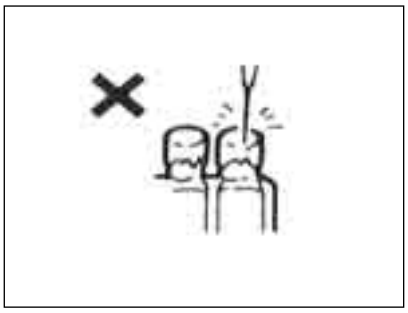
■ MAGNETO NO-LOAD PERFORMANCE

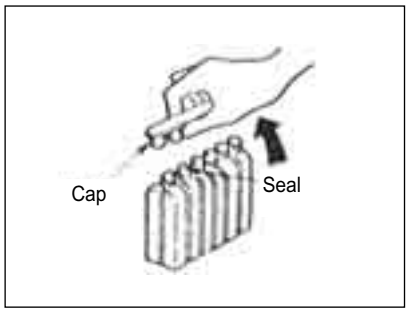
Disconnect the three lead wires from the magneto terminal.
Start the engine and keep it running at 5,000 rpm.
Using the pocket tester, measure the AC voltage between the three lead wires.
If the tester reads under 67 V or over 99 V the magneto is faulty.

Standard NO-load performance of magneto	67～99 V (at 5,000 rpm)





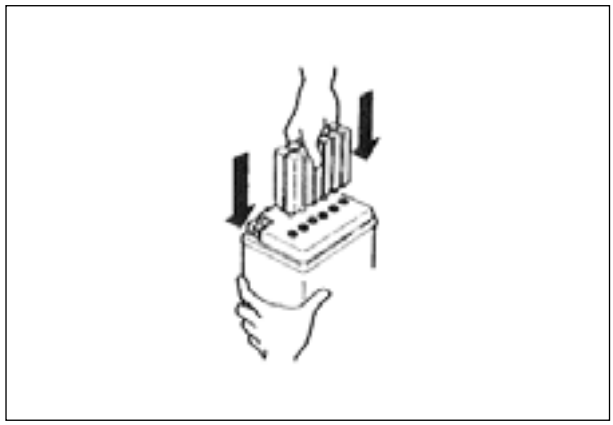


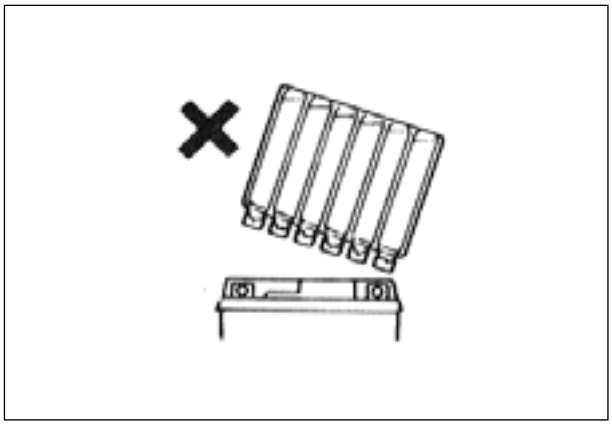


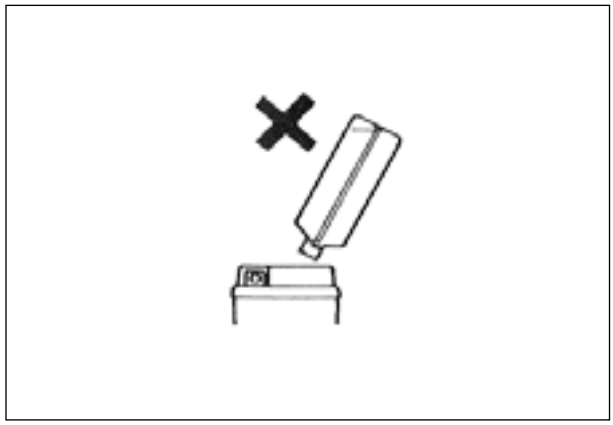
③ Pouring of battery electrolyte
When insert the nozzles of the electrolyte container into the battery' s electrolyte filler holes, holding the container firmly so that it does not fall.
Take precaution not to allow any fluid to spill.

⚠ CAUTION

The pouring of electrolyte may not be done if the electrolyte container is pushed slopely.



