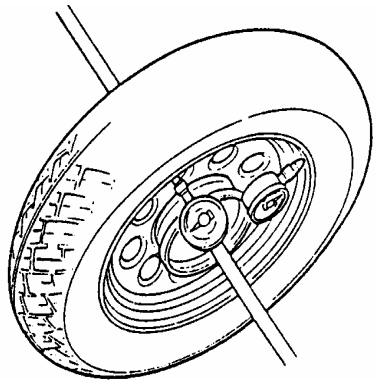
WHEEL RIM

Check the wheel rim runout.

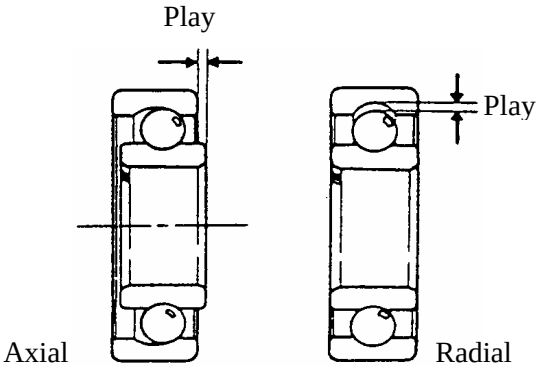
Service Limits:

Radial: 2.0mm replace if over

Axial: 2.0mm replace if over

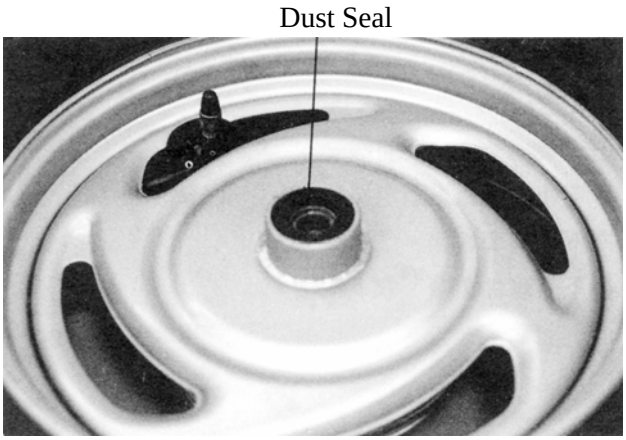


Turn the wheel bearings and replace the bearings if they are noisy or have excessive play.



DISASSEMBLY

Remove the dust seal.



Remove the front wheel bearings and distance collar.

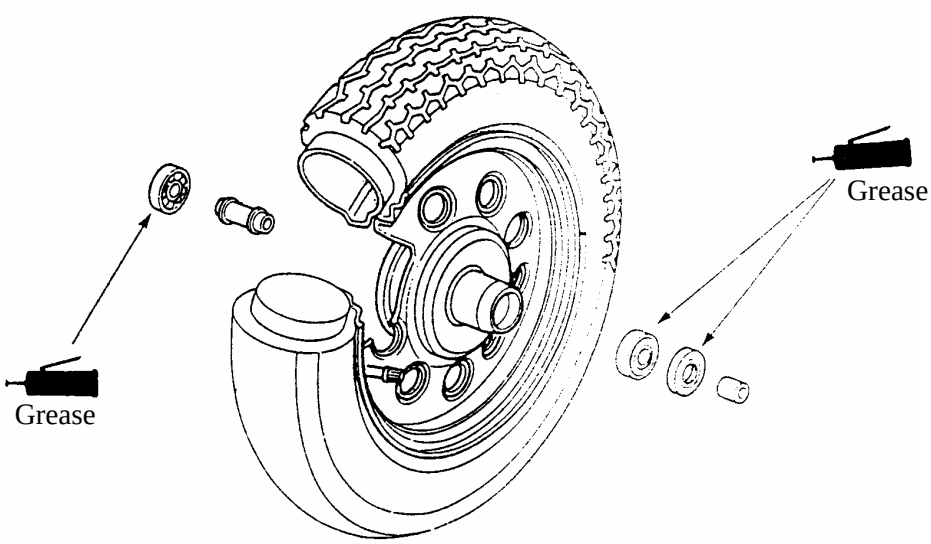
Special

Bearing Puller

Bearing Puller

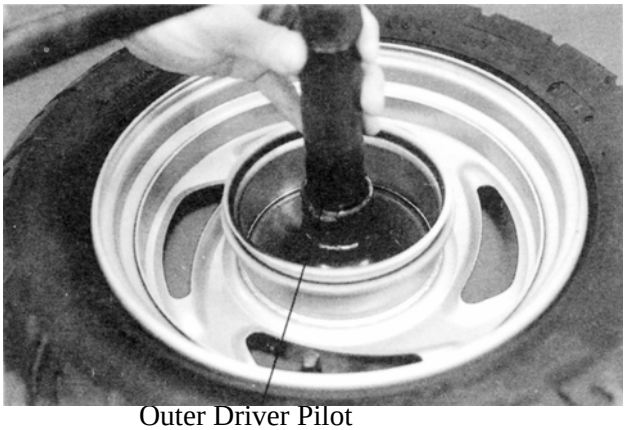
Pilot

ASSEMBLY



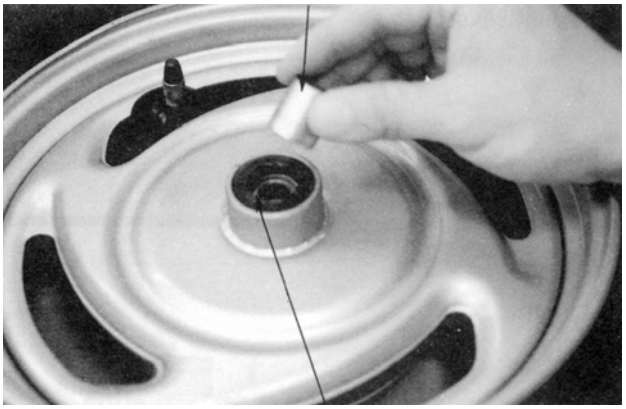
Pack all bearing cavities with grease.
Drive in the left bearing.
Install the distance collar.
Drive in the right bearing.

* Drive in the bearing squarely with the sealed end facing out.



Outer Driver Pilot

Apply grease to a new dust seal lip and install the dust seal.
Install the side collar.

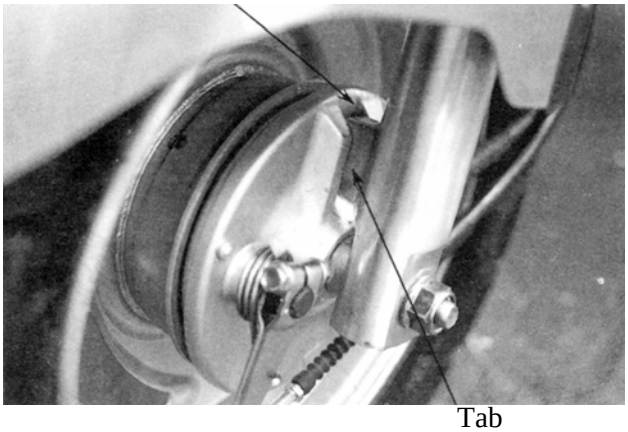


INSTALLATION

Install the front wheel by aligning the brake panel groove with the front fork tab.
Insert the axle shaft and tighten the axle nut.

Torque: 4.5kg-m

Connect the speedometer cable and secure it with the screw.
Install the front brake cable and adjust the front brake lever free play.



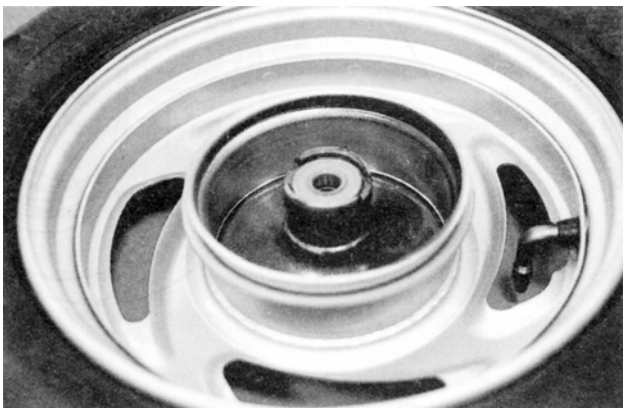
FRONT BRAKE

Remove the front wheel. (⇨12-4)
Remove the front brake panel.

INSPECTION

Measure the brake drum I.D.

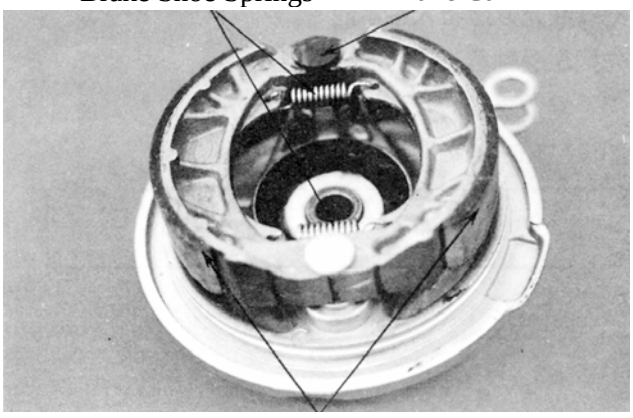
Service Limit: 111mm replace if over



Measure each brake lining thickness.

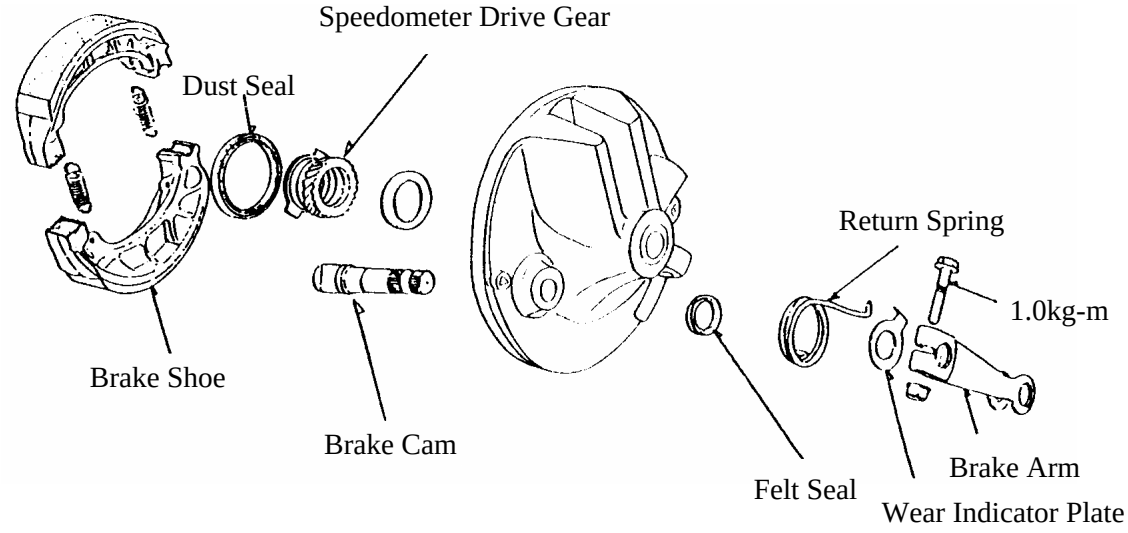
Service Limit: 2.00mmmm replace if below

* Keep oil or grease off the brake linings.



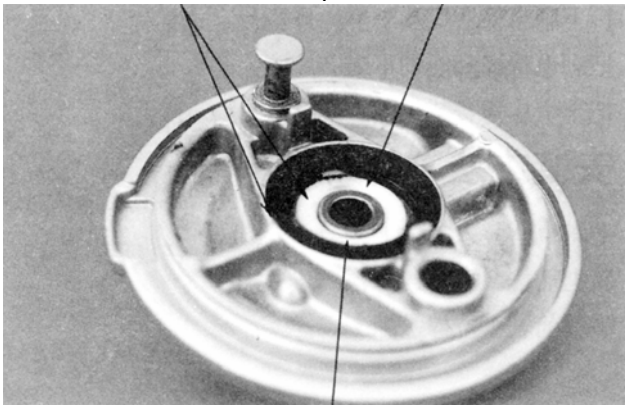
DISASSEMBLY

Do not swing the brake arm to expand the brake shoes.
Remove the brake shoes by removing the brake shoe springs using a screw driver.
Remove the brake arm and return spring.
Remove the wear indicator plate and felt seal.
Remove the brake cam.
Remove the dust seal and speedometer drive gear.

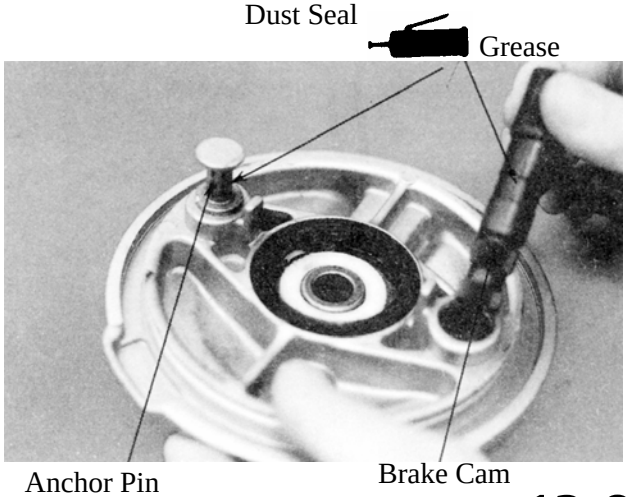


ASSEMBLY

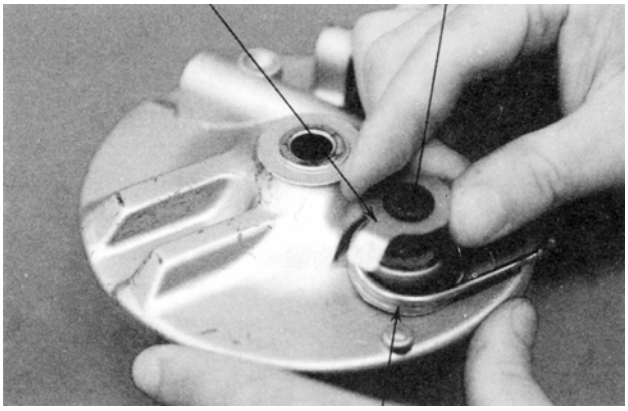
Apply grease to the speedometer drive gear and then install it into the brake panel.
Apply grease to the dust seal lip and install it into the brake panel.



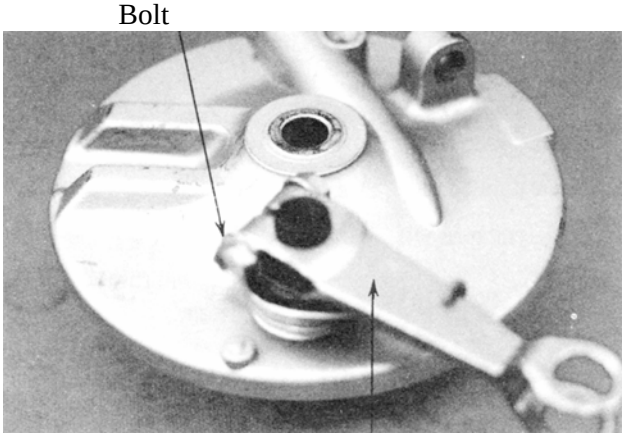
Apply grease to the anchor pin and brake cam.
Install the brake cam.



Install the return spring by aligning the spring hook end with the hole in the brake panel.
Apply a small amount of engine oil to the felt seal and install it to the brake panel.
Install the wear indicator plate on the brake cam by aligning the tooth on the plate with the groove on the brake cam.



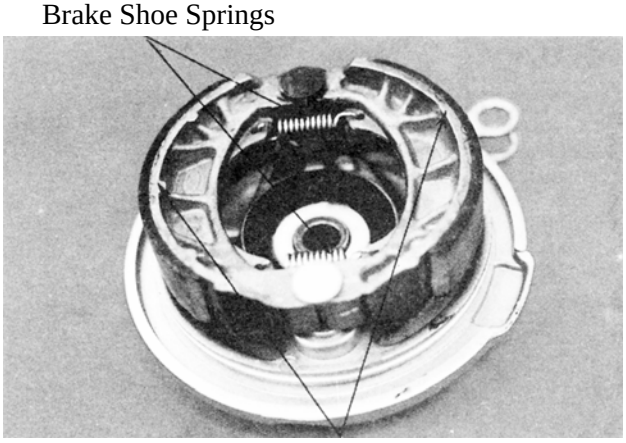
Install the brake arm on the brake cam by aligning the punch mark on the brake arm and the scribed line on the brake cam.
Install and tighten the brake arm bolt.
Torque:0.8~1.2kgf-m



Install the brake shoe springs to the brake shoes and then install the brake shoes into the brake panel.

INSTALLATION

Install the brake panel onto the front wheel.
Install the front wheel. (⇨12-7)
Adjust the front brake lever free play.



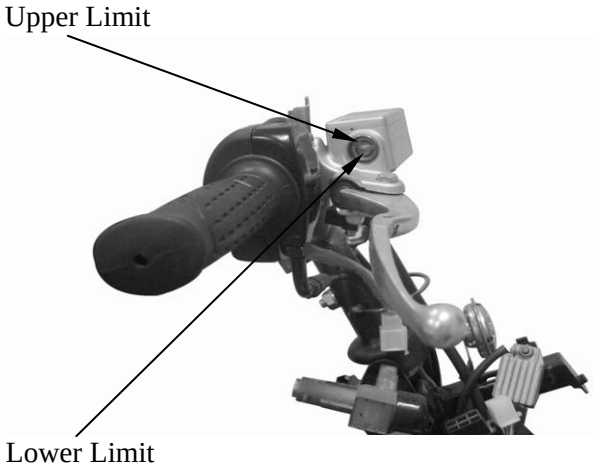
HYDRAULIC BRAKE (FRONT BRAKE)

Brake Fluid Replacement/Air Bleeding

Check the brake fluid level on level ground.

*

- When operating the brake lever, the brake reservoir cap must be tightened securely to avoid spill of brake fluid.
- When servicing the brake system, use shop towels to cover plastic parts and coated surfaces to avoid damage caused by spill of brake fluid.



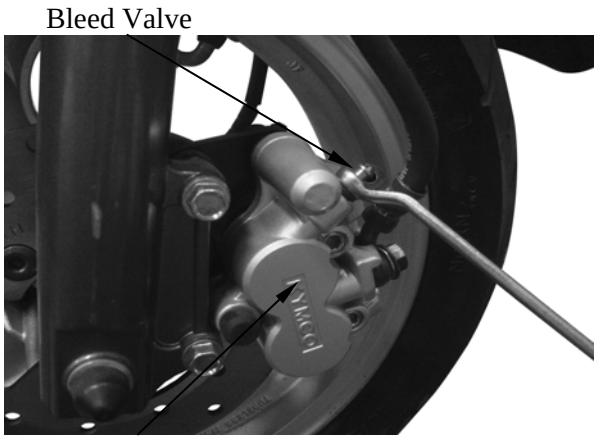
Brake Fluid Bleeding

In order to avoid spill of brake fluid, connect a transparent hose to the bleed valve.

Warning

Brake fluid spilled on brake pads or brake disk will reduce the braking effect. Clean the brake pads and brake disk with a high quality brake degreaser.

Fully apply the brake lever and then loosen the brake caliper bleed valve to drain the brake fluid until there is no air bubbles in the brake fluid. Then, tighten the bleed valve. Repeat these steps until the brake system is free of air.



Front Brake Caliper

Brake Fluid Refilling

Add DOT-4 brake fluid to the brake reservoir.

*

- When bleeding, be careful not to allow air in the brake reservoir flowing into the brake system.
- When using a brake bleeder, follow the manufacturer‘s instructions.
- Never use dirty or unspecified brake fluid or mix different brake fluids be-cause it will damage the brake

Make sure to bleed air from the brake system.

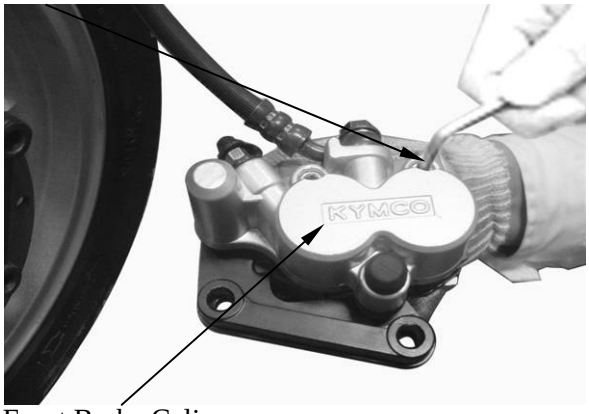
Brake Pad/Disk Replacement

* The brake pads must be replaced as a set to ensure the balance of the brake disk.

Remove the two bolts attaching the brake caliper.
Remove the brake caliper.

Remove the brake pad pins to remove the brake pads.

Pad Pin



Front Brake Caliper

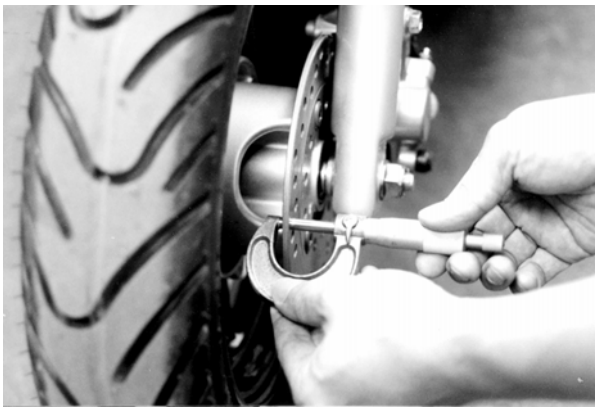
Install the brake pads in the reverse order of removal.
Tighten the brake pad pin bolts.
Torque: 1.5～2.0kgf-m

* • Keep grease or oil off the brake pads to avoid brake failure.
  • Do not reuse the brake pad pin bolts that have been removed.

