

System Test

Test on the filler cap

Hermetically seal the filler cap, apply water and pressure to the filler cap. Replace it with new one if found failing to maintain the specified pressure within a given time limit, or the opening pressure is too high or too low. The specified pressure shall be maintained at least for 6 seconds in the test

Relief pressure for the filler cap: 0.9-0.15 kgf/cm²

Apply pressure to the radiator, engine and water hose to check for any leakage

Caution

Pressure which is too high may damage the radiator. Never use pressure which exceeds 1.05 kg/cm².

If the system fails to maintain the specified pressure for at least 6 seconds, repair or replace parts.

Change of coolant

Warning

Never attempt to carry out service work on the cooling system unless the engine is completely cooled down, otherwise, you may get scalded. Remove the front center cover, and then remove filler cap.

Place a water pan under the water pump; loosen the drain bolt to drain out the coolant. Reinstall the drain bolt.

Refilling system with coolant and bleeding the air bubbles.

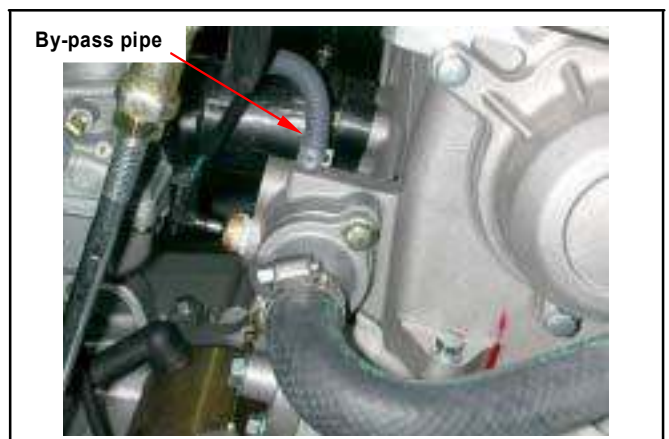
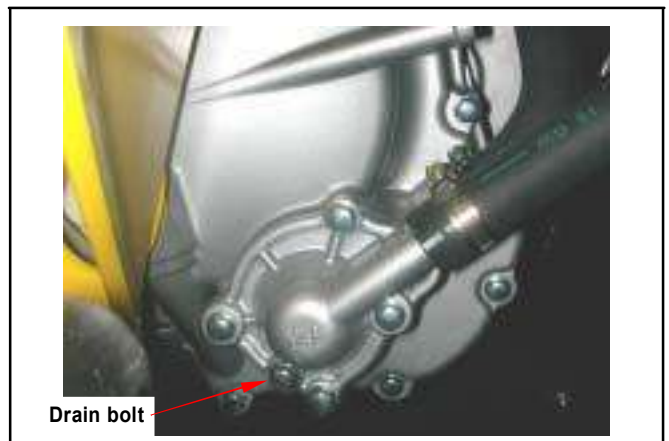
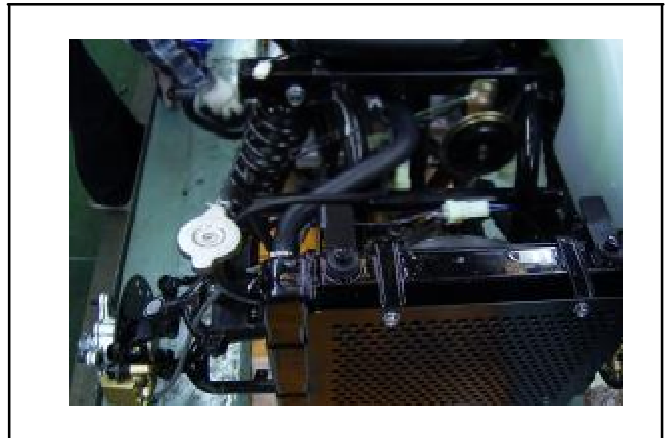
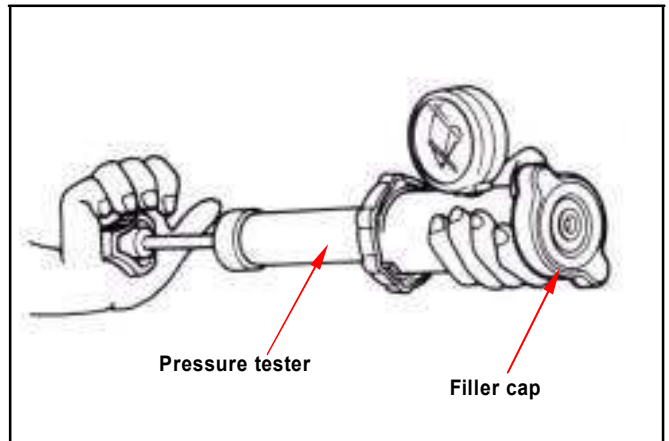
- Run the engine, and remove by-pass pipe.
- Check by-pass hole whether has the air bubble to emit.
- If emits without the air bubble, only has the coolant to flow out, then backflow pipe joint on, engine flameout.
- Remove radiator filler cap.
- Starts the engine, inspects does not have the air bubble in the radiator coolant, also the coolant liquid level is stable.
- Stop the engine. Add coolant to proper level if necessary.
- Screw and tighten up the radiator filler cap.

Caution

In order to avoid the water tank rusting, please do not use the unclear trade mark refrigerant.

Coolant recommended: TGB Bramax radiator agent.

Concentration: 50%



12. COOLING SYSTEM

Check reserve tank

- Remove the front center cover, and then remove reserve tank filler cap.
- Check the liquid level in the front fender right side. Add coolant to proper level if too low.
- Reinstall the reserve tank filler cap.

Caution

The reserve tank liquid level too low is not high, after avoids the water temperature elevating, in the cooling system the refrigerant backflow floods.



Radiator

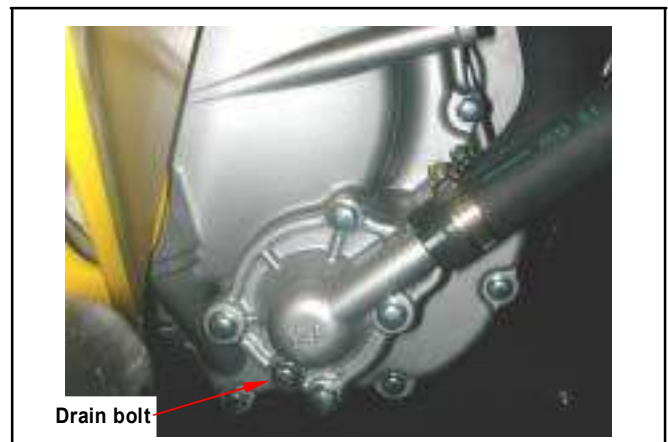
Check

Remove the front center cover, side covers and front fender. (refer chapter 13), check for any leakage from weld seam. Blow radiator clean using compressed air. If the radiator is blocked by dirt, use low pressure water jet to clean it. Care shall be taken when straightening the sink fan.

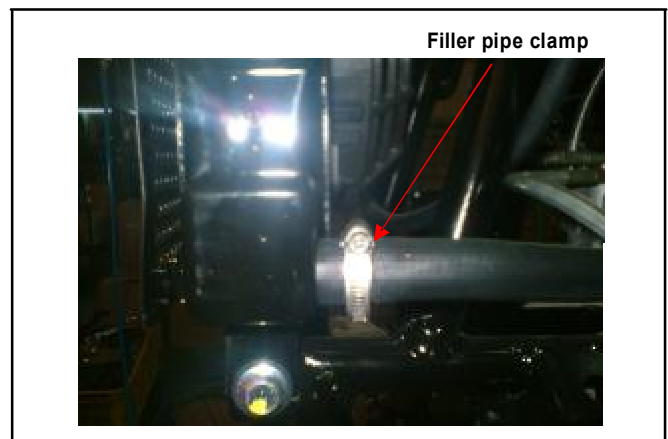


Removal

Place a water pan under the water pump; loosen the drain bolt to drain out the coolant.



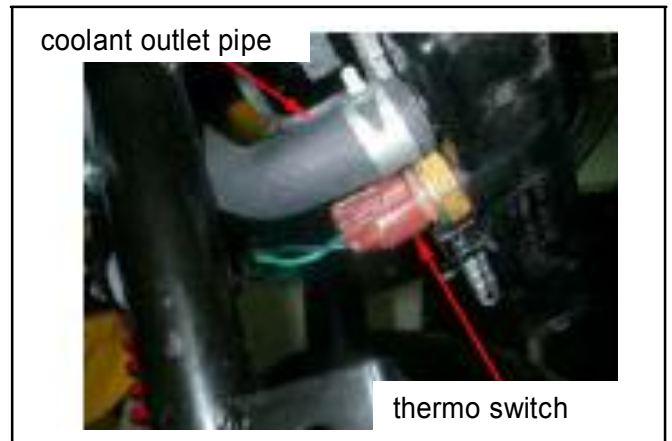
Remove coolant filler pipe.



Loosen the radiator 4 bolts. Remove coolant upper side pipes.



Remove coolant outlet pipe. Disconnect the couplers for the thermo switch and fan motor, and then remove radiator and cooling fan.



Disassembly

Loosen the 4 bolts from the fan duct, and then remove the fan duct.
Loosen 4 screws from the fan motor, and take off the fan motor.
Remove nut to remove the fan from fan motor.

Assembly

Install fan motor onto fan duct and insert the fan into the motor shaft.
Apply a coat of the adhesive to the shaft thread of the motor, and then install the washer and the lock nut.
Tighten the fan duct onto the radiator with 4 bolts.
Please refer to chapter 17 for the inspection of the thermo switch.

Caution

Liquid packing must be applied to the thermo switch before installing to avoid damaging the radiator.



Installation

Install the removed parts in the reverse order of removal.
Install radiator in the reverse order of removal.
Upon completion, check for any leakage.

12. COOLING SYSTEM

Water Pump

Check water pump seal / cooling system divulges inspection

- Disassembles the refrigerant drain bolt, overflows little buckles the N actually fluid, confirmed overflows the refrigerant whether has the greasy dirt.
- Turns on lathe the engine oil gauge rule, the inspection engine oil whether does have bleaches situation of the emulsified.

If has the above two kind of interior to divulge the phenomenon, possibly for the water pump inner two seal damages, the engine cooling system damages or the cylinder and the cylinder head gasket damages, please first dismantles the right crank case to say A confirms the replacement water pump seal, if does not have the question to take apart for overhaul cooling system of system again the cylinder head, the cylinder.

Removal of water pump

Loosen the drain bolt to drain out the coolant.
Remove the water hose.
Loosen 4 bolts and remove the pump cover.
Loosen 9 bolts and remove the right cover.
Take off the gasket and dowel pins.

Turn pump impeller clockwise and remove.

Caution

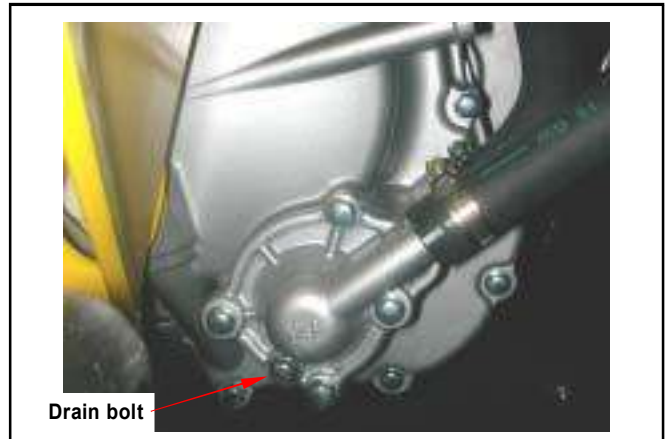
The impeller is provided with left turn thread.

