ZT703-R
Maintenance manual

2026-08-10

Preface

All the information, illustrations, photos, etc. collected in this manual are compiled according to the ZT703-RR Euro V+ edition. However, due to the continuous improvement of the product and other changes, there may be some inconsistencies between your motorcycle and this manual. When it comes to color or upgrading, please refer to the part code on the official website of ZONTES, and this manual will not be listed in detail; If the name of the part in this manual is inconsistent with the official website of ZONTES, the official website of ZONTES shall prevail. The shape or size of individual parts with different displacements is different, but the disassembly and assembly methods are the same, and this manual is not listed one by one.

If there is any deficiency in some parts of this manual, please refer to the "Driver's Manual" provided with the vehicle. The latest version of the driver's manual can be downloaded from the corresponding model introduction on the official website of ZONTES. GUANGDONG TAYO MOTORCYCLE TECHNOLOGY CO., LTD Technology Co., Ltd. reserves the right, including but not limited to, to modify the specifications, design, etc. at any time without prior notice to you, and does not assume any responsibility for this.

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Notice to Users

This manual is written by GUANGDONG TAYO MOTORCYCLE TECHNOLOGY CO., LTD, Ltd. to guide dealers or service personnel to use. This manual does not provide more detailed knowledge about motorcycles and is intended for service reference only. If you do not have the corresponding knowledge such as electrician, mechanic, etc., improper assembly or maintenance failure may occur during repair.

If you need to clean or wash the body parts of the vehicle, you should use neutral motorcycle wash liquid or tap water or diesel, kerosene, etc. Acidic or alkaline motorcycle wash liquid will cause irreversible corrosion on the surface of parts, such as paint, electroplating surface, anodized surface, etc.; Gasoline can cause premature aging or hardening of sealants, gaskets, rubber parts, etc., reducing the service life. Non-woven fabrics that do not leave residue should be used for wiping, as ordinary rags may affect the assembly or cause other adverse effects such as cloth shavings or wool.

We try to update this manual as soon as possible after changes to the product.

The following are the meanings of the icons in this manual:

DANGER	Failure to comply will result in personal injury or death to the driver or maintenance personnel; or cause serious damage to spare parts, shorten the service life, etc
WARNING	Failure to comply could result in personal injury or death to the driver or maintenance personnel; or cause damage or abnormality of spare parts
CAUTION	Failure to follow warnings can result in personal injury to the driver or maintenance personnel; or matters that need special attention in the process of disassembly and assembly
	It means that there is a requirement for torque
	It means that the piece needs to be replaced after disassembly
	In order to facilitate the reading of the electronic version, if there is this symbol on the right side of the step, you can click the symbol to quickly jump to the corresponding chapter.

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1. Motorcycle information

Pre-Service Notice

1. It is necessary to use good quality tools, or special tools and fixtures designed by our company. Using inferior tools may result in damaged parts, detached plating, inadequate assembly, etc.

2. The O-rings, paper gaskets, copper gaskets, and component sealing rings used for sealing must be replaced before assembly.

3. Fasteners with torque requirements need to use a torque wrench to check the torque; Refer to the general-purpose torque value recommended for general-purpose fasteners where torque is not required.

4. It needs to be cleaned before assembly; after assembly, it is necessary to check whether the assembly is correct and in place.

5. The motorcycle should be parked in a balanced manner, and safety should be paid attention to during disassembly. Including but not limited to the use of power tools, hand tools, pneumatic tools, hydraulic tools, handling; Protect against contact with skin, eyes, burns, etc.

6. All kinds of oil, liquid, batteries, etc. that have been replaced need to be uniformly recycled and handed over to qualified institutions for disposal; It is forbidden to dump indiscriminately to pollute the environment or water sources.

7. Swallowing or inhaling coolant, brake fluid, etc. will cause certain harm to the human body. Wash any exposed skin such as hands and face immediately and thoroughly after each addition. If swallowed, contact a poison control center or hospital immediately; If inhaled, immediately move into a ventilated environment. If it accidentally gets into your eyes, you should immediately rinse your eyes with plenty of running water and seek medical attention in time. Always keep out of reach of children and pets.

Only some of the basic requirements for the prevention of accidental injuries can be enumerated; It is not possible to exhaustively list all scenarios. Be vigilant during disassembly and assembly to prevent accidents.

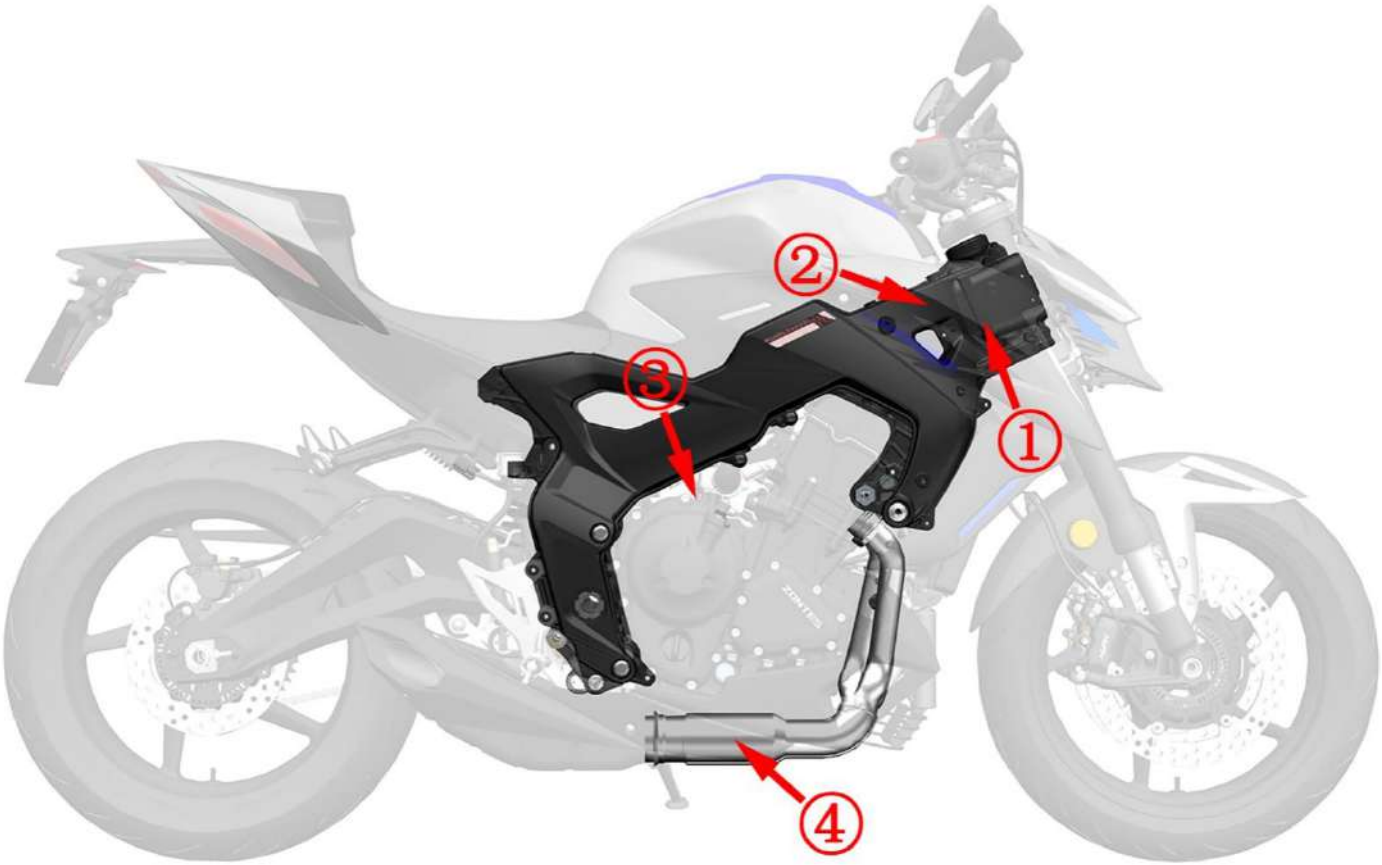
Motorcycle body identification characters

①Vehicle identification code VIN, the VIN code is engraved on the side of the front steering tube of the right frame

②The nameplate is on the right side of the frame

③The muffler regulation code is at the end of the front section of the muffler

④The engine identification code is engraved on the top of the right crankcase



Technical parameters

Project		Parameter	
Vehicle	Front tires	120/70ZR17	
	Rear tires	180/55ZR17	
	Front rim specifications	MT3.5×17	
	Rear rim specifications	MT5.5×17	
	Brake fluid	DOT4 0.22L	
	Oil usage	Replace the fine filtration:	3.4L
		Without changing the fine filtration:	3L
Motor	Idle speed (r/min)	1500±100	
	Fuel oil	95 and above	
Spark plug	Spark plug model	BN8RTIP－8	
	Interval	0.7～0.9mm	
	Resistance (kΩ)	3～7.5	
Cooling system	Total coolant usage	1.9L	
	Thermostat turning on temperature	80～84℃(176～183.2 F)	
	Thermostat is fully open temperature	95℃(203 F)	
	The thermostat opens the stroke	≥8mm(0.31 in)	
	Coolant type	Ethylene glycol + distilled water	

Front wheels/steering

Project		Standard	Limit values
Tread depth		-	≥1.6mm(0.063 in)
Standard tire pressure at room temperature		250kPa	-
Front rims	Radial runout	-	<1mm
	Axial runout	-	<1mm

Rear wheels/suspension

Project		Standard	Limit values
Tread depth		-	≥1.6mm
Standard tire pressure at room temperature		250kPa	-
Rear rims	Radial runout	-	<1mm
	Axial runout	-	<1mm
chain	Size/links	525/114 section	-
	Slack	20～30	-

Braking system

Project		Standard	Limit values
Front disc brakes	Brake fluid	DOT4	-
	Brake pad use limit	-	Bottom of the trough
	Brake disc thickness	5.0mm	＜4.5mm
Rear disc brakes	Brake fluid	DOT4	-
	Brake pad use limit	-	substrates
	Brake disc thickness	4.5mm	＜4.0mm

Battery/Charging System

Project			Standard
Battery	Type		Lithium battery
	Capacity		6Ah
	The battery self-discharge current		≤1mA
	Voltage	Fully charged	13.2～13.4V
		Charging voltage is required for unloaded vehicles	≤12.8V
		Charging voltage is required for loading	≤12V
	Charging mode	Charging voltage	14.6V
		Maximum charging current	5A
		Charging time	2 hours
Alternator (magneto)	Power	14V 30A 5000rpm	-
	Charging Coil Resistance (20°C)	0.2～0.6Ω	-

