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CF250T-5 SERVICE MANUAL

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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 motorcycle Model: CF250T-5(V5).

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

Chapter 2：inspection and adjusting key points，service guide.

Chapter 3 and later：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 scooters.

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Conversion Table

Item	Example	Conversion
Pressure	200 kPa（2.00kgf/cm^2）	1kgf/cm^2=98.0665kPa 1kPa=1000Pa
	33kPa (250mmHg)	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 for Operation

Safety Cautions

Warning: Hazardous components in exhaust。
Do not run the engine in a enclosed or poorly ventilated place for long time。

Caution: 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.

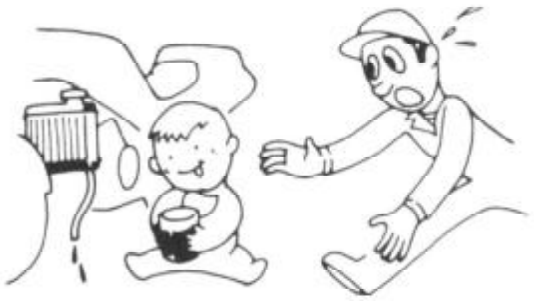
Keep battery and liquid away from reach of children

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

Warning: Do not touch the engineor muffler with bare hands when the engine has just stopped to avoid scalding. Wear long-sleeve work clothes and gloves for operation.

Warning: Coolant is poisonous. Do not drink or splash to skin, eyes or clothes.Flush with plenty of soap water if splashed to skin. Flush with water and consult the doctor If drinking the coolant, induce vomiting and consult doctor.

Keep coolant away from reach of children.



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

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

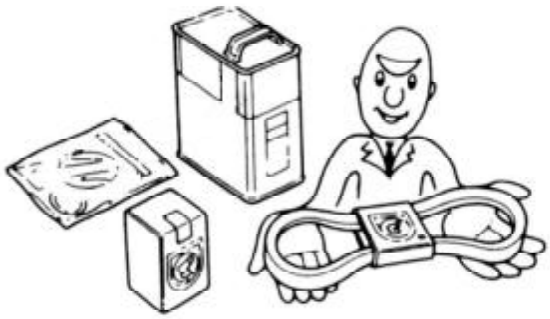
Warning:Be careful not to get clamped by the turning parts like wheels and clutch

Warning: The asbestos dust on the brake drum is carcinogenic if breathed in. Do not clean off the dust with compressed air. Use cleaning detergent to avoid dust proliferation.

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

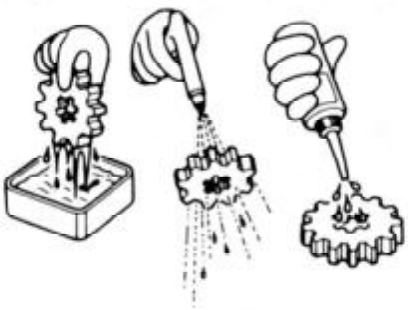
Cautions for Disassembling and Assembling

■ Use genuine CFMOTO parts, lubricants and grease

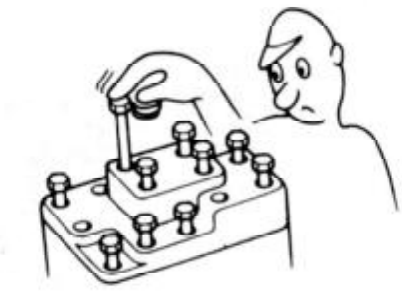


■ Place and store the disassembled parts separately in order for correct assemble.

■ Clean and blow off the detergent after disassembling the parts. Apply lubricants on the surface of moving parts.



■ If not knowing the length of screws,install the screws one by one and tighten with same torque.



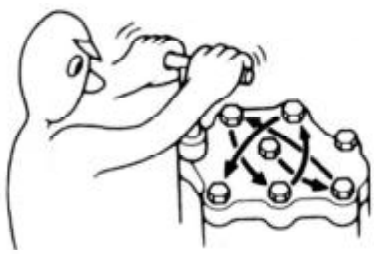
■ Clean the mud, dust before overhauling。

■ Replace the disassembled washers, o-rings,piston pin circlip, cotter pin with new ones.

■ Elastic circlips might get distorted after disassembled. Do not use the loosed circlips.

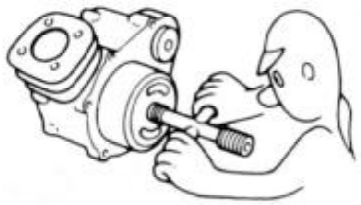
■ Measure the data during disassembly for correct assembling.

■ 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.



■ Check if the disassembled rubber parts are aged and replace if necessary. Keep the rubber parts away from grease.

■ Use special tools wherever necessary

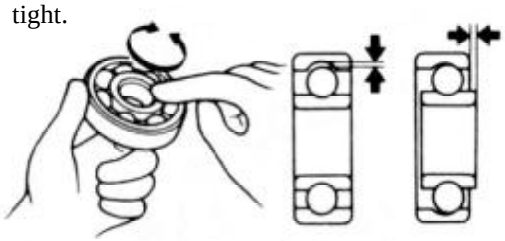


■ Turn the ball bearing with hands to make sure the bearing will turn smoothly.

•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.

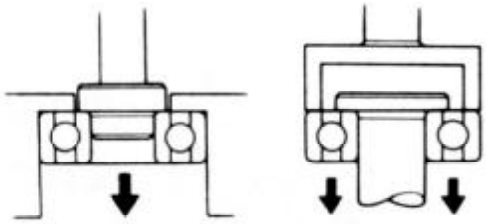
• When pressing the bearing into the machine or to the shaft, replace the bearing if it could not be pressed tight.



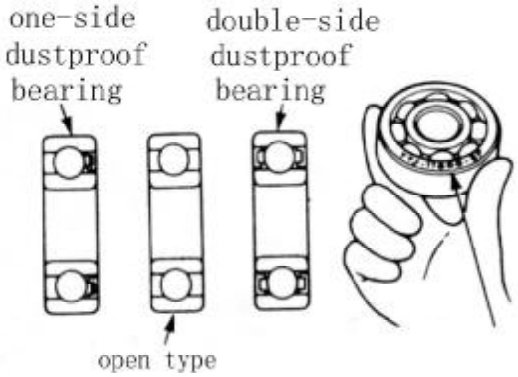
■ Keep the bearing block still when blowing dry the bearing after washing clean. Apply oil or lubricant before assembling.

■ Apply or inject recommended lubricant to the specified parts.