Remove the cir clip from the right crankcase cover.
Remove the water pump shaft and the inner bearing.
Remove the outside bearing by inner bearing puller.

Rotate the inner ring of bearing, the bearing shall move smoothly and quietly.

If the bearing does not rotate smoothly or produces a noise, replace it with new one. **Special tool:**

Inner bearing puller



Check any wear and damage of the mechanical seal and inside seal.

⚠ Caution

The mechanical seal and inside seal must be replaced as a unit.



Replacement of Mechanical Seal

Remove the inside bearing by inner bearing puller.
Drive the mechanical seal and inner seal out of the right crankcase.

Special tools:
Inner bearing puller
Water pump bearing driver

⚠ Caution

Replace a new mechanical seal after removing it.

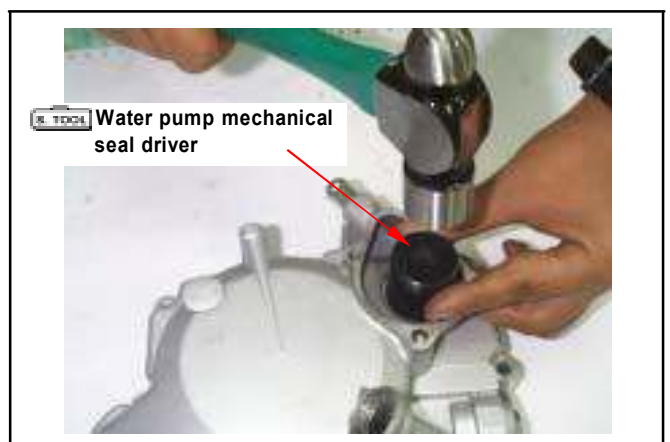


Apply a coat of sealant to the mating surfaces of the right crankcase before installing the new mechanical seal.



Install the mechanical seal onto the right crankcase.

Special tools:
Water pump mechanical seal driver



12. COOLING SYSTEM

Install the new inner seal onto the right crankcase.

Special tools:

Water pump oil seal driver (inner)



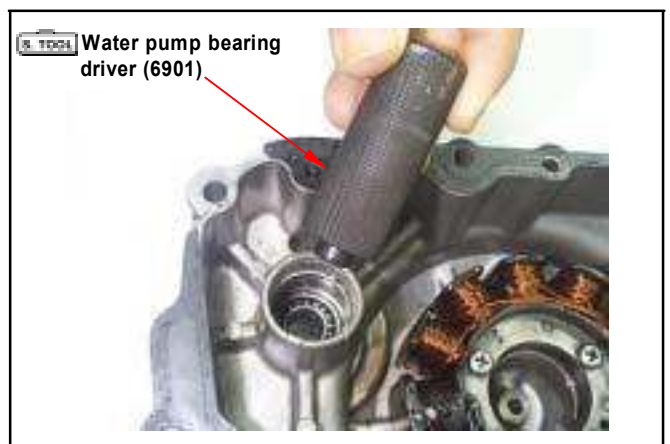
Install a new outside bearing to the right crankcase cover.

Special tools:

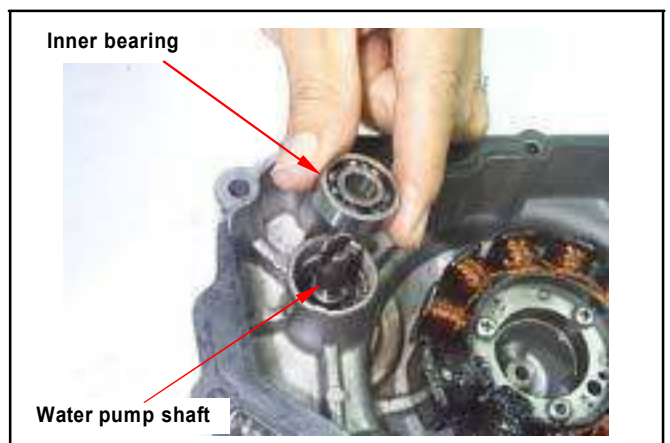
Water pump bearing driver (6901)

Caution

Do not reuse old bearing. It must be replaced with a new one once it has been removed.



Mount the water pump shaft and the inner bearing to the right crankcase cover.



Install the cir clip to hold the inner bearing.



Install the seal washer into the impeller.

⚠ Caution

Washer must be replaced together with the mechanical seal.

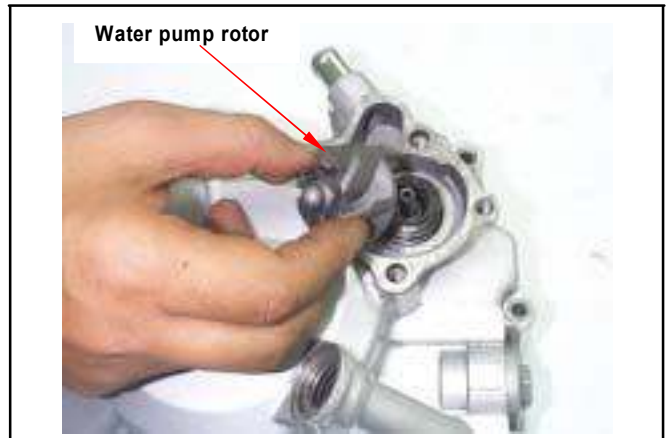


Install the impeller onto the water pump shaft and tighten.

Torque Value: 1.0~1.4kgf-m

⚠ Caution

The impeller is left thread.



Install the dowel pin and right cover gasket. The rotation water pump impeller, causes the water pump drive shaft scoop channel, aligns the oil pump drive shaft flange, install the right crank case. (9 bolts)



Install the dowel pin and new gasket. Install the water pump cover with 4 bolts.



12. COOLING SYSTEM

Thermostat

Please refer to chapter 17 for inspection of temperature sensor.

Removal

Drain out the coolant.
Remove the thermostat set. (2 bolts)

Inspection

Visually inspect thermostat for any damage.

Place the thermostat into heated water to check its operation.

Caution

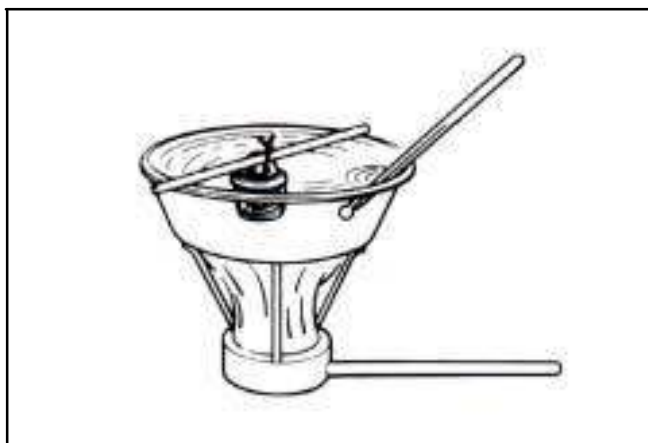
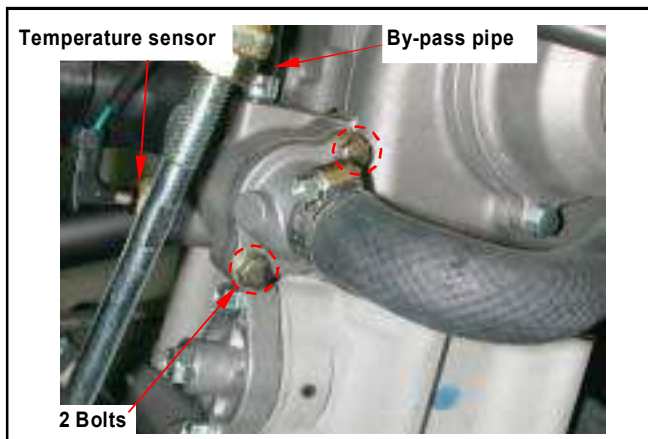
Whenever the thermostat and the thermometer are in contact to the wall of heated water container, the reading displayed is incorrect. If the valve of the thermostat remains open at room temperature or the valve operation is not corresponding to the temperature change, then it must be replaced.

Technical Data

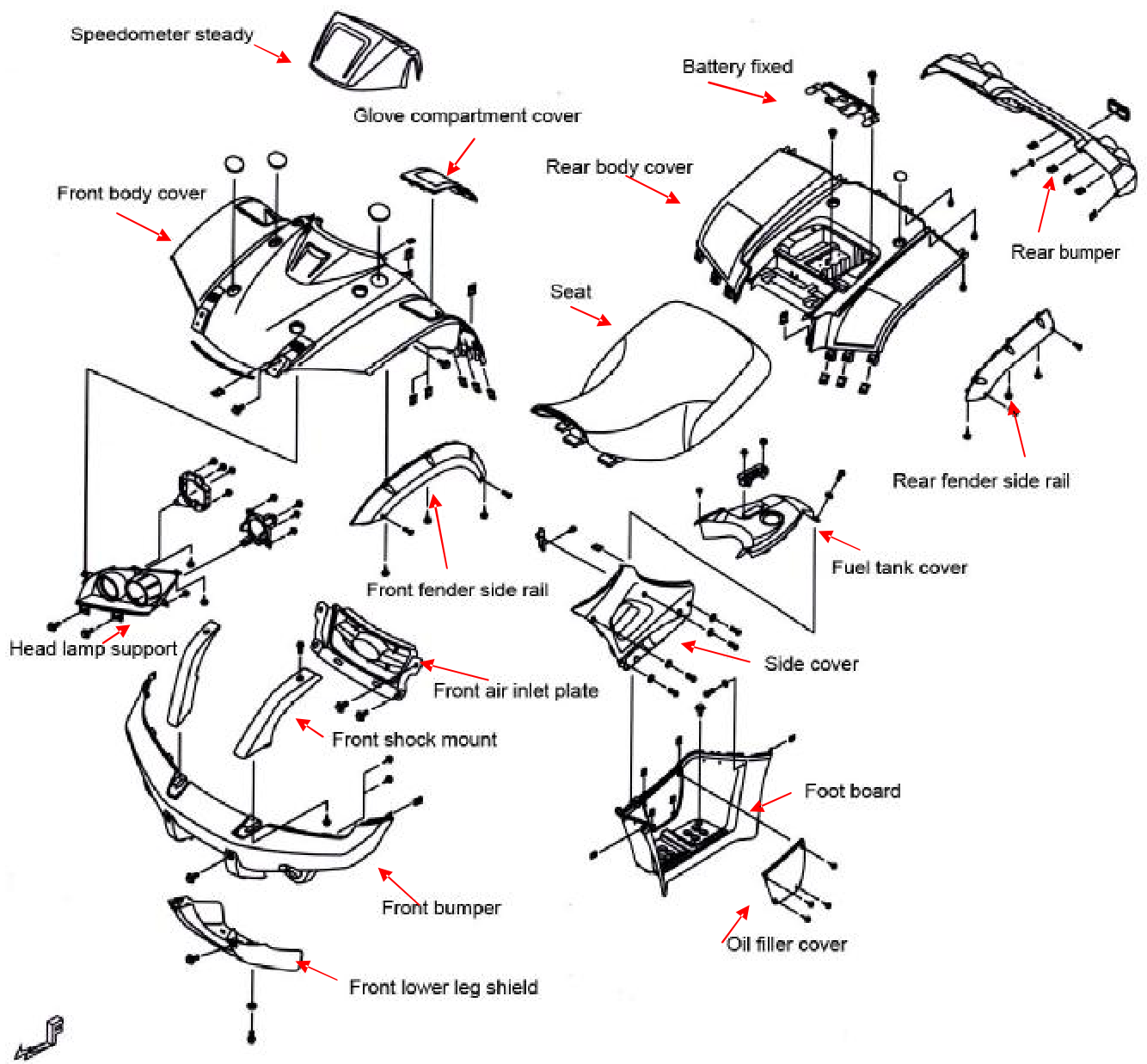
Valve begins to open	65~72 °C
Valve stroke	0.05 ~ 5mm

Installation

Install the thermostat.
Install the thermostat cover. (2 bolts)
Refill the coolant and bleed out the air bubble (Page 12-5).