Tightening torque

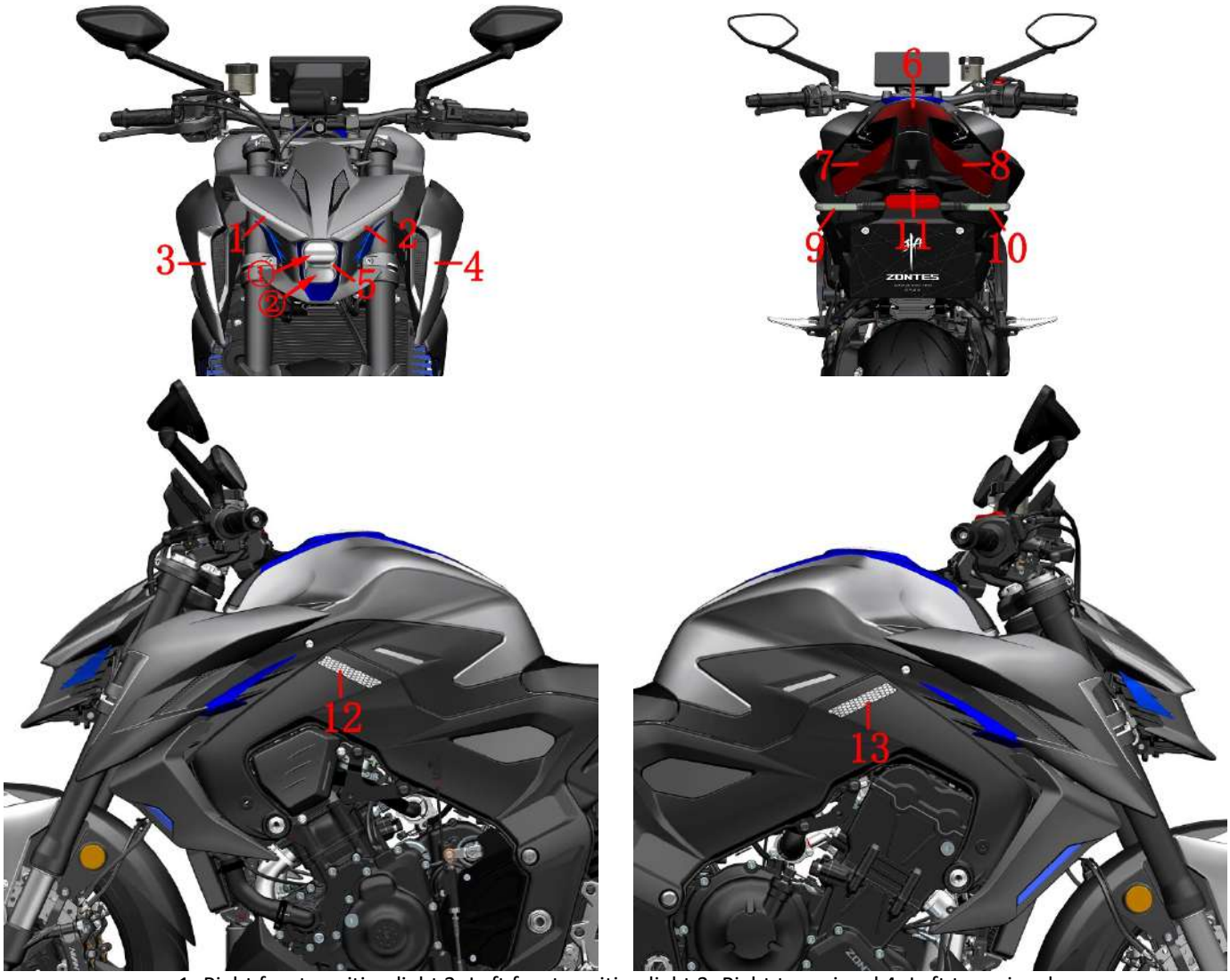
Bolt tightening torque for general fastening parts

	Class 4.8-6.8 (bolt head marked "4")			Class 8.8 (bolt head marked "7" or "8.8")		
Bolt diameter	Tightening torque range	Standard value	Breaking moment	Tightening torque range	Standard value	Breaking moment
M4	1～2	1.4	/	1.5～3	2.5	/
M5	2～4	2.9	4.5	3～6	4.5	8
M6	4～7	4.9	10	8～12	10	14.5
M8	10～16	12.2	20	18～28	22	34
M10	22～25	24.5	45	40～60	44	76
M12	35～55	43	75	70～100	77	112
M14	50～80	69	123	110～160	124	200
M16	80～130	110	195	170～250	200	300
M18	130～190	150	285	200～280	270	450

Note: The connection fastening torque of the plastic parts is half of the fastening torque of the 6.8 bolt. For those with special requirements, please refer to the corresponding disassembly steps; for the rest, refer to the requirements in the above table. The torque standard for using a T25 Torx wrench on M6 non-standard internal Torx shoulder bolts in a clamp structure is 2–2.5 N·m; for other structures, it is 5±1 N·m.

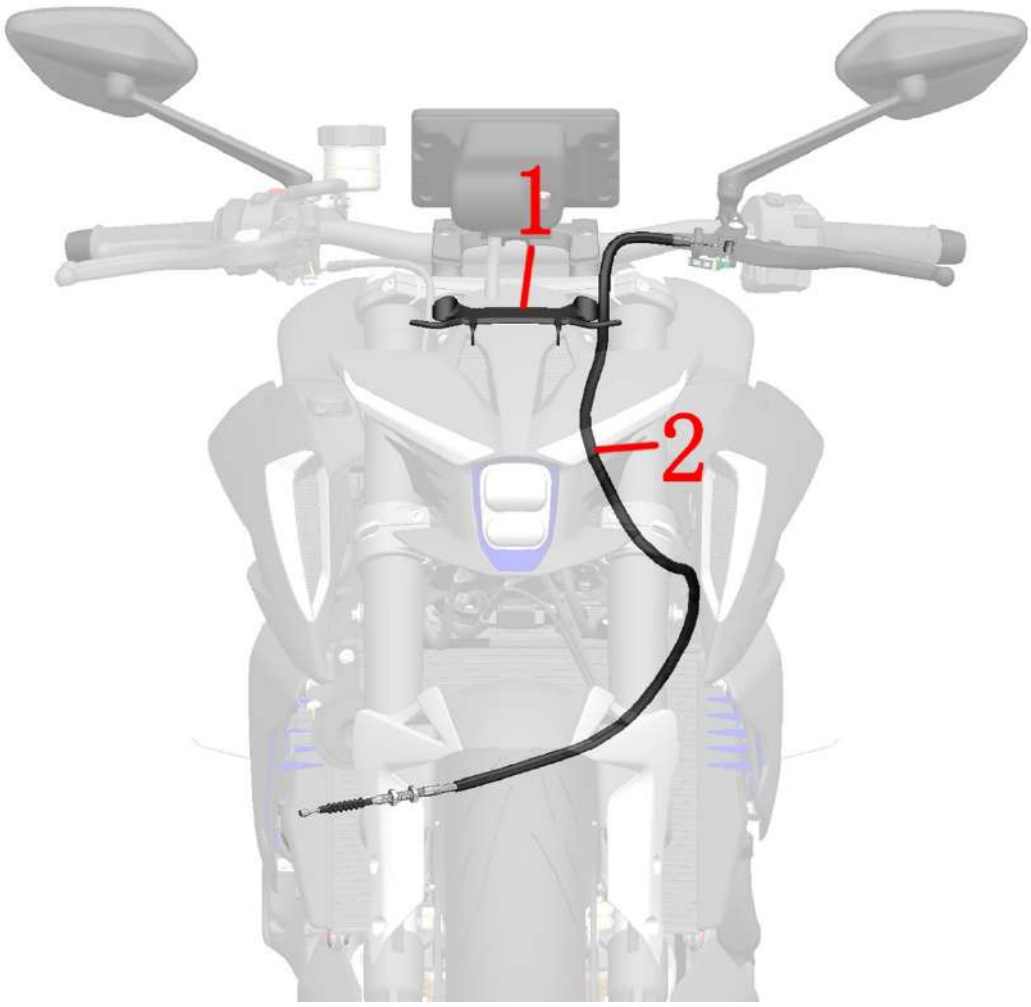
Cable/pipe/electrical device distribution diagram

1. Distribution map of lamps and lanterns



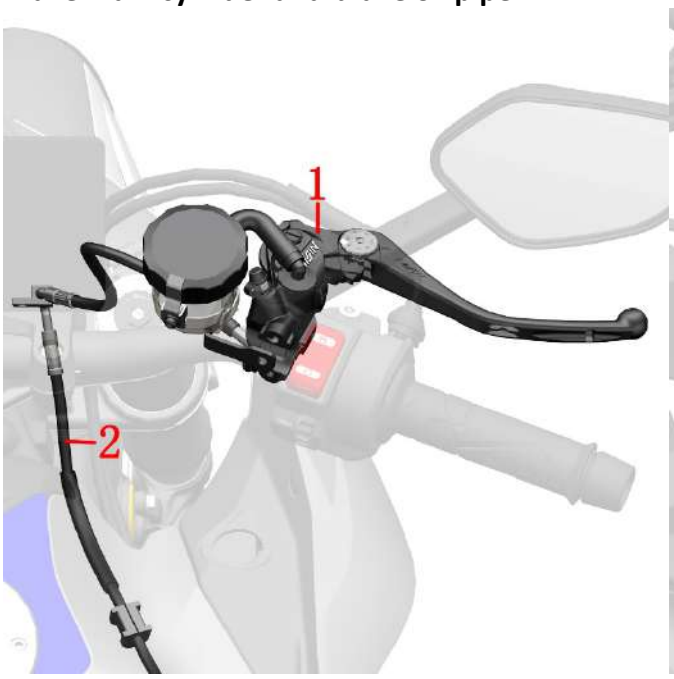
1- Right front position light 2- Left front position light 3- Right turn signal 4- Left turn signal
5- Front headlight (①- low beam position ②- high beam position) 6- Brake light 7- Left position light
8- Right position light 9- Left rear turn signal 10- Right rear turn signal 11- Rear license plate light
12- Left frame grid ambient light 13- Right frame grid ambient light

2. Throttle and clutch cable



1-Head Bracket 2-Clutch line

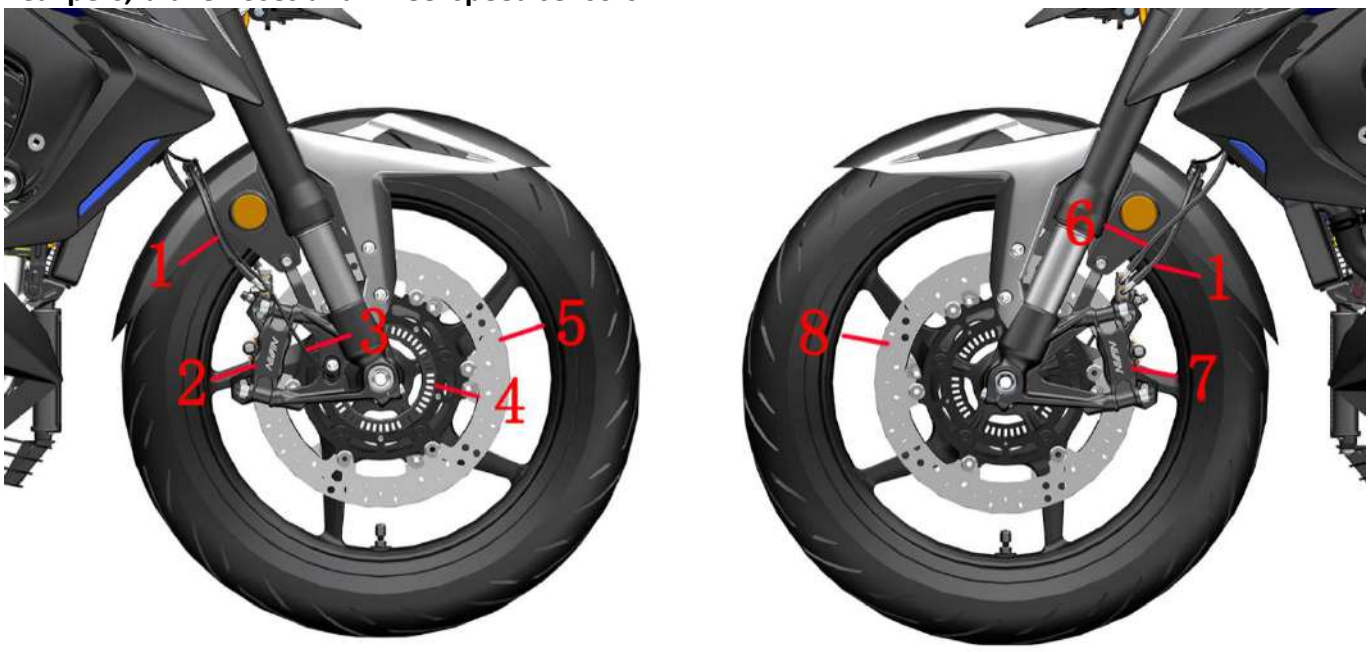
3. Brake main cylinder and brake oil pipe



