

11-5 Crankshaft Inspection

Use a thickness gauge to measure left and right clearance of connecting rod big end.

Service limit: 0.6 mm

Measure the clearance of the big end at the vertical directions.

Service limit: 0.05 mm

Place the crankshaft on a V-block, measure run-out of the crankshaft.

Service limit: 0.10 mm

Check crankshaft bearing

Use hand to crank the bearing to see it moves freely, smoothly and noiseless.

Check the inner ring to see it links firmly on the bearing.

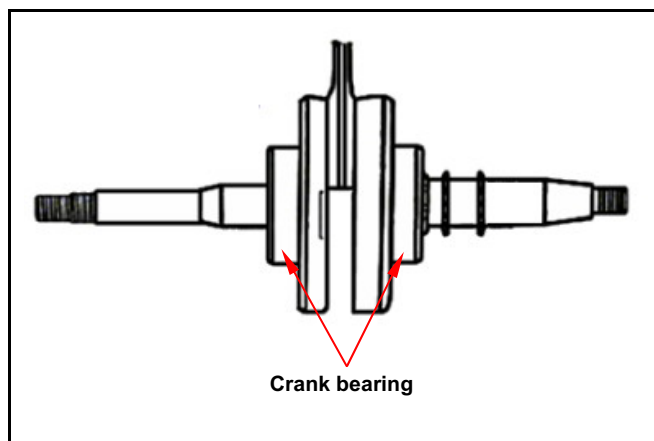
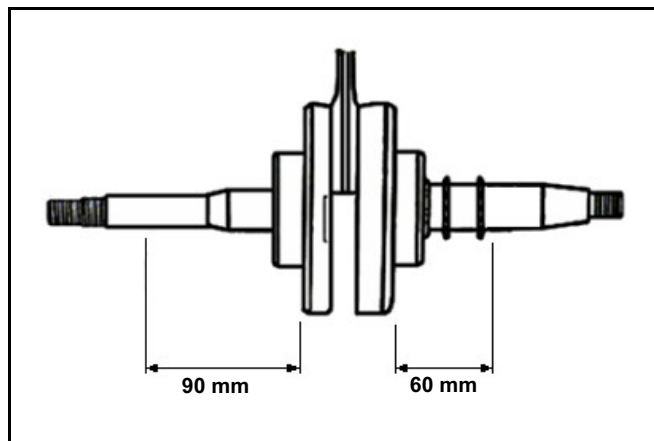
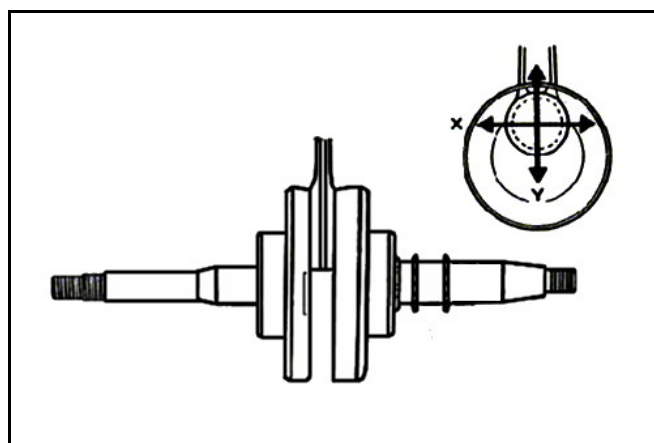
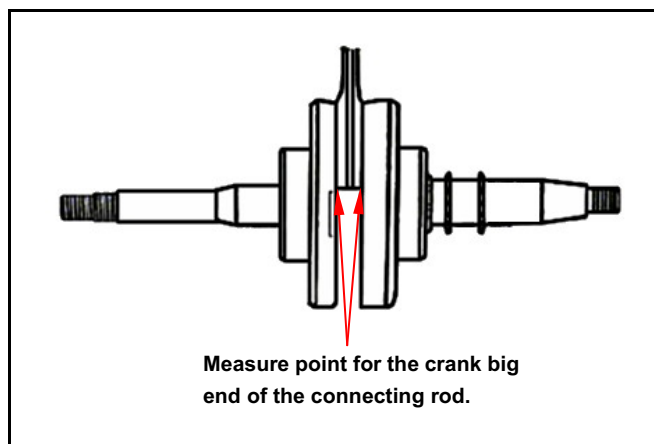
If any roughness, noise and loose linkage are detected, replace the bearing with new one.

⚠ Caution

The bearing shall be replaced in pair.

Special tool: outer bearing puller

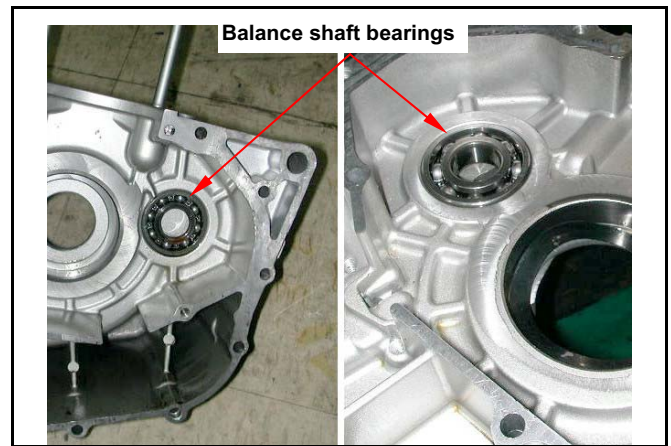
Check balance shaft bearing



Check bearings on right and left crankcase.
Rotate each bearings inner ring with fingers.
Check if bearings can be turned in smooth and silent,
and also check if bearing outer ring is mounted on
gear tightly.

If bearing rotation is uneven, noising, or loose bearing
mounted, then replace it.

Special tool: Inner bearing puller
Bearing driver



11-6 Assembly Of Crankcase

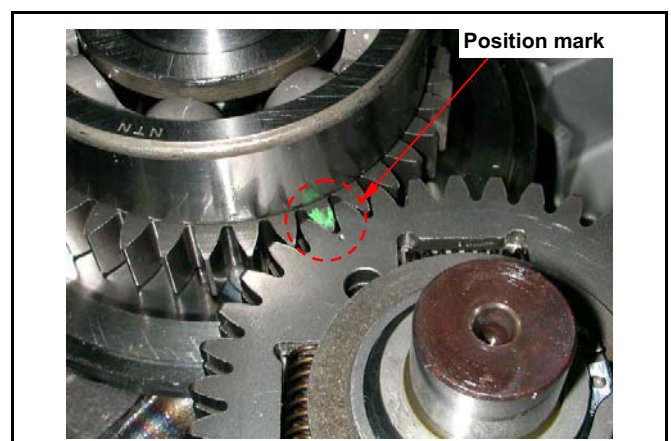
Install wave washer into right crank bearing seat.



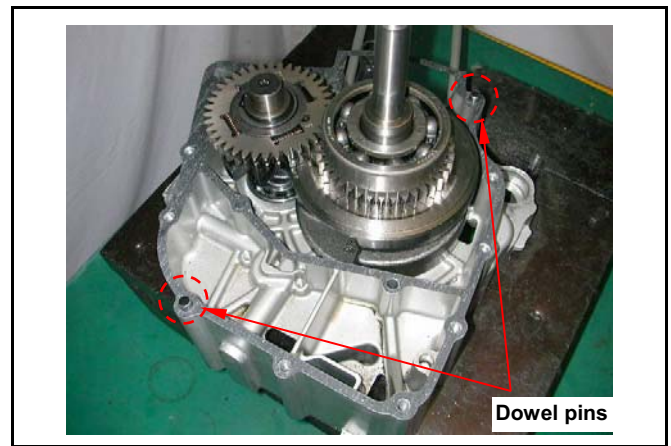
Install crank shaft on the right crankcase.



Align the position mark on the balance shaft drive
gear with that of balance shaft driven gear, and then
install balance shaft onto right crankcase.



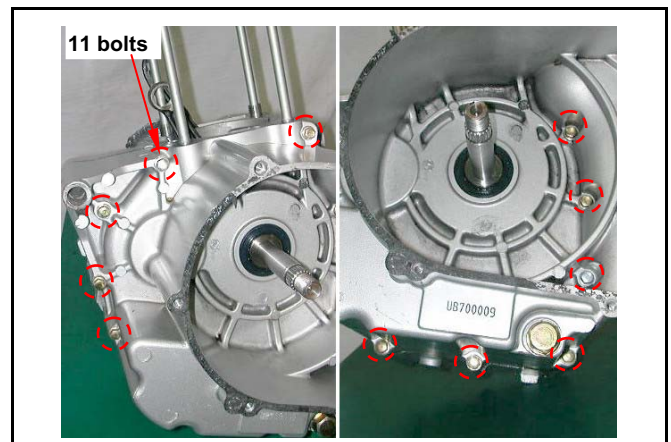
Install 2 dowel pins and new gasket.



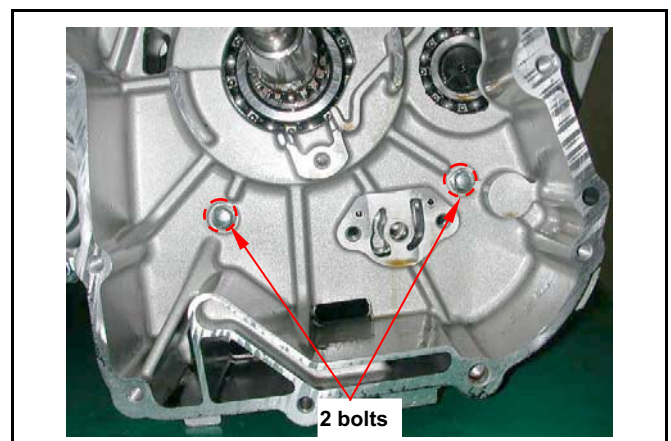
Install the left crankcase onto the right crankcase.



Tighten 11 bolts on the left crankcase.
Torque value: 0.8~1.2kgf-m



Tighten 2 bolts on the right crankcase.
Torque value: 0.8~1.2kgf-m



Clean the crankshaft.

Apply a layer of grease on the lip of oil seal, Puts on the left crank shaft.

Install the oil seal in the left crankcase with care not to damage the lip of the oil seal.



By oil seal driver (27×42×7), oil seal will knock into located.

Special tool:

Oil seal driver (27×42×7)

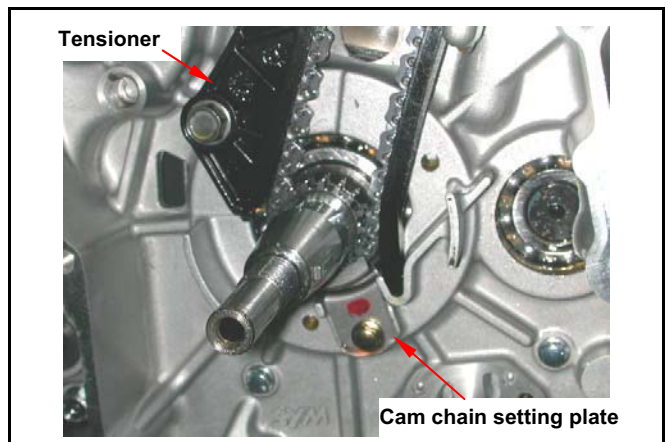


Install the tensioner and tighten the pivot bolt.

Torque value: 0.8 ~1.2kgf-m

Install the cam chain.

Install the cam chain setting plate.



12. COOLING SYSTEM

12-1 Mechanism Diagram

12-2 General Information

12-3 Trouble Diagnosis

12-4 Trouble Diagnosis For Cooling System

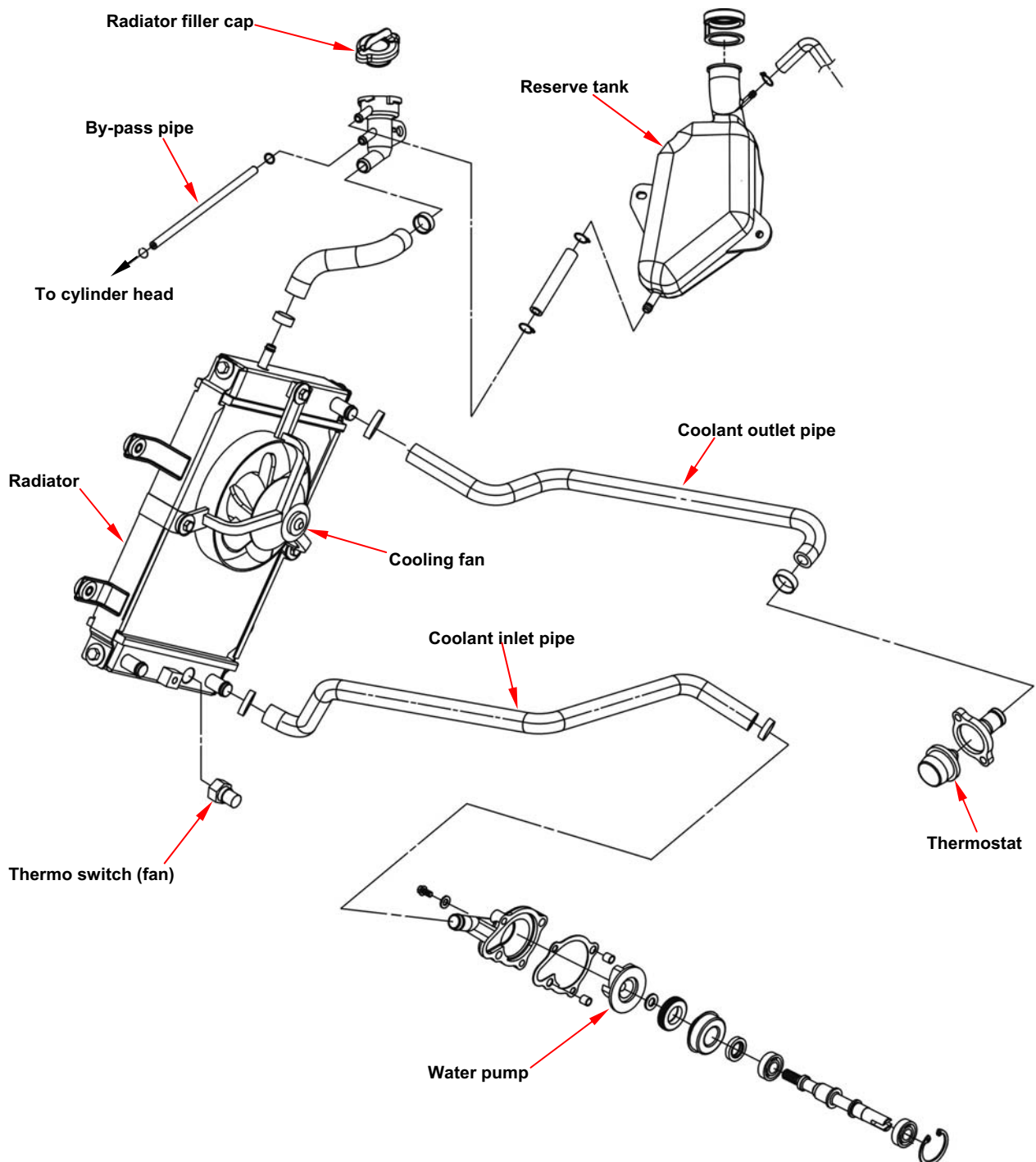
12-5 System Test

12-6 Radiator

12-7 Water Pump

12-8 Thermostat

12-1 Mechanism Diagram



12-2 General Information

General

Warning:

While the engine is running, never attempt to open the radiator filler cap, the pressurized hot coolant may shoot out and cause serious scalding injury. No maintenance work is allowed to perform unless the engine is completely cooled down.

- Refill the radiator with distilled water or specified additives.
- Add coolant to the reservoir.
- The cooling system can be serviced on the ATV.
- Never spill the coolant to the painted surface.
- Test the cooling system for any leakage after the repair.
- Please refer to Section 17 for inspection of the temperature sensor switch for the fan motor and the water thermometer.

Technical Specification

Item	Specification
Pressure to open filler cap	0.9±0.15 kgf/cm ²
Capacity of coolant: Engine + radiator Reservoir upper	850c.c. 420c.c.
Thermostat	Begins to activate at 82~95°C Stroke: 0.05~3mm
Thermos switch (fan)	Begins to activate at 98±3°C
Boiling point	Not-pressure: 107.7°C Pressurized: 125.6°C

Torque Value

For water pump rotor

1.0~1.4kgf-m

Tools Requirement

Special tools

Water pump bearing driver (6901): SYM-9100100

Water pump oil seal driver (Inner): SYM-9120500-H9A

Water pump mechanical seal driver: SYM-1721700-H9A

Inner bearing puller: SYM-6204020

12-3 Trouble Diagnosis

The engine temperature is too high

- The water thermometer and the temperature sensor do not work properly.
- The thermostat is stuck to close.
- Insufficient coolant.
- The water hose and jacket are clogged.
- Fan motor malfunction.
- The filler cap of the radiator malfunction.

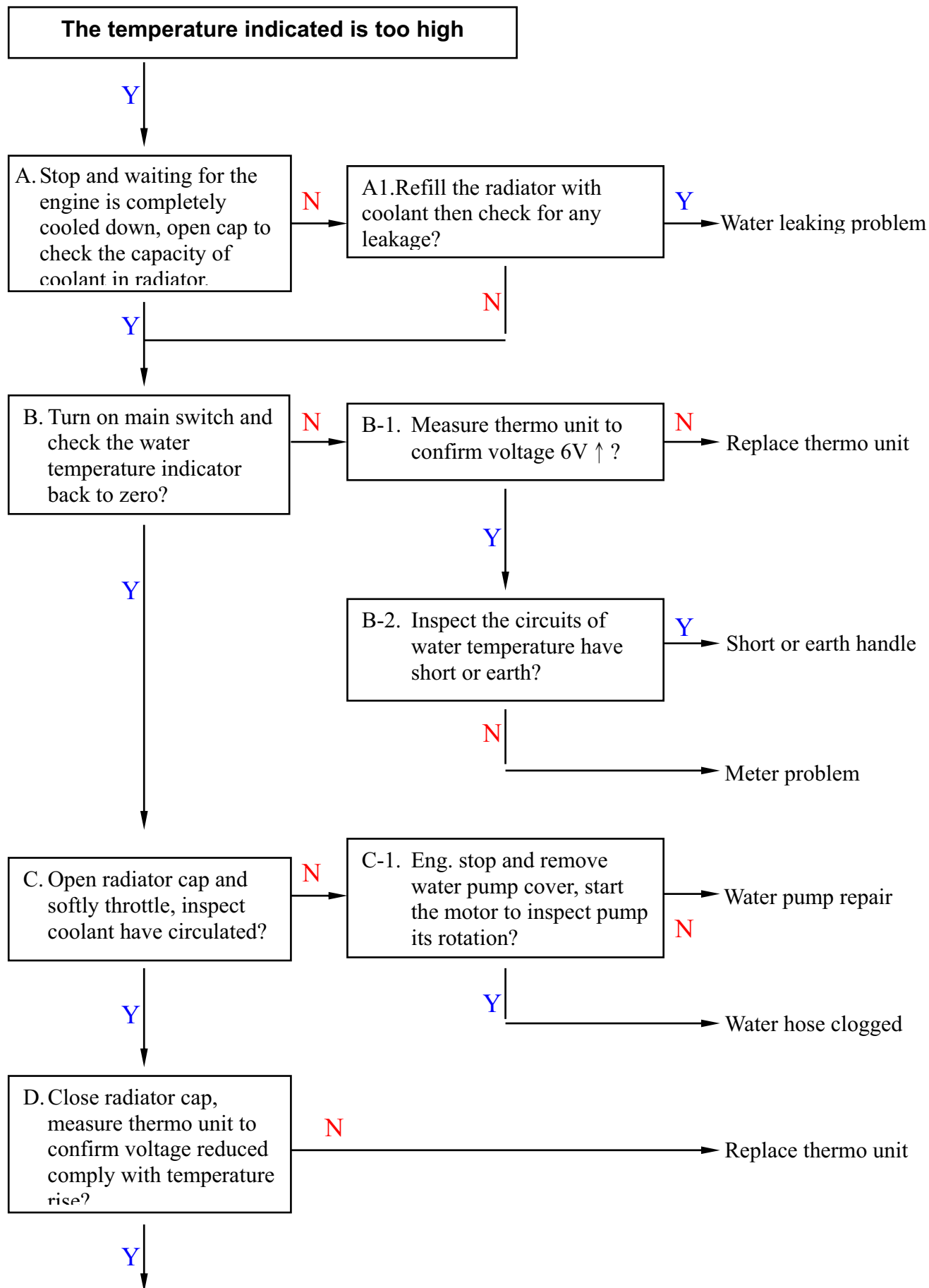
The engine temperature is too low

- The water thermometer and the temperature sensor malfunction.
- The thermostat is stuck to open.