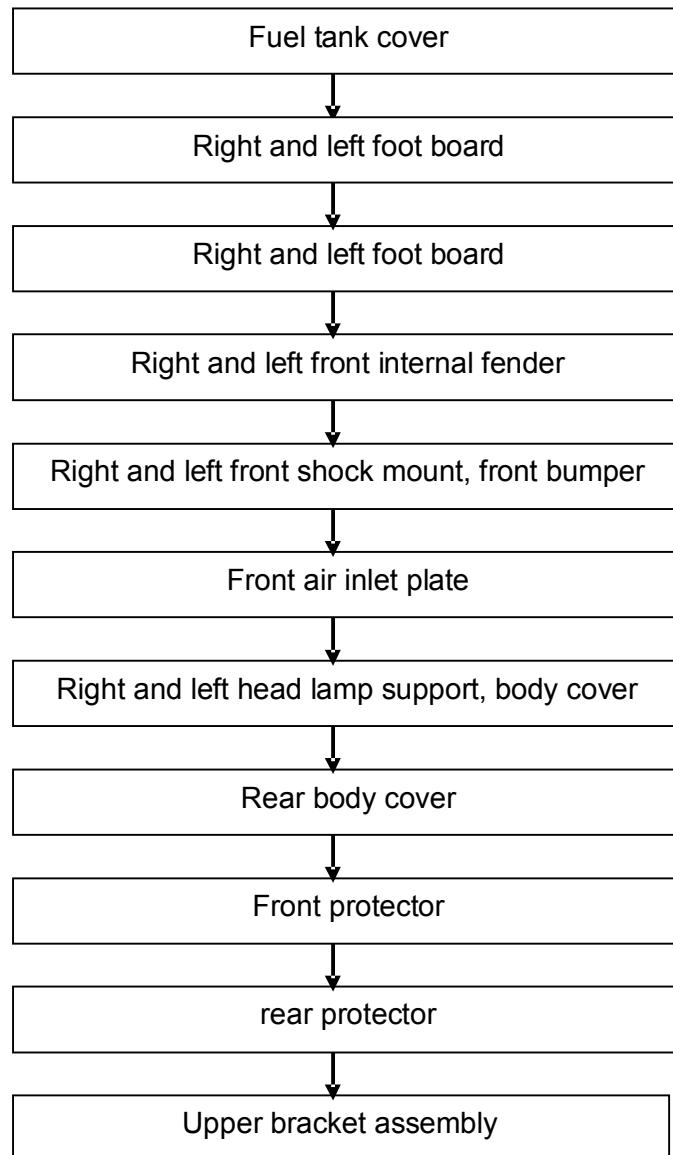
Mechanism Diagram



1

Maintenance

Body covers disassemble sequence

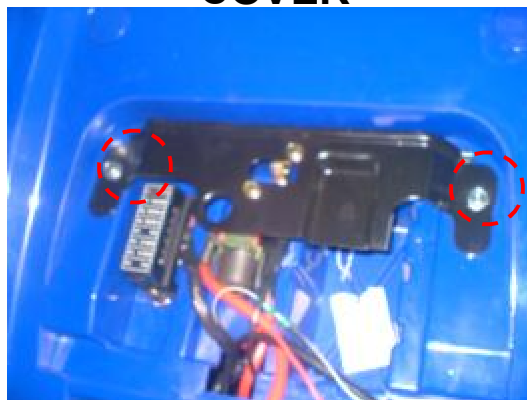


- Be careful not to damage various covers in assembly or disassembly operation.
- Never injure hooks molded on the body covers.
- Align the buckles on the guards with slot on the covers.
- Make sure that each hook is properly installed during the assembly.
- Never compact forcefully or hammer the guard and the covers during assembly.

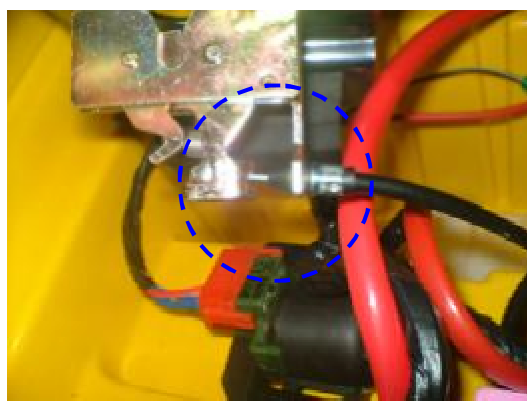
13. BODY COVER

Remove seat

Remove 2 bolts from battery fixed

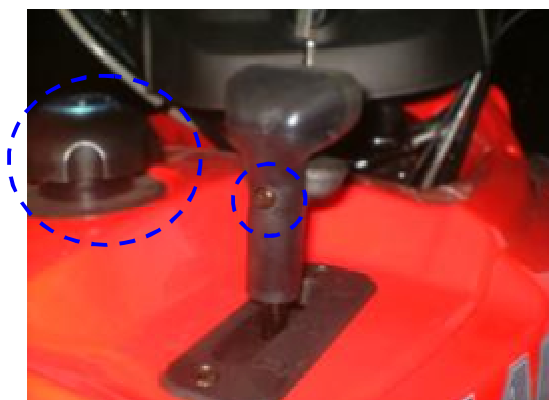


Remove cable and battery fixed



Remove 1 screw and take off shift lever

Remove fuel cap



Remove 4 screws , and then remove fuel tank cover



Installation

Install in reverse order of removal procedures.

13. BODY COVER

Remove screws from right or left foot board (each side 4 screws)



Remove screws from right or left foot board (each side 8 screws)

Remove M6 bolts from right or left foot board
remove right or left foot board (each side 3 bolts)



Remove bolts from right or left front internal fender (each side 5 bolts) , and then remove right or left front internal fender



Remove 4 bolts from front bumper

Remove 2 screws from front bumper



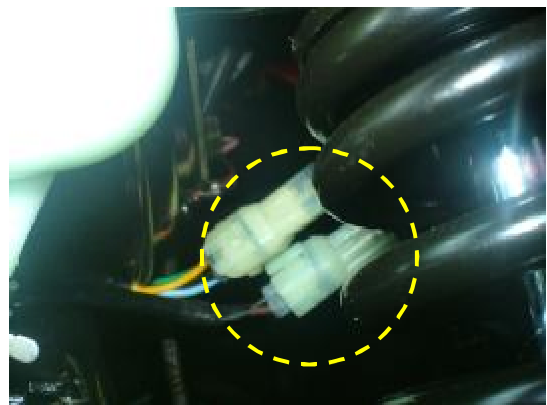
Installation

Install in reverse order of removal procedures.

Remove screws from front bumper (each side 3 screws)



Remove head lamp couplers , and then remove front bumper



Remove bolts from right and left head lamp support (each side 2 bolts)



Remove bolts from front air inlet plate (each side 2 bolts) , and then remove front air inlet plate

Remove bolts from front body cover (each side 1 bolts)



Installation

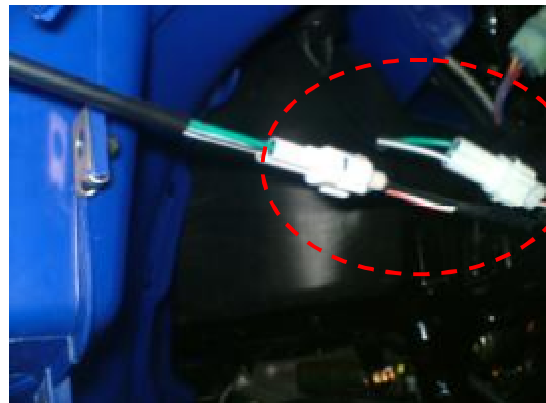
Install in reverse order of removal procedures.

13. BODY COVER

Remove lock cap



Remove power source couplers , and then remove front body cover



Remove bolts (each side 1 bolts)



Remove 2 couplers



Installation

Install in reverse order of removal procedures.

Remove 1 couplers and 1 nut from starting motor relay , and then remove starting motor relay



Remove 1 bolts from rear body cover



Remove 1 nut from bear reflector assembly (each side 1 bolts)



Remove number-plate lamp couplers , rear lamp assembly couplers (L/R) and turn signal lamp couplers (L/R)

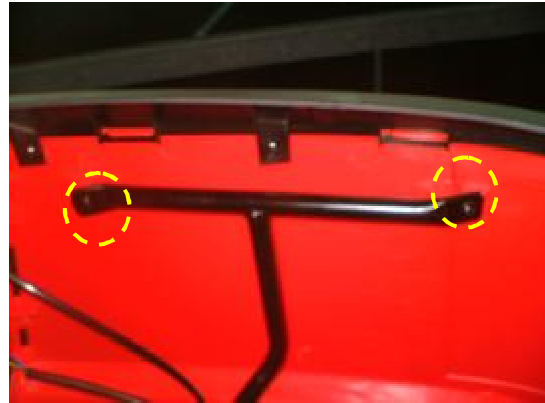


Installation

Install in reverse order of removal procedures.

13. BODY COVER

Remove screws from rear body cover (each side 2 screws) , and then remove rear body cover



Remove 2 bolts from front protector



Remove 2 bolts from front protector , and then remove front protector



Remove bolts from bear protector (each side 1 bolts)



Installation

Install in reverse order of removal procedures.

Remove bolts from bear protector (each side 1 bolts) , and then remove bear protector



Remove bolts from upper bracket assembly (each side 2 bolts)



