

# **CX-2E**

# **CX-5E**

***Service Manual***

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## INTRODUCTION

This manual introduces CF1000DY/CF650DY two-wheel electric motorcycle maintenance information, including disassembly procedure checking & adjustment methods, troubleshooting and technical specifications. There are some illustrations, drawing to guide your operation.

The first three chapters mainly introduce general operation information, special tool, vehicle structure, basic specification, inspection & maintenance methods etc.,

The rest chapters introduce vehicle part removal, installation, adjustment, service, fault diagnosis and etc.,

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This manual has been improved by using many ways to make it accuracy. But we are no response for any difference and missing. CFMOTO reserves right to make improvements and modifications to the products without prior notice. Overhaul and maintenance should be done according to actual condition of vehicle. And CFMOTO is not responsible for production improvements and modifications. This manual is only for reference. If any objections, please ask the nearest dealer to get the latest information.

The information in this manual are the latest depends on latest productions on coming out. The images in this manual may not stand for real model assembly and parts.

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### Conversion table

A	Ampere	lb	Pound
°C	Centigrade	r	Revolutions
DC	Direct current	rpm	Revolutions per minute
F	Farad	TDC	Top dead center
°F	Fahrenheit	TIR	Total indicator reading
ft	Feet	V	Volt
g	Gram	W	Watt
h	Hour	Ω	Ohm
L	Litre	in	Inch
US gal	Gallon(US)	US qt	Quart(US)
oz	Ounce	HP	British horsepower
cm Hg	Centimeter of mercury	pint	Pint
cu in	Cubic inch	mL	Milliliter

## **Forward**

This service manual is not only specially designed for professional machinist, but also it is used to instruct the vehicle's user how to do maintenance work. It is necessary to know mechanical knowledge, tools proper usage and have a well understanding of service procedure Conversion before you perfectly solve all service problems. If no, you should get the service support by professional machinist. Please read this service manual and understand it before operate for high efficiency work. And working in clean area. For vehicle mechanical performance and safety works. No tools replaced or use temporary tools since that we have been appointed the special service tools and equipment. All service and scheduled maintenance should be executed base on the instructions of service manual. Any consequences are responsible by the vehicle's owner resulted from any rule-breaking operations.

### **How to get Long Service Life:**

- Follow scheduled maintenance and service operations base on service manual.
- Non-periodical maintenance in special situations.
- Use tools properly and use CFMOTO genuine parts.
- Special tools, dashboard and tester have been listed into this service manual for necessary genuine parts.
- Strictly operated bas on the correct service procedures.
- Keep fully service records and specify the date of new parts replacement.

### **How to use this manual:**

In this manual, the production will be separated as several systems. All the systems are shows up in the contents. That will help you to lock the chapter. And each chapter has its own contents. For example, If you wanna see vehicle charger information, use the contents to find our charging system and find the vehicle charger on the first page of the chapter.

Whenever you see the warning or warning symbol, you must keep attention and comply with the safety operation and maintenance method.

 **DANGER:** This symbol means it will cause serious injuries even death if you don't follow the procedure.

 **WARNING:** This symbol means the special steps. It may cause the operator injury and vehicle damage if you don't follow the procedure.

 **CAUTION:** This symbol means the special steps. It may cause the parts damage if you don't follow the procedure.

**NOTE:** It makes operation process easier or offers clearer information. It has no symbol.

**NOTE:**  
The vehicle removal procedures are not included electrical parts, police implements and engine. Electrical parts and engine are shown in the separate chapters.  
All connectors are unplugged by default during removal.  
The guide line without serial number in the picture indicates the direction of removal.

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## 1.1 Operation Cautions

**⚠️ WARNING:** Must wear uniform (pilot uniform etc), cap, safety boots during operation. Wear safety articles such as dust-proof goggles, dust proof respirator and gloves when necessary.



**⚠️ DANGER:** Never touch the rotating or movable pieces such as wheels, clutch, etc. Pay attention not to get pinched during operation.



**⚠️ WARNING:** The coolant is poisonous. Never drink it. Neither let it contact the skin, eyes or clothes. If it contacts skin or clothes, rinse it immediately. If it contacts eyes, wash it with plenty of clean water immediately and seek for medical treatment. If accidental drinking of the coolant, attempt to spit it out/gargle it, and seek for medical treatment immediately. The coolant must be stored strictly out of the reach of children.

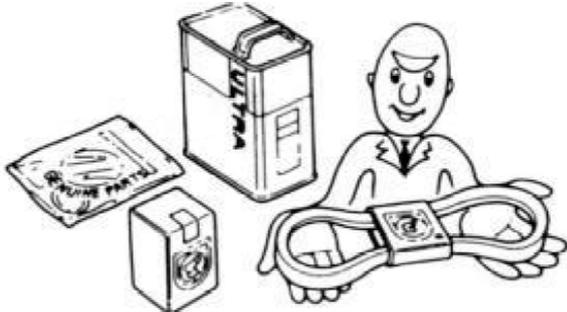


**⚠️ DANGER:** The battery may produce combustible and explosive hydrogen when being charged. It may explode if there is a flame or electric spark. Charge it in the place with nice ventilation.

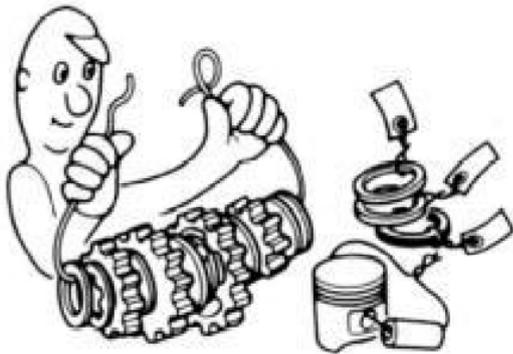


## 1.2 Disassembly and Assembly Cautions

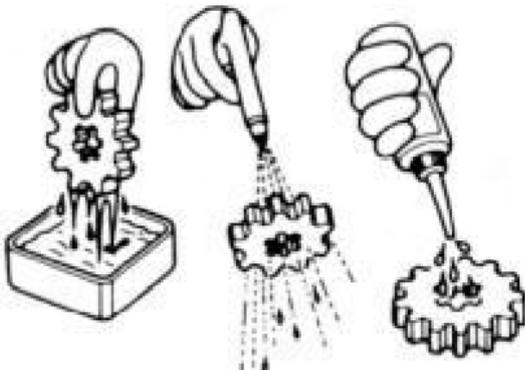
■ Use CFMOTO genuine or recommended parts, lubricants and grease.



■ Place and store the disassembled parts separately for correct assembly.



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



■ Clean the mud, dust before overhauling.



■ Replace the removed washers, o-rings, piston pin circlips, cotter pins with new ones.

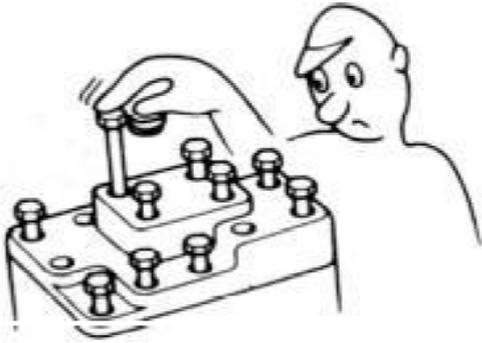
■ Elastic circlips might be distorted after disassembly. Do not use the loosened circlips.



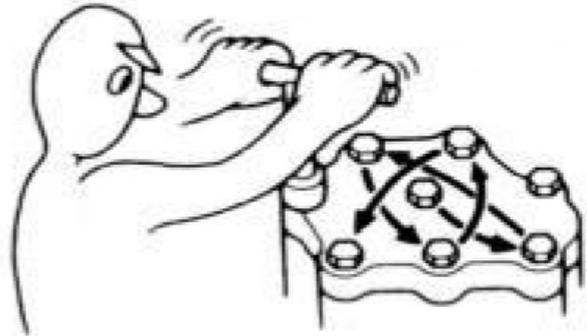
■ Measure the data during disassembly for correct assembly.



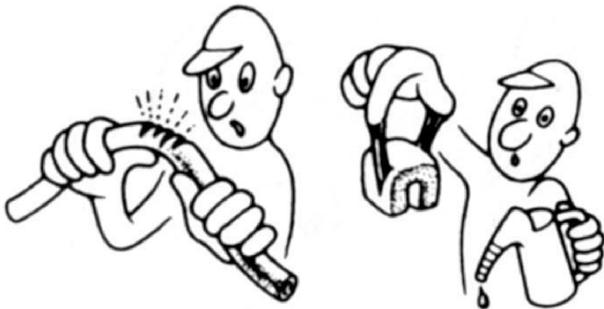
■ If not know the length of screws, install the screws one by one and tighten with same torque.



■ Pre-tighten bolts, nuts and screws, then tighten them according to the specified torque, from big to small and from inner side to outer side.



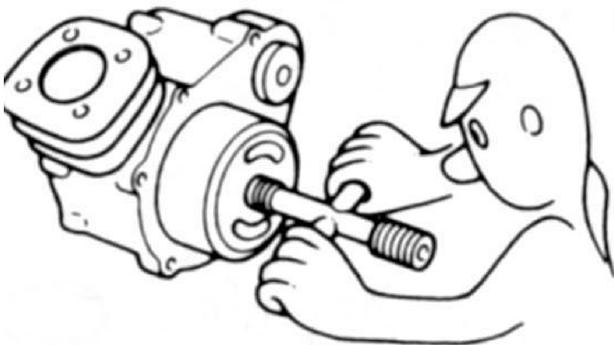
■ Check if the disassembled rubber parts are aged. Replace it if necessary. Keep the rubber parts away from the grease.



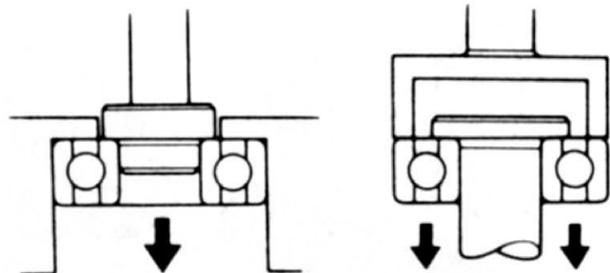
■ Apply or inject recommended lubricant to the specified parts.



■ Use special tools when necessary.

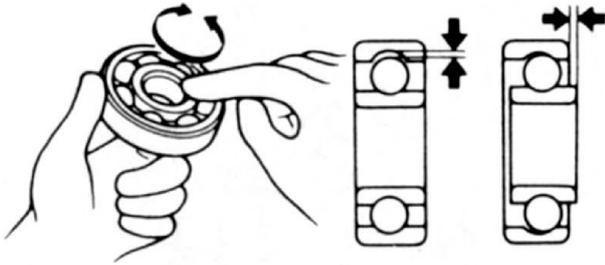


■ If remove the ball bearing by pressing the balls, the removed bearings should not be used again.



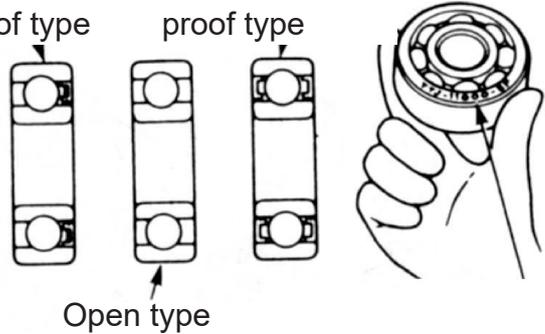
# 01 Service Information

■ 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 work. When pressing the bearing into the machine or to the shaft, replace the bearing if it could not be pressed tightly.



■ Install the one-side dust-proof bearing in the right direction. When assembling the open type or double side dust-proof bearing, the side with manufacturer's mark and size should face outside.

Signal side dust-  
-proof type      Double dust-  
proof type

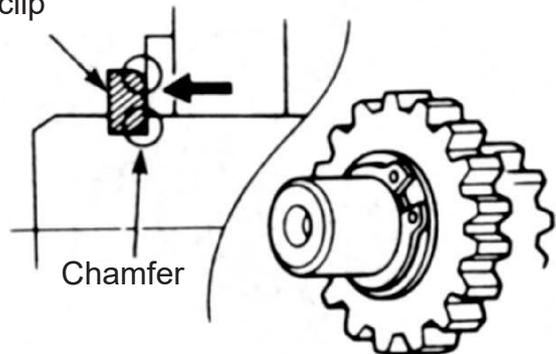


■ Keep the bearing block still when blowing the bearing after washing. Apply oil or lubricant before assembly.



■ The circlip with chamfering side should be towards force direction. Loosened circlips can not be used. Turn the circlip after installation to make sure that it has been installed into the slot.

Circlip



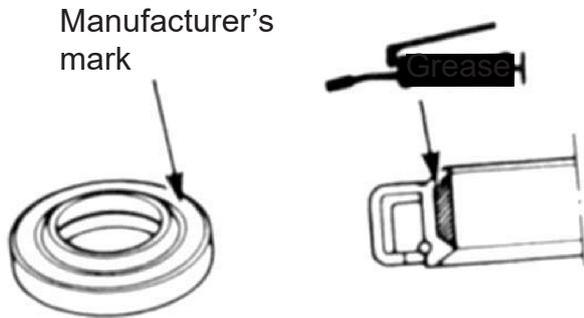
■ After assembly, check if all the tightened parts are properly tightened and can be moved smoothly.



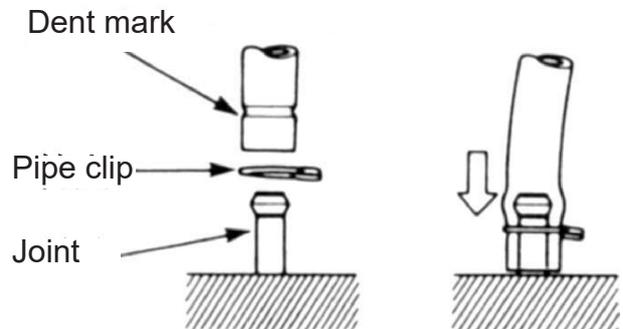
■ Brake fluid and coolant may damage coating, plastic and rubber parts. Flush these parts with water if splashed.



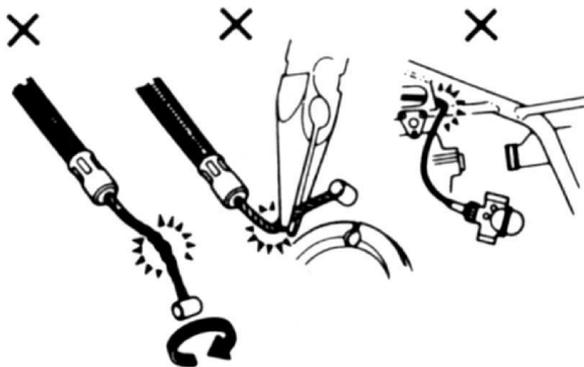
■ Install oil seal with the side of manufacturer's mark facing outside.  
Do not fold or scratch the oil seal lip.  
Apply grease to the oil seal lip before assembly.



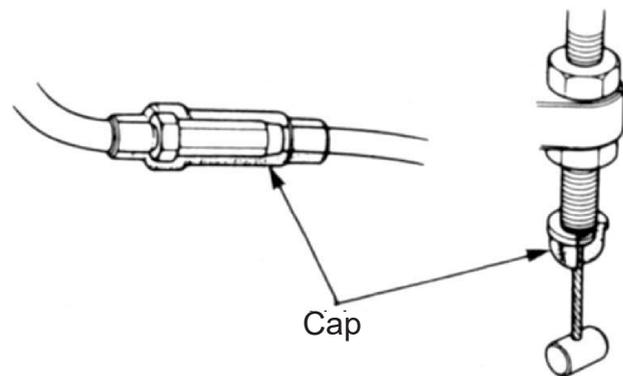
■ When installing pipes, insert the pipe till the end. Fit the pipe clip into the rove. Replace the pipes or hoses that cannot be tightened.



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



■ When assembling the parts like protection caps, insert the caps to the grooves.



When repairing or handling the vehicle specific voltage system, please prepare the following safety equipments:

Insulating protective equipments includes insulating gloves, goggles and insulant shoes.

ABC dry chemical extinguisher.

Solvent resistant protective equipments includes gas masks for organic gases, chemical resistant rubber gloves.

Dishcloth and towel.

**⚠ DANGER**

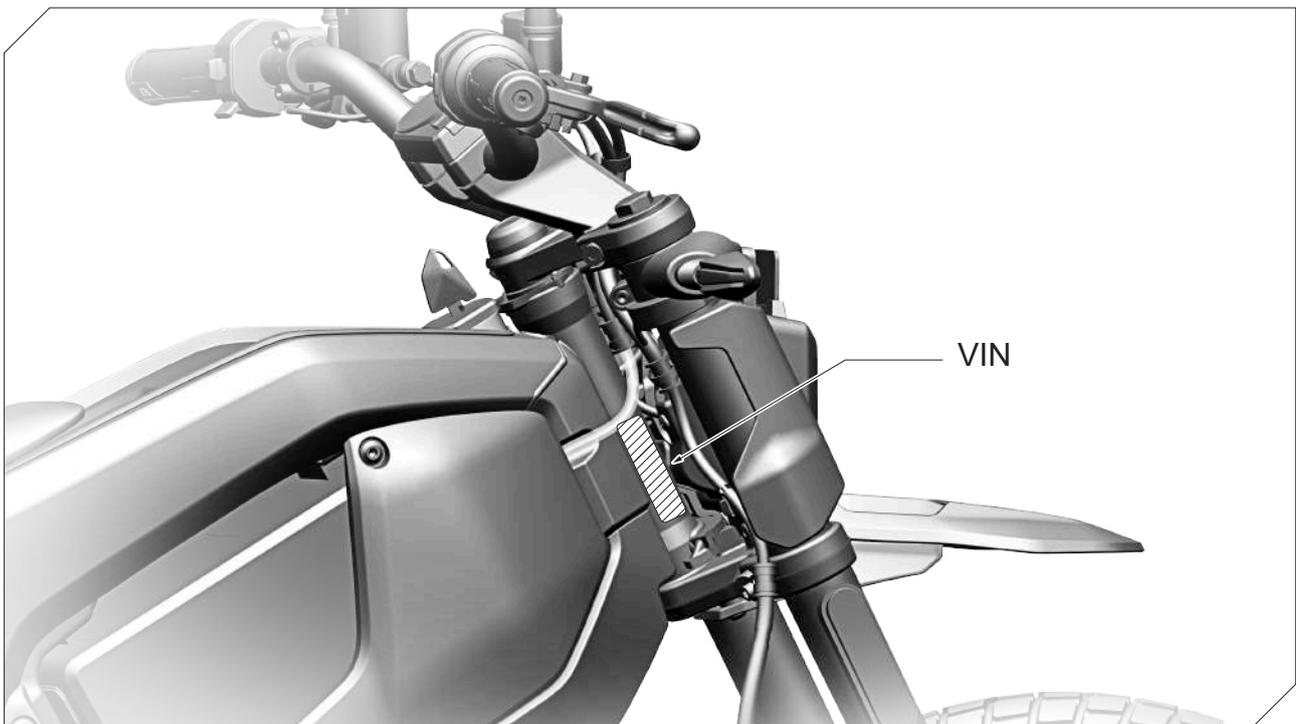
If the vehicle-specific voltage cable component is damaged and the wires and terminals are exposed, do not touch the exposed component under any circumstances. In addition, if not sure whether the damage is the special voltage part of electric motorcycle, do not touch the exposed wires or terminals.

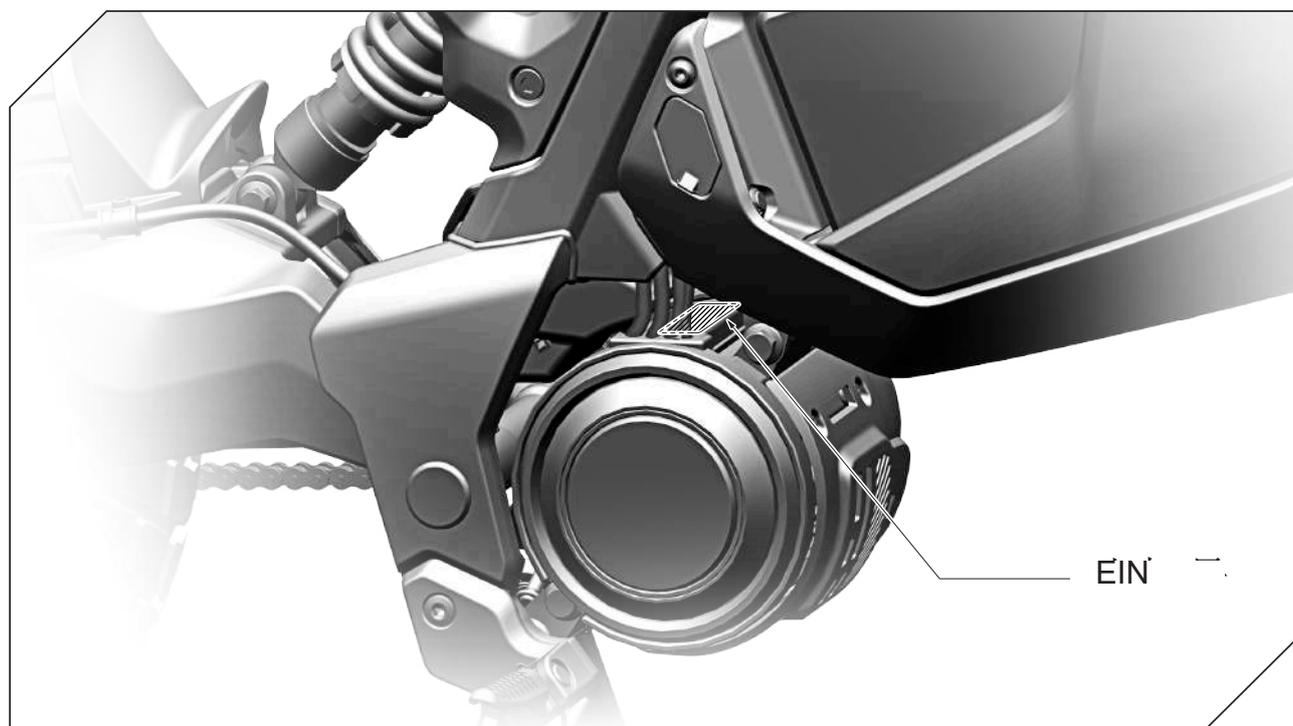
Touch the wires or terminals without proper safety protection may result in serious burn or electric shock, even serious injury or death.

If contact with the exposed parts of special voltage cables or voltage components for electric motorcycles is necessary, or there is a risk of contact, use the insulation protective equipments (insulating gloves, goggles, insulant shoes) that can withstand the voltage for electric vehicles.

When the maintenance personnel is separated from the vehicle, such as storing it after an accident, please label the body “⚠Working. Do not touch!” to prevent other personnel from inadvertently touching the vehicle which may result in serious safety accidents.

### 1.3 VIN and EIN Location





## 02 Maintenance Information

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### 2.1 Maintenance Information

The following ICONS are used to mark special situations in the maintenance schedule:

- ▲ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.
- = Have an authorized dealer perform repairs that involve this component or system.
- = Emission related components, have an authorized dealer perform repairs that involve this component or system.

#### 2.1.1 Daily Maintenance Schedule

Before each use of the vehicle, the best practice is to check the vehicle according to the form of "Inspection Before Riding" in this manual.

**⚠WARNING**

If the correct inspection is not done before each use, it may cause serious vehicle failure, serious injury or death. Always check the vehicle before each use and ensure that it is in the correct operating conditions.