Coolant is leaking

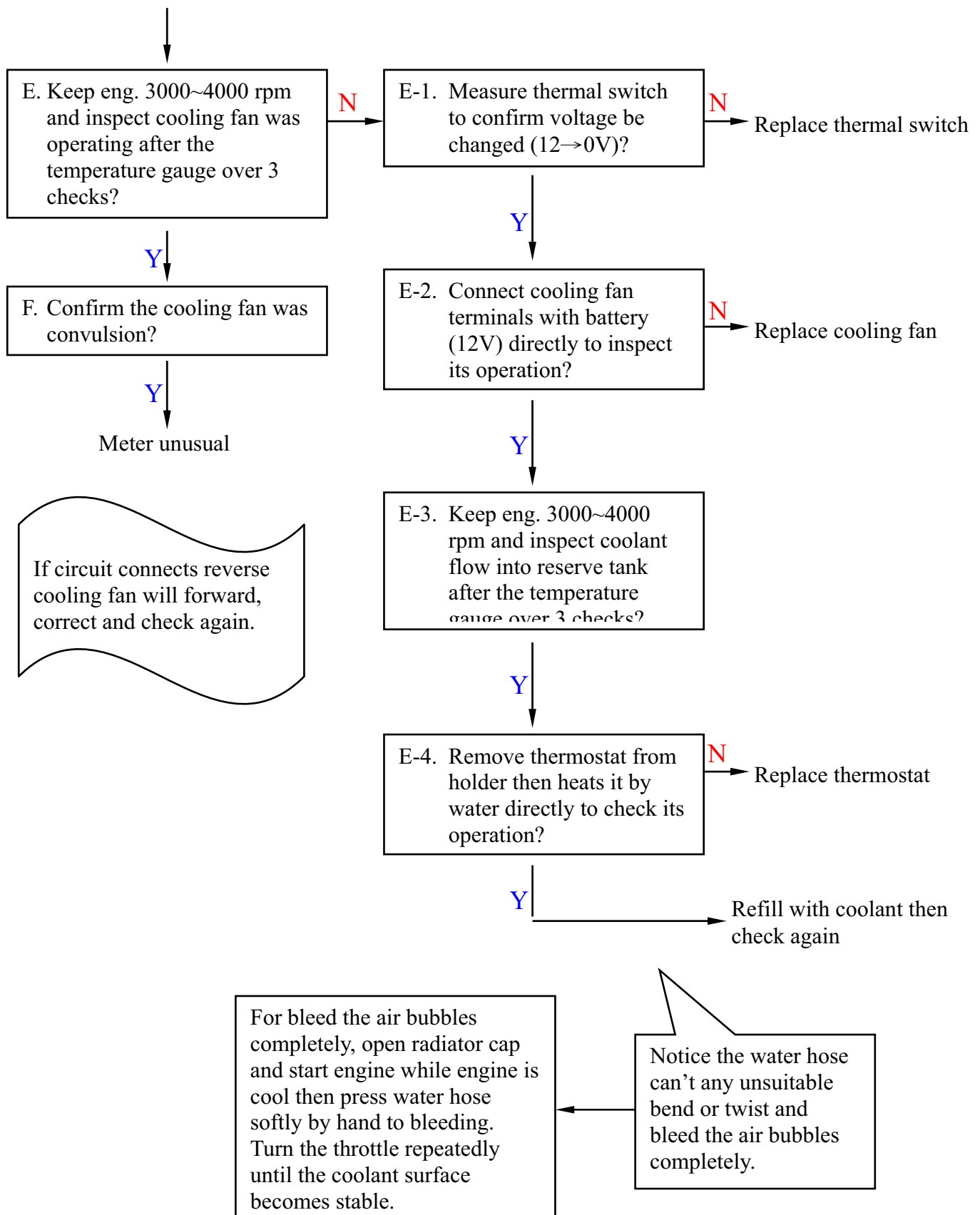
- The water pump mechanical seal does not function properly.
- The O ring is deteriorated.
- The water hose is broken or aged.

12-4 Trouble Diagnosis For Cooling System



Next page

Preceding page



12-5 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.

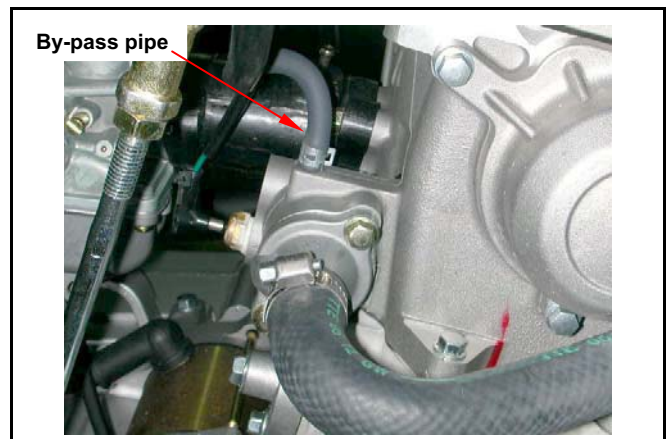
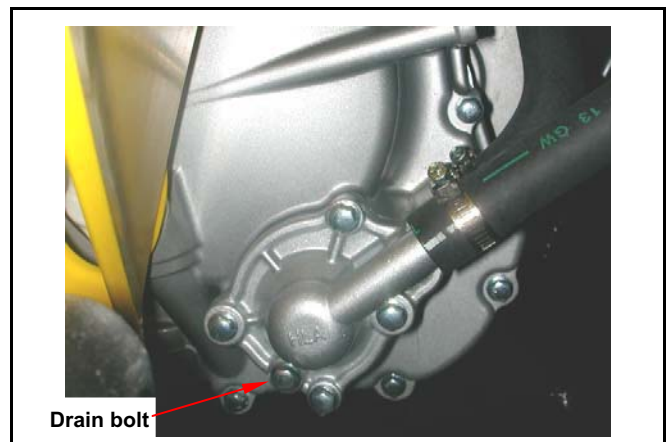
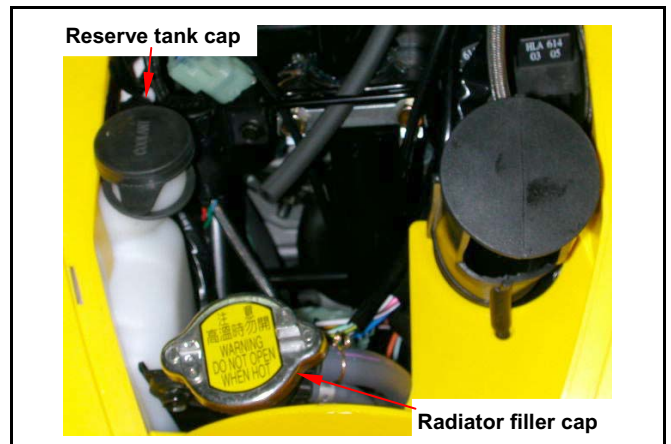
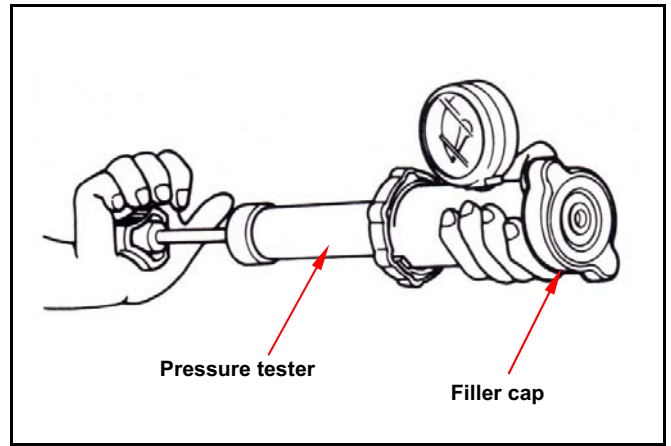
Refilling system with coolant and bleeding the air bubbles.

- 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: SYM Bramax radiator agent.
Concentration: 50%

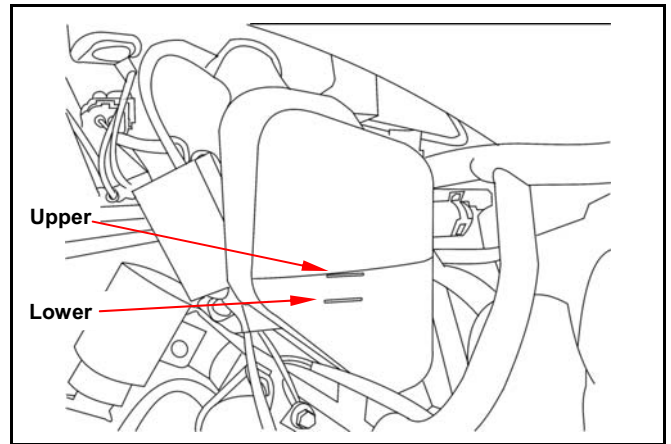


Check reserve tank

- 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 can be too low, after avoiding the water temperature elevating, in the cooling system the refrigerant backflow floods.



12-6 Radiator

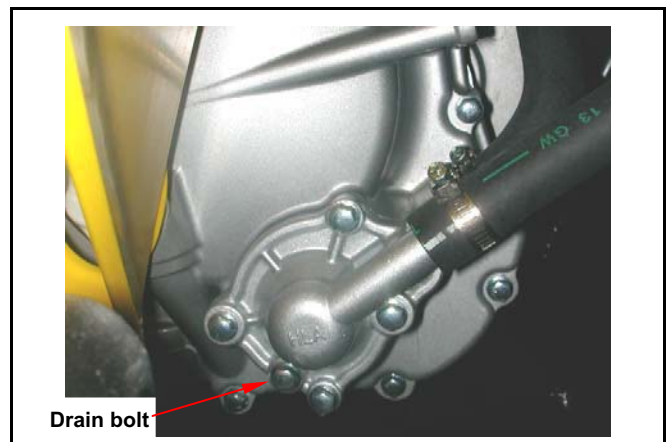
Check

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.

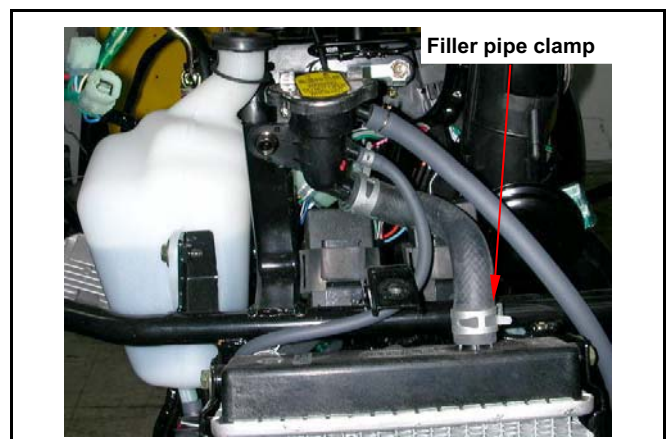


Removal

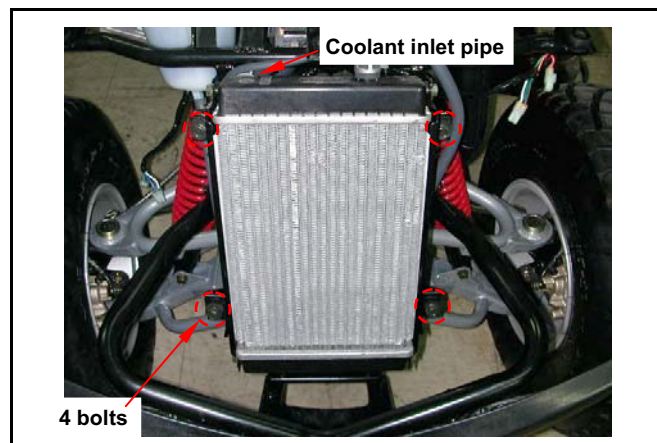
Place a water pan under the water pump; loosen the drain bolt to drain out the coolant.



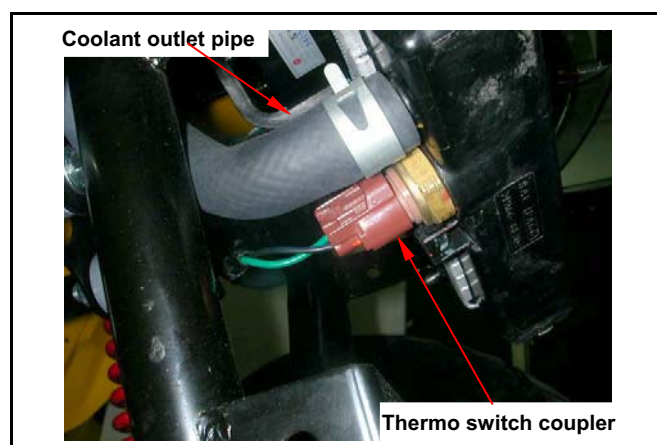
Remove coolant filler pipe.



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 3 bolts from the fan duct, and then remove the fan duct.

Loosen 3 screws from the fan motor, and take off the fan motor.

Remove nut to remove the fan from fan motor.

Assembly

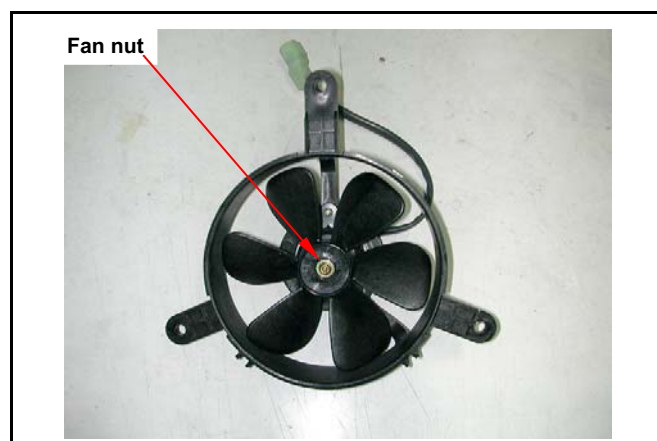
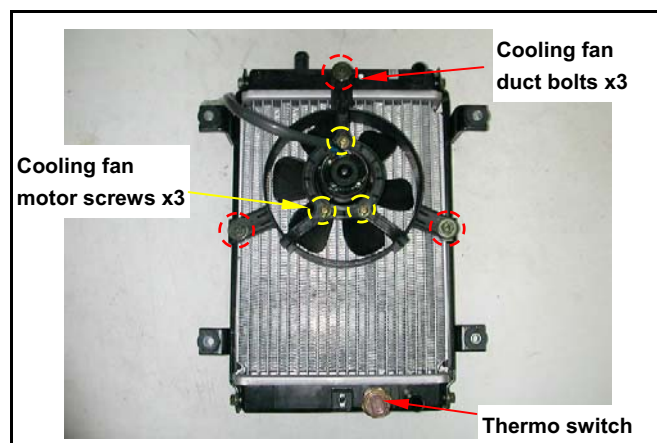
Install fan motor onto fan duct and insert the fan into the motor shaft.

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 3 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.

12-7 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.

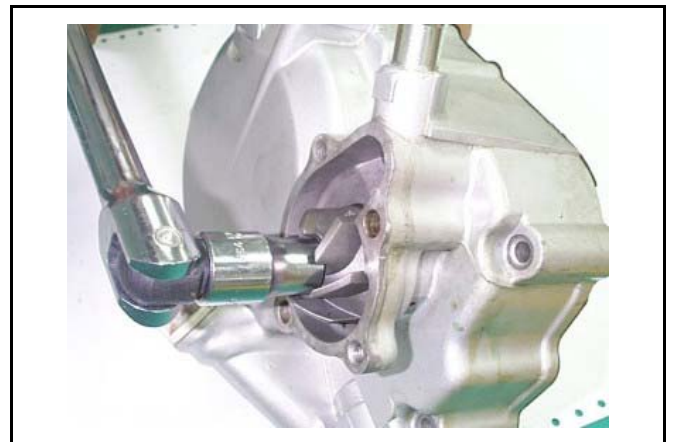
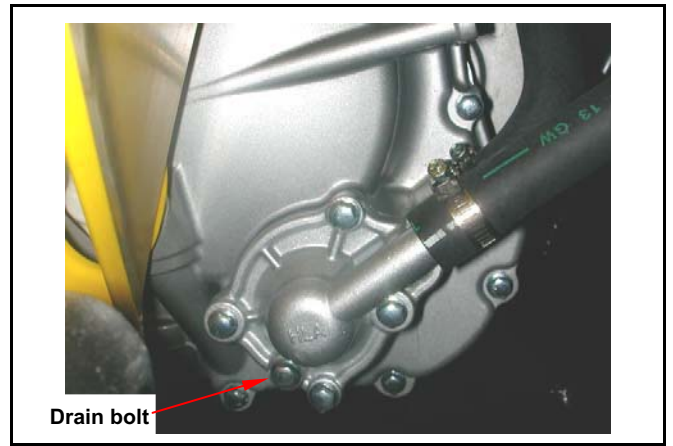
Loosen 9 bolts and remove the right cover.

Take off the gasket and dowel pins.

Turn pump rotor clockwise and remove.

Caution

The rotor 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:

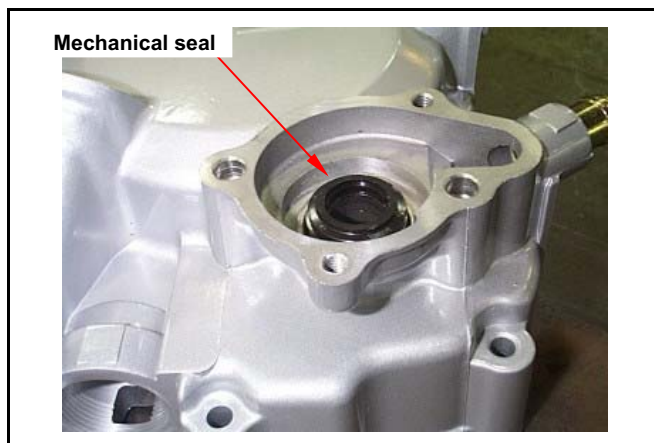
Inner bearing puller



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.