Remove speedometer assembly couplers , and then remove upper bracket assembly

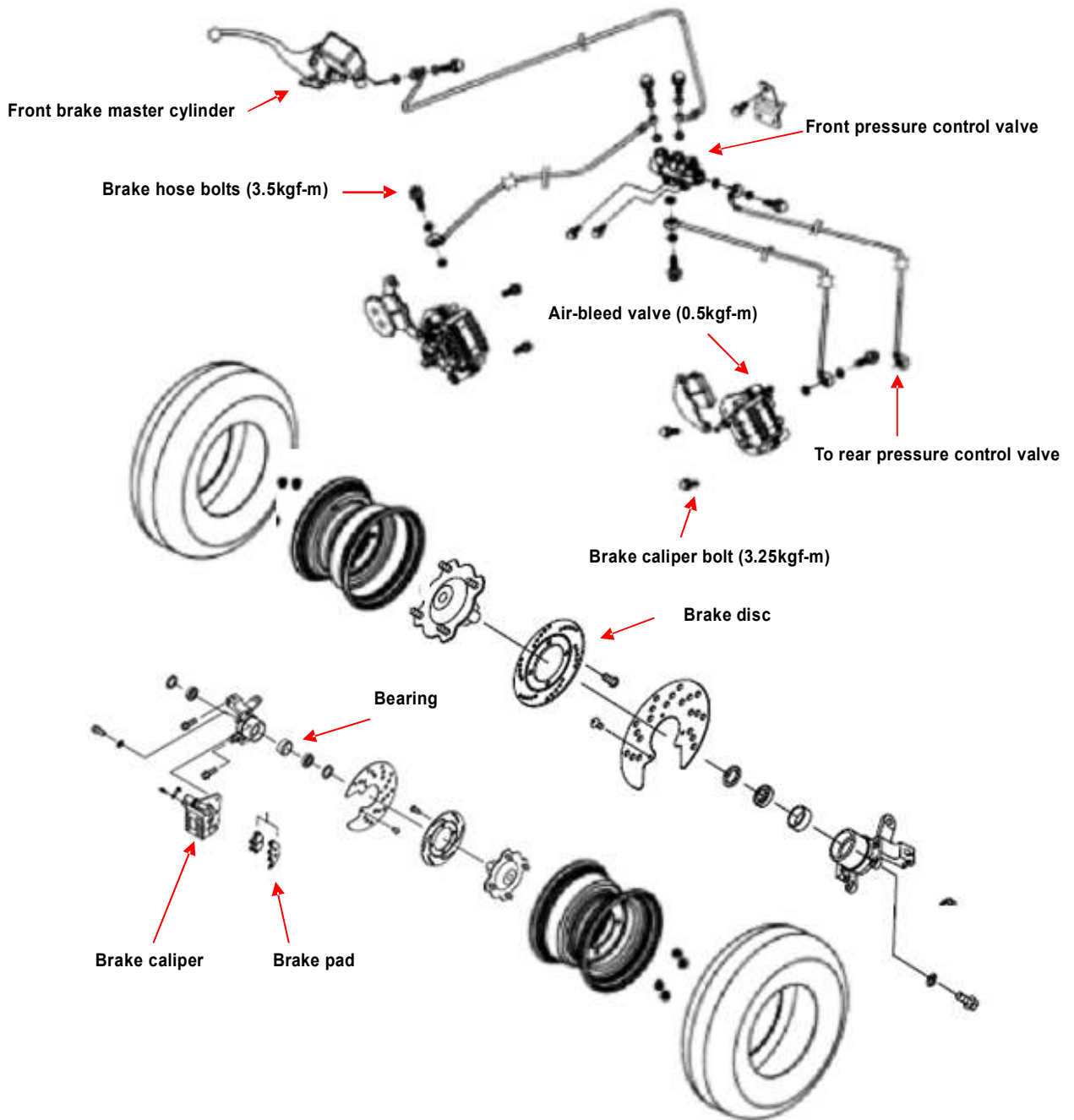


Installation

Install in reverse order of removal procedures.

Mechanism Diagram14-1	Adding Brake Fluid 14-8
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Mechanism Diagram



14. FRONT BRAKE & FRONT WHEEL

Maintenance Description

Operational precautions

 **Caution**

Inhaling asbestos may cause disorders of respiration system or cancer, therefore, never use air hose or dry brush to clean brake parts. Use vacuum cleaner or other authorized tool instead.

- The brake caliper can be removed without removing the hydraulic system.
- After the hydraulic system is removed, or the brake system is felt to be too soft, bleed the hydraulic system.
- While refilling brake fluid, care should be taken not to let the foreign material entering into the brake system.
- Do not spill brake fluid on the painted surfaces, plastic or rubber parts to avoid damage.
- Check the operation of the brake system before riding.
- Please refer to the Maintenance Manual of tubeless tire in respect to the removal, repair and installation of the tire.

Specifications

Item	Standard (mm)	Limit (mm)
The thickness of front and rear brake disk	3.500	2.000
Front and rear brake disk eccentricity	< 0.100	0.300
Master cylinder inner diameter	14.000~14.043	14.055
Master cylinder piston outer diameter	13.957~13.984	13.945
Diameter of front disk	175.000	-
Thickness of front brake lining	5.500	2.000

Tire pressure as cold: 0.8 kg/cm² (12psi)

Torque values

Brake hose bolts	3.50kgf-m
Bolt for brake caliper	3.25kgf-m
Bolts for the brake disk	4.25kgf-m
Brake lever nut	1.00kgf-m
Air-bleed valve	0.50kgf-m
Front wheel nut	2.40kgf-m
Front axle castle nut	5.00kgf-m

Trouble Diagnosis

Soft brake lever

1. Air inside the hydraulic system
2. Hydraulic system leaking
3. Worn master piston
4. Worn brake pad
5. Poor brake caliper
6. Worn brake lining/disk
7. Low brake fluid
8. Blocked brake hose
9. Warp/bent brake disk
10. Bent brake lever

Hard steering

1. Faulty tire
2. Insufficient tire pressure

Front wheel wobbling

1. Faulty tire
2. Worn front brake drum bearing
3. Bent rim
4. Axle nut not tightened properly

Hard operation of brake lever

1. Blocked brake system
2. Poor brake caliper
3. Blocked brake pipe
4. Seized/worn master cylinder piston
5. Bent brake lever

Steers to one side

1. Bent tie rods
2. Wheel installed incorrectly
3. Unequal tire pressure
4. Incorrect wheel alignment

Uneven brake

1. Dirty brake lining/disk
2. Poor wheel alignment
3. Clogged brake hose
4. Deformed or warped brake disk
5. Restricted brake hose and fittings

Tight brake

1. Dirty brake lining/disk
2. Poor wheel alignment
3. Deformed or warped brake disk

Brake noise

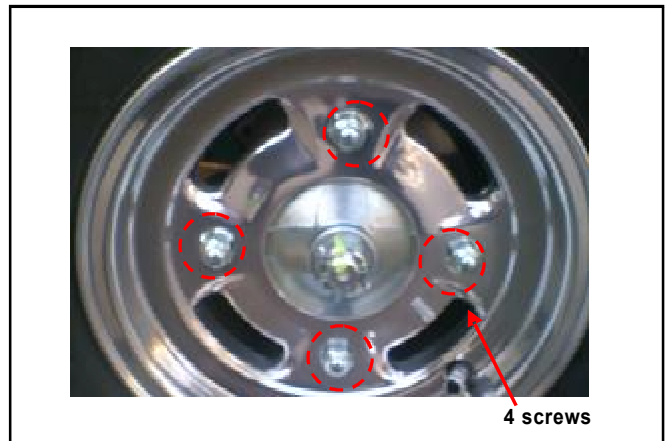
1. Dirty lining
2. Deformed brake disk
3. Poor brake caliper installation
4. Imbalance brake disk or wheel

14. FRONT BRAKE & FRONT WHEEL

Front Wheel

Removal

Raise the front wheels off the ground by placing a jack or other support under the frame.



Remove the front wheel nuts, and then remove front wheels.

Installation

Install the front wheel and tighten the nuts.

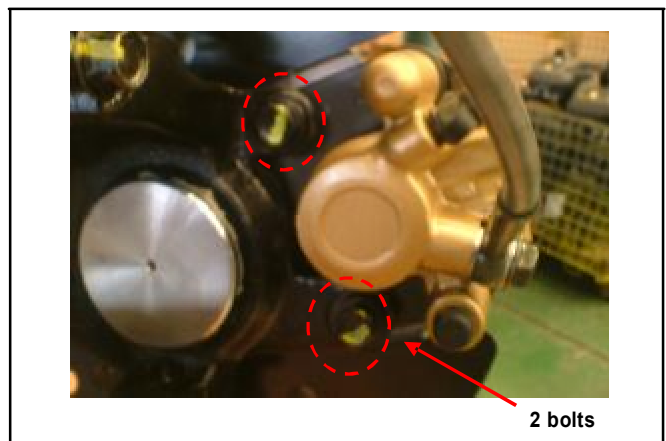
Torque: 5.0kgf-m



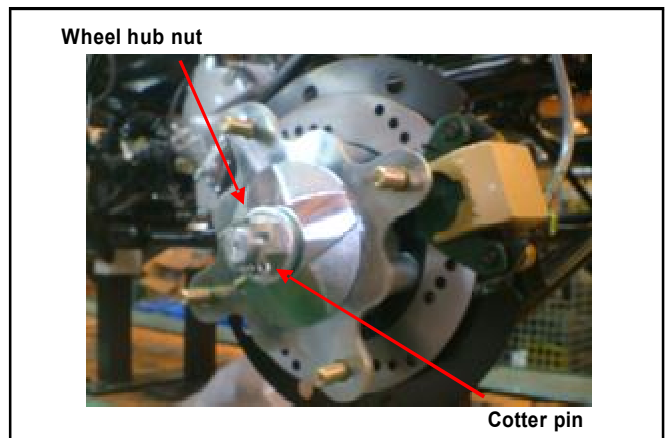
Front Wheel Hub

Removal

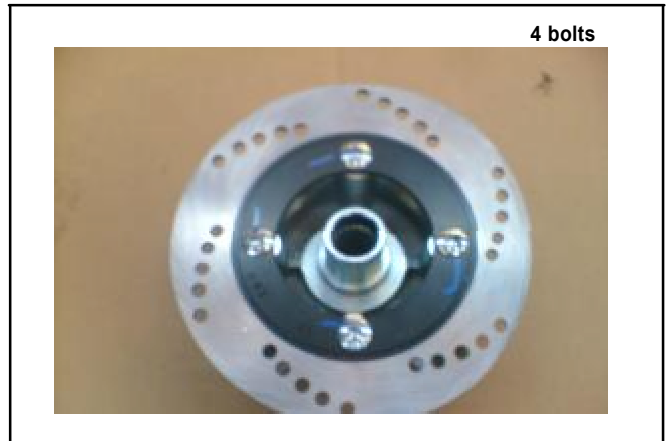
Remove front brake caliper (2 bolts).



Remove cotter pin, wheel hub nut and washer.
Remove wheel hub and brake disk.



Remove 4 socket bolts, and then remove the brake disk from wheel hub.



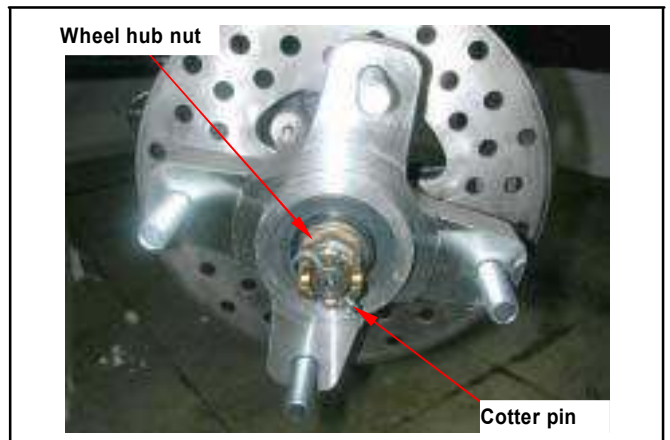
Installation

Install the front brake disk to the wheel hub.
Install wheel hub and brake disk on to knuckle.
Install wheel hub washer and tighten the wheel hub nut.



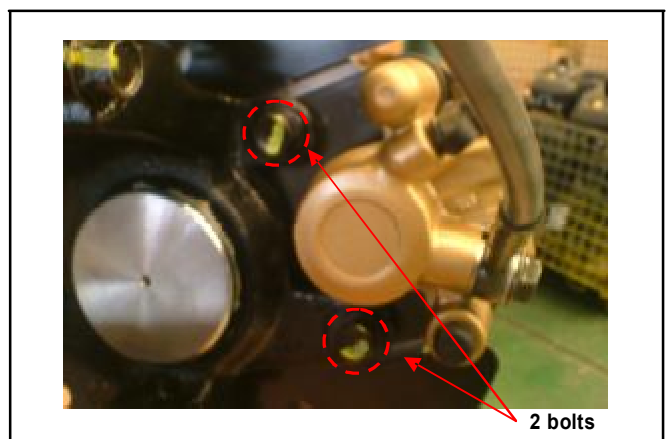
Torque: 9.0kgf-m

Install cotter pin



Install front brake caliper.