Item		Maintenance before riding			Remarks
		Hours	Calendar	Miles (km)	
■	Steer system	--	Pre-Ride	--	Visually inspect, test, or inspect parts. Adjust or arrange maintenance schedule when required.
■	Throttle return	--	Pre-Ride	--	
	Front suspension and shaft	--	Pre-Ride	--	
	Rear suspension and shaft	--	Pre-Ride	--	
	Wire	--	Pre-Ride	--	
	Brake Fluid Level	--	Pre-Ride	--	
	Brake lever/foot pedal function	--	Pre-Ride	--	
	Brake system function	--	Pre-Ride	--	
	Wires/fastener part	--	Pre-Ride	--	
■	Headlight	--	Pre-Ride	--	Inspect. Replace lights if necessary.

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## 2.2 Break-in Maintenance Schedule

Perform the following maintenance items in 10hours or specified mileage interval, whichever comes first.

Item	Break-in Maintenance Interval (Service whichever interval comes first)			
	Hours	Calendar	Miles	Remarks
<b>Electrical Equipment Function</b>				
■ Electrical equipment function	every 10 hours	-	200Km	Inspect electrical equipment for normal working.
Battery	every 10 hours	-	200Km	Inspect terminals, clean and test battery if necessary.
Fuse and overload protector	every 10 hours	-	200Km	Inspect whether it is blown.
■ Fault memory	every 10 hours	-	200Km	Use scan tool to read.
<b>Brake System</b>				
Brake disc	every 10 hours	-	200Km	Inspect brake disc thickness.
Brake fiction pad	every 10 hours	-	200Km	Inspect brake pad thickness.
Brake fluid level	every 10 hours	-	200Km	Inspect brake fluid level.
■ Brake line	every 10 hours	-	200Km	Inspect for damage or sealing.
<b>Wheels</b>				
■ Tire condition	every 10 hours	-	200Km	Inspect tire pressure.
Tire pressure	every 10 hours	-	200Km	Contact the dealer for calibration if necessary.
<b>Suspension System</b>				
Front and rear shock absorber	every 10 hours	-	200Km	Inspect for leakage.
Front steer shaft and rear suspension	every 10 hours	-	200Km	Lubricate oil points and inspect fasteners.
<b>Steering System</b>				
Steer column	every 10 hours	-	200Km	Inspect steer system.
Steer rod	every 10 hours	-	200Km	Contact the dealer for calibration if necessary.
<b>Transmission</b>				
Chain	every 10 hours	-	200Km	Lubricate and adjust. Replace it if there is crack.
Rear axle	every 10 hours	-	200Km	Lubricate all accessories and oil points.

## 02 Maintenance Information

### 2.3 Periodic Maintenance Schedule

After the 20-hour breaking-in period, perform maintenance items at intervals according to the maintenance schedule and take the first due item.

Item		Periodic Maintenance Interval (Service whichever interval comes first)			Remarks
		Hours	Calendar	Miles (km)	
■	Electrical equipment function		every 12 months	5000 km	Inspect electrical equipment for normal working.
	Battery		every 6 months	1500 km	Inspect terminals, clean and test battery if necessary.
■	Fault memory		every 6 months	1500 km	Use scan tool to read
	fuse and overload protector		every 6 months	1500 km	Inspect whether it is blown.
■	Cables		every 12 months	5000 km	Inspect for damage or aging.
	Brake disc		every 12 months	5000 km	Inspect brake disc thickness.
▲	Brake fiction pad		every 6 months	1500 km	Inspect brake pad thickness.
	Brake fluid level	-	every 6 months	1500 km	Inspect brake fluid level.
■	Brake line	-	every 6 months	1500 km	Inspect for damage and inspect brake pipe for sealing.
■	Suspension system	-	every 12 months	5000 km	Lubricate oil points and inspect fasteners.
■	Front and rear shock absorber	-	every 12 months	5000 km	Inspect for leakage.
▲■	Frame	-	-	5000 km	Inspect for cracks and contact CFMOTO dealer.
▲	Tire condition	-	every 6 months	1500 km	Inspect the tires and contact the CFMOTO dealer for service.
	Wheel bearing	-	every 12 months	5000 km	
▲■	Rear axle	-	every 12 months	5000 km	Lubricate all accessories and oil points.
▲	Chain	-	every 2 months	500 km	Lubricate and adjust. Replace it if there is crack.
			every 12 months	3000 km	Replace
▲	Fault diagnose interface	-	every 12 months	5000 km	Use scan tool to read
	All moving parts	-	every 12 months	5000 km	Lubricate and inspect for flexibility.
■	Bolt and nut	-	every 12 months	5000 km	Inspect for firmness.
■	All hoses and sleeves	-	every 12 months	5000 km	Inspect for cracks, sealing and routing.
■	Bolt and nut	-	every 12 months	5000 km	Inspect for firmness.
■	All hoses and sleeves	-	every 12 months	5000 km	Inspect for cracks, sealing and routing.

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## 3.1 General Specification

Item		Specifications	
Model		CF650DY	CF1000DY
Length		1330 mm	1555 mm
Width		610 mm	665 mm
Height		789 mm	958 mm
Wheel Base		952 mm	1066 mm
Gross Weight		49 kg	56 kg
Passengers		1 person	
Tire	Front	2.5-10	70/100-14
	Rear	2.5-10	80/100-12
Min Ground Clearance		152 mm	210 mm
Turning Circle Diameter		2 m	
Steering	Steering Angle	Right	34°
		Left	34°
Brake System		Front	Hydraulic Disc
		Rear	Hydraulic Disc
Shock Absorber	Suspension	Front Wheel	Telescopic
		Rear Wheel	Telescopic
Frame		Steel Tube	

## 3.2 Motor and Controller Parameters

Item	Type/Specification
Motor Constant Voltage (V)	48
Motor Constant Power (W)	1300±100
Motor Peak Power (30s)	2000±100
Motor Rated RPM (r/min)	2300±100
Motor Peak RPM (r/min)	3500±100
Motor Continuous Torque (N·m)	5±0.5
Motor Peak Torque(N·m)	18±0.5
Motor Peak Torque RPM Range(r/min)	(0-1400) ±100
Motor Peak Power RPM Range (r/min)	(1400-3500) ±100
Motor Position Sensor Phase Difference(°)	-60±2
Motor Top RPM (r/min)	3500±100
Motor Top RPM Torque(N·m)	7±0.5
Motor Stator Winding Resistance(mΩ)	13.9±1
Motor Stator Wilding Inductor(μH)	220±20
Motor no Load Current (A)	3.5
Controller Undervoltage Value (V)	37±1
Controller Overvoltage Value (V)	62±1
Controller Rated Input Current (A)	28±1
Controller Maximum Input Current (A)	40±1
Motor weight (kg)	7.75±0.5
Controller weight (kg)	0.675±0.02
Motor Noise Limitation (A)	80
Motor wilding Temperature Rise Limitation (°C )	135
Controller over Temperature Protection Threshold (°C )	Second level alarm: 110 (Limit power) Third level fault: 130 (Do not output power)
Motor over Temperature Protection Threshold (°C )	Second level alarm: 120 (Limit power) Third level fault: 145 (Do not output power)
Controller Energy Recycle Power (W)	380±100
Controller RPM Controll Precision (r/min)	±100
Controller Torque Control Precision (N·m)	±1
Controller RPM Response Time (ms)	≤500
Controller Torque Response Time (ms)	≤100

## 3.3 Battery Specification

Item	Type/Specification
Battery Type	Lithium Manganate System
Communication Mode	RS485
Constant Capacity (kWh)	1.15
Constant Voltage (V)	48V
Series-parallel Structure	1 parallel, 13 series
Voltage Range (V)	39-54.6
Discharge Capacity	30A (Constant) 40A (1min)
Maximum Charge Current	≥ 5A
Temperature Sensor Quantity	3
Cycle Time	650
PACK Weight (kg)	≤ 9kg
Cooling Mode	Natural cooling
IP Level	IP67
Package Size	L165*W155*H260
<b>Working Environment Temperature</b>	
Charge	-10℃ ~45℃
Discharge	-20℃ ~50℃

## 3.4 Maintenance Specifications

### 3.4.1 Front Wheel

Item		Standard	Service Limit
Front	Front axle bend	-	0.2 mm
	Wheel ring bound	Vertical	1 mm
		Horizontal	1 mm
	Tire	Residual groove	-
Pressure		CF650DY:220kPa±22kPa CF1000DY:200kPa±20kPa	-

### 3.4.2 Rear Wheel

Item		Standard	Service Limit	
Rear Wheel	Wheel ring bound	Vertical	1 mm	
		Horizontal	1 mm	
	Tire	Residual groove	-	0.8 mm
		Pressure	CF650DY:220kPa±22kPa CF1000DY:220kPa±22kPa	-

### 3.4.3 Shock Absorber

Item		Standard
CF650DY	Shock absorber dampening	Non-adjustable
	Front shock absorber travel	72 mm
	Rear shock absorber travel	65 mm
	Rear shock absorber spring preload	Factory setting is position #2
CF1000DY	Shock absorber dampening	Non-adjustable
	Front shock absorber travel	105 mm
	Rear shock absorber travel	100 mm
	Rear shock absorber spring preload	Factory setting is position #2

### 3.4.4 Brake System

Item		Standard	Service Limit
Front Brake	Brake disc weariness	3 mm	2 mm
	Thickness of front brake friction pad and material	4.8 mm	2.5 mm
Rear Brake	Brake disc weariness	3 mm	2 mm
	Thickness of rear brake friction pad and material	4.8 mm	2.5 mm

### 3.4.5 Dashboard and Switches

Item	Standard
Fuse	CF650DY
	CF1000DY
Lights	Headlight (Hi / Lo)
	Position light
	Rear tail light
	Turn light
	License light

## 3.5 Tighten Torque

### 3.5.1 Tighten Torque Table for Vehicle

Project	Torque N•m(kgf•m)	Project	Torque N•m(kgf•m)
M5 bolt, nut	5±1(0.5±0.1)	M5 screw	4±1(0.4±0.1)
M6 bolt, nut	10±1(1.0±0.1)	M6 screw	9±1(0.9±0.1)
M8 bolt, nut	20~30(2.0~3.0)	M6 flange bolt and nut	12±1(1.2±0.1)
M10 bolt, nut	30~40(3.0~4.0)	M8 flange bolt and nut	20~30(2.0~3.0)
M12 bolt, nut	40~50(4.0~5.0)	M10 flange bolt and nut	30~40(3.0~4.0)

### 3.5.2 Tighten Torque Table for Engine

No.	Project	Thread dia.(mm)	Qty.	Torque N•m
1	Upper triple clamp block mounting bolt	M8×25	4	20~25
2	Upper & lower triple clamp fasten bolt	M8×25	4	20~25
3	Steering stem lock nut	M22	1	15
4	Upper triple clamp lock nut	M22	1	100~110
5	Brake disc mounting bolt	M8×25	2	20~25
6	Rear brake disc mounting bolt	M8×14	2	20~25
7	Front wheel axle	M12×207	1	85~90
8	Rear fork shaft	M12×187	1	85~90
9	Rear wheel axle	M12×217	1	85~90
10	Motor lower bracket bolt	M8×75	1	25~30
11	Rear shock absorber mounting bolt	M10×45	2	45~50
12	Big sprocket mounting bolt	M6×18	4	8
13	Brake disc mounting bolt	M6×16	8	8
14	Dashboard mounting bolt	M6×12	2	10
15	Battery guard mounting bolt	M6×12	2	10
16	Electrical fence mounting bolt	M6×16	2	10
17	Front fender mounting base bolt	M6×12	4	8
18	Chain guard assy mounting bolt	M6×35	1	8
19	Chain guard mounting bolt	M6×18	2	10
20	Motor power cord lug mounting bolt	M6×12	1	12
21	Motor side cover mounting bolt	M5×25	3	5
22	Top cover self-tapping screw	ST4.2×13	8	3
23	Top cover self-tapping screw	ST4.2×9	6	3
24	Top cover mounting bolt	M6×14	20	10
25	Rear upper fender mounting bolt	M6×16	1	10

### 3.6 Lubrication

Sleeve, bearing, and each turing part should be lubricated as table below.

Part	Content	Material
LH &RH brake lever pin shaft Steering column bearing Side support rotate part Front & rear wheel LH/RH dust seal Rear fork cushion sleeve	Lubrication	Lithium grease GB/T5671

**4.1 Seat Removal..... 4-2**

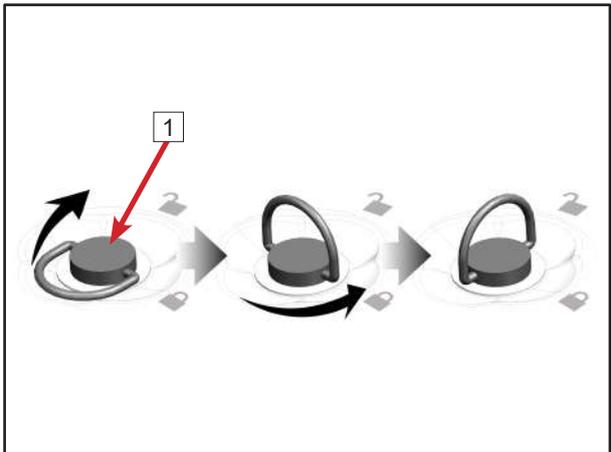
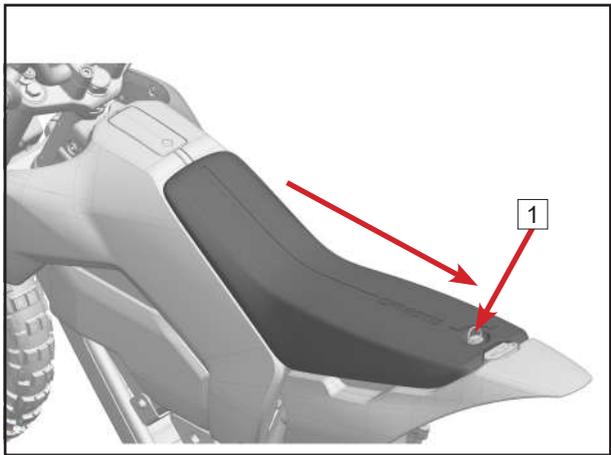
**4.2 Seat Installation..... 4-2**

**4.2.1 CF650DY..... 4-2**

**4.2.2 CF1000DY ..... 4-2**

## 4.1 Seat Removal

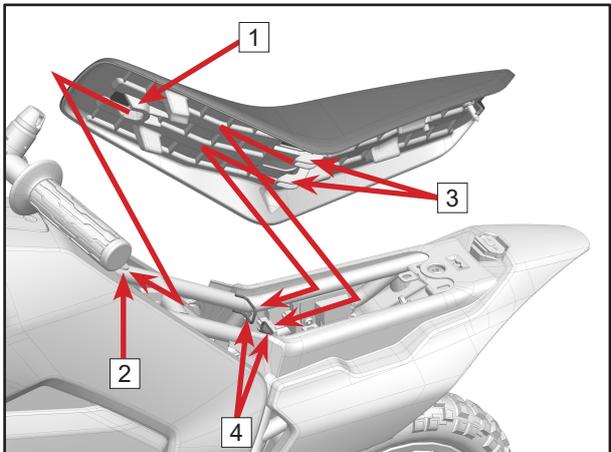
Place the quick release fastener **1** on the release lock position.  
Remove seat.



## 4.2 Seat Installation

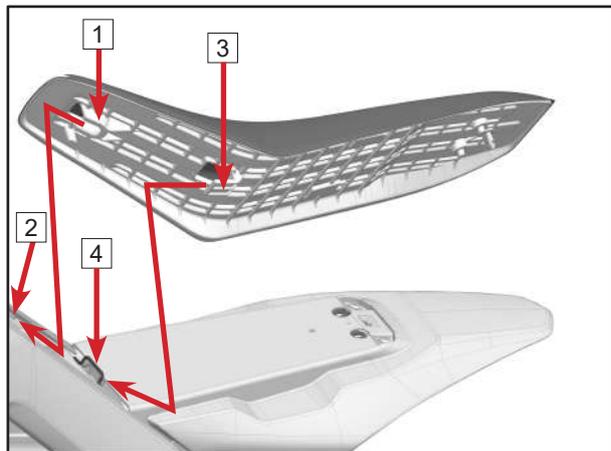
### 4.2.1 CF650DY

Insert the socket **1** into seat holder **2**.  
Insert two convex tongue **3** in the seat into seat holder **4**.  
Place the quick release fastener in the lock position.



### 4.2.2 CF1000DY

Insert the socket **1** into seat holder **2**.  
Place the convex tongue **3** in the seat center into seat holder **4**.  
Place the quick release fastener in the lock position.



## **05 Body Covering Parts**

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<b>5.1 Front Guards Assembly (CF650DY).....</b>	<b>5-2</b>
<b>5.2 Front Fender Assembly (CF1000DY) .....</b>	<b>5-2</b>
<b>5.2.1 Disassemble the Front Fender Assembly.....</b>	<b>5-3</b>
<b>5.3 Central Panel (CF650DY) .....</b>	<b>5-3</b>
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<b>5.4 Central Panel (CF1000DY) .....</b>	<b>5-4</b>
<b>5.4.1 Disassemble the Central Panel.....</b>	<b>5-5</b>
<b>5.5 Disassemble the Side Panel (CF1000DY).....</b>	<b>5-6</b>
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<b>5.7 Disassemble the Front Lower Panel (CF1000DY).....</b>	<b>5-7</b>
<b>5.8 Disassemble the Rear Fender (CF650DY).....</b>	<b>5-7</b>
<b>5.8.1 Disassemble the Rear Fender .....</b>	<b>5-7</b>
<b>5.9 Disassemble the Rear Fender (CF1000DY).....</b>	<b>5-8</b>
<b>5.9.1 Disassemble the Rear Fender .....</b>	<b>5-8</b>
<b>5.10 Sprocket Cover.....</b>	<b>5-9</b>

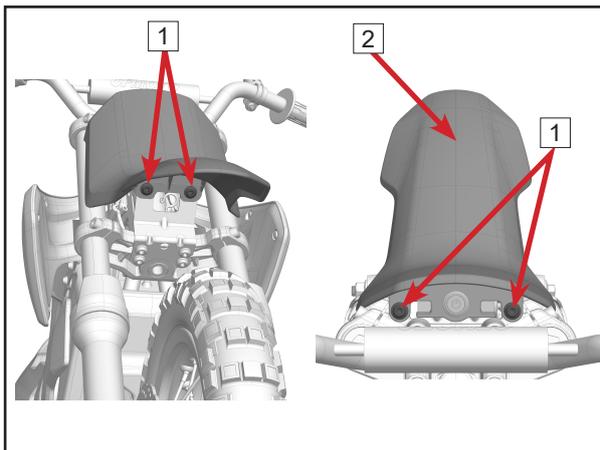
## 5.1 Front Guards Assembly (CF650DY)

### Pre-work

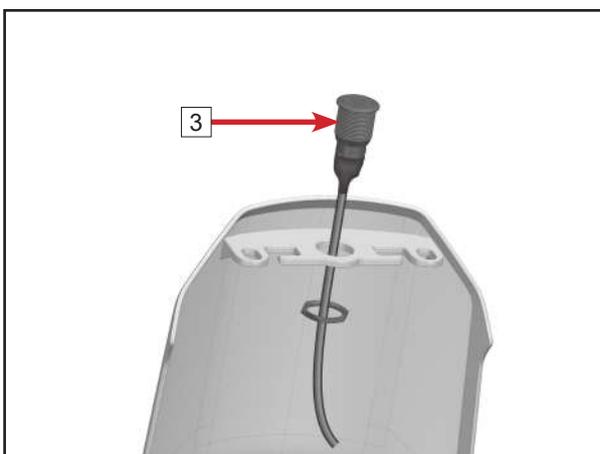
Central guard panel  
Main switch coupler

### Removal

Remove four bolts **1** the front fender **2**.



Remove the main switch **3** from the front fender.



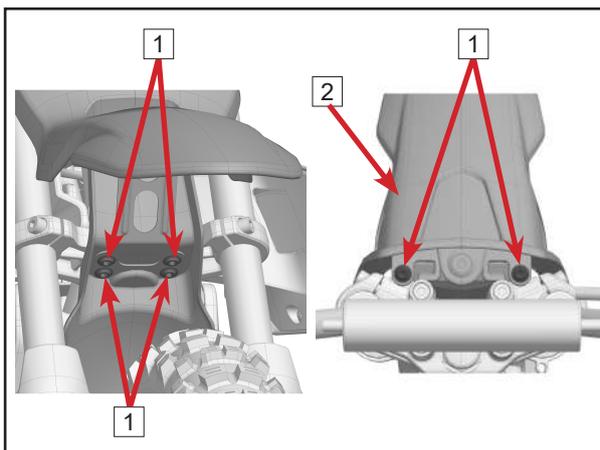
## 5.2 Front Fender Assembly (CF1000DY)

### Pre-work

Central guard panel  
Main switch coupler

### Removal

Remove six bolts **1** and the front fender assembly **2**.



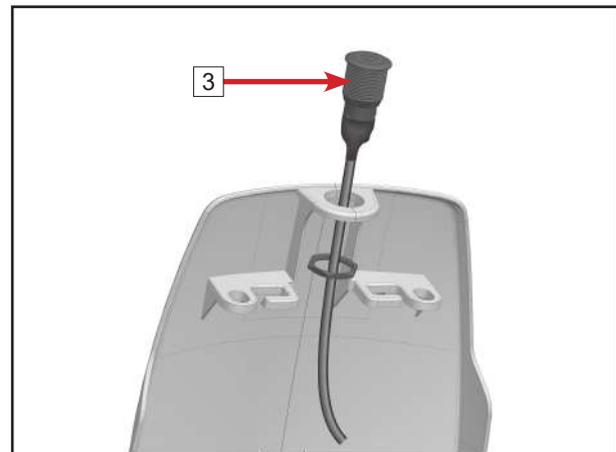
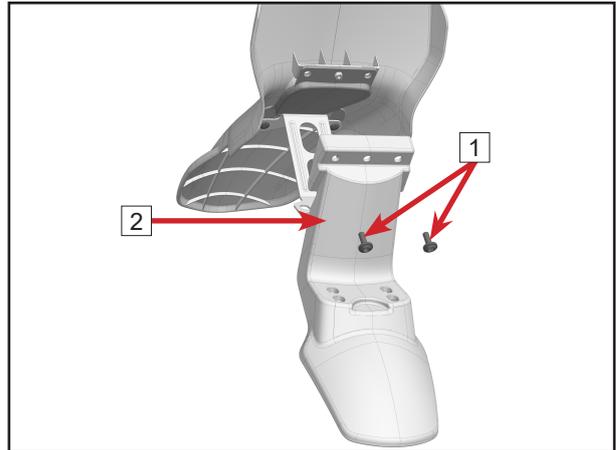
### 5.2.1 Disassemble the Front Fender Assembly

#### Removal

Remove two bolts **1**.

Remove the front fender assembly **2**.

Disassemble the main switch **3** from the front fender.