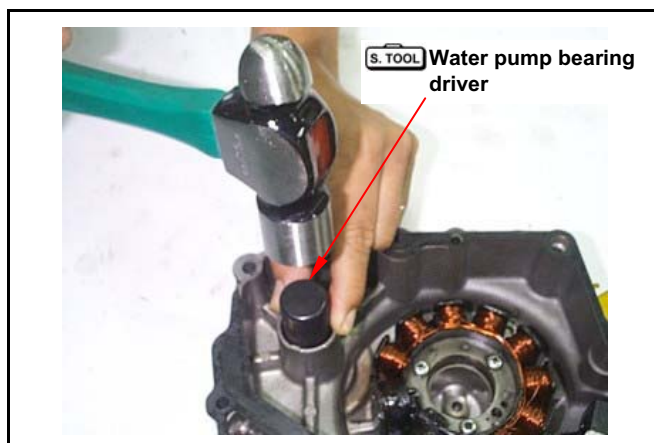
Special tools:

Inner bearing puller

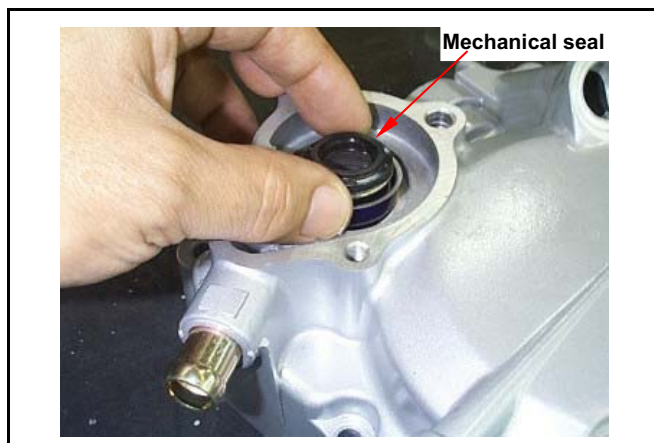
Water pump bearing driver

⚠ Caution

Replace a new mechanical seal after removing it.



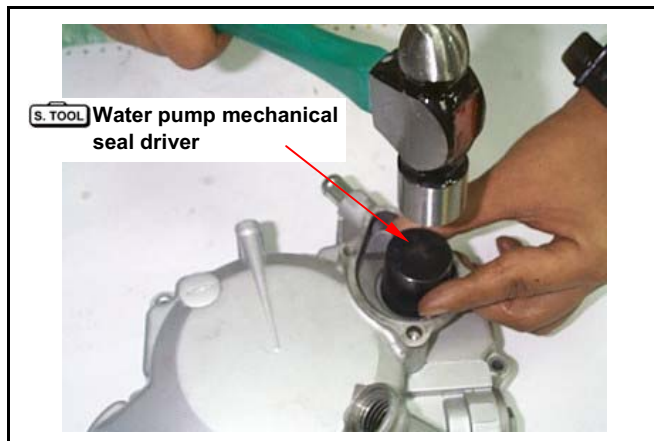
Apply a coat of sealant to the mating surfaces of the right crankcase before installing the new mechanical seal.



Install the mechanical seal onto the right crankcase.

Special tools:

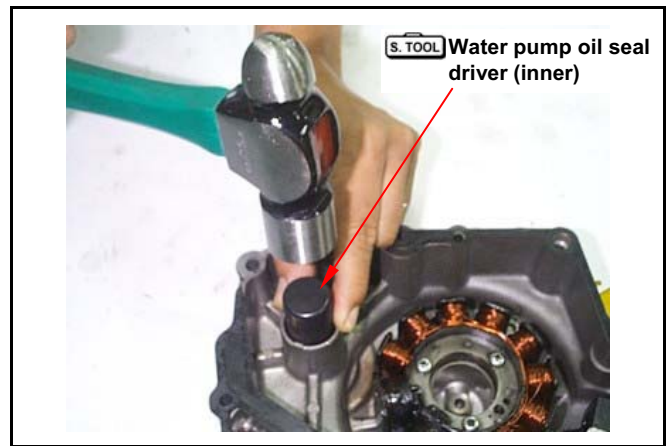
Water pump mechanical seal driver



Install the new inner seal onto the right crankcase.

Special tools:

Water pump oil seal driver (inner)



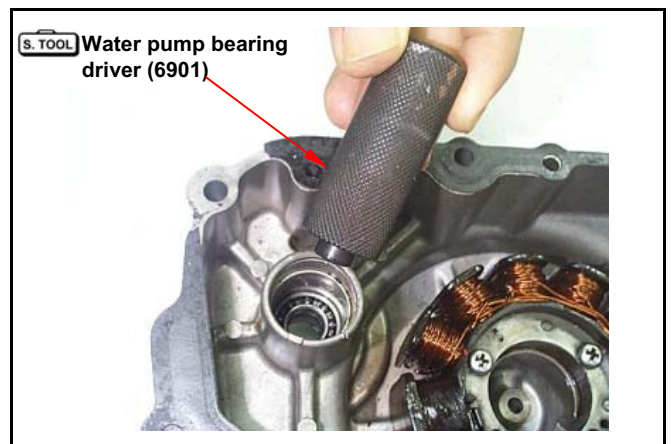
Install a new outside bearing to the right crankcase cover.

Special tools:

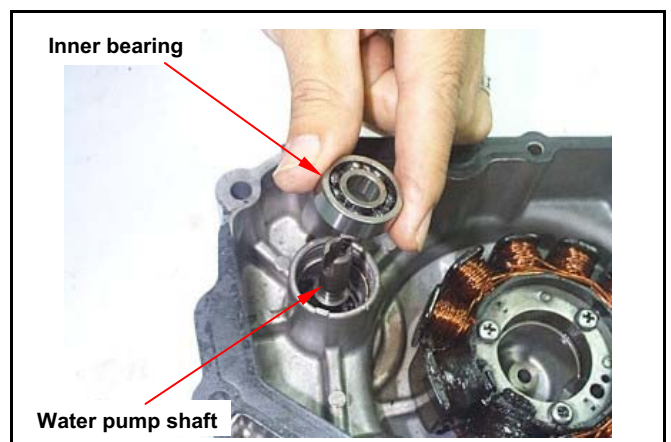
Water pump bearing driver (6901)

⚠ 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 rotor.

⚠ Caution

Washer must be replaced together with the mechanical seal.

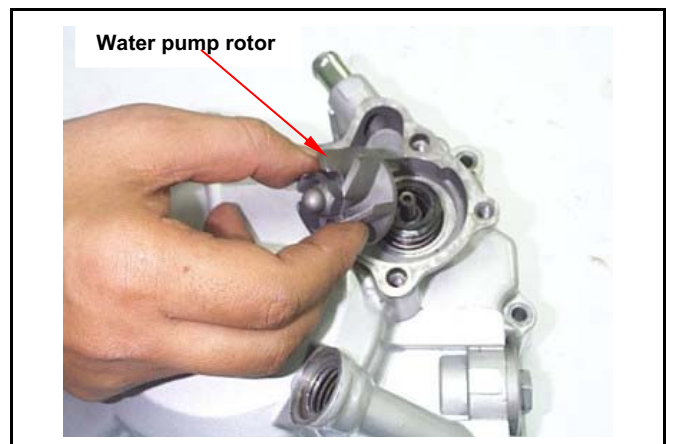


Install the rotor onto the water pump shaft and tighten.

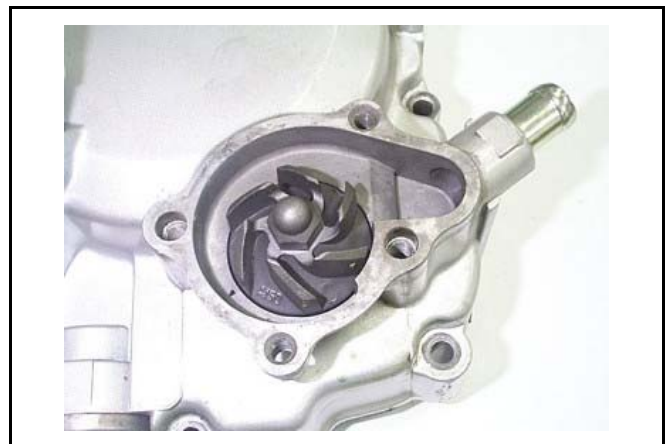
Torque Value: 1.0~1.4kgf-m

⚠ Caution

The rotor is left thread.



Install the dowel pin and right cover gasket.
The rotation water pump rotor, 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.



12-8 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

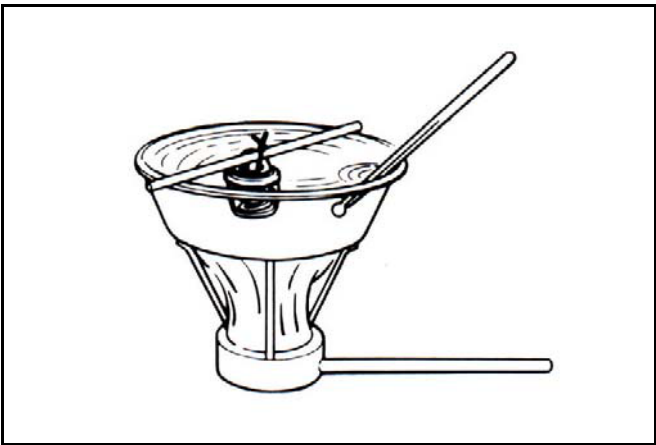
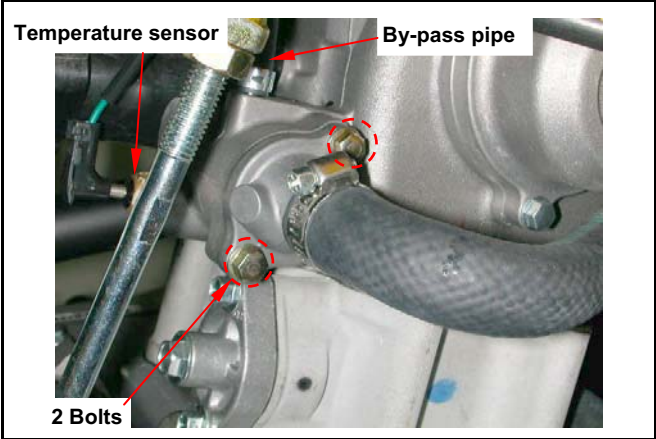
Whenever the thermostat and the thermometer are in contact to the wall of heated water container the reading displayed is incorrect. If the valve of the thermostat remains open at room temperature or the valve operation is not corresponding to the temperature change then it must be replaced.

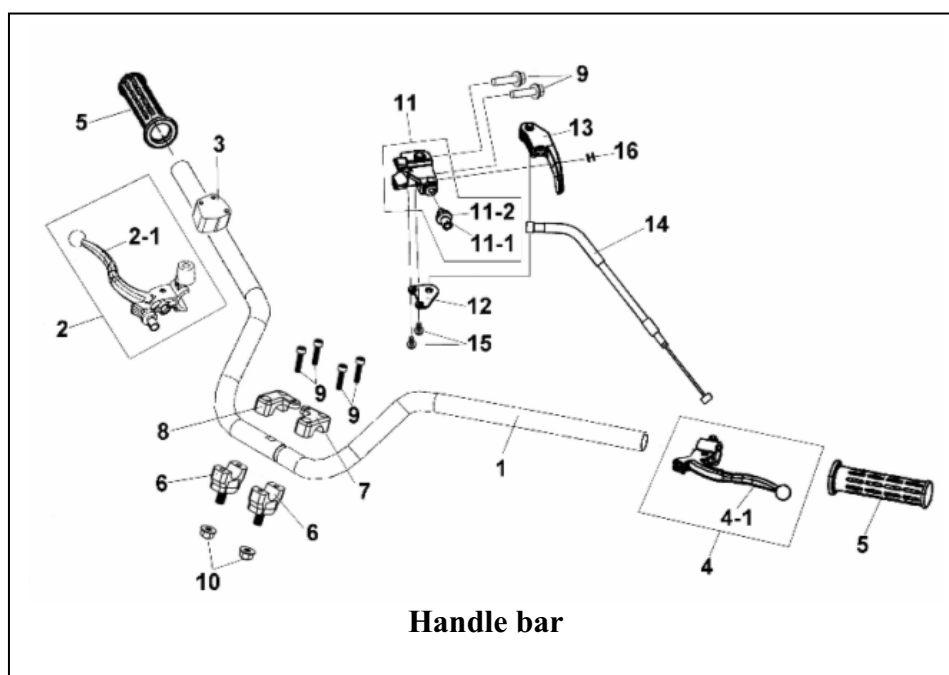
Technical Data

Valve begins to open	82~95℃
Valve stroke	0.05 ~ 3mm

Installation

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





13-2 Troubleshooting

HARD STEERING

- ★ 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

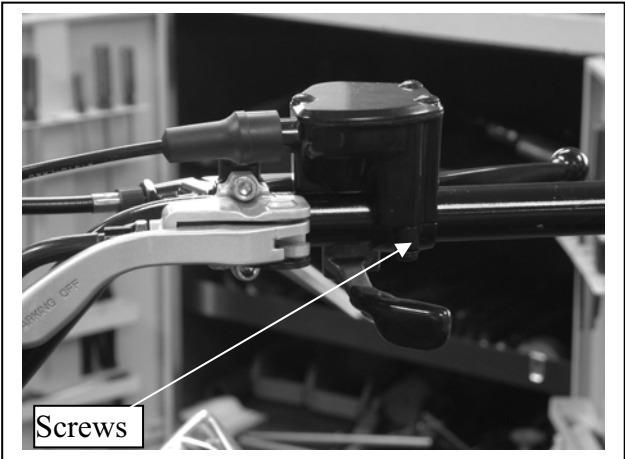
- ★ Weak front shock absorber springs
- ★ Worn or damage front swing arm bushings

13-3 Handlebar

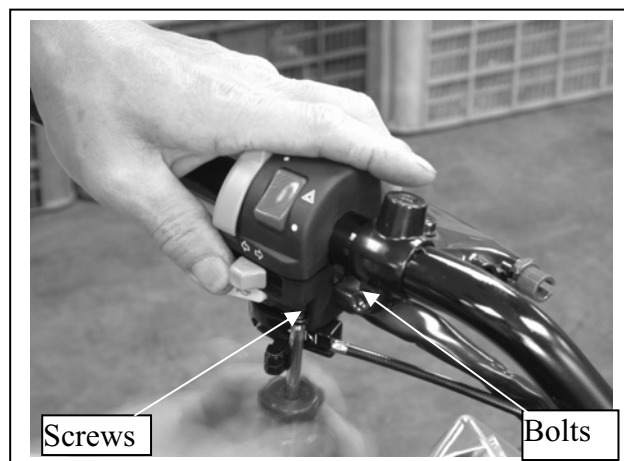
REMOVAL

Remove the throttle housing by two fixed screws.

Remove the throttle lever housing on the right side handle bar.
Remove brake lever bracket assembly.



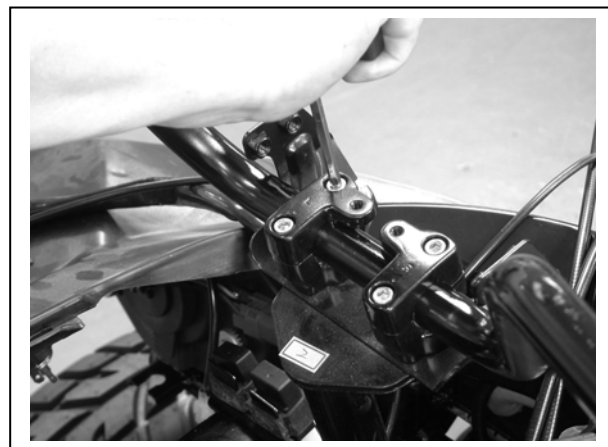
Remove the handle bar switch on the left handle bar.
Remove rear brake lever bracket assembly.



Remove the handle cover and instrument panel by four screws at right and left side as shown in picture.



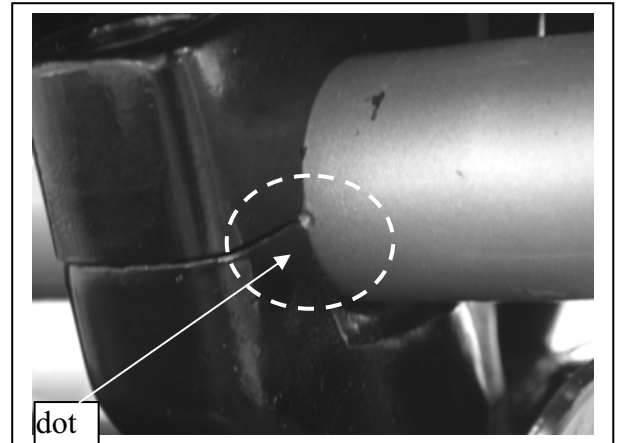
Remove the bolts attaching the handlebar upper holder.
Remove the handlebar.



INSTALLATION

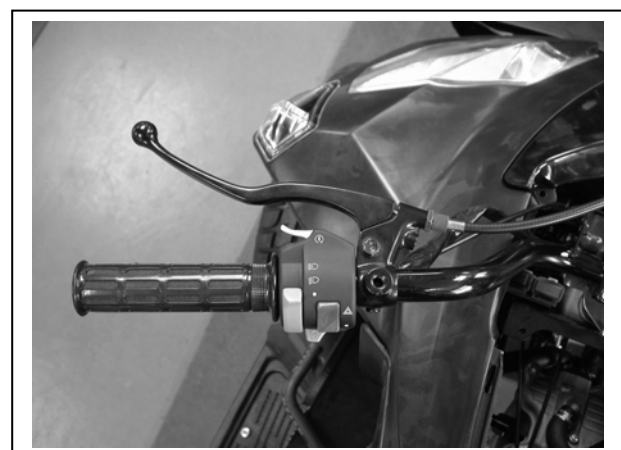
Put the handlebar on the lower holders.
Make sure the handlebar punch marks match with the top end of the handlebar of lower holders.

Install the handlebar upper holders with the L or R marks facing forward.
Tighten the forward bolts first, and then tighten the rear bolts.
Install the handlebar upper holder's cover.



Install the switch housing, aligning the small dot of the handlebar.
Tighten the upper screw firstly, after that tighten the lower one.

Install the rear brake lever bracket, aligning the small dot of the handlebar.
Tighten the screw securely.



13-4 Throttle Housing

DISASSEMBLY

Loosen the screws on the throttle housing cover.

Remove throttle housing cover and gasket.

Disconnect throttle cable from the throttle arm and remove from the throttle housing.