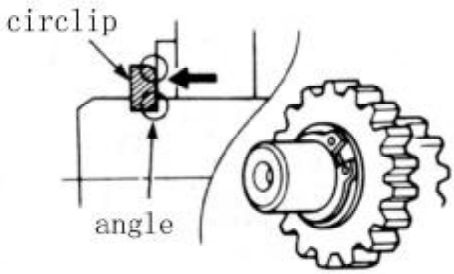
■ If the disassembling of pressed ball bearing is done by pressing the balls, the disassembled bearing should not be used again.



■ 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.



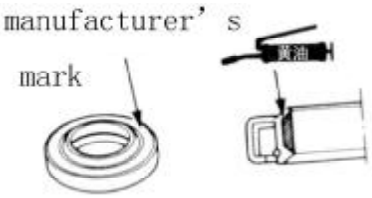
■ Install the elastic circlip properly.Turn the circlip after assembling to make sure it has been installed into the slot.



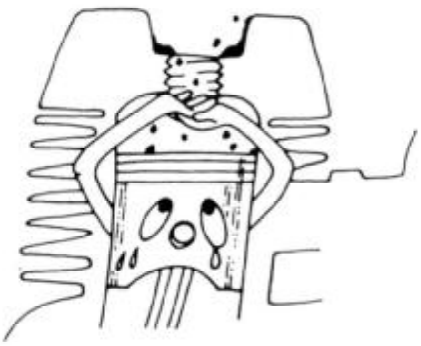
■ After assembling, check if all the tightened parts are properly tightened and can move smoothly.

■ Install oil seal with the side of manufacturer's mark outward.

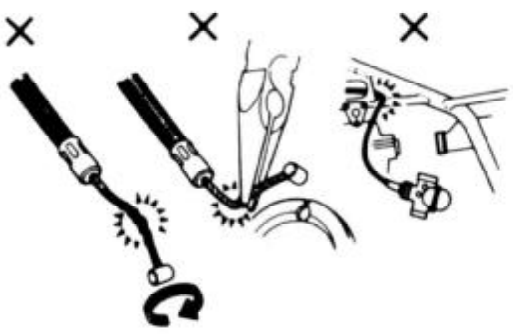
- do not fold or scratch the oil seal lip
- apply grease to the oil seal lip before assembling



■ Do not mix mud or dust into engine or the hydraulic brake system.

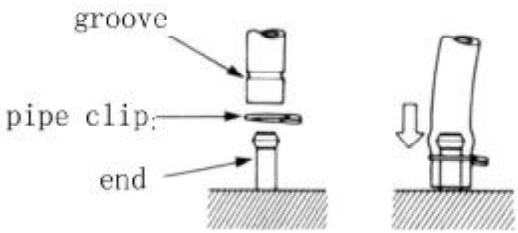


■ Do not twist or bend the cables too much.Distorted or damaged cables may cause poor operation.



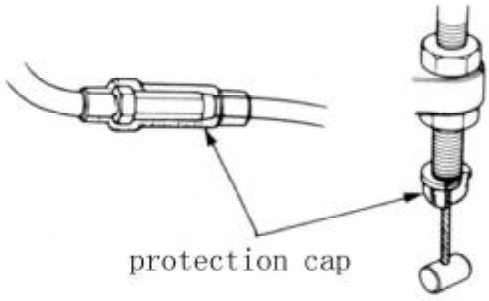
■ Brake fluid and coolant may damage coating, plastic and rubber parts. Flush these parts with water if splashed.

■ When installing pipes, insert the pipe till the end. Fit the pipe clip, if any, into the groove. Replace the pipes or hoses that cannot be tightened.



■ Clean the gaskets and washers of the engine cases before assembling. Remove the scratches on the contact surfaces by polishing evenly with an oilstone.

■ When assembling the parts of protection caps,insert the caps to the grooves, if any.



Number Engrave Place

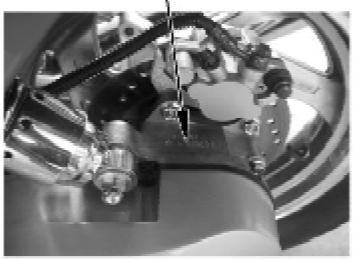
CF250T-5

Frame Number：LCETDJPK～

Engine Number：172MM-A ～

Frame Number
Engrave Place

Engine Number Engrave Place



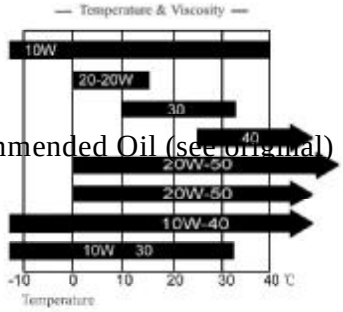
Major Specifications

Item				Parameter
Model				V5　CF250T-5
Length				2225mm
Width				875mm
Height				1110mm
Wheel base				1490mm
Engine type				172MM-A
Displacement				244.3ml
Fuel type				Unleaded gasoline 90 Octane or above
Dry weight				166kg
Number of Passengers				2(including driver)
Max. Load				150kg
Tire		Front		100/90－18
		Rear		150/80－15
Ground Clearance				150mm
Min. turning radius				5m
Engine	Starting			Electrical starting
	Engine type			4-stroke, gasoline engine
	Arrangement and No. of cylinder			Single, horizontal
	Combustion chamber type			Hemispherical
	Valve Driving type			OHC chain driving
	Bore x stroke			72mm×60mm
	Compression Ratio			10:1
	Max. power			11kw/7000r/min
	Max. torque			17.6N • m/5500r/min
	Cam valve	Valve intake	On	0°（1mm）　BTDC
			Off	30°（1mm）　ABDC
		Valve exhaust	On	35°（1mm）　BBDC
			Off	5°（1mm）　ATDC
	Lubrication type			Pressure & Splash
	Oil pump type			Rotor
	Oil filter type			Full flow filter screen
	Cooling type			Forced water cooling

Item			Parameter
Fuel device	Air Filter type		Urethane foam filter
	Carburetor	Type	Vacuum Diaphragm type
		Diameter of mixing valve	26mm
Gearing	Clutch	Type	Dry, auto-centrifugal
		Operation mode	Automatic
	Initial Transmission	Gear type	Bevel gear
		Reduction ratio	2.938
	Secondary transmission	Gear type	Bevel Gear
		Reduction ratio	2.938
	Gearbox	Type	CVT
		Function	Auto-centrifugal
		Transmission ratio	2.2~0.9
Steering device	Steering angle	Right	35°
		Left	35°
Brake type		Front	Hydraulic Disc
		Rear	Hydraulic Disc
Buffer Device	Suspension	Front wheel	Telescopic
		Rear wheel	Swing arm
Frame type			Welded steel tube and plate