Brake Pads

Front Brake Caliper

Brake Disk
Measure the brake disk thickness.
Service Limit: 3.0mm
Measure the brake disk runout.
Service Limit: 0.3mm



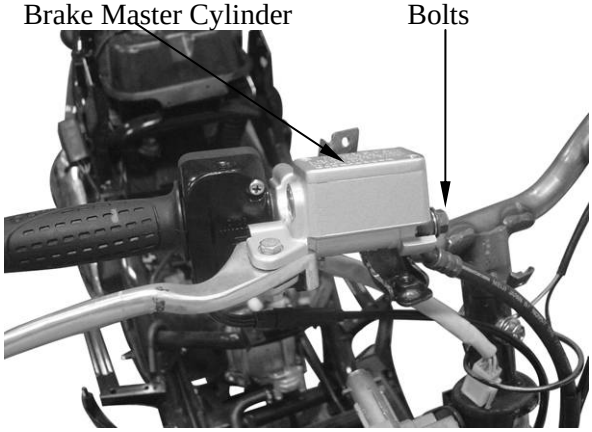
BRAKE MASTER CYLINDER

Removal

First drain the brake fluid from the hydraulic brake system.

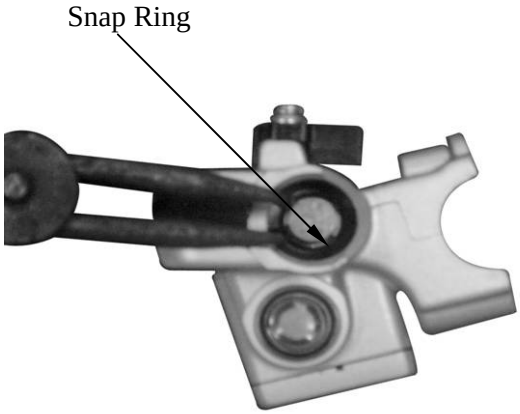
*

- When servicing the brake system, use shop towels to cover rubber and plastic parts and coated surfaces to avoid being contaminated by brake fluid.
- When removing the brake fluid pipe bolt, be sure to plug the pipe to avoid

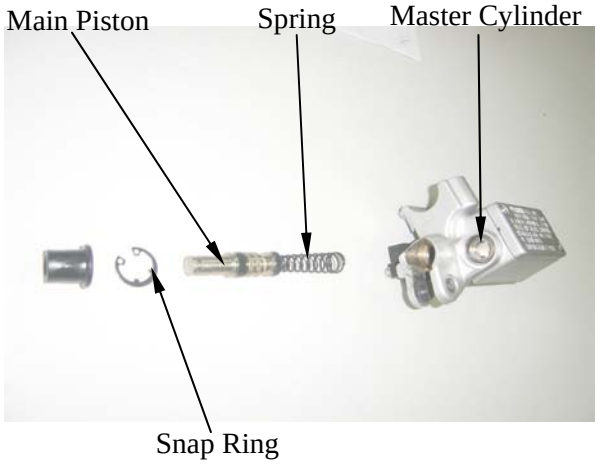


Disassembly

Remove the piston rubber cover and snap ring from the brake master cylinder.



Remove the washer, main piston and spring from the brake master cylinder.
Clean the inside of the master cylinder and brake reservoir with brake fluid.

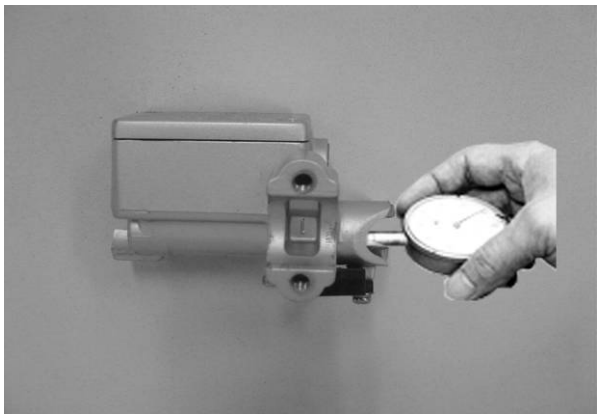


Inspection

Measure the brake master cylinder I.D.

Service Limit: 12.75mm

Inspect the master cylinder for scratch or crack.



Measure the brake master cylinder piston O.D.

Service Limit: 12.6mm

Before assembly, inspect the lst and 2nd rubber cups for wear.

Assembly

Before assembly, apply brake fluid to all removed parts.

Install the spring together with the 1st rubber cup.

*
- During assembly, the main piston and spring must be installed as a unit without exchange.
- When assembling the piston, soak the cups in brake fluid for a while.
- Install the cups with the cup lips facing the correct direction.

Install the main piston, spring and snap ring.

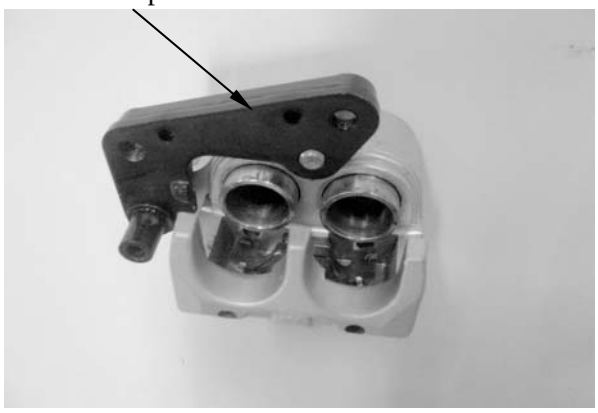
Install the rubber cover.

Install the brake lever.

Disassembly

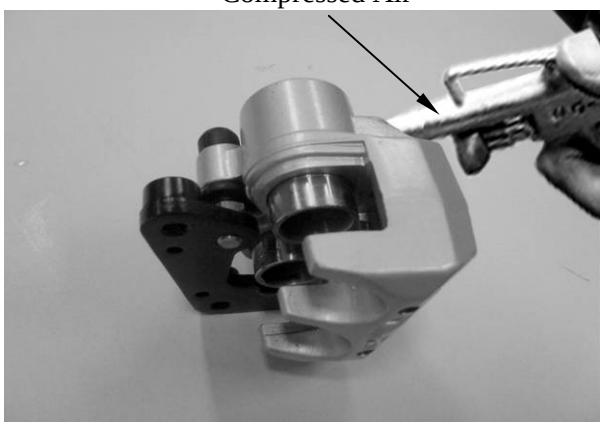
Remove the brake caliper seat from the brake caliper.

Brake Caliper Seat



Remove the piston from the brake caliper.
If necessary, use compressed air to squeeze out the piston through the brake fluid inlet opening and place a shop towel under the caliper to avoid contamination caused by the removed piston.
Check the piston cylinder for scratch or wear and replace if necessary.

Compressed Air



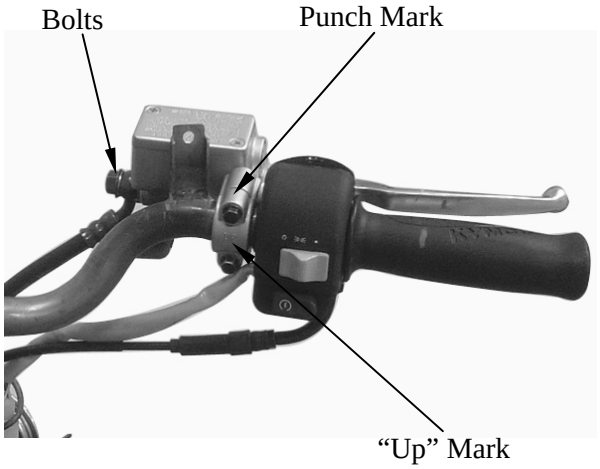
Push the piston oil seal outward to remove it.
Clean the oil seal groove with brake fluid.

Piston Oil Seal

* Be careful not to damage the piston surface.

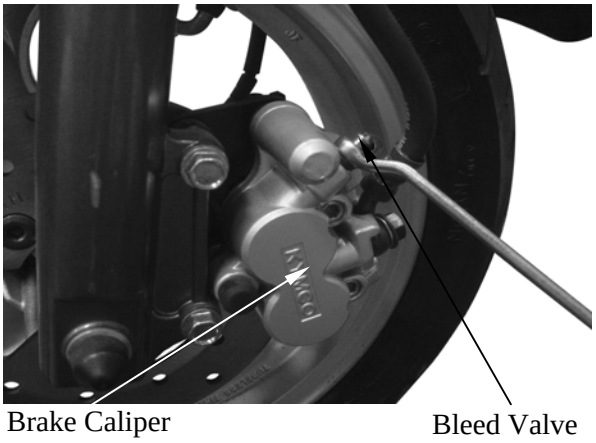
Place the brake master cylinder on the handlebar and install the holder with “up” mark facing up. Be sure to align the punch mark with the holder joint.
First tighten the upper bolt and then tighten the lower bolt.

Torque: 3.0～4.0kgf-m



Install the brake fluid pipe with the attaching bolt and two sealing washers.

Install the handlebar covers. (⇨12-3)
Fill the brake reservoir with recommended brake fluid to the upper limit and bleed air according to the method stated in 12-10.

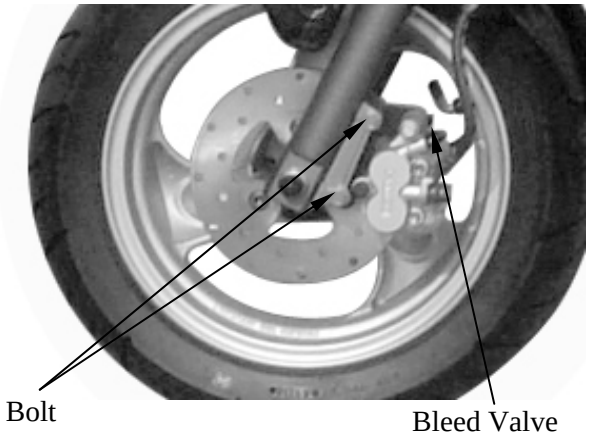


BRAKE CALIPER (FRONT)

Removal

Remove the brake caliper.
Place a clean container under the brake caliper and disconnect the brake fluid pipe from the caliper.

* Do not spill brake fluid on any coated surfaces.

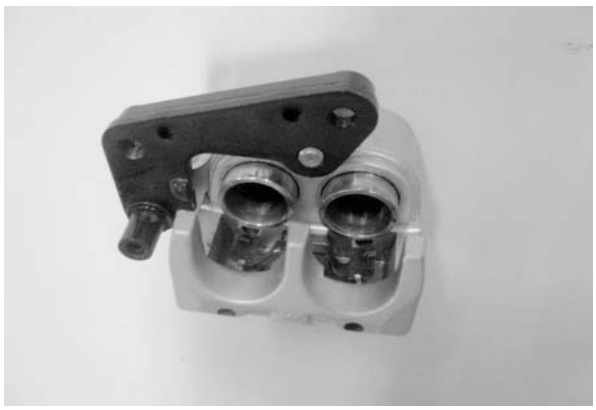


Check the piston for scratch or wear.
Measure the piston O.D. with a micrometer.
Service Limit: 26.3mm

Check the caliper cylinder for scratch or wear and measure the cylinder bore.
Service Limit: 26.45mm

Assembly

Clean all removed parts.
Apply silicon grease to the piston and oil seal.
Lubricate the brake caliper cylinder inside wall with brake fluid.
Install the brake caliper piston with grooved side facing out.



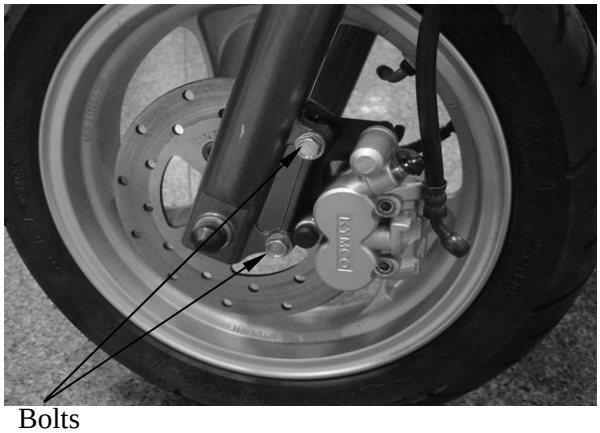
* Install the piston with its outer end 3～5mm protruding beyond the brake caliper.

Wipe off excessive brake fluid with a clean shop towel. Apply silicon grease to the brake caliper seat pin and caliper inside.
Install the brake caliper seat.

Installation

Install the brake caliper and tighten the two bolts.

Torque: 2.9～3.5kg-m



Bolts

Connect the brake fluid pipe to the brake caliper and tighten the fluid pipe bolt.

Torque: 2.5～3.5kg-m

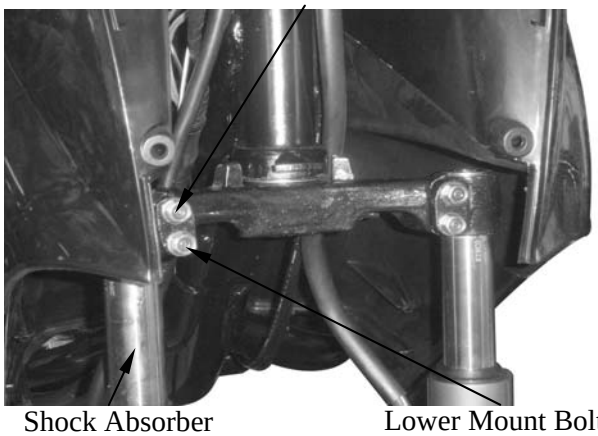
Fill the brake reservoir with recommended brake fluid and bleed air from the brake syst em. (⇨12-10)

Bolt

FRONT SHOCK ABSORBER

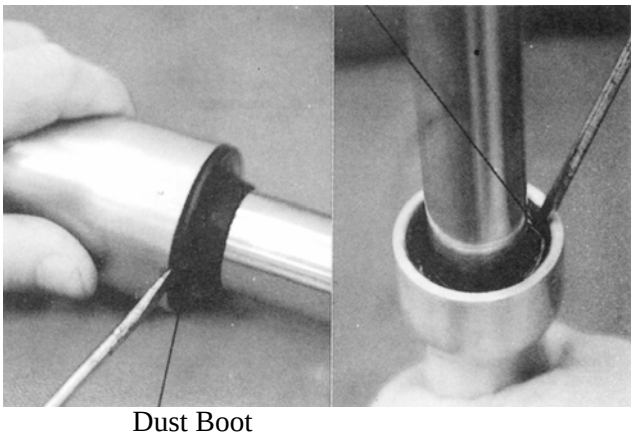
REMOVAL

Remove the front wheel. (⇨12-4)
Remove the front lower cover. (⇨2-2)
Remove the front inner fender.
Remove the front shock absorber upper mount bolts.
Loosen the lower mount bolts to remove the front shock absorbers.

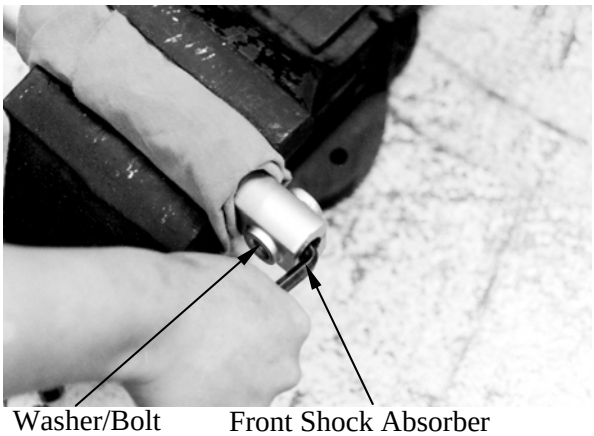


DISASSEMBLY

Remove the dust boot.
Remove the circlip.



Set the front shock absorber in a vise.
Remove the damper rod, hex bolt and copper washer.
Pull out the front shock absorber tube.

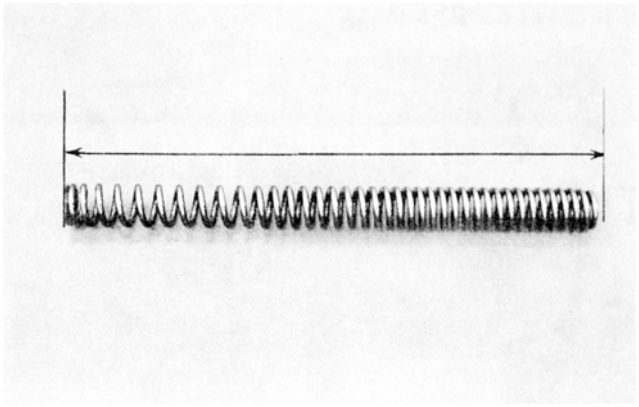


Set the front shock absorber tube in a vise.
Remove the top nut, shock spring, damper, and damper spring from the front shock absorber tube.

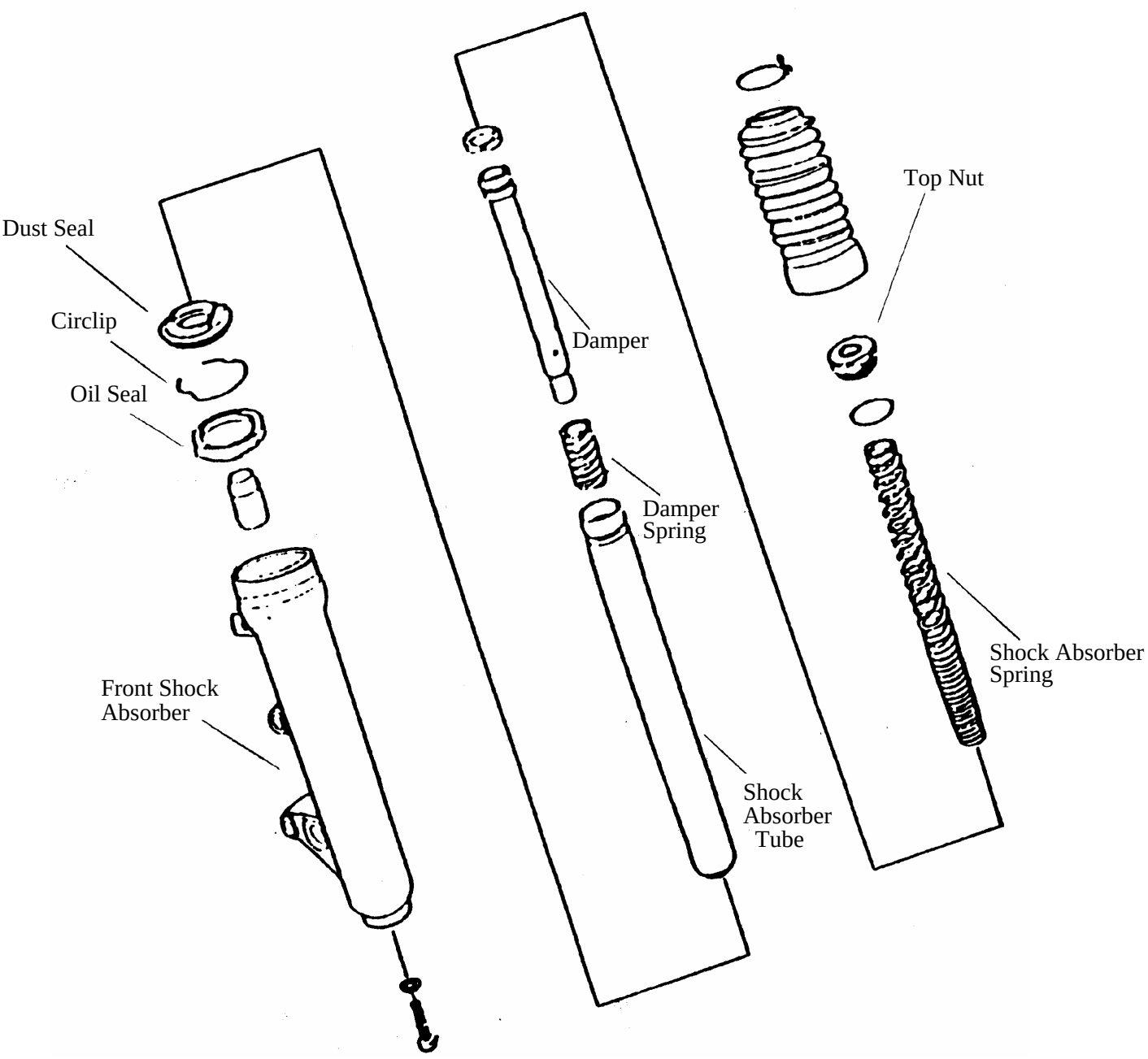
* • When holding the shock absorber tube, place a shop towel to protect it and do apply too much force .

Measure the front shock absorber spring free length.