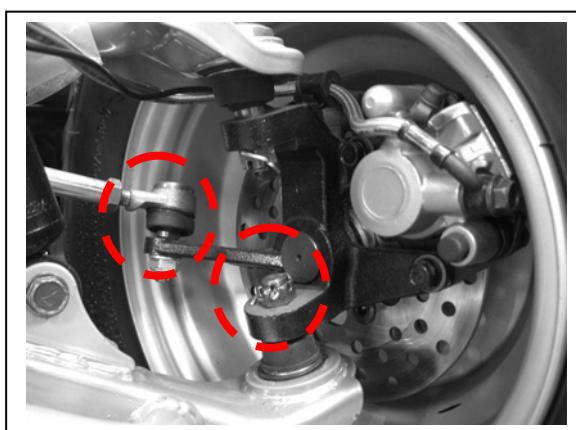
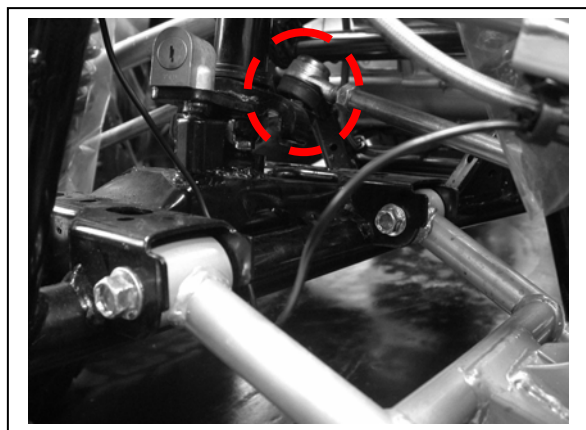
NOTE:

Assembly is in the reverse order of disassembly.



13-5 Steering System

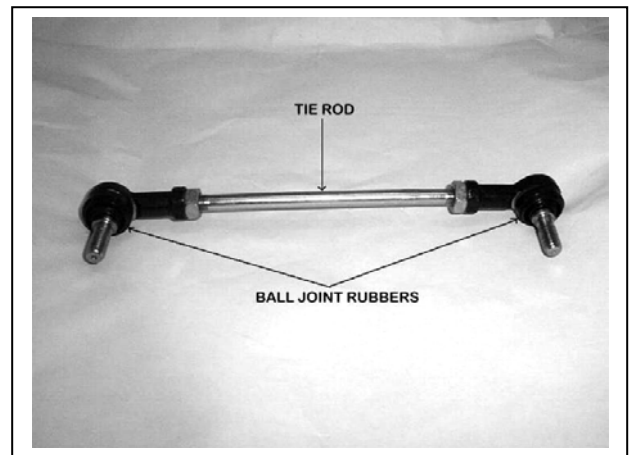
When the steering shaft needs to be repaired, you need to remove three kinds of components: the tie-rods, front wheels and hub assy. Following the steps to check these components, if broken please change the new one



Step 1 Tie-rod Inspection

- ✓ Inspecting the tie-rod for damage or bending.
- ✓ Inspecting the ball joint rubbers for damage, wearing or deterioration.

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



Steering Shaft Removal

Remove the handle bar cover and handle bar.

(See Chapter 13-3)

Remove the front fender. (See Chapter 16-1)

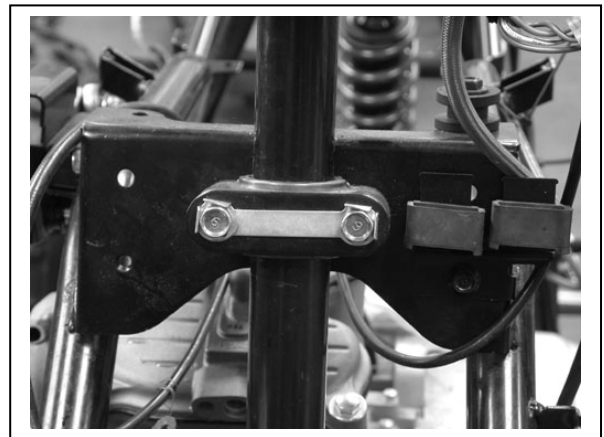
Remove handlebar lower holder.

Loosen the steering shaft holder bolt and remove steering shaft holder.

Take off the cotter pin below steering shaft.

Loosen the steering shaft fixed out below shaft.

Pull steering shaft carefully.



Step 2 Steering Shaft Holder Inspection

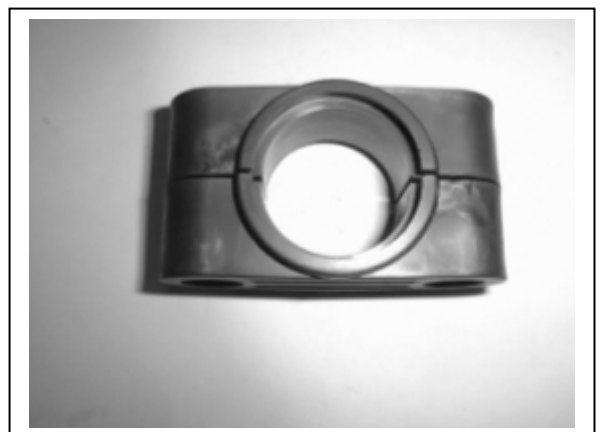
Remove the steering shaft.

Remove the bushing from the shaft.

Inspect the bushing for damage or wear, replace if necessary.

Measure the bushing inner diameter.

Maximum limit: Ø39.5 mm



Step 3 Steering Shaft Inspection

Inspect the steering shaft for damage or cracks.

Installation of Steering Shaft

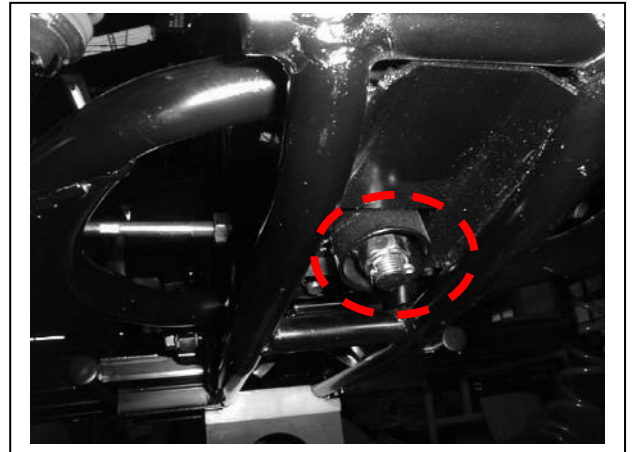
Apply grease to the holder.

Install the holder and oil seal tighten with the nuts.

Torque: 33 N.m (24 lbf-ft)

Install the steering shaft nut and tighten it.
This nut is under this steering shaft.

Torque: 50 N.m (37 lbf.ft)

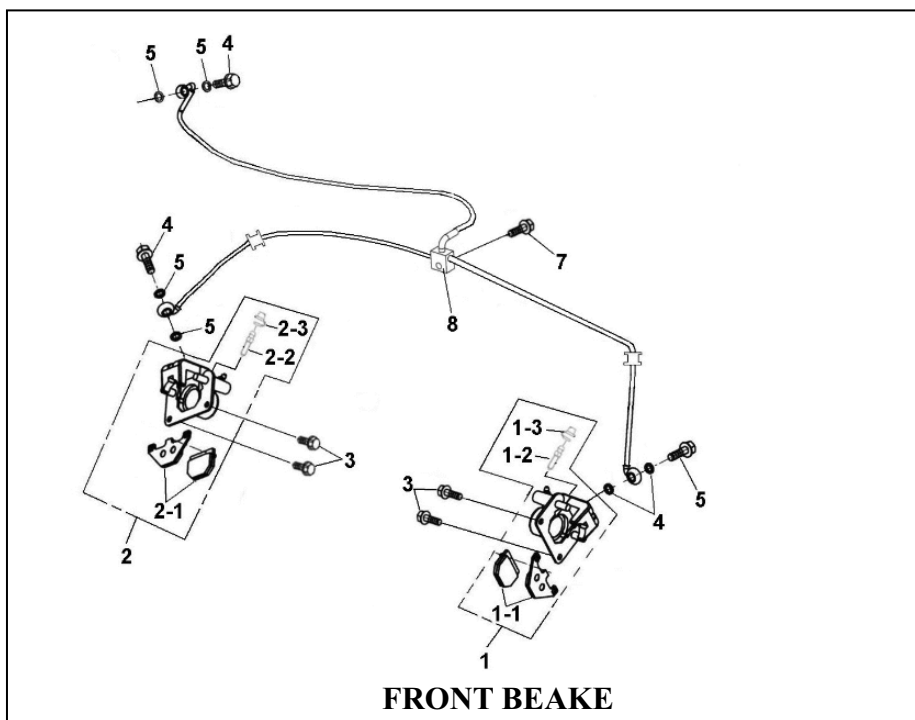
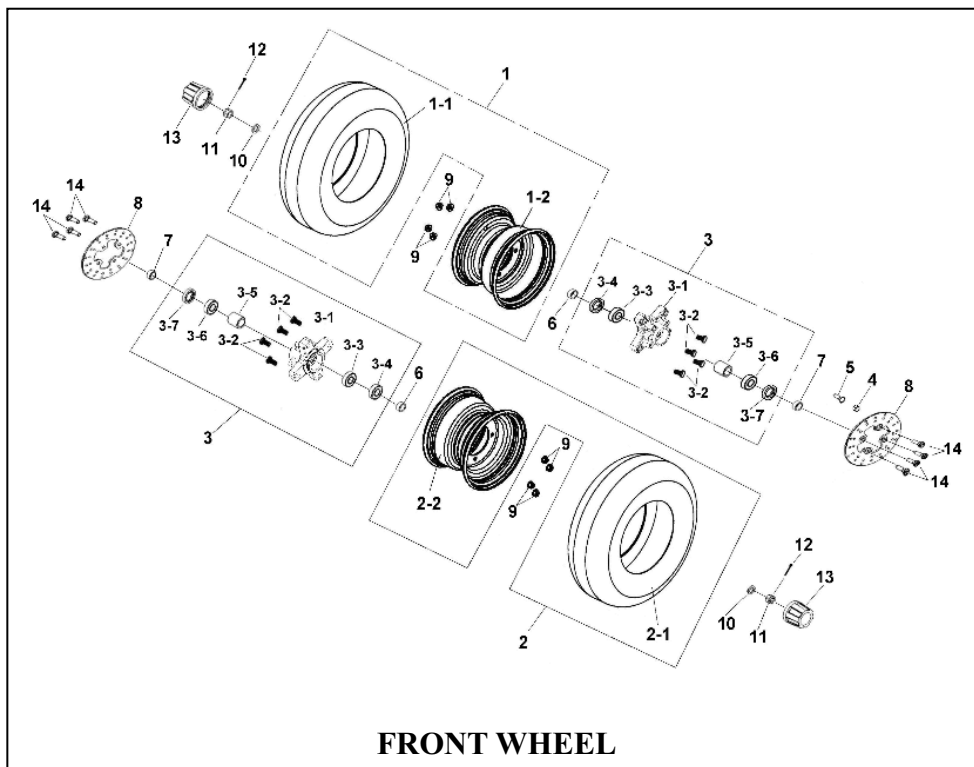


14. FRONT WHEEL AND BRAKE SYSTEM

14-1 Parts Drawing
14-2 Troubleshooting
14-3 Front Wheels

14-4 Hydraulic Brake
14-5 Suspension Adjustment

14-1 Parts Drawing



14-2 Troubleshooting

HARD STEERING

- ★ Faulty tire
- ★ Insufficient tire pressure

FRONT WHEEL WOBBLING

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

BRAKE DRAG

- ★ Incorrect brake adjustment
- ★ Sticking brake cable

STEERS TO ONE SIDE

- ★ Bent tie rods
- ★ Wheel installed incorrectly
- ★ Unequal tire pressure
- ★ Incorrect wheel alignment

POOR BRAKE PERFORMANCE

- ★ Brake shoes worn
- ★ Worn brake drum
- ★ Brake linings oily, greasy or dirty
- ★ Improper brake adjustment

14-3 Front Wheels

REMOVAL

(The disassemble of front wheel system in this serials are the same)

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

Remove the front wheel nuts, washer and wheels.

INSTALLATION

Install and tighten the four-wheel nuts

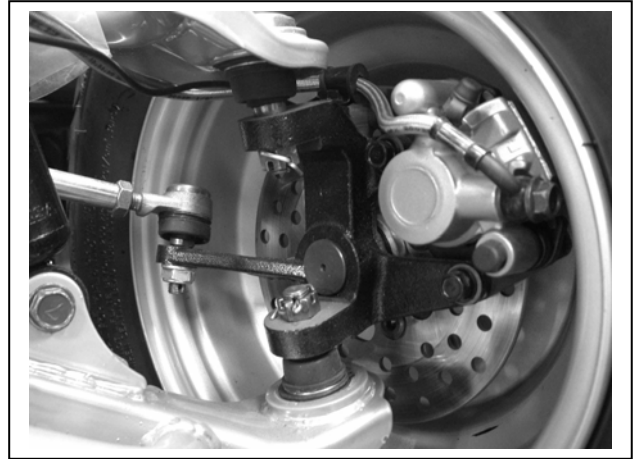
Torque: 24 N.m (17.7 lbf.ft)

Remember put a cotter pin in the castle nut.



14-4 Hydraulic Brake

This type of brakes are applying in front of two wheels of RA1



REMOVAL

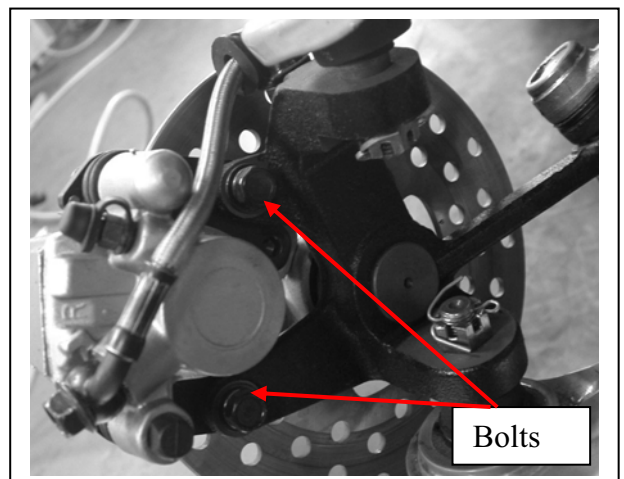
Raise the front wheels off the ground by placing a jack or other support under the frame.

Remove the front wheel nuts, washer and wheels.
Please follow the next three steps of right pictures.

Loosen four nuts as shown in picture.
Then take the wheel out.



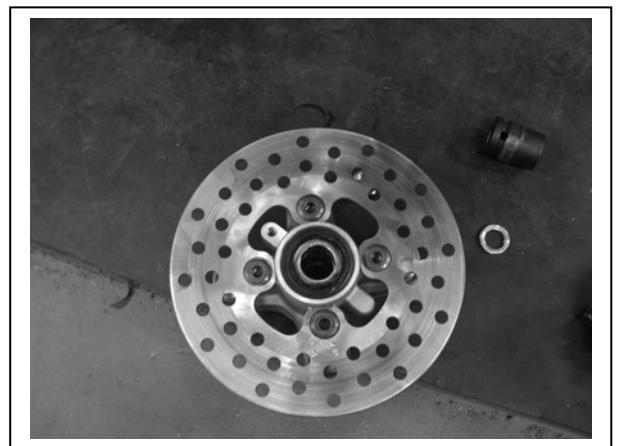
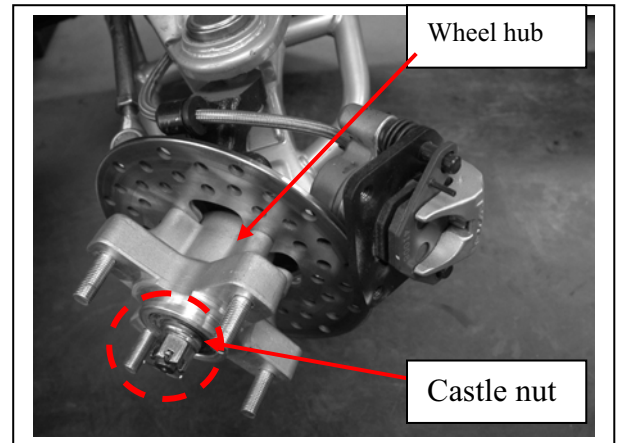
You can find two bolts fixed at front hydraulic disk component.
Loosen these two bolts and you can take out disk component.



After disassembling the wheel, please inspect the disk plate.
If the disk plate needs to be changed, you have to loosen castle nut to take wheel hub apart.

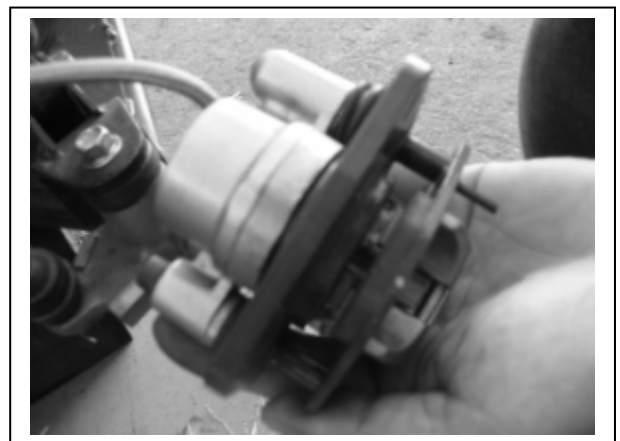
Before loosening castle nut, you have to remove cotter pin

Then using the power tools to take the screw out from brake stopping plate. You can take the brake disc off.



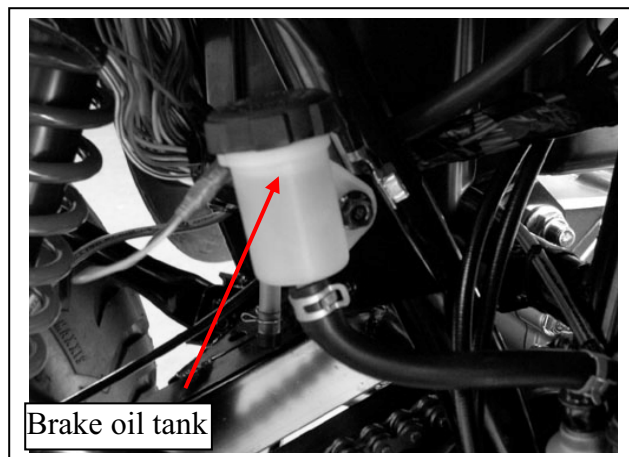
When change brake shoe wear, you must push the master piston to rearward.

After removal the front brake assembly, you must fabricate in reverse sequence.



ADD BRAKE OIL

The brake oil tank is under the driver seat at right hand side. Please check the brake oil level position at outside of tank. To open the cap of brake oil tank, please turn “CCW” direction.



14-5 Suspension Adjustment

Suspension system in this type of AVT can be adjustable its hardness and softness (fig 1).

1. You can raise the all ATV body up by using a repair platform.
The four wheels are in the free position, you can use special tool (adjustable hook spanner, E1105-LRA0-FT1) to adjust the suspension.

How to use the “Adjustable Hook Spanner”

When you use the adjustable hook spanner, please depress the slider (fig 2&3.) to a proper position.