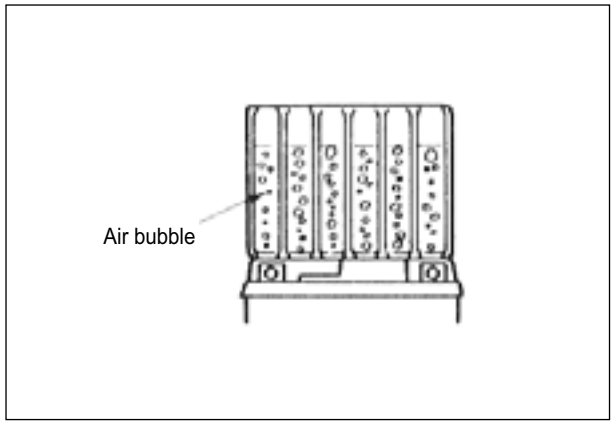




④ Confirmation of pour
Make sure that air bubbles are coming up each electrolyte container, and keep this position for more than about 20 minutes.

⚠ CAUTION

If no air bubbles are coming up from a filler port, tap the buttom of the two or three times.



⚠ CAUTION

Do not allow brake fluid to contact the paint surface, plastic or rubber parts, or its chemical reaction can cause discoloration or crack.

⊙ BRAKE FLUID REPLACEMENT

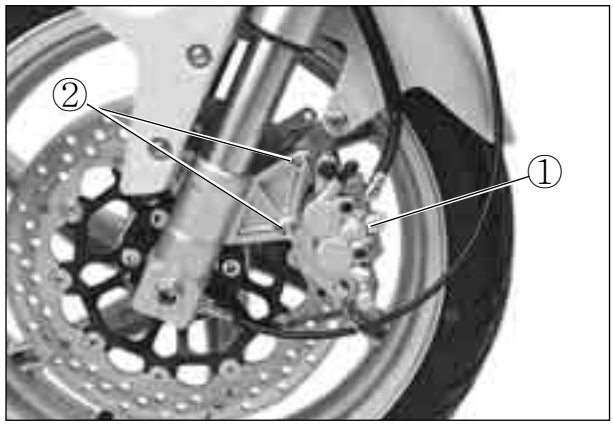
● For replacing procedure of brake fluid : Refer to page 2-15

⊙ BRAKE PAD REPLACEMENT

● For replacing procedure of brake pad : Refer to page 2-14

⊙ CALIPER DISASSEMBLY

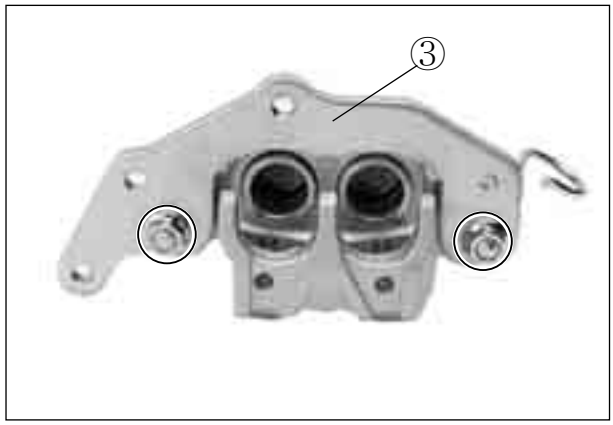
● Drain brake fluid. (Refer to page 2-15)



⚠ CAUTION

To prevent brake fluid from splashing on the parts nearby, cover the parts with cloth.

● Remove the union bolt ① and caliper mounting bolts ②.
● Remove the brake pad. (Refer to page 2-14)
● Remove the brake caliper holder ③.



● Using an air gun, push out the caliper piston.

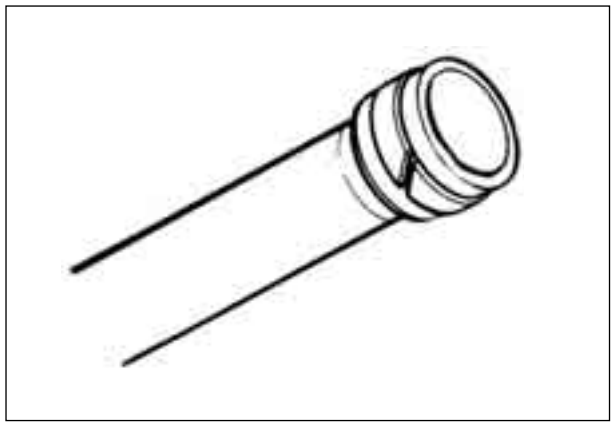
⚠ WARNING

- ❖ **Place a rag over the piston to prevent it from popping out and flying and keeping hand off the piston.**
- ❖ **Be careful of brake fluid which can possibly splash.**
- ❖ **Do not use high pressure air but increase the pressure gradually.**

⊙ INSPECTION

■ DAMPER ROD RING

Inspect the damper rod ring for wear and damage.