Overhaul Datasheet

Lubricating device

Item		Standard	Service limit
Engine Oil Capacity	Volume when replacing	0.8L	—
	Full capacity	1.0L	—
Recommended Oil (see original) 		• Special 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	17.0L
Carburetor	Designated marks	VE14C
	Main jet	
	Low-speed jet	
	Drop turn median value	
	Fuel level of float chamber	18.5±0.5mm
	Idle speed	1500±150r/min

Cooling Device

Item		Standard
Coolant capacity	Full Capacity	1100ml
	Reservoir tank capacity	340ml
	Standard density	50%
Opening pressure of radiator cap		108kpa(1.1kgf/cm^2)
Thermostat	Temperature / valve open	72±2℃
	Temperature/valve full open	88℃
	Overall lift	3.5～4.5mm

Cylinder head、valve

Item			Standard	Service limit
Compression pressure of cylinder			15.0kgf/cm² -600rpm	
Valve clearance		IN	0.10mm	
		EX	0.10mm	
Planeness				0.05mm
Camshaft	Cam Height	IN	31.60-31.72mm	31.52mm
		EX	31.60-31.72mm	31.52mm
Rocker arm	Inner diameter of rocker	IN/EX	12.000-12.018mm	12.10mm
	Outer diameter of rocker	IN/EX	11.973-11.984mm	11.91mm
Valve Valve guide bushing	Outer diameter of valve stem	IN	4.975-4.990mm	4.90mm
		EX	4.955-4.970mm	4.90mm
	Inner diameter of valve guide	IN	5.000-5.012mm	5.03mm
		EX	5.000-5.012mm	5.03mm
	Clearance between valve stem and guide	IN	0.010-0.037mm	0.08mm
		EX	0.030-0.057mm	0.10mm
	Thrown height of valve guide	IN/EX	12/12mm	
	Contact width of valve seat	IN/EX	1.2mm	1.8mm
Valve spring	Free length (outer/inner)	IN/EX	40.0/30.5mm	36.1/27.6mm

Auto CVT

Item		Standard	Service limit
Transmission Primary Sheave	Primary Sliding Sheave	27.000-27.033mm	27.06mm
	Outer diameter of bushing, Primary Sheave	26.959-26.980mm	26.94mm
	Outer diameter of weight roller	22.94-23mm	22.4mm
Belt width		27.2mm	25.5mm
Secondary Sheave	Clutch facing thickness		1.5mm
	Inner diameter of clutch housing	153-153.15mm	153.8mm
	Free length of clutch spring	135.0mm	127.0mm
	Outer diameter of secondary fixed sheave	39.95-39.975mm	39.94mm
	Inner diameter of secondary sliding sheave	40.0-40.025	40.06mm

Gearbox

Item		Standard
Gear oil	For replacing	0.2 L
	For disassembling	0.25 L
Recommended gearbox oil		SAE15W-40/SF

Starting motor

Item		Standard	Service Limit
Starting motor	Brush length	12.0-12.5mm	11.0

Crankshaft 、Piston、Cylinder

Item			Standard （mm）	Limit （mm）
Crankshaft	Big end, connecting rod	Axial clearance	0.10-0.35	0.5mm
		Radial clearance	0.013-0.025mm	0.05mm
	Crankshaft play		0.02mm	0.10mm
Piston	Piston installing direction		“IN” towards valve intake	
	Outer diameter of Piston		71.96-71.98mm	71.9mm
	Piston pin hole inner diameter		17.002-17.008mm	17.04mm
	Piston pin outer diameter		16.994-17mm	16.96mm
	Connection rod small end inner diameter		17.006-17.024mm	17.06mm
	Clearance between cylinder& piston		0.02-0.059mm	0.10mm
	Clearance between piston & pin		0.002-0.014mm	0.02mm
	Clearance between pin & connection rod		0.006-0.030mm	0.02mm
	Clearance between Piston ring & groove	Top ring （1）	0.015-0.05mm	0.09mm
		2nd Ring（2）	0.015-0.05mm	0.09mm
	Piston ring end gap	Top ring （1）	0.15-0.30mm	0.05mm
		2nd Ring（2）	0.10-0.25mm	0.05mm
		Oil ring	0.4-0.5mm	
	Installing direction， piston ring		Mark Upward	
Cylin-der	Inner diameter		72-72.019mm	72.1mm
	Upper distortion		---	0.05mm
	Roundness		0.002mm	0.05mm
	Cylindericity		0.005mm	0.05mm

Front wheel

Item			Standard	Service Limit
Front wheel	Bending, front wheel axle		—	0.2mm
	Play of wheel rim	Vertical	0.8mm	2.0mm
		Horizontal	0.8mm	2.0mm
	Tire	Groove	—	1.6mm
		Pressure	250kPa（2.5kgf / cm^2）	—

Rear wheel

Item			Standard	Service Limit
Rear wheel	Play of wheel rim	Vertical	0.8mm	2.0mm
		Horizontal	0.8mm	2.0mm
	Tire	Groove	--	1.6mm
		Pressure	280kpa(2.8kgf/cm^3)	--

Brake system

Item		Standard	Service Limit
Front brake	Brake lever play	10-20mm	--
	Brake disc thickness	4mm	3mm
Rear brake	Brake lever play	10-20mm	--
	Brake disc thickness	4mm	3mm

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		12V 10Ah
	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
Sparking-plug	Type	Electricity negative type spark plug
	Standard	DPR7EA-9(NGK)
	Optional	DR8EA 、D7RTC
	Spark plug gap	0.8-0.9mm
Ignition timing	Max. advanced angle	28° CA
Peak voltage	Ignition coil	
	Pulse generator	

Light、Instrument、Switch、Pickup coil

Item		Standard
Fuse	Main	20A
	Auxiliary	5A×2 10A×2
Light， Bulb	Head light （Hi/Lo）	12V—35W/35W
	Brake light/tail light	12V—5W/21W
	Turning light	12V—10W×4
	Odometer indicator light	12V—3.4W
	Odometer light	12V—1.7W
	Turning Indictor	12V—3.4W
	High Beam Indicator	12V—3.4W

Tightening torque

Item	Torque N·m(kgf·m)	Item	Torque N·m(kgf·m)
Bolt, nut 5mm	5（0.5）	Screw 5mm	4（0.4）
Bolt, nut 6mm	10（1.0）	Screw 6mm	9（0.9）
Bolt, nut 8mm	22（2.2）	Bolt with flange, 6mmSH	10（1.0）
Bolt, nut 10mm	34（3.5）	Bolt with flange, nut6mm	12（1.2）
Bolt, nut 12mm	54（5.5）	Bolt with flange, nut8mm	26（2.7）
		Bolt with flange, nut10mm	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.
2.Locknut must be replaced with a new one after removed.