Service Limits: Right : 206.4mm
Left : 206.4mm

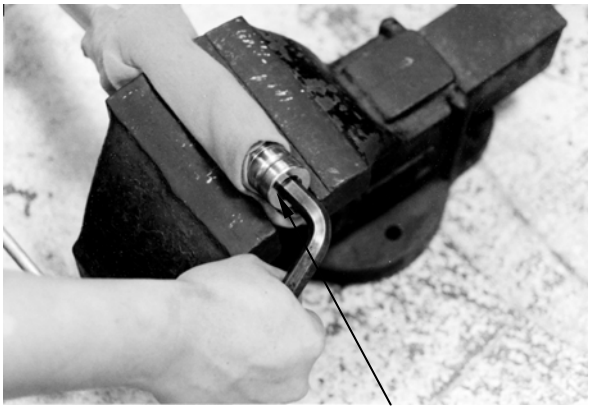


ASSEMBLY



Install the damper spring onto the damper rod and then install them into the front shock absorber tube.
Install the shock absorber spring onto the front shock absorber tube and tighten the top nut.

* Install the front shock absorber spring with the closely wound coils facing down.

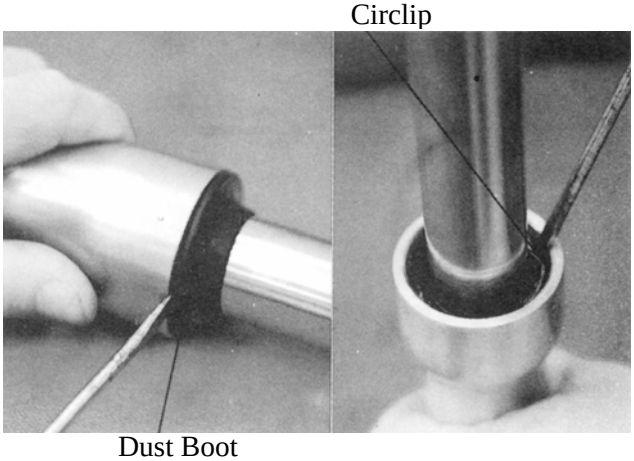


Set the front shock absorber in a vise.
Insert the shock absorber tube into the shock absorber and tighten the hex bolt.
(Apply locking agent to the washer and install it together with the hex bolt.)
Torque: 3.0kgf-m

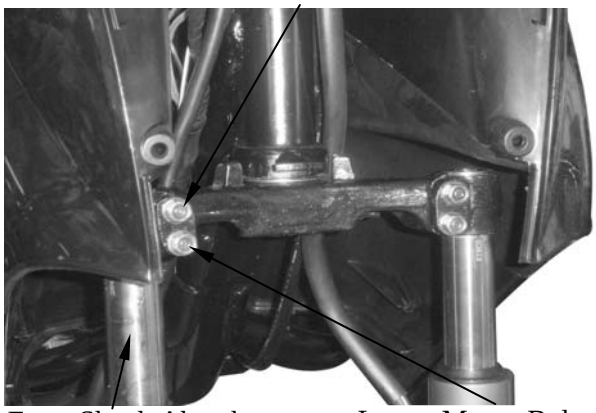
Add engine oil into the front shock absorber.

Specified Oil: SS#8

Oil Capacity: 38±1cc



Install the circlip.
Install the dust boot.



INSTALLATION

Install the front shock absorbers onto the steering stem.
Install and tighten the front shock absorber upper mount bolts.
Tighten the lower mount bolts.

* Align the upper mount bolt hole with the groove on the front fork.

Install the front wheel. (⇨12-7)

FRONT FORK

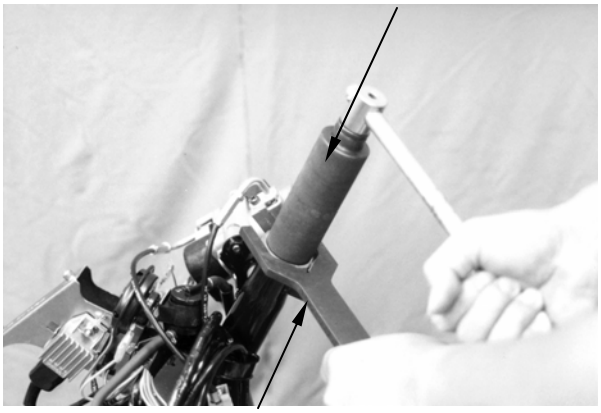
REMOVAL

Remove the steering handlebar. (⇨12-3)
Remove the front wheel. (⇨12-4)
Disconnect the speedometer cable.
Remove the steering stem lock nut using long socket wrench.

Special

Long Socket Wrench,32mm 8Angle

Long Socket Wrench



Lock Nut Wrench

Remove the top cone race and remove the steering stem.

* • Be careful not to lose the steel balls (26 on top race and 29 on bottom race).

Inspect the ball races and cone races for wear or damage and replace if necessary.

.

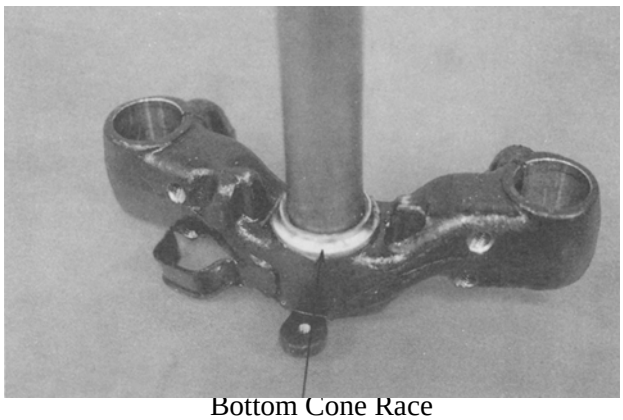
Top Cone Race

BOTTOM CONE RACE REPLACEMENT

Remove the bottom cone race using a chisel.

* Be careful not to damage the steering stem and front fork.

Drive a new bottom cone race into place with a proper driver.

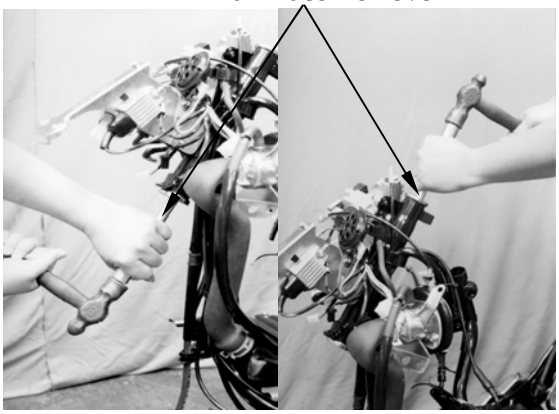


Bottom Cone Race

Ball Race Remover

BALL RACE REPLACEMENT

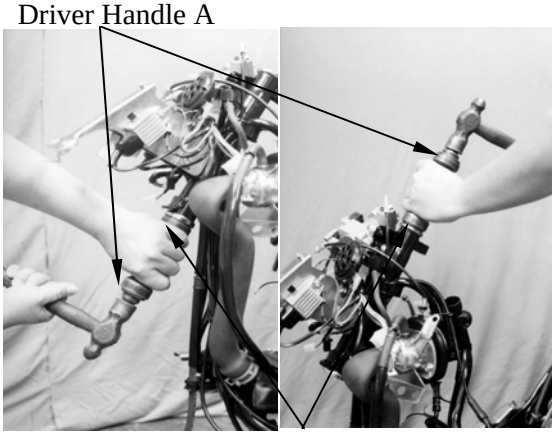
Drive out the top and bottom ball races.



Drive new top and bottom ball races into the steering head using the outer driver.

* Be sure to completely drive in the ball races.

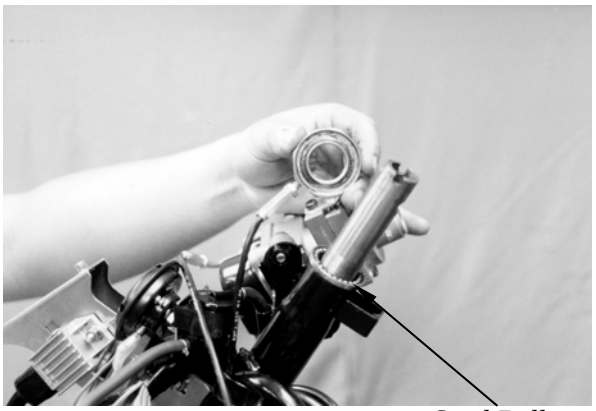
Driver Handle A



Outer Driver, 37x40mm

INSTALLATION

Apply grease to the top and bottom ball races and install 26 steel balls on the top ball race and 29 steel balls on the bottom ball race.
Apply grease to the ball races and install the front fork.

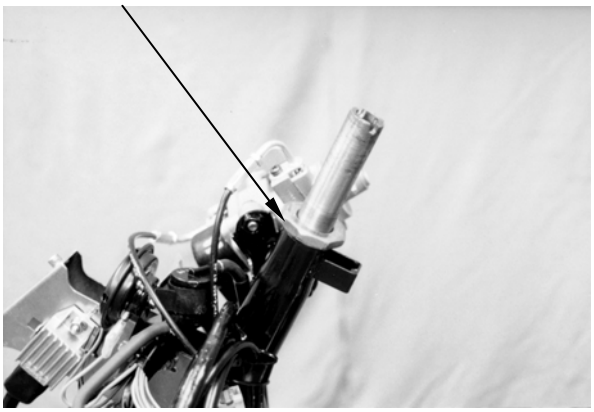


Steel Balls

Apply grease to the top cone race and install it.
Tighten the top cone race and then turn the steering stem right and left several times to make steel balls contact each other closely.

* Check that the steering stem rotates freely without vertical play.

Top Cone Race



Install the steering stem lock nut and tighten it while holding the top cone race.

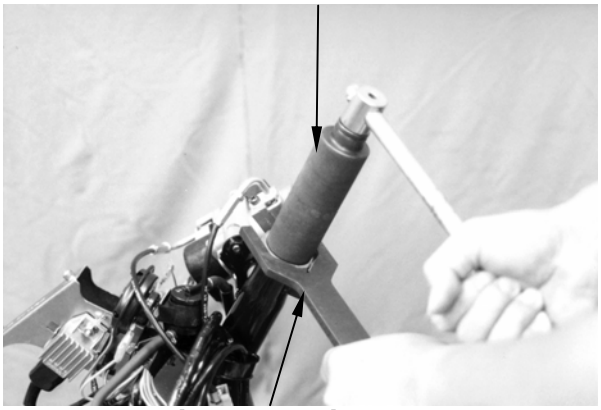
Torque: 6.0～8.0kgf-m

Install the front wheel. (⇨12-7)
Install the steering handlebar. (⇨12-3)
Install the speedometer cable. (⇨12-7)

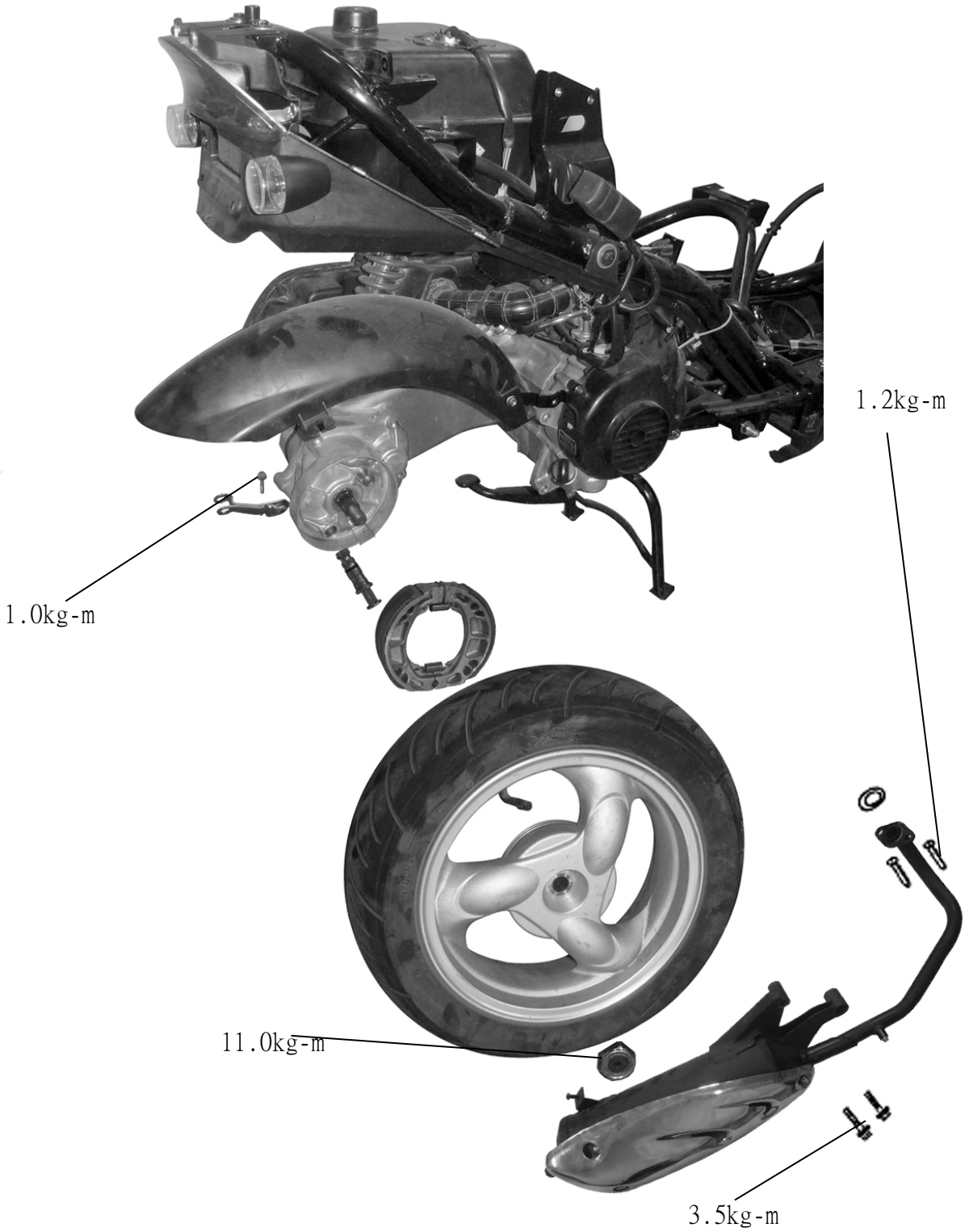
Special

Long Socket Wrench,32mm 8Angle

Long Socket Wrench



Lock Nut Wrench



13

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- During servicing, keep oil or grease off the brake drum and brake linings.

SPECIFICATIONS

Item			Standard (mm)	Service Limit (mm)
Rear wheel	Rim runout	Radial	—	2.0
		Axial	—	2.0
	Rear brake drum I.D		110	111
Rear brake lining thickness			4.0	2.0
Rear shock absorber spring free length			227	220

TORQUE VALUES

Rear axle nut	11~13kgf-m
Rear shock absorber upper mount bolt	3.5~4.5kgf-m
Rear shock absorber lower mount bolt	2.4~3.0kgf-m
Exhaust muffler joint lock nut	1.0~1.4kgf-m
Exhaust muffler lock bolt	3.0~3.6kgf-m

Special Tool
Cushion Assemble & Disassemble Tool

TROUBLESHOOTING

Rear wheel wobbling
- Bent rim
- Faulty tire
- Axle not tightened properly

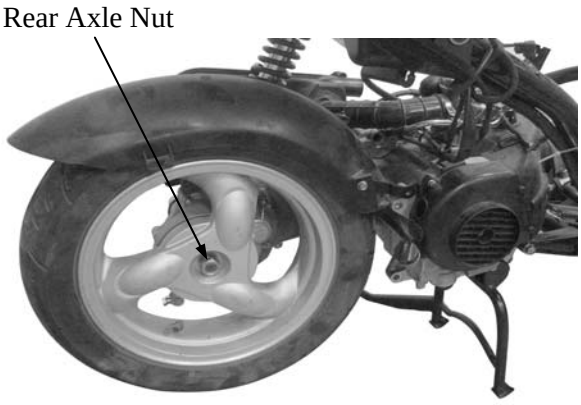
Soft rear shock absorber
- Weak shock absorber spring
- Faulty damper

Poor brake performance
- Brake not adjusted properly
- Worn brake linings
- Worn brake shoes at cam contacting area
- Worn brake cam
- Worn brake drum

REAR WHEEL

REMOVAL

Remove the exhaust muffler. (⇨2-5)
Remove the rear axle nut to remove the rear wheel.



INSPECTION

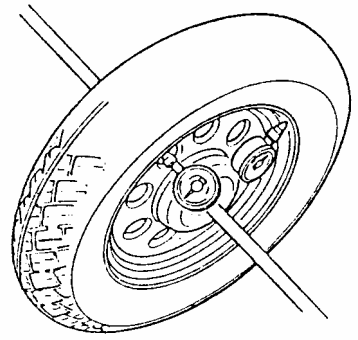
Measure the rear wheel rim runout.

Service Limits:

Radial: 2.0mm replace if over

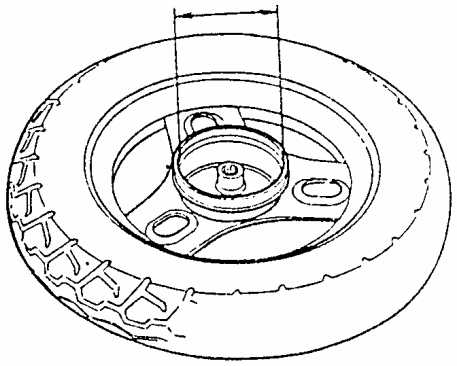
Axial: 2.0mm replace if over

If the rim runout exceeds the specified service limits, check the final shaft bearing for excessive play and the final shaft for bending. Inspect the rear wheel and wheel rim for runout.



Inspect the rear brake drum.
Measure the rear brake drum I.D.

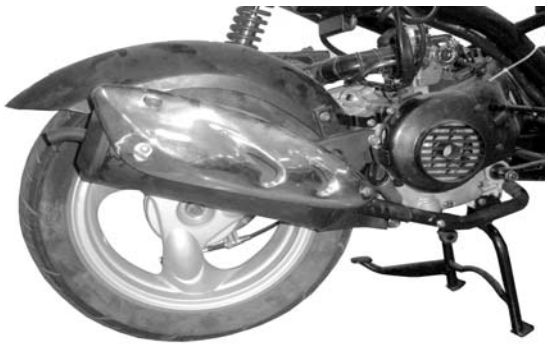
Service Limits: 111mm replace if over



INSTALLATION

Install the rear wheel in the reverse order of removal.
Tighten the rear axle nut.
Torque: 11.0-13.0kg-m

Install the exhaust muffler.
Torque:
Exhaust muffler joint lock nut: 1.0~1.4kgf-m
Exhaust muffler lock bolt: 3.0~3.6kgf-m

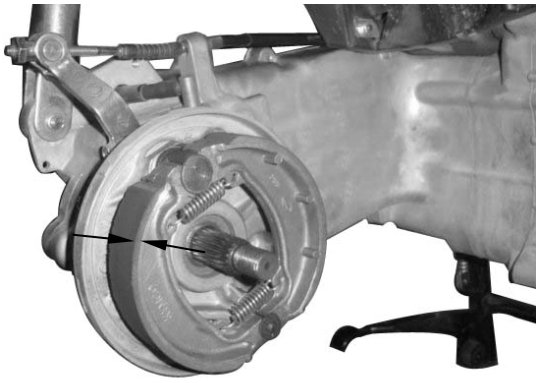


* First install and tighten the exhaust muffler joint lock nuts and then the exhaust muffler lock bolts.

REAR BRAKE

BRAKE LINING INSPECTION

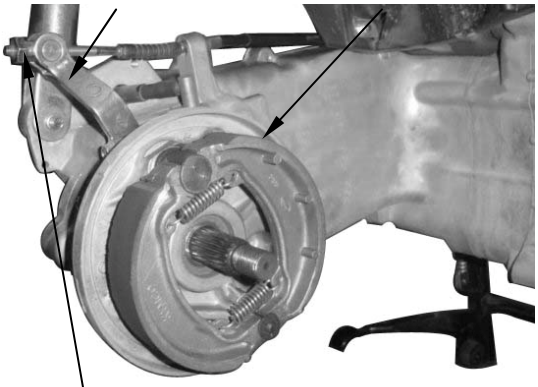
Measure the brake lining thickness.
Service Limit: 2.0mm replace if below



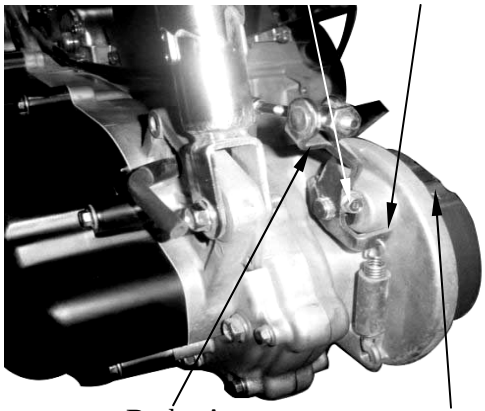
* Keep oil or grease off the brake linings.

REAR BRAKE DISASSEMBLY

Remove the rear brake adjusting nut and disconnect the rear brake cable.
Remove the rear brake shoes.