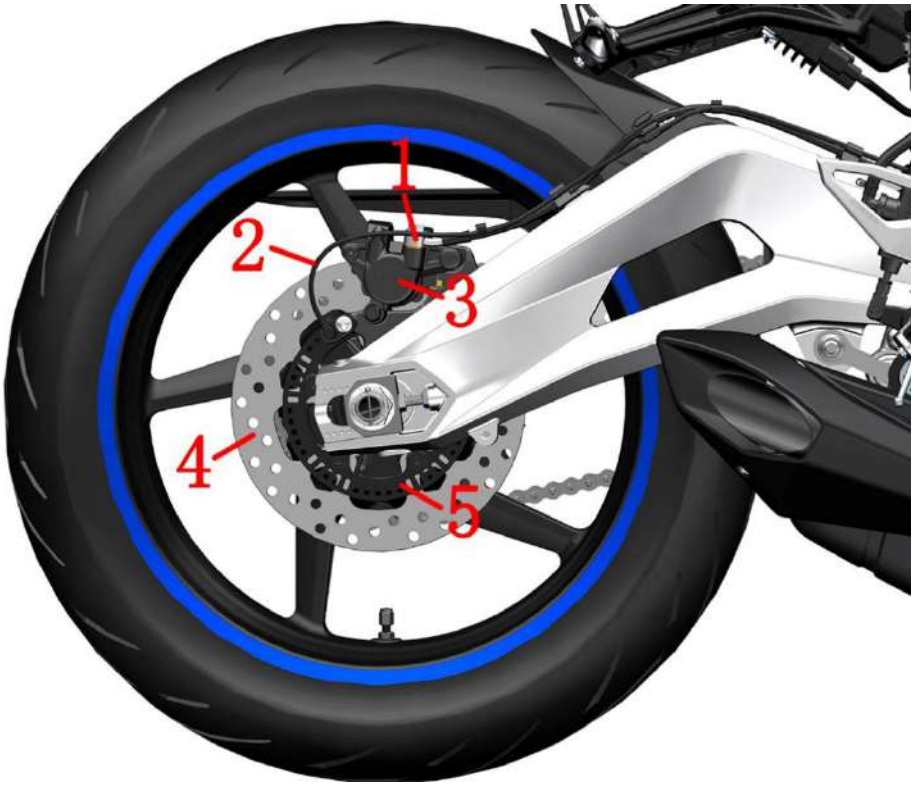


1-Front disc brake main cylinder 2-FMC-HU brake hose 3-RMC-HU brake hose 4-Rear disc brake main cylinder

4. Calipers, brake hoses and wheel speed sensors



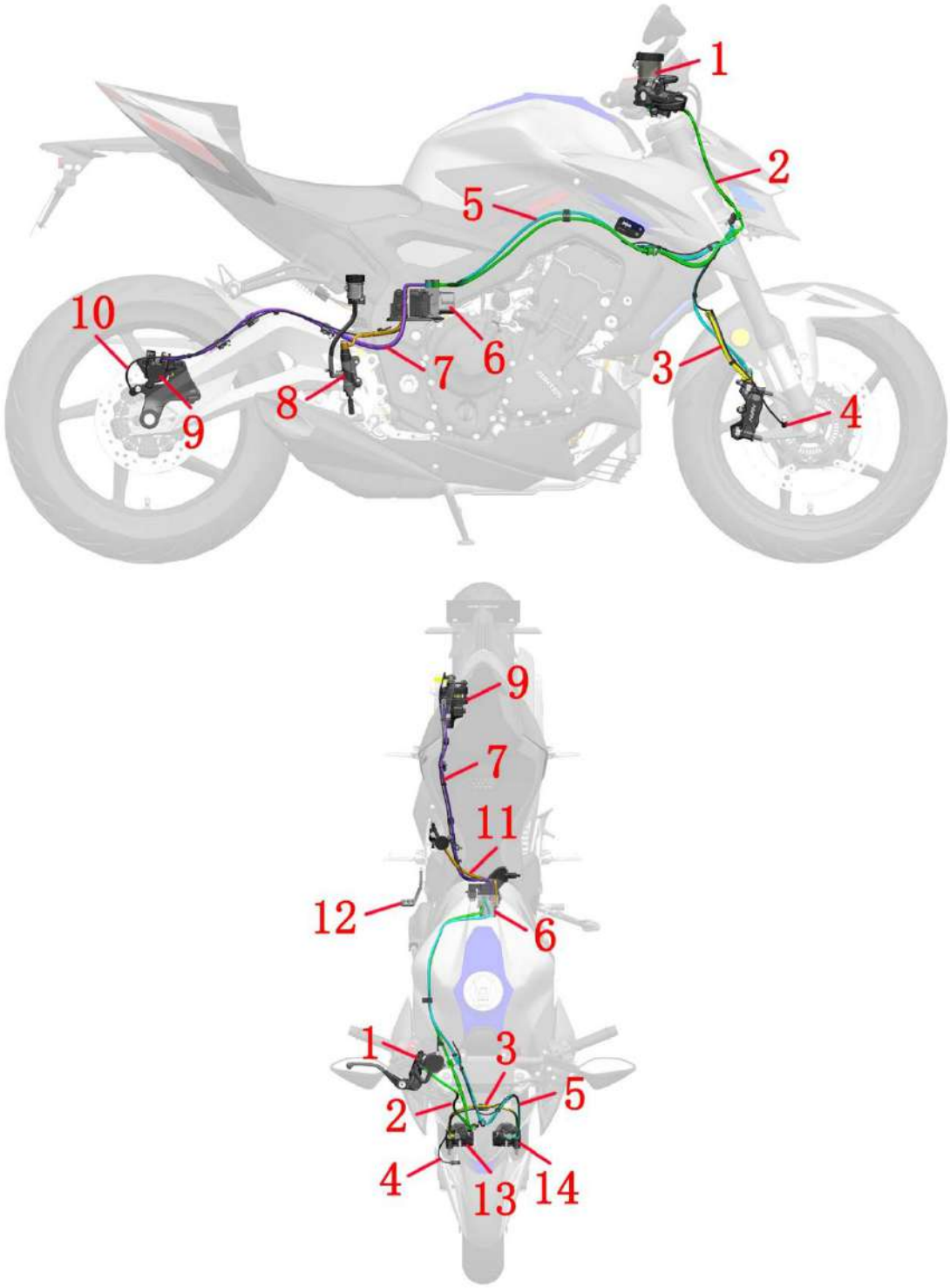
1-Brake hose left and right caliper interchange section 2-Disc brake caliper (front right)
3-Wheel speed sensor (front wheel) 4-ABS induction coil (front wheel) 5-Brake disc (front right)
6-FC-HU Brake hose 7-Disc Brake Caliper (Front Left) 8-Brake Disc (Front Left)



1-RC-HU brake hose 2-Wheel speed sensor (rear) 3-Rear disc brake caliper 4-Brake disc (rear) 5-Rear wheel sensing ring gear

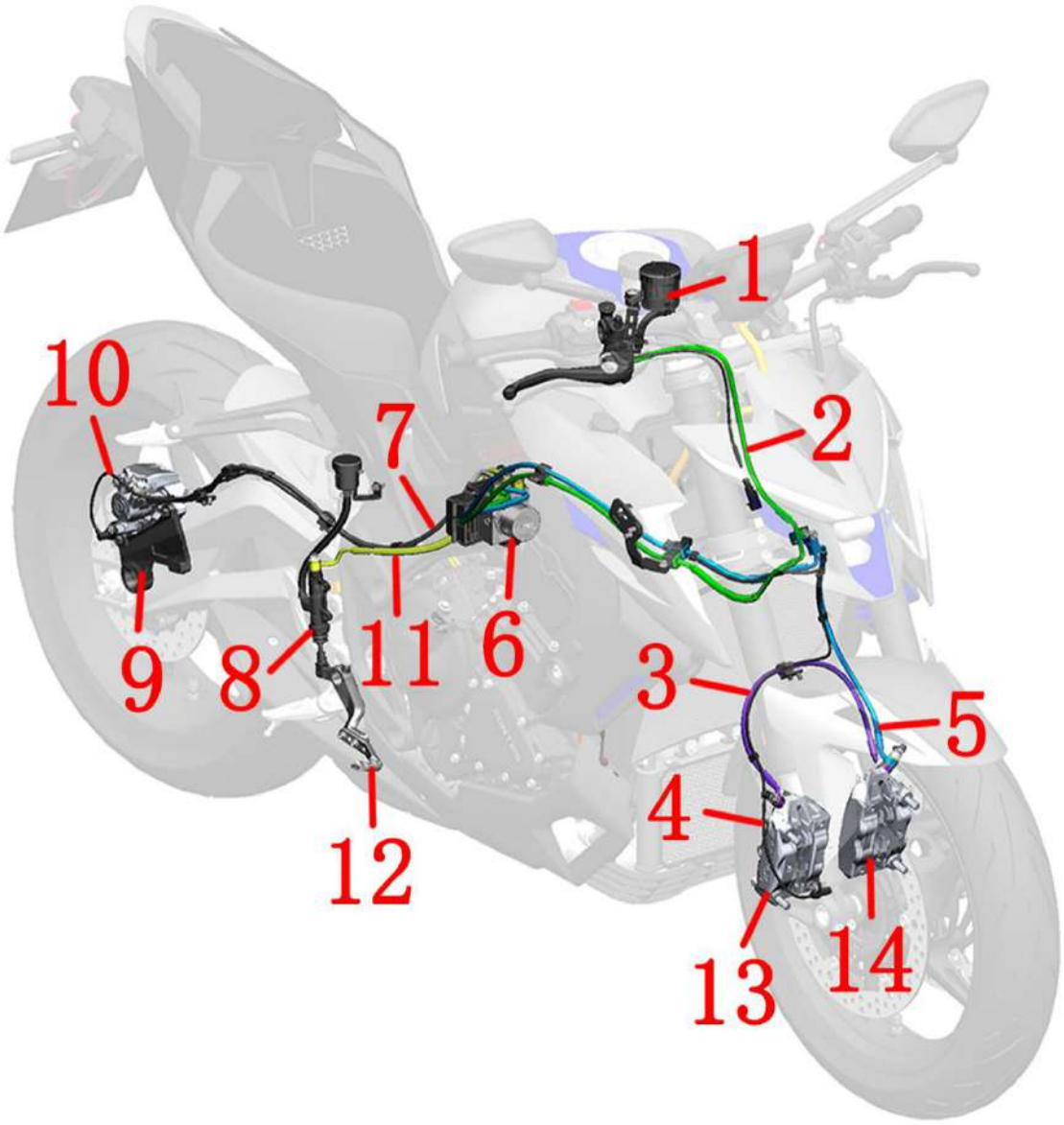
5. Distribution map of braking system accessories