### 5.3 Central Panel (CF650DY)

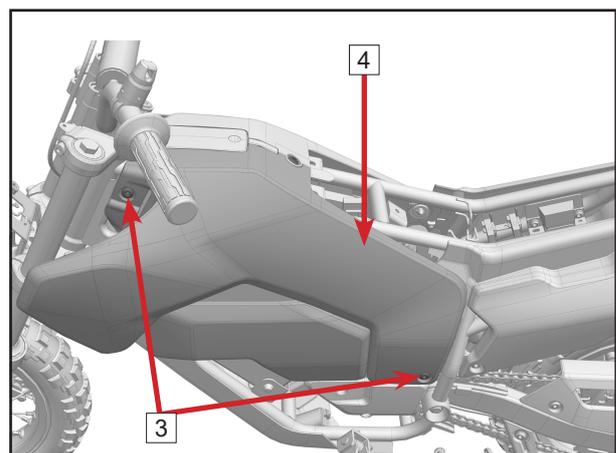
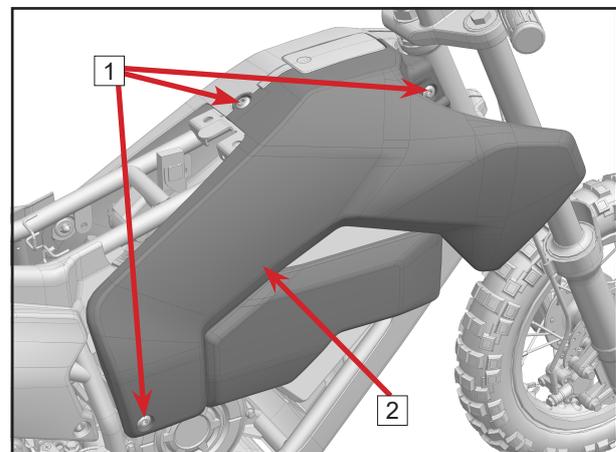
#### Pre-work

Seat

#### Removal

Remove three bolts **1** and the central panel at right side **2**.

Remove two bolts **3** and the central panel and left side **4**.



## 5.3.1 Disassemble the Central Panel

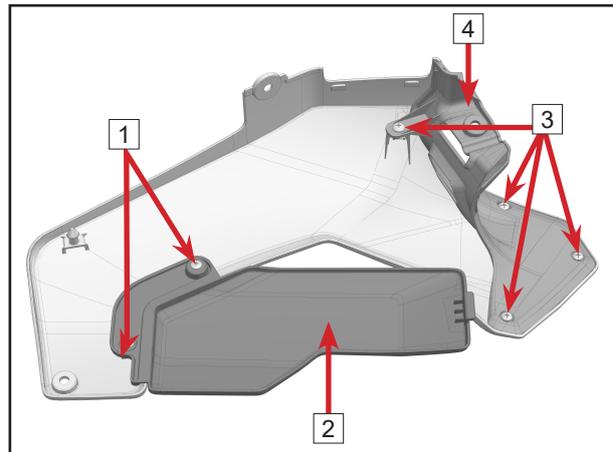
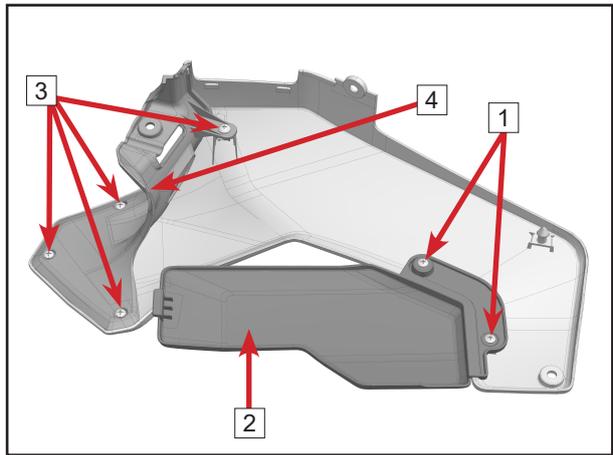
### Removal

Remove two screws for each **1**.

Remove the panel **2** from each side of central panel.

Remove four screws **3**.

Remove each of the deflector **4** from the central panel.



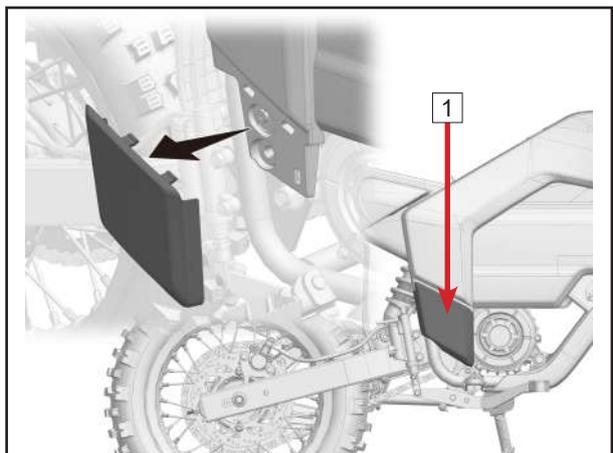
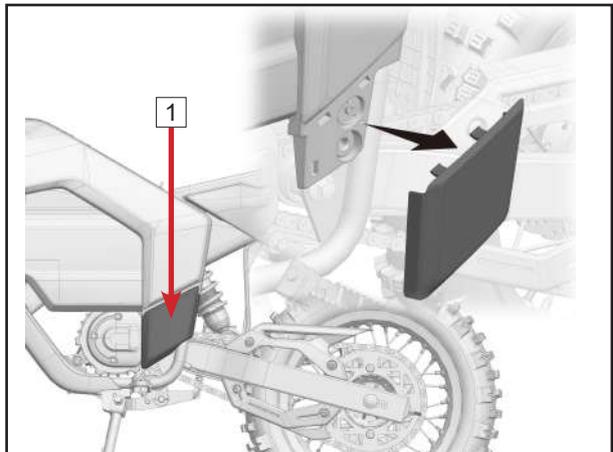
## 5.4 Central Panel (CF1000DY)

### Pre-work

Seat

### Removal

Remove the lower side panel **1**.

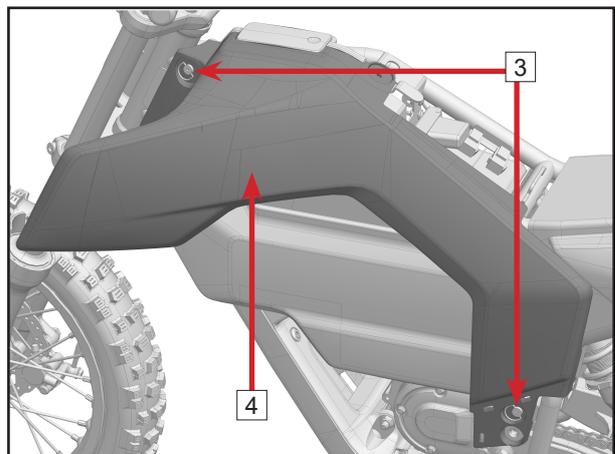
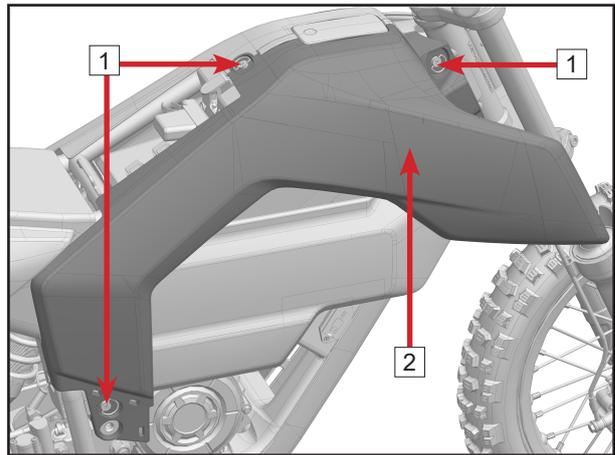


## 05 Body Covering Parts

### Removal

Remove three bolts **1** and RH central panel **2**.

Remove two bolts **3** and LH central panel **4**.

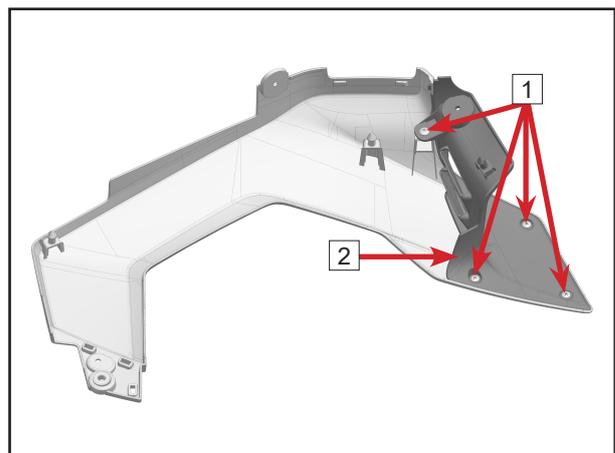


### 5.4.1 Disassemble the Central Panel

#### Removal

Remove four screws **1**.

Remove each side of the panel **2** from each deflector.



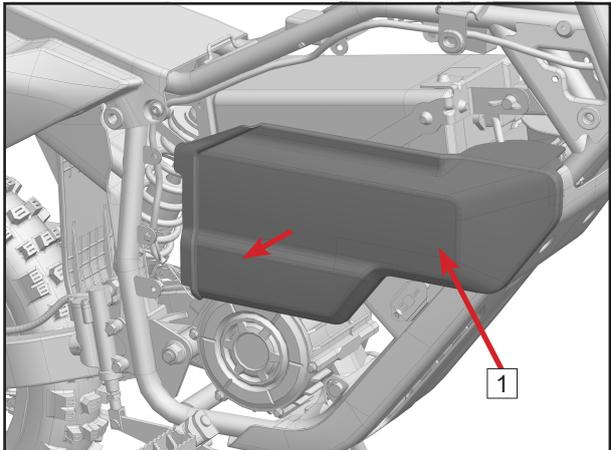
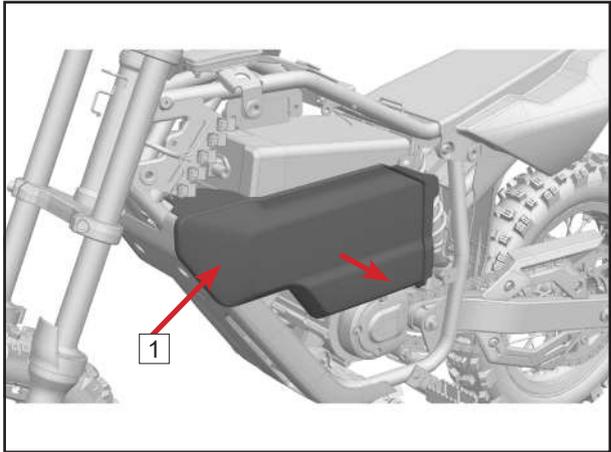
## 5.5 Disassemble the Side Panel (CF1000DY)

### Pre-work

Central panel

### Removal

Remove the left and right side panel **1**.



## 5.6 Disassemble the Lower Panel

### Pre-work

CF650DY: Central panel

CF1000DY: Side panel

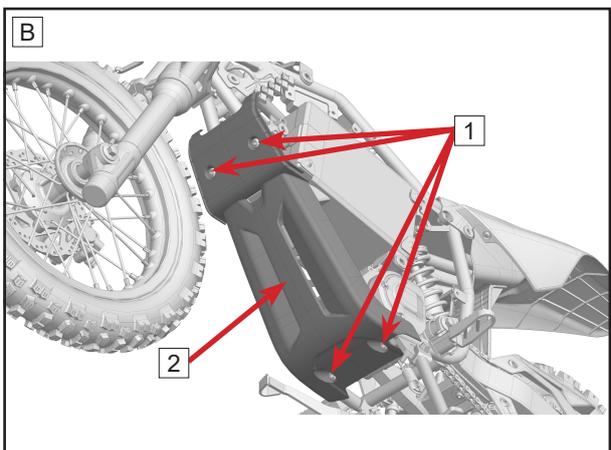
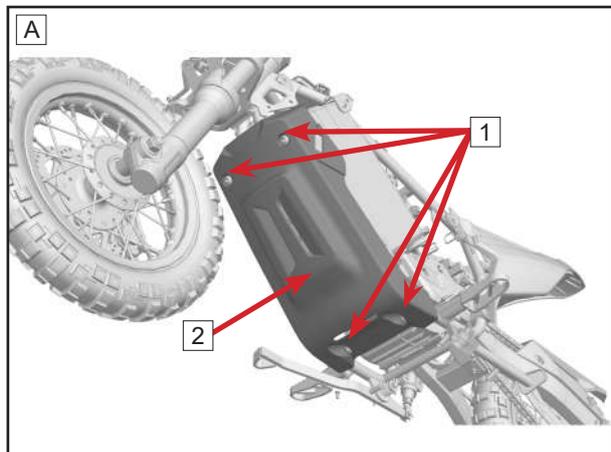
### Removal

Remove four bolts **1**.

Remove lower panel **2**.

A: CF650DY

B: CF1000DY



### 5.7 Disassemble the Front Lower Panel (CF1000DY)

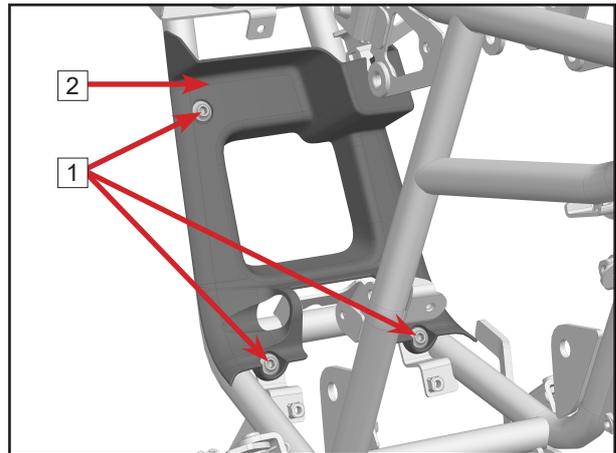
#### Pre-work

Motor

#### Removal

Remove three bolts [1].

Remove front lower panel [2].



### 5.8 Disassemble the Rear Fender (CF650DY)

#### Pre-work

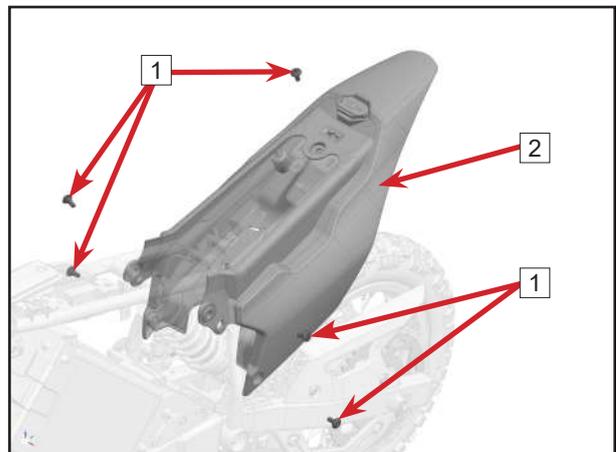
Seat

Central panel

#### Removal

Remove five bolts [1].

Remove the rear fender assembly [2].



### 5.8.1 Disassemble the Rear Fender

#### Removal

Remove two bolts [1].

Remove the fender rubber [2].

Remove one bolt [3] and two screws [4].

Remove the inner fender [5] from the rear fender.

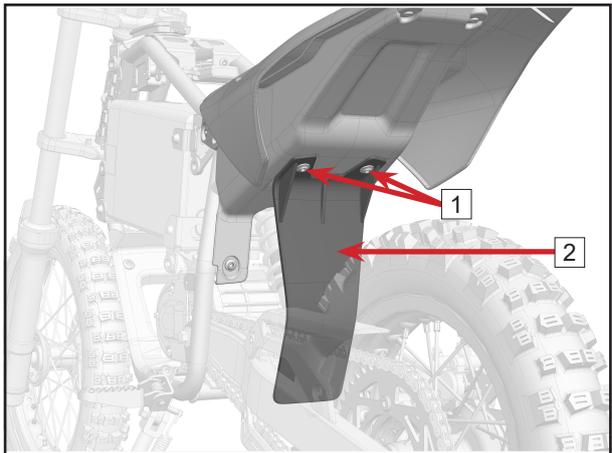
## 5.9 Disassemble the Rear Fender (CF1000DY)

### Pre-work

Seat  
Central panel

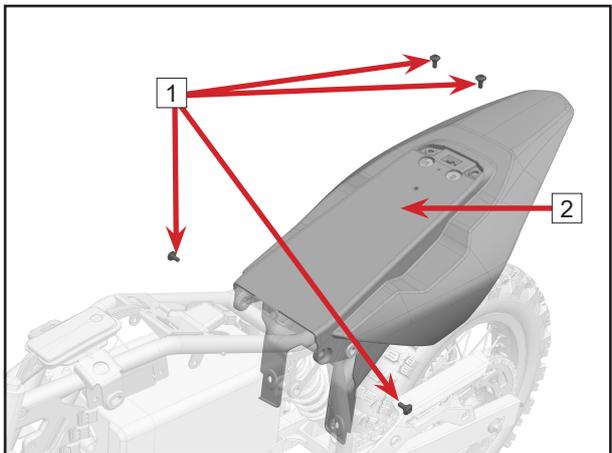
### Removal

Remove two bolts [1].  
Remove the fender rubber [2].



### Removal

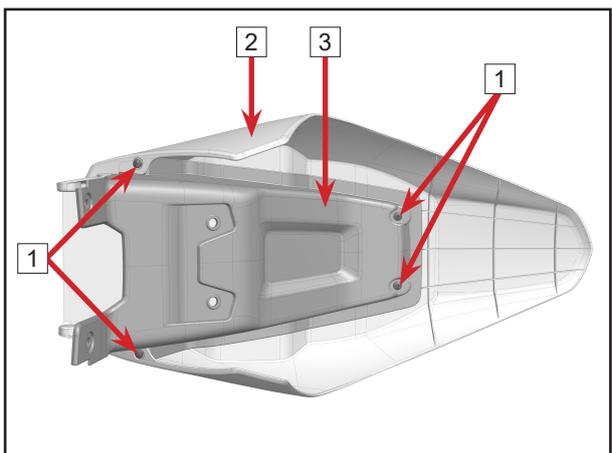
Remove four bolts [1].  
Remove the rear fender [2].



### 5.9.1 Disassemble the Rear Fender

#### Removal

Remove four screws [1].  
Remove the inner fender [3] from the rear fender [2].



### 5.10 Sprocket Cover

#### Removal

Remove bolt **1**.

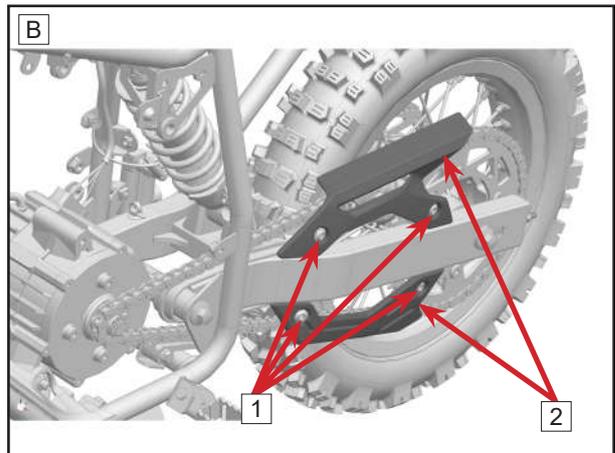
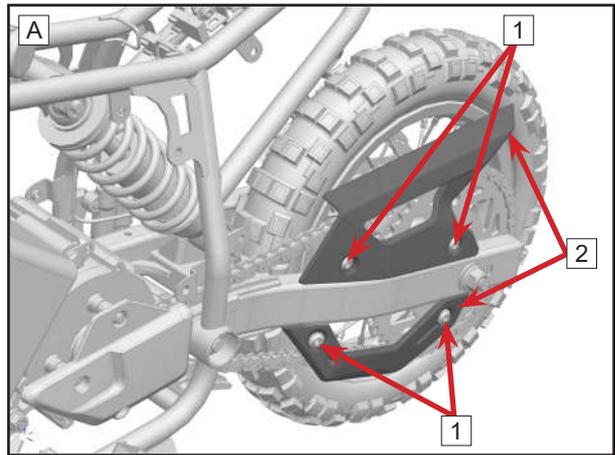
Remove the sprocket cover **2**.

A: CF650DY

B: CF1000DY

#### Installation

Reverse the removal procedures for installation.



<b>6.1 Service Information .....</b>	<b>6-2</b>
6.1.1 Operation Notice.....	6-2
<b>6.2 Notice Before Service .....</b>	<b>6-2</b>
<b>6.3 Electrical Throttle .....</b>	<b>6-3</b>
<b>6.4 Electric Fence Transmitter.....</b>	<b>6-3</b>
<b>6.5 Integrated Motor .....</b>	<b>6-4</b>
6.5.2 Motor Controller .....	6-4
6.5.1 E-control Connector Definition .....	6-4
<b>6.6 Fault Code Table.....</b>	<b>6-5</b>

## 6.1 Service Information

### 6.1.1 Operation Notice

**⚠ CAUTION:**

Please confirm that whether the battery is abnormal when checking it.

The conduction test of switch can be checked and determined in the body installation state of switch.

After the inspection and maintenance of each part, the cables should be correctly passed according to its distribution diagram.

Do not carry out maintenance operations on all electric parts when the vehicle is powered on.

Before maintaining high voltage components, you must hold relevant documents and wear complete high voltage protective equipment.

## 6.2 Notice Before Service

The special voltage for electric vehicles is high voltage, which exceeds the safe voltage of 36V, so careful operation and backup support are required when carrying out rescue work. When repairing or handling the vehicle specific voltage system, please prepare the following safety equipments:

Insulating protective equipments includes insulating gloves, goggles and insulant shoes.

ABC dry chemical extinguisher.

Solvent resistant protective equipments includes gas masks for organic gases, chemical resistant rubber gloves.

Dishcloth and towel.

**⚠ DANGER:** If the vehicle-specific voltage cable component is damaged and the wires and terminals are exposed, do not touch the exposed component under any circumstances. In addition, if not sure whether the damage is the special voltage part of electric motorcycle, do not touch the exposed wires or terminals.

Touch the wires or terminals without proper safety protection may result in serious burn or electric shock, even serious injury or death.

If contact with the exposed parts of special voltage cables or voltage components for electric motorcycles is necessary, or there is a risk of contact, use the insulation protective equipments (insulating gloves, goggles, insulant shoes) that can withstand the voltage for electric vehicles.

When the maintainance personnel is separated from the vehicle, such as storing it after an accident, please label the body “**⚠ Working. Do not touch!**” to prevent other personnel from inadvertently touching the vehicle which may result in serious safety accidents.

## 6.3 Electrical Throttle

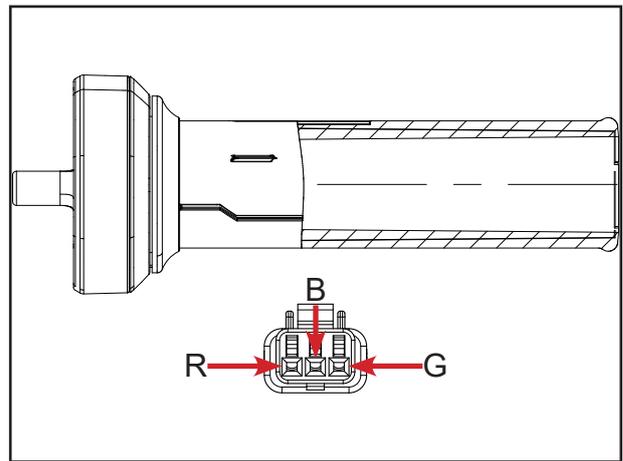
The vehicle adopts electronic grip assembly. When the driver turns the grip, MCU integrates the grip unscrewing angle, motor speed, gear, motor temperature, vehicle mode and other information to provide the best drive strategy.