Torque: 3.5kgf-m

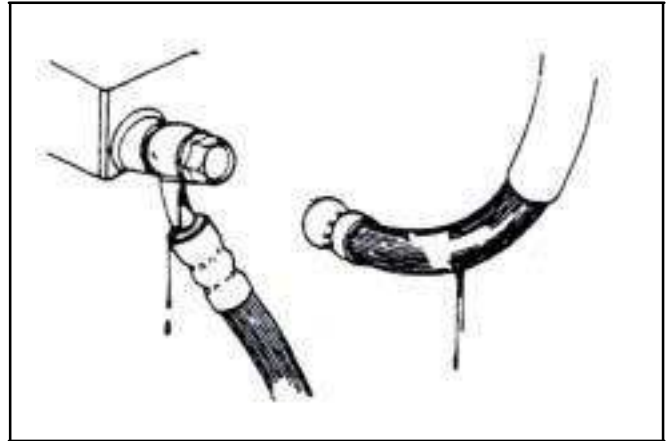


14. FRONT BRAKE & FRONT WHEEL

Disk Brake System Inspection

Inspection

By visual examination whether divulges or the damage, with spanner inspection brake tube seam whether becomes less crowded, and the inspection handle bar turn right or turn left, or pressure the cushion, whether besides the pipeline protection department, whether there is interferes, contacts other parts of.



Check the brake from behind the brake caliper. The brake pad must be replaced with new lining when the brake pad wear limit reaches the brake disk.

Caution

- Check the front brake lining must be removed front wheel first.



Park the ATV on a level ground, and check if fluid level is under the “LOWER” mark. Recommended Brake Fluid: WELL RUN BRAKE OIL (DOT 4).

Caution

- The vehicles inclined or just stop, the survey oil level could not be accurate, had to settle the 3~5 minute.
- In order to prevent has the chemical change, please do not use counterfeiting or other unclear trade marks brake fluid.
- Uses by all means must with the trade mark brake fluid, guarantees the ghost vehicle efficiency.



Adding Brake Fluid

Before the brake fluid reservoir is removed, turn the handle so that the brake fluid reservoir becomes horizontal, and then remove the brake fluid reservoir.

When maintenance brake system, will be supposed to paint the surface or the rubber parts catches up by the rags.

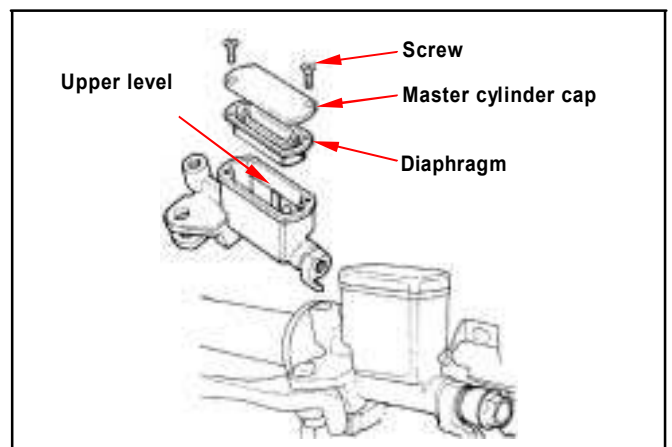
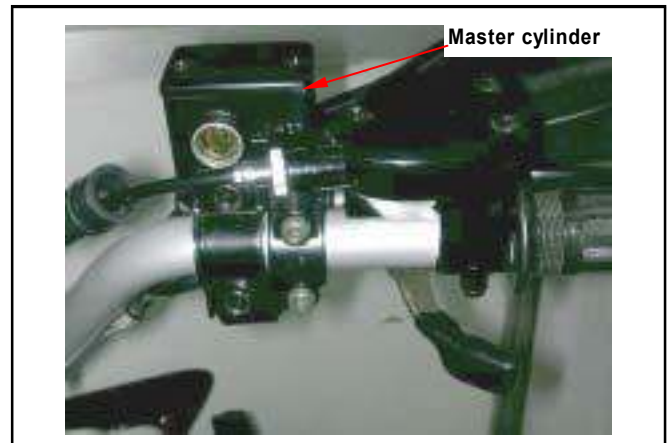
Caution

Supplement brake fluid please do not surpass the upper limit, spilled brake fluid on painted surfaces, plastic or rubber components may result in their damages.

Remove the master cylinder cap and diaphragm. Increases the high quality brake fluid, uses by all means must with the trade mark brake fluid joins in the master cylinder. Clean the dirty brake disk.

Caution

- The dirty brake lining or disk will reduce the brake performance.
- To mixed non-compatible brake fluid will reduce brake performance.
- Foreign materials will block the system causing brake performance to be reduced or totally lost.



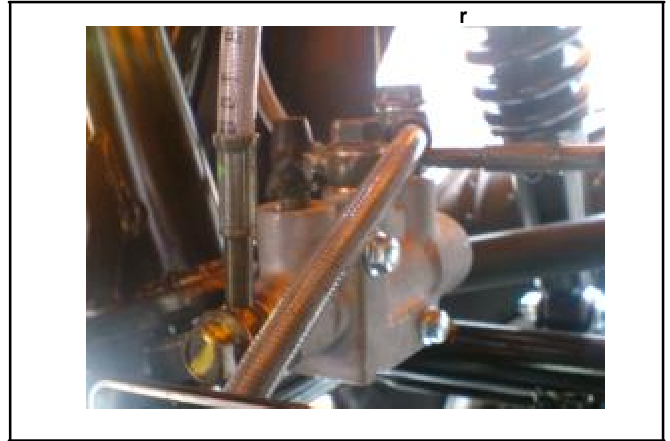
Brake fluid replacement / Air-bleed

Connect drain hose to air-bleed valve.

Open the drain valve on the caliper and operate the brake lever until the old brake fluid is entirely drained out.

Close the drain valve and add specified brake fluid into the brake master cylinder.

Recommended brake fluid: WELLRUN DOT 4 brake fluid



Air-bleed must from pressure control valve fist. Connect one end of transparent hose to the air-bleed valve, and put the other end into a container.

Open the drain valve around 1/4 turns, and at the same time hold the brake lever until there is no air bubble in the drain hose and also feeling resistance on the brake lever.

Close the drain valve when finishing the brake system refilling fluid procedure, and operate the brake lever to check whether air bubble is in brake system or not.

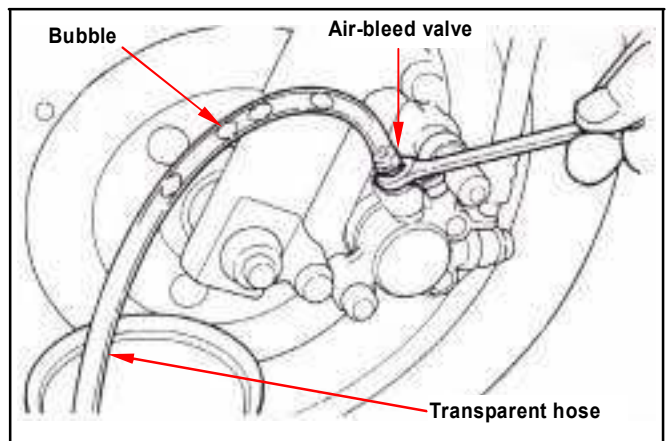
If brake is still soft, please bleed the system as described below:

1. Tightly hold the brake lever and open the drain valve around 1/4 turns, and then close the valve.

Caution

- Do not release the brake lever before the drain valve is closed.
- Always check the brake fluid level when carrying out the air bleeding procedure to avoid air enters into the system.

2. Slowly release the brake lever, and wait for a few seconds until it reaches its top position.
3. Repeat the steps 1 and 2 until there is no air bubble at the end of the hose.
4. Tightly close the drain valve.
5. Make sure the brake fluid is in the UPPER level of the master cylinder, and refill the fluid if necessary.
6. Cover the cap.



Front Brake Caliper

Removal

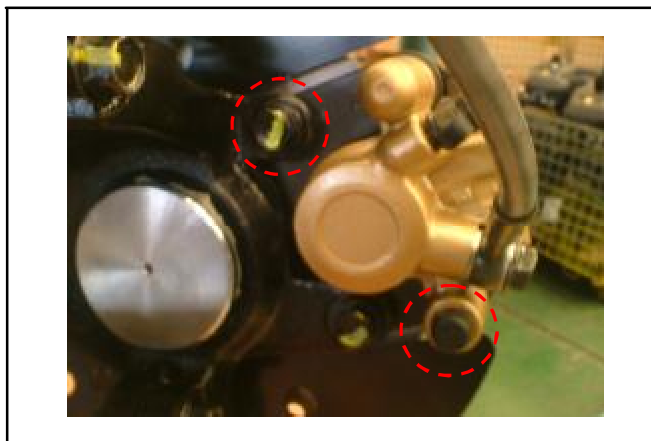
Place a container under the brake caliper, and loosen the brake hose bolt and finally remove the brake hose.

Caution

Do not spill brake fluid on painted surfaces.



Remove two caliper bolts and the caliper.



Inspection

Make sure the brake linings condition. Replace the linings if the brake linings wear limitation groove close to the brake disk.

Brake lining replacement

Remove two guide pins.
Compress caliper mounting plate, and then remove brake linings.
Install new linings, and tighten the guide pins.



Installation

Install the brake caliper and tighten the attaching bolts securely.

Torque: 3.25kgf-m

Caution

- Use M8 x 18 mm flange bolt only.
- Long bolt will impair the operation of brake disk.

Use two seal washers and hose bolts to lock the hose and brake caliper in place.

Torque: 3.5kgf-m

Refill up the brake fluid to the reservoir and make necessary air bleeding.



Brake Disk

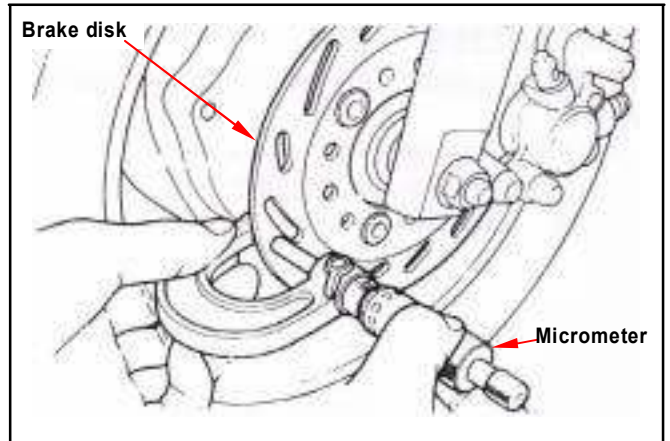
Inspection

Visually check the brake disk for wear or break. Measure the thickness of the disk at several places. Replace the disk if it has exceeded the service limit.

Allowable limit: 2.5 mm

Caution

- Replace the disk should be replace new fix bolt, or smear over fixative.

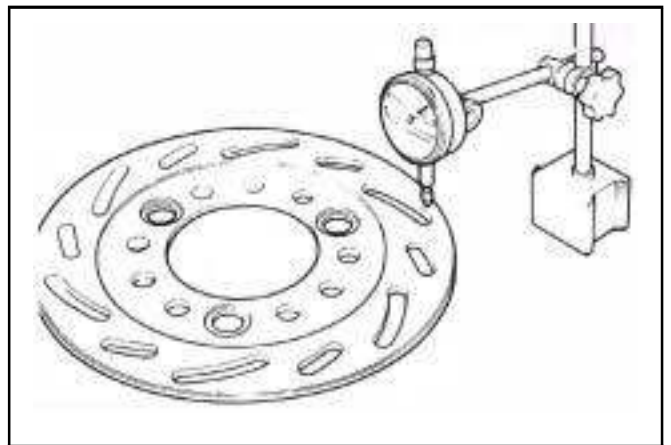


Remove the brake disk from wheel hub. Check the disk for deformation and bend.