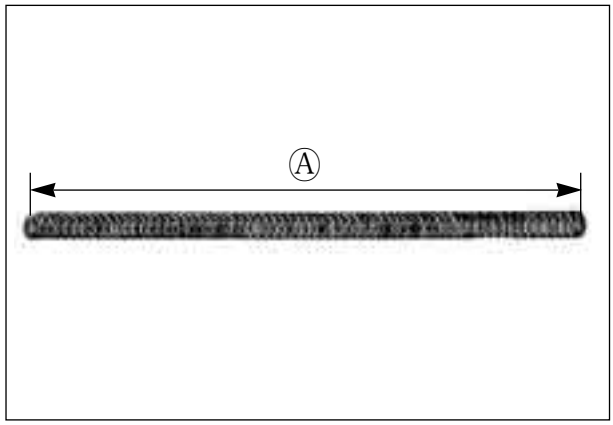
■ INNER TUBE AND OUTER TUBE

Inspect the inner tube and outer tube sliding surfaces for any scuffing or flaws.

■ FORK SPRING

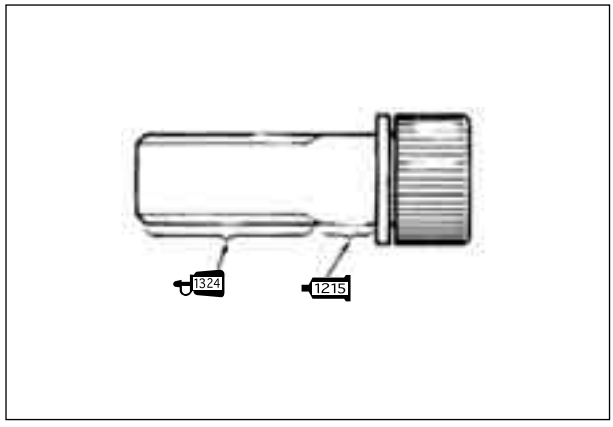
Measure the fork spring free length Ⓐ. If it is shorter than the service limit, replace it.

Fork spring free length Ⓐ	Standard
	433.3 mm (17.1 in)

