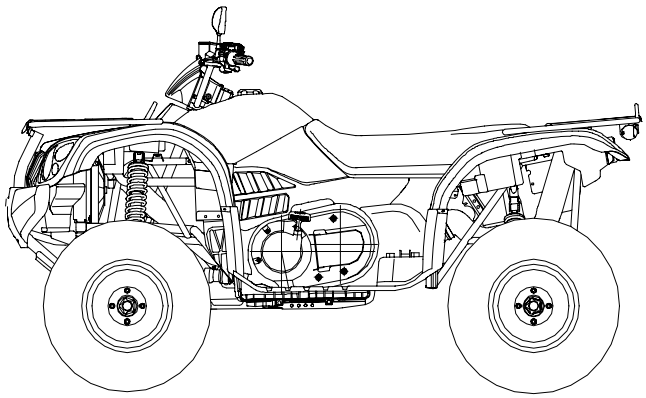
CFMOTO
春风水冷摩托

CF500/CF500-A

Service Manual



First Edition, August 2006

FOREWORD

This manual contains an introductory description of procedures for inspection, maintenance, overhaul, disassembly & assembly, removal and installation of components and parts, troubleshooting and service data together with illustrations of our All Terrain Vehicle Model CF500 and CF500-A

Chapter 1: general service information, tools, vehicle structure and technical data.

Chapter3: key points for inspection and adjusting, service guide.

Chapter 2 and after Chapter 3: disassembly of parts and components, installation, overhaul and troubleshooting.

The manufacturer reserves the right to make improvements or modifications to the products without prior notice. Overhaul and maintenance should be done according to the actual state and condition of the ATV.

INDEX

Conversion Table

Item	Example	Conversion
Pressure	200Kpa (2.00kgf/cm^2) 33kpa(250mmHg)	1kgf/cm^2=98.0665kpa 1kpa=1000pa 1mmHg=133.322Pa=0.133322Kps
Torque	18N • m(1.8kgf-m)	1kgf • m=9.80665N • m
Volume	419ml	1ml=1cm^3=1cc 1l=1000cm^3
Force	12N (1.2kgf)	1kgf=9.80665N

Cautions
Safety Cautions

1. Hazardous components in exhaust. Do not run the engine in a enclosed or poorly ventilated place for long time.
2. Do not touch the engine or muffler with bare hands after the engine has just stopped to avoid scalding. Wear long-sleeve work clothes and gloves for operation.

3. Battery liquid (dilute sulfuric acid) is highly caustic and may cause burns to skin and eyes. Flush with water if splashed to skin and get immediate medical attention. Flush with water if splashed to clothes to avoid burns. Keep battery and liquid away from reach of children

4. Coolant is poisonous. Do not drink or splash to skin, eyes or clothes. Flush with plenty of soap water if splashed to skin. If splashed into eyes, flush with water and consult the doctor. If drinking the coolant, induce vomit and consult the doctor. Keep coolant away from reach of children.

5. Wear proper work clothes, cap and boots. If necessary, were dust-glass, gloves and mask.

6. Gasoline is highly flammable. No smoking or fire. Also keep against sparks. Vaporized gasoline is also explosive. Operate in a well-ventilated place.

7. When charged, Battery may generate hydrogen which is explosive. Charge the battery in a well-ventilated place.

8. Be careful not to get clamped by the turning parts like wheels and clutch.

9. When more than two people are operating, keep reminding each other for safety purpose.

Cautions for Disassembling and Assembling

1. Use genuine CFMOTO parts, lubricants and grease
2. Clean the mud, dust before overhauling
3. Store the disassembled parts separately in order for correct assemble.
4. Replace the disassembled washers, o-rings, piston pin retainer, cotter pin with new ones.
5. Elastic retainers might get distorted after disassembled. Do not use the loosened retainers.

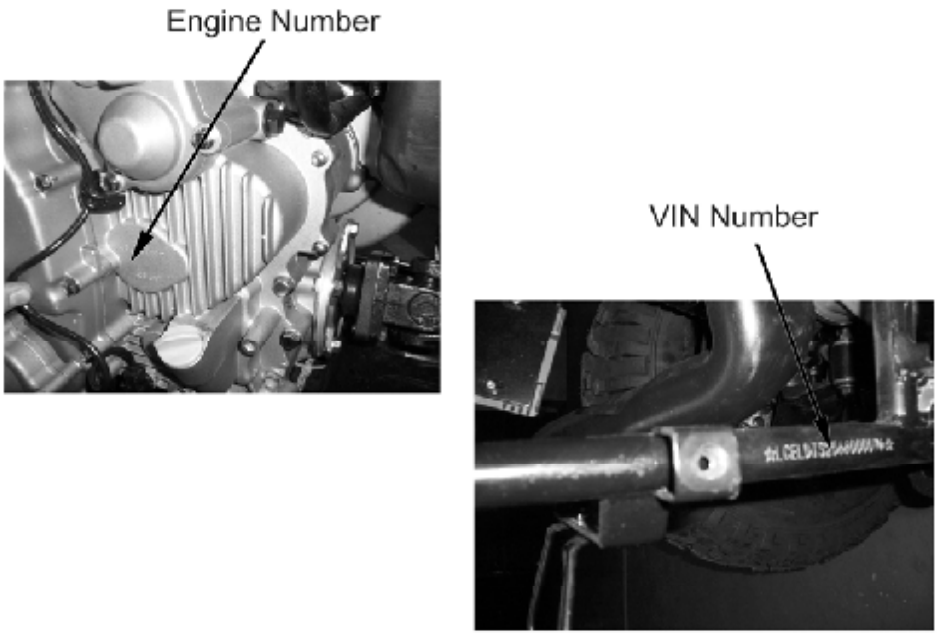
6. Clean and blow off the detergent after disassembling the parts. Apply lubricants on the surface of moving parts. Measure the data during disassembly for correct assembling.
7. If you do not know the length of screws, install the screws one by one and make sure they are screwed in with same depth.
8. Pre-tighten the bolts, nuts and screws, then tighten according to the specified torque, from big to small and from inner side to outer side.
9. Check if the disassembled rubber parts are aged and replace if necessary. Keep the rubber parts away from grease.
10. Apply or inject recommended lubricant to the specified parts.
11. Use special tools wherever necessary.
12. Replace the disassembled ball bearings with new ones.
13. Turn the inner and outer rings of ball bearing to make sure the bearing will turn smoothly. Replace if the axial or radial play is too big. If the surface is uneven, clean with oil and replace if the cleaning does not help.
    When pressing the bearing into the machine or to the shaft, replace the bearing if it could not be pressed tight.
14. Install the one-side dust-proof bearing in the right direction. When assembling the open type or double-side dustproof bearing, install with manufacturer's mark outward.
15. Keep the bearing block still when blowing dry the bearing after washing clean. Apply oil or lubricant before assembling.
16. Install the elastic circlip properly. Turn the circlip after assembling to make sure is has been installed into the slot.
17. After assembling, check if all the tightened parts are properly tightened and can move smoothly.
18. Brake fluid and coolant may damage coating, plastic and rubber parts. Flush these parts with water if splashed.
19. Install oil seal with the side of manufacturer's mark outward.
    Do not fold or scratch the oil seal lip. Apply grease to the oil seal lip before assembling
20. When installing pipes, insert the pipe till the end of joint. Fit the pipe clip, if any, into the groove. Replace the pipes or hoses that cannot be tightened.
21. Do not mix mud or dust into engine and/or the hydraulic brake system.

22. Clean the gaskets and washers of the engine casing before assembling. Remove the scratches on the joint faces by polishing evenly with an oilstone.
23. Do not twist or bend the cables too much. Distorted or damaged cables may cause poor operation.
24. When assembling the parts of protection caps, insert the caps to the grooves, if any.

VIN Number and Engine Number

Vehicle Identification Number: LCELDTS~

Engine Number: CF188~



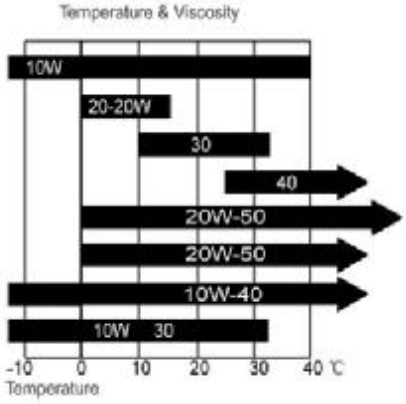
Main Data Table

Item			Parameter
Model			CF500/CF500-A
Length			2120mm/2320mm
Width			1170mm
Height			1230mm
Wheel base			1290mm/1490mm
Engine type			CF188
Displacement			493ml
Fuel type			Unleaded gasoline 90 Octane or above
Dry weight			337Kg/340Kg
Number of Passengers			1 for CF500, 2 for CF500-A (including driver)
Max. Load			150kg/225Kg
Tire		Front	25x8-12
		Rear	25x10-12
Ground Clearance			275mm
Min. turning diameter			4.5m/4.8m
Engine	Starting		Electrical starting/Recoil starting
	Engine type		Single cylinder, 4-stroke, Liquid-cooled, 4 valves, OHC
	Combustion chamber type		Triangle
	Valve Driving type		SOHC chain driving
	Bore x stroke		87.5mm X 82.0mm
	Compression Ratio		10.2:1
	Max. power		24Kw/7000 rpm
	Max. torque		36N.M/5500 rpm
	Lubrication type		Pressure & Splash
	Oil pump type		Rotor
	Oil filter type		Full flow filter screen
	Cooling type		Closed coolant circulation

Item				Parameter
Fuel device	Air Filter type			Sponge element filter
	Carburetor	Type		Vacuum Diaphragm type MIKUNI BSR36-89
		Diameter of mixing valve		36mm
Gearing	Clutch	Type		Wet, auto-centrifugal
		Operation mode		Automatic (CVT) + Parking & Gear shifting
	Initial Transmission	Gear type		Bevel gear
		Reduction ratio		2.938
	Secondary transmission	Gear type		Bevel Gear
		Reduction ratio		2.938
	Gearbox	Type		Automatic (CVT) + Parking & Gear shifting
		Function		Auto-centrifugal
		Transmission ratio		2.88~0.70
		Gear Ratio	Final Ratio	1.333 (24/18, bevel gear)
			Secondary Ratio	1.952 (41/21)
			Gears	Low Gear: 2.25 (36/16), High Gear: 1.35(27/20), Reverse Gear: 3.828
			Total	Low Gear: 5.857, High Gear: 3.514, Reverse Gear: 3.828
Steering device	Steering angle	Right		30°
		Left		30°
Brake type		Front		Hydraulic Disc
		Rear		Hydraulic Disc
Bumper Device	Suspension	Swing Arm		
Frame type				Welded steel tube and plate

Overhaul Datasheet

Lubricating device

Item		Standard	Service limit
Engine Oil Capacity	Volume when replacing	1900ml	
	Full capacity	12200 ml	
Recommended Oil (see original) 		●Specially for 4-stroke motorcycle SAE-10W-40、20W-50 Substitutes must be used in the following range. ●API type: SE or SF grade ●SAE type: Choose from the left chart according to the environmental temperature	
Oil pump Rotor	Gap between inner and outer rotors	0.07~0.15mm	0.20mm
	Gap between outer rotor and body	0.07~0.17mm	0.25mm
	End face gap	0.05~0.10mm	0.12mm

Fuel Device

Item		Standard
Fuel Tank Capacity	Full capacity	19.0l
Carburetor	Type	MIKUNI BSR36-89
	Main jet	N102221-130#
	Idle jet	N224103-22.5#
	Idle speed	1300±100r/min

Cooling Device

Item		Standard
Coolant capacity	Full Capacity	1140ml
	Reservoir tank capacity	340ml
	Standard density	30%
Opening pressure of radiator cap		108kpa(1.1kgf/cm^2)
Thermostat	Temperature / valve open	72±2C°
	Temperature/valve full open	88 C°
	Overall lift	3.5-4.5mm