5.1 Western Mutual Braking System



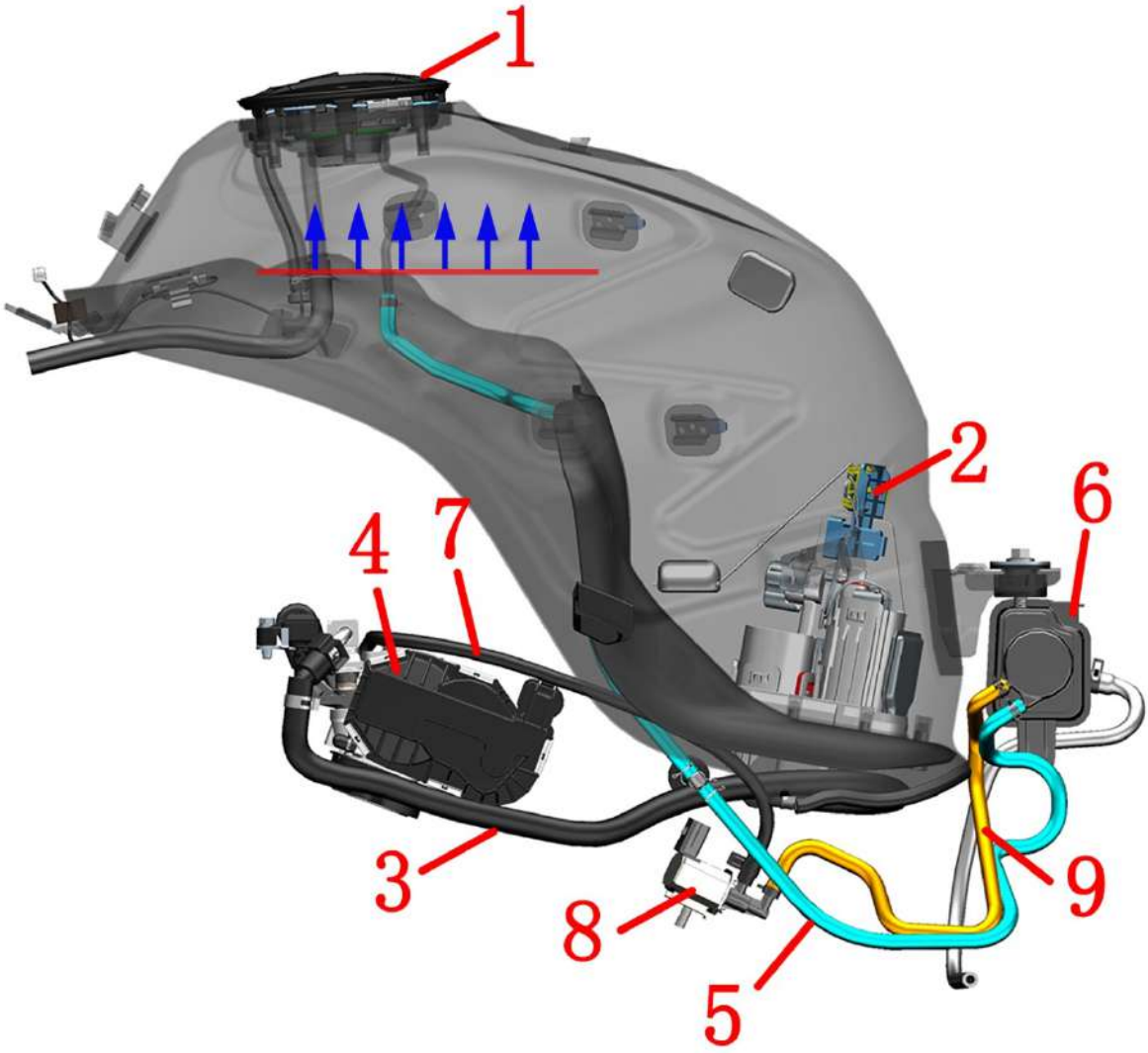
1 -Front disc brake main cylinder 2- FMC-HU brake hose 3-Brake hose left and right caliper interchange section 4- Wheel speed sensor (front wheel) 5- FC-HU Brake Hose 6-ABS Hydraulic Control Unit 7- RC-HU Brake Hose 8-Rear disc brake main cylinder 9-Rear disc brake caliper 10-Wheel speed sensor (rear) 11- RMC-HU Brake Hose 12-Rear brake pedal 13-Front disc brake caliper (right) 14-Front disc brake caliper (left)

5.2 Brembo Brake System



1-Front Disc Brake Master Cylinder 2-FMC-HU Brake Hose 3-Left and Right Caliper Interconnecting Brake Hose
4-Wheel Speed Sensor (Front Wheel) 5-FC-HU Brake Hose 6-ABS Hydraulic Control Unit 7-RC-HU Brake Hose
8-Rear Disc Brake Master Cylinder 9-Rear Disc Brake Caliper 10-Wheel Speed Sensor (Rear Wheel) 11-RMC-HU Brake Hose
12-Rear Brake Pedal 13-Front Disc Brake Caliper (Right) 14-Front Disc Brake Caliper (Left)

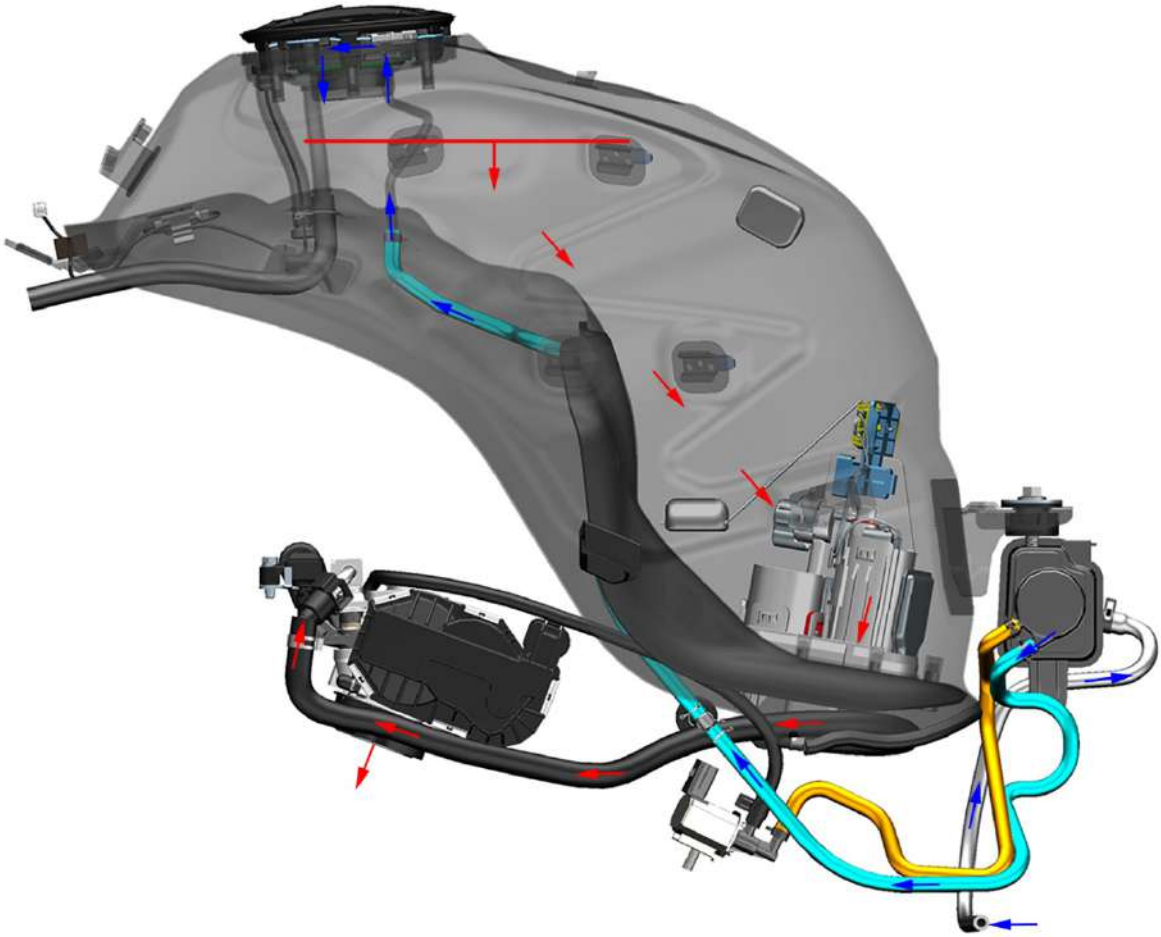
6. Oil supply system
6.1 Fuel evaporation



1-Fuel Tank Lock2-Fuel Pump 3-High Pressure Oil Hose 4-Throttle Valve Body Assembly
5-Adsorption/Snorkel 6-Carbon Canister 7-Solenoid Valve Outlet Pipe 8-Carbon Canister Solenoid Valve
9-Solenoid Valve Intake Pipe 10-Fuel Tank

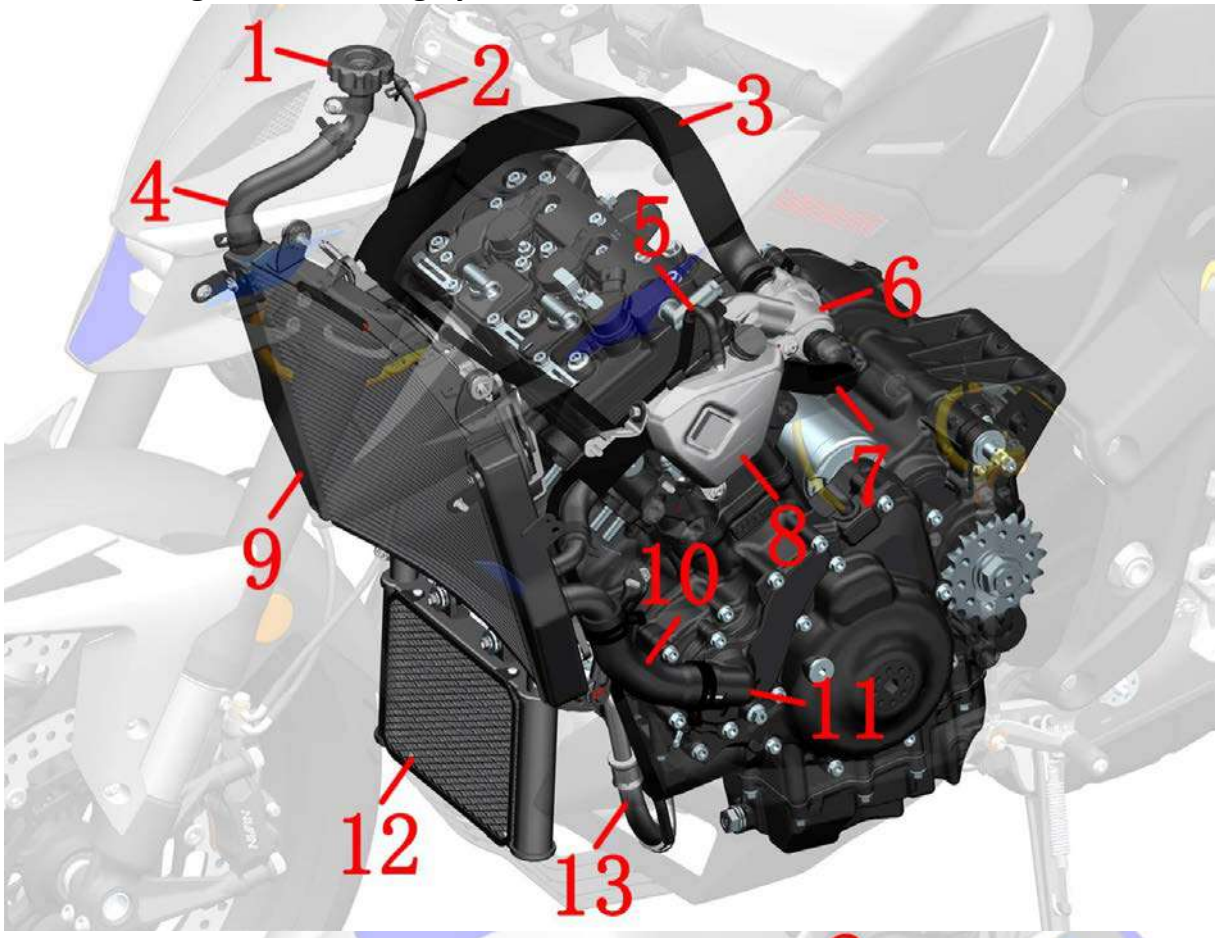
Fuel evaporation:
Oil and gas → Oil and gas separator (inside the tank lock) → adsorption/breather pipe → solenoid valve inlet pipe → solenoid valve outlet pipe → throttle body assembly → intake manifold → cylinder