Type	No. of Bolt & Nut	Thread diameter	Torque N·m(kgf·m)	Remarks
Checking、adjusting				
Check Gearbox oil /drain Bolt	2	M10×1.25		
Engine oil filter cover	1	M39×1.5	18~22	
Drain bolt	1	M12×1.5	20~25	
Spark plug	1	M12×1.25	15~20	
Lubricating system				
Oil plump and mounting bolt	2	M6×12	10	
Screw, oil pump plate	1	M3×12	2	
Cooling system				
Coolant drain bolt	1	6	8（0.8）	
Coolant temperature Alarm	1	R1/8	10（1.0）	
Impeller, water pump	1	7	10（1.0）	
Cylinder head/head cover				
Cylinder head cover bolt	2	6	10（1.0）	
Cylinder Stud	short 3	8	30（3.0）	
	long 1	8	30（3.0）	
Timing sprocket bolt	2	5	9（0.9）	
Tensioner spring seat bolt	1	8	10（1.0）	
Tensioner thread pin bolt	1	8	13（1.3）	
Belt, CVT system				
Left side cover bolt	5	6	10（1.0）	
Gearbox nut	1	14	78（8.0）	
Clutch special nut	1	28	69（7.0）	
Clutch nut	1	12	49（5.0）	
AC Magneto motor				
AC Magneto motor nut	1	14	103（10.5）	
Flange bolt for casing	8	6	12（1.2）	
Overriding clutch inner hex bolt	3	6	12（1.2）	

Frame

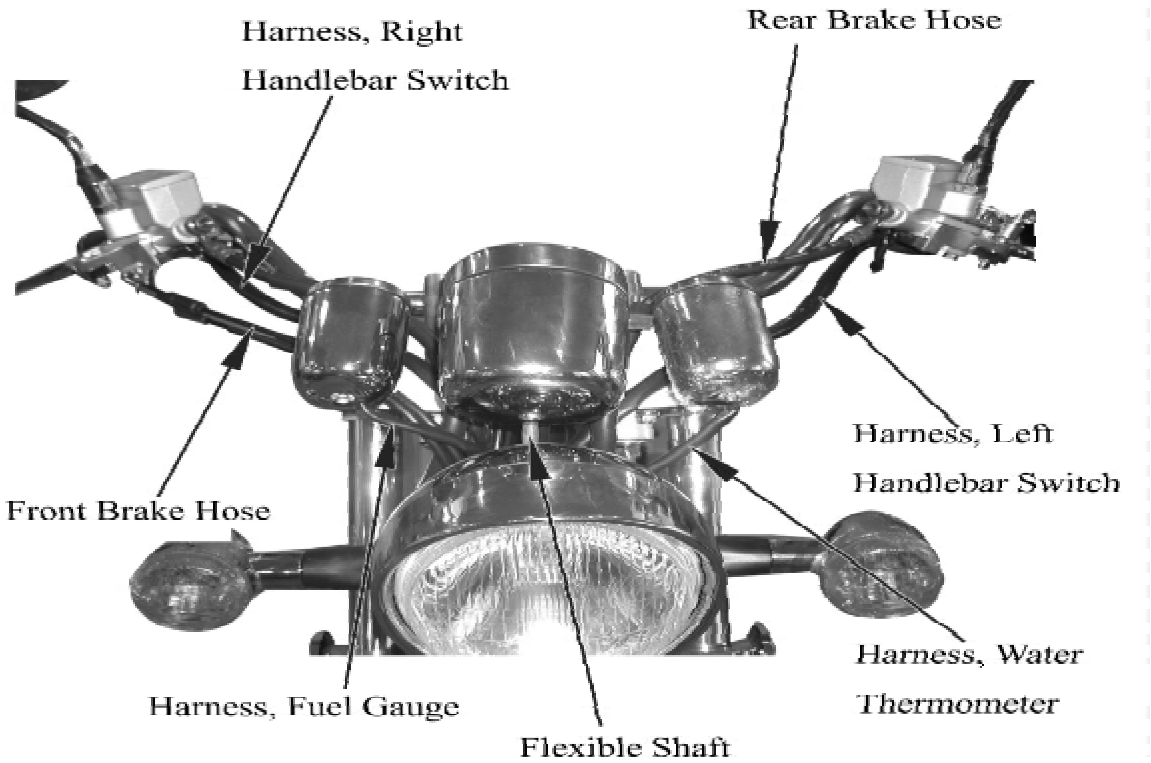
Type	No. of Bolt & Nut	Diameter (mm)	Tighteningtorque N·m(kgf·m)	Remarks
Engine disassembly				
Engine suspension mounting bolt	2	10	55（5.6）	
Engine suspension shaft nut	1	12	80（8.1）	
Front wheel, Front suspension, Steering				
Handlebar locknut	1	25	68（7.0）	
Handlebar mounting nut	1	10	55（5.6）	
Front wheel axle nut	1	14	100（10.1）	
Upper mounting bolt, absorber	4	8	40（4.1）	
Rear wheel ,Rear suspension				
Rear wheel axle nut	1	16	140（14.3）	
Upper mounting bolt, absorber	2	10	55（5.6）	
Lower mounting bolt, absorber	2	10	50（5.6）	
Rear fork mounting bolt	2	8	30（3.1）	
Brake system				
Front brake disc mounting bolt	6	8	12（1.2）	
Rear brake disc mounting screw	4	8	26（2.7）	
Front brake caliper mounting bolt	2	8	30（3.1）	
Rear brake caliper mounting bolt	2	8	30（3.1）	
Muffler				
Mounting nut (Front elbow)	2	8	26（2.7）	
Mounting bolt(Muffler barrel)	3	10	55（5.6）	