Fig 1

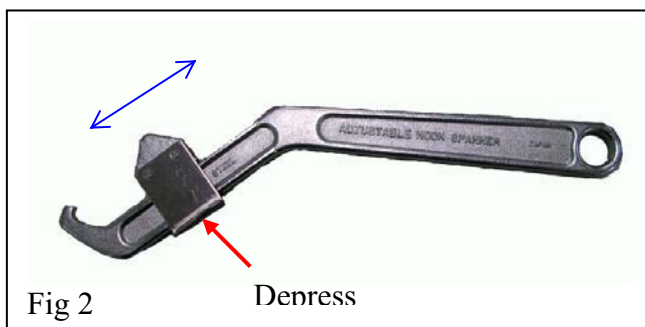


Fig 2

Depress

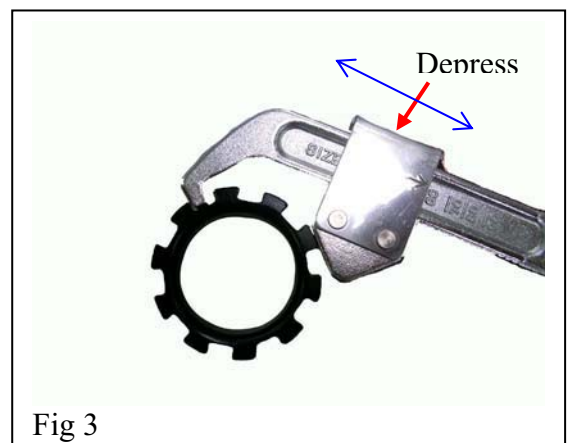


Fig 3

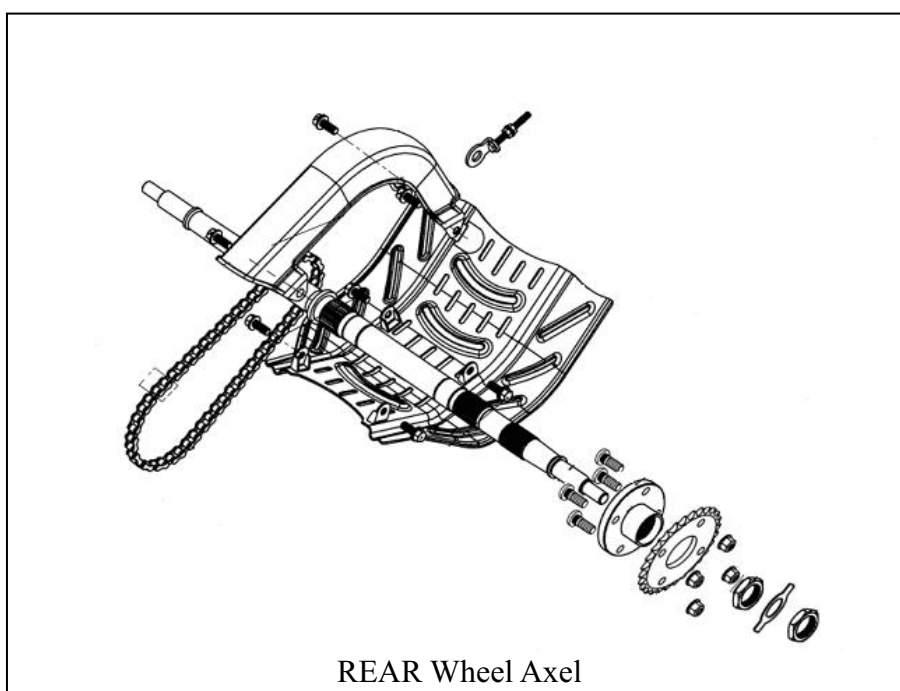
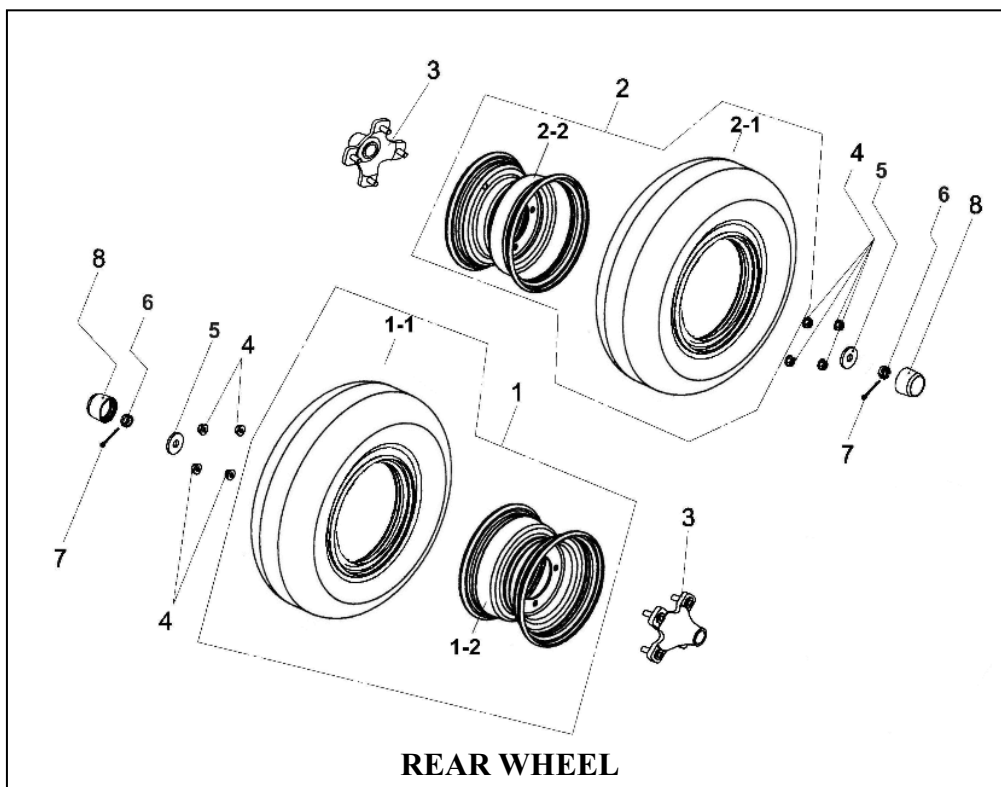
Depress

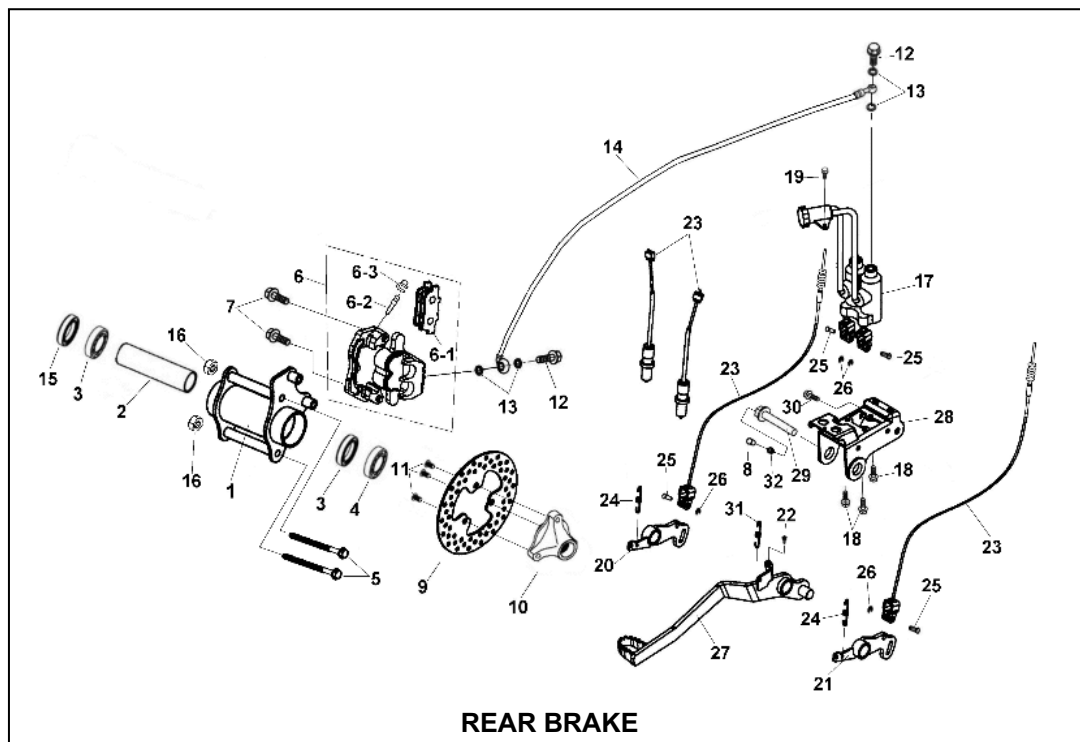
15. REAR WHEEL AND BRAKE SYSTEM

15-1 Parts Drawing
15-2 Troubleshooting

15-3 Remove Rear Wheel And Rear Brake
15-4 Swingarm & Rear Axle Holder
15-5 Suspension Adjustment

15-1 Parts Drawing





15-2 Troubleshooting

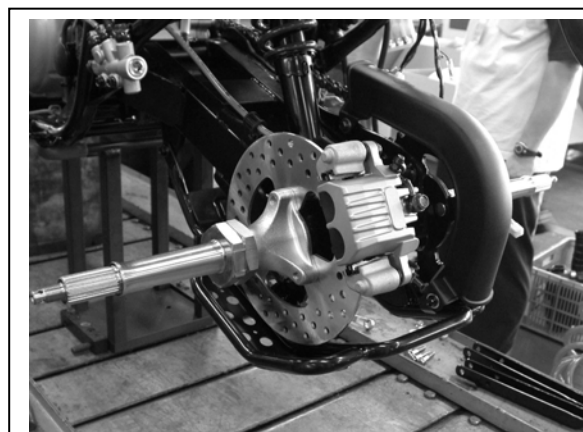
Bad Brake Performance	★	Brake shoes are worn
	★	Bad brake adjustment
	★	Brake linings are oily, greasy or dirty
	★	Brake drums are worn
	★	Brake arm setting is improperly engage
Vibration or Wobble	★	Axle is not tightened well
	★	Bent rim
	★	Axle bearings are worn
	★	Faulty tires
	★	Rear axle bearing holder is faulty
Brake Drag	★	Incorrect brake adjustment
	★	Sticking brake cam
	★	Sticking brake cable
Hard Suspension	★	Bent damper rod
	★	Faulty swing arm pivot bushings
Soft Suspension	★	Weak shock absorber damper
	★	Weak shock absorber spring

15-3 Remove Rear Wheel And Rear Brake

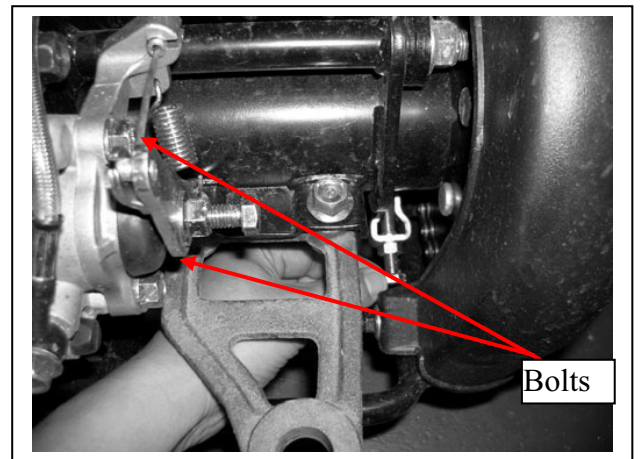
To replace brake disk

The produce of removing the rear left tire is same as removing front tire.

You need to loosen four nuts firstly.



Loosen two bolts to take out rear brake disk as shown in picture.

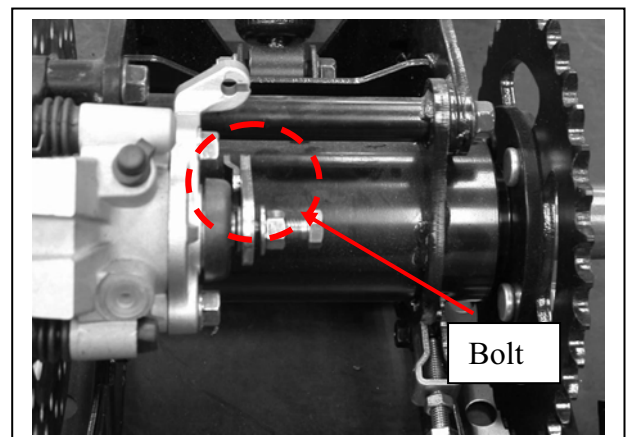


Loosen bolts and remove the brake disc
Check the thickness of disc and replace a new one if the thickness less than 3mm

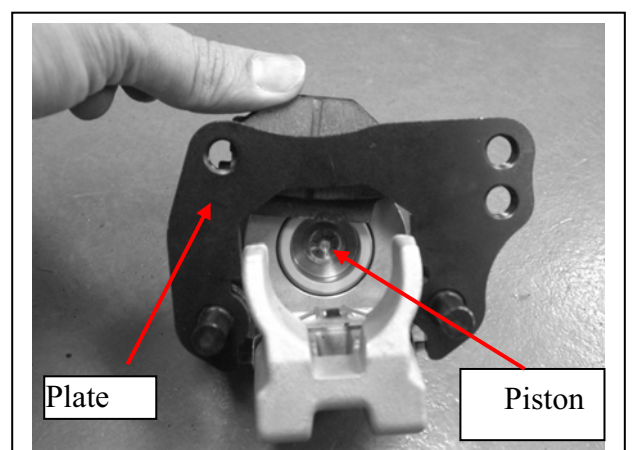


TO REPLACE THE BRAKE SHOE

To replace the brake shoe, please loosen this bolt as shown in picture.

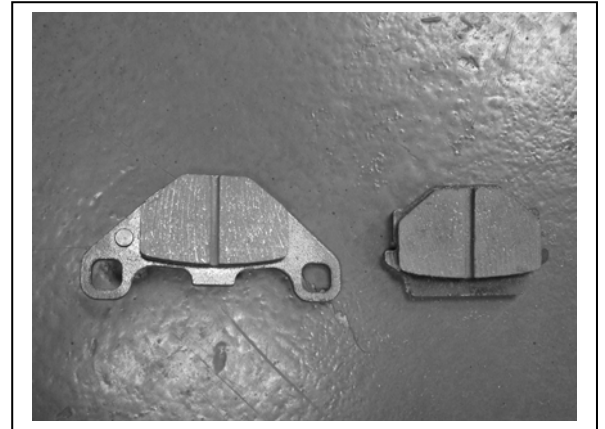


Please push the plate back to take a shoe out as shown in picture



Eventually, you can take all brake shoe out the hub.

There are two kind of brake linings as shown in picture

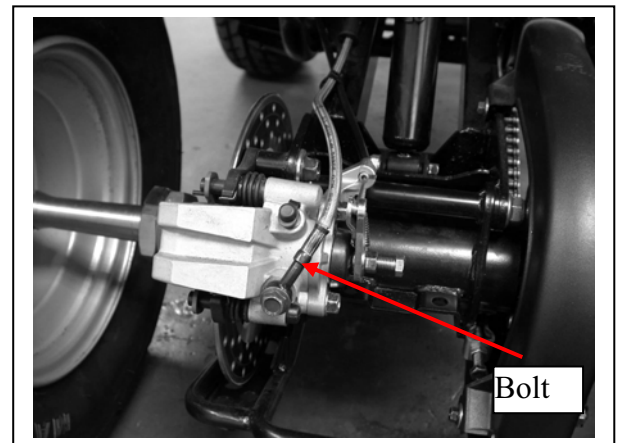


TO REPLACE THE BRAKE HYDRAULIC OIL

Loosen the bolts and open the cover

Loosen the bolt and drain the used oil out.

Tighten the bolt after the used oil being drained out completely



Add the brake oil (Dot 3 or Dot 4)

Keep oil level at least half of the cup in order to avoid air in the brake system.



Loosen the bolt to vent the air from brake system.

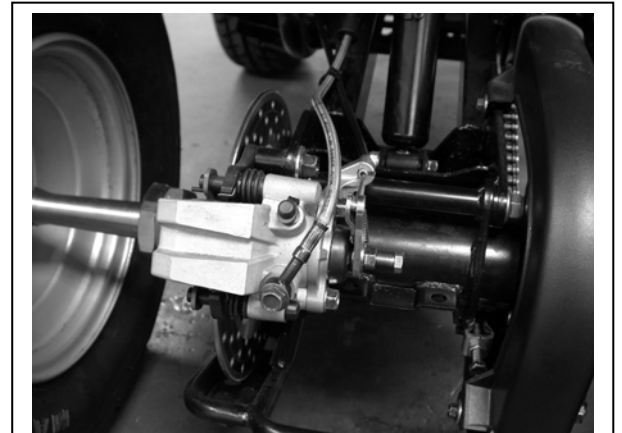
Tighten the bolt if there isn't any air in the brake system

Tighten torque 40~70kgf-cm

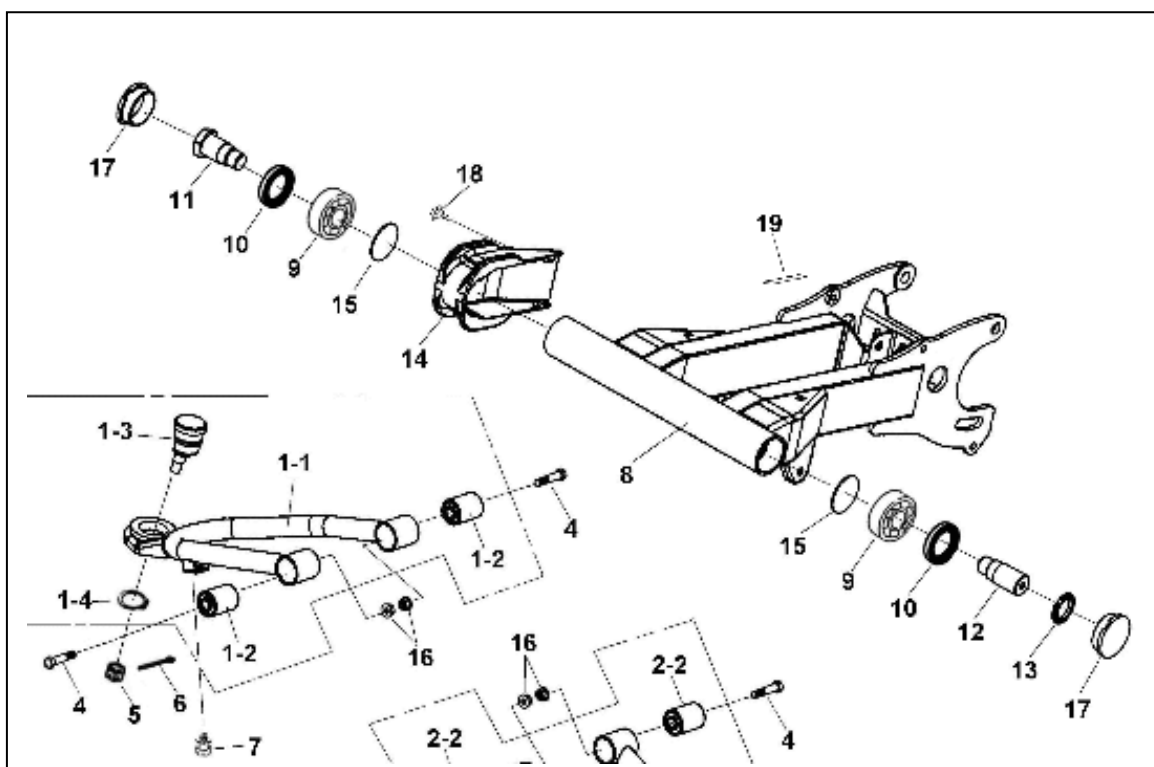
Pull left brake lever slightly in order to extract air from brake system

Fill the brake oil in the level shown on the cup when no air comes out

Assemble the cover

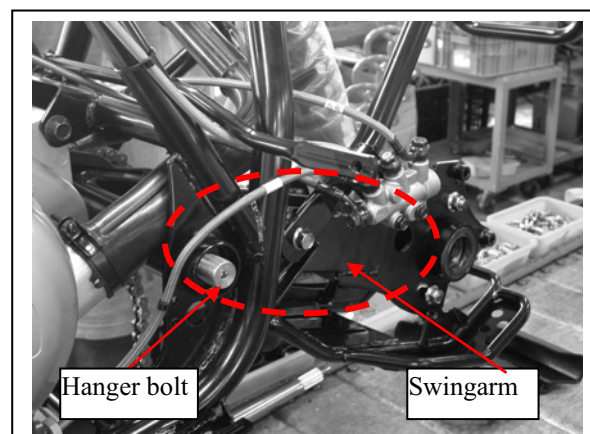


15-4 Swingarm & Rear Axle Holder

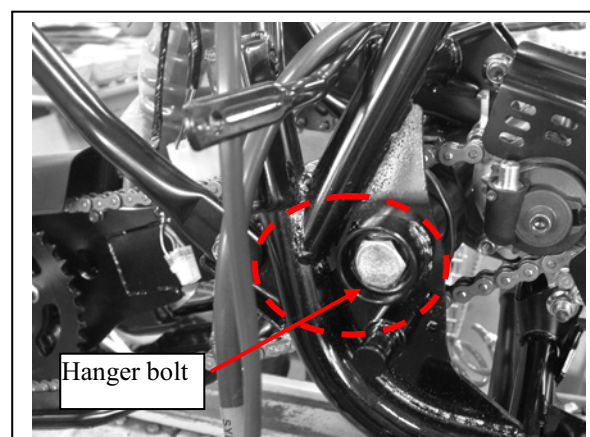


This section is to introduce how to repair the swing-arm,
The following pictures are going to teach you how to
Install the swing-arm.