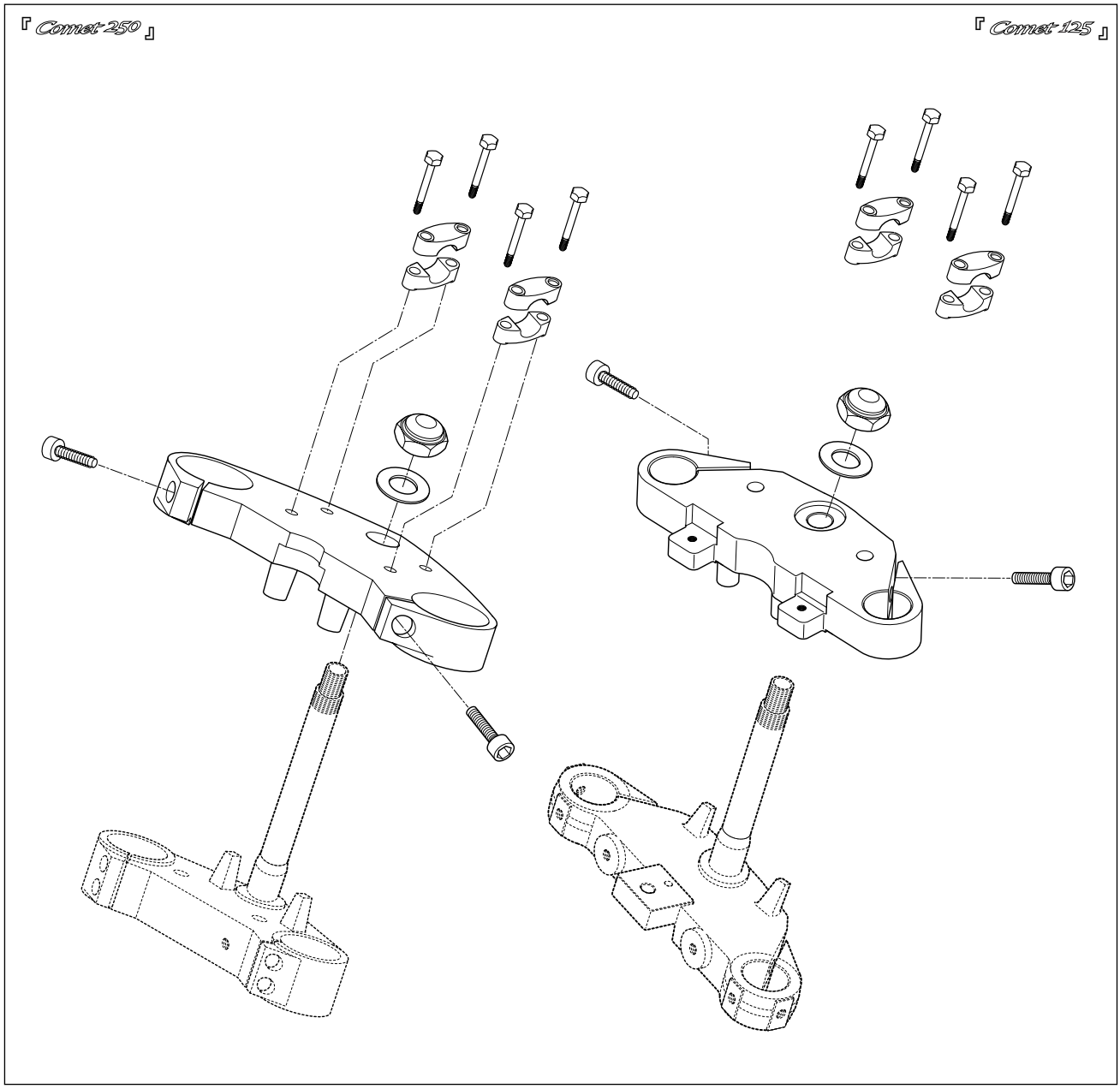


■ REASSEMBLY

Reassemble and remount the front fork in the reverse order of disassembly and removal, and also carry out the following steps :