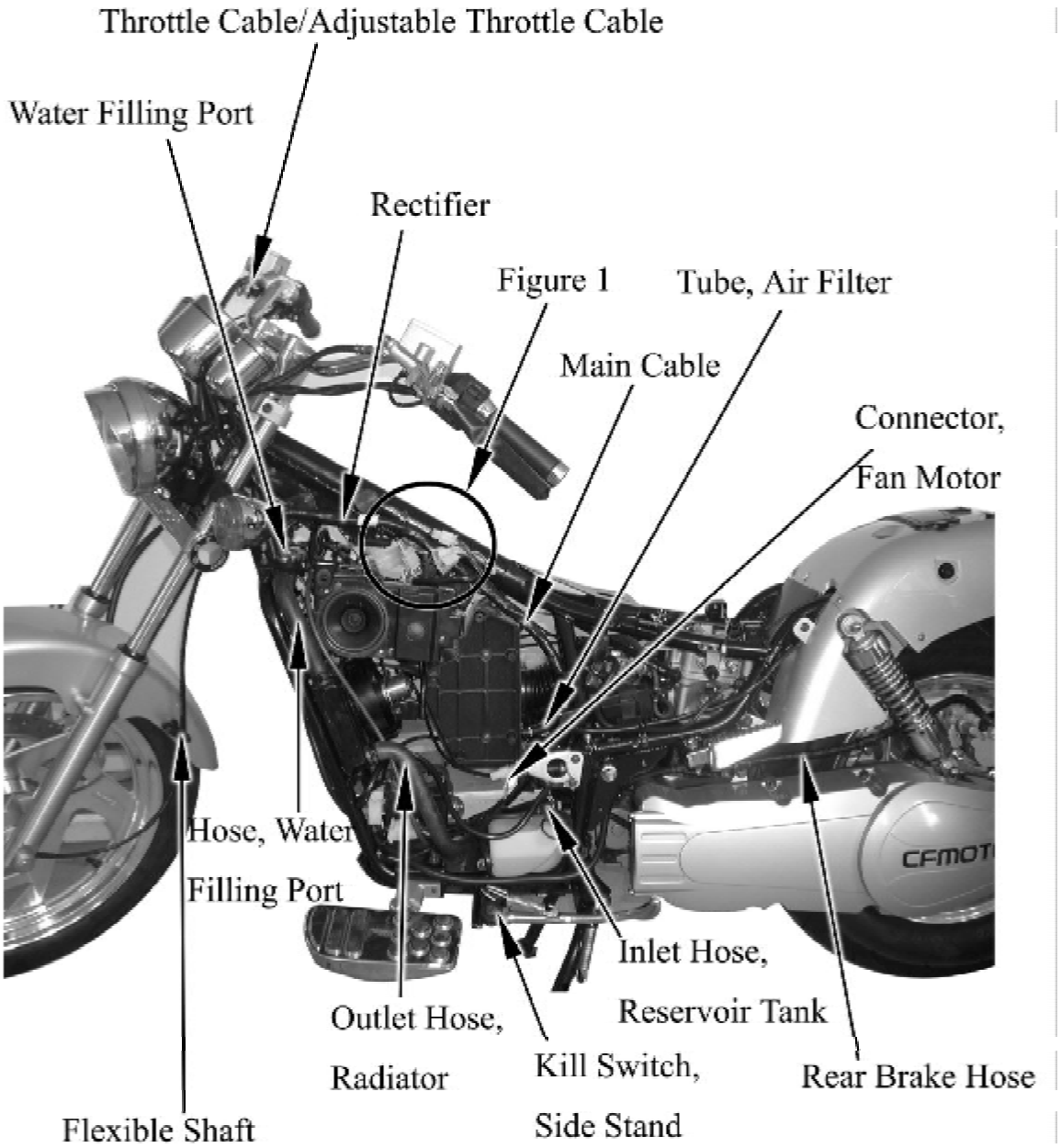
Lubricant, Sealant

Application Areas	Notes	Grease type
Inner surface, cylinder sleeve Conical surface, AC magneto rotor Bearing/flank, connecting rod big end Inner side, connecting rod small end Crankshaft main bearing surface Tooth flank, crankshaft timing sprocket Drive gear tooth flank, oil pump Piston pin outer surface Piston ring groove Piston ring Camshaft bearing rotating surface Timing sprocket tooth flank Rock arm shaft surface Sprocket tooth flank, oil pump Oil pump comp. Thread/joint face, drive wheel nut Outer surface, oil seal lips Tooth flank & bearing, reduction gear Cam surface Inner surface, rocker arm Valve stem (guide side)		Special SAE standard for 4 stroke motorcycle engine. 15w-40 API category: SE or SF engine oil
Water temperature alarm Screw thread part, timing sprocket mounting nut		Tightening sealant
Ball bearing, clutch Needle bearing, clutch Secondary sliding sheave, clutch	5.0-5.5g(do not apply on clutch surface)	Exxonmobile grease XHP222 (deep blue)
Sealing surface, all o-rings Tightening bolt, cylinder body	Do not apply on the sharp point	Sealant

Application areas	Notes	Types
Bearing race, head pipe Lip ,front wheel dust-proof seal Joint, meter flexible shaftJoint, throttle cable Throttle grip part Pivot, rear pedal(L) Pivot, rear pedal(R) Pivot, side stand Oil seal lip, rear fork Tooth flank, counter gear/small gear Axle part, main stand		Multi-purpose lubrication oil
Rear wheel axle nut		Engine oil
Dust-proof seal lip, lower part of front shock-absorber		Absorber oil # 5
Inner surface, handle bar		Engine oil