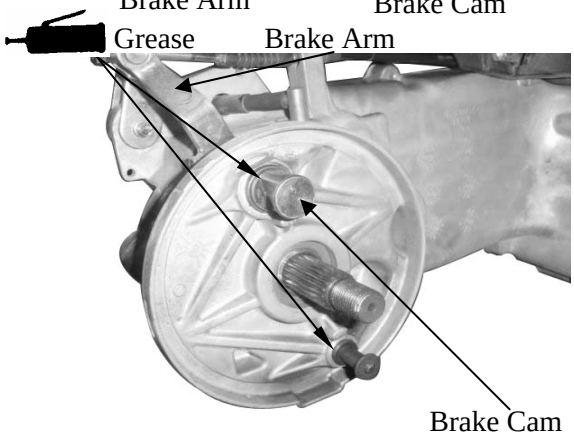


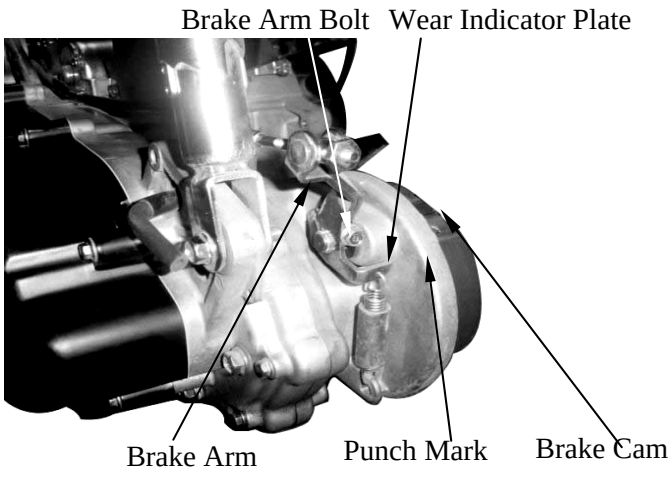
Remove the brake arm bolt to remove the brake arm, wear indicator plate and felt seal.
Remove the brake cam.



REAR BRAKE ASSEMBLY

Apply grease to the anchor pin.
Apply grease to the brake cam and install it.
Install the brake shoes.



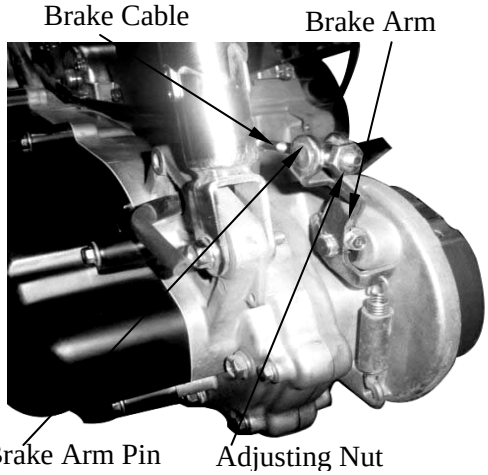


Apply a small amount of engine oil to the felt seal and install it to the brake cam.
Install the wear indicator plate and brake arm.

* Align the wide groove on the wear indicator plate with the wide tooth of the brake cam.

Install and tighten the brake arm bolt.

* Align the scribed line on the brake arm with the punch mark on the brake cam.



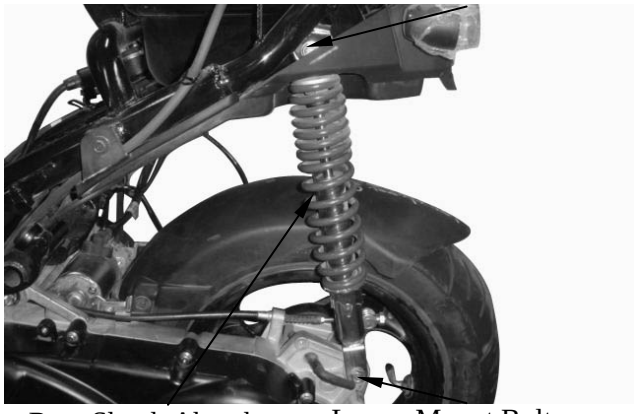
Install the brake arm return spring.
Install the brake arm pin.
Connect the brake cable and install the adjusting nut.
Install the rear wheel. (⇨13-2)
Adjust the rear brake lever free play. (⇨3-8)

REAR SHOCK ABSORBER

REMOVAL

Remove the frame body cover. (⇨2-3)
Remove the air cleaner case. (⇨5-19)

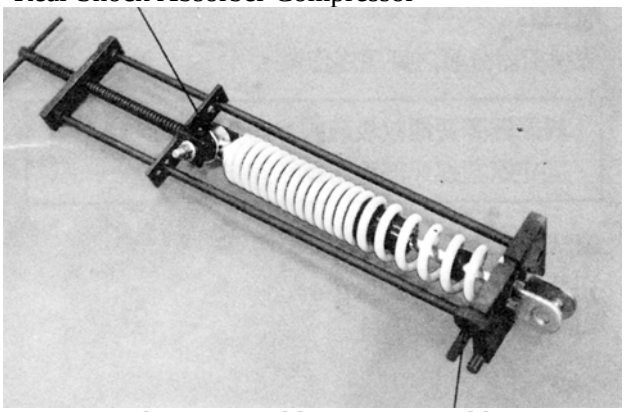
Remove the rear shock absorber upper and lower mount bolts.
Remove the rear shock absorber.



DISASSEMBLY

Install the rear shock absorber compressor as the figure shown.

Rear Shock Absorber Compressor



* Install the rear shock absorber lower joint into the rear shock absorber compressor.

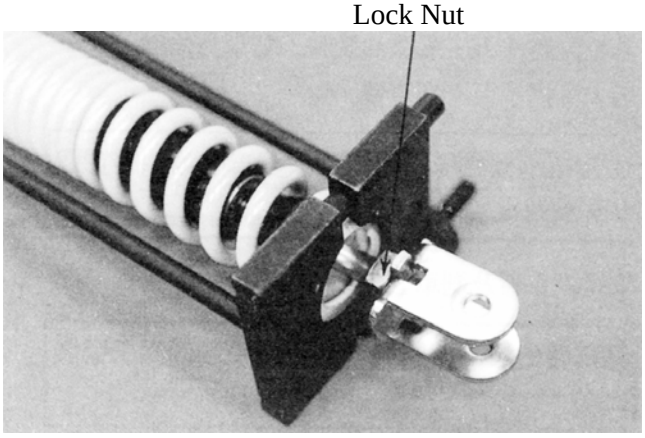
Compress the rear shock absorber spring.

Special

Cushion Assemble & Disassemble Tool

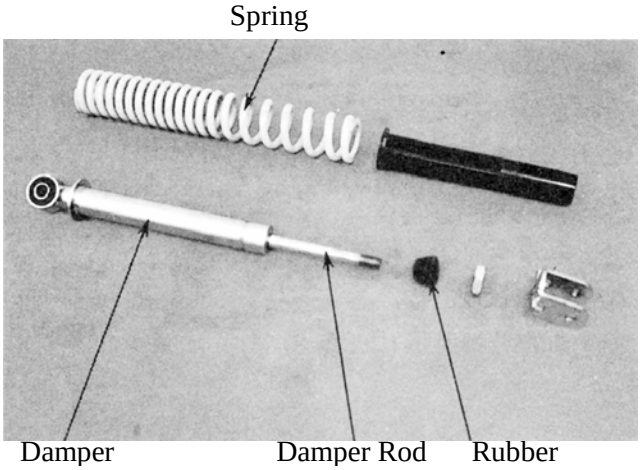
Cushion Assemble & Disassemble Too

Loosen the lower joint lock nut.
Remove the lower joint.
Remove the lock nut, rubber and damper.



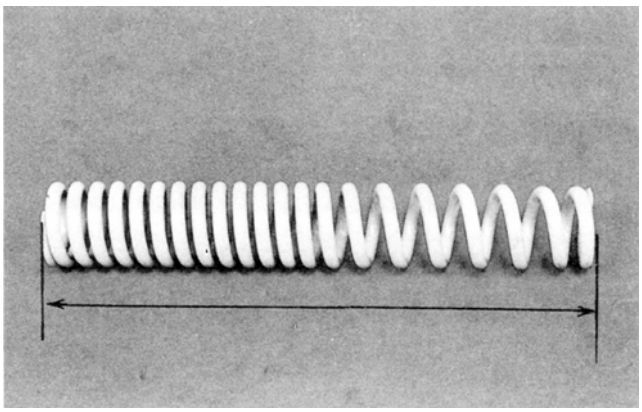
INSPECTION

Inspect the damper rod for bending or damage.
Inspect the damper for oil leaks.
Inspect the damper rubber for deterioration or damage.



Measure the rear shock absorber spring free length.

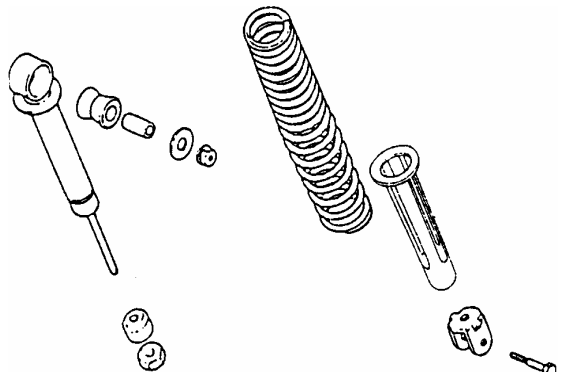
Service Limit: 198mm replace if over



ASSEMBLY

Assemble the rear shock absorbers in the reverse order of disassembly.

*
- Install the shock absorber spring with loosely wound coils facing down.
- Apply locking agent to the lock nut threads and tighten the lock nut.



INSTALLATION

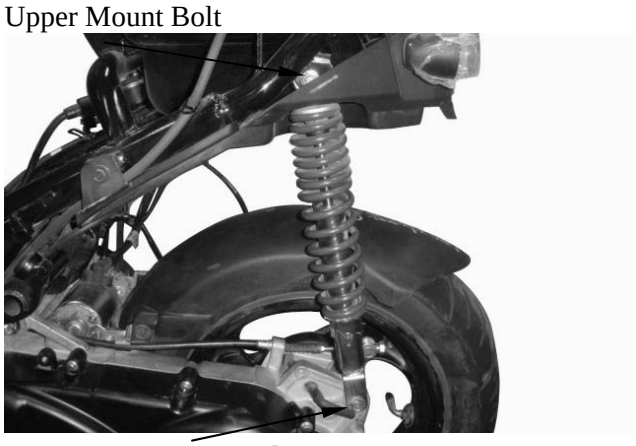
Install the rear shock absorber.
Install the rear shock absorber upper mount bolt and then the lower mount bolt.
Tighten the bolts.

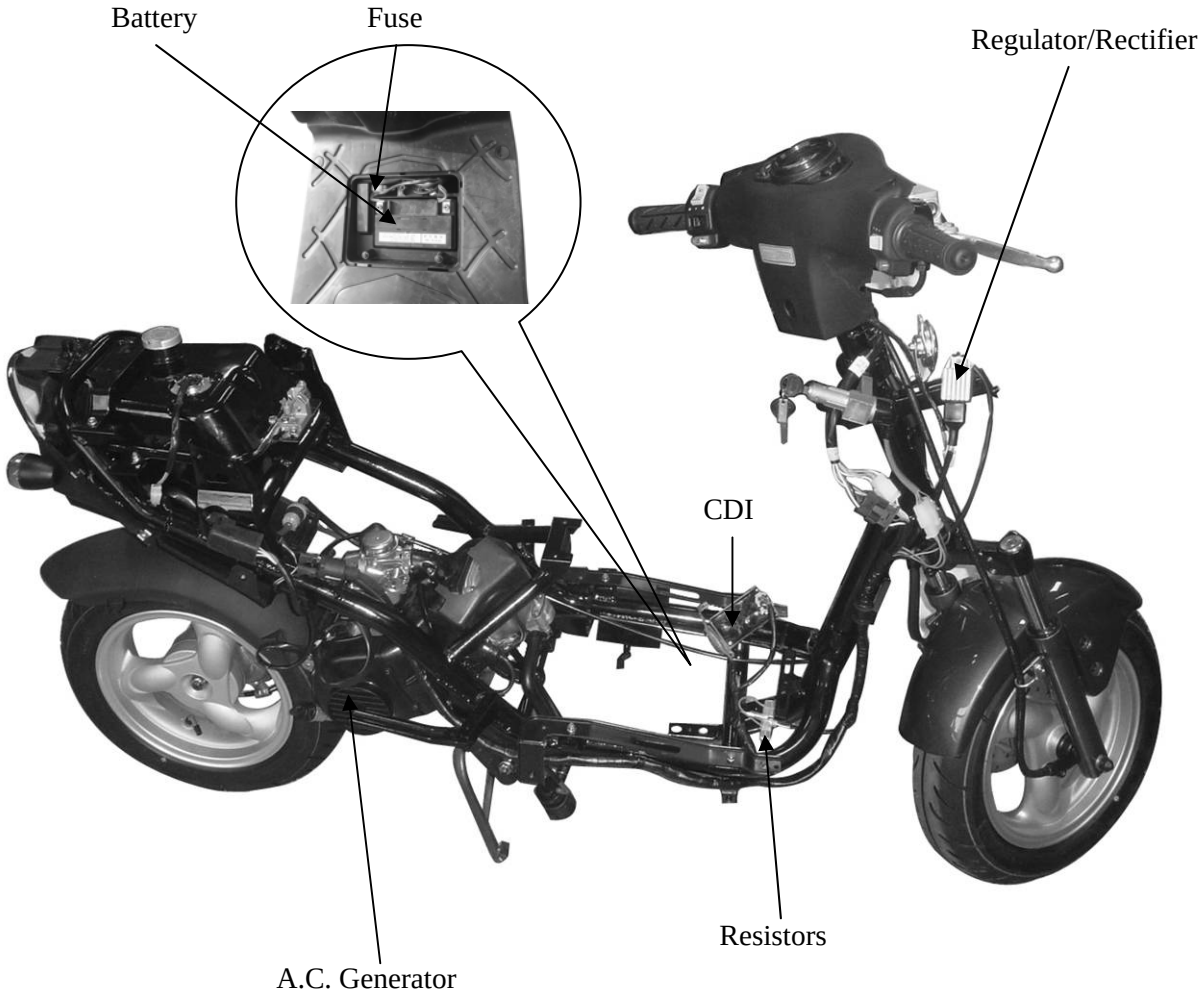
Torque:

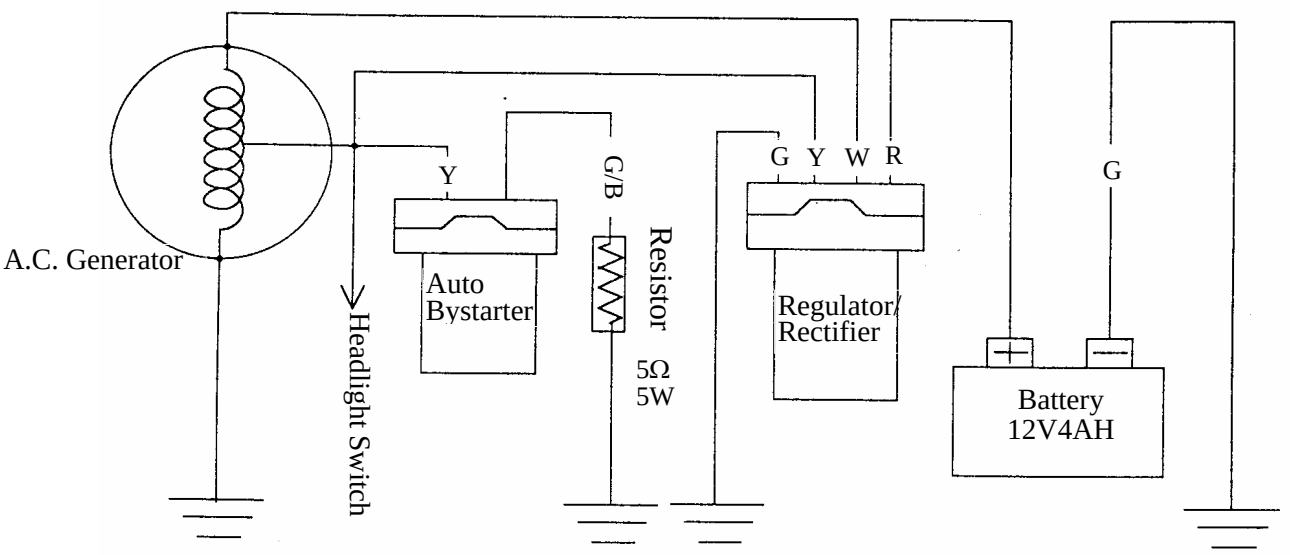
Upper Mount Bolt: 3.5~4.5kgf-m

Lower Mount Bolt: 2.4~3.0kgf-m

Install the air cleaner case. (⇨5-15)
Install the frame body cover. (⇨2-3)




Battery
Fuse
Regulator/Rectifier
CDI
Resistors
A.C. Generator


A.C. Generator
Y
G/B
G Y W R
G
Auto
Bystarter
Resistor
5Ω
5W
Regulator/
Rectifier
Battery
12V4AH
Headlight Switch

SERVICE INFORMATION

GENERAL INSTRUCTIONS

The battery electrolyte (sulfuric acid) is poisonous and may seriously damage the skin and eyes. Avoid contact with skin, eyes, or clothing. In case of contact, flush with water and get prompt medical attention

- The battery can be charged and discharged repeatedly. If a discharged battery is not used for a long time, its service life will be shortened. Generally, the capacity of a battery will decrease after it is used for 2～3 years. A capacity-decreased battery will resume its voltage after it is recharged but its voltage decreases suddenly and then increases when a load is added.
- When a battery is overcharged, some symptoms can be found. If there is a short circuit inside the battery, no voltage is produced on the battery terminals. If the rectifier won‘t operate, the voltage will become too high and shorten the battery service life.
- If a battery is not used for a long time, it will discharge by itself and should be recharged every 3 months.
- A new battery filled with electrolyte will generate voltage within a certain time and it should be recharged when the capacity is insufficient. Recharging a new battery will prolong its service life.
- Inspect the charging system according to the sequence specified in the Troubleshooting.
- Do not disconnect and soon reconnect the power of any electrical equipment because the electronic parts in the regulator/rectifier will be damaged. Turn off the ignition switch before operation.
- It is not necessary to check the MF battery electrolyte or fill with distilled water.
- Check the load of the whole charging system.
- Do not quick charge the battery. Quick charging should only be done in an emergency.
- Remove the battery from the motorcycle for charging.
- When replacing the battery, do not use a traditional battery.
- When charging, check the voltage with an voltmeter.

SPECIFICATIONS

Item			Standard	
Battery	Capacity/Model		12V–8AH	
	Voltage (20℃)	Fully charged	13.1V	
		Undercharged	12.3V	
	Charging current		STD: 0.4A Quick: 4.0A	
	Charging time		STD: 5～10hr Quick: 30min	
A.C. Generator	Capacity		0.144KW/5000rpm	
	Lighting coil resistance (20℃)		Yellow～Green	0.1～1.0Ω
	Charging coil resistance (20℃)		White～Green	0.2～1.2Ω
Regulator/Rectifier	Type		Single-phase half-wave SCR	
	Limit voltage	Lighting	13.1～13.9V/5000rpm (Electric tester, tachometer)	
			13.1±0.5V	
		Charging	14.5±0.5V/5000rpm	
Resistor	Resistance (20℃)		5W12Ω	
	Resistance (20℃)		30W7.5Ω	

TORQUE VALUES

Pulser coil bolt	0.45~0.6kgf-m
Stator bolt	0.8~1.2kgf-m
Flywheel nut	3.5~4.5kgf-m
Cooling fan bolt	0.8~1.2kgf-m

SPECIAL TOOLS

Universal holder
Flywheel puller

TESTING INSTRUMENTS

Kowa electric tester
Sanwa electric tester

TROUBLESHOOTING

No power

- Dead battery
- Disconnected battery cable
- Fuse burned out
- Faulty ignition switch

Low power

- Weak battery
- Loose battery connection
- Charging system failure
- Faulty regulator/rectifier

Intermittent power

- Loose battery cable connection
- Loose charging system connection
- Loose connection or short circuit in lighting system

Charging system failure

- Loose, broken or shorted wire or connector
- Faulty regulator/rectifier
- Faulty A.C. generator

BATTERY

REMOVAL

Remove the battery cover screws on the floor board.

Open the battery cover and remove the battery by removing the bolt and band.

First disconnect the battery negative (-) cable and then the positive (+) cable.

When disconnecting the battery positive (+) cable, do not touch the frame with tool; otherwise it will cause short circuit and sparks to fire the fuel.

The installation sequence is the reverse of removal.

First connect the positive (+) cable and the negative (-) cable to avoid short circuit.

BATTERY VOLTAGE (OPEN CIRCUIT VOLTAGE) INSPECTION

Remove the floor board.

Open the battery cover and disconnect the battery cables.

Measure the voltage between the battery terminals.

Fully charged : 13.1V

Undercharged : 12.3V max.

* Battery charging inspection must be performed with a voltmeter.

CHARGING

Connect the charger positive (+) cable to the battery positive (+) terminal.

Connect the charger negative (-) cable to the battery negative (-) terminal.

- Keep flames and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals to prevent sparks near the battery to avoid explosion.
- Charge the battery according to the

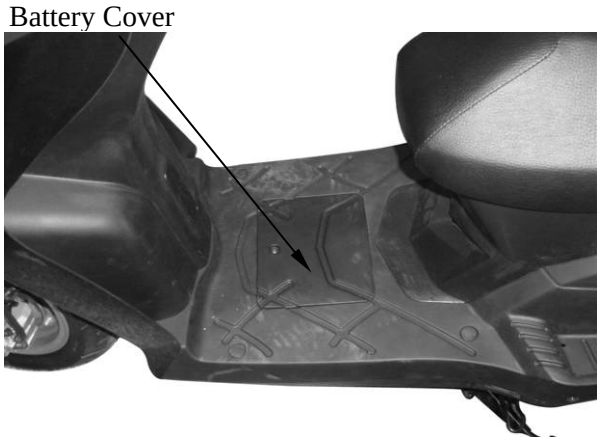
* • Quick charging should only be done in an emergency.
  • Measure the voltage 30 minutes after the battery is charged.