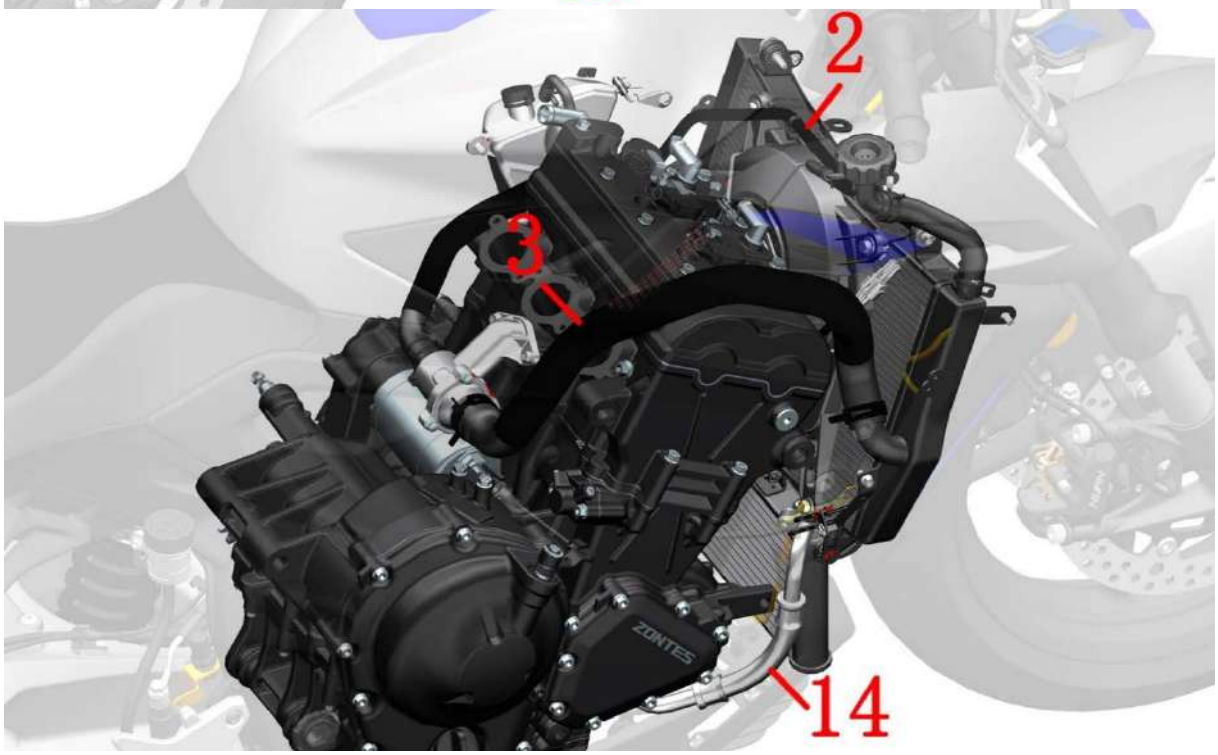
6.2 Fuel supply



Oil Supply System:
Air → canister→ adsorption/ventilation pipe→ air-air separator (inside the tank lock)
Fuel → fuel pump filter→ fuel pump→ high-pressure tubing→ injector → cylinder

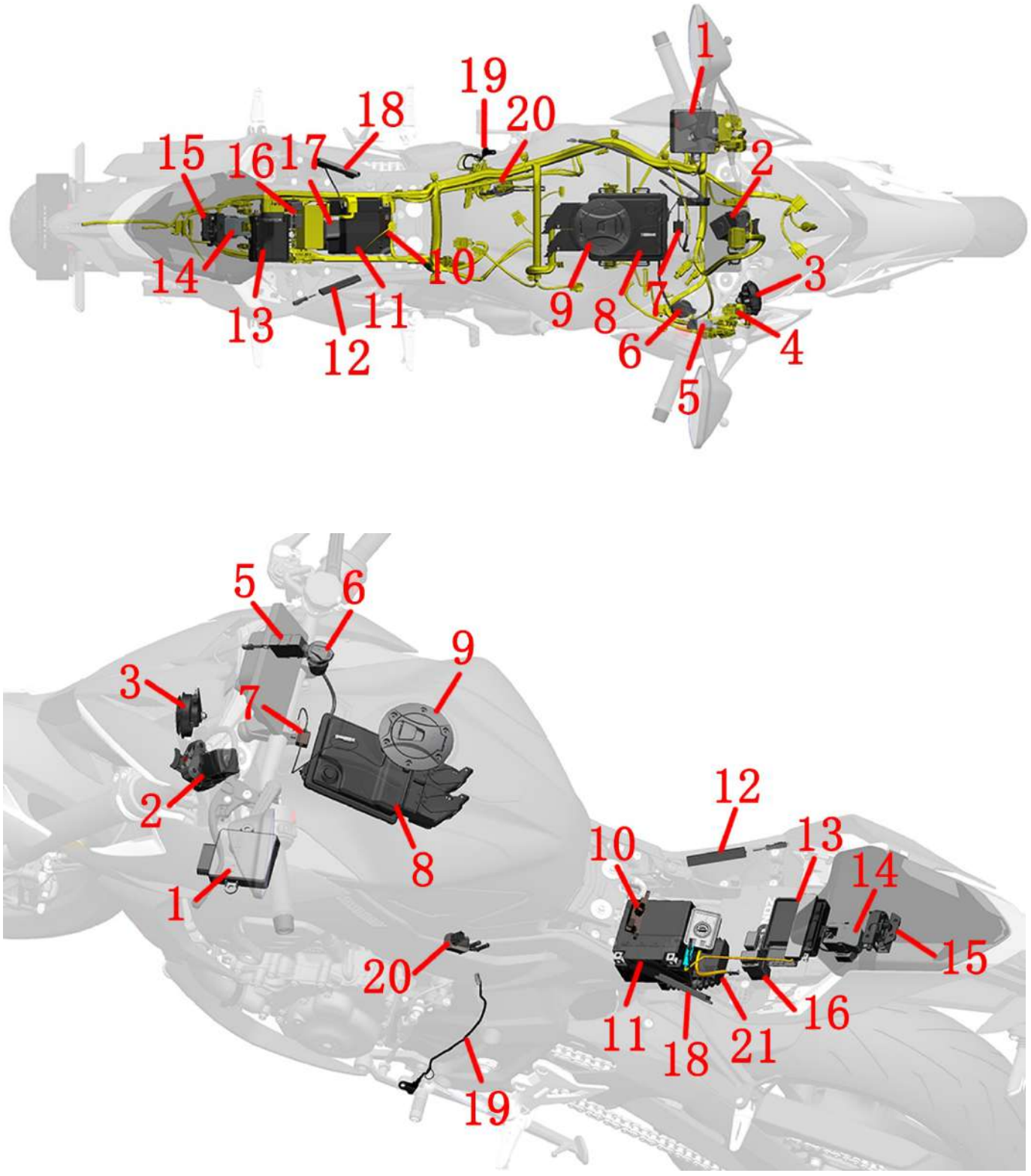
7. Distribution diagram of cooling system accessories





1-Main water tank water inlet 2-Sub water tank connecting water pipe 3-Main water tank water inlet pipe
4-Water tank water inlet connecting water pipe 5- Auxiliary radiator connecting hose 6- Thermostat
7- Small circulation water pipe 8- Auxiliary radiator 9- Main radiator 10- Engine water inlet pipe
11- Water pump cover assembly 12- Oil cooler 13- Engine oil outlet pipe 14- Engine oil inlet pipe

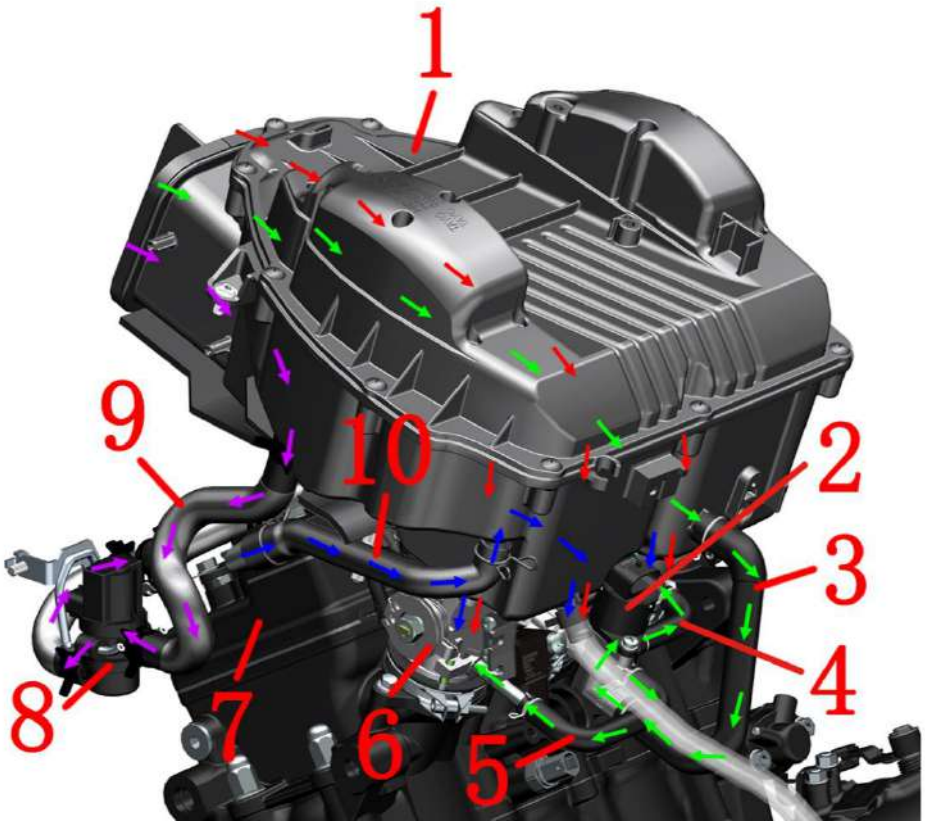
8. Electrical device layout diagram



1-LCM Lighting Controller 2-Faucet Lock 3-Horn 4-Cable Assembly (shown in yellow) 5-Tire Pressure Monitoring Host 6-Dual-port Universal USB Charging Cable 7-Electronic Fuel Tank Lock Circuit Board 8-Electronic Fuel Tank Lock 9-Engine Control Unit (ECU)10-Tilt Switch 11-Lithium Battery 12-PKE External Antenna 13-Third Generation PKE Host 14-Starter Relay 15-Seat Lock 16-Relay 17-GPS Antenna 18-Non-inductive Antenna 19-Side Kill Switch 20-Carbon Canister Solenoid Valve 21-Rectifier

9. Intake and exhaust system

9.1 Air intake system



1-Air filter assembly 2-Throttle fill valve 3-Stepper motor rubber hose (2) 4-Stepper motor rubber hose (3)
5-Stepper motor rubber tube (1) 6-Throttle valve body 7-Cylinder head 8-Secondary make-up valve
9-Air valve rubber tube ④ 10-Exhaust gas snorkel