**Input voltage: 5V**

**Signal voltage: 0.8-4.2V. (influenced by input voltage)**

Pin function:

Pin	Function Description
R	power+
B	power-
G	signal



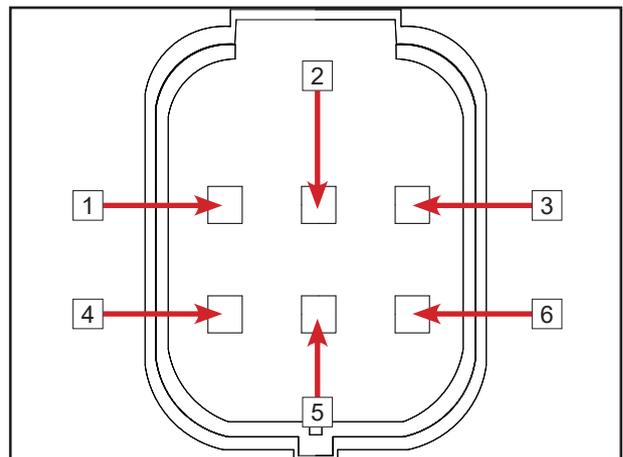
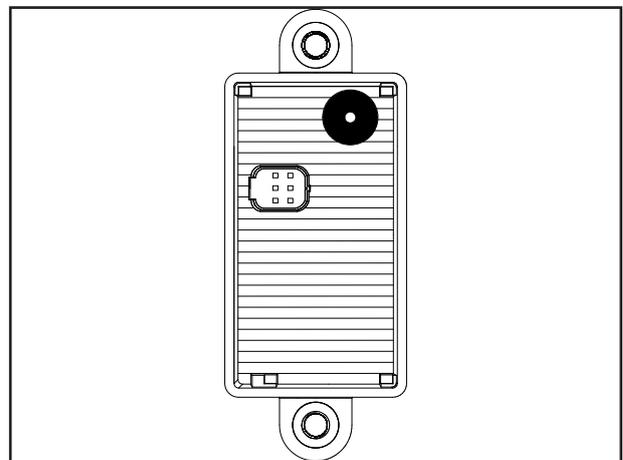
## 6.4 Electric Fence Transmitter

Electric fence transmitter default setting: Initially the fence is closed, the speed limit is open, the fence range is 500 meters, and the fence is closed when no GPS signal is received. Fixed Settings: Alarm duration 0 seconds, ride duration 0 seconds after exceeding the fence, stop duration 240 seconds.

Buzzer warning: short sound: power on/off, receive control command (set fence range, open/close). Warning once/second within the riding time, 0.5 times/second within the stop time.

**Work voltage: 9~18V**

Pin	Function Description
1	DC12V- output interface
2	DC12V+ output interface
3	Switch signal output interface (No stall when negative output)
4	Switch signal output interface (No stall when negative output)
5	Overspeed signal output interface (Speed limit when negative output)
6	Electric fence LED light flashing prompt interface (Negative outputs once/1.2s when the engine stops, once/0.6s during the temporary operation)

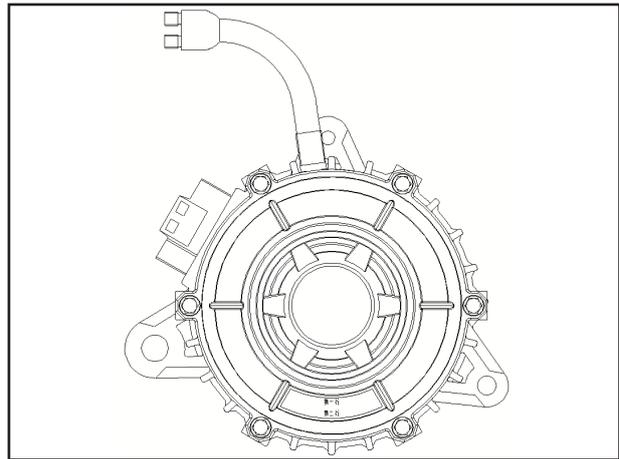


## 6.5 Integrated Motor

The integrated motor integrates the motor, motor controller, and DCDC in one.

**⚠ CAUTION:**

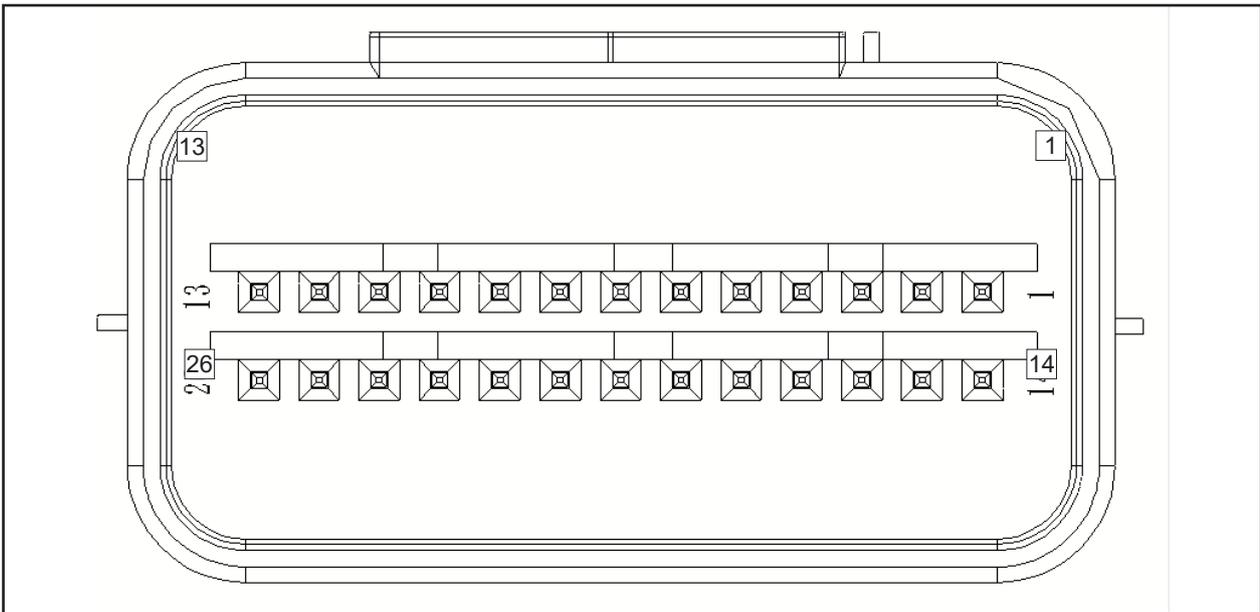
The red and black positive and negative leads of the motor use Anderson high-current connectors, and be careful not to short-circuit the red and black lines during maintenance, otherwise it may cause ablation and motor damage.



### Motor Performance

Permanent Magnet Synchronous Motor Parameters	
Rated voltage	48V
Rated power	0.65/1.0kw
Rated speed	2300r/min
Insulation grade	H
Working system	S9
Protection grade	IP65
Cooling type	Air cooling

### 6.5.2 Motor Controller



#### 6.5.1 E-control Connector Definition

26PIN Definition							
1	RS485A	8	Low brake	15	Signal ground	22	Safety rope signal
2	Grip negative	9	Electric fence signal	16	Signal ground	23	/
3	Grip signal	10	/	17	/	24	Power ground
4	Grip power	11	Power ground	18	/	25	12V output positive
5	/	12	12V output positive	19	/	26	Electric door lock
6	/	13	Electric door lock	20	/		
7	signal ground	14	RS485B	21	/		

## 6.6 Fault Code Table

No.	DTC Meaning	DTC Display Code	Possible Cause	Countermeasures
1	Cell overvoltage fault	E001	Cell pressure > 4.2V	Leave for 2 hours 1. Try to reinsert the battery connector. 2. Try to power up the whole vehicle and load ride to reduce the voltage. 3. Replace the pack.
2	Cell under-voltage fault	E002	Cell pressure < 2.95V, 30min, or cell pressure < 2.6V, 3s	Leave for 2 hours 1. Try to reinsert the battery connector. 2. Try to charge by charging generator. 3. Replace the pack.
3	Large cell pressure difference	E003	Cell pressure >3.5V, Cell differential pressure exceeds 500mV, Cell pressure ≤3.5V, Cell differential pressure exceeds 800mV	Leave for 2 hours or replace the battery pack.
4	OV software lock fault	E004	Cell pressure ≤2.0V	Can not return, replace the pack.
5	Battery over charge	E008	30A 5s or max {SOP+1A, 6A} 2min	1. Reinsert the battery connector. 2. Try to discharge (ride) for more than 1s
6	Battery feedback overcurrent fault	E009	30A	1. Reinsert the battery connector. 2. Try to discharge (ride) for more than 1s
7	Battery over discharge	E010	45A	1. Reinsert the battery connector. 2. Try to lower the speed or stop riding for more than 2min.
8	Battery discharge transient overcurrent fault	E011	Discharge current > 60A	1. Stop riding for more than 2min. 2. Lower the speed to below 30km/h for at least 2min.
9	High temperature fault of battery charge	E013	Cell temp. > 55°C	Stop charging, suggest to place the pack at room temperature or 15°C for more than 2 hours, and then reinstall and test.

# CFMOTO

10	Low temperature fault of battery charge	E014	Cell temp. < -11°C	Stop charging, suggest to place the pack at room temperature or 15° C for more than 2 hours, and then reinstall and test.
11	High temperature fault of battery discharge	E015	Cell temp. > 70°C	Stop discharging, suggest to place the pack at room temperature or 15° C for more than 2 hours, and then reinstall and test.
12	Low temperature fault of battery discharge	E016	Cell temp. < -25°C	Stop discharging, suggest to place the pack at room temperature or 15° C for more than 2 hours, and then reinstall and test.
13	High temperature difference of battery	E017	Maximum temp. difference >15°C	Stop discharging, suggest to place the pack at room temperature or 15° C for more than 2 hours, and then reinstall and test.
14	Battery MOS over-temperature fault	E019	MOS temp.>110°C	Stop discharging, suggest to place the pack at room temperature or 15° C for more than 2 hours, and then reinstall and test.
15	Low SOC of battery	E022	Cell voltage when discharge < 3V and SOC < 0.1%	1. Try to charge by charging generator. 2. Replace the pack.
16	Short circuit	E032	Discharge current >200A	1. Load removal. 2. Leave for 5 minutes to restore (at most 3 times)
17	Battery life end failure EOL	E040	SOH<50%	Replace the pack if non-recoverable.
18	MCU drive fault	E082	MCU driver chip or driver circuit damaged.	1. If repower on and the vehicle returns to normal, no maintenance is required. 2. If the vehicle does not return to normal, there may be hardware failure in the MCU. Replace the integrated motor.
19	MCU over-temperature fault	E083	1. MCU long-term heavy load operation, controller temperature is higher than 90°C . 2. MCU hardware circuit fault or wire harness damage.	1. Check the operation, and the power can be reduced when the temperature is less than 90 °C . Stop riding for at least 10min. 2. Replace integrated motor.

## 06 Electrical System

20	MCU over-pressure fault	E084	Voltage of motor bus more than 85V.	<ol style="list-style-type: none"> <li>1. Replace the pack.</li> <li>2. Check the high voltage power supply circuit and reinsert the power plug.</li> </ol>
21	Motor phase failure	E086	Motor internal phase line off	<ol style="list-style-type: none"> <li>1. If repower on and the vehicle returns to normal, no maintenance is required.</li> <li>2. Replace integrated motor.</li> </ol>
22	Motor position sensor fault	E087	Status 000 or 111 for Hall ABC	<ol style="list-style-type: none"> <li>1. If repower on and the vehicle returns to normal, no maintenance is required.</li> <li>2. Replace integrated motor.</li> </ol>
23	Motor gridlock fault	E088	Motor speed is 0 for over 1.5S under the condition of handle output.	Twist the handle again after load removal.
24	Motor over-temperature fault	E089	<ol style="list-style-type: none"> <li>1. MCU long-term heavy load operation, motor temperature is higher than 110°C .</li> <li>3. MCU hardware circuit fault or wire harness damage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the operation, and the power can be reduced when the temperature is less than 110°C . Stop riding for at least 10min.</li> <li>2. Replace integrated motor.</li> </ol>
25	Handle fault	E090	<ol style="list-style-type: none"> <li>1. Handle circuit fault, signal voltage is more than 4V or less than 0.5V.</li> <li>2. Poor contact of handle connector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the handle and wires.</li> <li>2. Pins of handle measurement standard value (the voltage range of pin 2 to pin 3 in the 26pin plug-in is more than 4V or less than 0.5V, considered handle fault), replace the handle.</li> </ol>
26	Controller overcurrent fault	E092	The current of mos pipe detected by hardware circuit is over 450A during operation.	<ol style="list-style-type: none"> <li>1. Twist the handle after re-entry.</li> <li>2. Replace integrated motor if the above operation does not work.</li> </ol>
27	Brake fault	E094	There is still current output when the brake signal exists	<ol style="list-style-type: none"> <li>1. If repower on and the vehicle returns to normal, no maintenance is required.</li> <li>2. Replace integrated motor.</li> </ol>
28	MCU initialization fault	E095	Abnormal current and voltage signals inside the MCU after power-on	<ol style="list-style-type: none"> <li>1. If repower on and the vehicle returns to normal, no maintenance is required.</li> <li>2. Replace integrated motor.</li> </ol>

29	MCU over-temperature warning	E096	1. MCU long-term large load operation, motor controller temperature above 80 ° C, and less than 90 ° C.	1. Check the operation, the temperature is less than 80°C can be restored to normal. (Stop running for at least 10 minutes).
30	Motor over-temperature warning	E097	1. MCU long-term large load operation, motor temperature above 100 ° C, and less than 110 ° C.	1. Check the operation, the temperature is less than 100°C can be restored to normal. (Stop running for at least 10 minutes).
31	Low power warning	E098	1. SOC is 0 for more than 2min.	1. Charge. 2. Replace the pack.
32	Electric fence warning	E099	1. The vehicle out of range of electronic fence. 2. The vehicle is locked by electric fence.	1. Use electric fence to lift restrictions. 2. Inspect wires and connector. 3. Replace integrated motor.
33	Safety rope warning	E101	1. Safety rope fall off. 2. MCU damage.	1. Restore safety rope. 2. Inspect wires and connector. 3. Replace integrated motor.
34	BMS communication failure	E041	1. BMS without communication over 2s.	1. Wait for 2min. 2. Reinsert the battery connector. 3. Replace the battery. 4. Replace integrated motor.
35	MCU communication failure	E100	1. MCU without communication over 2s.	1. Replace integrated motor.
36	Charger output overvoltage failure	E126	If the output voltage exceeds 56V for 2s during operation, the protection will be triggered.	1. This fault is recoverable. If the output voltage of charger is lower than 56V, the fault is automatically removed. 2. If this exception still exists after restarting the machine several times, the hardware is faulty and the charger needs to be replaced.

37	Charger output overcurrent failure	E127	If the output current exceeds 5A for 2s, the protection will be triggered.	<ol style="list-style-type: none"> <li>1. This fault is recoverable. If the output current of charger is lower than 5A, the fault is automatically removed.</li> <li>2. If this exception still exists after restarting the machine several times, the hardware is faulty and the charger needs to be replaced.</li> </ol>
38	Charger output short-circuit fault	E128	Because the DC output of charger is short-circuited during operation, the secondary protection is triggered	The charger is not plugged into the AC power, and the DC output end is not connected to the battery. After the multimeter is selected as the short-circuit, connect the red and black watch pen to the DC positive and negative terminals of the charger. If the multimeter sounds, the charger needs to be replaced.
39	Charger output reverse connection fault	E129	Because the positive and negative terminals of the charger DC output inversely connected to the positive and negative terminals of battery pack during operation	According to the interface definition, check whether the charger or battery line sequence is connected abnormally.
40	Motor phase failure	E086	Motor phase line drops	<ol style="list-style-type: none"> <li>1. Replace the integrated motor.</li> <li>2. Replace the relay, and check relay base wiring harness.</li> <li>3. Check the positive and negative red and black lines</li> </ol>

## **07 Wheels and Brake System**

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## 7.1 Front Hydraulic Brake Assembly

### Pre-work

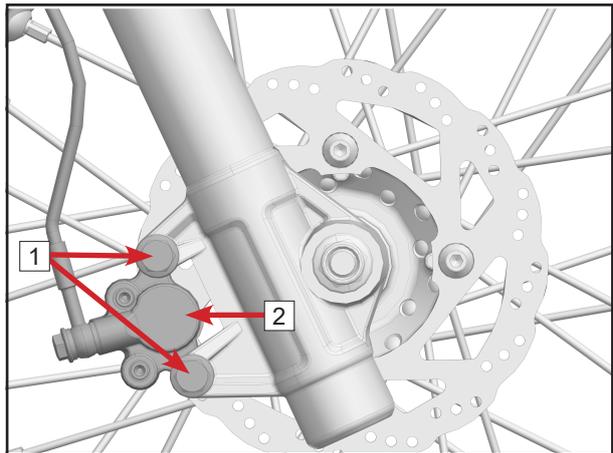
Remove front fender assembly (refer to chapter 05).

### Removal

Remove bolts [1].

Remove front brake caliper assembly [2].

**Bolt torque: 20~25 N•m (apply thread locker)**



Pull out connector of front brake switch.

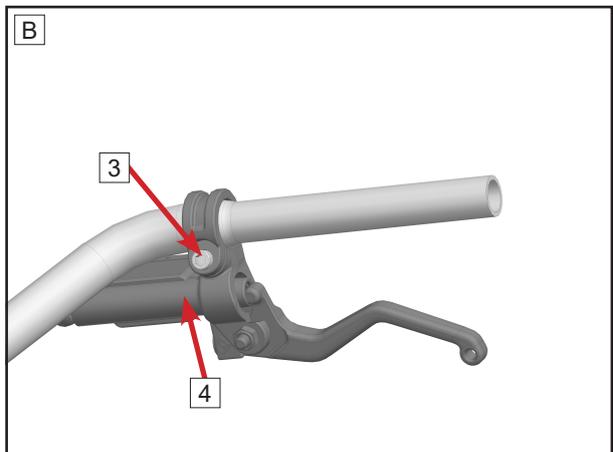
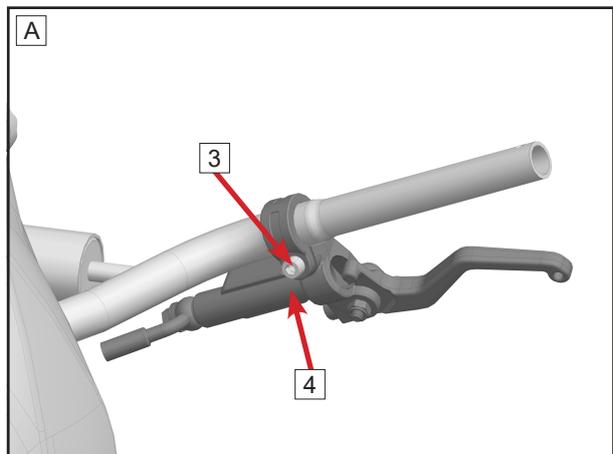
Loosen the bolt [3].

Loosen front brake main pump assembly [4].

Remove front hydraulic brake assembly.

A: CF650DY

B: CF1000DY



## 7.2 Front Wheel

### Pre-work

Use a jack, front wheel support or a crane to lift the front wheel off the ground (select a part of vehicle that can be loaded to prevent the vehicle from tipping and causing injury to the operators).

Remove front brake caliper assembly (refer to this chapter).

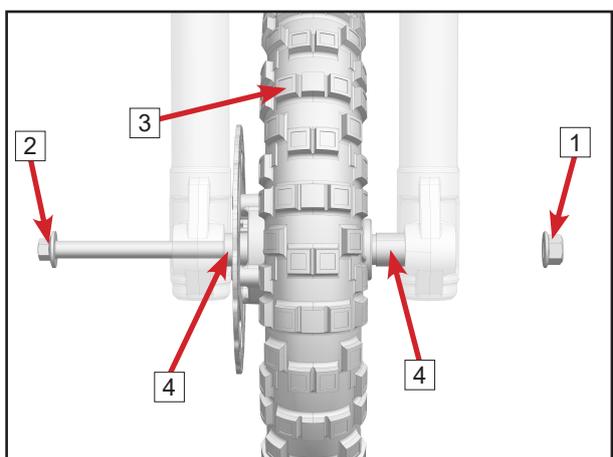
### Removal

Remove front axle nut [1] and front axle [2].

Remove front wheel [3].

Remove shaft sleeve [4].

**Front axle nut torque: 85~90 N•m**



## 07 Wheels and Brake System

### Installation

Reverse the removal procedures for installation.

**NOTE: Apply grease on the inside of front wheel oil seal.**

### 7.2.1 Front Brake Disc

#### Removal

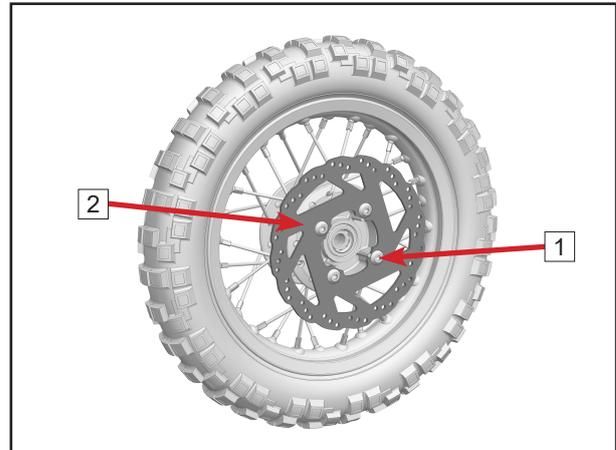
Remove four bolts **1**.

Remove front brake disc **2**.

**Bolt torque: 8 N•m (apply thread locker)**

#### Installation

Reverse the removal procedures for installation.



### 7.3 Rear Wheel

#### Pre-work

Use a jack, rear wheel support or a crane to lift the front wheel off the ground (select a part of vehicle that can be loaded to prevent the vehicle from tipping and causing injury to the operators).

Remove rear fender assembly (refer to chapter 05).

#### Removal

Remove rear axle nut **1**.

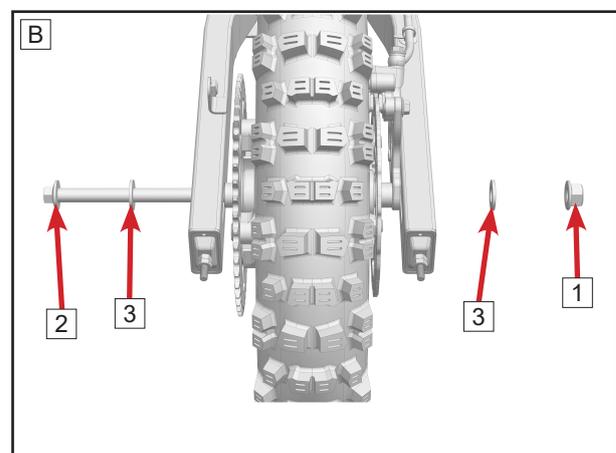
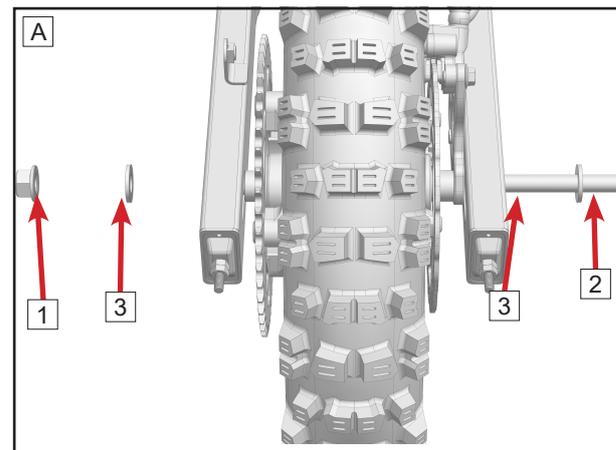
Remove rear axle **2**.