Front Wheel

Item			Standard	Service Limit
Front Wheel	Play of wheel rim	Vertical	1.0mm	2.0mm
		Horizontal	1.0mm	2.0mm
	Tire	Groove	--	3.0mm
		Pressure	35kpa(0.35kgf/cm^3)	--

Rear Wheel

Item			Standard	Service Limit
Rear wheel	Play of wheel rim	Vertical	1.0mm	2.0mm
		Horizontal	1.0mm	2.0mm
	Tire	Groove	--	3.0mm
		Pressure	35kpa(0.35kgf/cm^3)	--

Brake System

Item		Standard	Service Limit
Front brake	Brake lever play	0mm	--
	Brake disc thickness	3.5mm	4mm
Rear brake	Brake lever play	5-10mm	--
	Brake Pedal Play	0mm	
	Brake disc thickness	7.5mm	6.5mm

Battery、Charging System

Item			Standard
AC magneto Motor	Model		Permanent magnet AC type
	Output		3- phase AC
	Charging coil Resistance (20℃)		0.2-0.3Ω
Rectifier	Three-phase annular rectification, Silicon controlled parallel-connected regulated voltage		
Battery	Capacity		12V18Ah
	Terminal point voltage	Fully charged	12.8V
		Insufficient charge	<11.8V
	Charging current/time	Standard	0.9A/5~10H
		Quick	4A/1H

Ignition system

Item		Standard
Ignition		CDI ignition
Spark Plug	Type	DPR7EA-9(NGK)
	Optional	DR8EA, D7RTC
	Spark plug gap	0.8-0.9mm
Ignition timing	Max. advanced angle	32° CA
Peak voltage	Ignition coil	Above 200V
	Pulse generator	150V

Light、Instrument 、Switch、Pickup coil

Item		Standard
Fuse	Main	20A
	Auxiliary	10A 15Ax3
Light， Bulb	Head light （Hi/Lo）	12V-35W/35W
	Brake light/tail light	12V-21W/5W
	Turning light	12V-10Wx4
	Dashboard indicator light	12V-1.7W
	Other indicators	12V -3.4W

Tightening torque

Item	Torque N·m(kgf·m)	Item	Torque N·m(kgf·m)
5mm Bolt, nut	5(0.5)	5mm Screw	4(0.4)
6mm Bolt, nut	10(1.0)	6mm Screw	9(0.9)
8mm Bolt, nut	22(2.2)	6mmSH Bolt with flange,	10(1.0)
10mm Bolt, nut	34(3.5)	6mm Bolt with flange, nut	12(1.2)
12mm Bolt, nut	54(5.5)	8mm Bolt with flange, nut	26(2.7)
		10mm Bolt with flange, nut	39(4.0)

For others not listed in the chart, refer to the standard tightening torque.

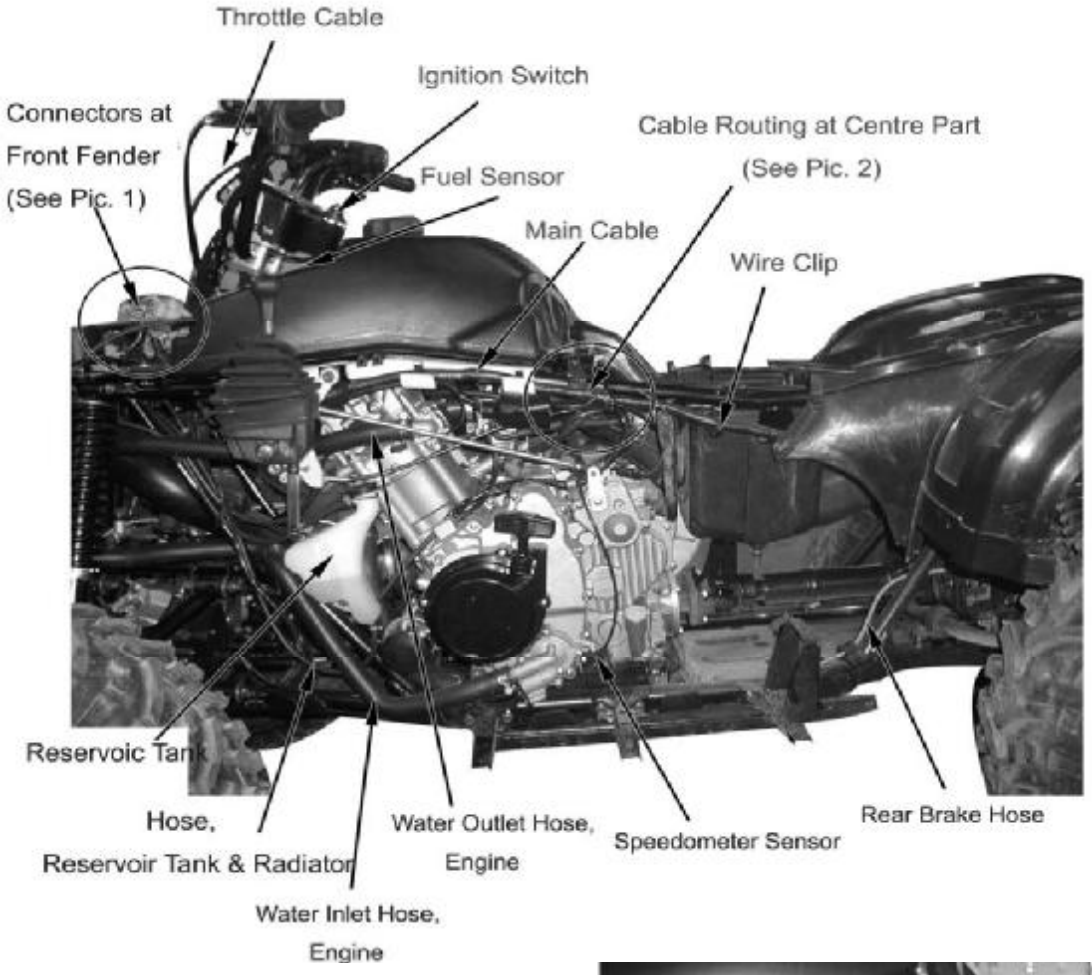
Notes: 1.Apply some engine oil on the part of screw thread and contact surface.

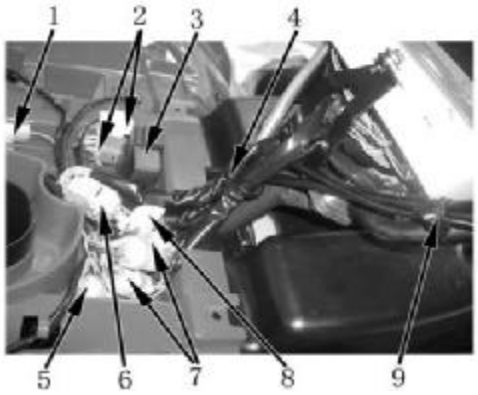
Item	Thread Dia. (mm)	Quantity	Torque N·m(kgf·m)
Front Upper Bolt, Engine	M8x60	1	35~45
Rear Upper Bolt, Engine	M10x1.25x110	1	40~50
Front Upper Bolt, Engine Bracket	M8x14	1	35~45
Rear Upper Bolt, Engine Bracket	M8x14	1	35~45
Lower Mounting Bold, Engine	M12x1.25x140	2	50~60
Bolt, Swing Arm	M10x1.25x70	16	40~50
Bolt, Rear Absorber	M10x1.25x50	4	40~50
Bolt, Front Absorber	M10x1.25x50	4	40~50
Bolt, Rear Wheel Support	M10x1.25x100	4	40~50
Mounting Nut, Rim	901-07.00.02 M20	16	50~60
Nut, Rim Shaft	901-07.00.03 M10	4	110~130
Mounting Screw, Rear Brake Pump	M6x25	2	18~22
Bolt, Rear Brake Caliper	M10x1.25x20	2	40~50
Bolt, Front Brake Disc	901-08.00.03 M8	8	25~30
Bolt, Front Brake Caliper	M8x14	4	35~45
Bolt, Handlebar	M8x55	4	20~30
Nut, Tie-rod	M10x1.25	4	40~50
Locknut, Steering Stem	M14x1.5	1	100~120
Rear Mounting Bolt, Muffler	M8x30	1	30~50
Bolt, Exhaust Pipe	M8x14	1	30~35
Mounting Bolt, Muffler	M8x40	1	30~35
Mounting Bolt, Rear Axle	M10x1.25x110	2	40~50
Mounting Bolt, Front Axle	M10x1.25x90	1	40~50
Mounting Bolt, Front Axle	M10x1.25x25	2	40~50
Bolt, Front Axle Support	M8x14	2	35~45
Bolt, Rear Transmission Shaft Rear End	901-30.00.01	6	40~50
Bolt, Rear Transmission Shaft Front End	901-29.00.01	4	35~45
Bolt, Front Transmission Shaft	901-29.00.01	8	35~45
Thermoswitch	CF250T-420500	1	28~30
Bolt 1, Front Rack	M8x14	2	35~45
Bolt 2, Front Rack	M6x12	2	25~30
Bolt, Rear Rack	M8x14	4	35x45

Lubricant, Sealing Agent

Application Areas	Cautions	Lubricants & Grease
Oil Seal Lip, Steering Stem Pivot, Rear Brake Pedal Joints, Throttle Cable Throttle Lever		Multi-purpose Lubricating Grease
Dust-proof Seal Lip, Front Shock absorber		#5 Absorber Oil
Inner surface, Handlebar		Engine Oil