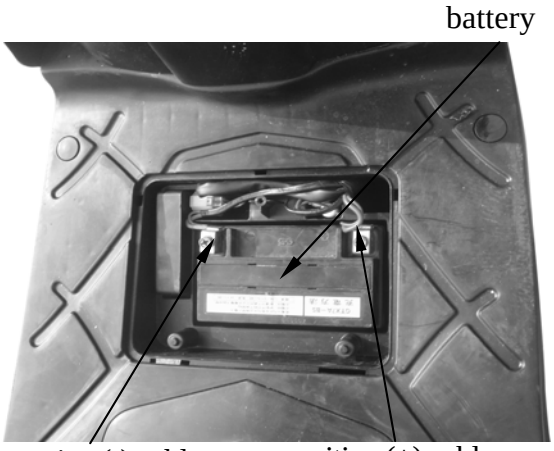
Charging current: Standard : 0.8A
Quick : 8A

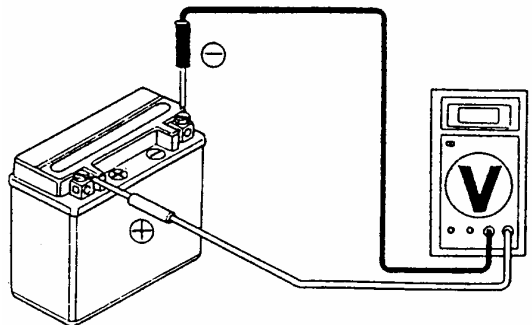
Charging time : Standard : 5～10 hours
Quick : 30 minutes

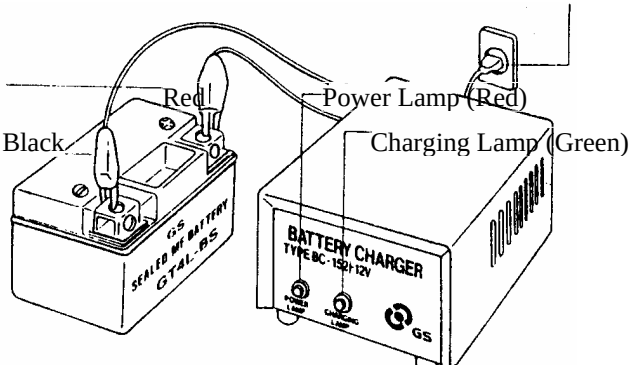
After charging: Open circuit voltage: 12.8V min.

Note: The battery temperature should not exceed 45℃ during charging.









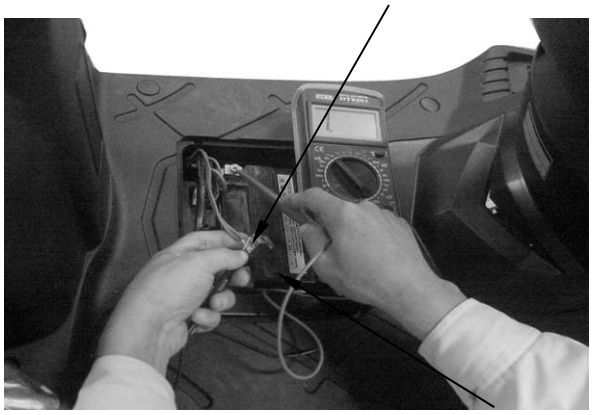
CHARGING SYSTEM

SHORT CIRCUIT TEST

Disconnect the ground wire from the battery and connect an ammeter across the battery negative (-) terminal and the ground wire. Turn the ignition switch OFF and check for short circuit.

* Connect the electric tester positive (+) terminal to ground wire and the tester negative (-) terminal to the battery negative (-) terminal.

If any abnormality is found, check the ignition switch and wire harness for short circuit .

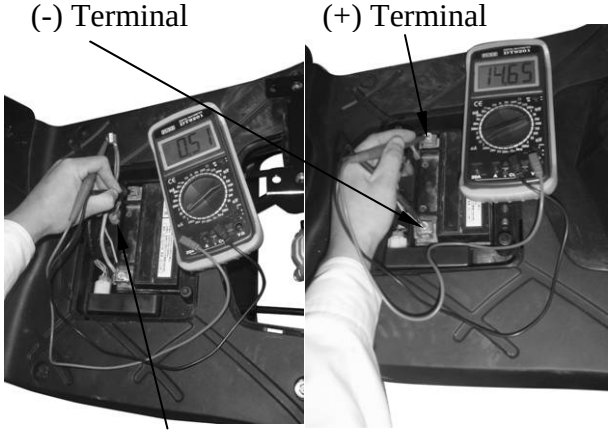


CURRENT TEST

This inspection must be performed with an electric tester when the battery is fully charged.
Warm up the engine for inspection.
Connect the electric tester across the battery terminals. Disconnect the fuse and connect an ammeter between the fuse terminals.
Attach a tachometer to the engine.
Start the engine and gradually increase the engine speed to measure the limit voltage and current.

Limit Voltage/Current: 14～15V/0.8A max.
(5000rpm max.)

If the limit voltage is not within the specified range, check the regulator/rectifier. (⇨14-5)



LIGHTING SYSTEM LIMIT VOLTAGE INSPECTION

Remove the handlebar front cover. (⇨2-2)

* Measure the voltage with the electric tester in the AC range.

Limit Voltage: 12～14V/ (5000rpm max.)

If the limit voltage is not within the specified range, check the regulator/rectifier. (⇨14-5)

* Perform this test with a fully charged battery.

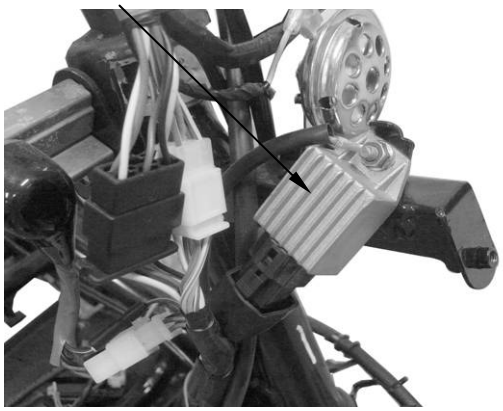
REGULATOR/RECTIFIER

MAIN HARNESS CIRCUIT INSPECTION

Remove the front covers. (⇨2-2)
Remove the regulator/rectifier 4P coupler and check for continuity between the wire harness terminals according to the following :

Item (Wire Color)	Judgment
Between battery (red) and engine ground	Battery has voltage
Between ground (green) and engine ground	Continuity exists
Between lighting wire (yellow) and engine ground (Remove the resistor coupler and auto bystarter coupler and turn the lighting switch OFF for inspection)	A.C. generator stator has resistance
Between charging coil (white) and engine ground	A.C. generator stator has resistance

Regulator/Rectifier

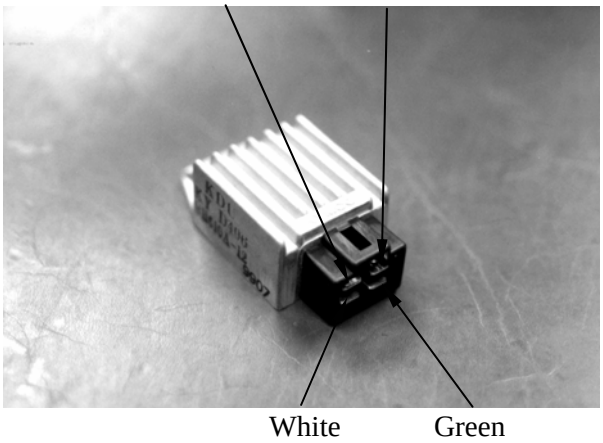


REGULATOR/RECTIFIER INSPECTION

If the main harness terminals are normal, check the regulator/rectifier coupler for loose connection and measure the resistances between the regulator/rectifier terminals.

*
- Do not touch the tester probes with your finger because human body has resistance.
- Use the following specified testers for accurate testing. Use of an improper tester in an improper range may give false readings.
  – Kowa Electric Tester
  – Sanwa Electric Tester
  – Kowa Electric Tester TH-5H
- Proper range for testing:
  – Use XKΩ range for Sanwa Tester
  – Use X100Ω range for Kowa Tester
- If the dry battery in the tester is weak, the readings will be incorrect. In this case, check the dry battery.
- The Kowa tester readings are 100 times the actual values. Be careful during testing.

Replace the regulator/rectifier if the readings are not within the specifications in the table.



Probe⊕ / Probe(-)	White	Yellow	Red	Green
White		∞	3K-50K	∞
Yellow	∞		∞	5K-100K
Red	∞	∞		∞
Green	∞	5K-50K	∞	

Fan C

A.C. GENERATOR CHARGING COIL

* The inspection of A.C. generator charging coil can be made with the engine installed.

INSPECTION

Disconnect the A.C. generator 2P connector. Measure the resistance between the A.C. generator white wire and engine ground with an electric tester.

Standard: 0.2～1.2Ω(at 20℃)

Replace the A.C. generator charging coil if the reading is not within the specifications.

Charging Coil Wire

A.C. GENERATOR LIGHTING COIL

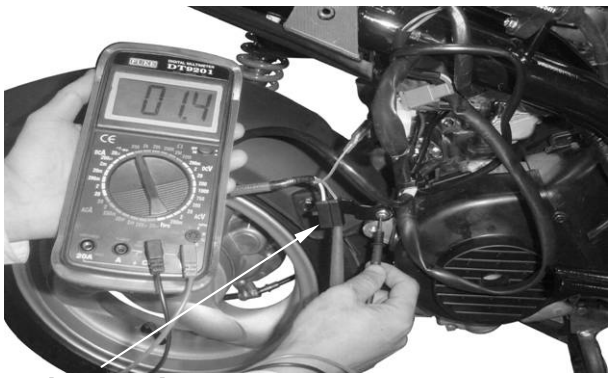
* The inspection of A.C. generator lighting coil can be made with the engine installed.

INSPECTION

Disconnect the A.C. generator 2P connector. Measure the resistance between the A.C. generator yellow wire and engine ground with an electric tester.

Standard: 0.1～1.0Ω (20℃)

Replace the A.C. generator lighting coil if the reading is not within the specifications.



Lighting Coil Wire

RESISTOR INSPECTION

Remove the front covers. (⇨2-2)
Measure the resistance between the resistor lead and engine ground.

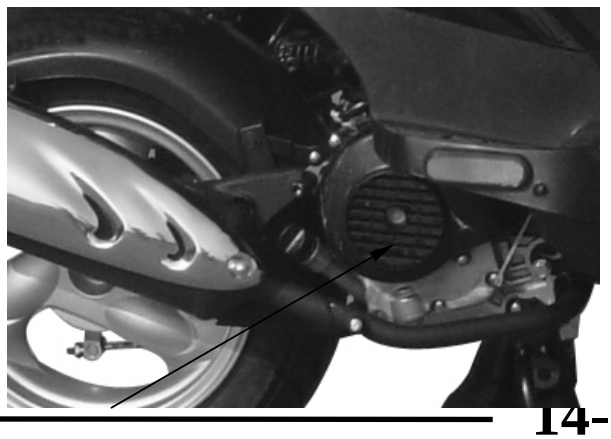
Resistances: 5W12Ω: 11～13Ω
30W7.5Ω: 6～8Ω

Resistor

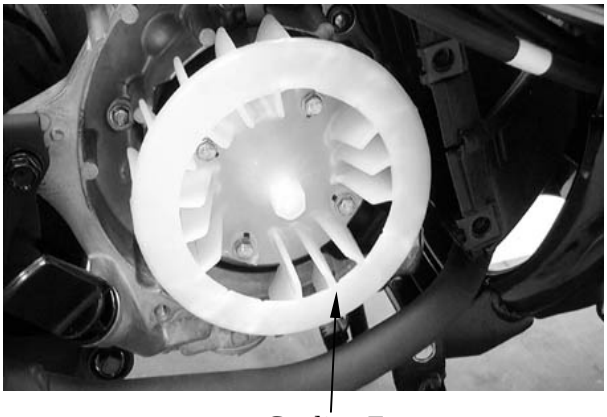
A.C. GENERATOR

REMOVAL

Remove the right side cover. (⇨2-4)
Remove the four bolts attaching the cooling fan cover to remove the fan cover.



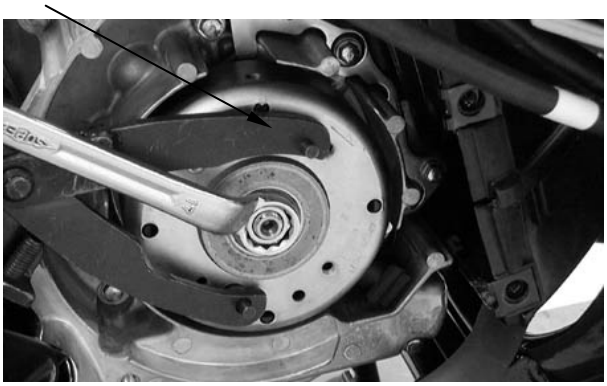
Remove the cooling fan by removing the four cooling fan attaching bolts.



Hold the flywheel with an universal holder.
Remove the flywheel nut.

Special

Universal Holder



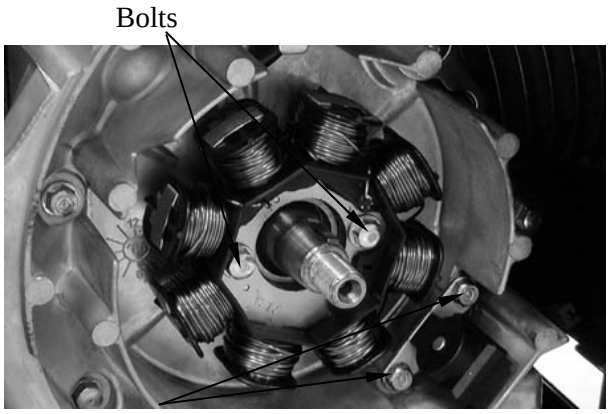
Remove the A.C. generator flywheel using the flywheel puller.
Remove the woodruff key.

Special

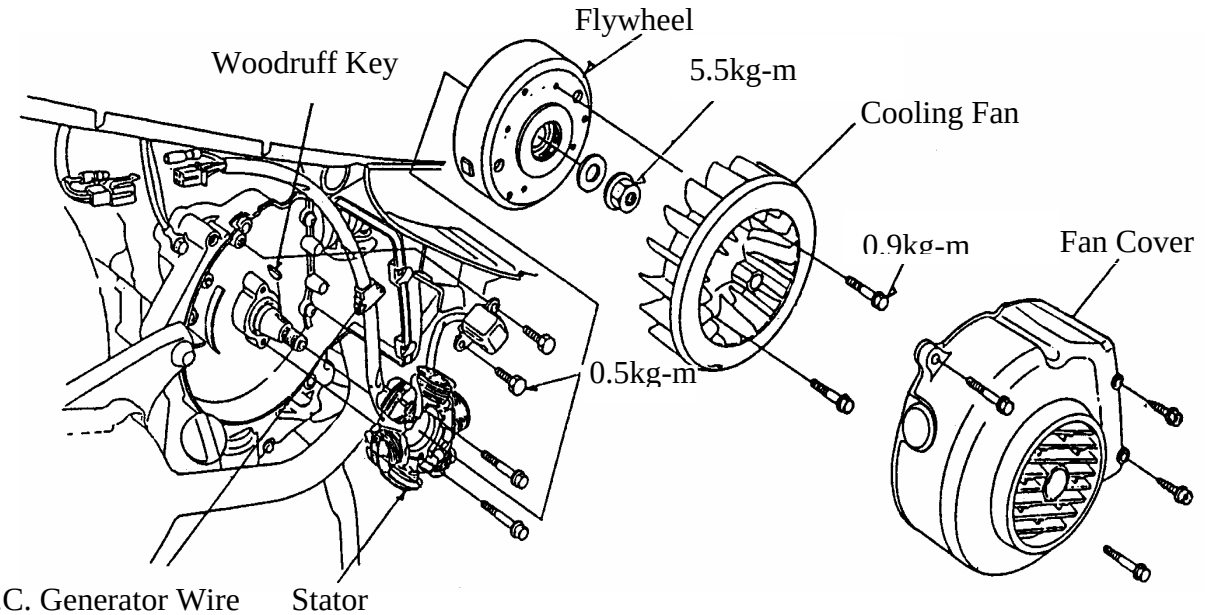
Flywheel Puller

Remove the A.C. generator wire connector.

Remove the A.C. generator wire set plate.
Remove the pulser coil bolts.
Remove the A.C. generator wire rubber sleeve and pulser coil from the right crankcase.
Remove the two bolts and A.C. generator stator.



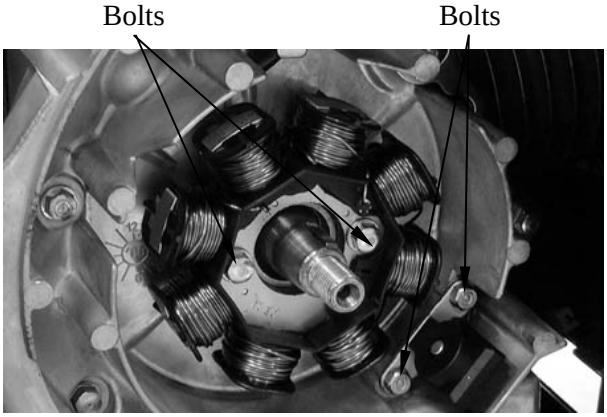
A.C. GNERATOR INSTALLATION



Install the A.C. generator stator and pulser coil onto the right crankcase.
Tighten the stator and pulser coil bolts.

Torques: Pulser Coil : 0.45~0.6kgf-m
Stator : 0.8~1.2kgf-m

Install the A.C. generator wire rubber sleeve and A.C. generator wire set plate.

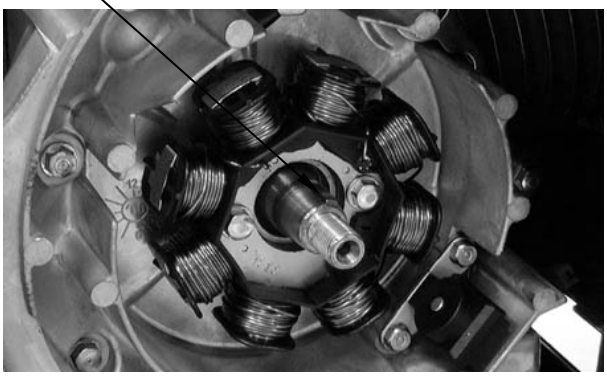


Connect the A.C. generator wire connector.

A.C. Generator Wire Connector

Clean the taper hole in the flywheel off any burrs and dirt.
Install the woodruff key in the crankshaft keyway.

Woodruff Key

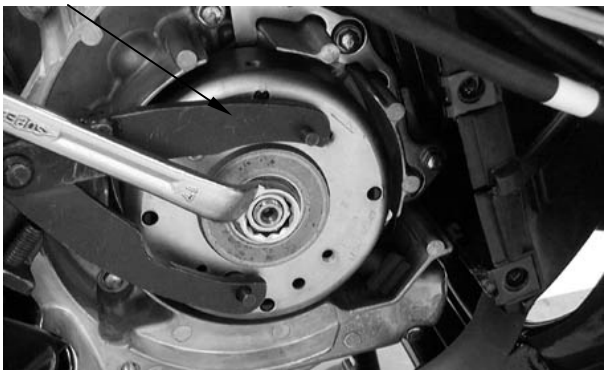


Install the flywheel onto the crankshaft with the flywheel hole aligned with the crankshaft woodruff key.

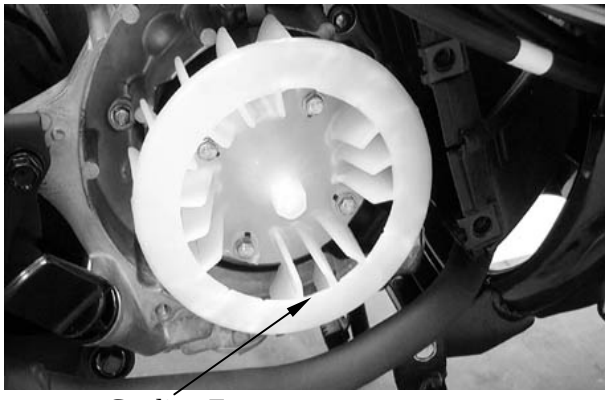
* The inside of the flywheel is magnetic. Make sure that there is no bolt or nut before installation.