Allowable limit: 0.30 mm

Caution

- The dirty brake lining or disk will reduce the brake performance.
- Brake lining includes the asbestos ingredient, cannot use the air-gun to be clean, the operator should dress the mouthpiece and the glove, use vacuum cleaner clean it.



Front Brake Master Cylinder

Master Cylinder Removal

Caution

Do not let foreign materials enter into the cylinder.

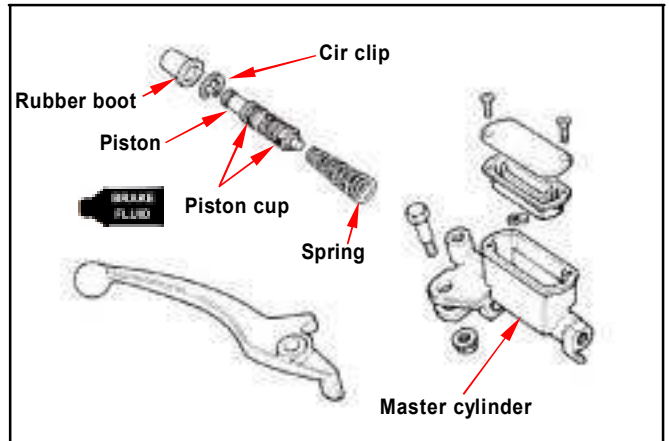
Caution

The whole set of master cylinder, piston, spring, diaphragm and cir clip should be replaced as a set.

Push the lead of brake light switch, and then remove brake light switch.
 Drain out the brake fluid.
 Remove the brake lever from the brake master cylinder.
 Remove the brake hose.
 Remove the master cylinder socket bolts and the master cylinder.



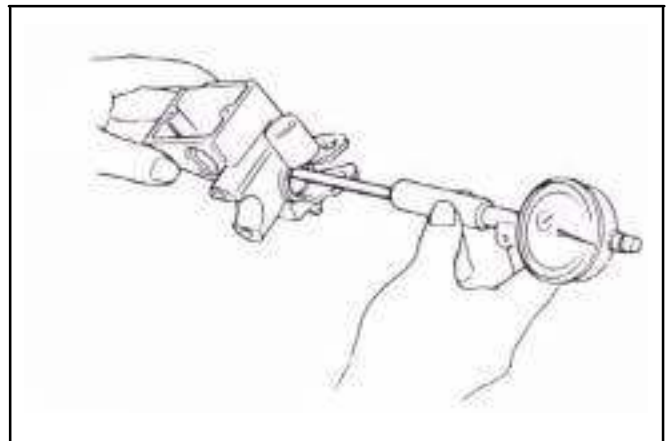
Remove the rubber boot.
 Remove the cir clip.
 Remove the piston and the spring.
 Clean the master cylinder with recommended brake fluid.



Master Cylinder Inspection

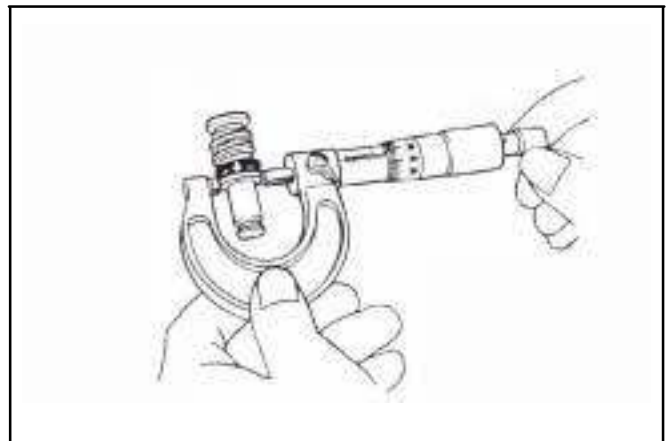
Check the master cylinder for damage or scratch.
 Replace it if necessary.
 Measure the cylinder inner diameter at several points along both X and Y directions.
 Replace the cylinder if the measured values exceed allowable limit.

Allowable limit: 14.055 mm



Measure the outer diameter of the piston. Replace the piston if its measured value exceeds allowable limit.

Allowable limit: 13.945 mm



Master Cylinder Assembly

⚠ Caution

- It is necessary to replace the whole set comprising piston, spring, piston cup, and cir clip.
- Make sure there is no dust on all components before assembling.

Apply clean brake fluid to the piston cup, and then install the cup onto the piston.

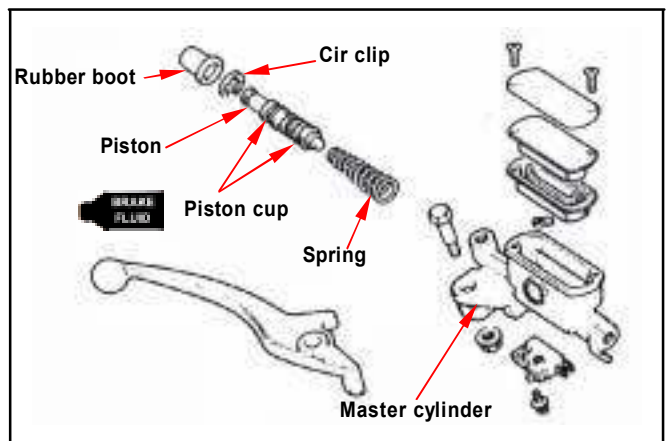
Install the larger end of the spring onto the master cylinder.

The master cup's cavity should be face inside of master cylinder when installing the master cup.
 Install the cir clip.

⚠ Caution

- Never install cup lip in the opposite direction.
- Make sure the cir clip is seated securely in the groove.

Install the rubber boot into groove properly.



14. FRONT BRAKE & FRONT WHEEL

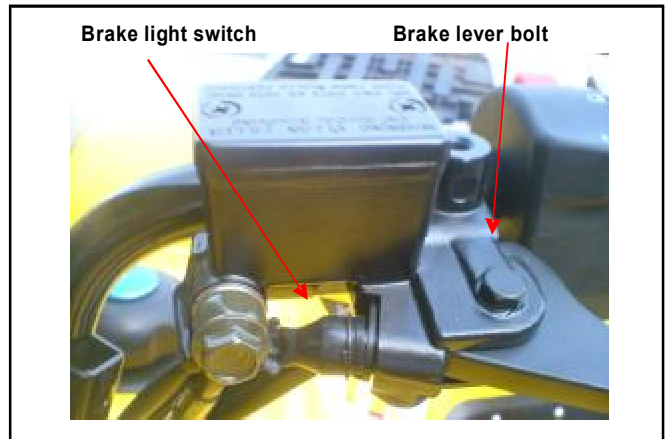


Master Cylinder Install

Install the rubber pad into the groove correctly. Place the master cylinder onto handlebar, and install the bolts.



Install the brake lever, and connect leads to brake light switch.



Connect brake hoses with 2 new washers. Tighten the brake hose bolt to the specified torque value.

Torque: 3.2kgf-m

Make sure the hose is installed correctly. Install all wires, hoses, and components carefully so avoid to twisting them together.

⚠ Caution

Improper routing may damage leads, hoses or pipes.



⚠ Caution

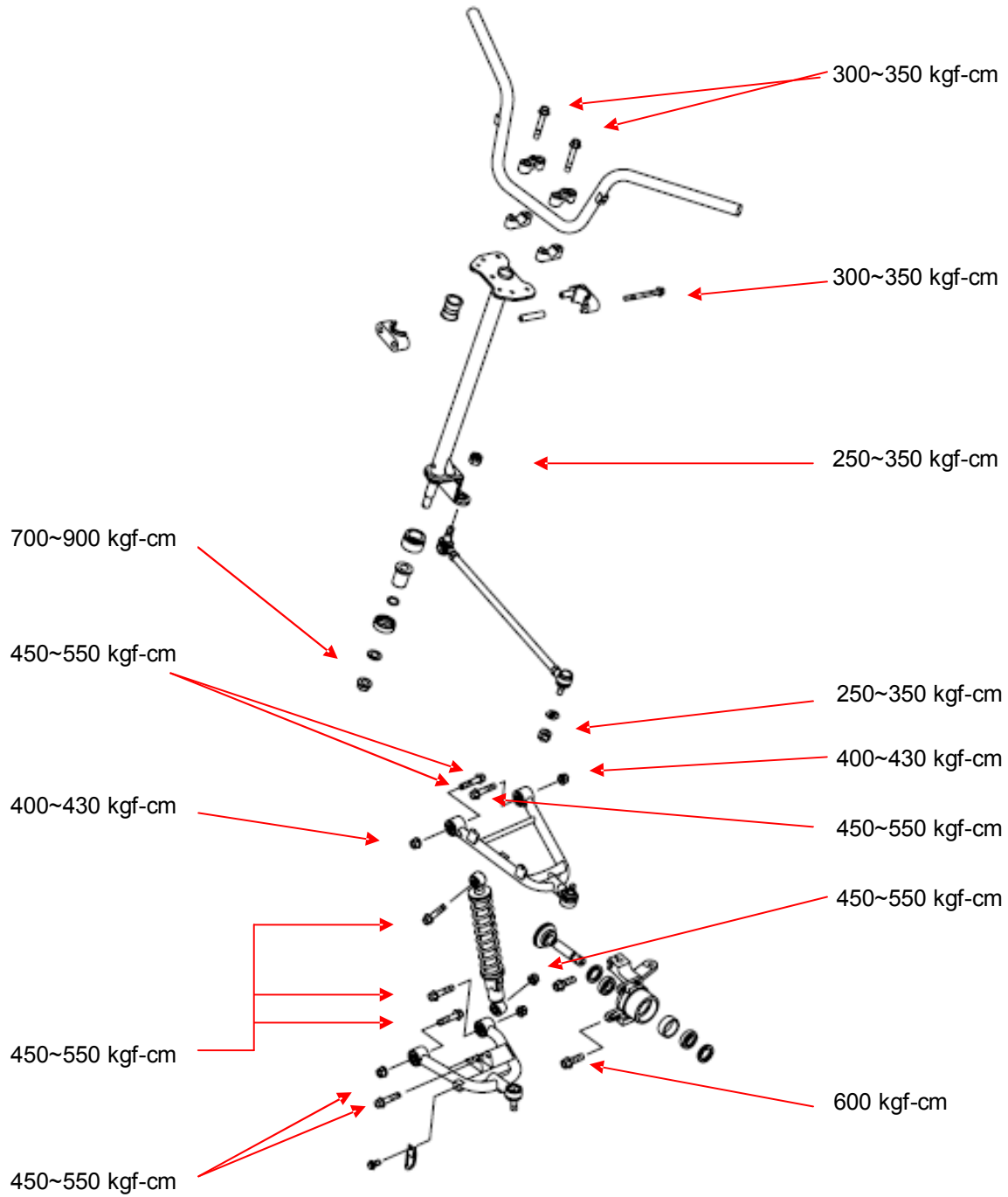
Kink of brake leads, hose or pipe may reduce brake performance.

Add specified brake fluid and bleed the system.

Notes:

Mechanism Diagram15-1	Steering Tie-Rod 15-6
Operational Precautions15-2	Knuckle 15-7
Trouble Diagnosis15-2	Front Cushion 15-8
Steering Handle15-3	Suspension Arm 15-9
Steering Shaft15-5	Toe-In 15-10

Mechanism Diagram



15. STEERING / FRONT SUSPENSION

Operational Precautions

Torque Values

Handlebar upper holder bolt	300~350 kgf-cm
Steering shaft holder bolt	300~350 kgf-cm
Steering shaft nut	250~350 kgf-cm
Steering tie-rod nut	250~350 kgf-cm
Knuckle nut	600 kgf-cm
Tie rod lock nut	450~550 kgf-cm
Suspension arm nut	450~550 kgf-cm
Front cushion mounting nut	450~550 kgf-cm

Trouble Diagnosis

Hard to steer

- Faulty tire.
- Steering shaft holder too tight.
- Insufficient tire pressure.
- Faulty steering shaft bushing.
- Damaged steering shaft bushing.