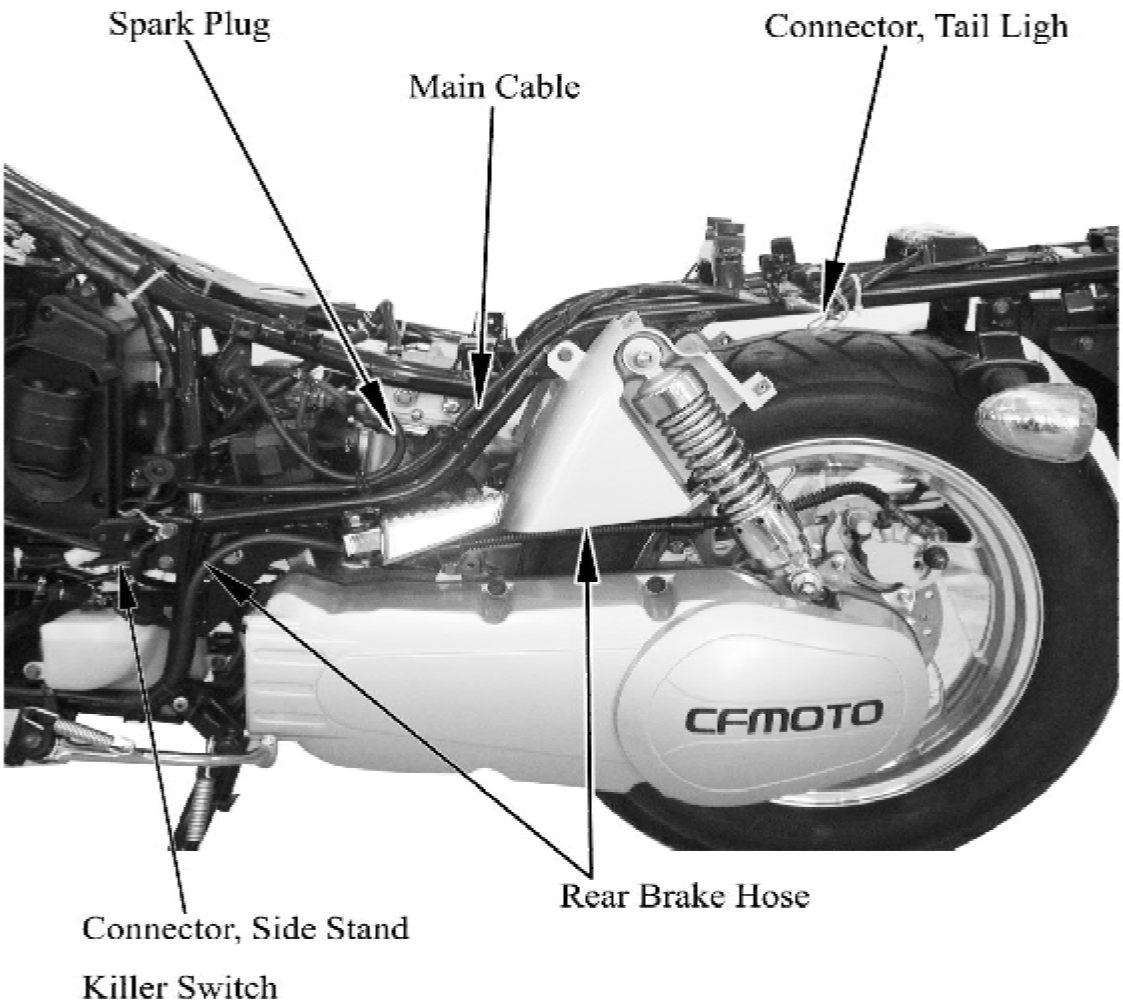
Wiring, Piping and Cable Routing

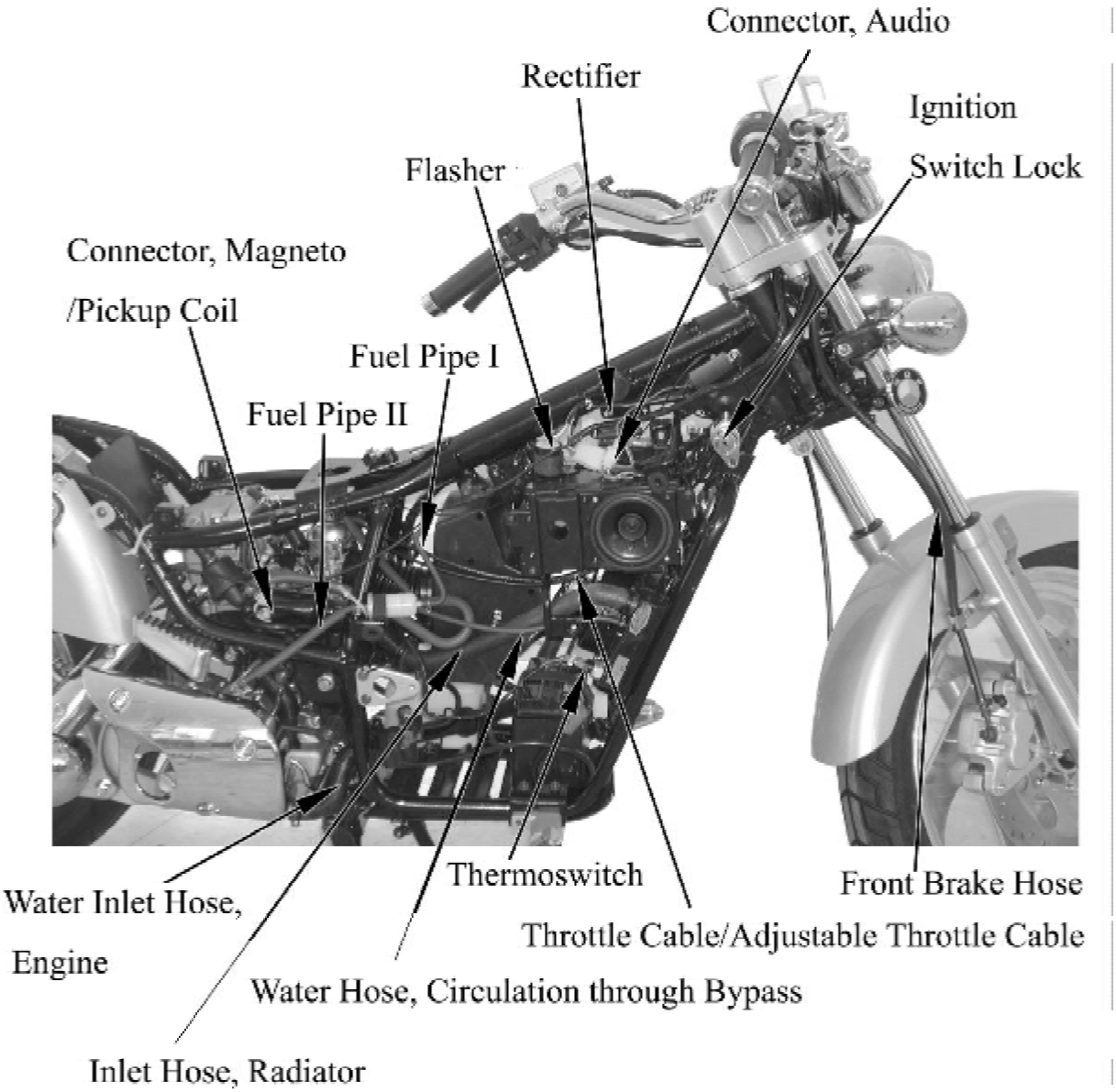


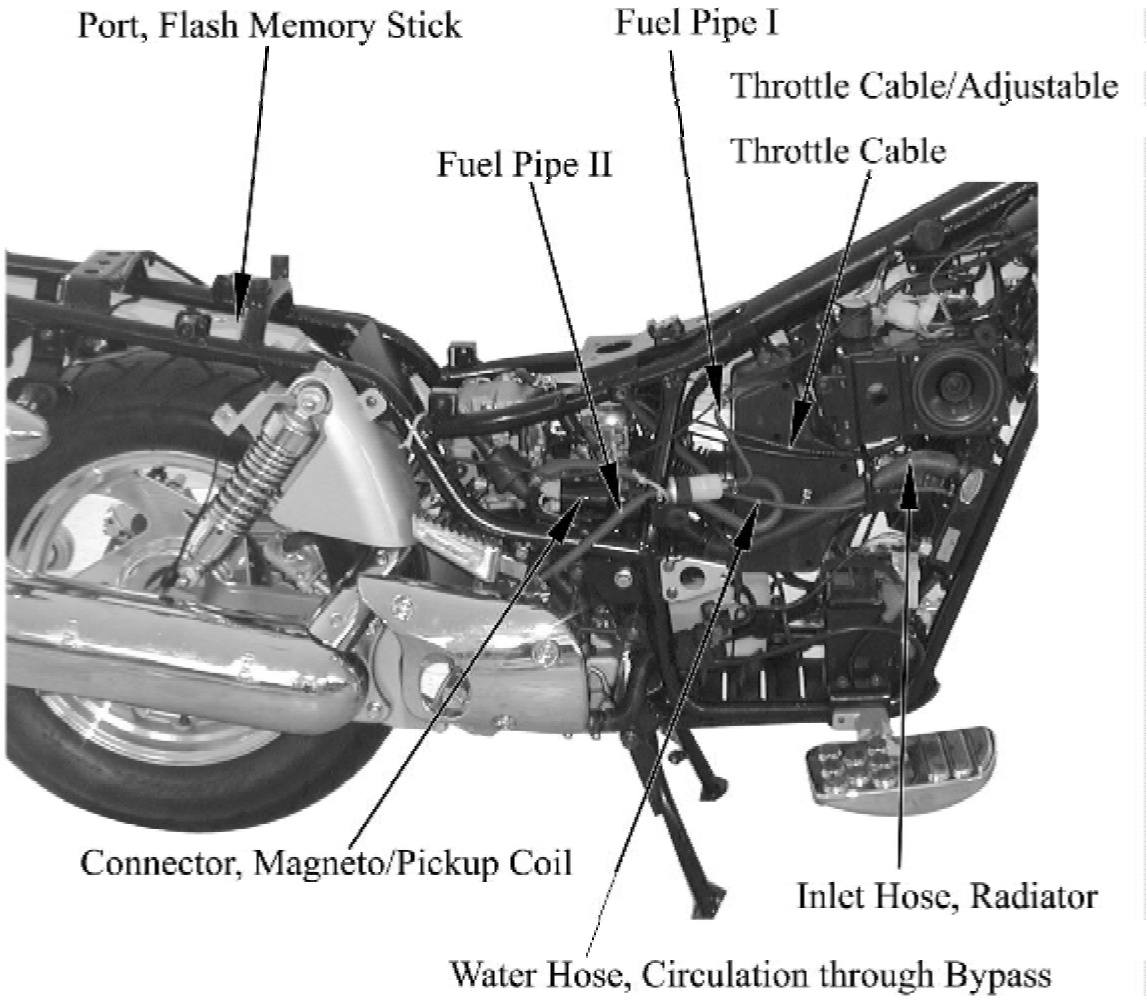

Throttle Cable/Adjustable Throttle Cable
Water Filling Port
Rectifier
Figure 1
Tube, Air Filter
Main Cable
Connector,
Fan Motor
Hose, Water
Filling Port
Inlet Hose,
Reservoir Tank
Outlet Hose,
Radiator
Kill Switch,
Side Stand
Rear Brake Hose
Flexible Shaft


3P Connector, Flasher
2P Connector, Fuel Sensor
9P Connector, Handle-bar Switch (L&R)
3P/4P Connector, Rectifier

Figure 1


Spark Plug
Main Cable
Connector, Tail Ligh
CFMOTO
Rear Brake Hose
Connector, Side Stand
Killer Switch


Connector, Audio
Rectifier
Ignition
Switch Lock
Flasher
Connector, Magneto
/Pickup Coil
Fuel Pipe I
Fuel Pipe II
Thermoswitch
Front Brake Hose
Water Inlet Hose,
Engine
Throttle Cable/Adjustable Throttle Cable
Water Hose, Circulation through Bypass
Inlet Hose, Radiator


Port, Flash Memory Stick