Hold the flywheel with the universal holder and tighten the flywheel nut.
Torque: 3.5~4.5kgf-m

Universal Holder



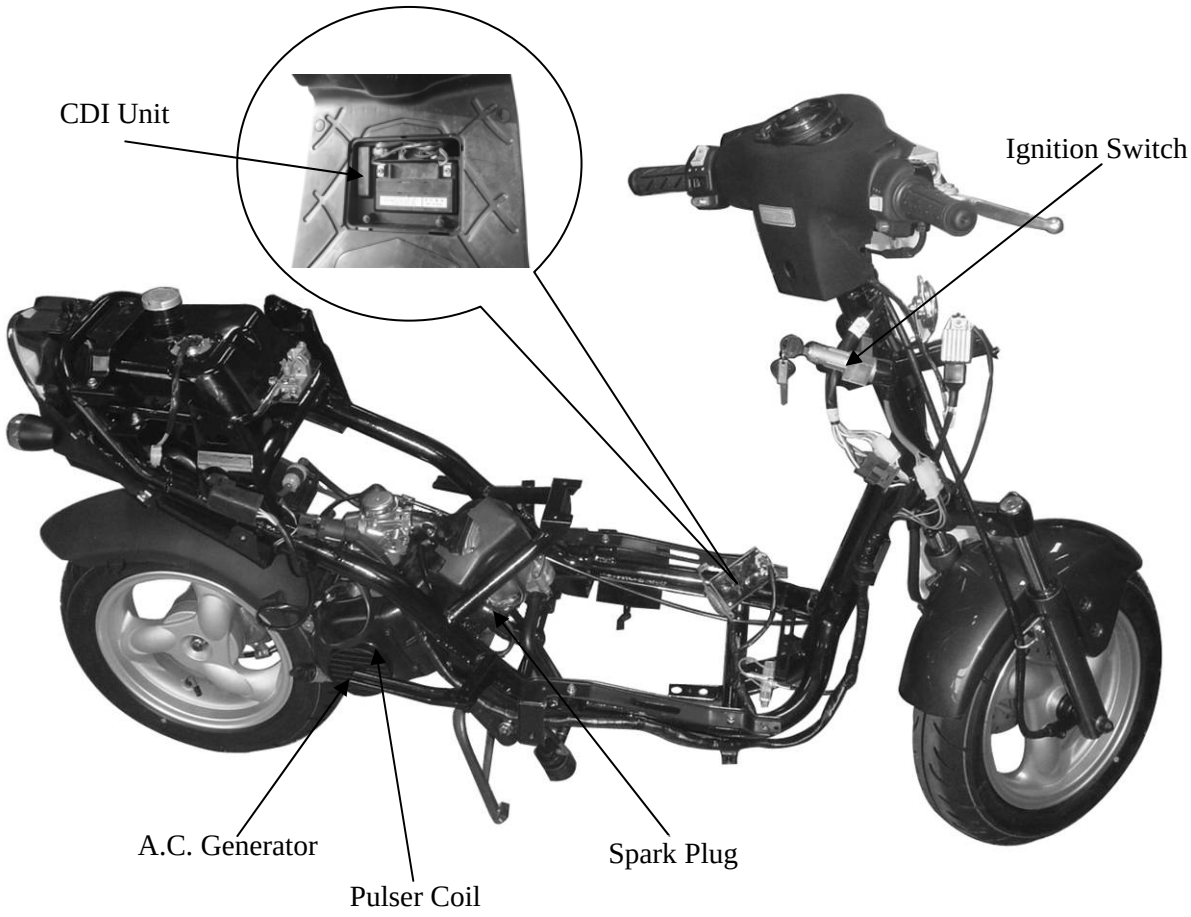
Special
Universal Holder
Install the cooling fan.
Torque: 0.8~1.2kgf-m

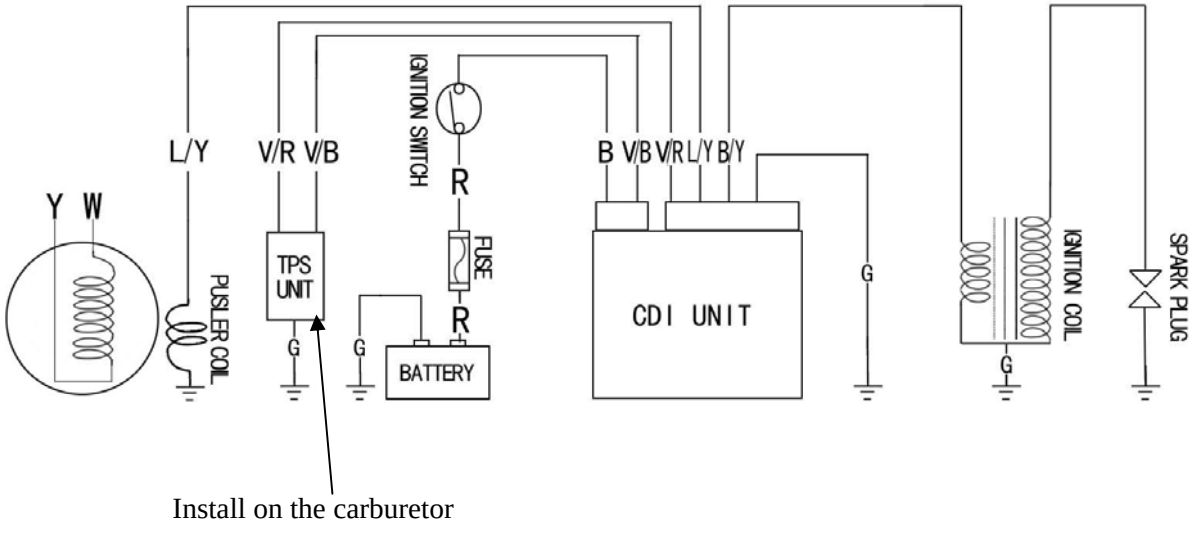


Cooling Fan

Install the fan cover.
Install the right side cover. (⇨2-4)

15. IGNITION SYSTEM





15. IGNITION SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Check the ignition system according to the sequence specified in the Troubleshooting. (⇨15-2)
- The ignition system adopts CDI unit and the ignition timing cannot be adjusted.
- If the timing is incorrect, inspect the CDI unit and A.C. generator and replace any faulty parts. Inspect the CDI unit with a CDI tester
- Loose connector and poor wire connection are the main causes of faulty ignition system. Check each connector before operation.
- Use of spark plug with improper heat range is the main cause of poor engine performance.
- The inspections in this section are focused on maximum voltage. The inspection of ignition coil resistance is also described in this section.
- Inspect the ignition switch according to the continuity table specified in page 17-3.
- Inspect the spark plug referring to Section 3.
- Remove the A.C. generator and pulser coil referring to Section 14.

SPECIFICATIONS

Item			Standard
Spark plug	Standard type		(NGK) C7HSA
	Hot type		(NGK) C6HSA
	Cold type		(NGK) C8HSA
Spark plug gap			0.6～0.7mm
Ignition timing	"F" mark Full advance		13° BTDC /1,700rpm±100RPM 28° BTDC /4,000rpm±100RPM
Ignition coil resistance (20℃)	Primary coil		0.1～1.0Ω
	Secondary coil	with plug cap	7～12KΩ
		without plug cap	3～5KΩ
Pulser coil resistance (20℃)			40～300Ω
Ignition coil primary side max. voltage			12V min.
Pulser coil max. voltage			2.1V min.

TESTING INSTRUMENT

Kowa Electric Tester
or commercially available electric tester with resistance over 10MΩ/CDV

TROUBLESHOOTING

High voltage too low
- Weak battery or low engine speed
- Loose ignition system connection
- Faulty ignition coil
- Faulty CDI unit
- Faulty pulser coil

Intermittent high voltage
- Faulty ignition switch
- Poorly connected CDI unit coupler
- Poorly connected or broken CDI ground wire
- Faulty pulser coil
- Loose high tension wire connection
- Faulty CDI unit

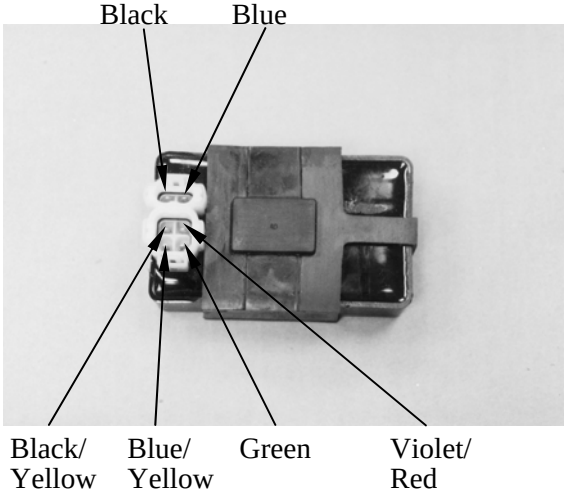
Normal high voltage but no spark at plug
- Faulty spark plug
- Faulty spark plug cap

No high voltage
- Faulty ignition switch
- Dead battery or faulty regulator/rectifier
- Faulty charging circuit
- Faulty ignition coil
- Faulty CDI unit

No or intermittent high voltage
- Faulty ignition coil
- Weak battery
- Faulty charging system

CDI UNIT INSPECTION

Remove the three battery cover screws.
Disconnect the CDI coupler and remove the CDI unit.



IGNITION COIL

REMOVAL

Remove the met-in box. (⇨2-3)
Remove the spark plug cap.
Disconnect the ignition coil wires and remove the ignition coil bolt and ignition coil.

Ignition Coil

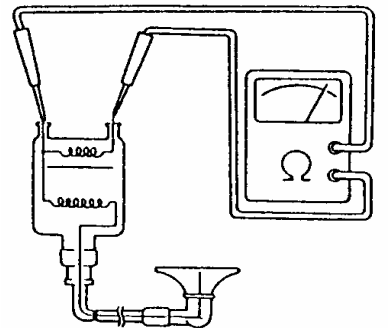
INSPECTION

CONTINUITY TEST

* The CDI unit is not adjustable. If the timing is incorrect, inspect the CDI unit, pulser coil and A.C. generator and replace any faulty parts.

Measure the resistance between the ignition coil primary coil terminals.

Resistance: 0.1～1.0Ω

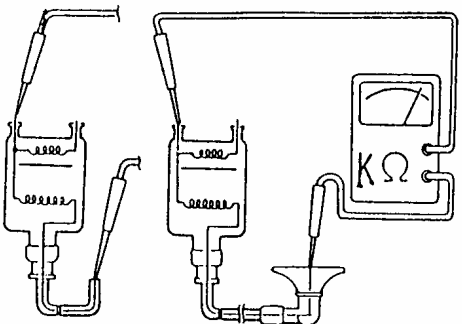


Measure the secondary coil resistances with and without the spark plug cap.

Resistances:

(with plug cap) : 7～12KΩ
(without plug cap) : 3～5KΩ

* Correctly operate the tester following the manufacturer‘s instructions.



PULSER COIL

INSPECTION

* This test is performed with the stator installed in the engine.

Remove the frame body cover. (⇨2-3)
Disconnect the A.C. generator connector.

Pulser Coil Coupler

Measure the pulser coil resistance between the blue/yellow and green wire terminals.
Resistance: 80～160Ω
Refer to page 14-6 for the A.C. generator removal.

IGNITION TIMING INSPECTION

* The CDI unit is not adjustable. If the ignition timing is incorrect, inspect the CDI unit, pulser coil and A.C. generator and replace any faulty parts.

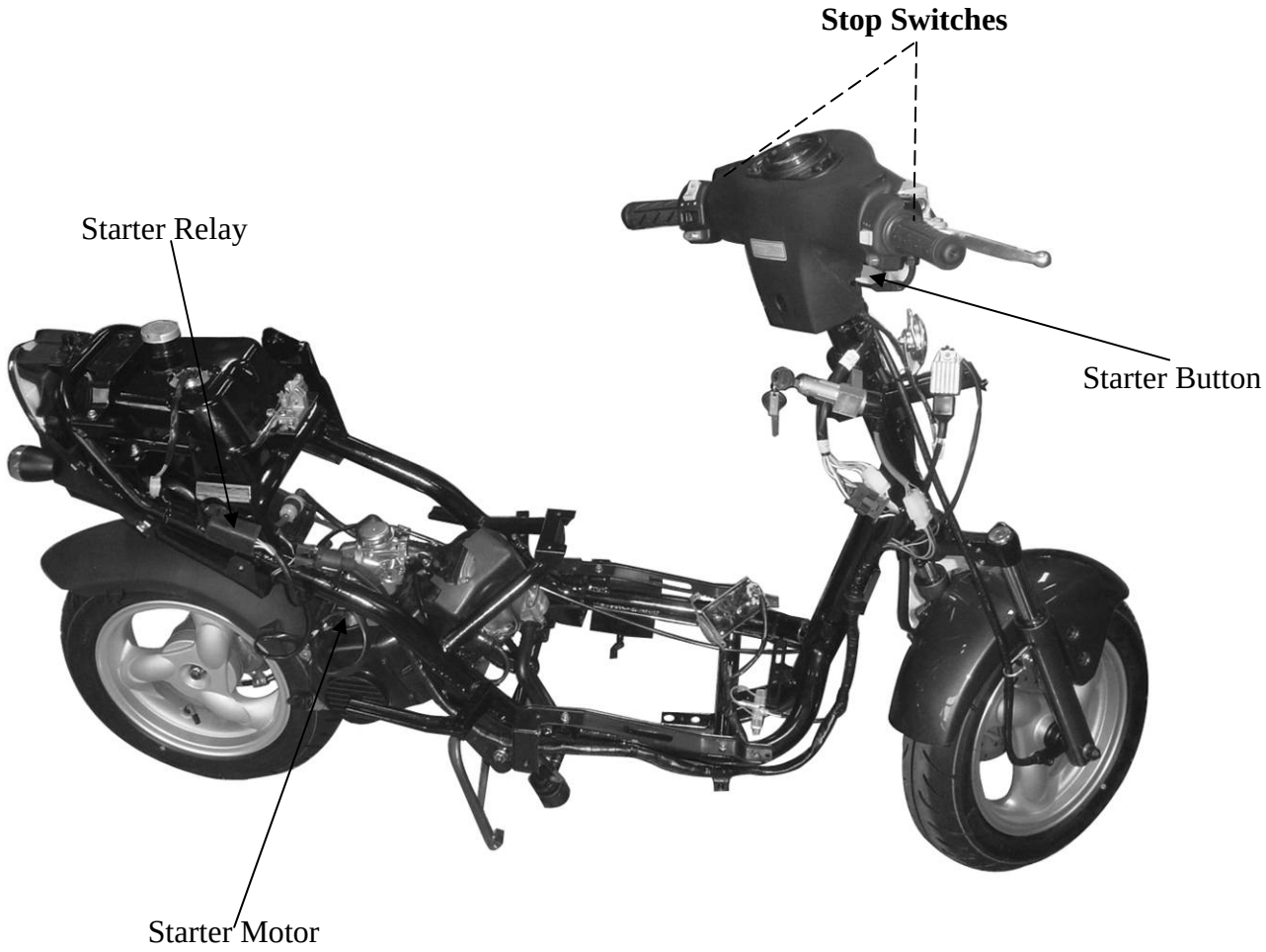
Remove the timing hole cap.

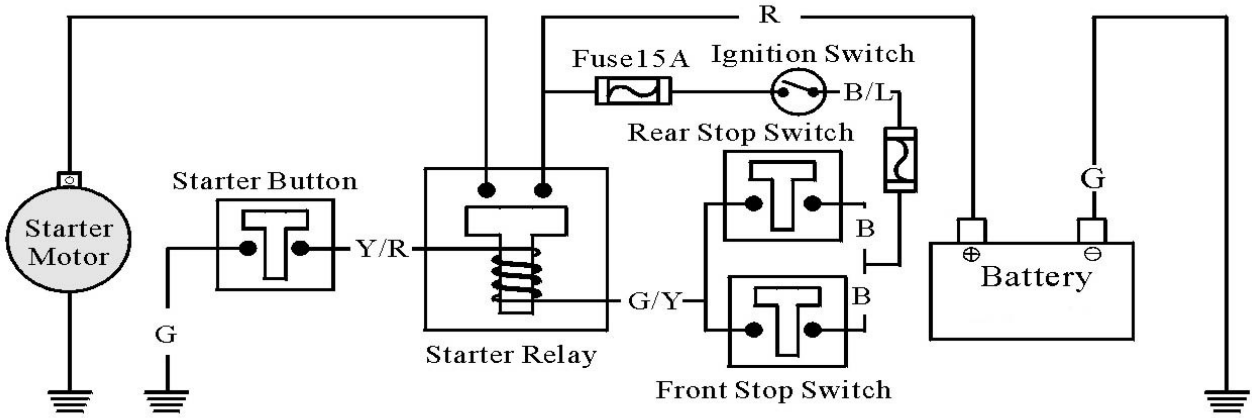
Timing Hole Cap

Warm up the engine and check the ignition timing with a timing light.
When the engine is running at the ignition timing is correct if the "F" mark aligns with the index mark within ±2°.
Ignition Timing: BTDC28°/4000rpm


"F" Mark

16. STARTING SYSTEM





16

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- The removal of starter motor can be accomplished with the engine installed.

SPECIFICATIONS

Item	Standard (mm)	Service Limit (mm)
Starter motor brush length	12.5	8.5

TORQUE VALUES

Starter clutch cover socket bolt 1.2kg-m
Starter clutch lock nut 9.5kg-m

SPECIAL TOOLS

Flywheel Holder

TROUBLESHOOTING

Starter motor won‘t turn

- Fuse burned out
- Weak battery
- Faulty ignition switch
- Faulty starter clutch
- Faulty front or rear stop switch
- Faulty starter relay
- Poorly connected, broken or shorted wire
- Faulty starter motor

Lack of power

- Weak battery
- Loose wire or connection
- Foreign matter stuck in starter motor or gear

Starter motor rotates but engine does not start

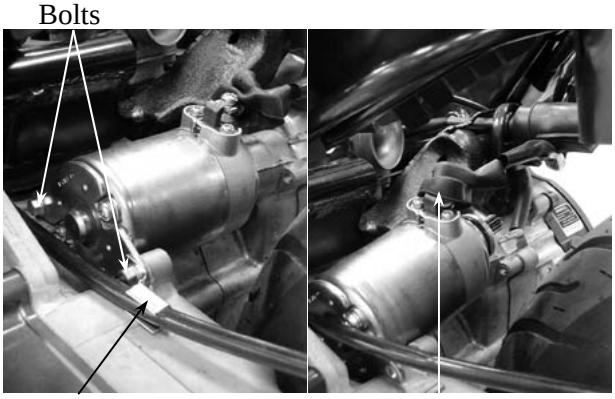
- Faulty starter clutch
- Starter motor rotates reversely
- Weak battery

STARTER MOTOR

REMOVAL

* Before removing the starter motor, turn the ignition switch OFF and remove the battery ground. Then, turn on the ignition switch and push the starter button to see if the starter motor operates properly.

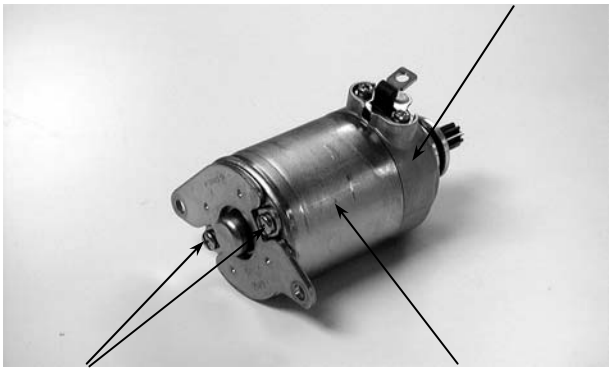
Remove the two starter motor mounting bolts and the motor.



Remove the waterproof rubber jacket and disconnect the starter motor cable connector.

DISASSEMBLY

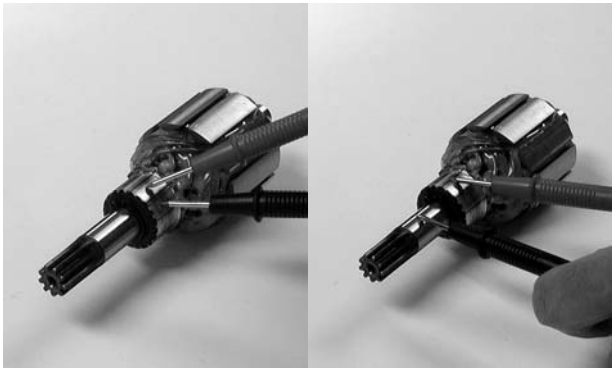
Remove the two starter motor case screws, front cover, motor case and other parts.



INSPECTION

Inspect the removed parts for wear, damage or discoloration and replace if necessary. Clean the commutator if there is metal powder between the segments.

Check for continuity between pairs of the commutator segments and there should be continuity.
Also, make a continuity check between individual commutator segments and the armature shaft. There should be no continuity.



STARTER MOTOR CASE CONTINUITY CHECK

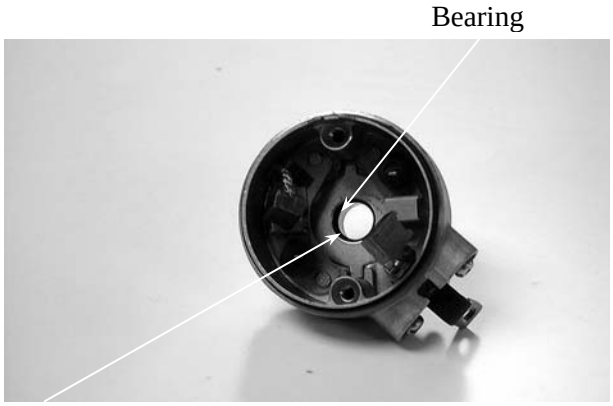
Check to confirm that there is no continuity between the starter motor wire terminal and the motor front cover.
Also check for the continuity between the wire terminal and each brush.
Replace if necessary.

Wire Terminal

Measure the length of the brushes.
Service Limit: 8.5mm replace if below

Check for continuity between the brushes. If there is continuity, replace with new ones.

Check if the needle bearing in the front cover turns freely and has no excessive play.
Replace if necessary.
Check the dust seal for wear or damage.