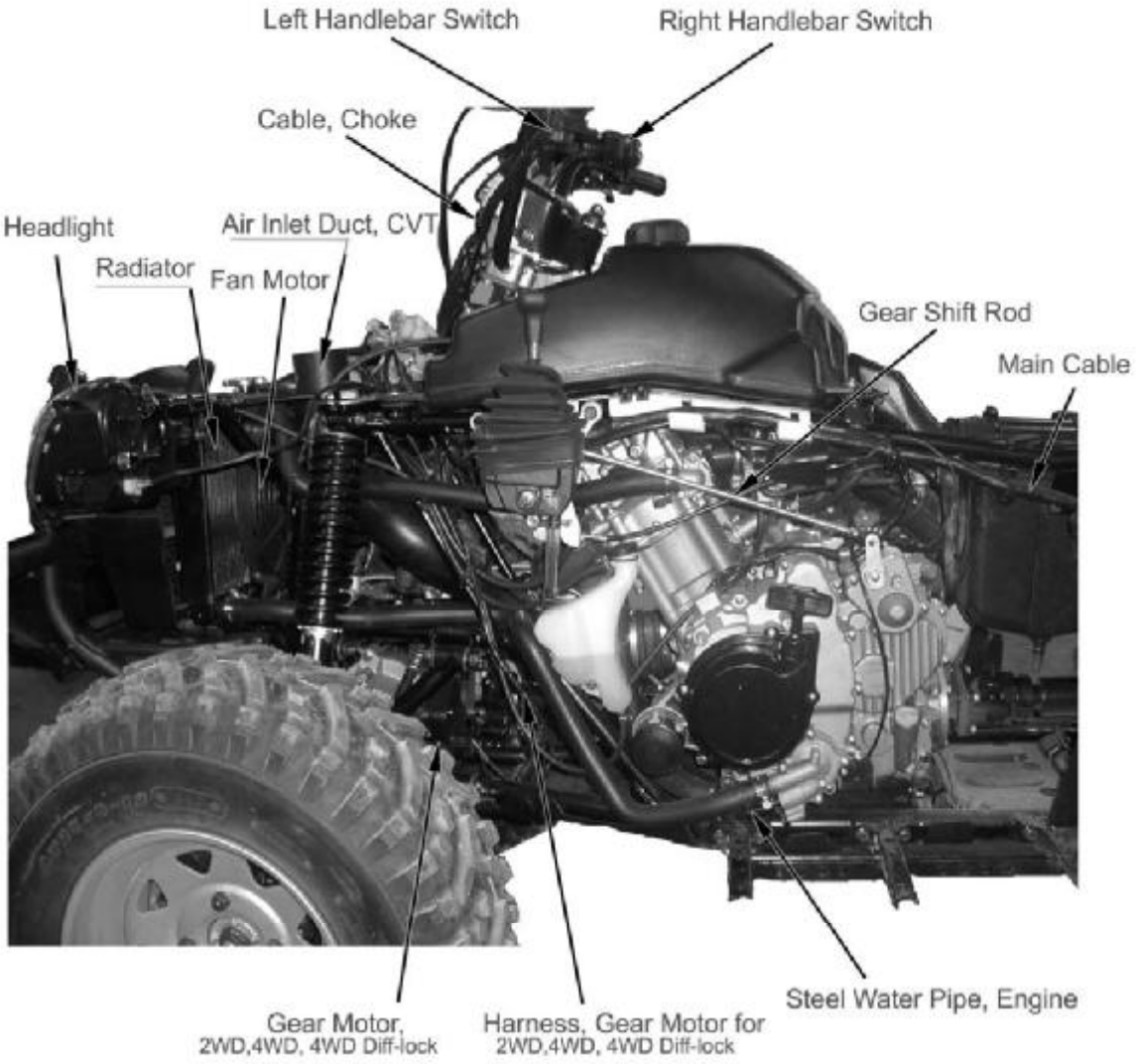
Cable Routing

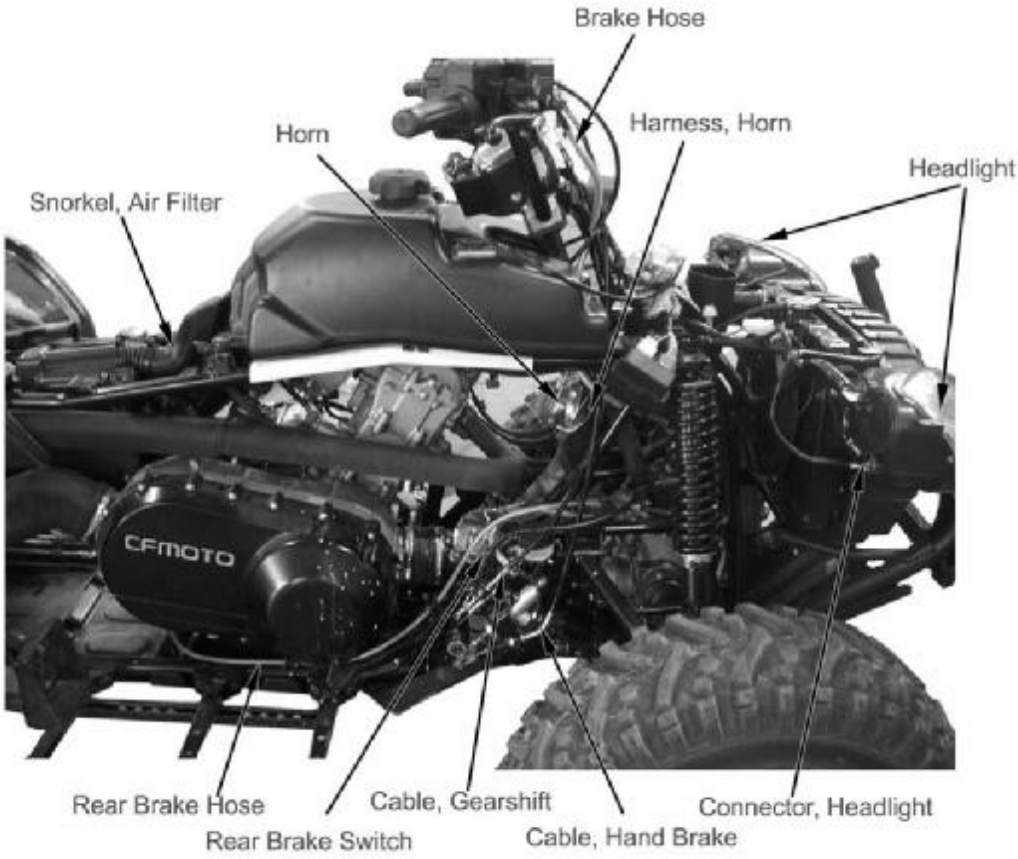


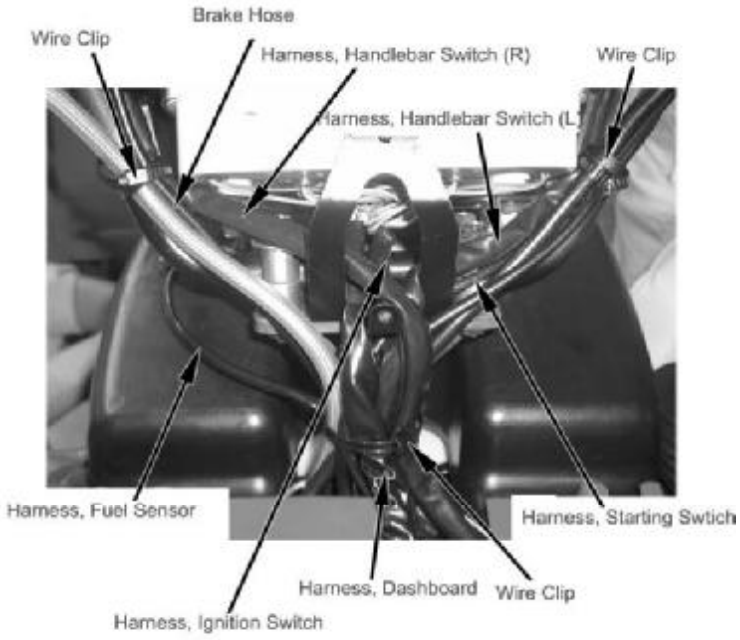


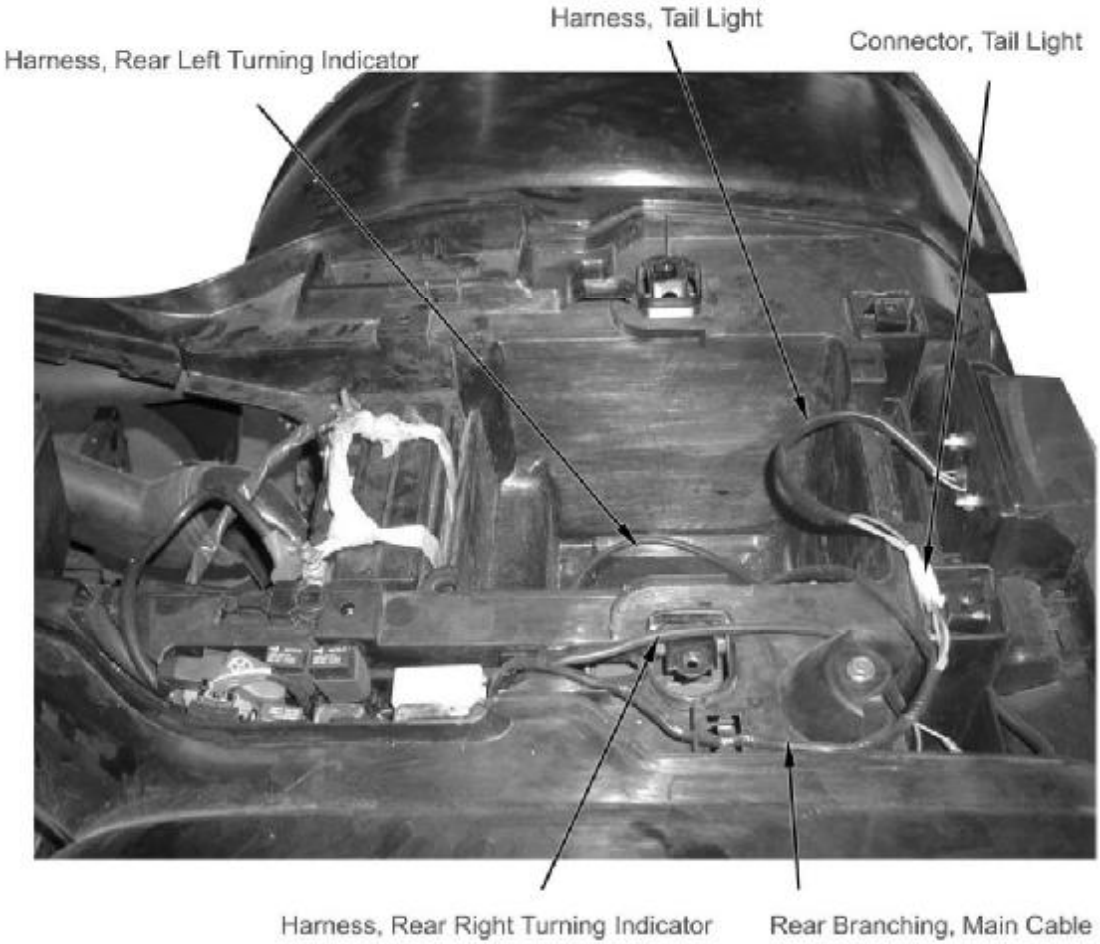
1. Connector, Fan Motor
2. Connector, CDI
3. CDI
4. Wire Clip
5. Connector, Starting Switch
6. Connector, Dashboard
7. Connector, Handlebar Switch (L&H)
8. Connector, Ignition Switch
9. Wire Clip

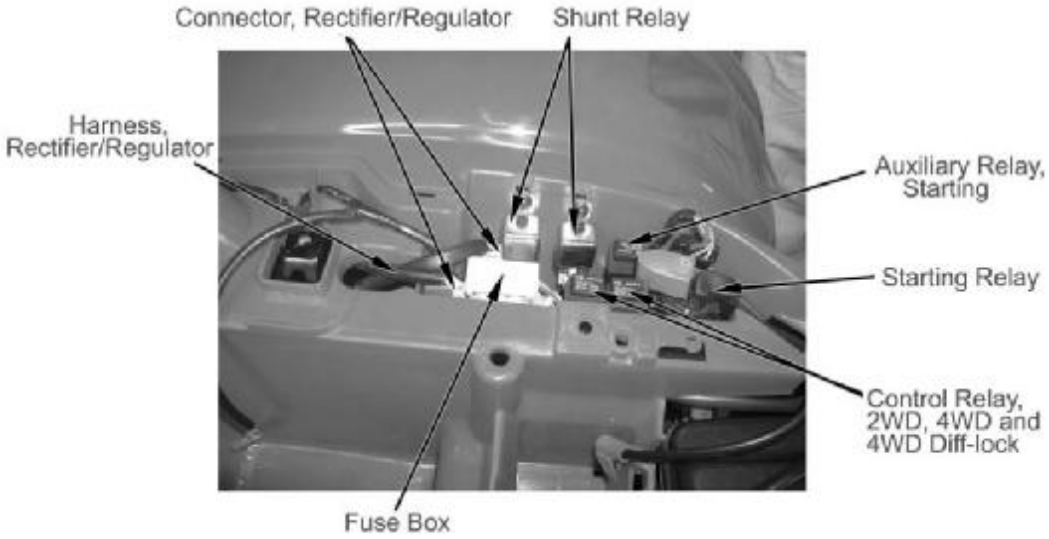
1. Ignition Coil
2. Water Temperature Sensor
3. Cable, Parking
4. Breather Hose, Reservoir Tank
5. Vacuum Tube
6. Wire Clip
7. Connector for Magneto, Gear Sensor and Pickup Coil
8. Fuel Pipe, Carburetor
9. Wire, Starting Motor
10. Steel Wire Clip


Left Handlebar Switch
Right Handlebar Switch
Cable, Choke
Headlight
Air Inlet Duct, CVT
Radiator
Fan Motor
Gear Shift Rod
Main Cable
Steel Water Pipe, Engine
Gear Motor,
2WD,4WD, 4WD Diff-lock
Harness, Gear Motor for
2WD,4WD, 4WD Diff-lock


Brake Hose
Horn
Harness, Horn
Headlight
Snorkel, Air Filter
CFMOTO
Rear Brake Hose
Cable, Gearshift
Connector, Headlight
Rear Brake Switch
Cable, Hand Brake


Brake Hose
Wire Clip
Harness, Handlebar Switch (R)
Wire Clip
Harness, Handlebar Switch (L)
Harness, Fuel Sensor
Harness, Starting Swtich
Harness, Dashboard
Wire Clip
Harness, Ignition Switch


Harness, Tail Light
Connector, Tail Light
Harness, Rear Left Turning Indicator
Harness, Rear Right Turning Indicator
Rear Branching, Main Cable


Connector, Rectifier/Regulator
Shunt Relay
Harness, Rectifier/Regulator
Auxiliary Relay, Starting
Starting Relay
Control Relay, 2WD, 4WD and 4WD Diff-lock
Fuse Box

Overhaul Information

Operation Cautions

Warning

Gasoline is highly flammable, therefore smoke and fire are strictly forbidden in the work place. Special attention should also be paid to sparks. Gasoline may also be explosive when it is vaporized, so operation should be done in a well-ventilated place.
Remove and Install muffler after it is fully cold.