Fuel Pipe I
Throttle Cable/Adjustable
Throttle Cable
Fuel Pipe II
Connector, Magneto/Pickup Coil
Inlet Hose, Radiator
Water Hose, Circulation through Bypass

Overhaul Info

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.

Removal and Installation of muffler should be done after it is fully cooled.

- This chapter is on the disassembly and installation of outer 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

Screw, Taillight/Brake Light 1.8N.m(0.18kgf.m)
Screw, Rear turning Light Housing 1.8N.m(0.18kgf.m)
Screw, Taillight Housing 1.8N.m(0.18kgf.m)

Trouble shooting

Loud exhaust noise

- Broken muffler
- Exhaust leakage

Insufficient power

- Distorted muffler
- Exhaust leakage
- Muffler clogged

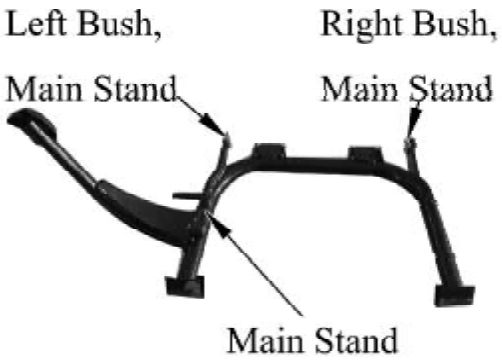
Main Stand

Caution

Make sure there is no deviation of the seat by shaking it up and down, back and forth after installation.

Installation

Install the left and right bush to the main stand.