ASSEMBLY

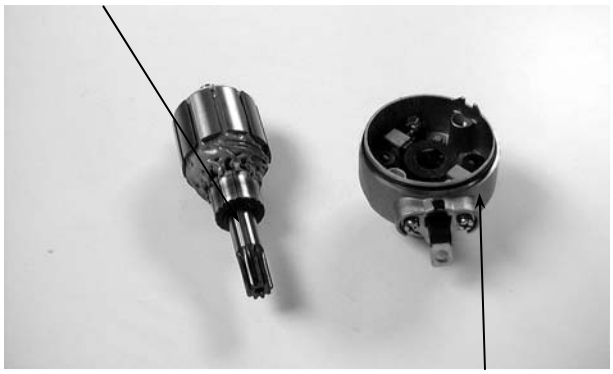
Apply grease to the dust seal in the front cover.
Install the brushes onto the brush holders.
Apply a thin coat of grease to the two ends of the armature shaft.
Insert the commutator into the front cover.

* • Be careful not to damage the brush and armature shaft mating surfaces.
  • When installing the commutator, the armature shaft should not damage the dust seal lip.

Install a new O-ring to the front cover.
Install the starter motor case, aligning the tab on the motor case with the groove on the front cover.
Tighten the starter motor case screws.

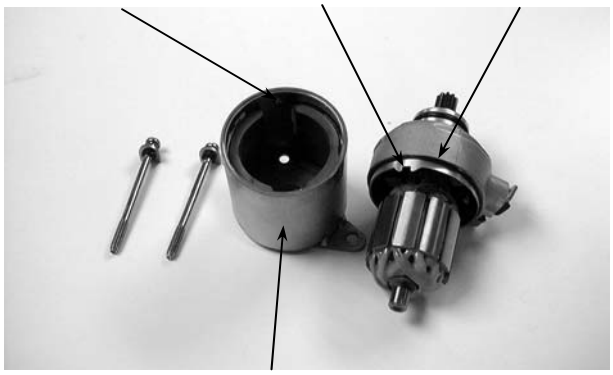
* When assembling the front cover and motor case, slightly press down the armature shaft to assemble them.

Commutator



Front Cover

Tab Groove O-ring



Motor Case

STARTER RELAY

INSPECTION

Remove the frame body cover.
Turn the ignition switch ON and the starter relay is normal if you hear a click when the starter button is depressed.
If there is no click sound:

- Inspect the starter relay voltage
- Inspect the starter relay ground circuit
- Inspect the starter relay operation

Starter Relay

Green/Yellow Wire

STARTER RELAY VOLTAGE INSPECTION

Place the motorcycle on its main stand.
Measure the voltage between the starter relay connector green/yellow wire (-) and engine ground.
Turn the ignition switch ON and the battery voltage should be normal when the brake lever is fully applied.
If the battery has no voltage, inspect the stop switch continuity and cable.

STARTER RELAY GROUND CIRCUIT INSPECTION

Disconnect the starter relay wire connector.
Check for continuity between the yellow/red wire terminal and ground.
There should be continuity when the starter button is depressed.
If there is no continuity, check the starter button for continuity and inspect the wire.

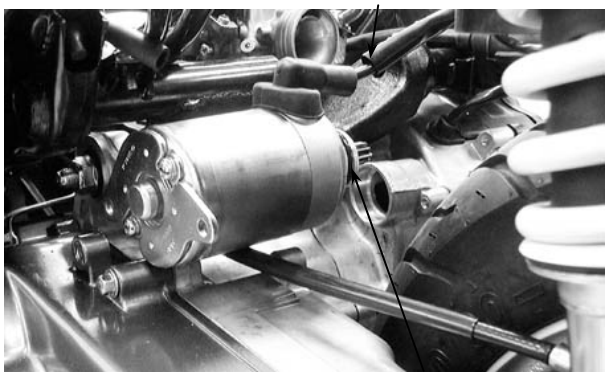
OPERATION TEST

Connect the electric tester to the starter relay larger terminals that connect to the battery positive cable and the starter motor cable.
Connect a fully charged battery across the starter relay yellow/red and green/yellow wire terminals.
Check for continuity between the starter relay large terminals. The relay is normal if there is continuity.

INSTALLATION

Connect the starter motor cable connector and properly install the waterproof rubber jacket.
Check the O-ring for wear or damage and replace if necessary.
Apply grease to the O-ring and install the starter motor.
Tighten the two mounting bolts.

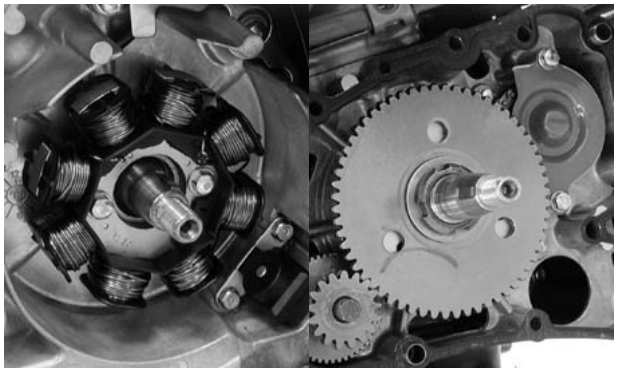
* The starter motor cable connector must be installed properly.



STARTER CLUTCH

REMOVAL

Remove the A.C. generator.
Remove the right crankcase cover.



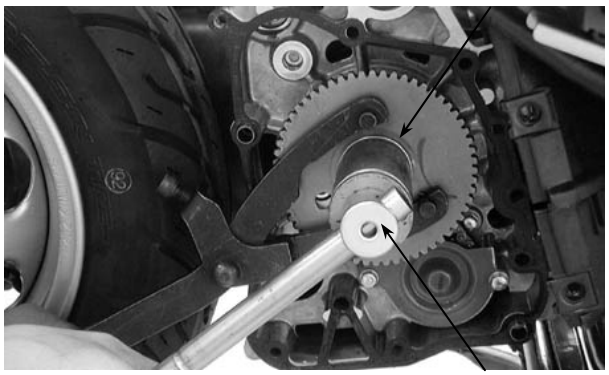
Remove the starter clutch lock nut.

Special

Flywheel Holder

* Note that the lock nut is left threaded.

Remove the starter clutch.
Remove the starter idle gear and shaft.



INSPECTION

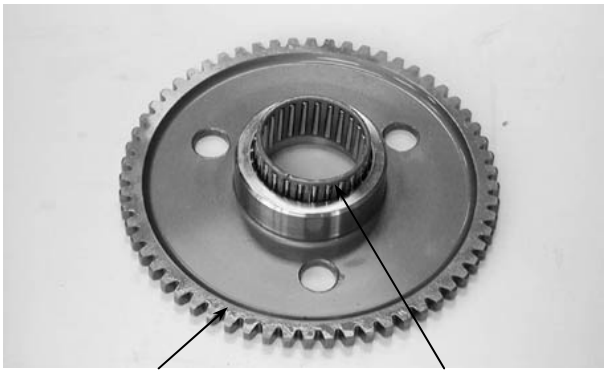
Inspect the operation of the starter drive gear when it is assembled on the clutch.
The starter drive gear should turn clockwise freely and should not turn counterclockwise.

STARTER CLUTCH DISASSEMBLY

Inspect the starter drive gear for wear or damage and replace if necessary.
Measure the starter drive gear I.D.

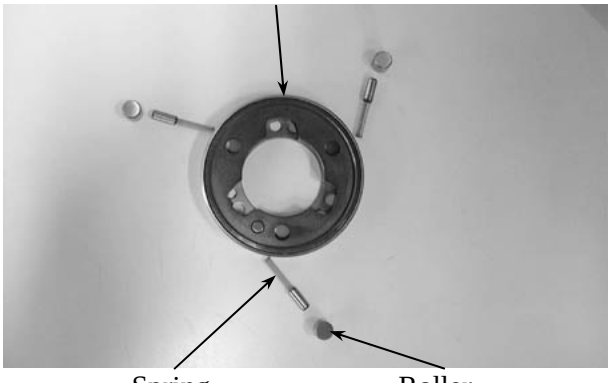
Service Limit: 32.06mm replace if over

Inspect the needle bearing for wear or damage and replace if necessary.

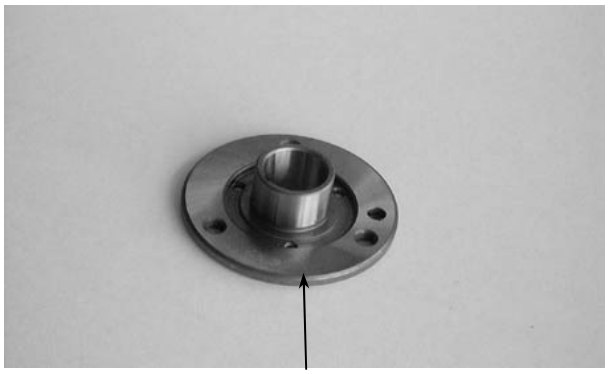


CLUTCH BODY DISASSEMBLY

Remove the rollers, plungers and springs from the clutch body.
Inspect the clutch body for wear or damage and replace if necessary.
Inspect each roller and plunger for wear or damage and check for weak spring.
Replace if necessary.

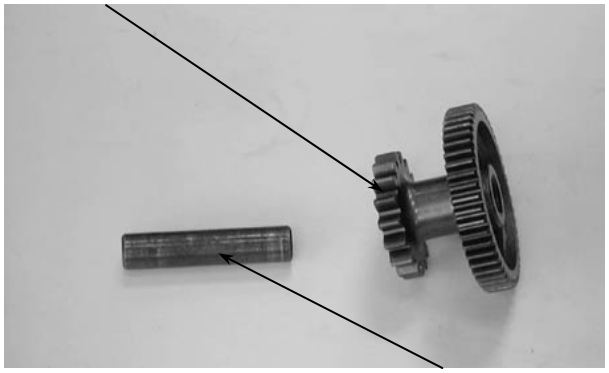


Measure the clutch cover O.D.
Service Limit: 27.94mm replace if over



Measure the starter idle gear I.D.
Service Limit: 10.05mm replace if over

Measure the starter idle gear shaft O.D.
Service Limit: 9.94mm replace if below

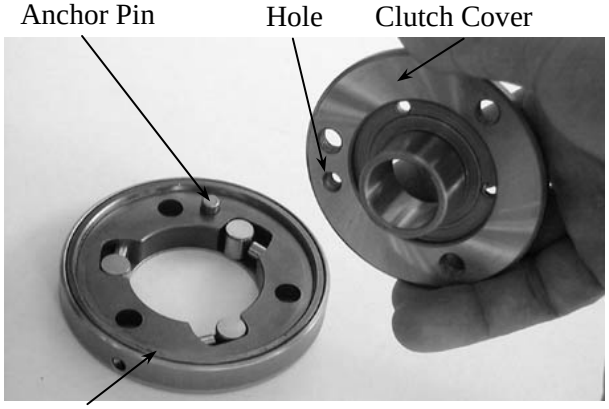


ASSEMBLY

Install the springs, plungers and rollers onto the clutch body.
Install the clutch cover by aligning the clutch cover anchor pin with the hole in the clutch body. Apply locking agent to the threads of the clutch cover bolts and tighten them.

Torque: 1.2kg-m

Apply engine oil to the needle bearing and starter drive gear and then install them to the clutch body.



INSTALLATION

Install the starter clutch onto the crankshaft.
Apply engine oil to the starter idle gear and shaft and then install them.
Hold the starter drive gear with the universal holder and tighten the starter clutch lock nut.

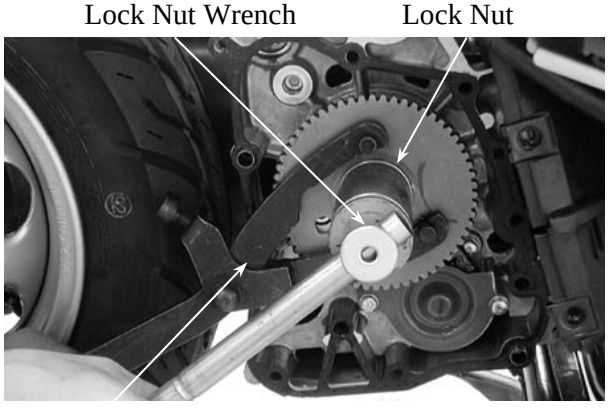
Torque: 9.5kg-m

Special

Flywheel Holder

* Note that the lock nut is left threaded.

Install the right crankcase cover.



SERVICE INFORMATION

GENERAL INSTRUCTIONS

- An electric tester is needed to measure or test the electric equipment.
- Be sure to use fuses and bulbs of the same specifications to avoid damage of electrical equipment.
- After installation of each switch, a continuity check must be performed. A continuity check can usually be made without removing the part from the motorcycle.

TROUBLESHOOTING

Lights do not come on when ignition switch is "ON"

- Burned bulb
- Faulty switch
- Broken wire
- Fuse burned out
- Weak battery
- Poorly connected or shorted wire
- Faulty winker

Light dims

- Faulty ignition coil
- Wire or switch resistance too high
- Faulty regulator/rectifier

Headlight does not change when dimmer switch is turn to Hi or Lo

- Faulty or burned bulb
- Faulty dimmer switch

Fuel gauge pointer does not register correctly

- Disconnected wire or connector
- Broken wire
- Faulty float
- Faulty fuel unit
- Faulty instrument

Fuel gauge pointer fluctuates or swings

- Loose wire connection
- Faulty fuel unit
- Faulty instrument

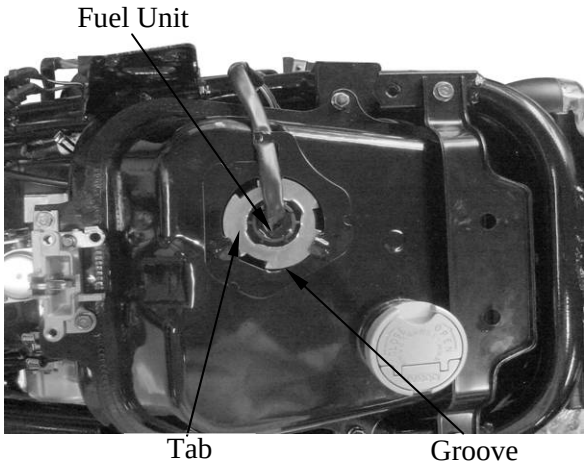
FUEL UNIT

* **No Smoking!**

REMOVAL

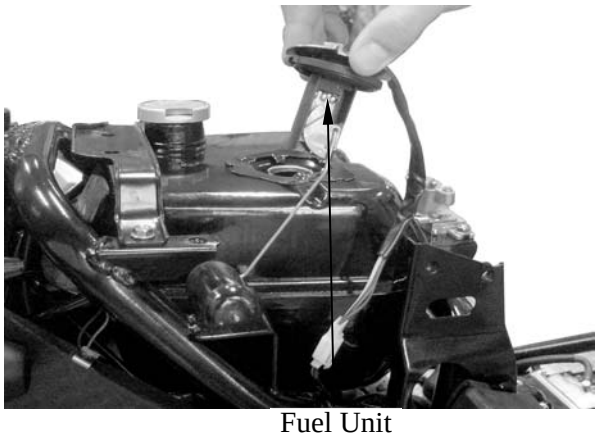
Remove the met-in box. (⇨2-3)
Remove the frame right side cover. (⇨2-4)
Disconnect the fuel unit wire connector.
Turn the fuel unit retainer counterclockwise to remove it.

* Do not damage the fuel unit wire.



Remove the fuel unit.

* Be careful not to bend or damage the fuel unit float arm.



INSTALLATION

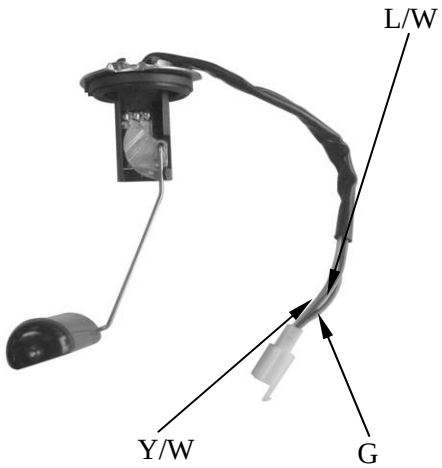
The installation sequence is the reverse of removal.

* • Align the groove on the fuel unit with the tab on the fuel tank.
  • Align the arrow on the retainer with the arrow on the fuel tank.
  • Turn the retainer clockwise to secure it.

INSPECTION

Remove the fuel unit.
Measure the resistance between the fuel unit wire terminals with the float at upper and lower positions.

Wire Terminals	Upper	Lower
G～Y/W	30Ω	686Ω
G～L/W	566Ω	153Ω
Y/W～L/W	599Ω	599Ω



FUEL GAUGE INSPECTION

Connect the fuel unit wire connector and turn the ignition switch “ON”.

* Before performing the following test, operate the turn signals to determine that the battery circuit is normal.

Check the fuel gauge needle for correct indication by moving the fuel unit float up and down.

Float Position	Needle Position
Upper	“F” (Full)
Lower	“E” (Empty)

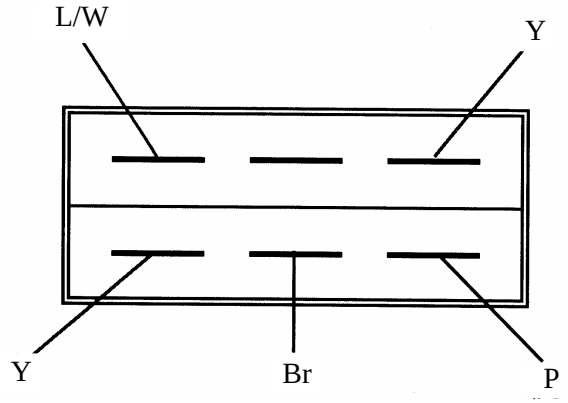
HANDLEBAR SWITCHES

INSPECTION

Remove the handlebar front cover. (⇨2-2)
Disconnect the handlebar switch couplers and check for continuity between wire terminals. If there is any abnormality found, check each switch.

HEADLIGHT SWITCH

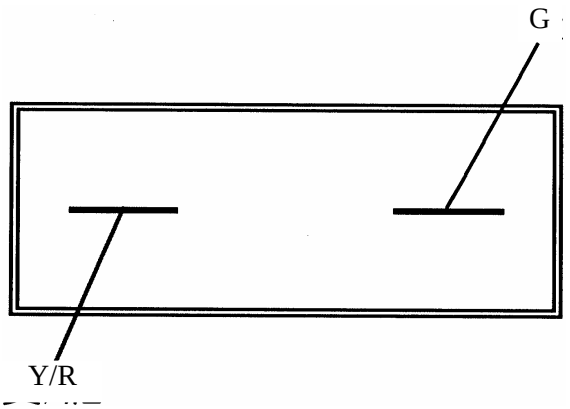
Color	Yellow	Brown	Pink	Yellow	Blue/ White
•	○		○	○	
≡D≡	○	○			
☼	○	○		○	○



✱ Use the X1Ω range for test when using an electric tester.

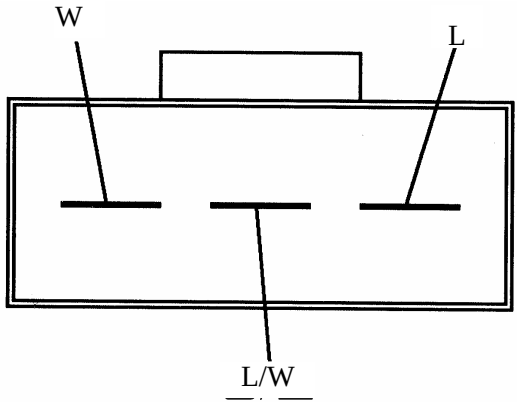
STARTER SWITCH

Color	Yellow/Red	Green
FREE		
PUSH	○	○



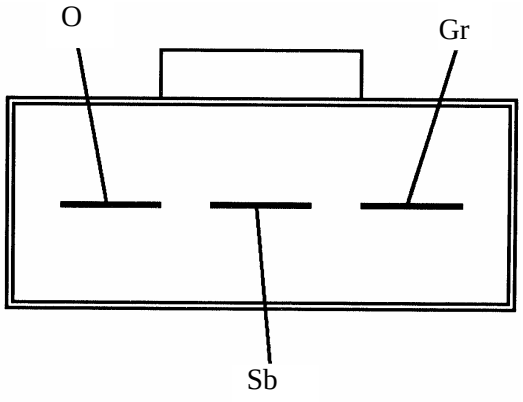
DIMMER SWITCH

Color	White	Blue/White	Blue
≡D	○	○	
≢D		○	○



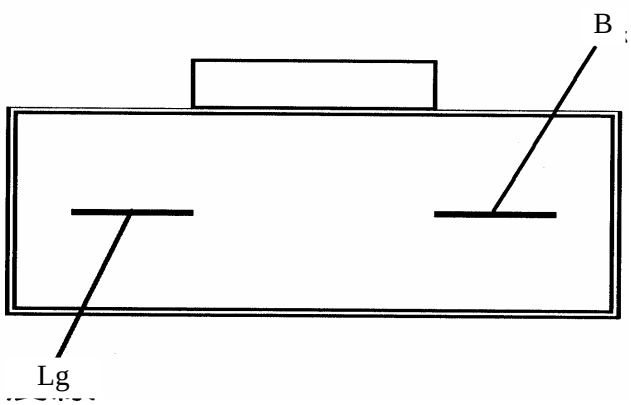
TURN SIGNAL SWITCH

Color	Gray	Light Blue	Orange
R	○	○	
N			
L	○		○



HORN SWITCH

Color	Light Green	Black
FREE		
PUSH	○———	———○



SWITCH REPLACEMENT

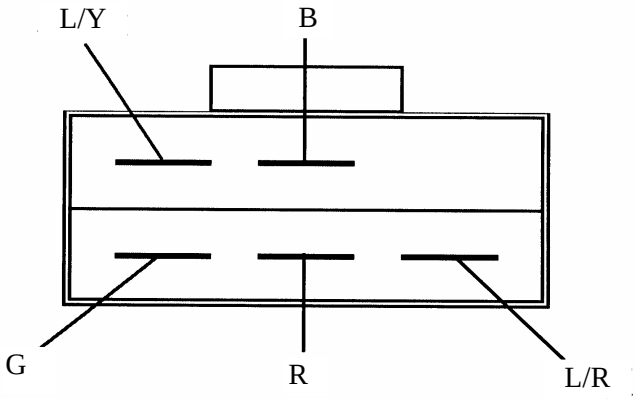
Remove the front covers. (⇨2-2)
Remove the handlebar front cover. (⇨2-2)
The installation sequence is the reverse of removal.