- This chapter is on the disassembly and installation of rack, visible parts, exhaust pipe, muffler and fuel tank.
- Hoses, cables and wiring should be routed properly.
- Replace the gasket with a new one after muffler is removed.
- After muffler is installed, check if there is any exhaust leakage.

Tightening torque

Muffler Rear Fixing Bolt: 35-45N.m
Muffler Exhaust Pipe Bolt: 35-45N.m
Muffler Body Fixing Bolt: 35-45N.m

Troubleshooting

Loud exhaust noise

- Broken muffler
- Exhaust leakage

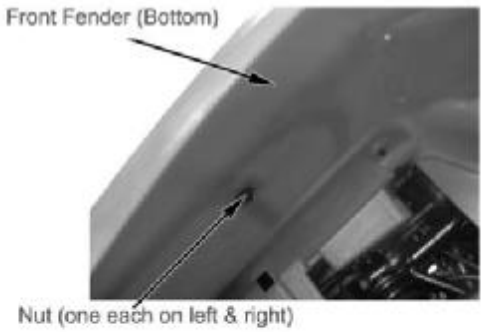
Insufficient power

- Distorted muffler
- Exhaust leakage
- Muffler clogged

Front Rack, Bolt Cap

Remove:

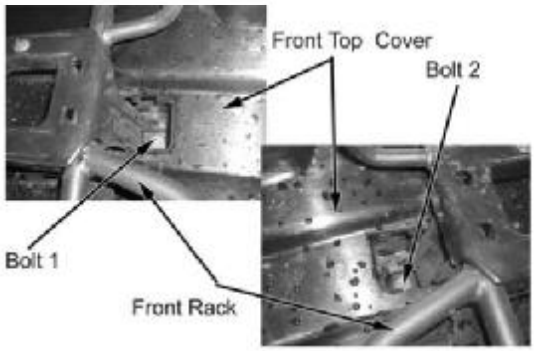
Remove 2 nuts from the bottom of front fender



Exert upward and remove bolt cap

Remove:
--Fixing Bolt 1 , Bolt 2

--Fixing Bolt 3, Bolt 4
--Front rack



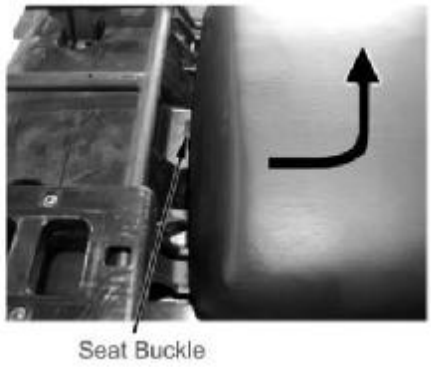
Installation:
Reverse the removal procedure for installation

Tightening Torque: Fixing Bolt 1, Bolt 2
35 N.m -45N.m
Fixing Bolt 3, Bolt 4
25 N.m -30N.m

Seat

Remove:
Pull upward seat buckle
Lift and push seat backward

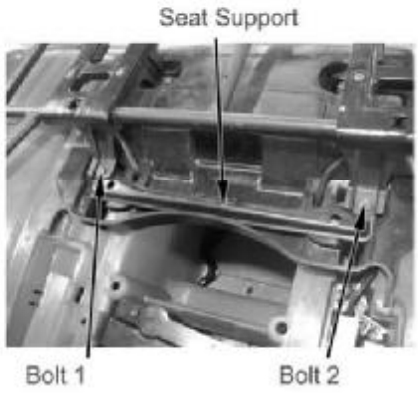
Installation:
Press upward seat buckle
Press seat forward and down



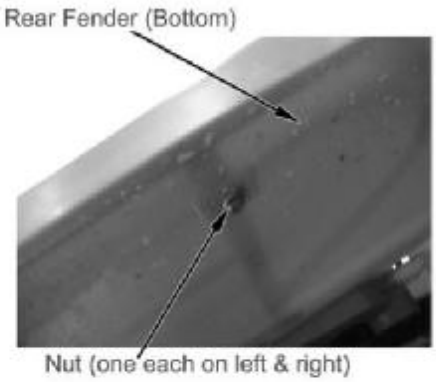
Note:
Make sure that the seat is firmly installed.

Seat Support, Rear Rack

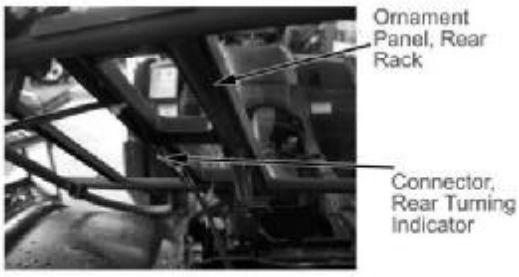
Remove:
--Seat (→2-3)
--Bolt 1, bolt 2
Remove seat support



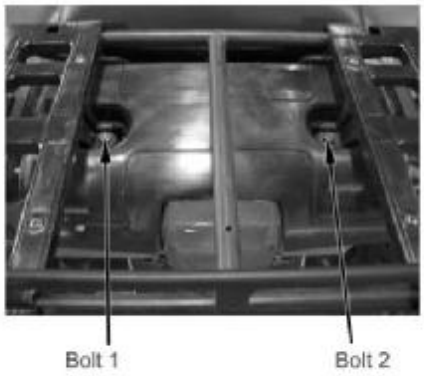
Remove the 2 nuts for rear rack and rear fender from rear fender bottom



Disconnect connectors of rear turning indicator



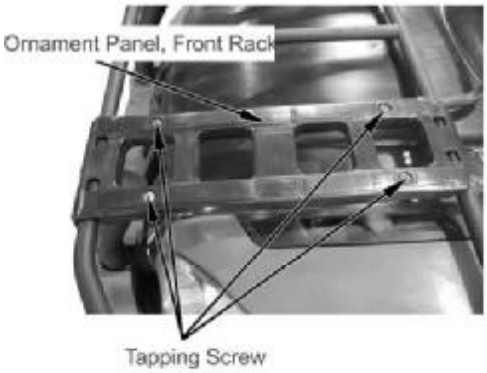
Remove Bolt 1, Bolt 2
Remove rear rack



Installation
Reverse the removal procedure for installation

Tightening Torque: Fixing Bolt, Rear Rack
35 N.m -45N.m

Ornament Panel, Front Rack
Remove:
Remove four tapping screw from front rack

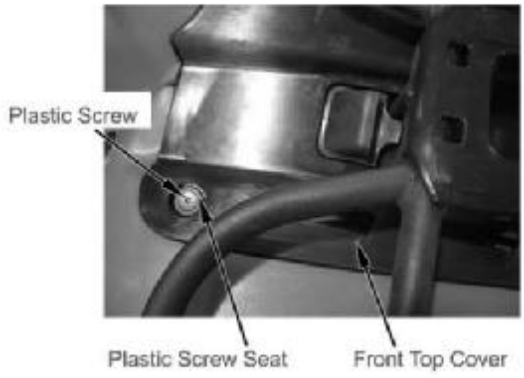


Installation:
Reverse the removal procedure for installation.

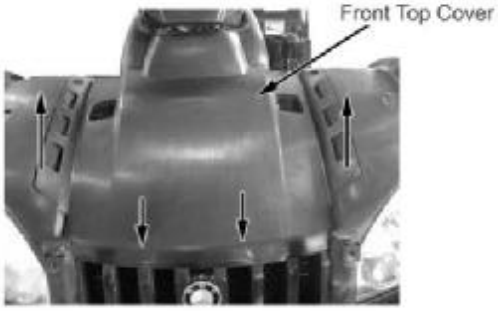
Ornament Panel, Rear Rack
Repeat above procedure for removal and installation of ornament panel, rear rack.

Front Top Cover
Remove:
Remove front rack (→2-2)

Push upward plastic screw from front fender bottom with a flat screwdriver;
Remove plastic screw and plastic screw seat



Separate clasps of top cover from fuel tank and front fender as illustrated on the right;
Push forward and remove front top cover.



Installation:
Reverse the removal procedure of installation.

Rear Top Cover
Remove:
--Rear rack (→2-3)
Separate clasps of rear top cover from rear fender
Remove rear top cover

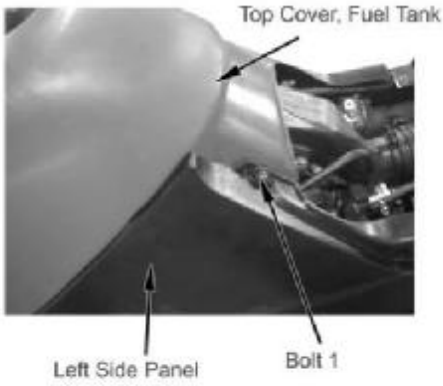
Installation:
Reverse the removal procedure and direction for installation.

Left Side Panel

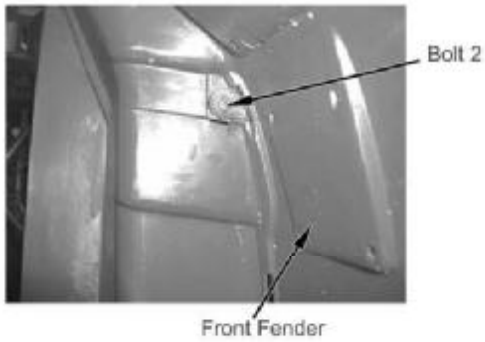
Remove

--Seat (→2-3)

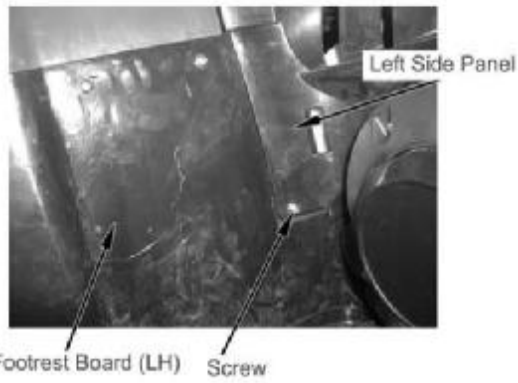
Remove Bolt 1 for left side panel and fuel tank top cover



Remove Bolt 2 for left side panel and front fender



Remove screw for left side panel and footrest board



Remove left side panel in the direction as illustrated on the right

Installation:

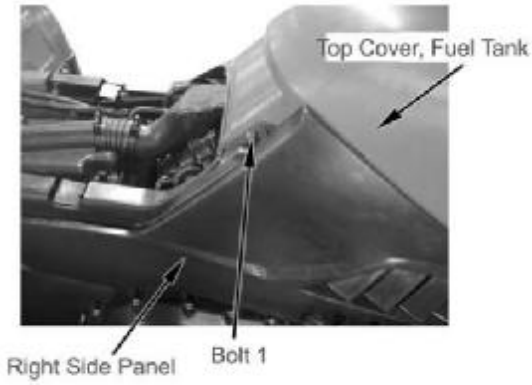
Reverse the removal procedure of installation.