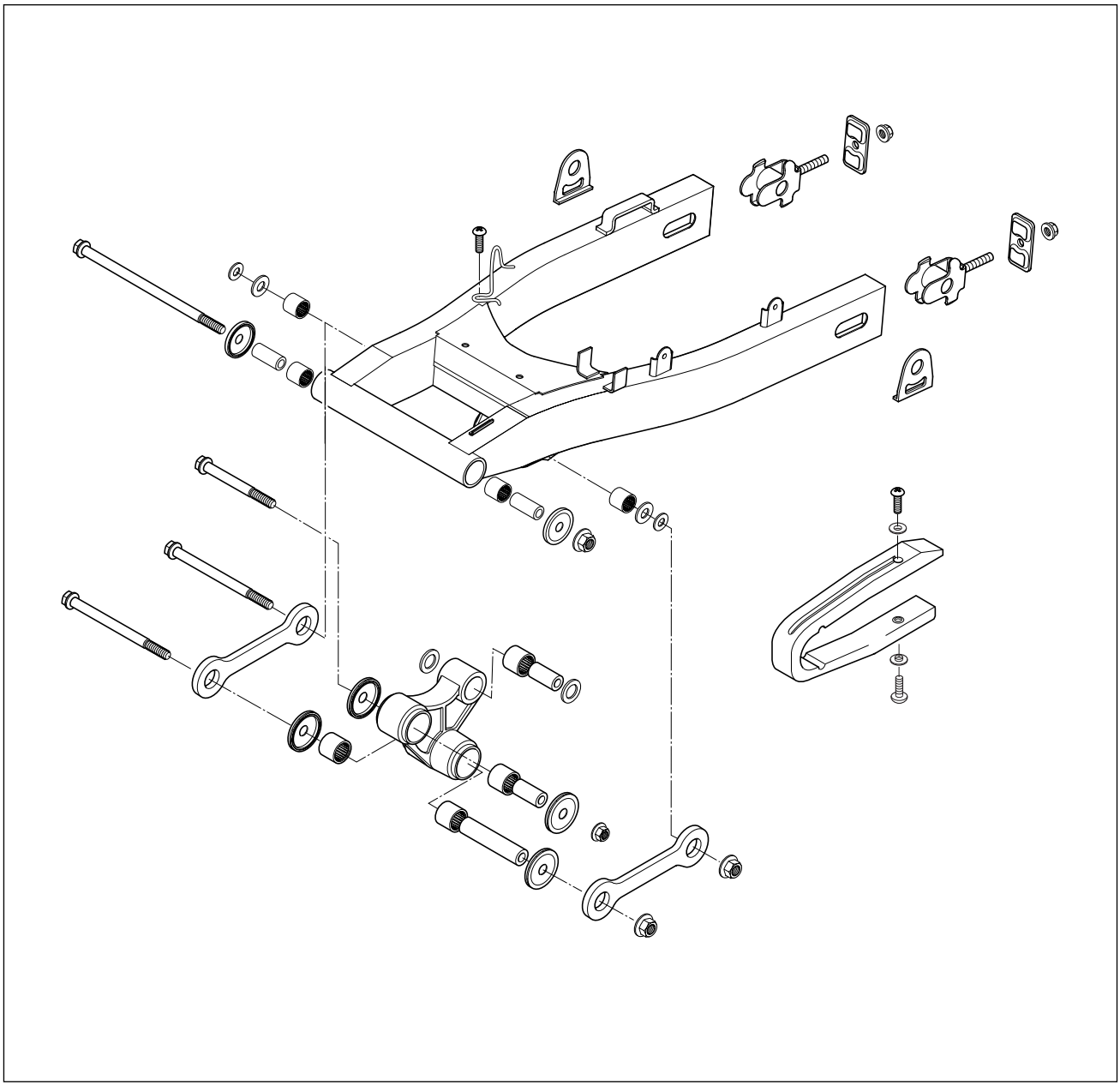
STEERING



⊙ REMOVAL AND DISASSEMBLY

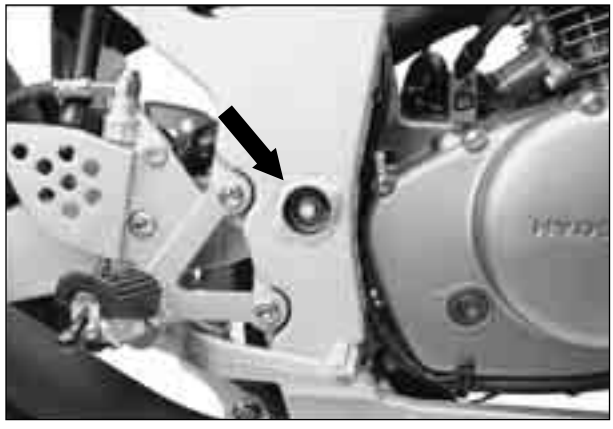
- Take off the front wheel. (See page 6-2)
- Remove the four bolts and front fender.
- Take off the front fork. (See page 6-15, 6-21)

SWINGARM



⊙ REMOVAL AND DISASSEMBLY

- Remove the rear wheel. (See page 6-30)
- Remove the rear shock absorber fitting nut and bolt. (See page 6-36)
- Remove the swing arm pivot nut.
- Draw out the pivot shaft and take off the swing arm.



BRAKES

Complaint	Symptom and possible causes	Remedy
Poor braking (FRONT and REAR)	1. Not enough brake fluid in the reservoir. 2. Air trapped in brake fluid circuit. 3. Pads worn down. 4. Too much play on brake lever or pedal.	Refill to level mark. Bleed air out. Replace. Adjust.
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn pads. 3. Oil adhesion of engaging surface of pads. 4. Worn disk. 5. Air in hydraulic system.	Repair or replace. Replace. Clean disk and pads. Replace. Bleed air.
Brake squeaking.	1. Carbon adhesion on pad surface. 2. Tilted pad. 3. Damaged wheel bearing. 4. Loosen front-wheel axle or rear-wheel axle. 5. Worn pads. 6. Foreign material in brake fluid. 7. Clogged return port of master cylinder.	Repair surface with sandpaper. Modify pad fitting. Replace. Tighten to specified torque. Replace. Replace brake fluid. Disassemble and clean master cylinder.
Excessive brake lever stroke.	1. Air in hydraulic system. 2. Insufficient brake fluid. 3. Improper quality of brake fluid.	Bleed air. Replenish fluid to specified level ; bleed air. Replace with correct fluid.
Leakage of brake fluid.	1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston and/or cup.	Tighten to specified torque. Replace. Replace piston and/or cup.

OIL PUMP (『 Comet 250 』)

ITEM	STANDARD	NOTE
Oil pressure	2.0 ± 0.5 kg/cm^2 (at 65 ℃, 3,000 rpm)	——
Oil pump reduction ratio	58/19×14/20 = 2.137	——

OIL PUMP (『 Comet 125 』)

ITEM	STANDARD	NOTE
Oil pressure	0.9 ~ 1.1 kg/cm^2 (at 65 ℃, 3,000 rpm)	——
Oil pump reduction ratio	70/20×14/20 = 2.45	——

CLUTCH

Unit : mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	4 (0.16)	——
Drive plate thickness	2.9 ~ 3.1 (0.114 ~ 0.122)	2.6 (0.102)
Drive plate claw width	11.8 ~ 12.0 (0.465 ~0.472)	11.0 (0.433)
Driven plate distortion	——	0.1 (0.004)
Clutch spring free length (『 Comet 250 』)	38.2 (1.50)	36.2 (1.43)
Clutch spring free length (『 Comet 125 』)	——	29.5 (1.16)