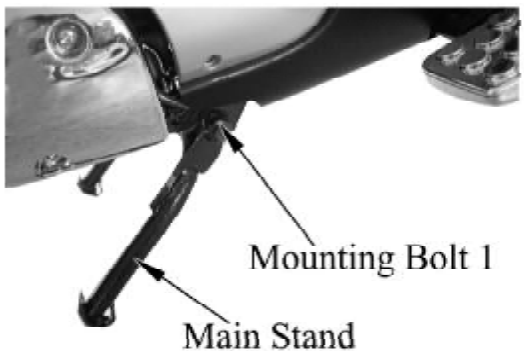


Note:

Apply grease to the outer surface of bush.

Install main stand to the vehicle with mounting bolt.

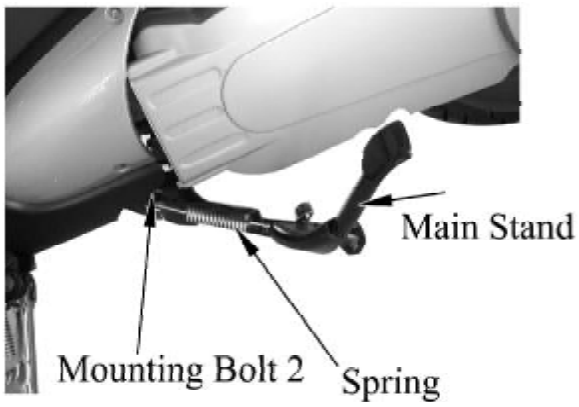
Tightening Torque: 26N.m(2.7kgf.m)



Install spring to main stand as illustrated.

Disassembly

Reverse the installation procedure for disassembly.



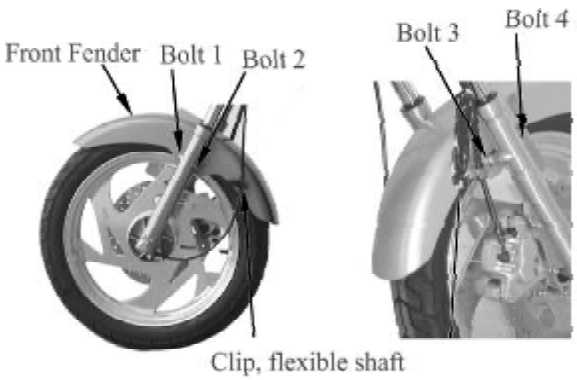
Front Fender

Removal

—Clip, flexible shaft

—Screw 1, Screw 2, Screw 3, Screw 4

—Front fender



Installation

Reverse the removal procedure for installation.

Seat

Removal

Unlock the passenger seat with ignition

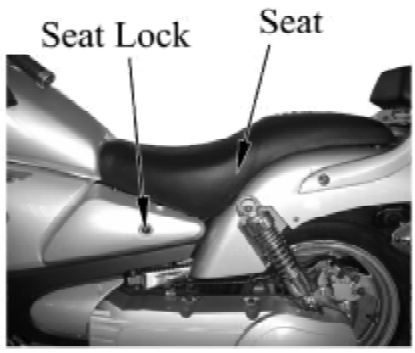
Push backward and lift passenger seat.

Installation

Reverse the removal procedure for installation.

Note:

Make sure that the seats are firmly installed.



Backrest

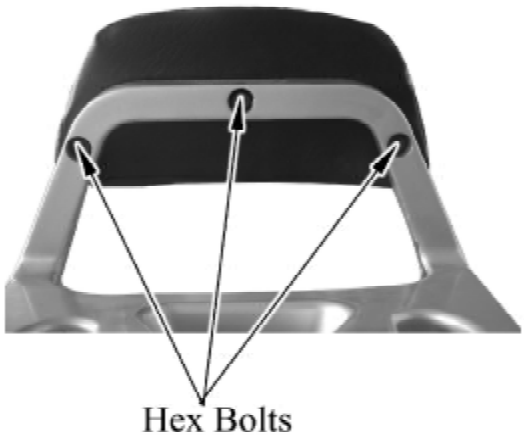
Removal:

—Three hex bolts

—Backrest

Installation

Reverse the removal procedure for installation.



Rear Left Panel

Removal:

—Seat

—Bolt

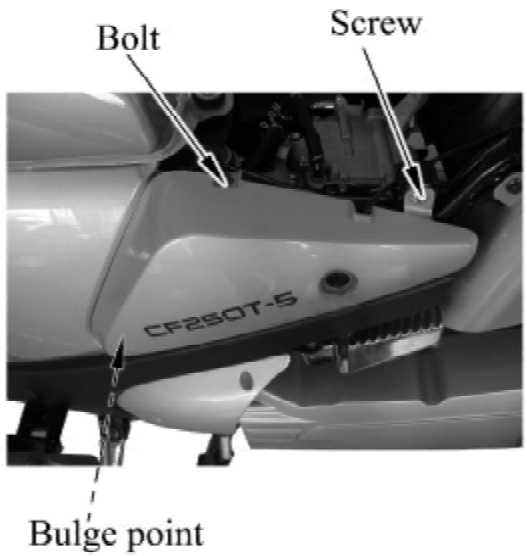
—Screw

Separate Rear Left Panel from frame.

Remove rear left panel

Installation

Reverse the removal procedure for installation.



Rear Right Panel

Removal:

—Seat

—Bolt

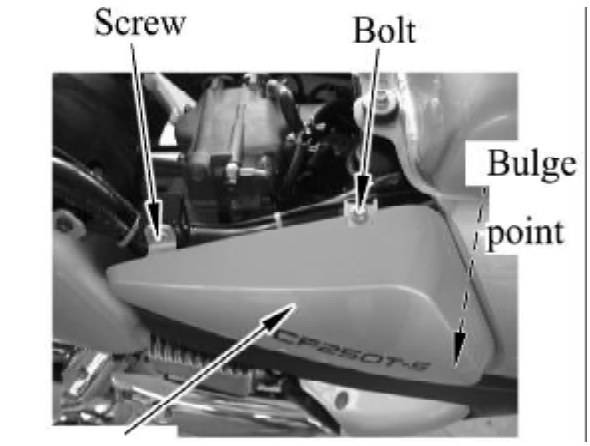
—Screw

Separate Rear Left Panel from frame.

Remove rear left panel

Installation

Reverse the removal procedure for installation.



Rear Right Panel

Front Vent Panel

Removal

—Six Tapping Screws

—Front Vent Panel

Installation

Reverse the removal procedure for installation.

Tapping Screw

Left Black Panel, Left Ornament Panel

Remove

—Front Vent Panel

—Rear Left Panel

—Bolt 1, Tapping Screw 1, 2, 3, 4

Remove left black panel with ornament panel.

Installation

Reverse the removal procedure for installation.