Right Side Panel

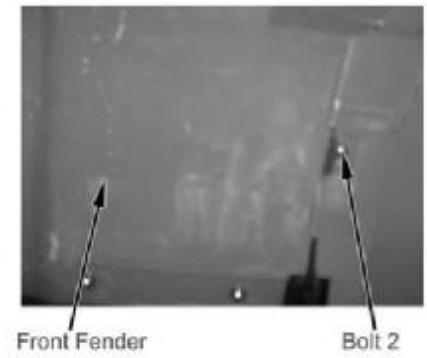
Remove:

--Seat (→2-3)

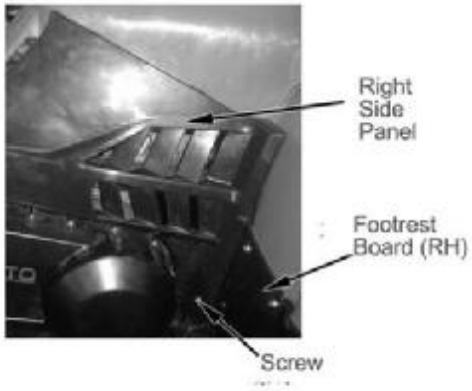
Remove Bolt 1 for right side panel and fuel tank top cover



Remove Bolt 2 for right side panel and front fender



Remove screw for right side panel and right footrest board



Remove right side panel in the direction as illustrated on the right

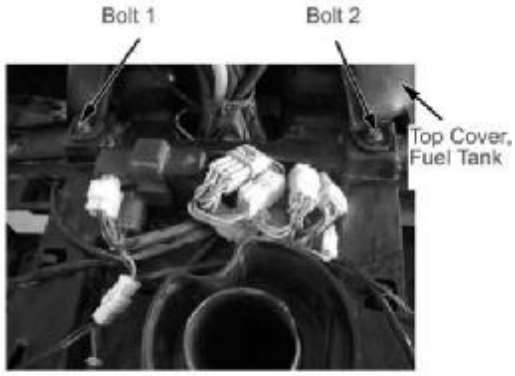
Installation:

Reverse the removal procedure of installation.

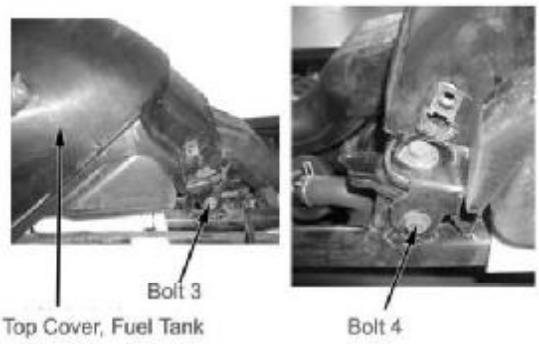
Top Cover, Fuel Tank

Remove:

--Seat (→2-3)
--Front rack (→2-2)
--Front top cover (→2-4)
--Left side panel (›2-6)
--Right side panel (›2-7)
--Bolt 1, Bolt 2

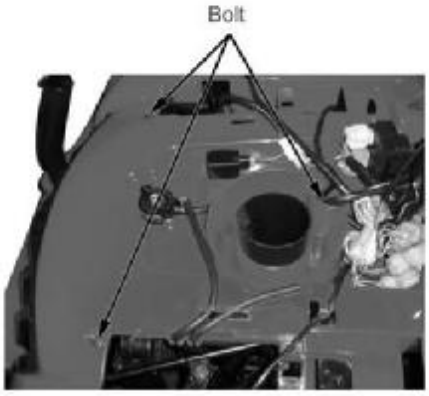


--Bolt 3, Bolt 4
--Top cover, fuel tank



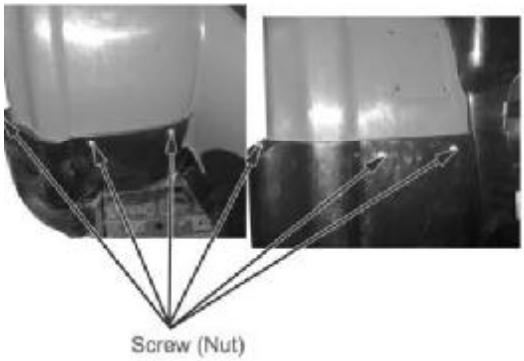
Installation:

Reverse the removal procedure of installation.



Front Fender

Remove:
--Front rack (→2-2)
--Front top cover (→2-4)
--Left side panel (→2-6)
--Right side panel (→2-7)
--Top cover, fuel tank (→2-8)
Disconnect wiring connectors from front fender;
Remove electrical components from front fender;
Remove 3 bolts from frame

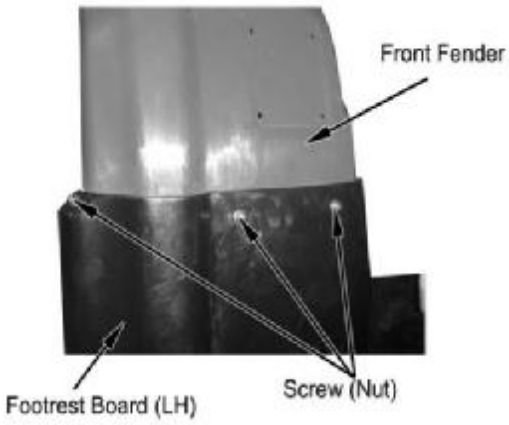


Remove 6 screws and nuts from left and right footrest board

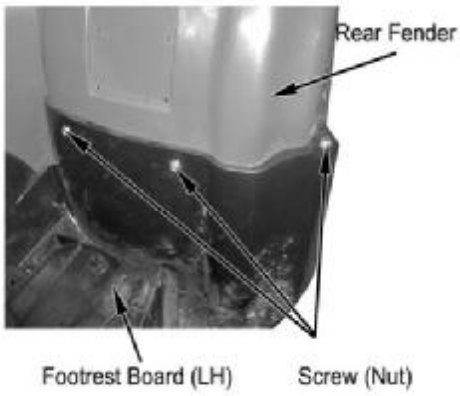
Remove front fender

Left Footrest Board

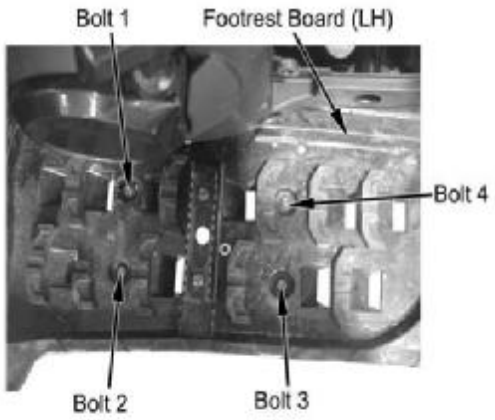
Remove:
--Left Side panel (→2-6)
--3 screws & nuts for front fender



--3 screws & nuts for rear fender



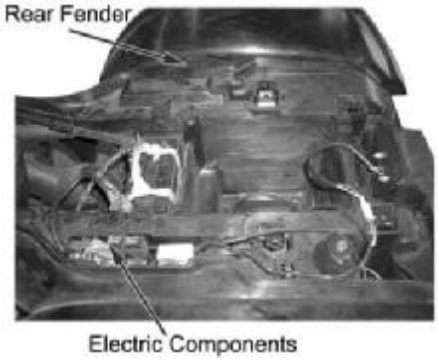
--Bolt 1
--Bolt 2
--Bolt 3
--Bolt 4
--Left footrest board



Installation:
Reverse the removal procedure for installation.

Right Footrest Board

Refer to Left Footrest Board for removal and installation



Rear Fender

Remove:

--Seat (→2-3)

--Rear rack(→2-3)

--Rear top cover (›2-5)

--Left & right side panel (›2-6) (›2-7)

--Battery fixing plate, battery cover (→8-4)

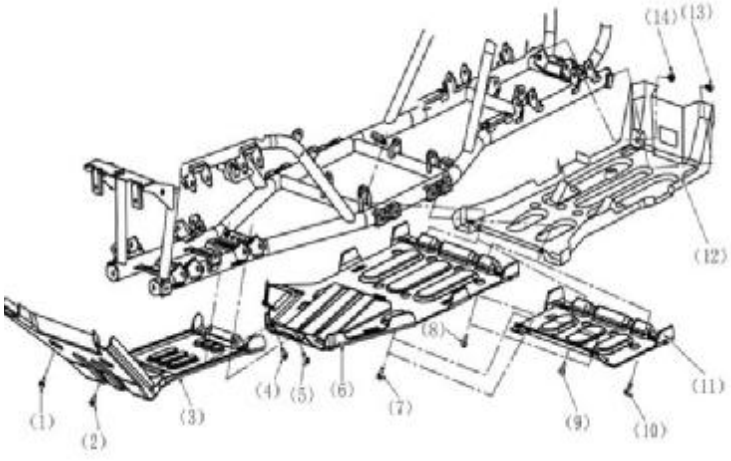
Remove battery

Remove electrical components from rear fender (Chapter 8)

Disconnect wiring connectors from rear fender (Chapter 8)

Lift upward and remove rear fender

Engine Skid Plate(Front), Engine Skid Plate (Center), Double Seat Protection Plate, & Engine Skid Plate (Rear)



(1) Bolt 1

(2) Bolt 2

(3) Engine Skid Plate(Front)

(4) Bolt 3

(5) Bolt 4

(6) Engine Skid Plate (Center)

(7) Bolt 5

(8) Bolt 6

(9) Bolt 7

(10) Bolt8

(11) Double Seat Protection Plate

(12) Engine Skid Plate (Rear)

(13, 14) Bolt 9

(15) Bolt 10

Disassembly

Note: Side skid plate (front), side skid plate (center), side skid plate (rear) and double seat protection plate are located at the bottom of vehicle.

The maintenance person should have to work under the vehicle bottom when disassembling the above parts. For safety purpose, make sure that the vehicle should be firmly parked.

Engine Skid Plate (Front)

Remove:

--Bolt 1

--Bolt 2

--Bolt 3

--Bolt 4

--Engine skid plate (Front)

Installation:

Reverse the removal procedure for installation.

Engine Skid Plate (Center)

Remove:

--Bolt 5

--Bolt 6

Engine skid plate (center)

Installation:

Reverse the removal procedure of installation.

Double Seat Protection Plate

Remove:

--Bolt 7

--Bolt 8

--Double seat protection plate

Note: This part is not available for single seat vehicle.

Installation:

Reverse the removal procedure of installation.

Engine Skid Plate (Rear)

Remove:

--Bolt 9

--Bolt 10

Engine skid plate (rear)

Installation:

Reverse the removal procedure for installation.

Front Right Inner Fender

Remove:

--Bolt 1

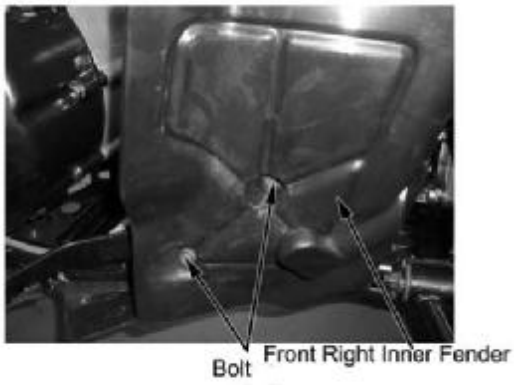
--Bolt 2

--Front right inner fender

Installation:

Reverse the removal procedure for installation.