Remove two washers **3**.

**Rear axle nut torque: 70 N•m ± 5 N•m**

A: CF650DY

B: CF1000DY



# CFMOTO

Loosen m6 nuts **4** of the left and right chain adjusting blocks.

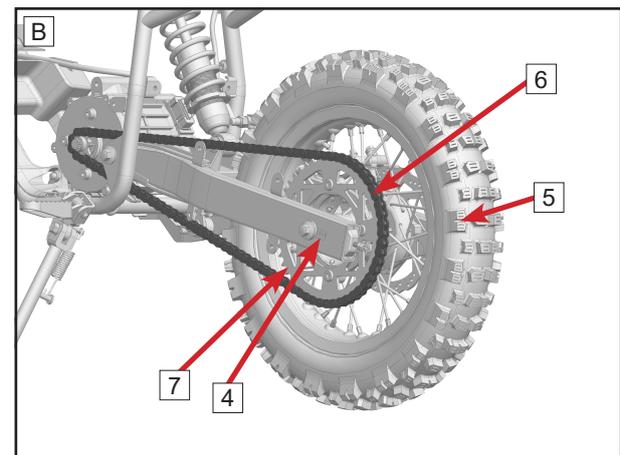
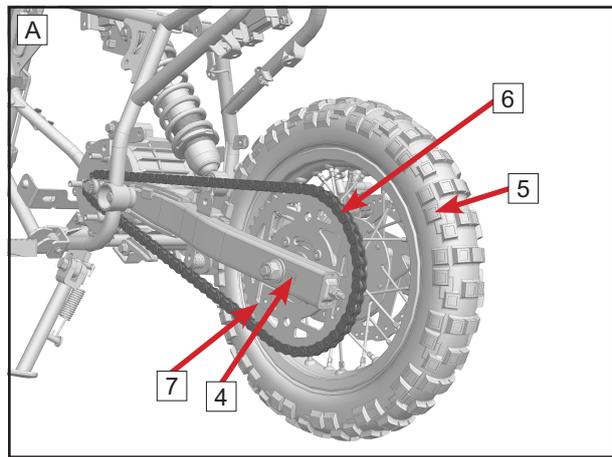
Push rear wheel **5** to the front of the vehicle.

Remove the chain **6** from rear sprocket **7**

Remove rear wheel **5**.

A: CF650DY

B: CF1000DY

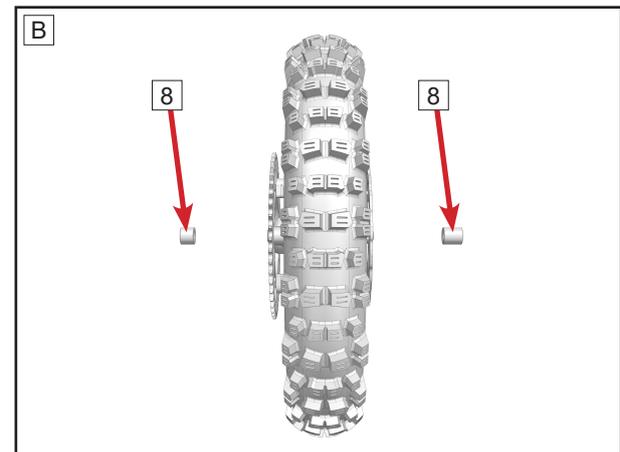
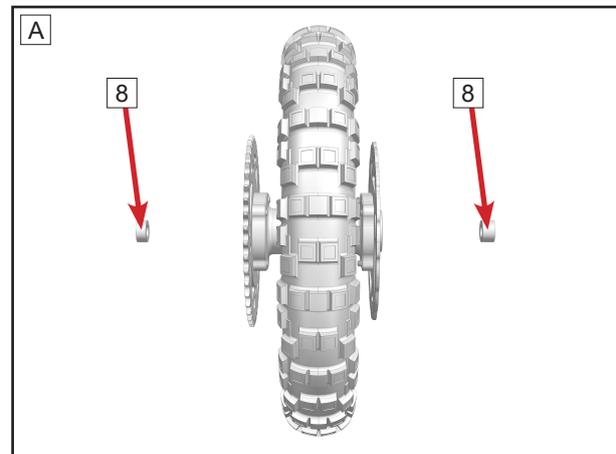


Remove shaft sleeve **8**.

**NOTE: The length of the rear wheel bushing is different, short on the left and long on the right.**

A: CF650DY

B: CF1000DY

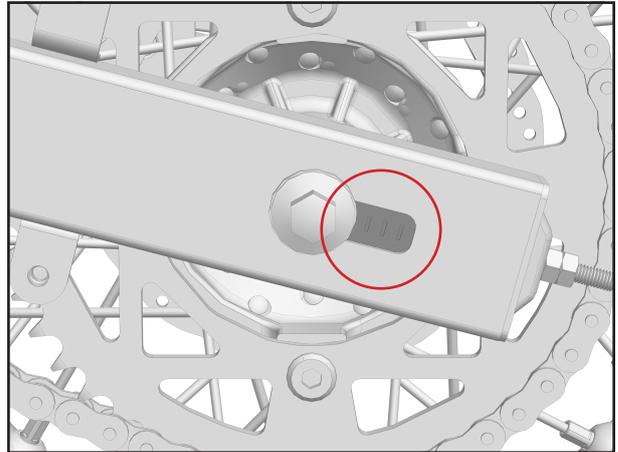


**NOTE:** When installing chain adjusting block **4**, the mark positions of the left and right adjusting blocks must be the same.

### Installation

Reverse the removal procedures for installation.

**NOTE:** Apply grease on the inside of rear wheel oil seal.



### 7.3.1 Sprocket Disc

#### Removal

Remove bolts **1**.

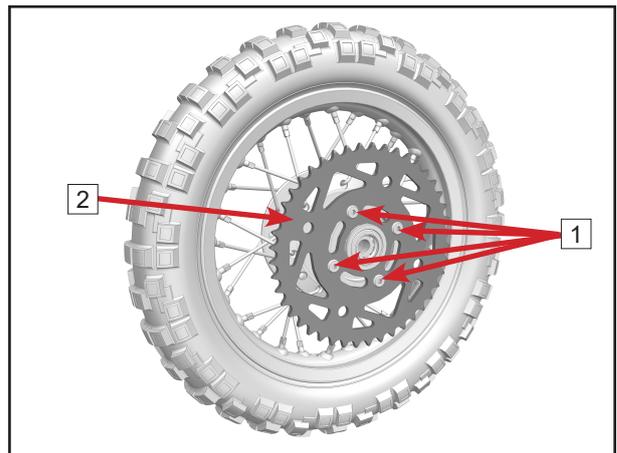
Remove sprocket disc **2**.

**Bolt torque (CF650DY): 10~12 N•m (apply thread locker)**

**Bolt torque (CF1000DY): 20~25N•m (apply thread locker)**

#### Installation

Reverse the removal procedures for installation.



### 7.3.2 Rear Brake Disc

#### Removal

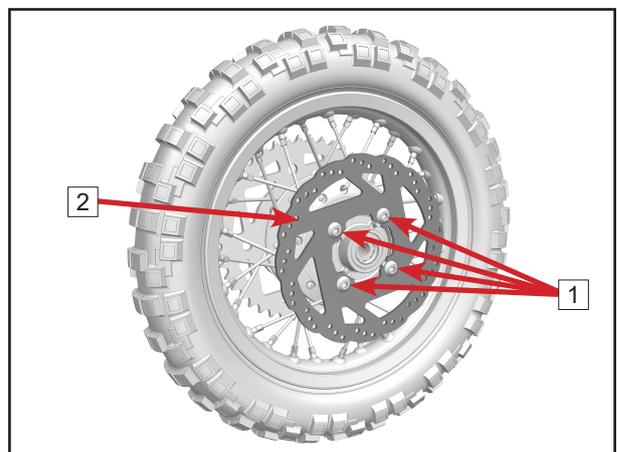
Remove bolts **1**.

Remove rear brake disc **2**.

**Bolt torque: 8 N•m (apply thread locker)**

#### Installation

Reverse the removal procedures for installation.



## 7.4 Rear Hydraulic Brake

### Pre-work

Remove frame rear panel (refer to chapter 05).

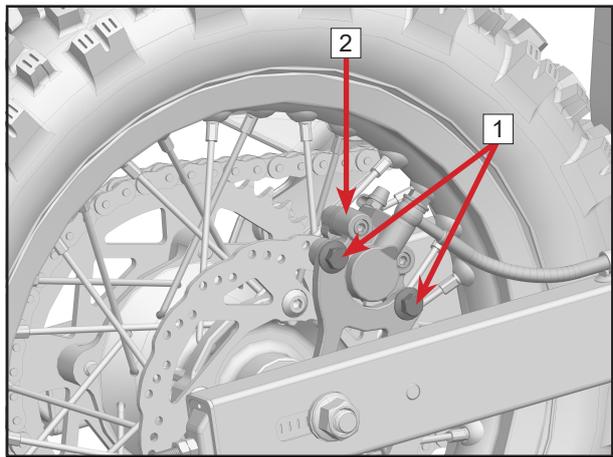
### Removal

Pull out rear brake switch connector.

Remove bolts [1].

Remove rear brake caliper [2].

**Bolt torque: 20 ~ 25 N•m (apply thread locker)**



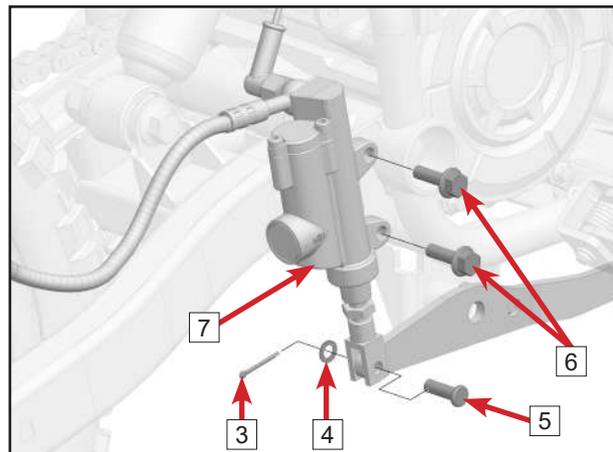
Remove caliper [3], small washer [4] and dowel pin [5].

Remove bolts [6].

Loosen rear brake main pump assembly [7].

Remove rear hydraulic brake assembly.

**Bolt torque: 10~12 N•m (apply thread locker)**



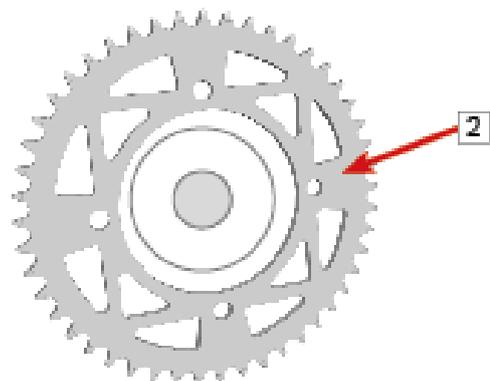
## 7.5 Tire Inspection

Inspect the spoke [1] for distortion, breakage, crack or other damage. Replace it if it damaged.

Inspect whether the spoke spring ring is deformed and misaligned. If the spring ring is deformed and misaligned, it may lead to rim leakage and damage. Replace the rim if necessary.



Inspect sprocket disc [2] for wear or damage. Replace it if the sprocket disc is worn or broken.



## 07 Wheels and Brake System

### 7.5.1 Tire Pressure

Remove tire inflation valve cap.

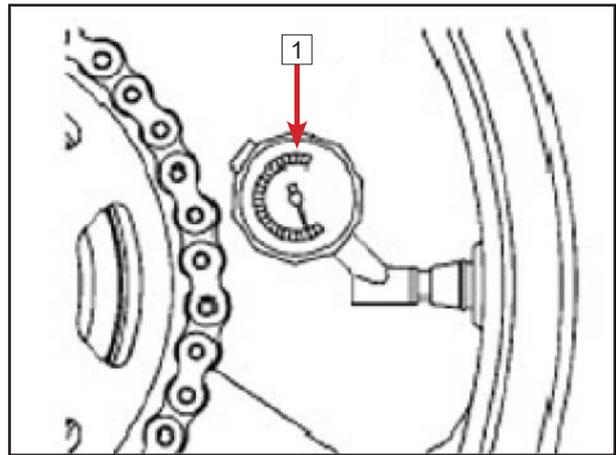
Measure the tire pressure with air gauge

1 when the tire is cold.

Single			
Pressure	kPa	kgf/cm <sup>2</sup>	psi
Front wheel (CF650DY)	220	2.2	31.3
Front wheel (CF1000DY)	200	2.0	28.4
Rear wheel	220	2.2	31.3

Adjust the tire pressure according to the standard if necessary.

Install tire inflation valve cap.



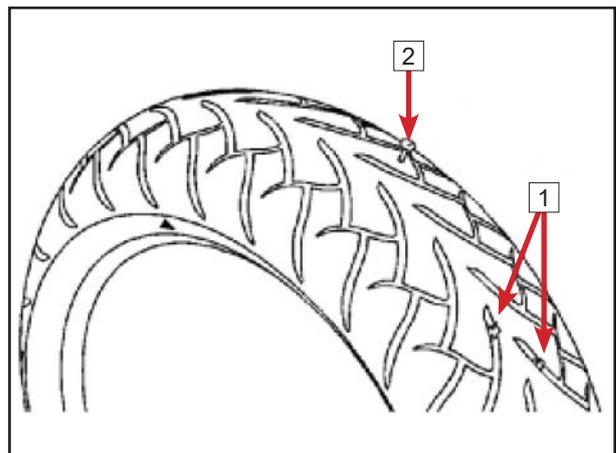
### 7.5.2 Tire Appearance

Clean the embedded stone 1 or other inclusions 2 on tires.

Inspect all parts of the tire tread for cracks, cuts, or dents.

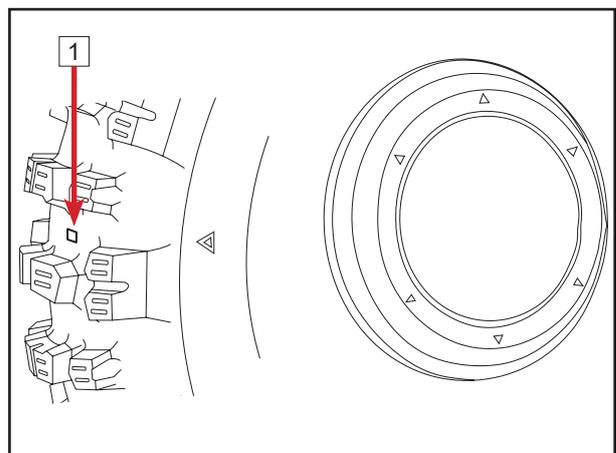
Inspect tire appearance for expansion or pulge. Expansion or pulge indicates damage inside the tire.

Replace it if any defect is found to avoid rapid expansion of tire damage.



Inspect tire for wear condition. The tire may be punctured or damaged if beyond service limit. Majority of the tire accidents happen due to exceeding service limit. Pay attention not to use the tire if the pattern is worn in case of injury.

When the tire thread wears to the block 1 height, replace a new tire.



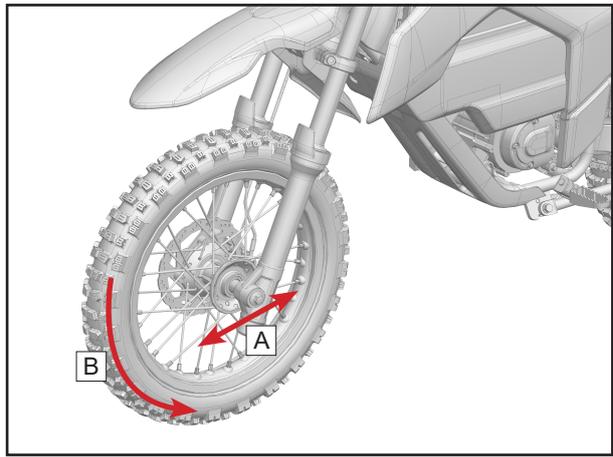
## 7.5.3 Wheel Bearing

Use the jack to lift the front wheel off the ground.

Inspect the front wheel bearing for damage by pushing and pulling wheel in the direction of **A**.

Rotate the wheel quickly in the direction **B** to check whether the wheel rotates smoothly, and check whether there is any noise when rotating.

Replace a new one if there is noise or the wheel can not rotate smoothly.

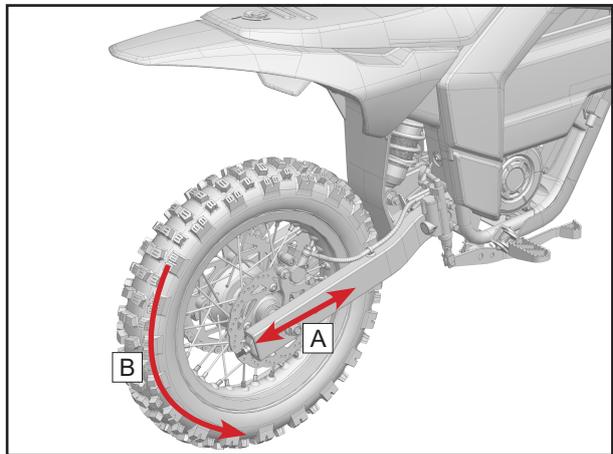


Use the jack to lift the rear wheel off the ground.

Inspect the front wheel bearing for damage by pushing and pulling wheel in the direction of **A**.

Rotate the wheel quickly in the direction **B** to check whether the wheel rotates smoothly, and check whether there is any noise when rotating.

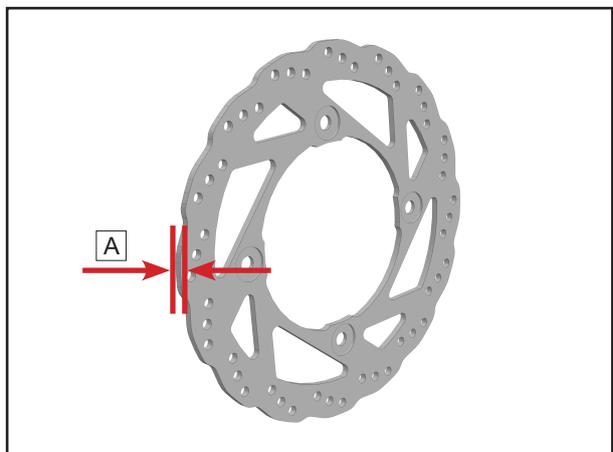
Replace a new one if there is noise or the wheel can not rotate smoothly.



## 7.5.4 Brake Disc Inspection

Measure the brake disc thickness **A** with micrometer or caliper. Replace a new one if beyond service limit.

Item		Standard	Service Limit
Front	Brake pad wear	3 mm	2 mm
Rear		3 mm	2 mm



## 7.6 Brake System Inspection

### ⚠️WARNING:

Brake fluid can stimulate the skin.

Keep the brake fluid out of reach of children.

Do not let brake fluid contact skin, eyes or clothing. Wear protective gears and goggles during operation.

If swallow brake fluid by accident, seek for medical attention immediately.

If you get brake fluid on skin, rinse contact area with clean water immediately.

If you get brake fluid in your eyes, immediately wash it off and seek for medical attention.

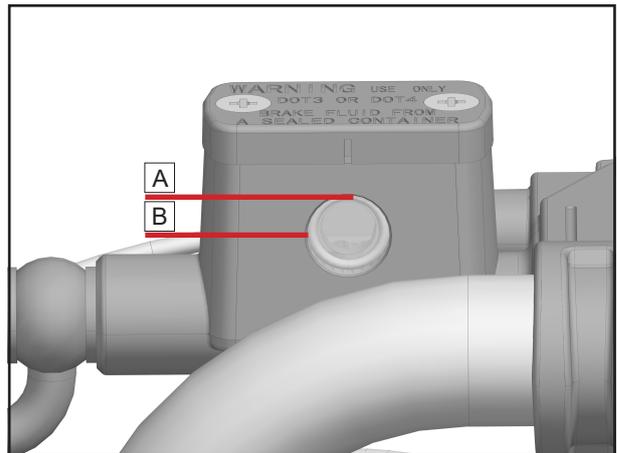
If you spill brake fluid on your clothing, change your clothing.

### 7.6.1 Front Brake Main Cylinder Inspection

#### Front Brake Fluid Level Inspection

Place the vehicle on the level ground, and straighten the vehicle and handlebar to make the front brake fluid reservoir parallel the ground. Inspect the brake fluid level of fuel reservoir.

If the fluid level is below than B level, add brake fluid to A level.



#### Brake Fluid Replacement

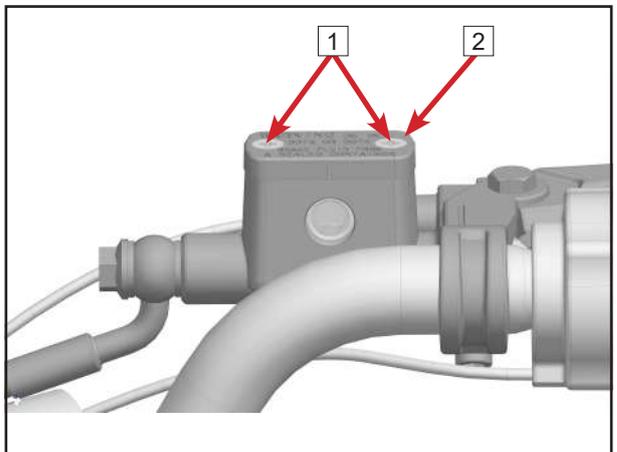
Remove screws [1].

Remove fluid reservoir cap [2].

**NOTE: Reservoir gasket may be sunk due to negative pressure caused by brake fluid reducing. It doesn't affect normal use but needs to be restored during installation.**

Open air-bleed bolt rubber sleeve [4].

Connect a clean hose with air-bleed bolt [5] with other side into a container.



Repeatedly hold and loose brake lever [A] and hold brake lever until it feels hard.

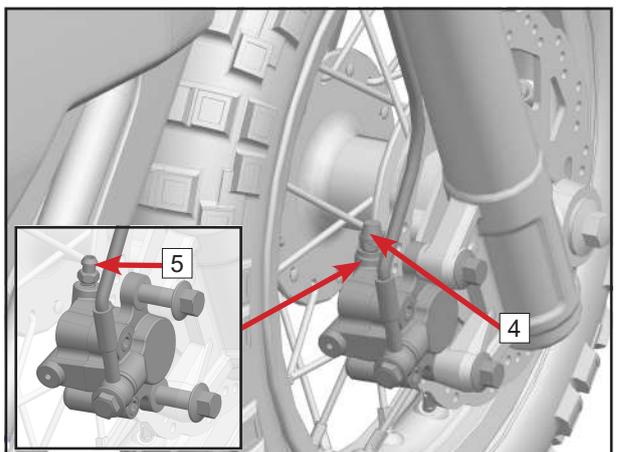
Loose air-bleed bolt [5] a little bit.

Until the brake fluid doesn't spray out or the lever feels soft.

Tighten the air-bleed bolt.

Add brake fluid to A level.

Repeat the above procedures until the new brake fluid sprays out.