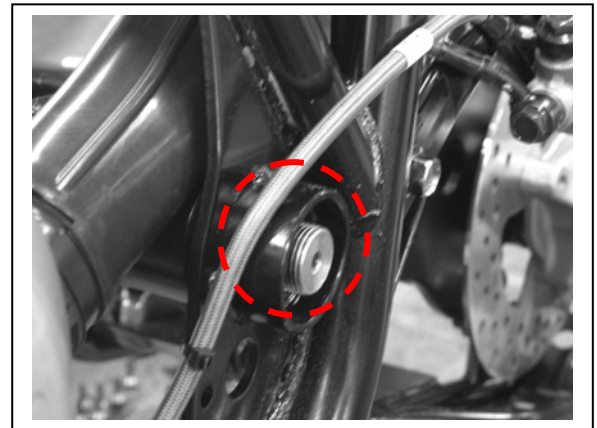
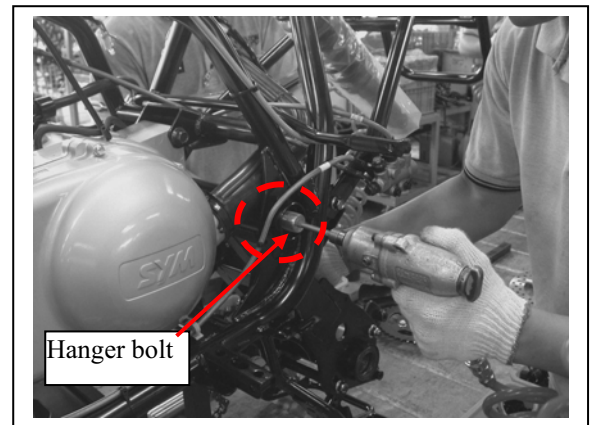
1. Put the swingarm at proper position as shown in picture. Two hanger bolts will be used to hold the swing-arm at right and left side.



2. Tighten a hanger bolt on the right side as shown in picture.



3. Screw another hanger bolt on the left side as shown in picture. But do not tighten it. Let the cross-section of bolt and cross-section of hole in the same plane nearly.



4. Tighten the nut



NOTE: If you make a wrong assembly procedure, it will cause:

1. A damage of bearings

2. The main frame will be extended at the area of assembly swim arm (Unalignment).

15-5 Suspension Adjustment

Suspension system in this type of AVT can be adjustable its hardness and softness (fig 1).

1. You can raise the all ATV body up by using a repair platform.
The four wheels are in the free position, you can use special tool (adjustable hook spanner) to adjust the suspension.

How to use the “Adjustable Hook Spanner”

When you use the adjustable hook spanner, please depress the slider (fig 2&3.) to a proper position. You can then adjust your ATV’s suspension (fig 4).

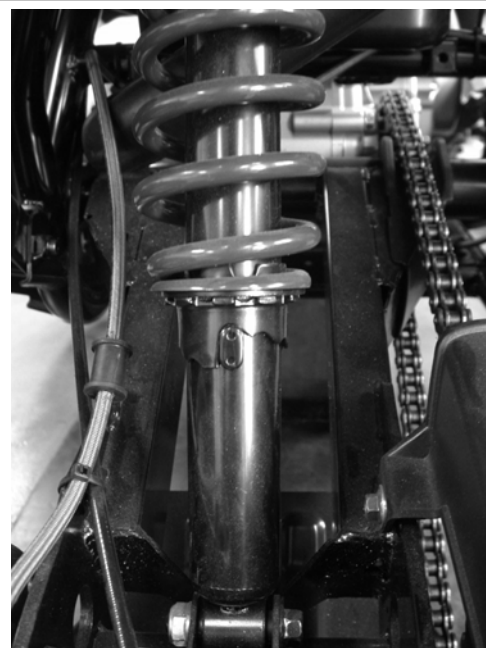


Fig 1

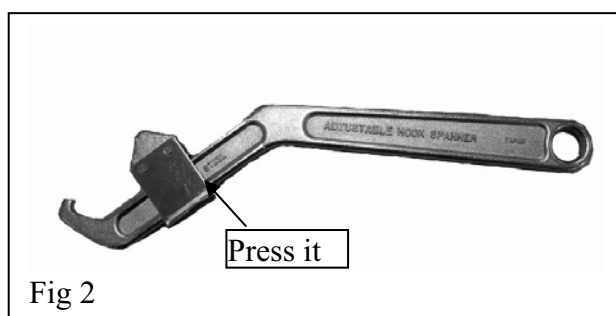


Fig 2

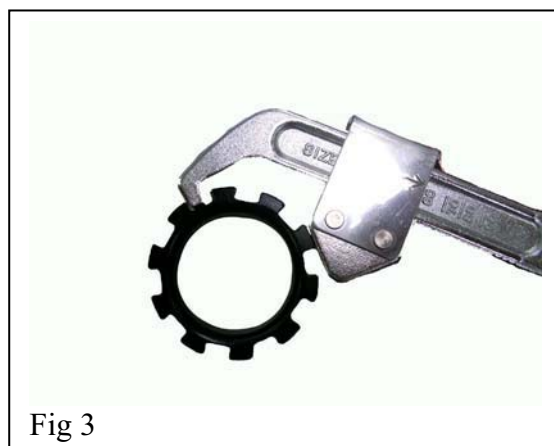


Fig 3

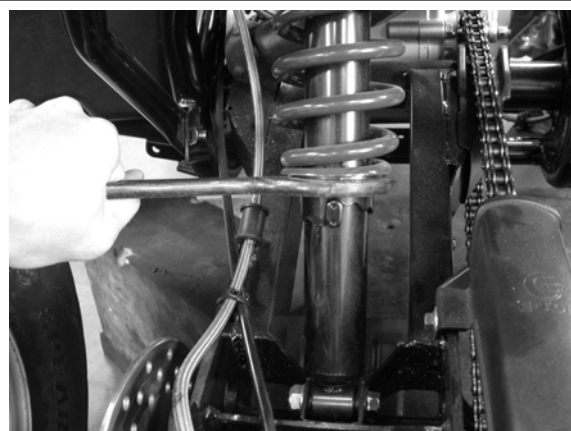


Fig 4

16. FENDERS AND EXHAUST PIPE

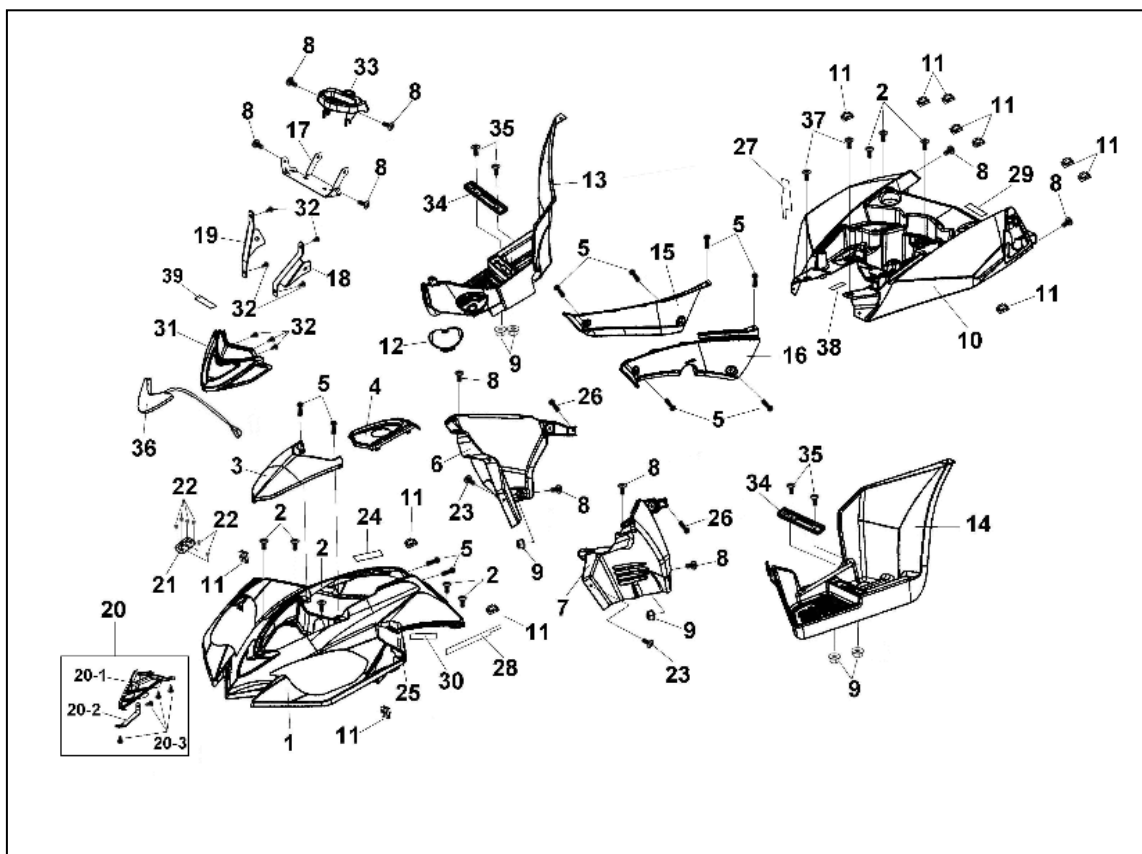
16-1 Fenders Drawing

16-2 Rear Fenders Removal

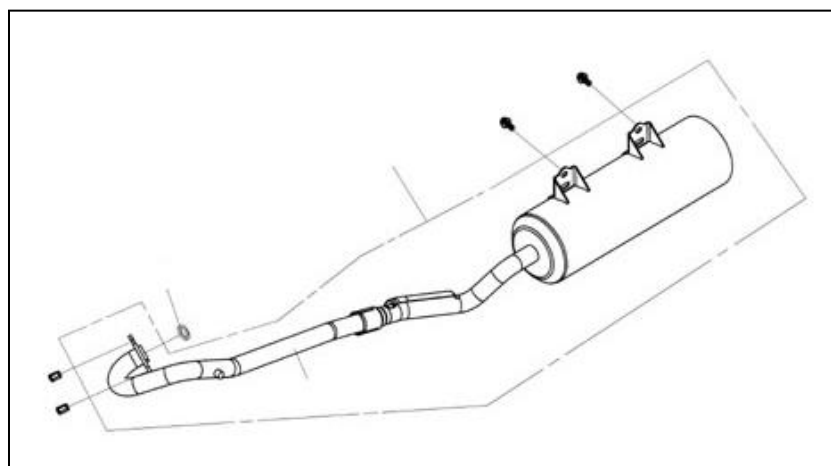
16-3 Front Fender Removal

16-4 Exhaust Pipe Removal

16-1 Fenders Drawing

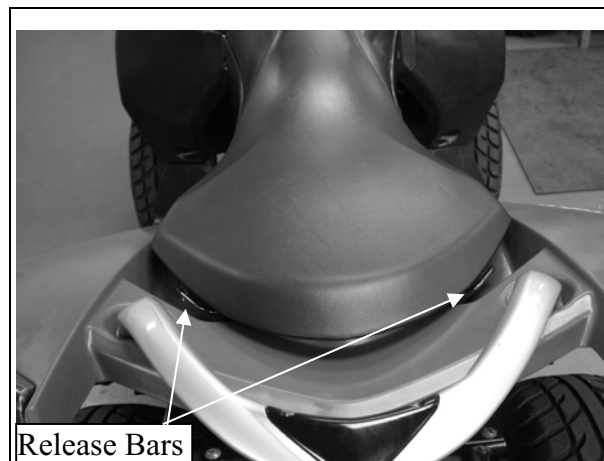


EXHAUST PIPE (For all serials)



16-2 Rear Fenders Removal

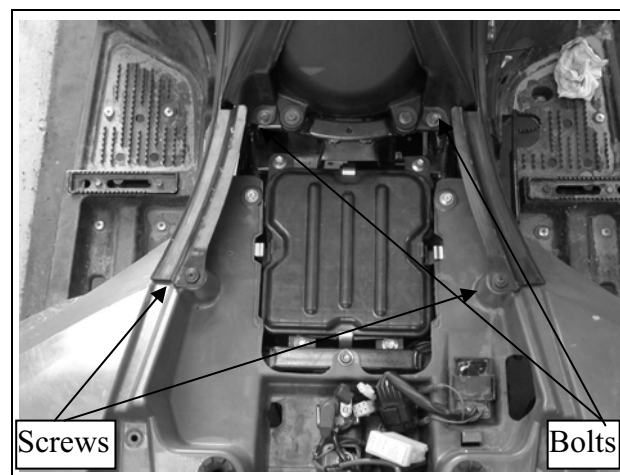
There are two seat release bars located at the right and left hand side of the seat. Please remove the seat first.



Procedures of remove the rear fender:

Remove the rear rack.

1. Open the seat.
2. Loosen the four bolts which connect the front fender and rear fender.
3. Loosen the two bolts, which connect the rear tender and frame, these two bolts just below the seat.

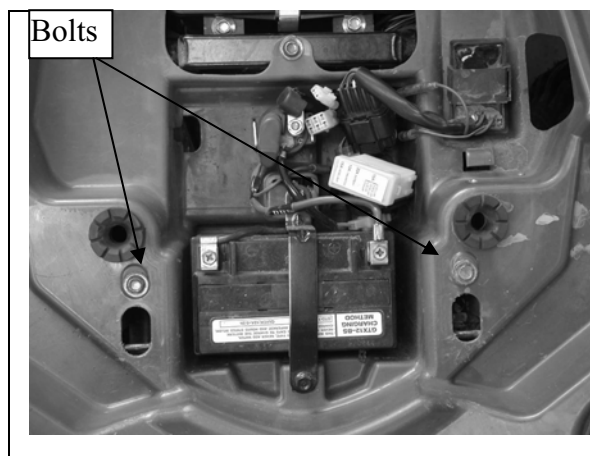


Loosen the three screws which connect with footrest plate.
Pull the rear fender backward.
So the rear fender can be removed.

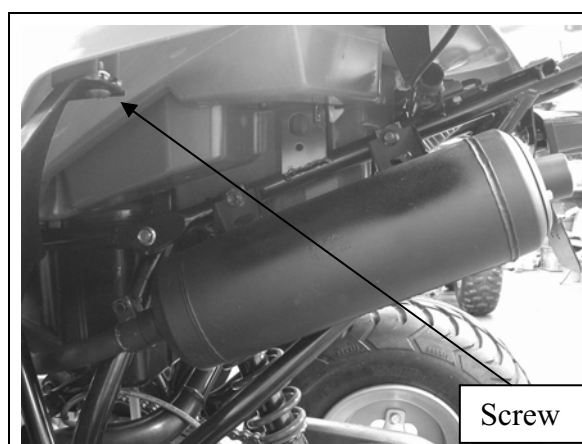


Pull the seat handle up first.

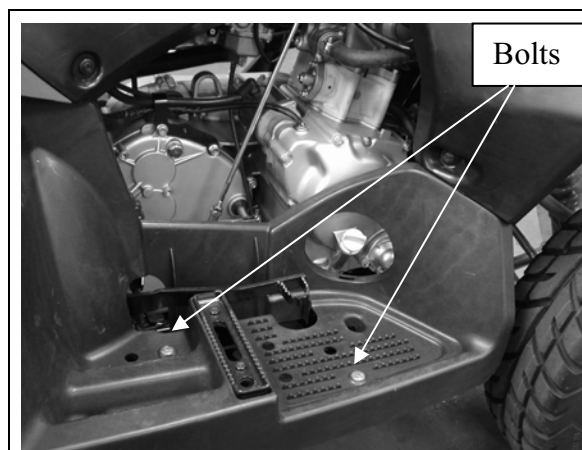
**There are two screws on the top of seat compartment.
Please remove them.**



Next, there are two screws on side of the tail.



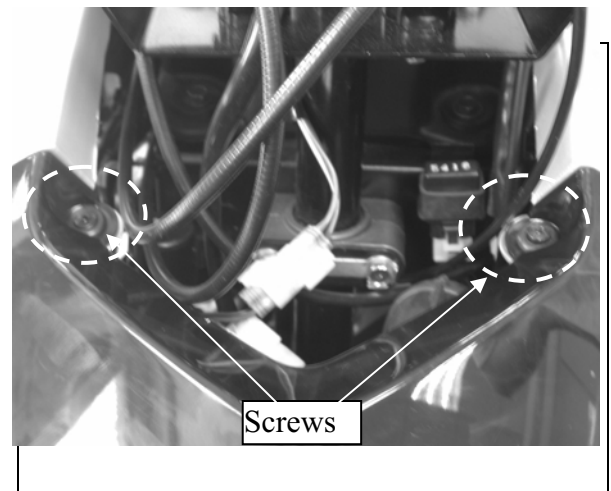
Finally, you must remove the bolts on the footrest.