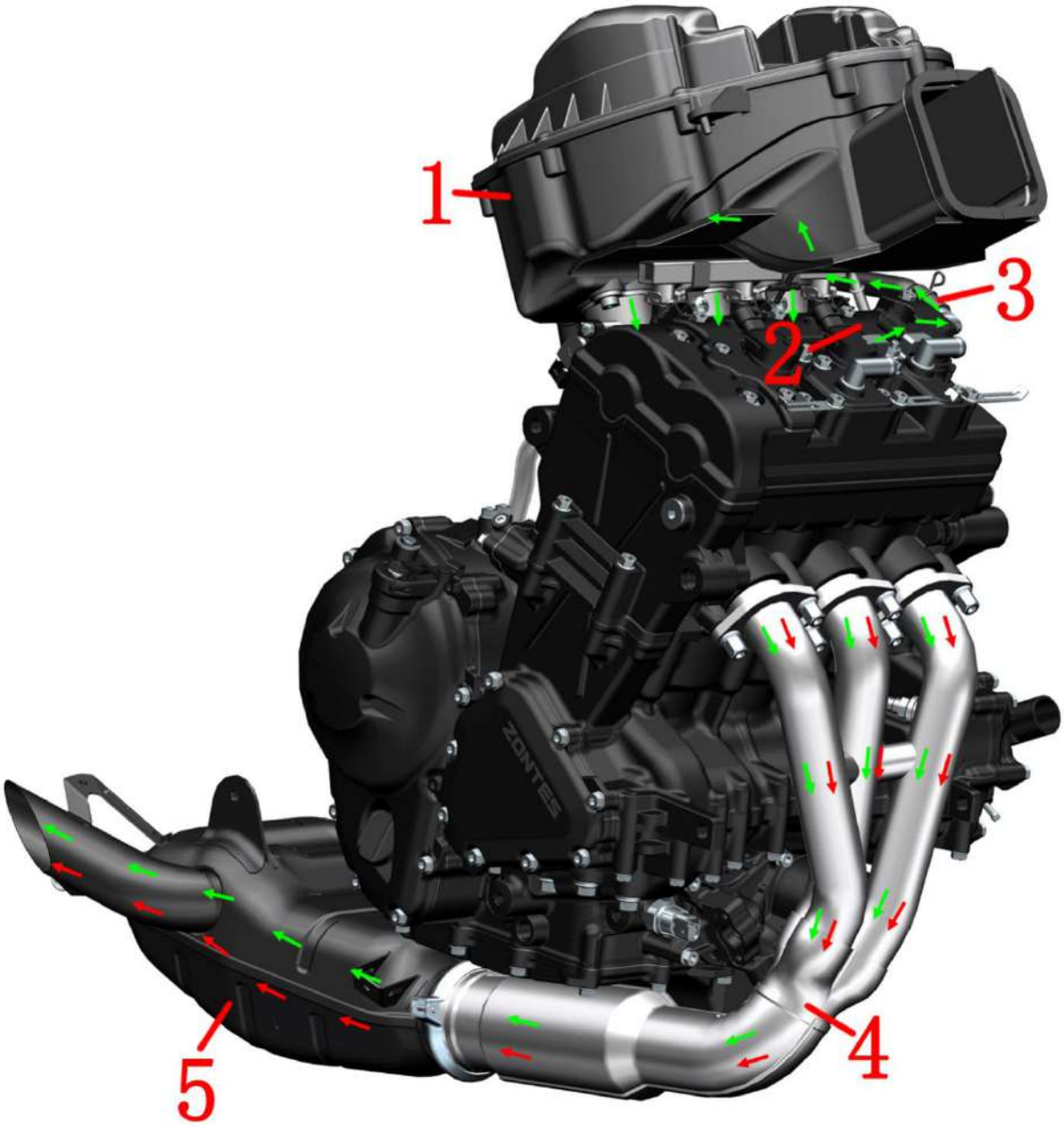
Air Intake System:
Main air flow direction of the air intake system (red arrow)
Air filter assembly → throttle body assembly → cylinder head

Secondary make-up valve gas flow direction (purple arrow)
Air filter assembly → make-up valve rubber hose (4) → secondary make-up valve → make-up valve rubber hose-3 → cylinder head

Throttle make-up valve gas flow direction (green arrow)
Air filter assembly → stepper motor rubber pipe (2) → throttle valve→ stepper motor rubber pipe (1), stepper motor rubber pipe (3) → cylinder head

Air filter exhaust gas recirculation gas flow direction (blue arrow)
Cylinder heads→ exhaust gas snorkels→ air filter assemblies→ throttle body assemblies → cylinder heads

9.2 Exhaust system



1-Air filter assembly 2-Cylinder head 3-Exhaust gas snorkel 4-Front muffler 5-Rear muffler

Exhaust system:
The main exhaust gas emission flow direction
Cylinder heads→ front mufflers→ rear mufflers

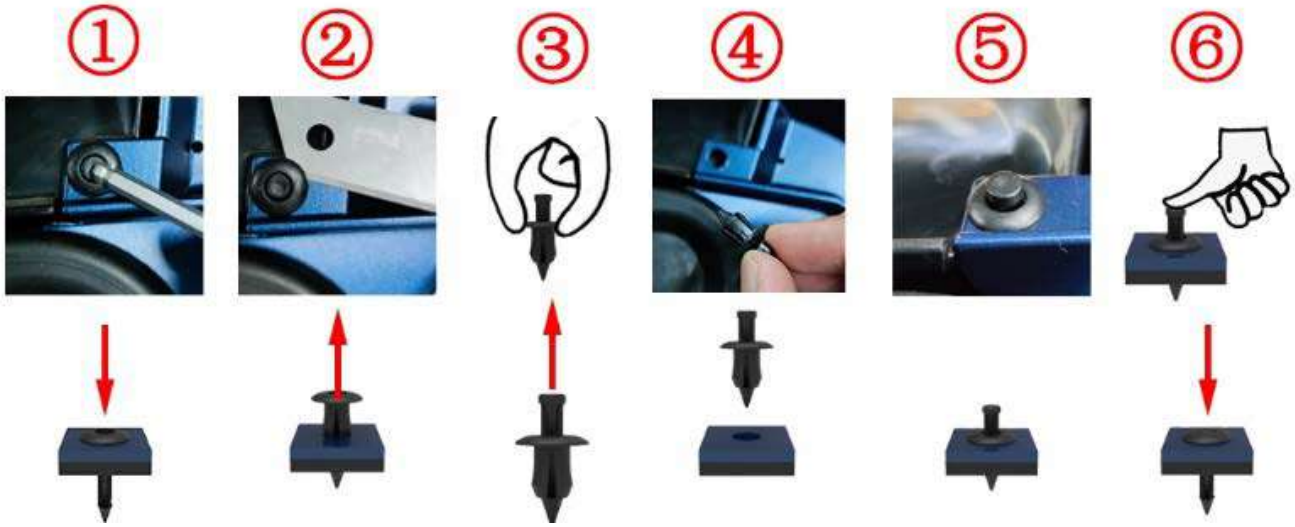
Secondary cycle exhaust emission process
Cylinder heads→ exhaust gas snorkels→ air filter assemblies→ cylinder heads→ front mufflers→ rear mufflers

Tool

			
125-piece tool set	Torque wrench	On-board tools	Claw hammer
			
Pull code	Rubber hammer	Dynamic balancing machine	Tire scraper
			
Oil sump	measuring cup	funnel	Taps, dies
			
micrometer	Depth gauge	Vernier calipers	Feeler gauge
			
Tire pressure gauge	Magnetic mount + dial gauge	PT300 Electrojet brush writing diagnostic instrument (16PIN)	17# Inner hexagon

			
Hoop pliers	Inner circlip pliers	Circlip pliers	Clamp-on multimeter
			
multimeter	Blow guns	14-side 65mm cap filter wrench (for M350 fine filter replacement)	T45/50 Torx socket with holes
			
T25/45/50 Torx wrench with holes			
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Expansion Nail Description



(1) Press the center cylinder with 4# hexagon or other tools, you can hear a sound or the center cylinder moves axially by 2mm;
(2) Use a blade, nail or carving knife to pry open the gap and remove it; If space allows, reach out to the back and push it out;
(3) Pinch the outer ring with two fingers and push the center cylinder up to the initial position;
(4) Pinch the center cylinder with two fingers to install the expansion nail to the installation position;
(5) The outer ring is attached to the connected parts; If it does not fit, it needs to be checked for misalignment;
(6) Press the center cylinder with your fingers or other tools, you can hear a sound or the top of the center cylinder is basically level with the top surface of the outer ring, indicating that the assembly is in place.

2. Maintenance

Pre-Service Notice

It is necessary to use good quality tools, or special tools and fixtures designed by our company. Using inferior tools may result in damaged parts, detached plating, inadequate assembly, etc.

The O-rings, paper gaskets, copper gaskets, and component sealing rings used for sealing must be replaced before assembly.

3. Fasteners with torque requirements need to use a torque wrench to check the torque; Refer to the general-purpose torque value recommended for general-purpose fasteners where torque is not required.

4. It needs to be cleaned before assembly; After assembly, it is necessary to check whether the assembly is correct and in place.

5. The motorcycle should be parked in a balanced manner, and safety should be paid attention to during disassembly and assembly. This includes, but is not limited to, the use of power tools, hand tools, pneumatic tools, hydraulic tools, handling. Protect against contact with skin, eyes, burns, electric shock, etc.

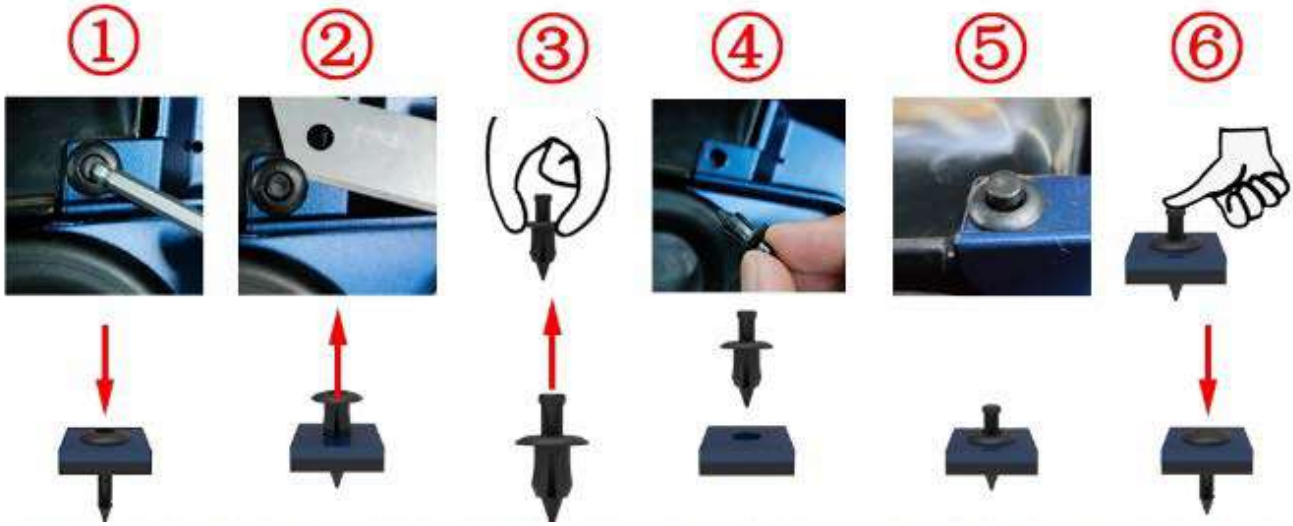
6. All kinds of oil, liquid, batteries, etc. that have been replaced need to be recycled and handed over to qualified institutions for disposal; It is forbidden to dump polluting the environment or water sources at will.