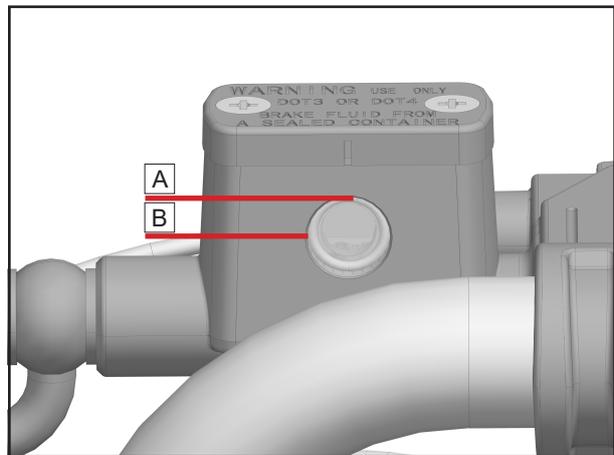
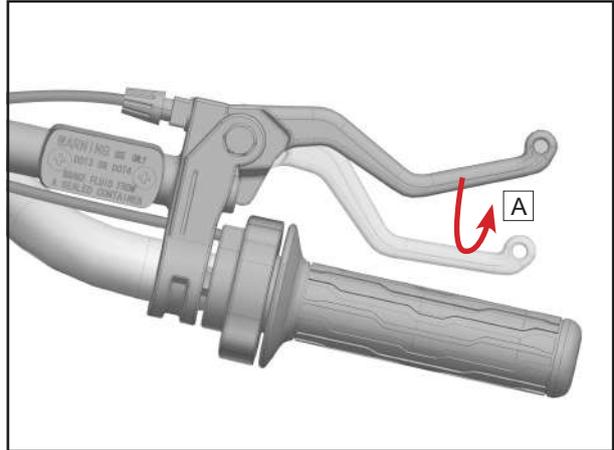


**⚠ WARNING:** Keep brake fluid level above B level, in case air gets into brake system, which results in brake system failure and injury.

**⚠ WARNING:** If there is air inside of brake system, replace brake fluid repeatedly until there is no air in drained brake fluid.

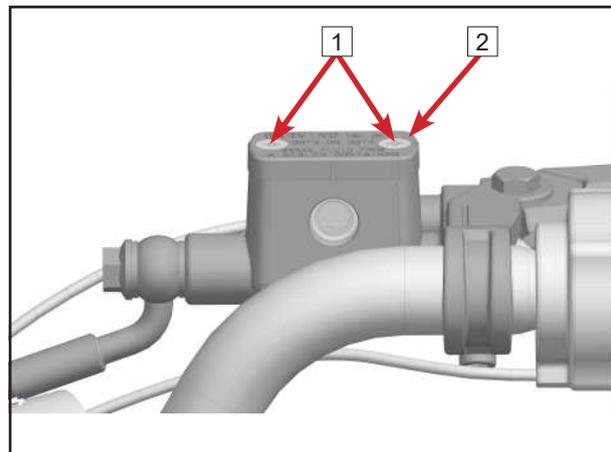
## Brake Fluid Addition

Add brake fluid to A level.



Install reservoir cap **2**.

Install two screws **1**.



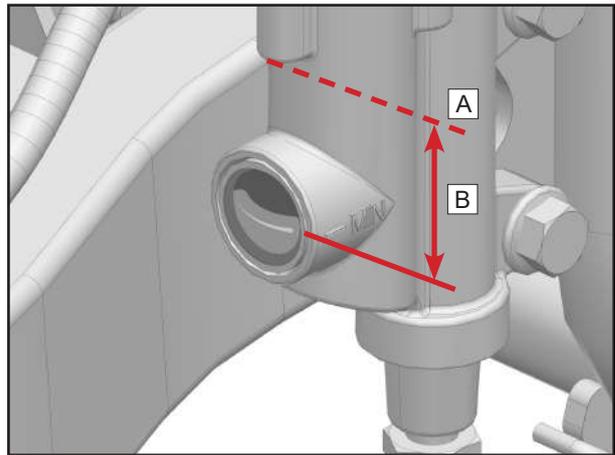
## 07 Wheels and Brake System

### 7.6.2 Rear Brake Master Cylinder Inspection

#### Rear Brake Fluid Level Inspection

Place the vehicle on the level ground, and straighten the vehicle and handlebar to make the rear brake fluid reservoir parallel the ground. Inspect the brake fluid level of fuel reservoir.

If the fluid level is below than B level, add brake fluid to A level.



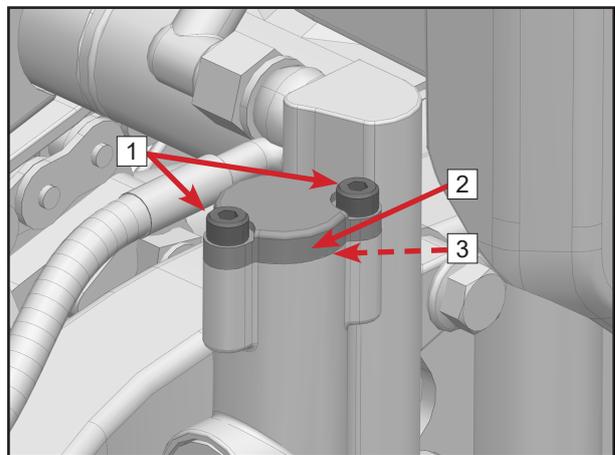
#### Brake Fluid Replacement

Remove bolts [1].

Remove fluid reservoir cap [2].

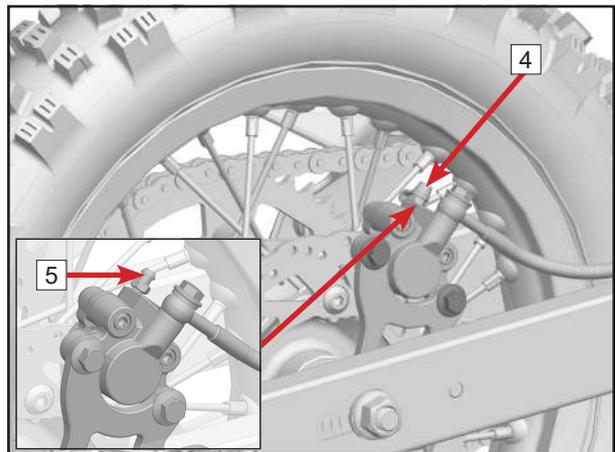
Remove fluid reservoir washer [3].

**NOTE: Reservoir gasket may be sunk due to negative pressure caused by brake fluid reducing. It doesn't affect normal use but needs to be restored during installation.**



Open air-bleed bolt rubber sleeve [4].

Connect a clean hose with air-bleed bolt [5] with other side into a container.



# CFMOTO

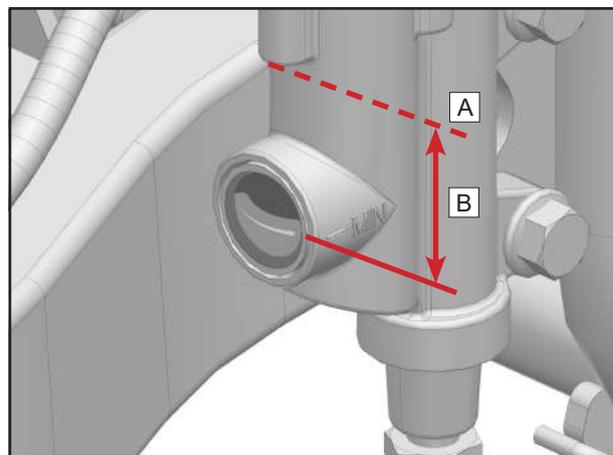
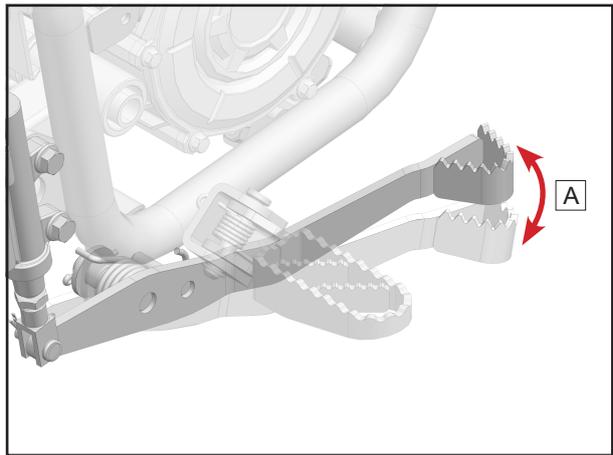
Repeatedly hold and loose brake lever **A** and hold brake lever until it feels hard.  
Loose air-bleed bolt **5** a little bit.  
Until the brake fluid doesn't spray out or the lever feels soft.  
Tighten the air-bleed bolt.  
Add brake fluid to A level.  
Repeat the above procedures until the new brake fluid sprays out.

**⚠ WARNING: Keep brake fluid level above B level, in case air gets into brake system, which results in brake system failure and injury.**

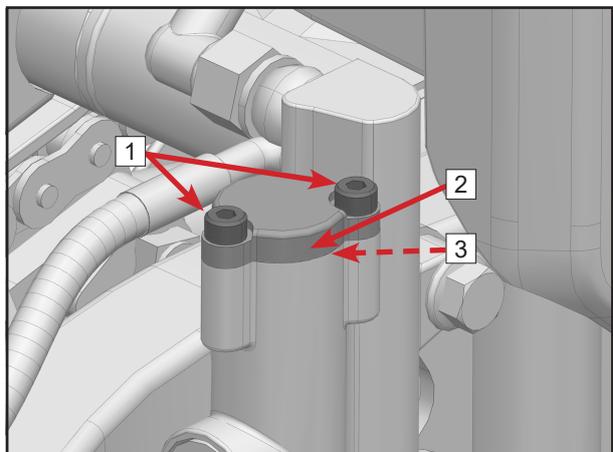
**⚠ WARNING: If there is air inside of brake system, replace brake fluid repeatedly until there is no air in drained brake fluid.**

## Brake Fluid Addition

Add brake fluid to A level.



Install fluid reservoir washer **3**.  
Install fluid reservoir cap **2**.  
Install screws **1**.



## 07 Wheels and Brake System

### 7.6.3 Brake Hose Inspection

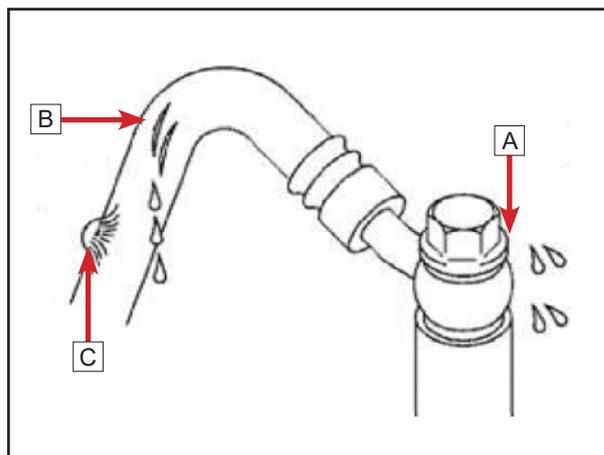
Inspect brake hose, connectors and pipes for damage, cracks or leaking.

With improper maintenance, the high pressure inside the brake hose can cause fluid leaking **A** or hose burst.

Inspect brake hose for bending or twist. Replace with new hoses and pipes if crack **B**, bulge **C** or leaking detected.

Tighten all the brake hose connecting bolts and nuts.

Inspect brake hose route. Reset the hose route if not proper or correct.



### 7.6.4 Brake Caliper and Brake Disc Inspection

#### Brake Caliper

Remove brake caliper assembly.

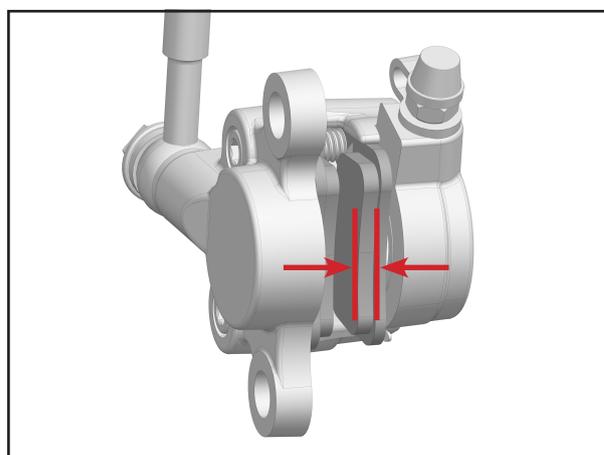
Inspect each brake pad thickness.

Front brake disc service limit:  $\geq 2.5\text{mm}$

Rear brake disc service limit:  $\geq 2.5\text{mm}$

Replace brake pads before it reaches to service limit. Replace brake pads in set.

Inspect brake pads for deep scratches or other damages. Replace if any defect is found.



#### Brake Disc

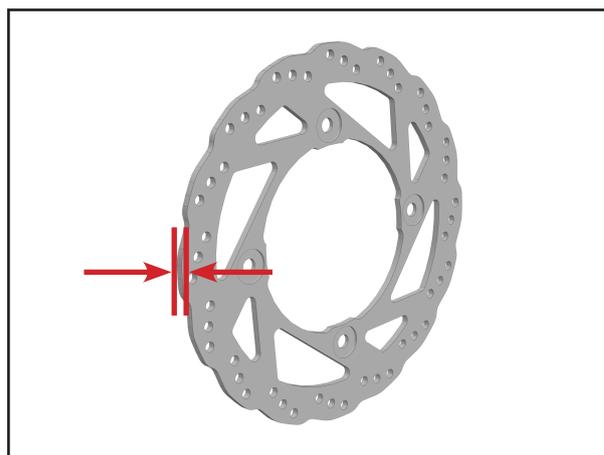
Inspect brake disc thickness.

Front brake disc service thickness: 2mm.

Rear brake disc service thickness: 2mm.

Replace brake discs before it reaches to service limit.

Inspect brake discs for deep scratches or other damages. Replace if any defect is found.



## **08 Power Assembly**

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<b>8.1 Battery (CF650DY) .....</b>	<b>8-2</b>
<b>8.2 Battery (CF1000DY) .....</b>	<b>8-2</b>
<b>8.3 Drive Sprocket .....</b>	<b>8-3</b>
<b>8.4 Motor Assembly.....</b>	<b>8-4</b>

## 8.1 Battery (CF650DY)

### Pre-work

Remove center panel.

Remove lower panel.

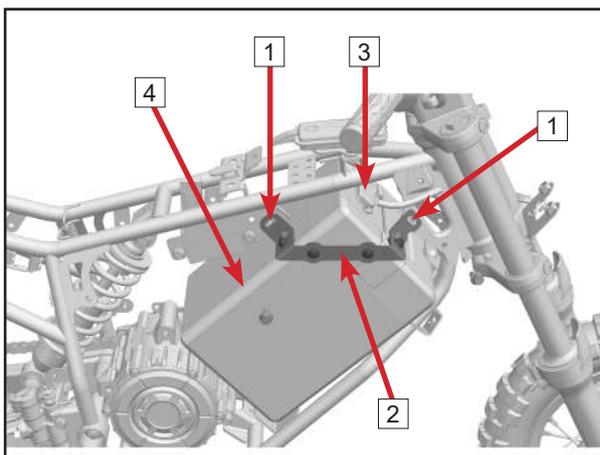
### Removal

Remove bolts **1**.

Remove battery bracket **2**.

Pull out the battery connector **3**.

Remove the battery **4**.



## 8.2 Battery (CF1000DY)

### Pre-work

Remove center panel.

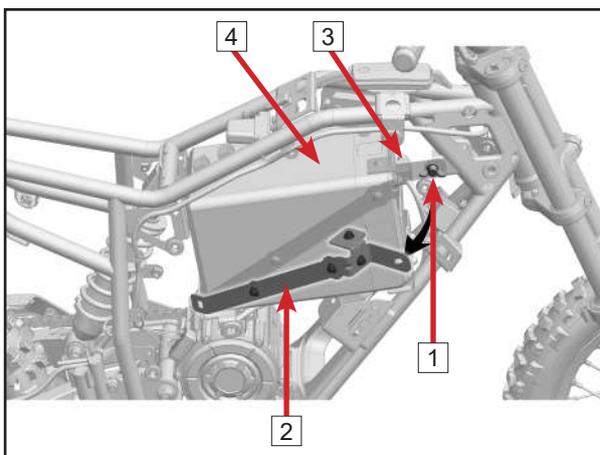
### Removal

Remove wing screw **1** and washer.

Remove battery bracket **2**.

Pull out the battery connector **3**.

Remove the battery **4**.



## 8.3 Drive Sprocket

### Pre-work

Loosen the loose part of drive chain.

CF650DY: remove left side center panel.

CF1000DY: remove left side center panel and left side panel.

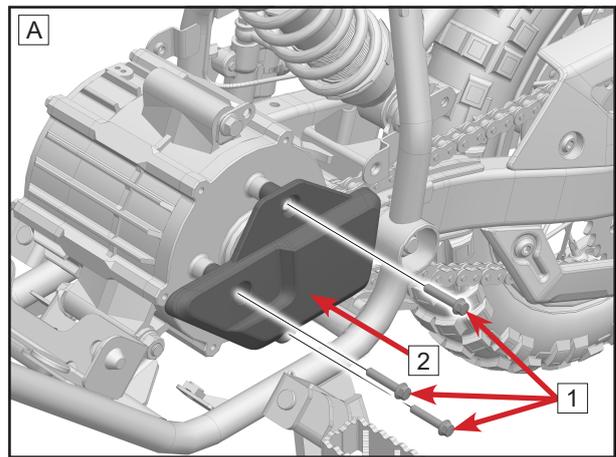
### Removal

Remove bolts **1** and drive sprocket cover **2**.

Remove circlip **3** and drive sprocket **4**.

A: CF650DY

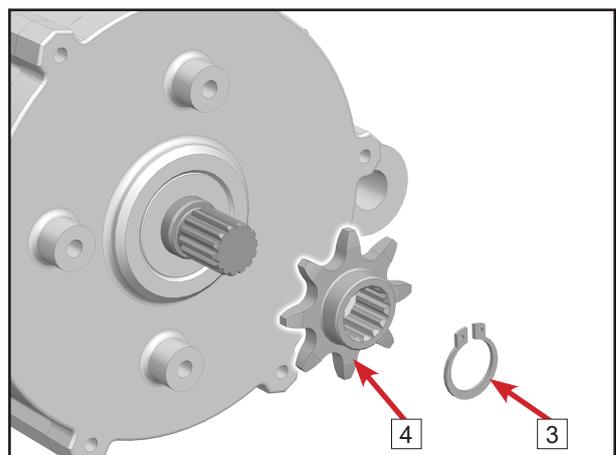
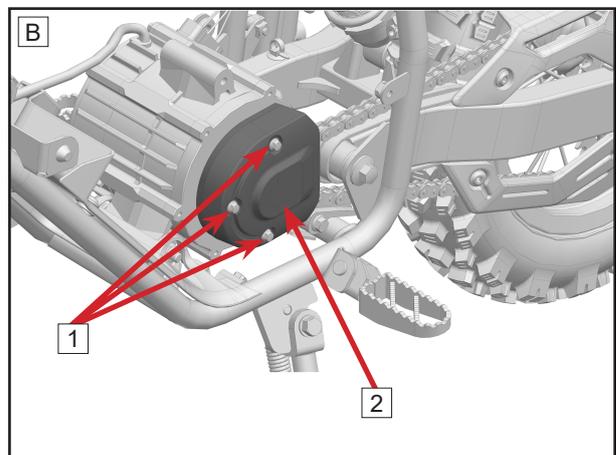
B: CF1000DY



### Installation

Reverse the removal procedures for installation.

**NOTE:** The long end of sprocket step faces outward.



# CFMOTO

## 8.4 Motor Assembly

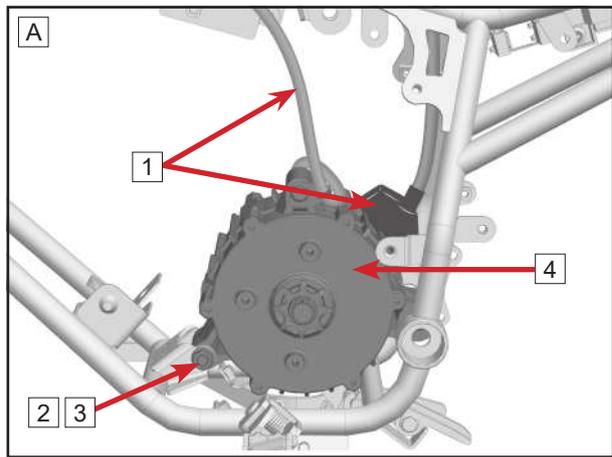
### Pre-work

Remove drive sprocket.  
Remove swing arm shaft.

### Removal

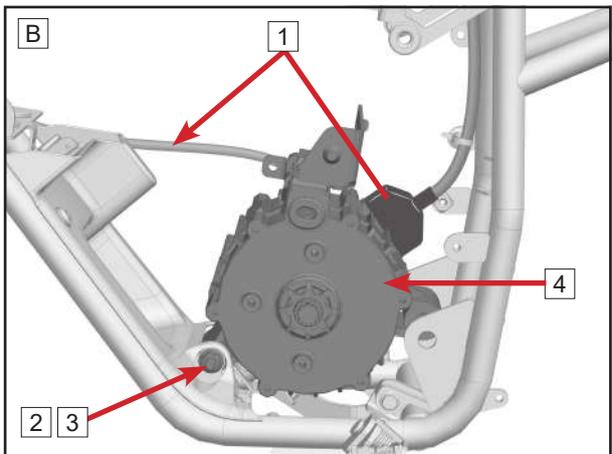
Pull out motor connector [1].  
Remove nut [2] and bolt [3].  
Remove the motor [4].

A: CF650DY  
B: CF1000DY



### Installation

Reverse the removal procedures for installation.