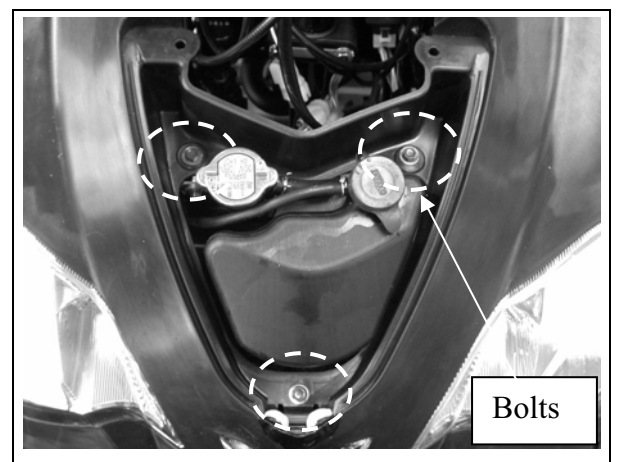
16-3 Front Fender Removal

To remove the front fender, there are several steps to indicate users how to remove it.

1. First picture shows there are two screws, loosen it.

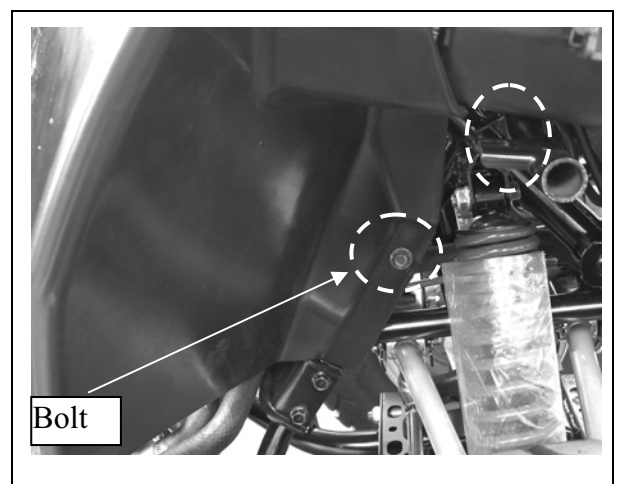


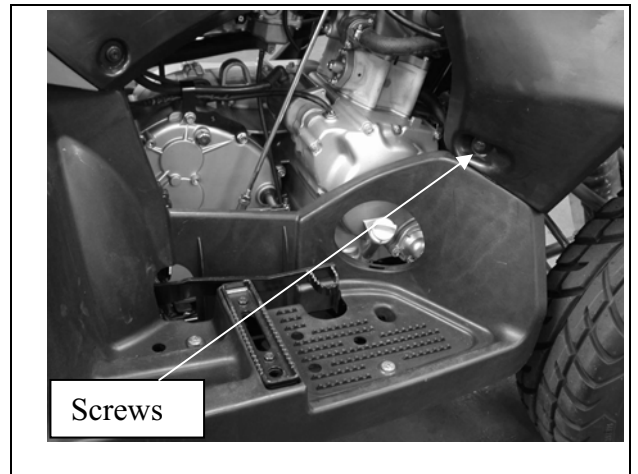
Remove the mounting bolts from the front fender.



Please remove the two screws on the top of the headlight. Then you can see there is a screw on the tip of the vehicle. Please remove it.

There is a screw near the suspension as shown in picture.





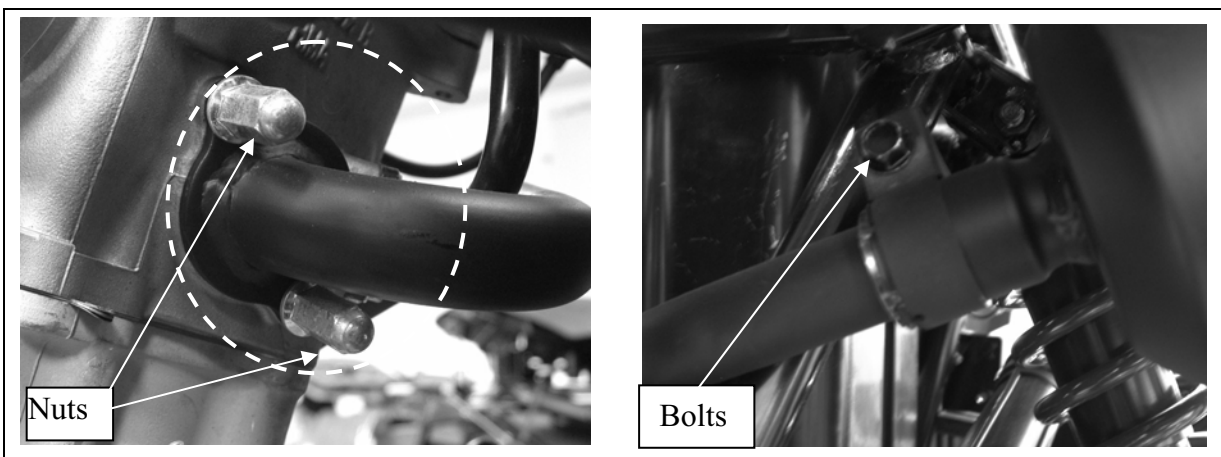
16-4 Exhaust Pipe Removal

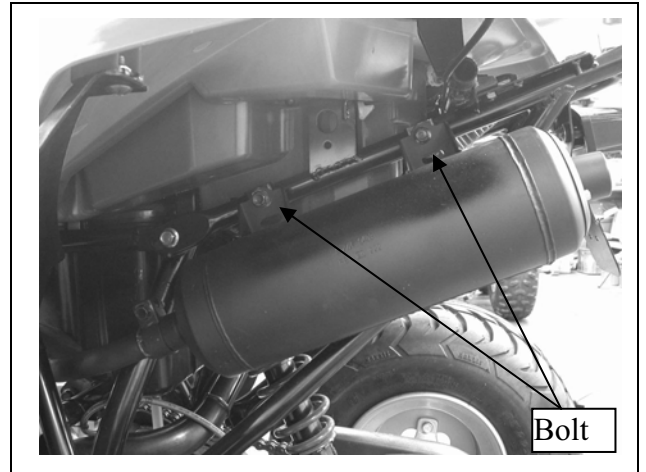
You must wait at least 15 minutes after stopping the engine.
You need to remove the seat, rear fender and footrest plate,
before you take off the exhaust pipe.
Loosen the two exhaust pipe bolts that fixed on the engine.

⚠Warning : DO NOT service the exhaust pipe while they are hot.

Remove the exhaust pipe bolts mounting on the frame
below the seat.

Remove the exhaust pipe carefully.





EXHAUST PIPE INSTALLATION

Installation is the reverse order of removal.

Torque: Exhaust muffler bolts 30 N.m (22 lbf.ft)

⚠ CAUTION:

After installing, make sure that there are no exhaust leaks.

17. ELECTRICAL SYSTEM

17-1 Troubleshooting
17-2 Ignition Coil
17-3 Ignition Timing
17-4 Battery Information

17-5 Electric Starter
17-6 Light Bulbs Replacement
17-7 Instrument Pane
17-8 Wiring Diagram

17-1 Troubleshooting

ENGINE STARTS BUT STOPS

NO SPARK AT PLUG

- ★ IMPROPER IGNITION TIMING
- ★ FAULTY SPARK PLUG
- ★ ENGINE STOP SWITCH AT “ OFF “ POSTION
- ★ GEARSHIFT BAR IS NOT AT NORMAL POSITION
- ★ FAULTY IGNITION COIL
- ★ FAULTY GENERATOR
- ★ FAULTY CDI UNIT
- ★ POOLY CONNECTED:
 - Between CDI and ignition coil
 - Between alternator and CDI unit
 - Between CDI and engine stop switch
 - Between ignition coil and spark plug
 - Between generator and CDI unit

ENGINE STARTS BUT RUNS POORLY

- ★ IGNITION PRIMARY CIRCUIT
 - Faulty generator
 - Faulty CDI unit
 - Faulty alternator exciter coil
 - Loosen contacted terminals
 - Faulty ignition coil
- ★ IGNITION SECONDARY CIRCUIT
 - Faulty plug
 - Loosen contacted spark plug wire
- ★ IMPROPER IGNITION TIMING
 - Faulty generator
 - Faulty CDI unit

CHARGING SYSTEM FAILURE

- ★ LOOSE, BROKEN OR SHORTED WIRE
- ★ FAULTY ALTERNATOR
- ★ FAULTY IGNITION SWITCH

ENGINE INTERMITTENT POWER

- ★ LOOSE BATTERY CONNECTION
- ★ LOOSE CHARGING SYSTEM CONNECTION

STARTER MOTOR CAN NOT WORK

- ★ BATTERY SHORTAGE
- ★ FAULTY IGNITION SWITCH
- ★ LOOSE OR DISCONNECTED WIRE
- ★ FAULTY IGNITION SYSTEM
- ★ ENGINE PROBLEMS
- ★ FAULTY ENGINE STOP SWITCH
- ★ THE SWITCH DO NOT TURN TO “ON” POSITION

ENGINE CAN NOT WORK

HEAD LIGHT CAN NOT WORK

- ★ THE LIGHT BULB WAS BROKEN, REPLACED

17-2 Ignition Coil

Remove the spark plug cap from the spark plug.
Disconnect the ignition coil primary wire.

Measure the primary coil resistance.

STANDARD: $0.1 - 0.3 \Omega (20^{\circ}\text{C})$

Measure the secondary coil resistance with
the spark plug cap in place.

STANDARD : $7.4 - 12 \text{ k}\Omega (20^{\circ}\text{C})$



17-3 Ignition Timing

The ignition advance is $15^{\circ} \pm 3^{\circ}/4000\text{rpm}$

The Capacitive Discharge Ignition (CDI) system is factory pre-set and does not require adjustment.

17-4 Battery Information

The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using the battery in an open area. The battery contains sulfuric acid (Electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield. Electrolyte is poisonous. If swallowed drink large quantities of water or milk and call a physician.

BATTERY VOLTAGE INSPECTION

Battery is under the seat. Measure the battery voltage by using a multifunction electric meter.

VOLTAGE: Fully charged: 13.1 V
Undercharged: Below 12.0 V

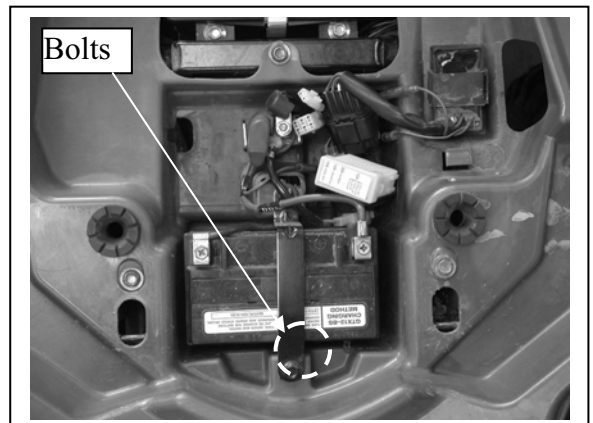


BATTERY REMOVAL

There are two main steps to teach you how to take out battery.
Open the seat, and then you can see the battery.
Disconnect the negative cable (Black —) first and then the positive cable (Red +).

BATTERY INSTALLATION

Install the battery in the reverse order of removal.
After installing the battery, coat the terminals with clean grease.



CHARGING

Firstly, connect the charged positive cable to the battery positive terminal. Secondly, connect the charged negative cable to the battery negative terminal.

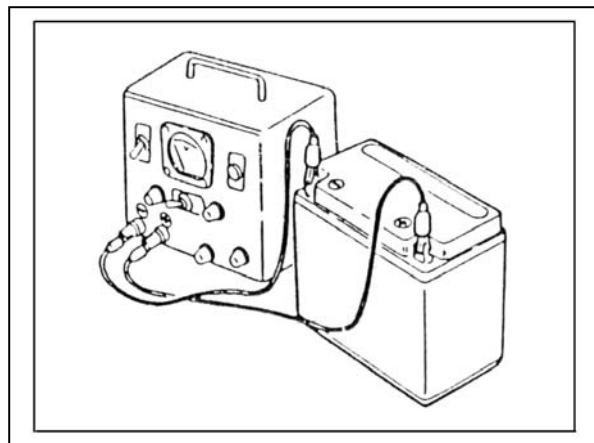
Using **0.9A-charging current about 11 hours.** (Normal charging)

Or using **4A-charging current about 3 hour.** (Quick charging)

Keep flames and sparks away from a battery being charged.

Quick charging should be limited to an emergency;

Normal charging is preferred.



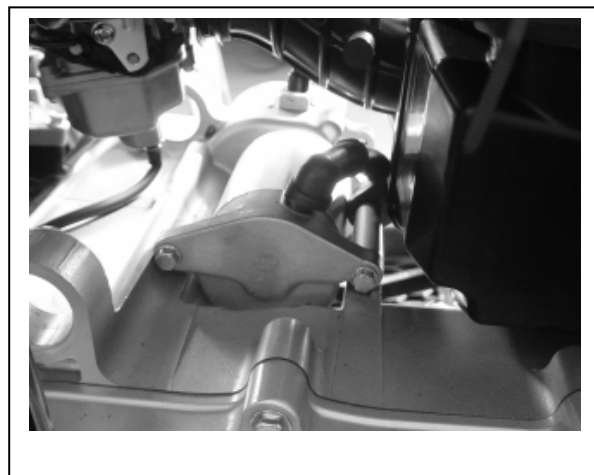
17-5 Electric Starter

Information

If a battery has not worked a period of time, the voltage may reduce and may not provide enough power to starter motor.

If a battery is in a good condition, but engine can not be start.

Please go back to service.



TROUBLESHOOTING

Starter Motor Turns Slowly

Weak battery.

Poorly connected starter motor cable.

Failed starter motor.

Poorly connected battery ground cable.

Starter Motor Cannot Work

Engine stop switch at “off” position.

Gearshift bar is not at neutral position.

Check for a blown fuse near battery.

Make sure that the battery is fully charged and in good condition.

17-6 Light Bulbs Replacement

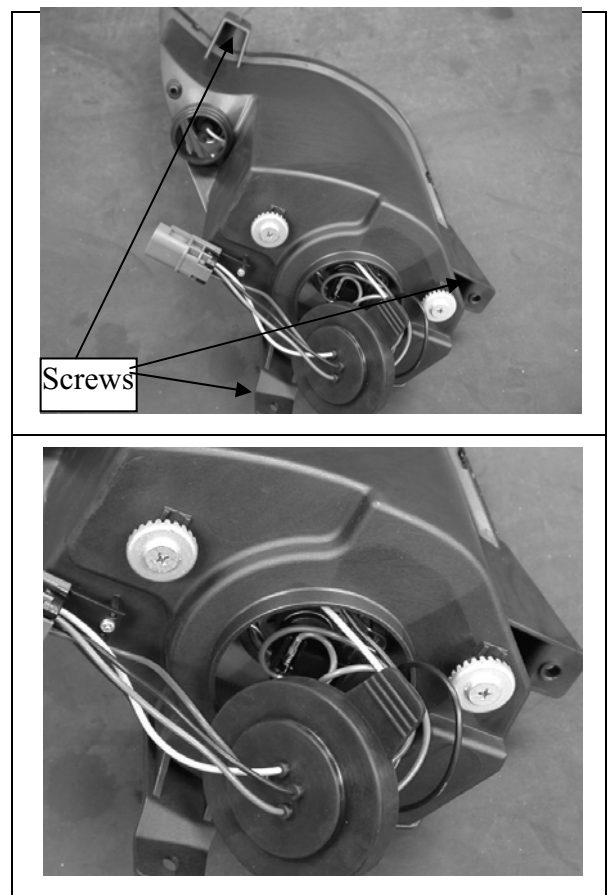
HEADLIGHT

To remove the headlight, please loosen three screws at back of the headlight.



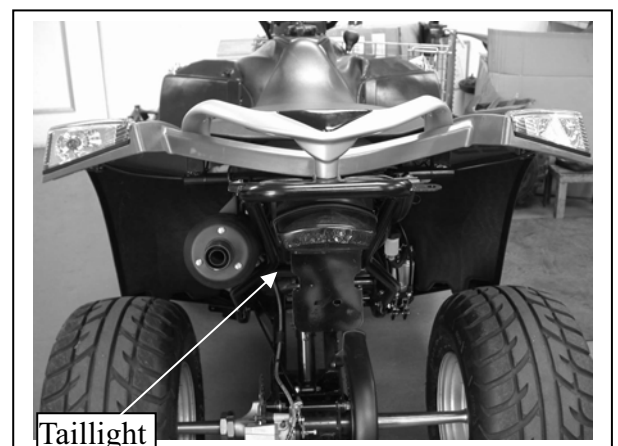
After loosen these three screws, users can find a connector. Please disjoin the connector in order to replace an electrical bulb conveniently and safely. The steps show on pictures.

Installation is in the reverse order of disassembly.



TAILLIGHT

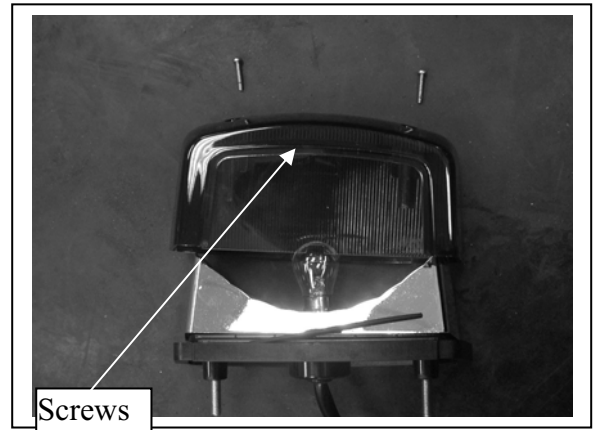
The taillight combines a position and a rear brake light. Normally, when users switch the key to “ON” position, the front & **rear position lights** are always keep the light slightly. Until a brake handlebar is depressed, the rear position light become more light



Rear Brake lights remove

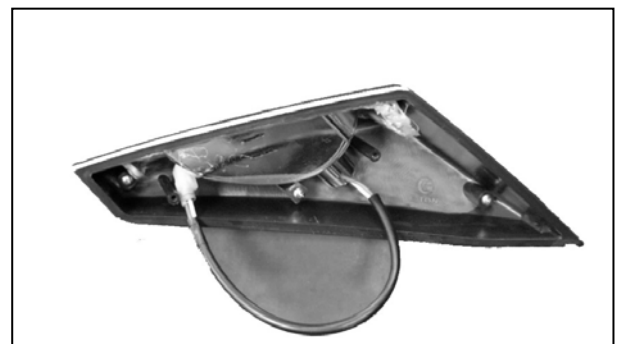
On the back of the brake light, you could see the cap. There are two screws to fix this cap, loosen them can open the cap.

Please rotate the electrical bulb, and then it could be removed.



Rear Direction lights remove

The same disassembling procedure like front direction light.
Please use the pliers to remove the seat. Then the bubble
could be see and replaced.



17-7 Instrument Pane

The instrument panel includes fuel gauge, speed meter, water Temperature gauge, right and left turn signal, trip do-meter, and indicator camp. A LCD is used on ATV8E's instrument panel

to display all driving information for users. Therefore, this is an all-in-one instrument panel.