IGNITION SWITCH

INSPECTION

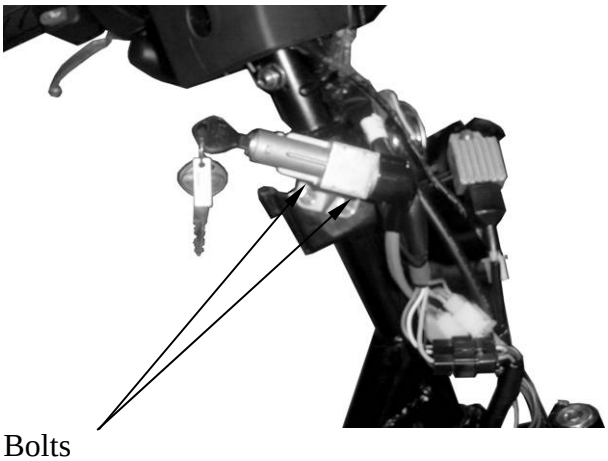
Remove the front covers. (⇨2-2)
Disconnect the ignition switch wire coupler.
Check for continuity between the wire terminals.

Color	Black	Red	Blue/ Yellow	Green
OFF			○———	———○
ON	○———	———○		
LOCK			○———	———○



IGNITION SWITCH REPLACEMENT

Remove the front covers. (⇨2-2)
Disconnect the ignition switch wire coupler.
Remove the two mounting bolts to remove the ignition switch decorative ring and holder.
Remove the two screws to remove the ignition switch from the ignition switch holder for replacement.
The installation sequence is the reverse of removal.



STOP SWITCH

INSPECTION

Remove the handlebar front cover. (⇨2-2)
Disconnect the front stop switch wire coupler.
Check for continuity between the wire terminals when the front brake lever is applied. The switch is normal if there is continuity.
Disconnect the rear stop switch wire coupler.
Check for continuity between the wire terminals when the rear brake lever is applied.
The switch is normal if there is continuity.


Coupler

HORN

INSPECTION

Remove the front covers. (⇨2-2)
Disconnect the horn wire coupler.
The horn is normal if it sounds when a 12V battery is connected across the horn wire terminals.

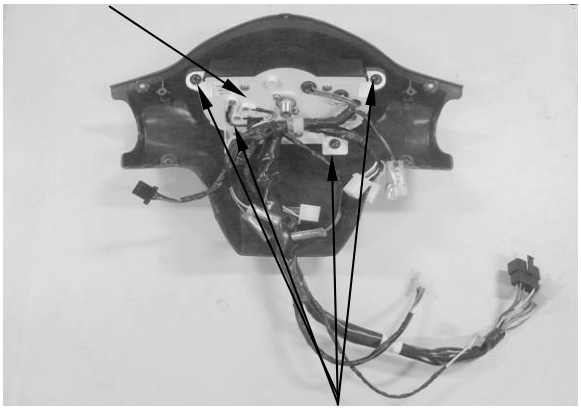
REPLACEMENT

Disconnect the horn wire coupler.
Remover the two bolts attaching the horn.
Remove the horn.
The installation sequence is the reverse of removal.

INSTRUMENTS

Remove the handlebar front cover. (⇨2-2)
Remove the handlebar rear cover. (⇨2-2)
Disconnect the handlebar switch couplers.
Remove the three screws to remove the instruments.
Install a new horn in the reverse order of removal.

Instruments


Screws

HEADLIGHT

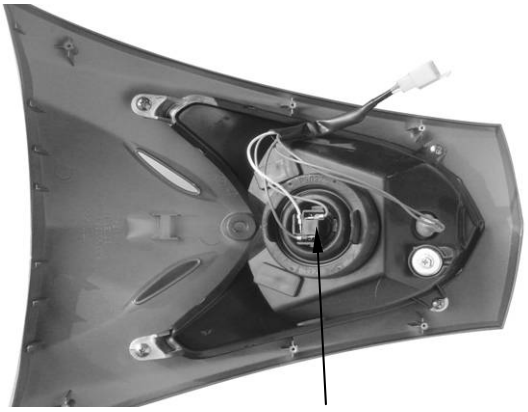
REMOVAL

Remove the screw on the front of the front cover.
Remove the six screws on the back of the front cover.
Remove the front cover.
The installation sequence is the reverse of removal.

*
- Align the tab on the headlight with the groove on the handlebar cover.
- After installation, adjust the headlight beam. (⇨3-9)

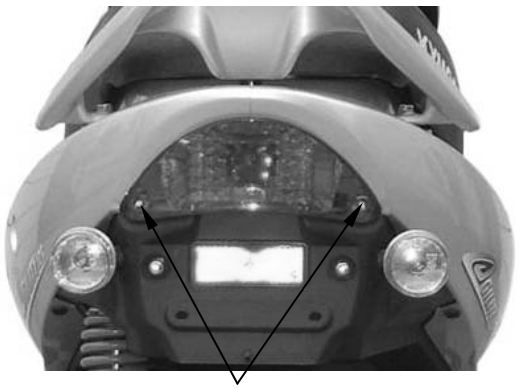
BULB REPLACEMENT

Remove the headlight bulb Coupler. (⇨2-2)
Remove the headlight replace with new bulbs.
The installation sequence is the reverse of removal.

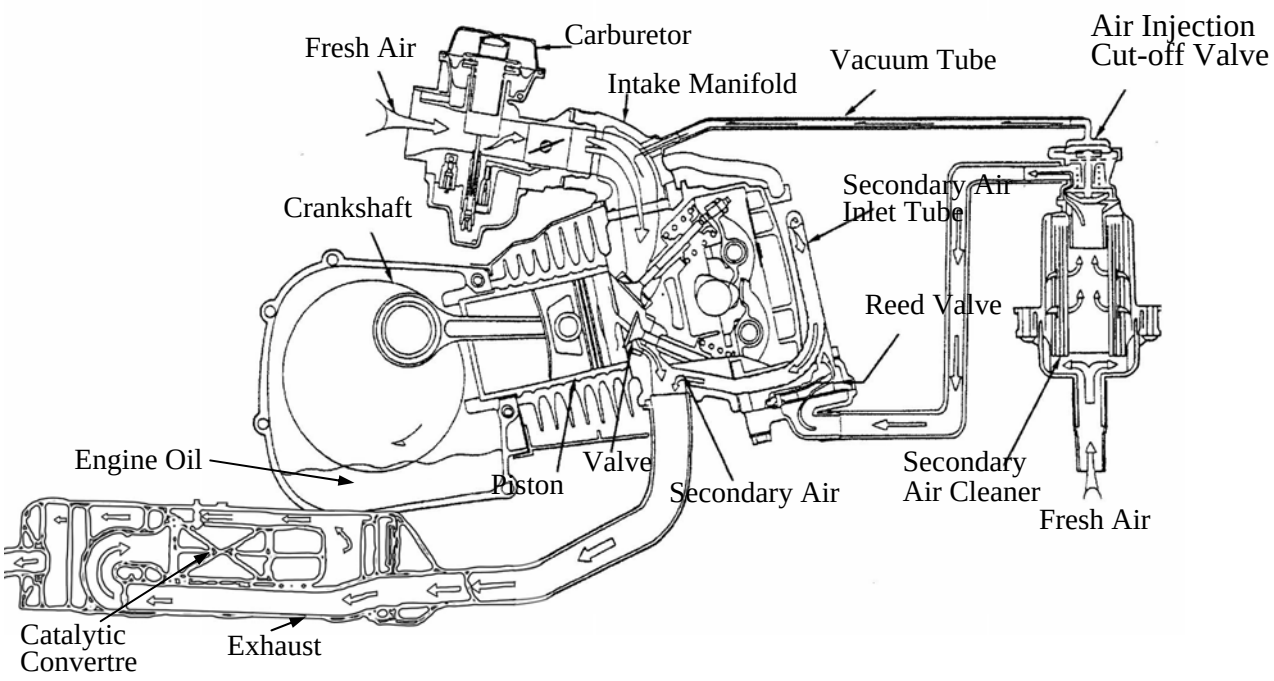


TAILLIGHT/STOPLIGHT/REAR TURN SIGNAL LIGHT/LICENSE LIGHT

Remove the two screws attaching the rear protector molding.
Remove the rear protector molding and remove the two nuts attaching the rear light shell.
Remove the rear turn signal light bulb and replace with a new one.
The installation sequence is the reverse of removal.



EXHAUST EMISSION CONTROL SYSTEM DIAGRAM



EXHAUST EMISSION CONTROL SYSTEM

The exhaust emission control system adopted in this model utilizes the reed valve to draw secondary air into the exhaust system for re-combustion by means of exhaust pulsation so as to minimize the exhaust emission.

FUNCTION

Item	Purpose	Function
Secondary Air Cleaner	Filter secondary air.	It filters the fresh air drawn for re-burning to prevent dirt or dust from affecting the operation of the air injection cut-off valve.
Air Injection Cut-off Valve	Prevent exhaust muffler noise and backfiring at sudden deceleration.	The air injection cut-off valve usually opens to lead air into the exhaust muffler in which air is re-burned to reduce CO. When the throttle valve closes suddenly, the air injection cut-off valve is actuated by vacuum to close and cut off secondary air in order to prevent exhaust muffler backfiring due to air in the exhaust system.
Reed Valve	Control the secondary air inlet to reduce CO.	When the motorcycle speed is less than 50km per hour, the reed valve operates to draw secondary air into the exhaust system for re-combustion.

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- During operation, be careful to avoid scalding caused by the exhaust muffler.
- Note the locations of tubes for proper installation.
- Replace any damaged tube with a new one.
- Make sure to tighten the connector of each tube securely

TOOLS

- Vacuum pump—

SPECIFICATIONS

Air injection cut-off valve actuating pressure—
250mm/Hg—30 liter/min.

Reed valve stopper clearance—6.6mm

TROUBLESHOOTING

High CO at idle speed

- Damaged or clogged reed valve
- Damaged or clogged air injection cut-off valve
- Clogged air cleaner

Exhaust muffler noise

- Faulty air injection cut-off valve
- Broken vacuum tube
- Faulty reed valve

Backfiring at sudden deceleration

- Damaged reed valve (malfunction)
- Faulty air injection cut-off valve (unable to close)
- Carburetor incorrectly adjusted
- Faulty air cut-off valve
- Leaking vacuum tube

MAINTENANCE SCHEDULE:

(1) PERIODIC MAINTENANCE

Item \ Service Mileage		300	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
Lubrication System	Engine oil	R		R	R	R	R	R	R	R	R	R	R	R	R	R	R
	Oil filter screen	C		C			C					C					C
	Gear oil	R					R					R					R
	Motor oil filter						I					I					I
Fuel System	Fuel filter			I			I					I					I
	Fuel filter screen	C					C					C					C
	Carburetor			A			A					A					A
	Fuel line						I					I					I
Air Supply System	Air cleaner			R		R		R		R		R		R		R	
	Charcoal canister			I			I					I					I
	Secondary air cleaner			I			R					R					R
	Secondary air inlet line											I					
	Intake manifold screw											I					
	Purge control valve			I			I					I					I
	Air lines						I					I					I
	Catalytic converter			I			I					I					I
Drive System	Cam chain			I			I					I					I
	Drive chain			I			I					I					I
	Drive belt			I			I					I					I
	Valve clearance			I			I					I					I
Ignition System	Spark Plug 4-stroke			I								R					
	C.D.I.						I					I					I
	Ignition system wires						I					I					I
Others	Bolts and nuts		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	Brake system		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Remarks		I: Inspect, A: Adjust, C: Clean, R: Replace, T: Tighten •During riding or inspection, if any part is found to be cleaned, adjusted or replaced, do it directly and take a record if the exhaust emission control system is not seriously affected. It must be reported and approved if the exhaust emission control system is seriously affected.															

(2) IRREGULAR MAINTENANCE:

Item	Contents
Ignition system	Inspect and repair when obvious symptoms of ignition failure, engine overheating and stalling are found frequently.
Carbon deposit removal	Remove carbon deposits from the exhaust system, cylinder head and piston head when the engine horsepower decreases greatly during the service mileage of 10000～15000 km.
Transmission system	Perform CVT system maintenance and inspection when the engine performance decreases obviously.
Piston	Severe use in the first 1000 km may cause worn or seized cylinder, piston and piston rings. Clean or replace with new ones if necessary.

SECONDARY AIR CLEANER

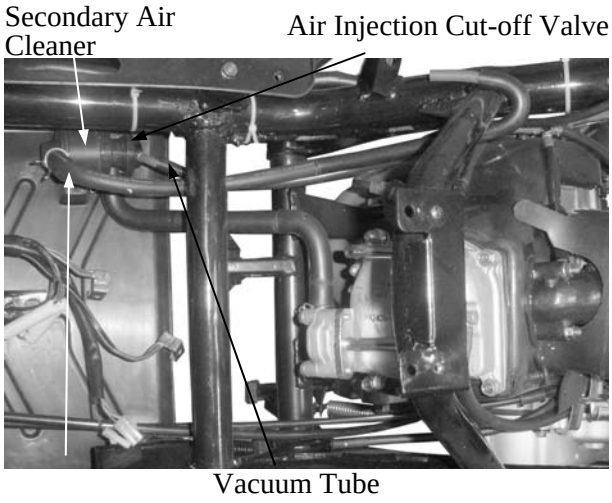
REMOVAL

Remove the met-in box. (⇨2-3)
Remove the center cover. (⇨2-3)
Remove the frame body covers. (⇨2-4)
Remove the floor board. (⇨2-4)

Disconnect the secondary air cleaner connecting tube.
Remove the air cleaner attaching the air cleaner.

INSTALLATION

The installation sequence is the reverse of removal.



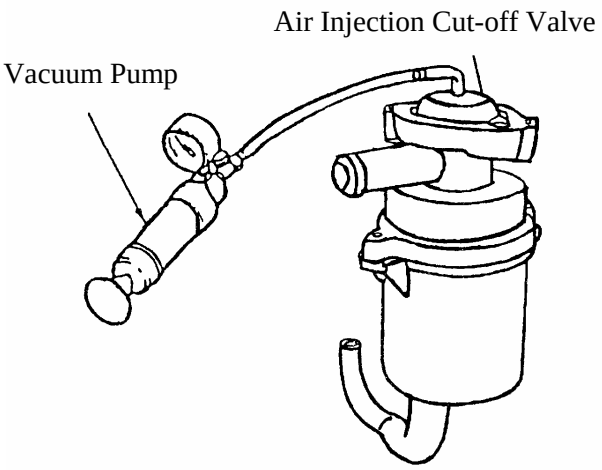
DISASSEMBLY

Remove the two secondary air cleaner replace with new secondary air cleaner.

* • The secondary air cleaner must be assembled and installed properly to avoid dust entering the air cleaner.

AIR INJECTION CUT-OFF VALVE INSPECTION

Inspect the air injection cut-off valve flow using a vacuum pump. If the flow is not within the specified values, replace with a new one.
The flow should be at least 30 liter/min when a vacuum of 250mm/Hg is applied. The flow should be at least 1.6 liter/min when a vacuum of 320mm/Hg is applied. Check each connecting tube for cracks or damage and replace if necessary.



INSTALLATION

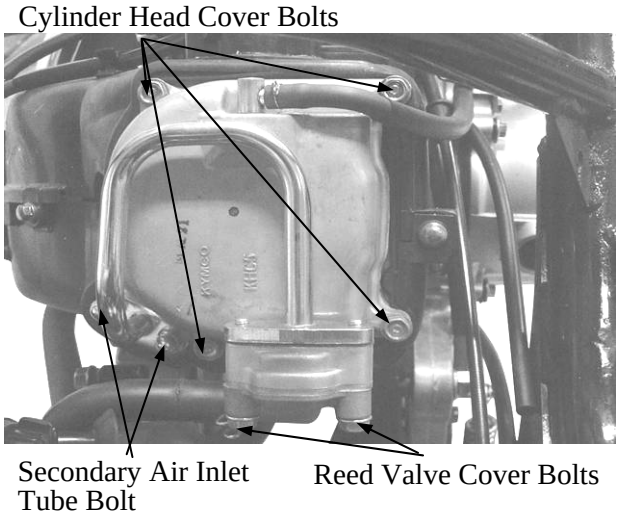
The installation sequence is the reverse of removal.

*
- When installing, be careful not to bend or twist the tubes and check for proper installation.
- The tube length is very important to its performance, use the tube of same specification for replacement.

REED VALVE

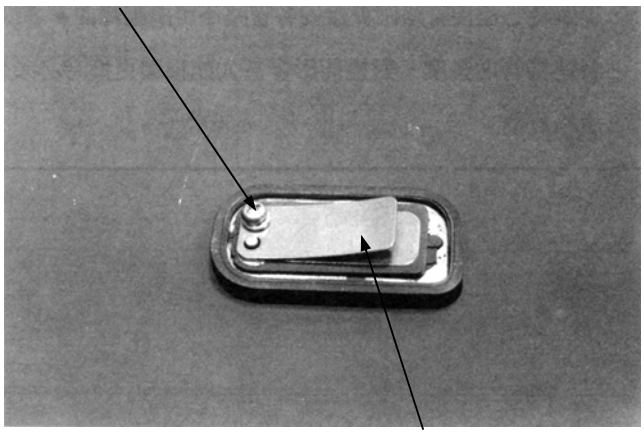
REMOVAL

Remove the met-in box and frame center cover.
Disconnect the secondary air inlet tube connector.
Remove the four cylinder head cover bolts and two secondary air outlet tube bolts.



INSPECTION

Remove the three screws attaching the reed valve cover and the reed valve.
Check the reed valve for damaged or weak reeds.
Check the reed valve seat for cracks, damage or clearance between the seat and reed.
Check the gasket and O-ring for damage or deterioration and replace if necessary.
Reed valve stopper clearance: 6.6mm



INSTALLATION

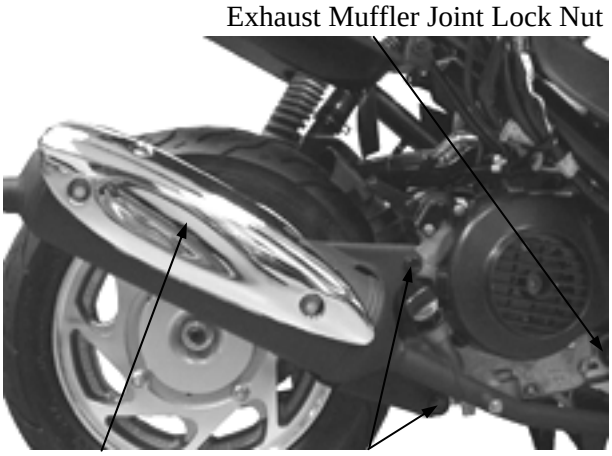
Install the reed valve in the reverse order of removal.

*
- When installing, be careful not to bend or twist the tubes and check for proper installation.

EXHAUST MUFFLER

REMOVAL

Remove the two exhaust muffler joint lock nuts and two exhaust muffler lock bolts. Remove the exhaust muffler.



*
- The temperature of exhaust muffler is very high. Be careful to avoid burns during working.

INSPECTION

1. Inspect the exhaust muffler and joint for damage or crack. Replace if necessary.
2. Inspect the exhaust muffler joint packing collar for deformation or damage. Replace if necessary.

INSTALLATION

1. Install the exhaust muffler in the reverse order of removal.

*
- A large amount of unburned mixture flowing into the high-heat catalytic converter will burn again and cause damage to the converter due to overheat. Pay attention to the following.
- Use 92# or 95# nonleaded gasoline only. (Leaded gasoline will cause catalytic converter failure.)
- During riding, do not turn the ignition switch OFF to avoid a large amount of unburned mixture flowing into the exhaust muffler.
- Faulty ignition system or fuel system will cause overheat and damage to the catalytic

EXHAUST EMISSION RELATED SYSTEM INSPECTION

Clean or replace the air cleaner. (⇨3-4)
Clean and adjust the carburetor. (⇨3-5)
Inspect the auto bystarter system. (⇨5-4)
Clean and inspect the spark plug. (⇨3-4)
Inspect the ignition system. (⇨3-6)

EXHAUST EMISSION TEST AND ADJUSTMENT

1. Start the engine and warm up for several minutes. (Engine surface temperature 50℃ ～60℃)
2. Adjust the idle speed to 1900rpm.
3. Connect the emission tester sampling pipe to the exhaust muffler.
   Standard:
   CO: 2.5±0.5%
   HC: 700PPM max.
4. If CO or HC exceeds the specified values, adjust the carburetor pilot screw (P.S.) until CO and HC are within the specified standard values.
   P.S. Opening: 2±½ turns
5. If the adjustment of carburetor makes no difference, inspect exhaust emission related system. (⇨18-9)