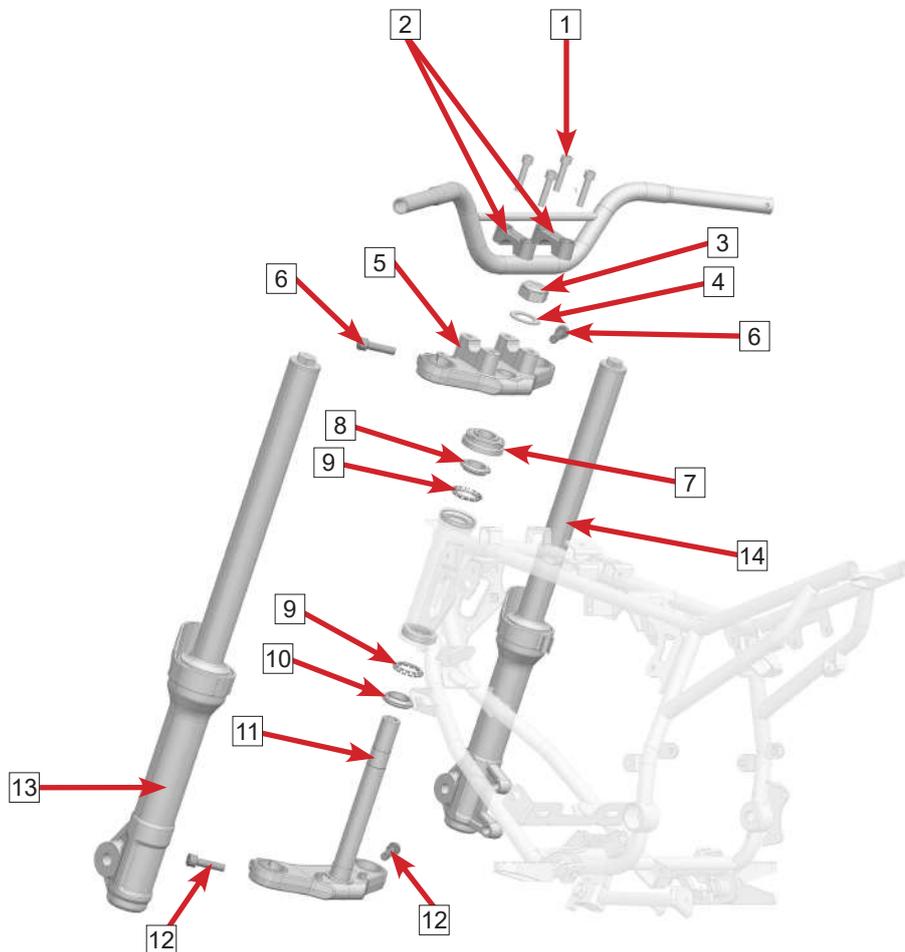


## **09 Shock Absorber, Rear Fork Assembly**

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<b>9.1 Front Bracket (Front Fork) Assembly Diagram (CF650DY) .....</b>	<b>9-2</b>
<b>9.2 Front Bracket (Front Fork) Assembly Diagram (CF1000DY) .....</b>	<b>9-3</b>
<b>9.3 Front Shock Absorber.....</b>	<b>9-4</b>
<b>9.4 Rear Shock Absorber .....</b>	<b>9-4</b>
<b>9.5 Rear Fork.....</b>	<b>9-5</b>
<b>9.5.1 Chain Slider Removal .....</b>	<b>9-5</b>
<b>9.6 Chain.....</b>	<b>9-6</b>
<b>9.7 Drive Chain Tightness Adjustment.....</b>	<b>9-6</b>
<b>9.8 Front Shock Absorber Inspection.....</b>	<b>9-7</b>
<b>9.9 Rear Shock Absorber Inspection.....</b>	<b>9-7</b>
<b>9.10 Rear Shock Absorber Adjustment .....</b>	<b>9-8</b>

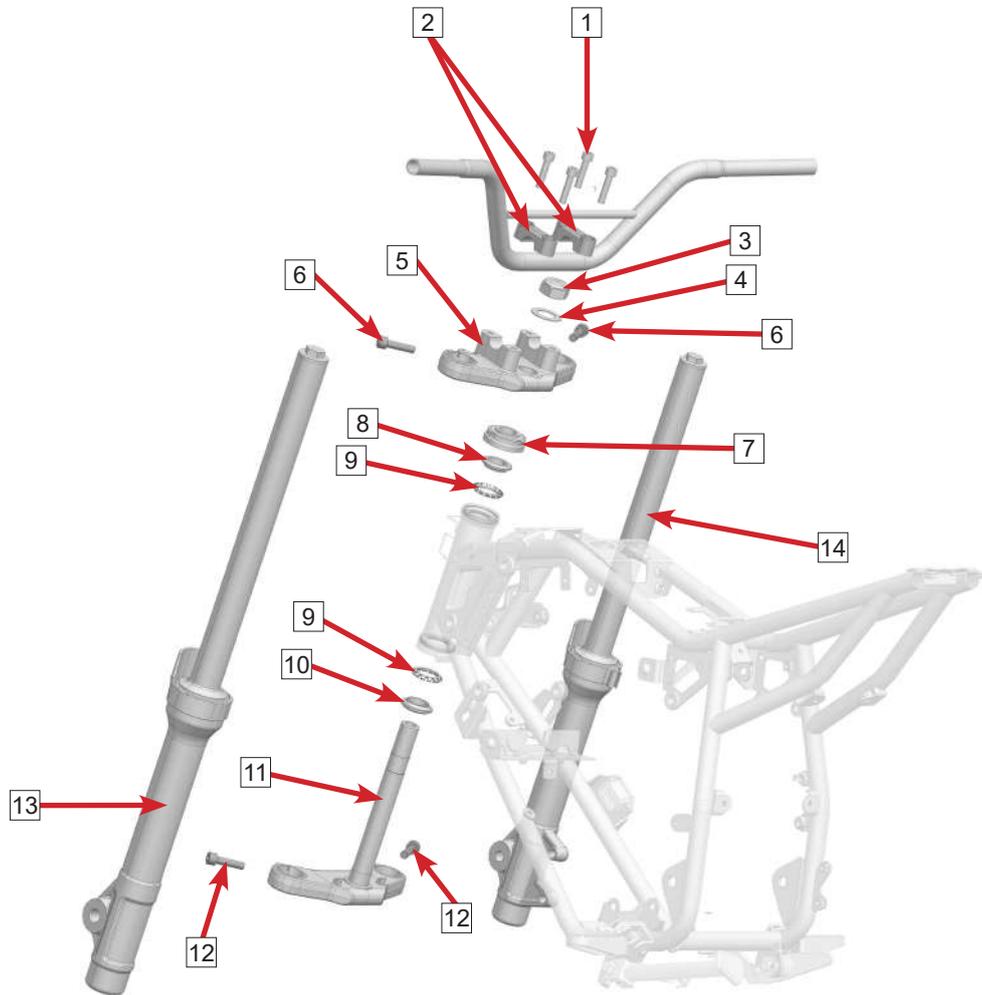
## 9.1 Front Bracket (Front Fork) Assembly Diagram (CF650DY)



1	Screw	2	Handlebar upper lid	3	Cap nut
4	Upper triple clamp washer	5	Upper triple clamp	6	Screw
7	Lock nut	8	Upper bearing circlip	9	Steel ball assembly
10	Lower bearing circlip	11	Lower triple clamp	12	Screw
13	LH front shock absorber	14	RH front shock absorber		

# 09 Shock Absorber, Rear Fork Assembly

## 9.2 Front Bracket (Front Fork) Assembly Diagram (CF1000DY)



1	Screw	2	Handlebar upper lid	3	Cap nut
4	Upper triple clamp washer	5	Upper triple clamp	6	Screw
7	Lock nut	8	Upper bearing circlip	9	Steel ball assembly
10	Lower bearing circlip	11	Lower triple clamp	12	Screw
13	LH front shock absorber	14	RH front shock absorber		

## 9.3 Front Shock Absorber

### Pre-work

Remove front wheel (refer to chapter 07).  
Remove front brake caliper assembly (refer to chapter 07).

### Removal

Remove bolt **1**.  
Remove bolt **2**.  
Remove left front shock absorber **3**.  
Remove right front shock absorber **4**.

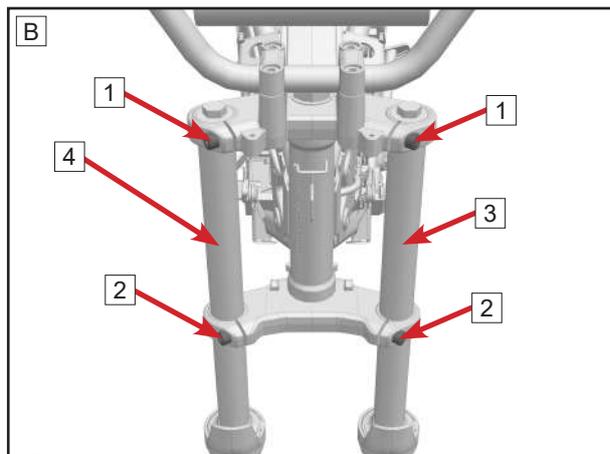
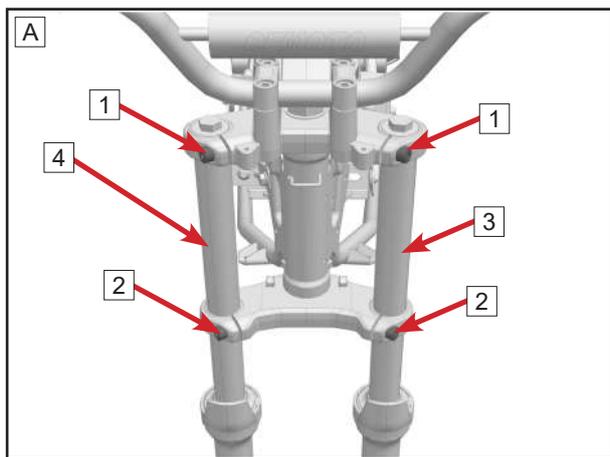
**Bolt torque** **1** **2**: **20~25 N•m (apply thread locker)**

A: CF650DY

B: CF1000DY

### Installation

Reverse the removal procedures for installation.



## 9.4 Rear Shock Absorber

### Pre-work

Remove rear inner fender (refer to chapter 05).

### Removal

Remove bolt and nut assembly **1**.  
Remove bolt and nut assembly **2**.

**Nut torque: 45~50 N•m**

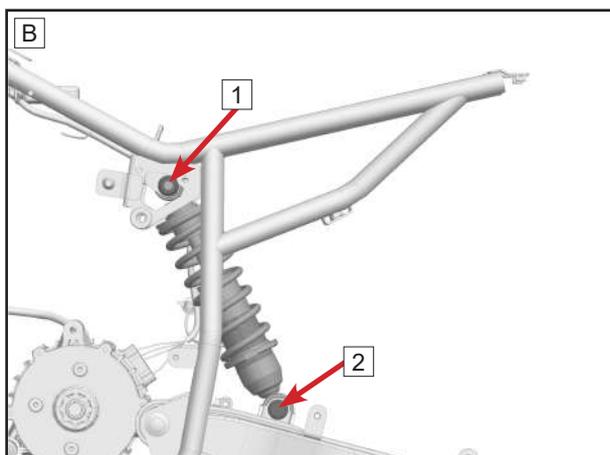
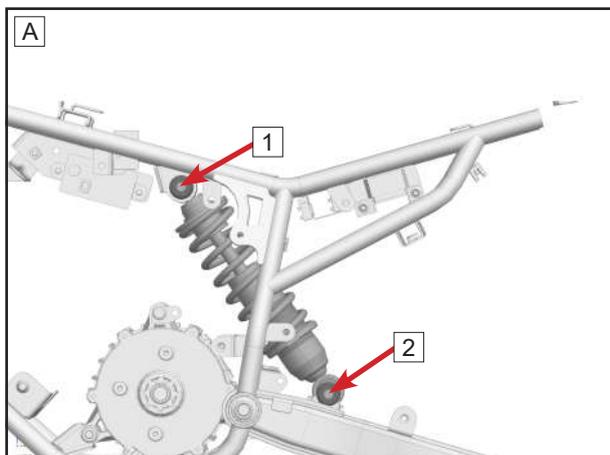
**NOTE: Apply thread locker on the thread section of bolt.**

A: CF650DY

B: CF1000DY

### Installation

Reverse the removal procedures for installation.



# 09 Shock Absorber, Rear Fork Assembly

## 9.5 Rear Fork

### Pre-work

Remove rear fender (refer to chapter 05).  
Remove rear wheel (refer to chapter 07).  
Remove chain cover (refer to chapter 05).  
Remove rear shock absorber (refer to this chapter).  
Remove rear brake caliper assembly (refer to chapter 7.4).

### Removal

Remove nut [1].  
Remove rear fork shaft [2].  
Remove rear fork [3].

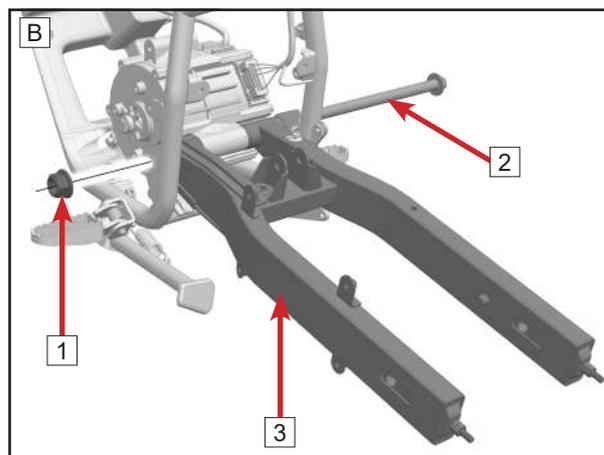
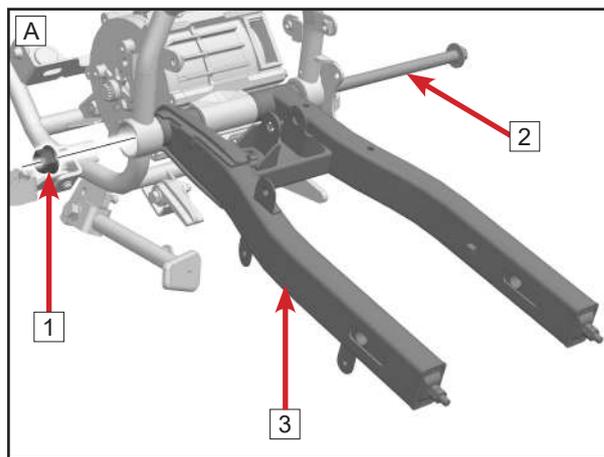
**Nut torque: 70 N•m ± 5 N•m**

A: CF650DY

B: CF1000DY

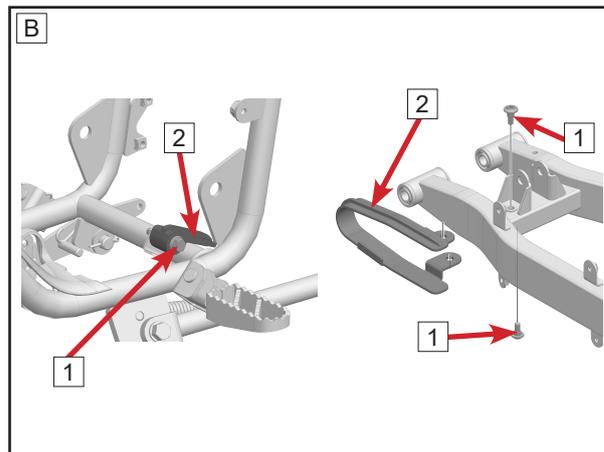
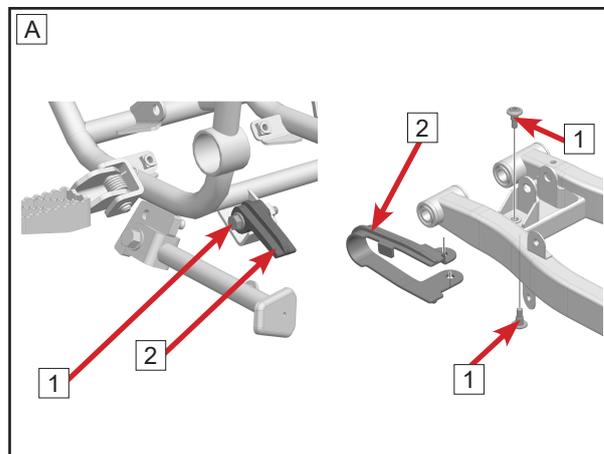
### Installation

Reverse the removal procedures for installation.



### 9.5.1 Chain Slider Removal

Remove bolt [1].  
Remove chain slider [2].  
A: CF650DY  
B: CF1000DY



## 9.6 Chain

### Pre-work

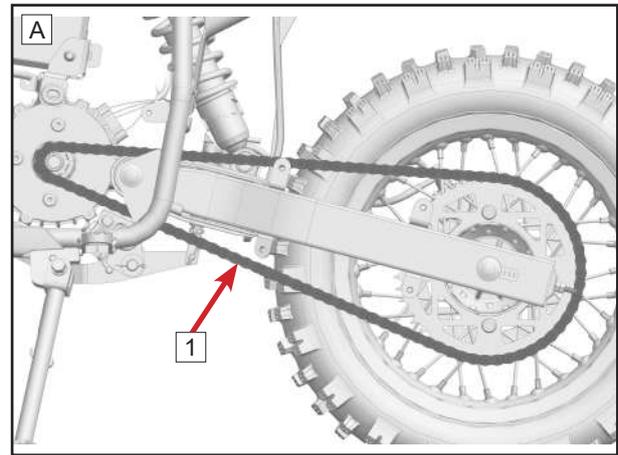
Remove rear fender (refer to chapter 05).  
Remove chain cover (refer to chapter 05).  
Remove rear shock absorber (refer to this chapter).  
Remove drive sprocket cover (refer to chapter 08).  
Remove rear fork (refer to this chapter 9.5).

### Removal

Remove the chain [1].

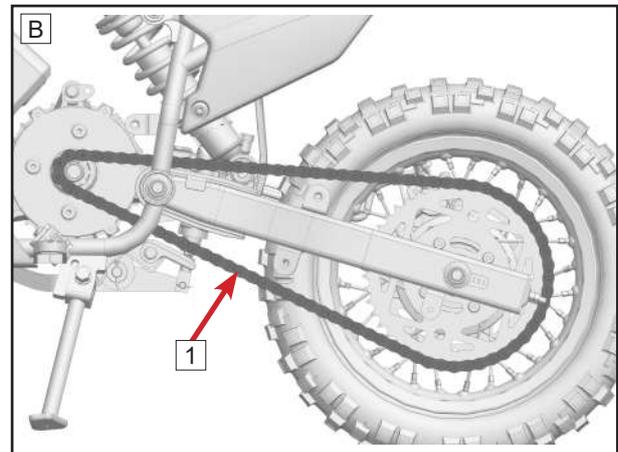
A: CF650DY

B: CF1000DY



### Installation

Reverse the removal procedures for installation.



## 9.7 Drive Chain Tightness Adjustment

Loosen rear axle nut [1].

Loosen lock nut [2].

Rotate adjusting bolt [3] to adjust the tightness of chain.

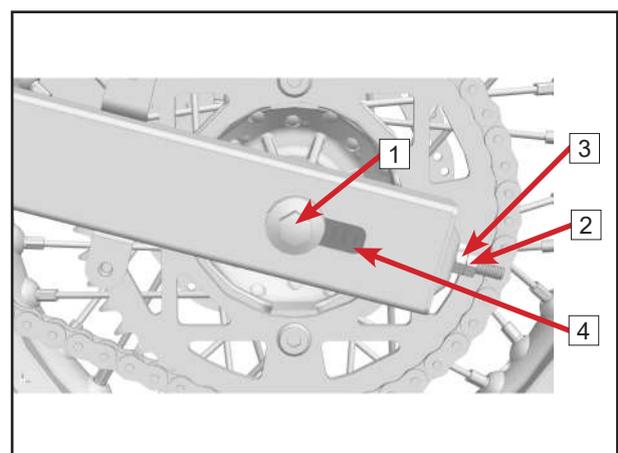
Make sure that the relative position between the chain adjustment block [4] marks and reference marks is the same.

Tighten rear axle nut [1].

Tighten lock nut [2].

**Chain looseness: 25mm ~ 30mm**

**Rear axle nut torque: 70 N·m ± 5 N·m**



## 09 Shock Absorber, Rear Fork Assembly

### 9.8 Front Shock Absorber Inspection

#### Inspection

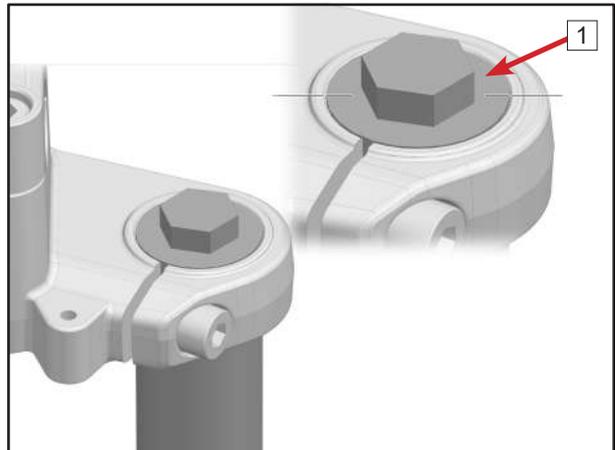
Inspect the appearance of front shock absorber for crack or other damage. Replace it if so.

Clean the dust and mud of front shock absorber.

Hold the handlebar to press for several times. Inspect whether the compression rebound of front shock absorber is normal.



**⚠ CAUTION:** When installing front shock absorber, the inner hoses upper end faces **1** of the two front shock absorbers should be flush, and the upper end of front shock absorber is flush with the upper triple clamp.

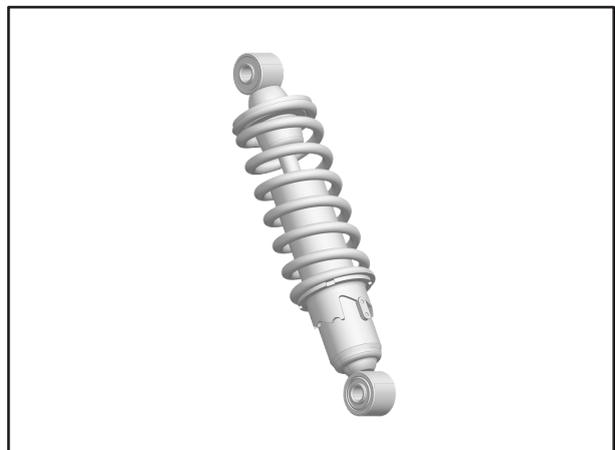


### 9.9 Rear Shock Absorber Inspection

Inspect the appearance of rear shock absorber for crack or other damage. Replace it if so.

Clean the dust and mud of rear shock absorber.

Press the seat down for several times. Check whether the compression rebound of rear shock absorber is normal.



## 9.10 Rear Shock Absorber Adjustment

The spring preload on rear shock absorber can be adjusted in 5 stages to suit the rider's weight and riding conditions.

The factory setting is on the second gear.

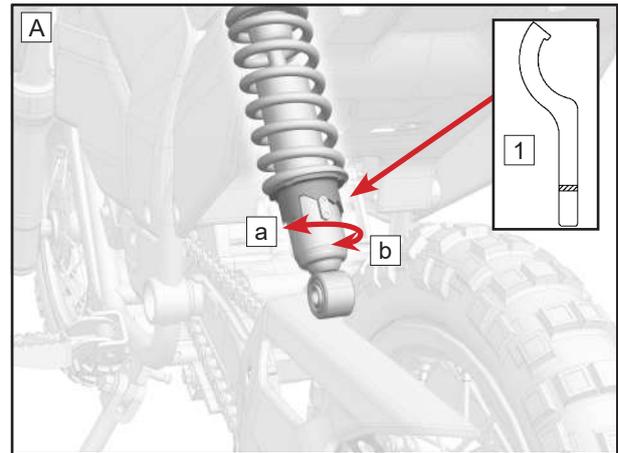
**Adjust the spring preload by following these steps**

Use special tool **1** to turn counterclockwise to **a** direction for increasing spring preload.

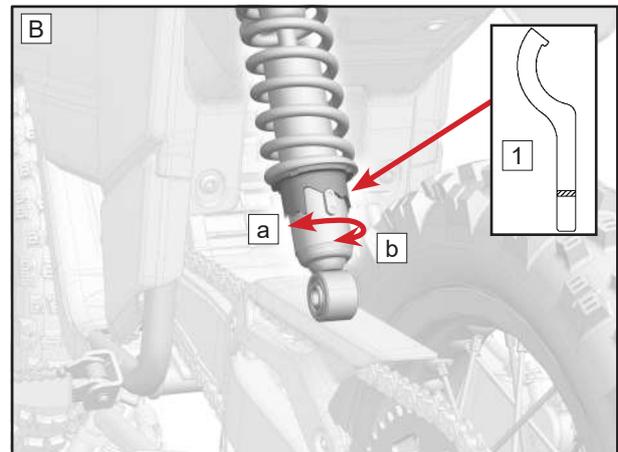
Use special tool **1** to turn clockwise to **b** direction for decreasing spring preload.