7. Swallowing or inhaling coolant and brake fluid will cause certain harm to the human body. Wash any exposed skin such as hands and face immediately and thoroughly after each addition. If swallowed, contact a poison control center or hospital immediately; If inhaled, immediately move into a ventilated environment. If it accidentally gets into your eyes, you should immediately rinse your eyes with plenty of running water and seek medical attention in time. Always keep out of reach of children and pets.

8. If you need to clean or wash the body parts of the vehicle, you should use neutral motorcycle washing liquid or tap water or diesel, kerosene, etc. Acidic or alkaline motorcycle wash liquid will cause irreversible corrosion on the surface of parts, such as paint, electroplating surface, anodized surface, etc.; Gasoline can cause premature aging or hardening of sealants, gaskets, rubber parts, etc., reducing the service life. Non-woven fabrics that do not leave residue should be used for wiping, as ordinary rags may affect the assembly or cause other adverse effects such as cloth shavings or wool.

9. The following are the instructions for disassembling and assembling expansion nails.

10. If there is a " " symbol on the right side of the step, you can click to quickly jump to the corresponding step.



(1) Press the center cylinder with 4# hexagon or other tools, you can hear a sound or the center cylinder moves axially by 2mm (0.079 in);

(2) Use a blade, nail or carving knife to pry open the gap and remove it; If space allows, reach out to the back and push it out;

(3) Pinch the outer ring with two fingers and push the center cylinder up to the initial position;

(4) Pinch the center cylinder with two fingers to install the expansion nail to the installation position;

(5) The outer ring is attached to the connected parts; If it does not fit, it needs to be checked for misalignment;

(6) Press the center cylinder with your fingers or other tools, you can hear a sound or the top of the center cylinder is basically level with the top surface of the outer ring, indicating that the assembly is in place.

Tool	multimeter	Torque wrench
		

Only some of the basic requirements for the prevention of accidental injuries can be enumerated; It is not possible to exhaustively list all scenarios. Be vigilant during disassembly and assembly to prevent accidents

Maintenance of periodic tables

I: Check (clean, lubricate, adjust or replace if necessary) **R**: Replace **T**: Fastening : Annotation

Item		Pre-ride check	Frequency*1						Annual Check	Regular replacement
			X1000 km	1	5	10	15	20		
			X1000mi	0.6	3	6	9	12		
Auxiliary radiator antifreeze (coolant)		I		I	I	I	I	I		Replace every 3 years or every 30,000 kilometers
Brake pad wear		I			I	I	I	I	I	Check for wear and tear
Rear swingarm anti-wear block		I			I	I	I	I		Replace every 30,000 kilometers, ★Note 1
Fuel level		I								
Engine fuel	☆	I		R	R	R	R	R	I	
Oil filter	☆			R		R		R	I	
Air Filter (Filter Element)	☆☆				I	R	I	R		
Tire	☆	I			I	I	I	I	I	Check tire pressure and tread wear
Brake fluid	☆	I			I	I	I	I	I	Replace every 2 years
Drive chain	☆	I			I				I	★Note 1
Front shock absorber	☆☆	I				I		I	I	Check for leaks
Rear shock absorber	☆☆	I				I		I	I	Check for leaks
Braking system	☆☆	I				I		I	I	Check the oil cup level
Radiator pipe				I	I	I	I			
Air filter oil accumulation tube				I	I	I	I	I		
Idle						I			I	Start Check
Fuel line					I					Check for leaks
Clutch lever free play	☆				I	I	I	I	I	According to the tutorial video
Throttle cable clearance	☆				I	I	I	I		Gap distance: 2.0～4.0mm
Internal mechanism of the head lock	☆					I		I		★Note 2
Bolts and nuts in the steering mechanism	☆☆			T	T	T	T	T	I	Figure 2
Bearings in the steering mechanism	☆☆						I			Add grease every 15,000 kilometers
Vehicle fasteners, bolts, nuts	☆☆			T	T	T	T	T		Figure 2
Axle sleeves and oil seals of wheels and sprocket hubs	☆☆				I	I	I	I	I	★Note 3
Brake hose	☆☆					I		I	I	Check for leaks
Spark plug	☆☆					I		R		
Rear double-row needle roller bearing	☆☆				I	I	I	I		Add grease every 15,000 kilometers
Multi-link shock-absorbing needle bearing	☆☆				I	I	I	I		Add grease every 15,000 kilometers
Valve clearance (cold check)	☆☆			Check and adjust every 40,000 km						★Note 4

☆This service is provided by a dealer or a qualified maintenance unit, and can be implemented by the owner if he or she has the right tools, service information and a certain understanding of the machinery.

☆☆For safety reasons, this service should be provided by a dealer or qualified repair unit.

★Note 1: Clean and lubricate the chain every 500–1000 km, and check the wear on the upper and lower wear pads of the rear swingarm.

★Note 2: Every 10,000 km (6000 mi), inspect, clean, and lubricate; for maintenance procedures, refer to the official website's Handlebar Lock Maintenance Video.

★Note 3: Check the wear of the oil seal lips and add grease if necessary.

★Note 4: Clearance (engine cold state) intake: 0.1–0.22 mm, exhaust: 0.2–0.33 mm.

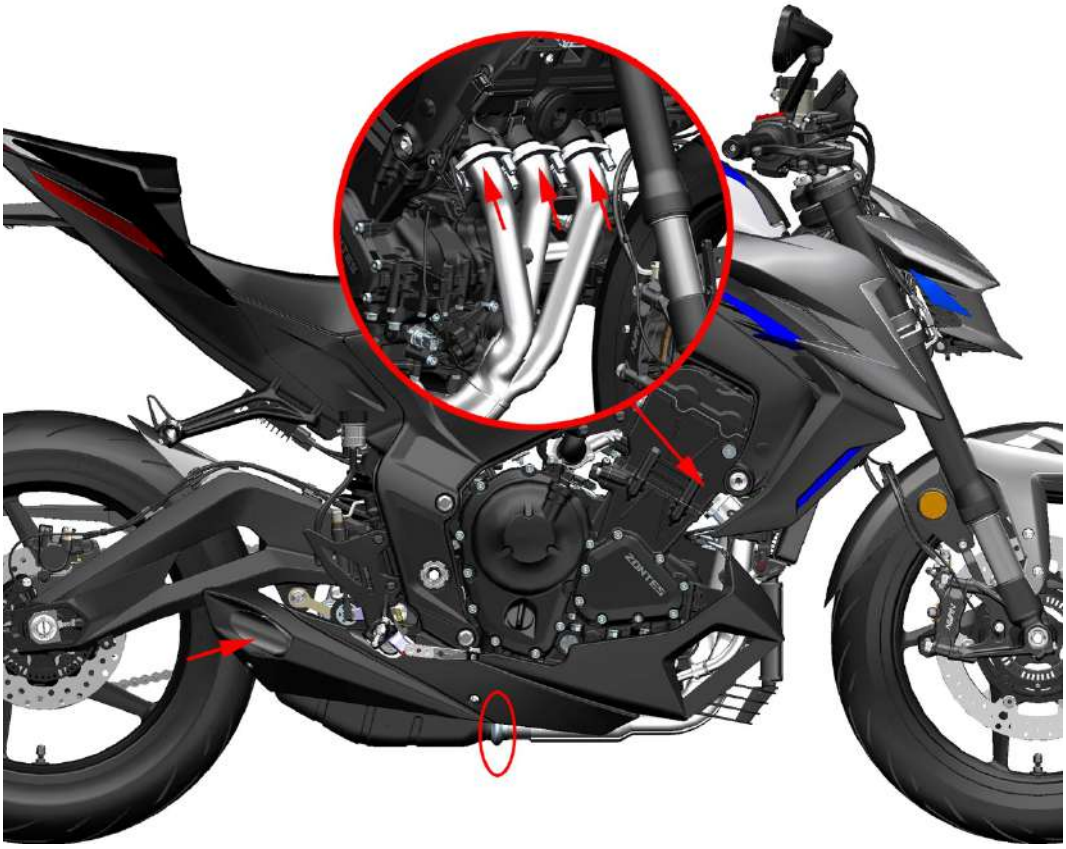


Figure 1 Standard torque for clamp bolts and exhaust port nuts: 25 N·m

Check whether the front disc brake caliper bolts, front shock absorber lower tube bolts, upper and lower linkage plate bolts, disc brake rotor bolts, sprocket nuts, chain adjuster nuts, front footrest bolts, gear shift lever bolts, rear axle nuts, side stand ignition switch bolts, rear swingarm axle nuts, upper linkage plate decorative nuts, and multi-link nuts are loose. Check whether the rear axle cotter pin is abnormal.

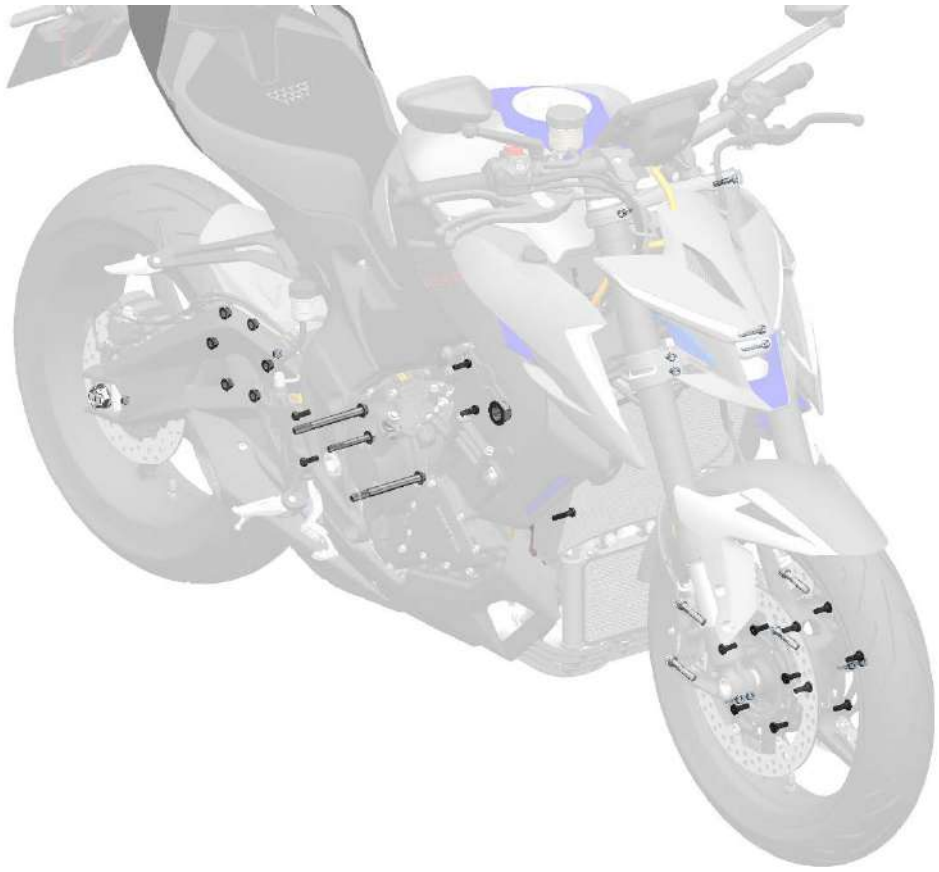


Figure 2

Vehicle Daily Operation Inspection Checklist

Serial number	Check the items	Check the contents
1	Neutral light	Lights up when neutral
2	Turn signals	The switch is normal and the flashing is normal
3	horn	The switch is normal, the volume is normal, and the sound quality is good
4	Brake lights	Lights up normally when braking
5	Headlamps	The switch is normal and the light is normal
6	Steering mechanism	Flexible steering, no overtight, too loose, no interference
7	Rearview mirrors	Clear vision without loosening
8	Braking system	The free stroke is normal, the braking effect is good, and the hydraulic system is leak-free
9	Transmission chains	Tightness is normal
10	Front and rear tires	Normal air pressure, no scratches and excessive wear
11	Fasteners	No loosening
12	lube	Sufficient and good lubrication
13	Leakage	There are no leaks in the engine, fuel tank, shock absorbers and battery
14	Ministries interfered	There is no excessive wear, abnormal noise and interference in all parts
15	Instruments, control parts	The signal devices on the instrument are working normally, and the displayed motorcycle status should be normal (if it has a self-test function); Each control part can be operated normally and function normally
16	Battery level display	The remaining power is sufficient
17	OBD faulty lamp	The fault lamp should have no fault prompt
18	Fuel	Sufficient fuel
19	Other	Check as needed

Air filter element replacement

Note:

●Please replace the air filter element of the motorcycle in strict accordance with the motorcycle maintenance cycle.