Note: The clasp of front right inner fender should hook water pipe when it is assembled.



Front Left Inner Fender

Remove:

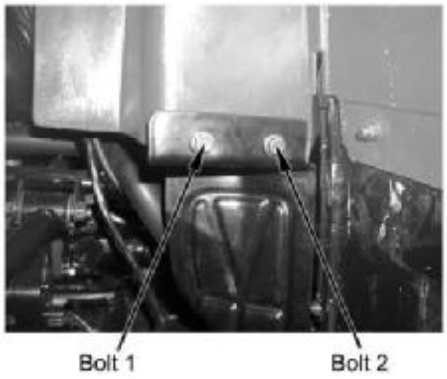
--Bolt 1

--Bolt 2

--Front left inner fender

Installation:

Reverse the removal procedure for installation.



Front Left Protector

Remove:

Bolt 1

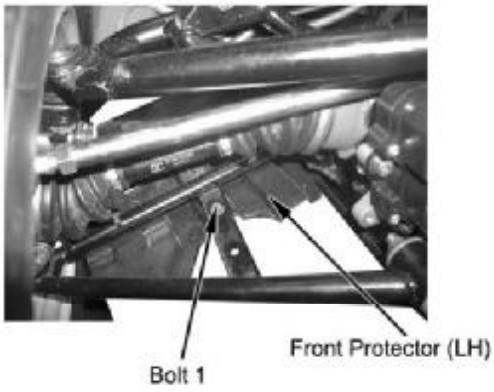
Pull backward and remove front left protector

Installation:

Reverse the removal procedure for installation.

Front Right Protector

Repeat the above procedure of removal and installation for front right protector.



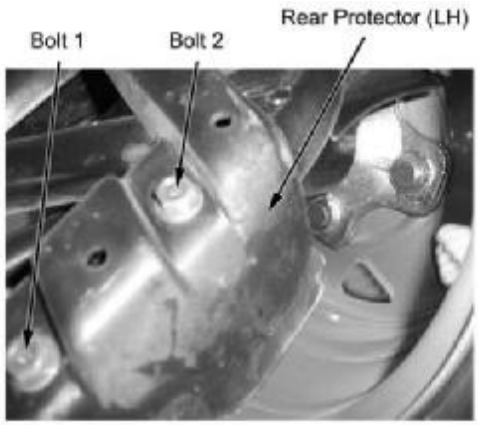
Rear Left Protector

Remove:

--Bolt 1

--Bolt 2

--Rear left protector



Installation:

Reverse the removal procedure for installation.

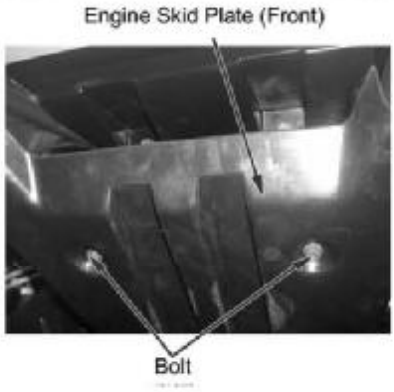
Rear Right Protector

Repeat the above procedure of removal and installation for rear right protector.

Bumper, Bumper Protector,

Remove:

--2 bolts from engine skid plate (front)



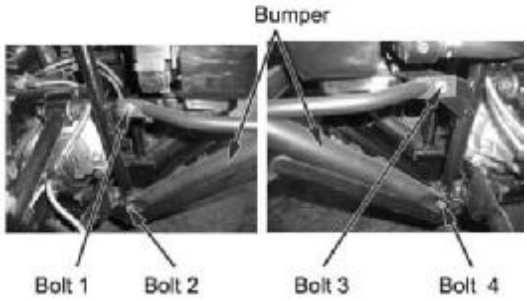
--Bolt 1

--Bolt 2

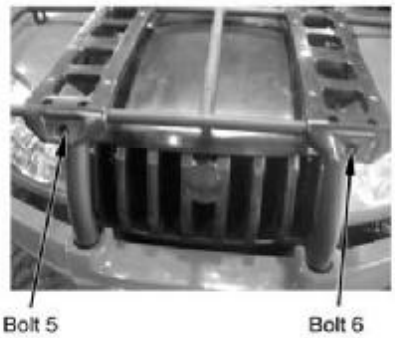
--Bolt 3

--Bolt 4

Remove bumper with bumper protector



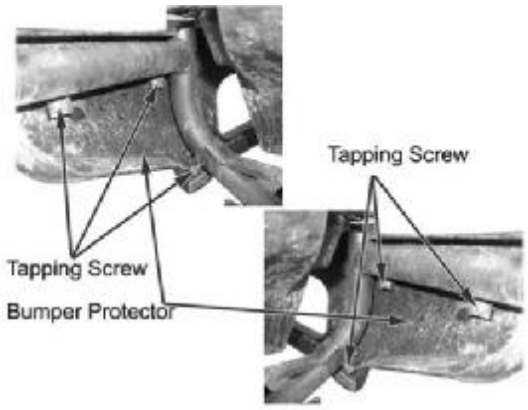
Remove Bolt 5 and Bolt 6 for bumper and front rack



Bumper Protector

Remove:

Remove bumper with bumper protector (→2-13),
Remove tapping screw of protector from bumper



Installation:
Reverse the removal procedure for installation

Bumper Cap

Remove:
There are four pieces of bumper caps, each
at the end of bumper pipe.
Pull bumper cap out from the end of bumper.

Installation:

Press bumper cap into bumper pipe.

Front Vent Grille

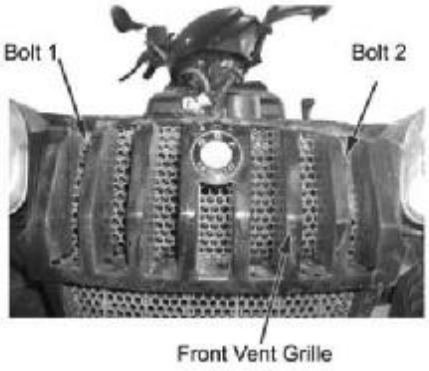
Remove:

--Front fender (→2-8)

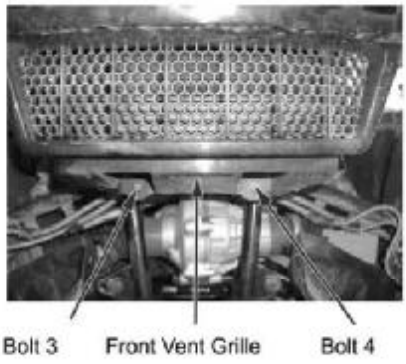
--Bumper (→2-13)

--Bolt 1, Bolt 2, Bolt 3, Bolt 4

--Front vent grille



Note: For removal of front vent grille only,
Just remove 2 fixing bolts
of bumper and 2 center fixing bolts,
then pull bumper down



Installation:

Reverse the removal procedure for installation

Fuel Tank

Warning: Gasoline is highly flammable, therefore smoke and fire are strictly forbidden in the work place. Special attention should also be paid to sparks. Gasoline may also be explosive when it is vaporized, so operation should be done in a well-ventilated place.

Remove:

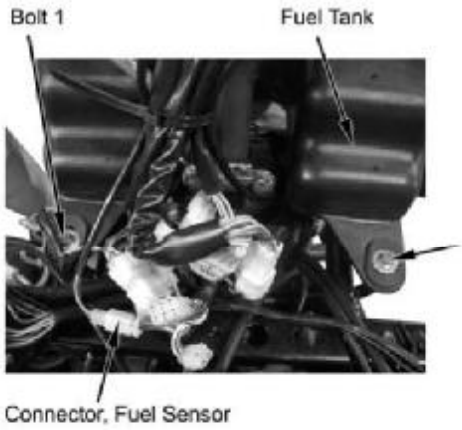
--Left and right side panel (→2-6)

--Front fender (→2-8)

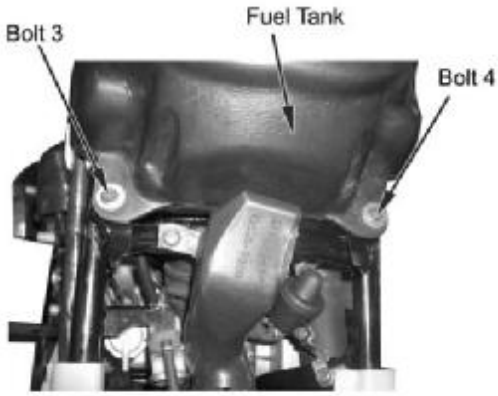
--Fuel tank top cover (→2-8)

--Bolt 1, Bolt 2

Disconnect 3P connectors of fuel sensor



Remove Bolt 3, Bolt 4



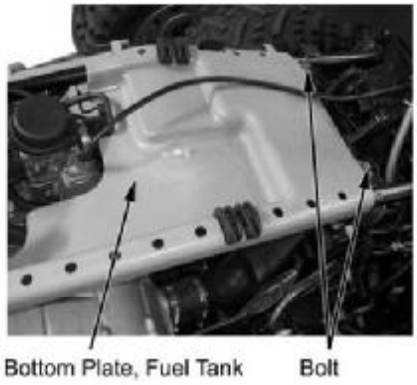
Remove:
--Fuel hose I and Clamp
--Fuel tank

Installation:
Reverse the removal procedure for installation.

Note:
Be careful not to damage main cable, pipes and hoses. Main cable, cables, pipes and hoses should be routed properly according to the routing drawing.
Take precaution against fuel leakage when removing fuel Fuel Hose I

Fuel Tank Bottom Plate,

Remove:
--Fuel tank (→2-15)
--Bolt 1
--Bolt 2
--Fuel tank top cover



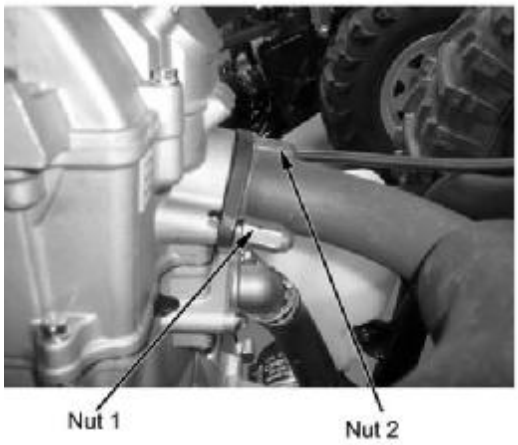
Installation:
Reverse the removal procedure for installation.
Note:
Be careful not to damage main cable, pipes and hoses. Main cable, cables, pipes should be routed properly according to the routing drawing

Muffler

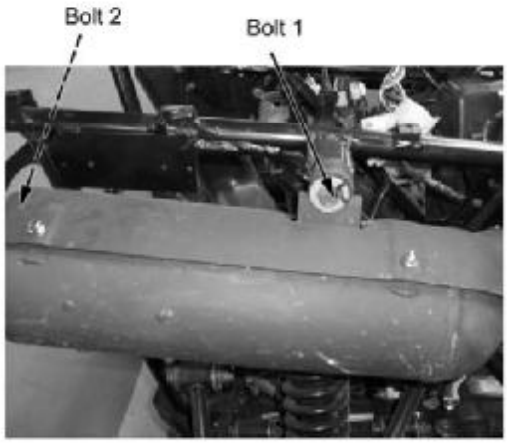
Caution: Perform disassembly only after the muffler is cooled down.