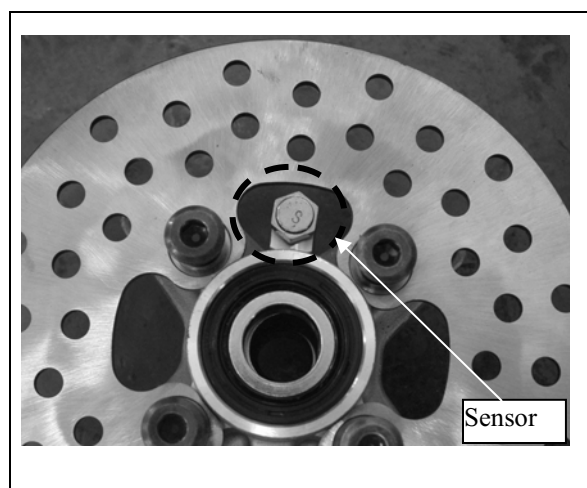


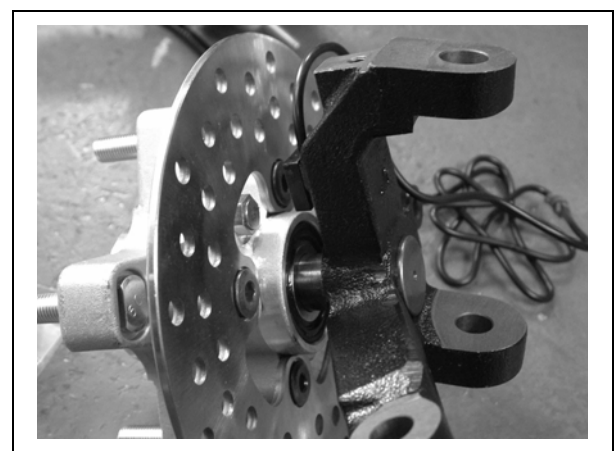
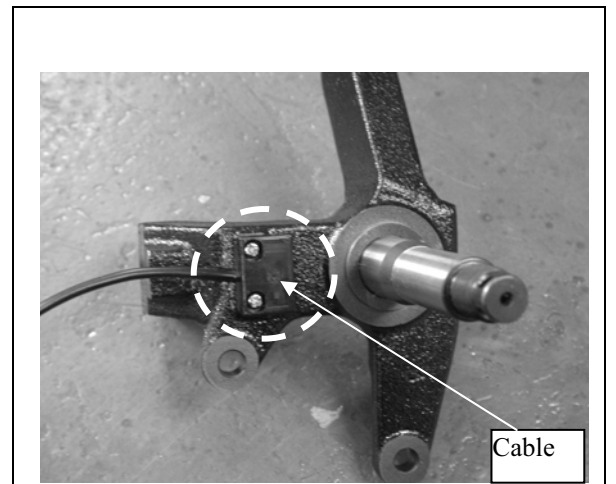
Instrument Panel REMOVAL

There is a cable and connector on the back of the instrument panel. After removing instrument panel, users can find out an electrical connector which is connected with a driving sensor at the back of the instrument panel.

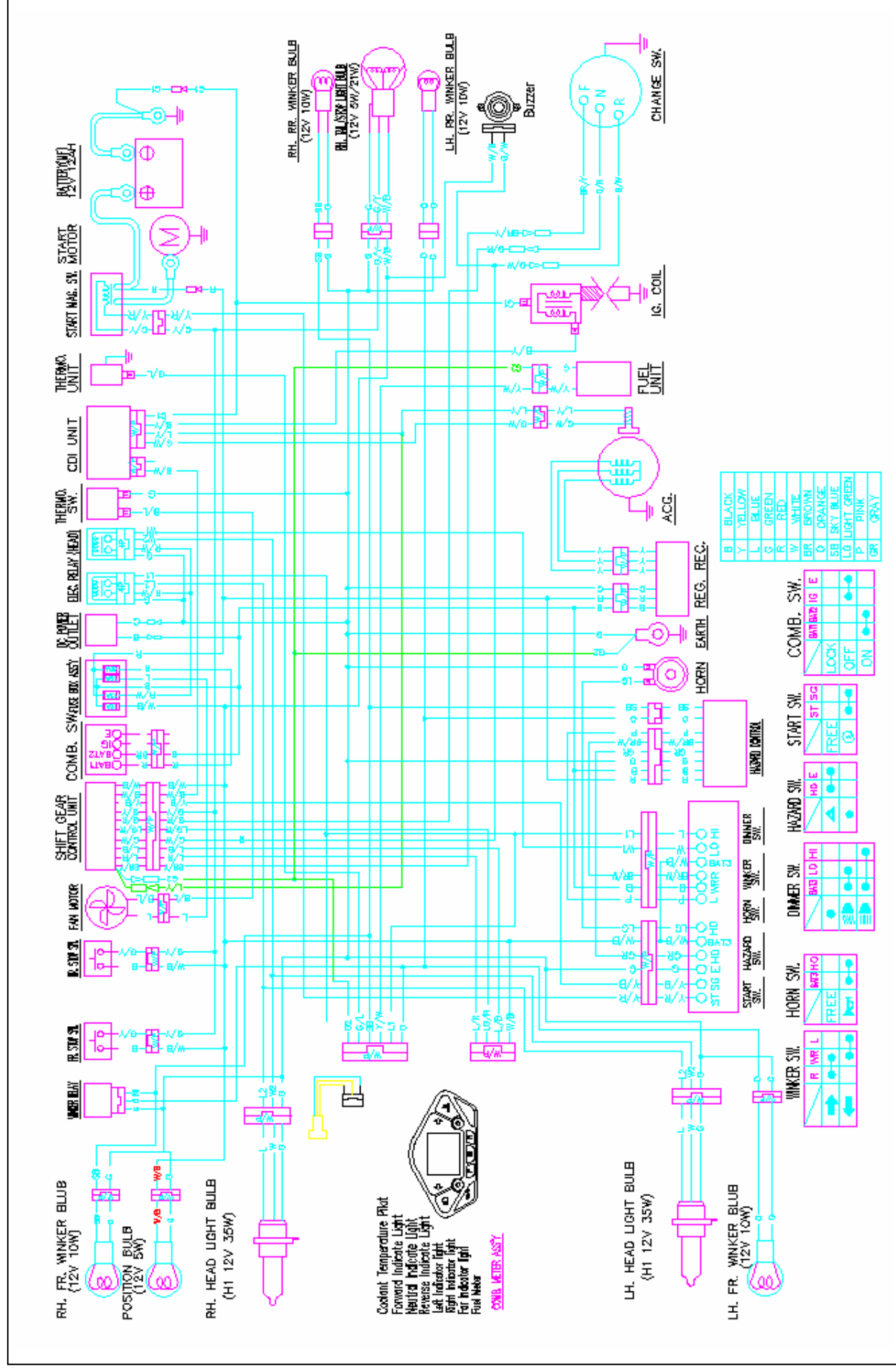


The sensor is installed at the brake disk and a cable is tightened on the left side of knuckle component as shown in pictures





17-8 Wiring Diagram



18.TROUBLESHOOTING

18-1 Engine Can Not Work

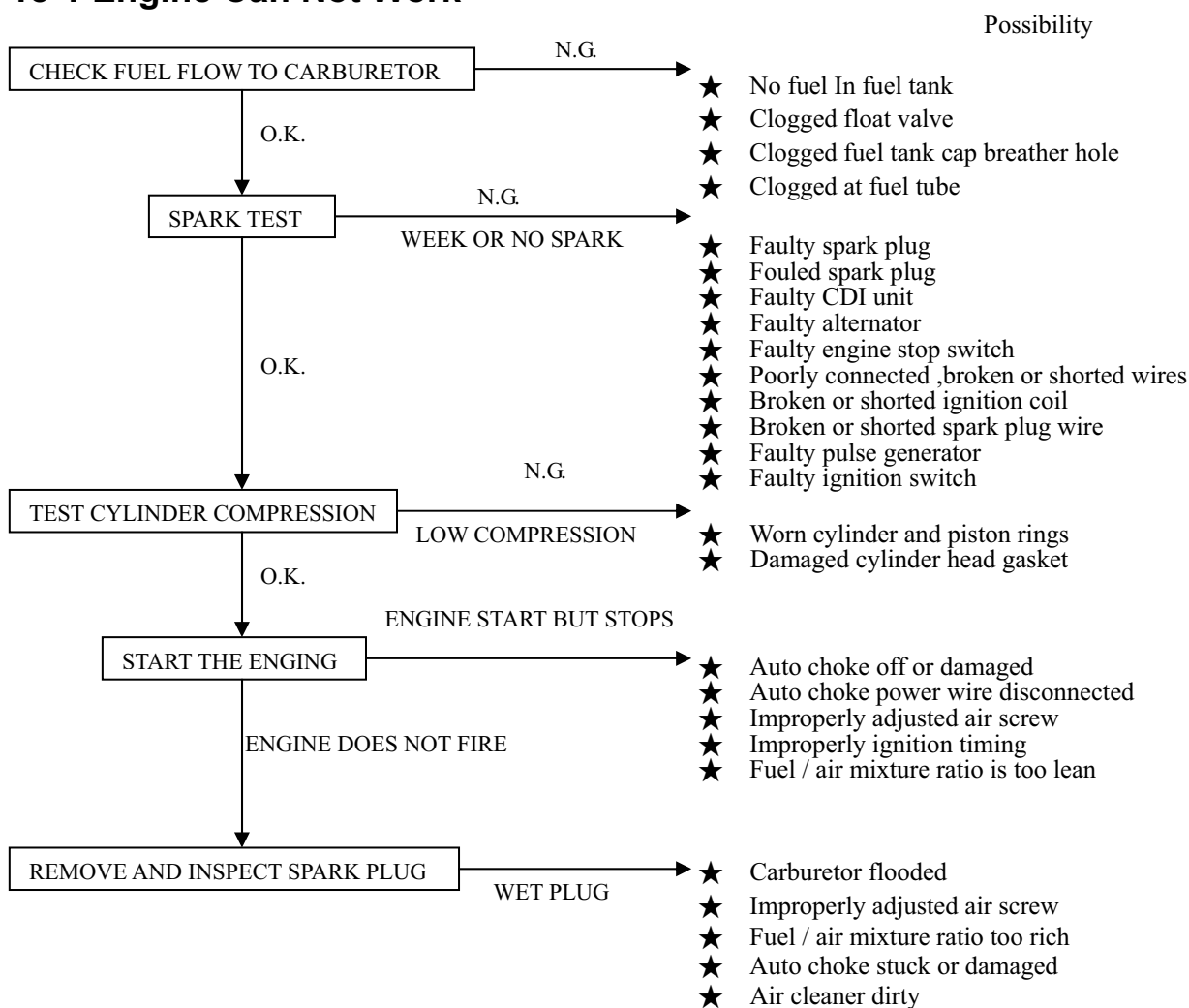
18.2 Poor Performance At Low And Idle Speeds

18.3 Poor Performance At High Speed

18.4 Loss Power

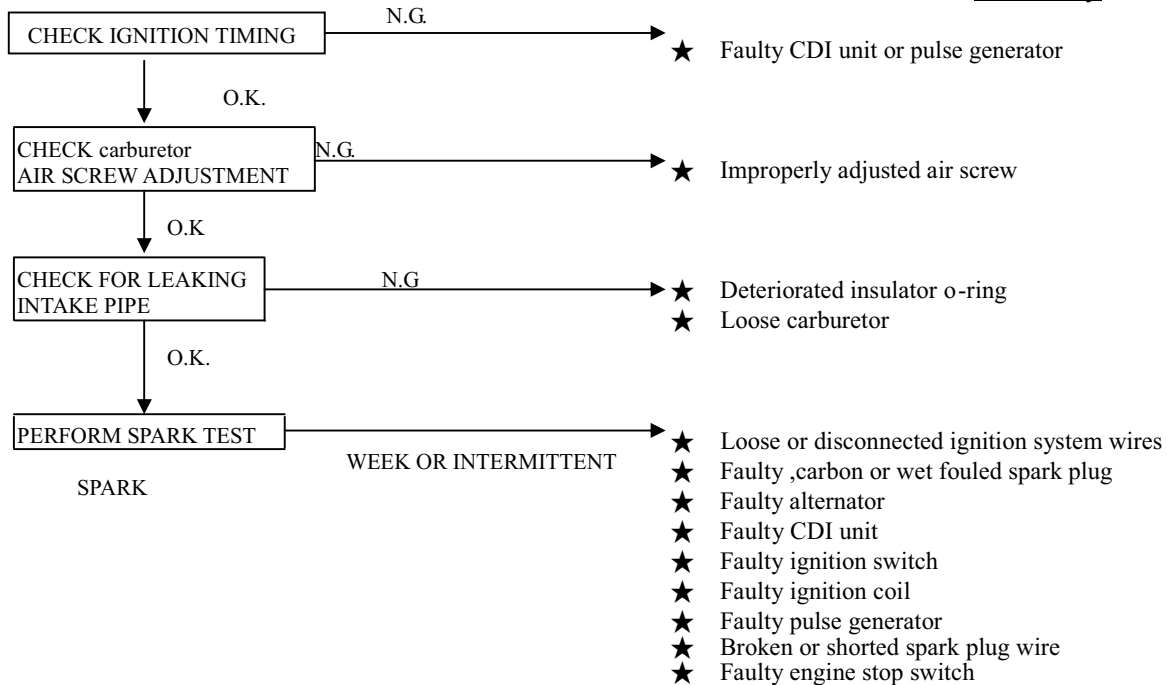
18.5 Poor Handling

18-1 Engine Can Not Work



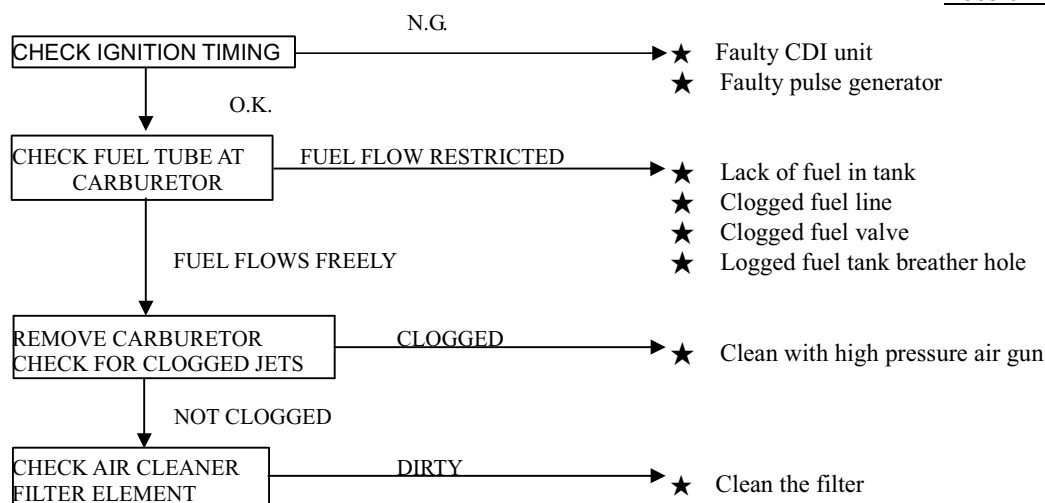
18.2 Poor Performance At Low And Idle Speeds

Possibility

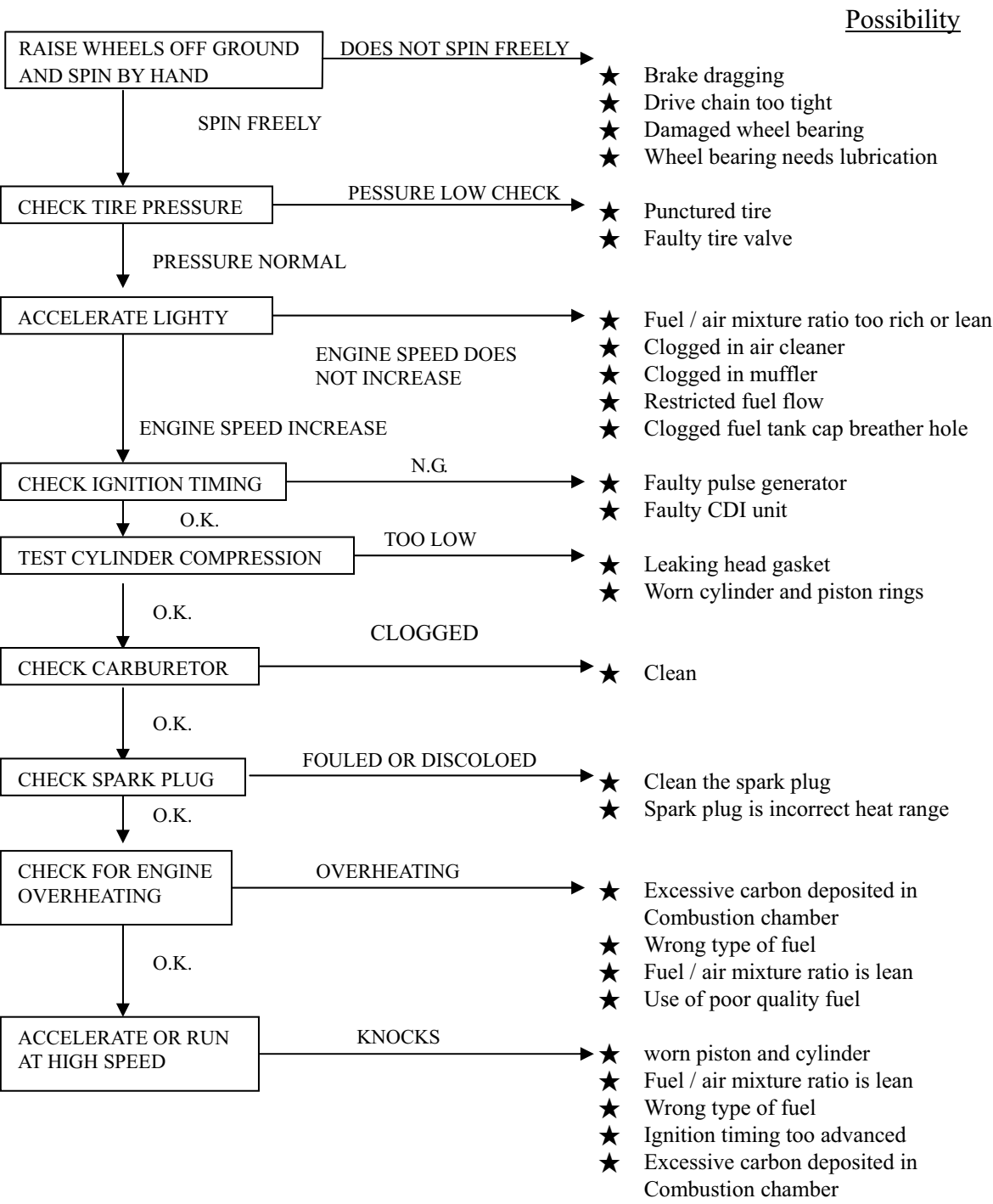


18.3 Poor Performance At High Speed

Possibility



18-4 Loss Power



18-5 Poor Handling

	<u>Possibility</u>
STEERING IS HEAVY	<ul style="list-style-type: none">★ Damaged steering bearing★ Damaged steering shaft bushing
ONE WHEEL IS WOBBLING	<ul style="list-style-type: none">★ Bent rim★ Improperly installed wheel hub★ Excessive wheel bearing play★ Bent swingarm★ Bent frame★ Swing arm pivot bushing excessively worn
VEHICLE PULLS TO ONE SIDE	<ul style="list-style-type: none">★ Worn★ Bent tie-rod★ Incorrect tie-rod adjustment★ Rear tie air pressure incorrect★ Improper wheel alignment★ Bent frame