Front wheel wobbling

- Faulty tire.
- Worn front brake drum bearing.
- Bent rim.
- Axle nut not tightened properly.

Steers to one side

- Bent tie rods.
- Wheel installed incorrectly.
- Unequal tire pressure.
- Bent frame.
- Worn swing arm pivot bushings.
- Incorrect wheel alignment.

Front suspension noise

- Loose front suspension fasteners.
- Binding suspension link.

Hard suspension

- Faulty front swing arm bushings.
- Improperly installed front swing arms.
- Bent front shock absorber swing rod.

Soft suspension

- Weak front shock absorber springs.
- Worn or damage front swing arm bushings.

Steering Handle

Removal

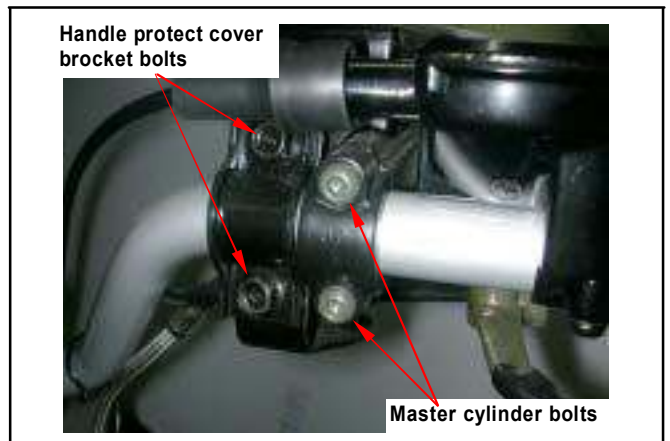
Remove the handle cover, meter set, handle protect cover and front fender. (Refer to chapter 13)



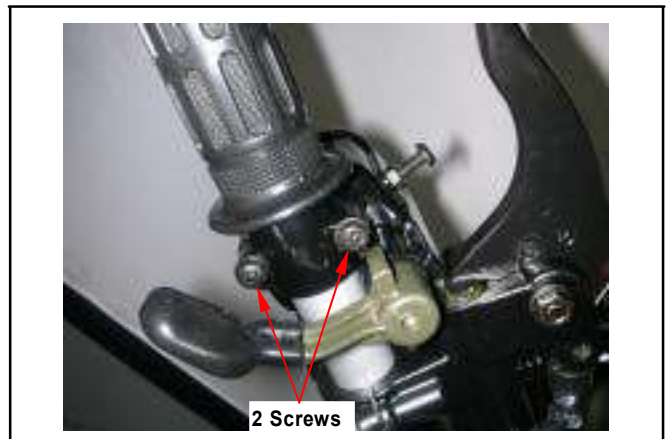
Loosen the socket bolts for the front brake master cylinder, and remove front brake master cylinder.

Caution

Do not let foreign materials enter into the cylinder.



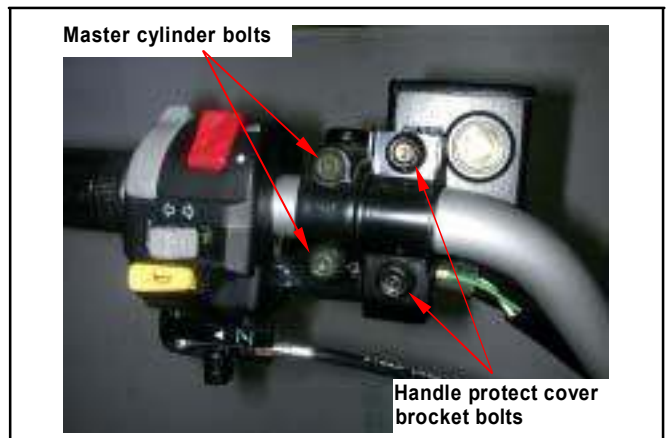
Remove 2 screws, and then remove throttle hosing holder and throttle hosing.



Loosen the socket bolts for the front brake master cylinder, and remove front brake master cylinder.

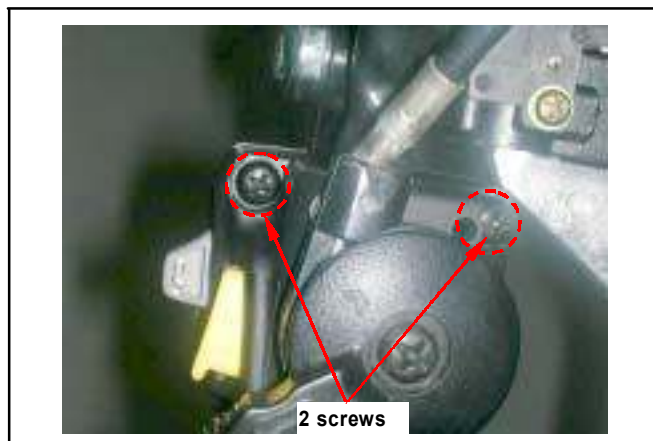
Caution

Do not let foreign materials enter into the cylinder.

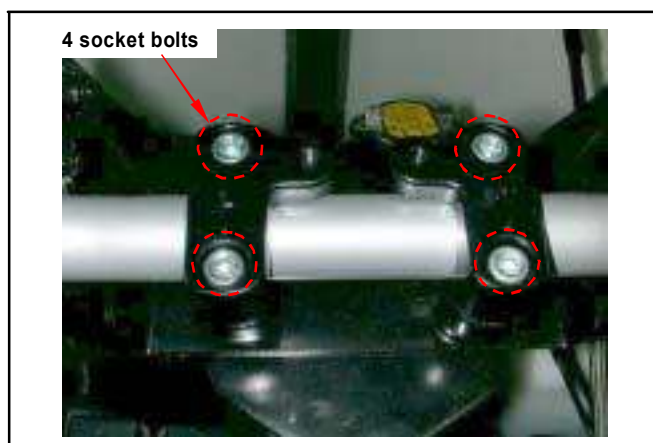


15. STEERING / FRONT SUSPENSION

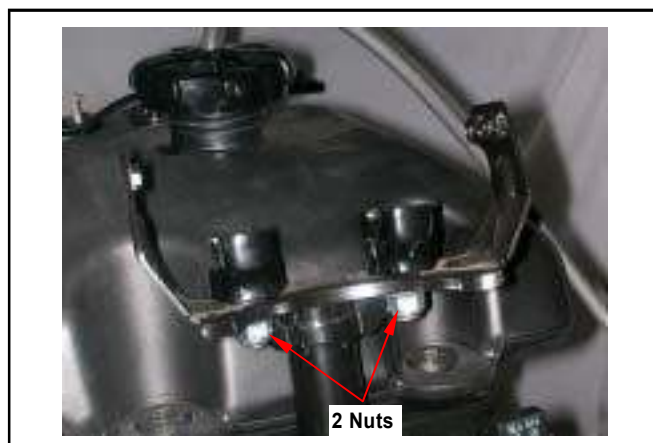
Loosen 2 screws, and then remove handle left switch and choke hosing.



Remove switch wire band.
Remove handle mounting bolt, and then remove the handle upper holder, handle.



Remove 2 nuts to remove handle under holder and meter bracket.



Installation

Install in reverse order of removal procedures.

Torque value:

Handlebar under holder nut	4.0kgf-m
Handlebar upper holder bolt	2.4kgf-m

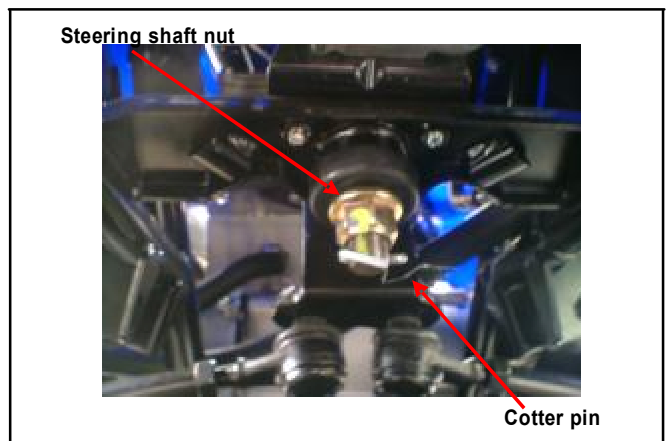
Steering Shaft

Remove

Remove cotter pins, and loosen right and left steering tie-rod nuts.
Remove tie-rod.



Remove the cotter pin below steering shaft, and remove steering shaft nut and washer.



Bend out the steering shaft holder nut fixed plate. Loosen 2 bolts, and then remove steering shaft holder, nut fixed plate, pressed plate and steering shaft.



Inspection

Check oil rings for wear or damage, and replace it if necessary.

Measure the holder inner diameter.

Maximum limit: Ø39.5 mm

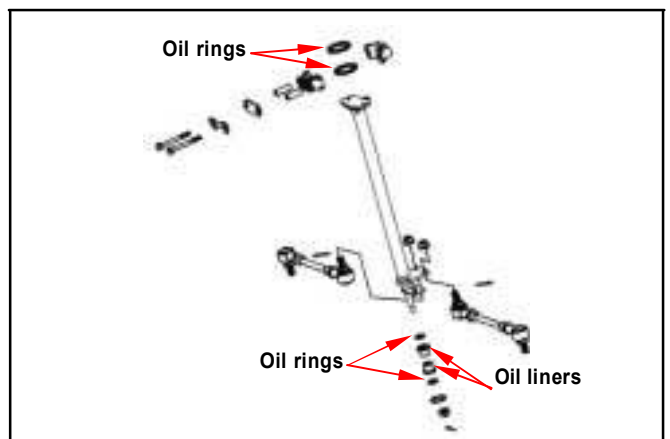
Installation

Install in reverse order of removal procedures.

Apply with grease onto oil liner and holder.

Torque value:

Steering shaft holder bolt	3.4kgf-m
Steering shaft nut	5.0kgf-m
Steering tie-rod nut	5.0kgf-m



15. STEERING / FRONT SUSPENSION

Steering Tie-Rod

Remove

Remove cotter pin and tie-rod nut from steering shaft side.



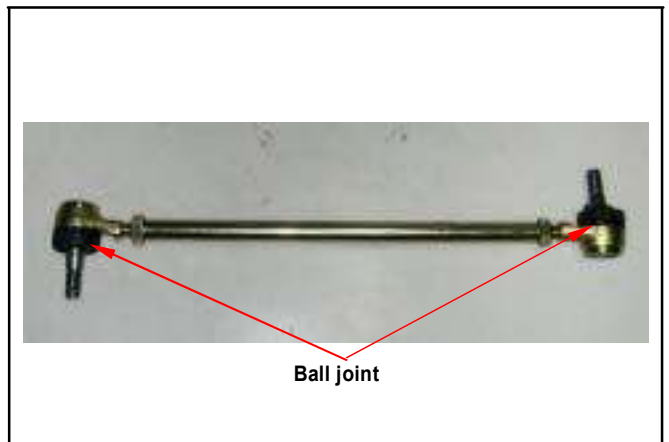
Remove cotter pin and tie-rod nut from wheel side.



Inspection

Inspect the tie-rod for damage or bending. Inspect the ball joint rubbers for damage, wear or deterioration.

Turn the ball joints with fingers. The ball joints should turn smoothly and quietly.