Remove:

--Seat (2-3)
--Right side panel (2-7)
--Nut1, Nut 2 for exhaust pipe elbow



Remove Bolt 1



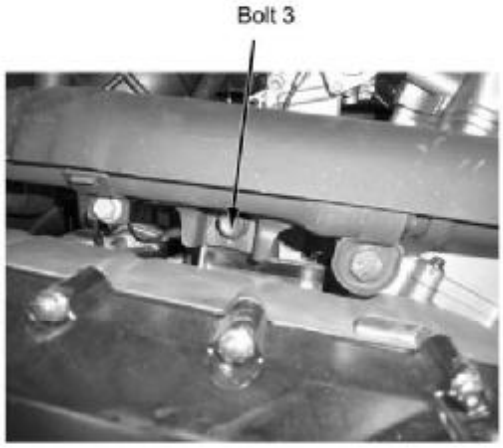
Remove Bolt 2, Bolt 3
Remove muffler

Installation:

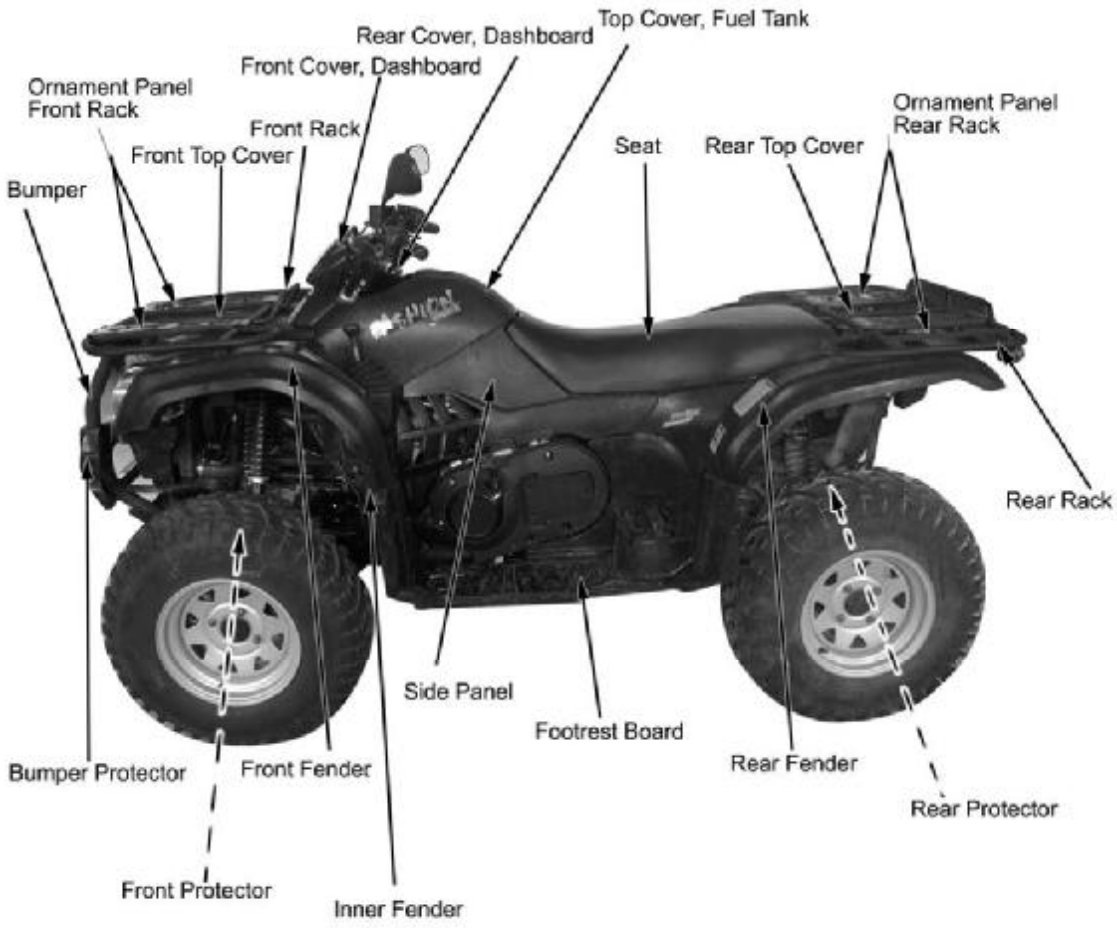
Reverse the removal procedure for installation.

Note:

Replace sealing gasket when installing the muffler.



Visible Parts



Overhaul info

Operation Cautions

Note

- DO NOT keep the engine running for long time in a poorly ventilated or enclosed place because of the harmful components like CO, etc, in the exhaust gas.
- The muffler and engine are still very hot when the engine is just stopped. Careless contact may cause serious burn. Be sure to wear fatigue dress with long sleeves and gloves if the work has to be done after the engine is just stopped.
- Gasoline is highly flammable, smoking is strictly forbidden in the work place. Keep alert on the electrical sparks. Besides, vaporized gasoline is highly explosive, so work should be done in a well-ventilated place.
- Be careful that your hands or clothes not get nipped by the turning or movable parts of the driving system.

Note

The vehicle should be parked on hard and level ground。

Periodic Maintenance Table

The table below lists the recommended intervals for all the required periodic maintenance work necessary to keep the vehicle at its best performance and economy. Maintenance intervals are expressed in terms of kilometer, miles and hours, whichever occurs first.

Note: More frequent maintenance may be required on vehicles that are used in severe conditions.

Interval / Item					
	Km	Initial 200	Every 1000	Every 2000	Remark
	Miles	Initial 100	Every 600	Every 1200	
	Hours	Initial 20	Every 40	Every 80	
Valve Clearance		I	--	I	IN: 0.05~0.10 EX:0.17~0.22
Idle Speed		I	I	I	1300±100r/Min
Spark Plug		--	--	I	No carbon deposit
		Replace every 6000Km			Gap: 0.8~0.9mm
Air Filter		--	C	C	Replace every 2000Km
Fuel Hose, Carburetor		--	--	I	Replace every 4 years
Clutch		--	--	I	
Drive Belt		--	I	R	
Oil Filter		R	--	R	
Coolant Level		I	I	I	
Water Hose & Pipes		I	I	I	
Coolant		Replace every 2 years			

I=Inpection and adjust, or replace if necessary

R=Replace

C=Clean

Inspection & Maintenance **○: Interval**

Item			Intervals			Standard
Part		Item	Daily	1/2 Year	Annual	
Steering System	Handlebar	Operation agility	○			
	Steering system	Damage	○			
		Installation condition of steering system	○			
		Sway of ball stud	○			
Brake System	Brake lever	Free play	○	○	○	Front: lever end 0mm Rear : lever end 0mm
		Brake Efficiency	○	○	○	
	Connecting rod, oil pipe & Hose	Looseness, Slack and damage	○		○	
	Hydraulic brake and brake disc	Front and rear brake fluid level	○	○	○	Brake fluid should be above LOWER limit
		Brake disc damage and wear	○	○	○	Replace when the thickness of front brake disc is less than 2.5mm, rear brake less than 6.5mm.
Driving System	Wheel	Tire pressure	○	○	○	Front tire: 35kPa (0.350kgf/㎠) Rear tire: 35kPa (0.35kgf/㎠)
		Chap and damage	○		○	
		Groove depth and abnormal wear	○		○	No wear indication on the surface of tire (the remained depth of groove should not be less than 1.6mm)
		Loosened wheel nut and axle	○	○	○	
		Sway of front wheel bearing	○		○	
		Sway of rear wheel bearing	○		○	

Buffer System	Suspension arm	Sway of Joint parts, rocker arm damage	○		○	
	Shock absorber	Oil leakage and damage	○		○	
		Function			○	
Drive Train	Front axle	Transmission, lubrication	○		○	
	Rear axle	Transmission, lubrication	○		○	
	Gear box	Transmission, lubrication	○		○	Remove filling bolt, add oil till oil level reaches edge of filling hole.
	Final shaft (Drive shaft)	Looseness of joint parts	○	○	○	
		Sway of Spline			○	
Electrical System	Ignition Device	Spark plug		○	○	Spark plug gap: 0.8-0.9mm
		Ignition timing		○	○	
	Battery	Terminal Joint			○	
	Wiring	Looseness and damage of joints			○	
Engine	Fuel device	Fuel leakage		○	○	
		Throttle			○	Throttle grip clearance: 3~5mm
	Cooling system	Coolant level	○	○	○	
		Coolant leakage			○	

Lighting device and turning indictors	Function	○	○	○	
Alarm and lock device	Function			○	
Instruments	Function			○	
Exhaust pipe and muffler	Looseness or damage caused by improper installation			○	
	Function of muffler			○	
Frame	Looseness and/or damage			○	
Others	Lubrication & grease of frame parts			○	
Abnormal parts which can be determined when driving	Make sure if there is any abnormal with relative parts.	○			

Steering Stem

Park the vehicle on level place, hold steering handlebar, and shake in the direction as illustrated on the right and see if there is any sway.

In case of any sway, check if it is the problem of the steering stem or other parts and then do the maintenance accordingly.

In case of sway of the steering stem, tighten the locknut or disassemble the steering stem for further check.

Park the vehicle on level place, slowly turn the handlebar left and right to see if it can turn freely.

In case there is any hindrance, check if it is from the main cable assembly or other cables.

If no, check the steering tie-rod end, and check if the steering stem bearing is damaged.

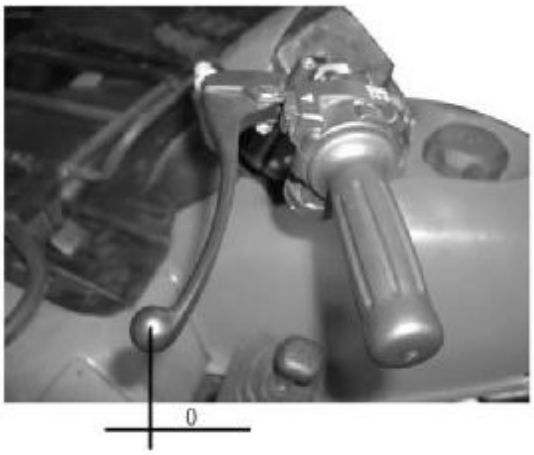
Note:
Make sure the steering can be operated freely.
An accident may occur
if the handlebar is out of control.

Brake system

Front brake lever free play

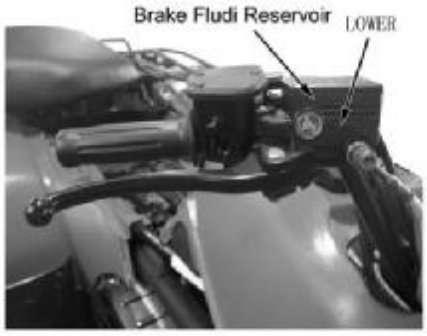
Operate front brake lever and check brake efficiency and brake lever function.

Check free play of front lever end.



Free play: 0mm

Master Cylinder



<Fluid level>

Check the brake fluid level

When the brake fluid level is near to the lower limit line, check master cylinder, brake hoses and joints for leakage. Remove the two mounting screws on fluid reservoir cap.

Remove the cap, add DOT3 or DOT4 brake liquid till the upper limit line.

- Do not mix with dust or water when adding brake fluid.
- Use only the recommended of brake fluid to avoid chemical reaction.
- Brake fluid may cause damages to the surface of the plastic and rubber parts. Keep the fluid away from these parts.
- Slightly turn the handlebar left and right till the master cylinder is in horizontal, then remove the fluid reservoir cap.

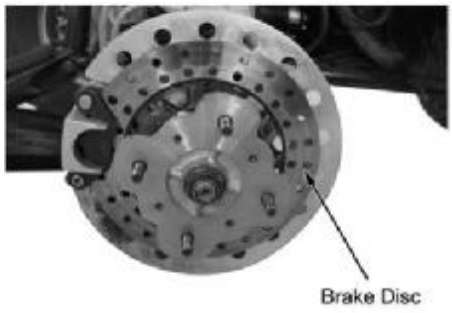
Brake Disc, Brake Pad

< Wear of brake pad>
Check the brake pad wears from the mark as indicated.

Replace the brake pad if the wear has reached position of wear limit trough.

Note
The brake pad must be replaced with a whole set.