A: CF650DY

B: CF1000DY



**NOTE: The rear shock absorber has been adjusted to the best state, which is suitable for most cases when the vehicle leaves the factory.**



## **10 Handlebar, Triple Clamp Assembly**

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<b>10.1 Emergency Stop Switch.....</b>	<b>10-2</b>
<b>10.2 LH Handlebar, Electrical Throttle Assembly .....</b>	<b>10-2</b>
<b>10.3 Handlebar, Triple Clamp Assembly Diagram (CF650DY) .....</b>	<b>10-3</b>
<b>10.4 Handlebar, Triple Clamp Assembly Diagram (CF1000DY) .....</b>	<b>10-4</b>
<b>10.5 Handlebar Pipe .....</b>	<b>10-5</b>
<b>10.6 Upper Triple Clamp.....</b>	<b>10-5</b>
<b>10.7 Front Fork, Lower Triple Clamp Assembly .....</b>	<b>10-6</b>

## 10.1 Emergency Stop Switch

### Pre-work

Remove central panel (refer to chapter 05).

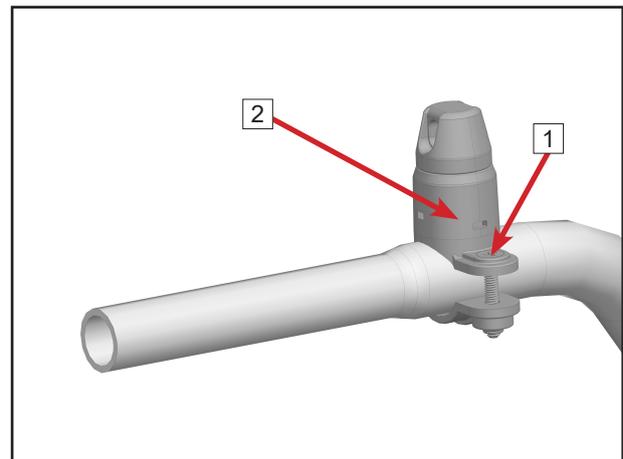
### Removal

Turn off the connection of emergency stop switch coupler.

Remove screw [1].

Remove emergency stop switch coupler [2].

.



### Installation

Reverse the removal procedures for installation.

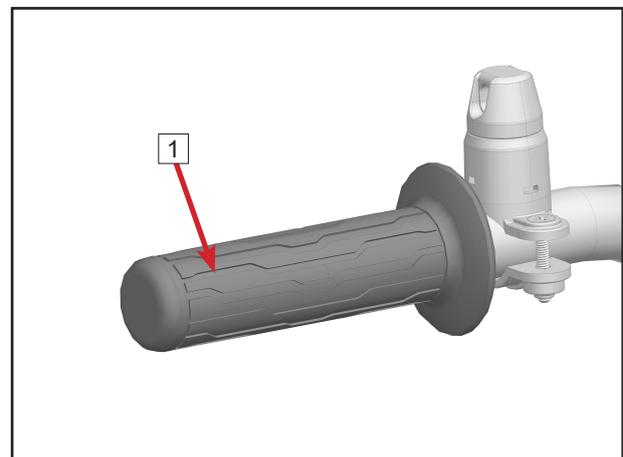
## 10.2 LH Handlebar, Electrical Throttle Assembly

### Pre-work

Remove central panel (refer to chapter 05).

### Removal

Remove left handlebar [1] (Use an air gun to disassemble the left grip, blow the air gun muzzle to the joint of left grip and the direction handle, and remove the left grip with hand).



Remove throttle assembly connector.

Loosen bolt [2].

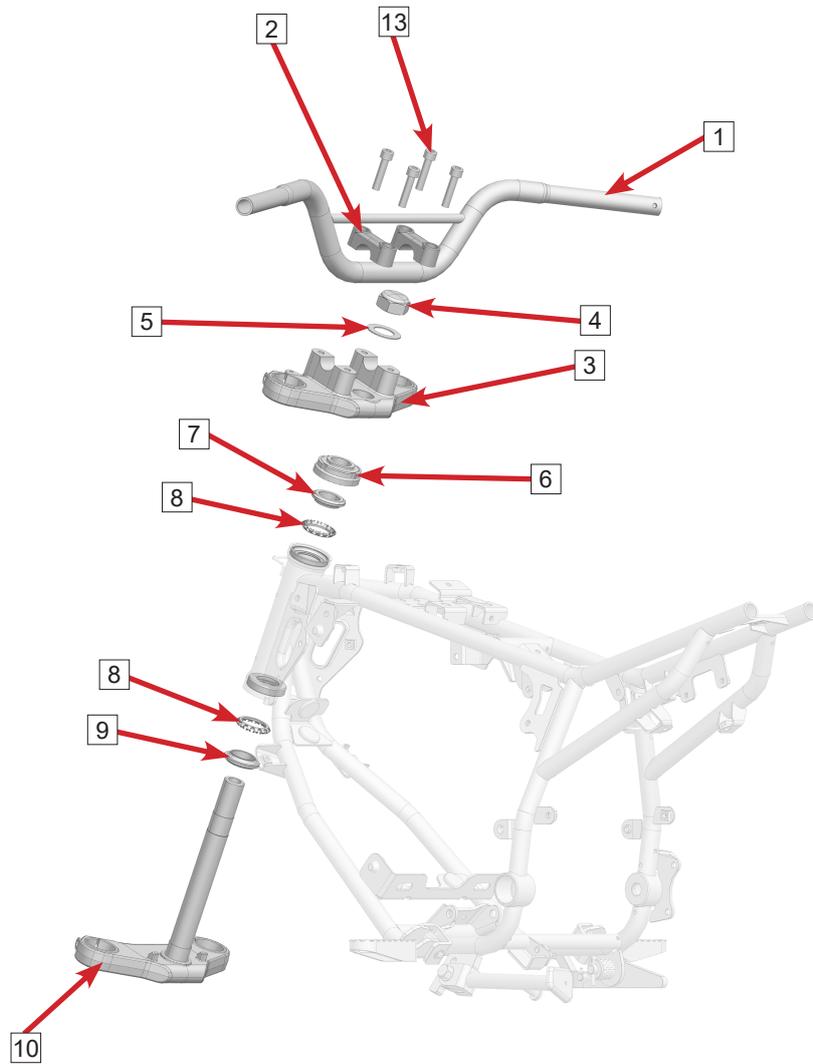
Remove electrical throttle assembly [3].

### Installation

Reverse the removal procedures for installation.

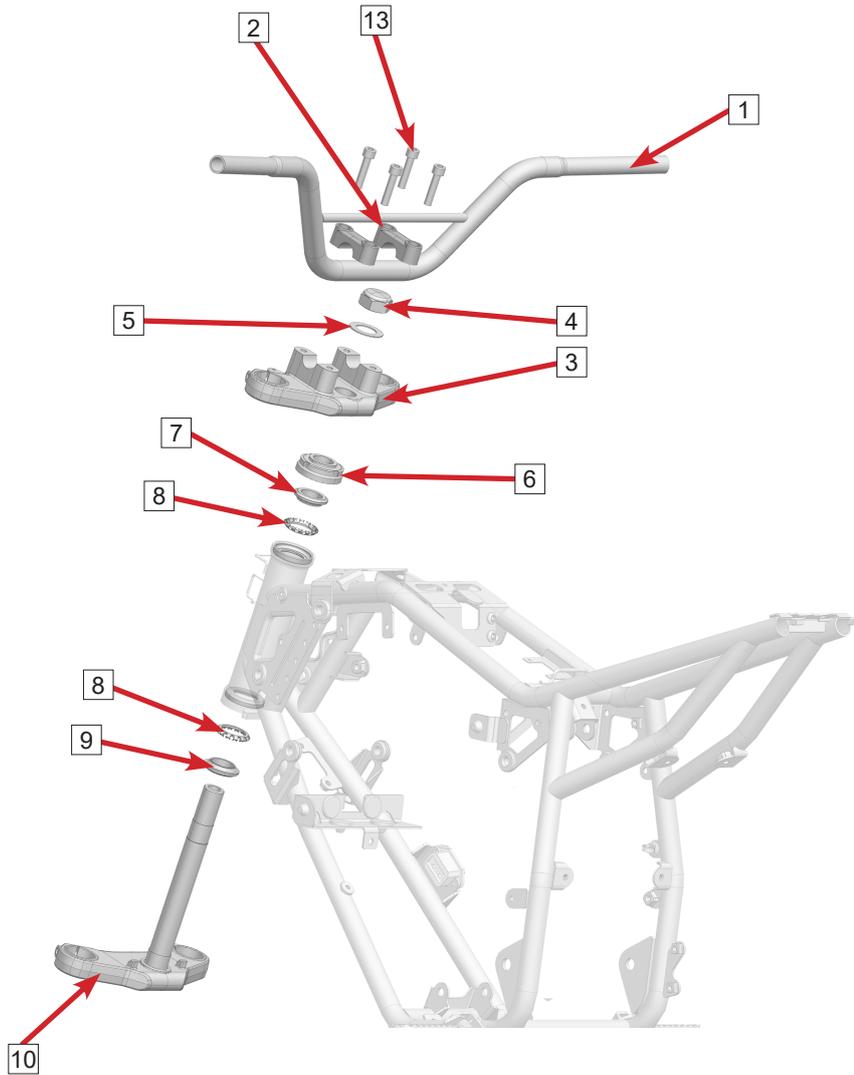
# 10 Handlebar, Triple Clamp Assembly

## 10.3 Handlebar, Triple Clamp Assembly Diagram (CF650DY)



1	Handlebar pipe	2	Handlebar upper lid	3	Upper triple clamp	4	Cap lock nut
5	Upper triple clamp washer	6	Lock nut	7	Circlip, upper bearing	8	Steel ball assembly
9	Circlip, lower bearing	10	Lower triple clamp				

## 10.4 Handlebar, Triple Clamp Assembly Diagram (CF1000DY)



1	Handlebar pipe	2	Handlebar upper lid	3	Upper triple clamp	4	Cap lock nut
5	Upper triple clamp washer	6	Lock nut	7	Circlip, upper bearing	8	Steel ball assembly
9	Circlip, lower bearing	10	Lower triple clamp				

# 10 Handlebar, Triple Clamp Assembly

## 10.5 Handlebar Pipe

### Pre-work

Remove left handlebar, electrical throttle assembly (refer to this chapter).

Remove front brake main pump assembly (refer to chapter 07).

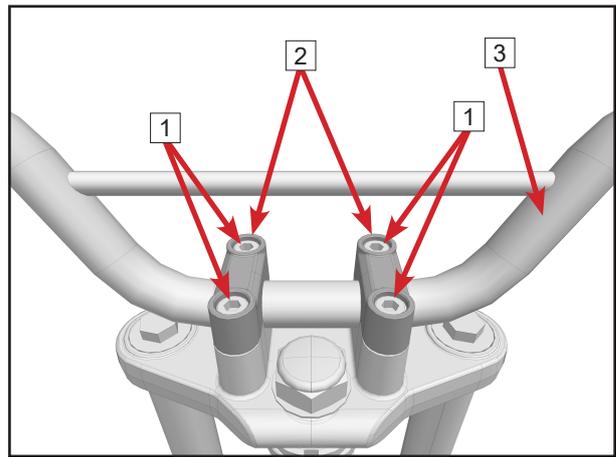
### Removal

Remove bolt [1].

Remove handlebar upper lid [2].

Remove handlebar [3].

**Bolt torque: 20~25 N•m (thread locker)**



### Installation

Reverse the removal procedures for installation.

## 10.6 Upper Triple Clamp

### Pre-work

Remove handlebar pipe (refer to this chapter).

Remove front shock absorber (refer to chapter 09).

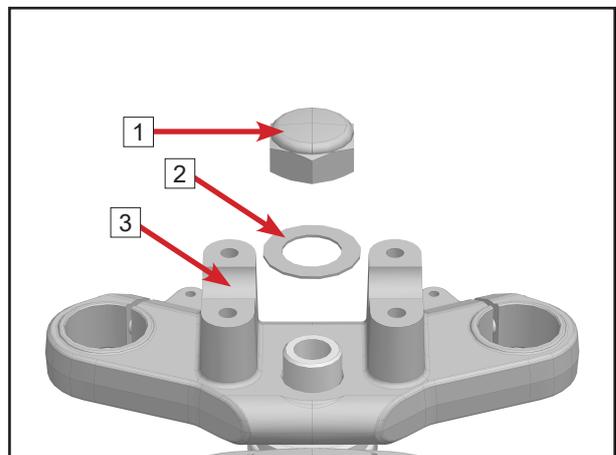
### Removal

Remove nut [1].

Remove upper triple clamp washer [2].

Remove upper triple clamp [3].

**Nut torque: 100~110 N•m**



### Installation

Reverse the removal procedures for installation.

## 10.7 Front Fork, Lower Triple Clamp Assembly

### Pre-work

Remove upper triple clamp (refer to this chapter).

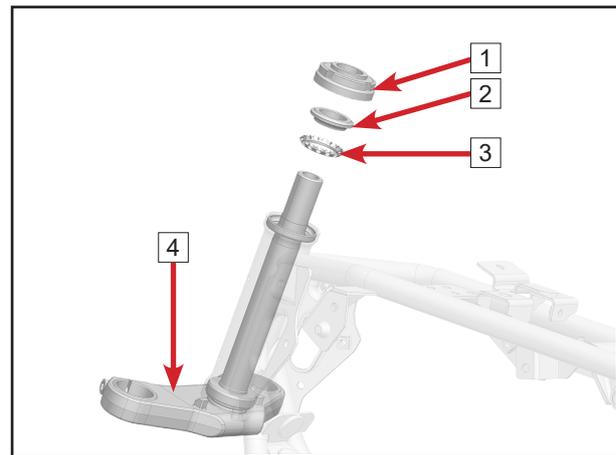
Remove turn nut **1**.

Remove upper bearing circlip **2**.

Remove steel ball assembly **3**.

Lower triple clamp **4**.

**Lock nut torque:  $5 \text{ N}\cdot\text{m} \pm 2 \text{ N}\cdot\text{m}$**



Remove steel ball assembly **5**.

### Installation

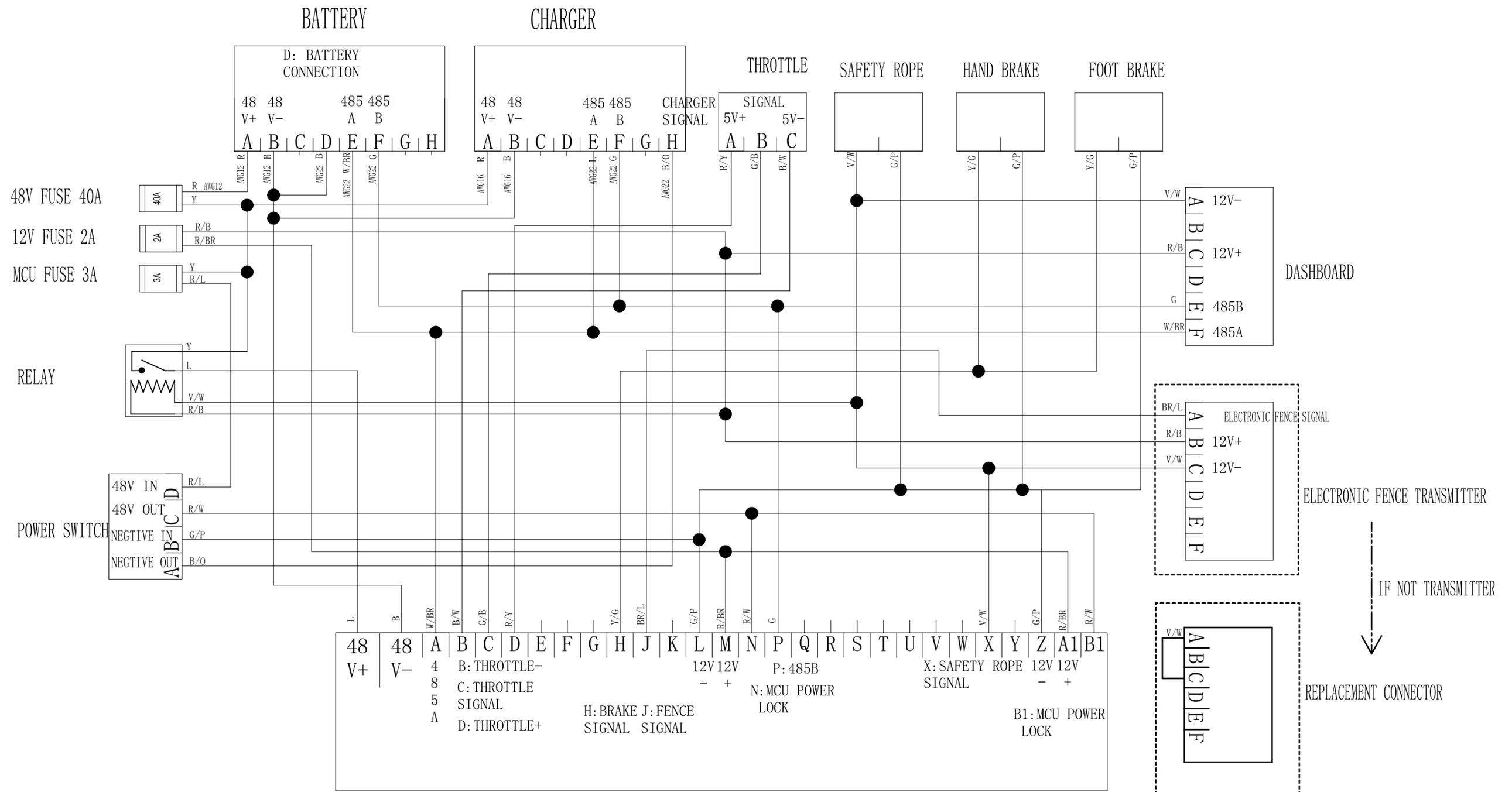
Reverse the removal procedures for installation.

**NOTE: Apply enough grease inside the steel ball assembly when installation and replacement.**

### Inspection

Inspect whether the steel ball assembly rotate smoothly, and whether there is abnormal wear, stuck, noise or other phenomena. Replace it if it does.

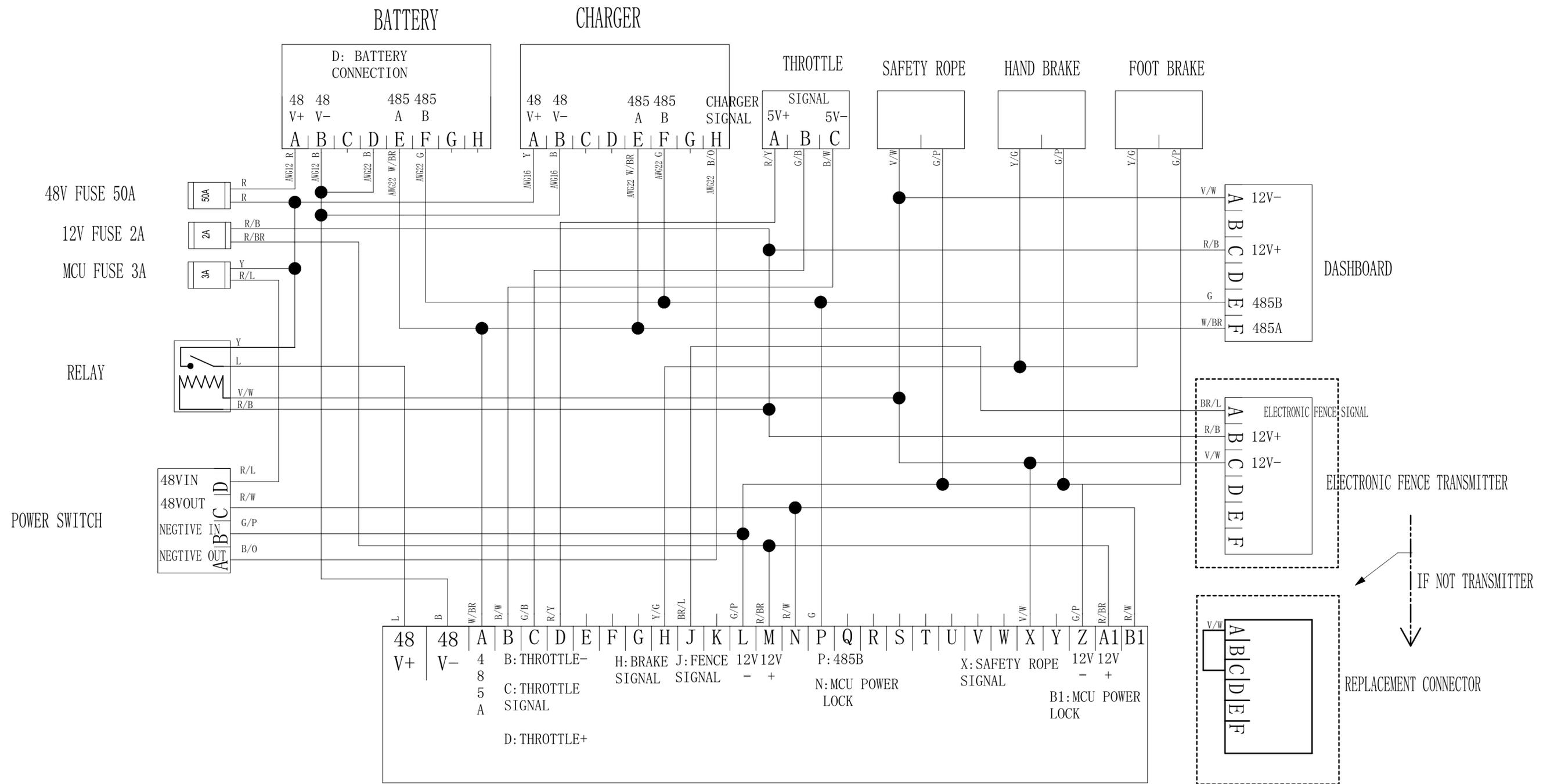
Inspect upper bearing circlip for cracks. Replace it if it does.



B	BLACK	黑色	R/W	RED WHITE	红白色
L	BLUE	蓝色	BR/V	BROWN VIOLET	棕紫色
BR	BROWN	棕色	BR/L	BROWN BLUE	棕蓝色
G	GREEN	绿色	R/Y	RED YELLOW	红黄色
Y/B	YELLOW BLUE	黄蓝色	Y/G	YELLOW GREEN	黄绿色
L/B	LIGHT BLUE	浅蓝色	B/W	BLACK WHITE	黑白色
R	RED	红色	BR/R	BROWN RED	棕红色
R/G	RED GREEN	红绿色	Y/W	YELLOW WHITE	黄白色
V/W	VIOLET WHITE	紫白色			

COLOUR TABEL

# INTEGRATED MOTOR



B	BLACK	黑色	R/W	RED WHITE	红白色
L	BLUE	蓝色	BR/V	BROWN VIOLET	棕紫色
BR	BROWN	棕色	BR/L	BROWN BLUE	棕蓝色
G	GREEN	绿色	R/Y	RED YELLOW	红黄色
Y/B	YELLOW BLUE	黄蓝色	Y/G	YELLOW GREEN	黄绿色
L/B	LIGHT BLUE	浅蓝色	B/W	BLACK WHITE	黑白色
R	RED	红色	BR/R	BROWN RED	棕红色
R/G	RED GREEN	红绿色	Y/W	YELLOW WHITE	黄白色
V/W	VIOLET WHITE	紫白色			

COLOUR TABEL

## INTEGRATED MOTOR