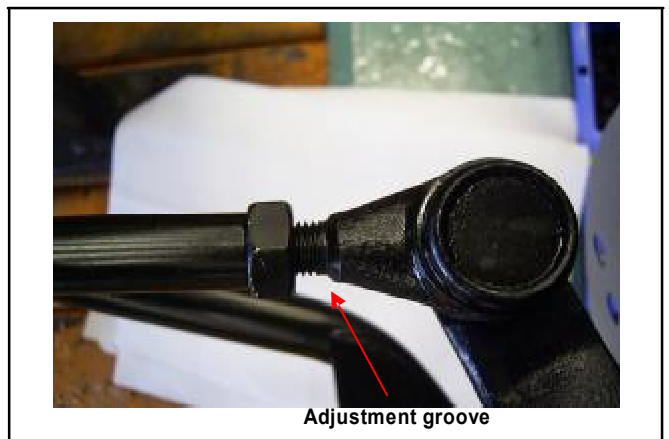
Installation

Install the ball joint with "adjustment groove" on the wheel side.

Install tie-rod nuts, and tighten the nuts.

Torque value: 5.0kgf-m

After tightened the tie-rod nut, install the cotter pin.



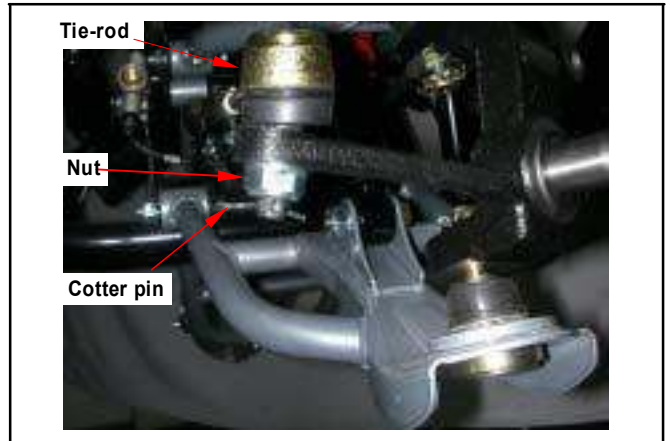
Knuckle

Remove

Remove front wheel, front brake caliper, front wheel hub and brake disk.

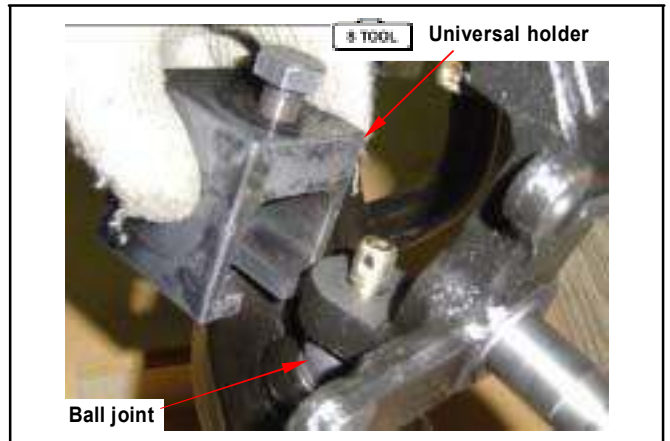


Remove cotter pin and tie-rod nut, remove tie rod.



Remove cotter pin and ball joint nut.
Remove upper and under ball joints by ball joint driver.
Remove the knuckle.

Special Tool : ball joint driver



Inspection

Inspect the upper and under ball joints and knuckle for damaging or cracking.

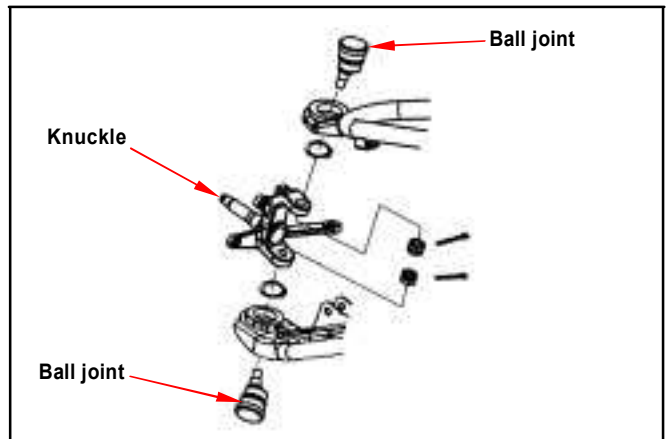
Installation

Install in reverse order of removal procedures.

Torque value:

Steering tie-rod nut **5.0kgf-m**
Ball joint nut **5.0kgf-m**

After tightened the nuts, install the cotter pins.



15. STEERING / FRONT SUSPENSION

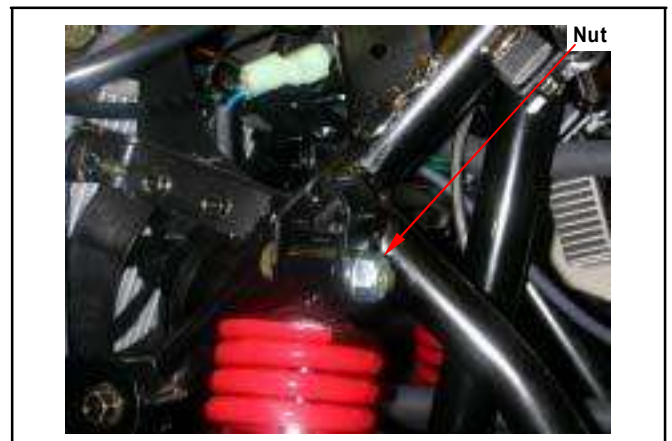
Front Cushion

Remove

Remove front cushion under bolt nut, and remove the bolt.



Remove front cushion upper bolt nut, and remove the bolt and cushion.



Installation

Install in reverse order of removal procedures.

Torque value:

Front cushion nut 4.6kgf-m

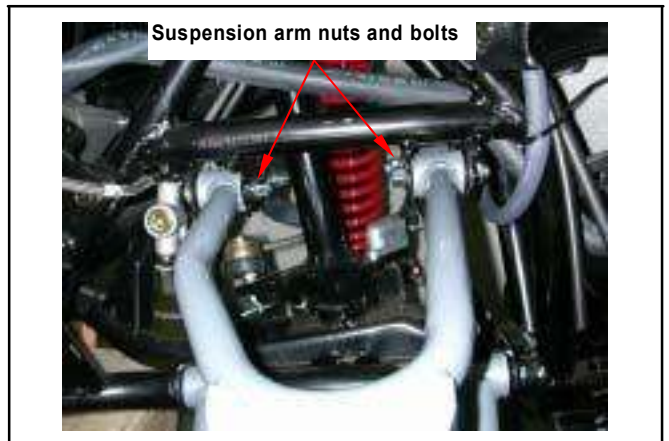
Suspension Arm

Remove

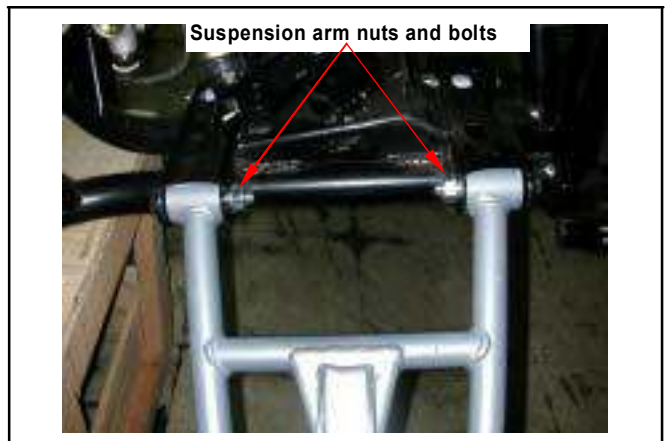
Remove front wheel, wheel hub, and brake caliper, brake disk, tie-rod, knuckle and front cushion.



Loosen upper suspension arm nuts, remove swing arm bolts.
Remove upper suspension arm.



Loosen under suspension arm nuts, remove swing arm bolts.
Remove under suspension arm.



Inspection

Inspect the suspension arm, ball joint and bush for damage or bending.

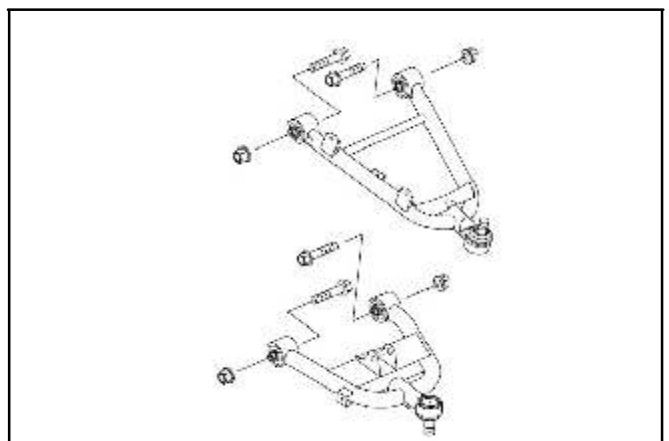
Installation

Install in reverse order of removal procedures.

Torque value:

Suspension arm nut 5.0kgf-m

Lubricate with grease into suspension arm.



15. STEERING / FRONT SUSPENSION

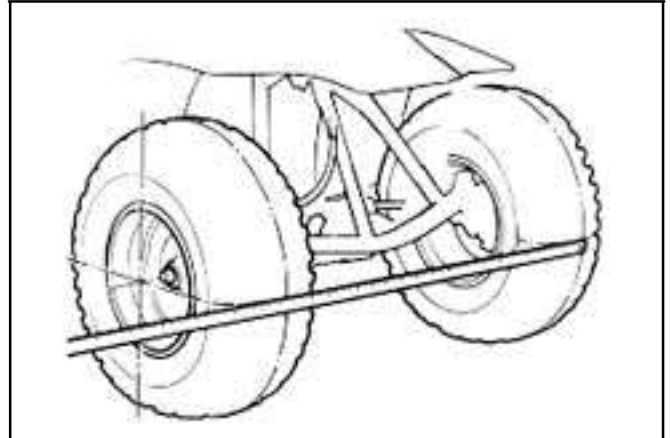
Toe-In

When repair or disassemble steering system parts, must to adjustment the toe-in.

Keep the vehicle on level ground and the front wheels facing straight ahead.

Mark the centers of the tires to indicate the axle center height.

Measure the distance between the marks.

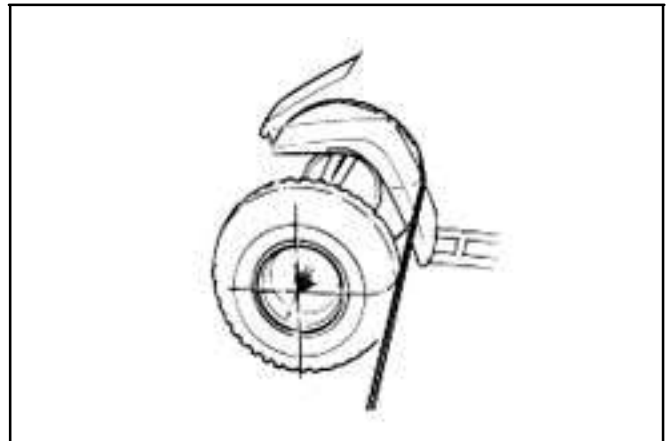


Carefully to move the vehicle back, let the wheels turn 180 degree, so the marks on the tires are aligned with the axle center height.

Measure the distance between the marks.

Calculate the difference in the front and rear measurements.

Toe-in: $10 \pm 3\text{mm}$



If the toe-in is out of standard, adjust it by hanging the length of the tie-rods equally by turning the tie-rod while holding the ball joint.

Loosen two side tie-rod lock nuts; turn the tie-rods to adjustment toe-in.

Tighten the lock nuts.

Torque value: 3.6kgf-m