Checking and replacing the brake disc
Front brake disc thickness: ≤2.5 mm →Replace
Rear brake disc: ≤6.5 mm →Replace



Min. limited thickness of the front brake disc: 2.5mm
Min. limited thickness of the rear brake disc: 6.5mm

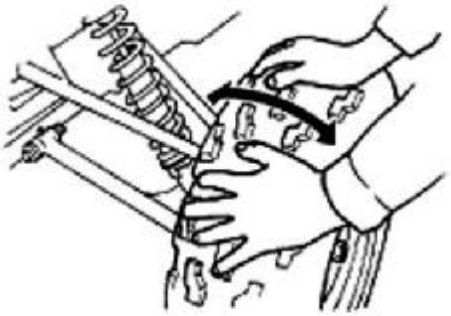
Change the Brake Fluid

< Changing Brake Fluid>

Change the brake fluid once every year.

Wheels

Lift front wheel on level place, and make sure there is no loading on the wheels.

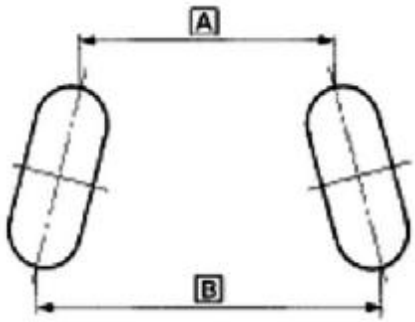


Shake the front wheel left and right to check whether the joint of front wheel is tightened and check whether it sways.

Not tighten enough: →Tighten it
Sway: →Replace the rocker arm

Front Toe-in size

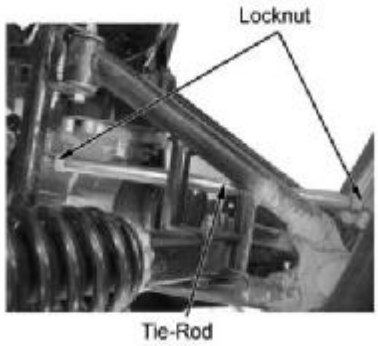
Park the vehicle on level place, measure the front toe-in
Toe-in: B-A=0-10mm



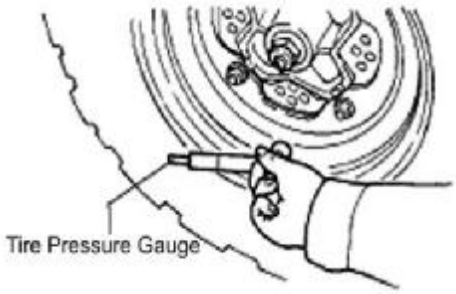
Toe-in out of the range: → Adjust the locknut of tie-rod

Note:

After the toe-in has been adjusted, slowly run the vehicle to check whether the direction of vehicle can be controlled by handlebar.



Tire Pressure



Check the pressure of the tires with a pressure gauge.

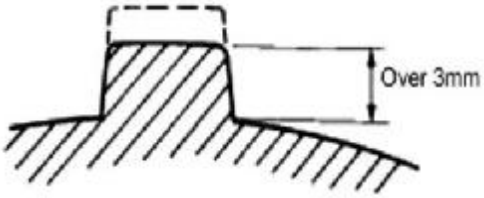
Note

Check the tire pressure after tires are cooled.

Driving under improper tire pressure will reduce the comfort of operation and riding, and may cause deflected wear of the tires.

Specified pressure /tire

	Front wheel	Rear wheel
Pressure	35kPa(.035kgf/cm^2)	35kPa(0.50kgf/cm^2)
Tire Size	25×8-12	25×10-12



Tire Tread

Check the tire tread.

Tread Height: < 3mm→Replace with new tires

Note:

When the tread height is less than 3mm,
the tire should be replaced immediately.

Wheel Nut and Wheel Axle

Check front and rear wheel axle nuts for looseness

Loosened axle nuts: →Tighten

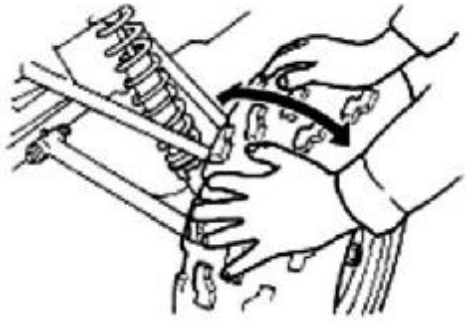
Tightening Torque:

Front wheel axle nut:

110-130N ▪ m(11.2kgf ▪ m-13.3kgf ▪ m)

Rear wheel axle nut:

110-130N ▪ m(11.2kgf ▪ m-13.3kgf ▪ m)



Sway of Wheel Bearing

Lift the front wheel

Make sure there is loading on the vehicle

Shake the wheel in axial direction for any sway

In case of any sway,

disassemble the front wheel and check the bearing

Suspension System

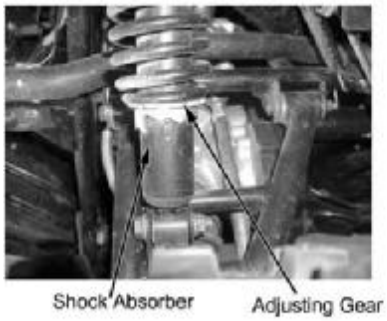
Park the vehicle on lever place, press the vehicle Several times up and down as illustrated on the right.

In case of any rocking or abnormal noise, check whether there is any oil leakage from absorbers, or any damage or looseness of tightening parts.

Adjusting the Absorber

Use special tools to adjust the length of absorber according to loading requirement

Turn clockwise to adjust from high to low

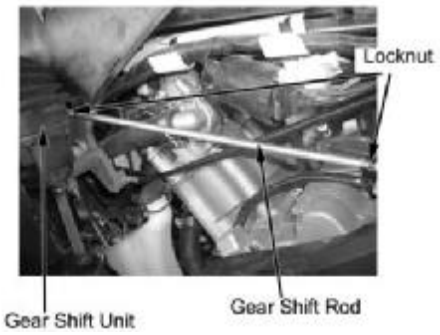


Gear Shifting

Shift the gear to check for flexibility and gear engagement

Adjust the gearshift rod if necessary

Release the locknut to adjust the length of gearshift rod



Fuel Device

Status of the fuel system

Remove the seat (→2-3)

Check the fuel hose for any aging or damage.

Aged or damaged fuel hose: → Replace

Check if there is cracks or bending with the vacuum tube.

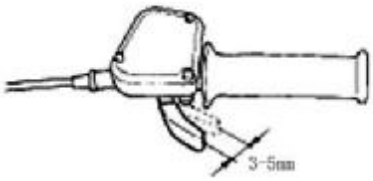
Cracked or bended vacuum tube: → Replace

Checking the Throttle Lever

Check the free play of throttle lever

Free play: 3-5mm

Out of range: →Adjust



Loosen locknut of throttle cable
turn the regulator and adjust free play of throttle lever

After adjusting, tighten locknuts and install throttle cable sleeve

Replace with a new throttle cable if the specified free play could not be acquired by adjusting the regulator or if there is still stickiness with the throttle.

Adjusting the Speed Limiter

The speed limiter is to limit the opening of throttle

Check the maximum length of limiter screw thread

Maximum screw thread: a=12mm

Adjust with a cross driver.

Note:

For beginners, the speed limit should be fully tightened.

Drivers with certain skills may adjust
the throttle with speed limiter

Maximum length of screw thread is 12mm.

It is recommended to adjust the thread length to 3-5mm.

Cooling System

Note

- Check coolant level from reservoir tank.
  Do not check from radiator.

  If the radiator cap is opened while the engine is hot (over 100 ℃), the pressure of the cooling system will drop down and the coolant will get boiled rapidly.

  DO NOT open the radiator cap until the coolant temperature drops down.
- Coolant is poisonous, DO NOT drink or splash it to skin, eyes, and clothes.
  - —In case the coolant gets to the skin and clothes, wash with soap immediately.
  - —In case the coolant gets into eyes, rinse with plenty of water and go to consult the doctor
  - —In case of swallowing the coolant, induce vomit and consult the doctor.
- Keep the coolant in a safe place and away from reach of children.

Coolant level

Coolant might reduce due to natural evaporation.
Check the coolant level regularly.

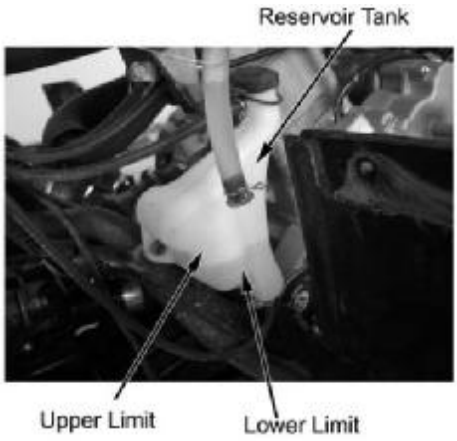
Note

- Coolant can prevent rust and resist freeze. Ordinary water may cause engine rust or cracks in winter due to freezing.
- Park the vehicle on level ground for checking of the coolant. Inclined vehicle body will cause incorrect judging of the coolant level.
- Check the coolant after the engine is warmed up.
  Start and warm up engine.

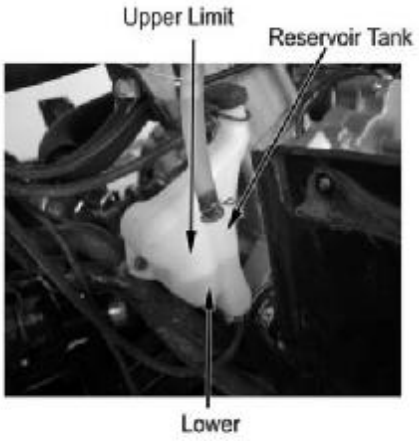
  Stop the engine.

  Remove left side panel (→2-6)

  Check if the coolant level is between the upper and lower limit.



When the coolant level is below the LOWER limit,
remove reservoir tank cap and add coolant till upper limit.
(Add coolant or diluted original liquid).
Recommended coolant: CFMOTO coolant
Standard density: 50%
(Freezing temperature of coolant varies according to the different mixture ratio. Adjust the mixture ratio according to the lowest temperature in the place where the vehicle is used.)
If the coolant reduces very fast, check if there is any leakage.
The cooling system may be mixed with air when there is no coolant in the reservoir tank and the air should be discharged before adding coolant.



Coolant Leakage
Check radiator hose, water pump, water pipes and joints for leakage.
In case of any leakage, disassemble and do further check.
(Refer to Chapter 4)

Check the radiator hose for aging, damages or cracks.

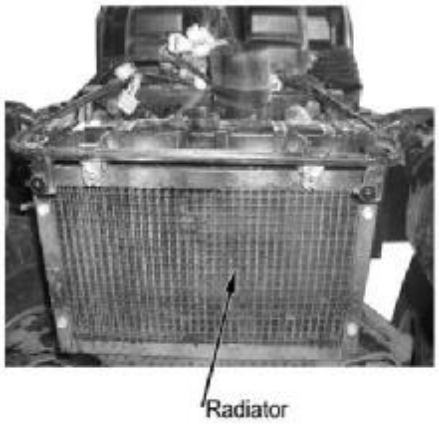
The rubber hose will naturally get aged after a period of service time. The aged hose may get cracked when the cooling system is heated. Nip the hose with fingers and check if there are any tiny cracks.

In case of any abnormal, replace with a new hose.

Check the clamps of the coolant pipes and hose.
Tighten properly in case of any looseness.

Check radiator fins for mud and dust clog or damage.

Correct the bent fins; clean the mud with water and compressed air. When the damaged area of the radiator fin is over 20%, replace with a new radiator.



Check Water Temperature Gauge

When engine is not working, the water temperature should be in the “0” position. Start the engine to check if the indicator works. If the indicator is not working, do the maintenance in time.

Lighting System
Adjusting headlight light beam

Turn the headlight beam adjusting screw with a cross screwdriver and adjust the high/low beam to meet the requirement.