Steps:

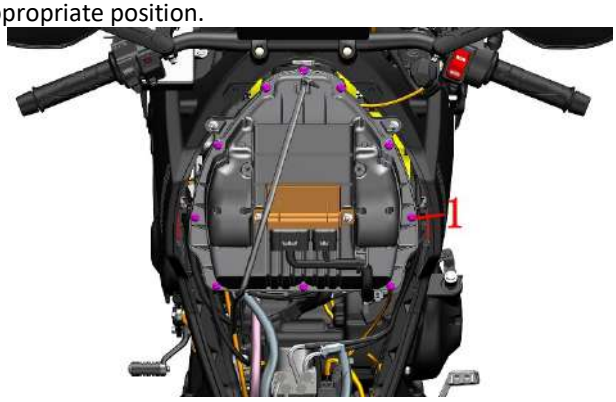
1. Remove the corresponding parts

Refer to "Removal of Fuel Tank" to remove the fuel tank.



2. Replace the filter element of the air filter.

a. Use a cross batch to remove the 10 self-tapping nails(1) on the upper housing of the air filter. Then flip the upper housing of the air filter backwards and place it in the appropriate position.



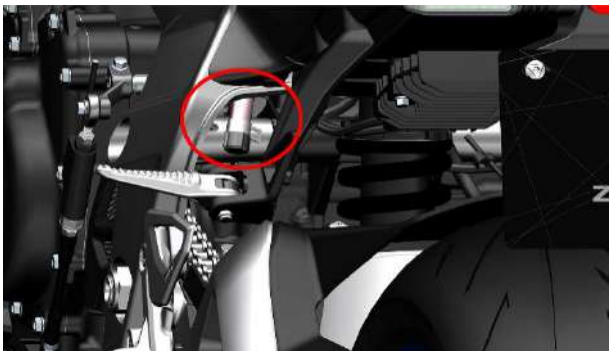
b. Remove the old air filter and put the new air filter on the new one.



c. After changing the air filter, install the upper shell of the air filter back, and check the wiring harness, and use the cross batch to install 10 self-tapping nails (1) back and fix.

3. Check the waste oil pipea.

a. Wipe the surface of the waste oil pipe and visually see if there is any liquid. If so, remove the waste oil pipe clamp with pliers, clean the waste oil pipe, and then put it back on. Pay attention to increase the frequency of inspections when the air humidity is high.



4. Reassemble the corresponding partsa.

Refer to the disassembly steps to put the fuel tank and other parts back on.

WARNING

●Every 10,000 km (6,200 miles) the air filter and engine air inlet filter should be replaced.

●The air filter and engine air inlet filter should be cleaned regularly according to the regular maintenance and lubrication table.

●If you regularly ride in wet or dusty areas, you should have your air cleaner filters serviced more often. Always check the air filter drain line frequently.

●If the filter element is broken, it must be replaced, otherwise, the dirt will be directed towards the engine, causing engine damage.

●Make sure the filter is in place.

CAUTION

●If the air filter is clogged with dust, it will increase the intake resistance and decrease the output power.

●If the replacement cycle is not reached, if there is no damage and the surface of the filter element is relatively clean, you can use a dust gun to blow air from the clean side of the filter element to blow away the dust on the surface of the filter element.

●Water should not be allowed inside the air filter when flushing the vehicle.

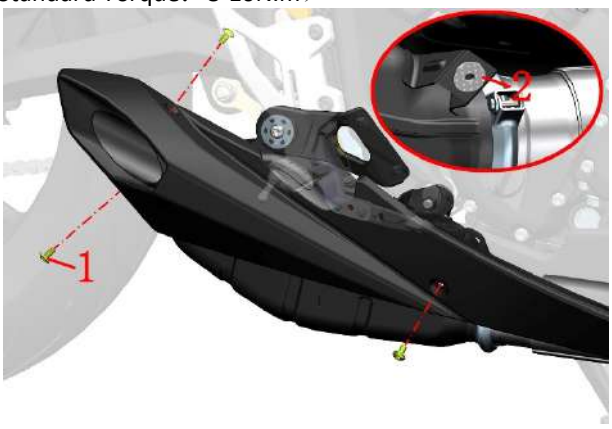
Muffler overhaul and maintenance

1. Disassembly of the muffler decorative cover

a. Lay down the side brackets and place the motorcycle on flat ground. Refer to “Disassembly of Covers” to remove the left and right lower surrounds. Note: If the motorcycle is started before disassembly, wait for the muffler assembly to cool down before disassembling to prevent burns.

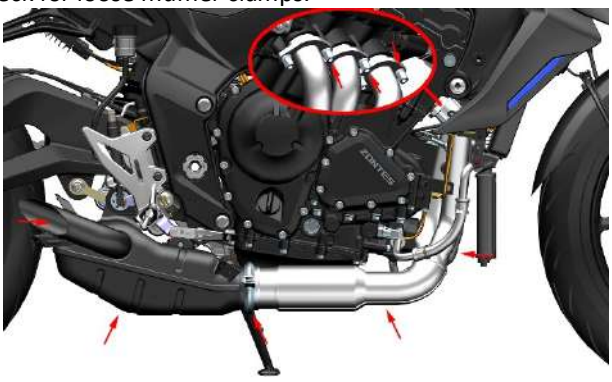


b. Use the T25 Torx hexagon socket to remove the 3 bolts (1) on the muffler decorative cover, and remove the muffler decorative cover. Note: There is 1 thermal insulation pad (2) on the back of the 3 mounting holes on the muffler trim cover, so do not omit it when installing and dismantling.
（Standard Torque：8-10N.m）

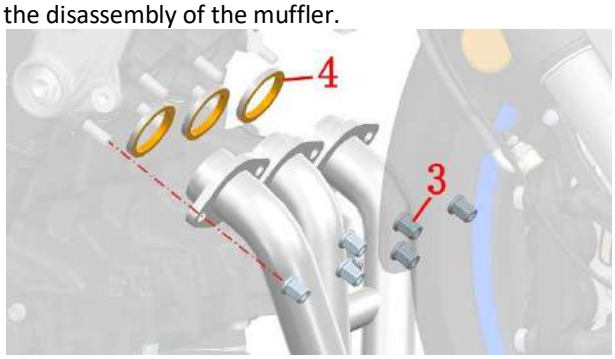


2. Check the muffler

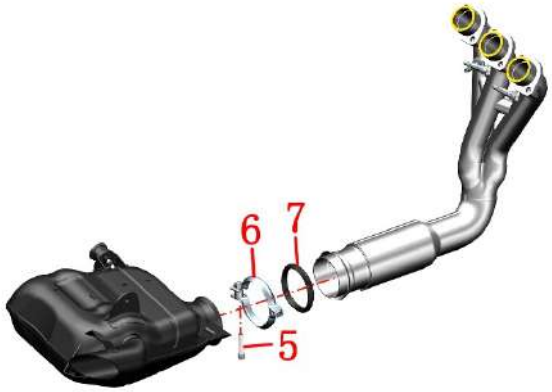
a. Check whether each part of the muffler is damaged, scratched, etc., and check whether the exhaust port is leaking. Check the connection between the rear end of the muffler and the front end of the muffler for air leaks and check for loose muffler clamps.



b. If there is a slight air leakage at the connection between the engine and the muffler, you can first try to tighten the exhaust nut (3) with 6# hexagon socket, Standard torque 25 N·m； If the problem is not resolved, the muffler needs to be removed and replaced with a new engine exhaust gasket (4). The specific disassembly method can refer to the disassembly of the muffler.

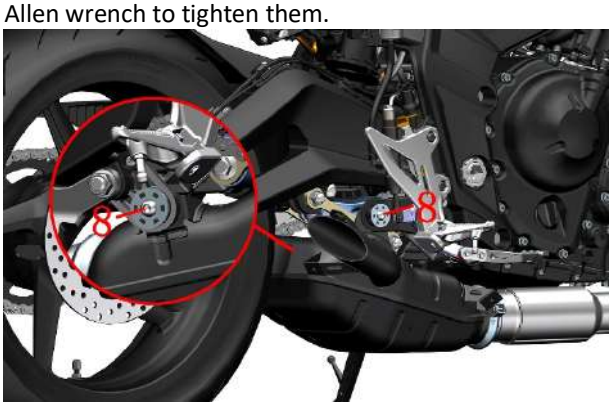


c. If there is a slight air leak at the connection between the rear silencer and the front silencer, you can try tightening with a #6 Allen bolt(5) to a standard torque of 25 N·m; if the problem cannot be resolved, replace with a new silencer graphite gasket(7). For specific disassembly methods, refer to the silencer's disassembly instructions.



3. Check the muffler installation bolts

a. Check whether the bolts (8) in the two places connecting the rear muffler to the frame are loose, and use a 6# Allen wrench to tighten them.

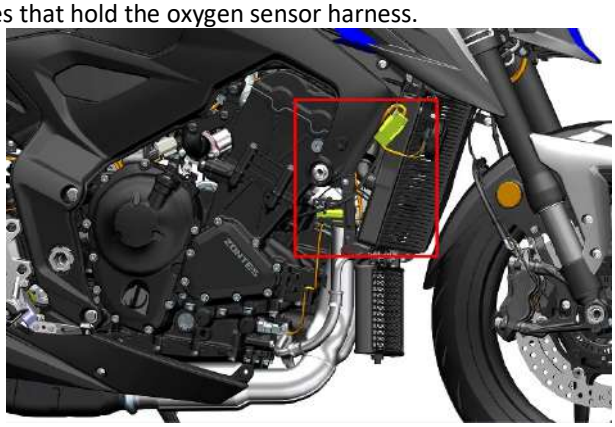


4. Disassembly of the muffler

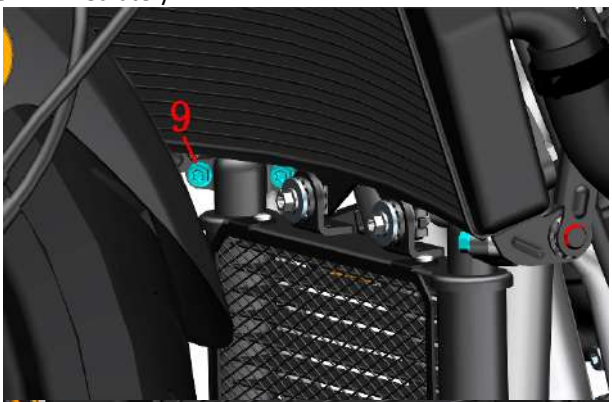
a. After placing the vehicle on a level surface, refer to 'Removal of Covering Parts' to remove the left, middle, and right lower air deflectors as well as the left and right radiator decorative covers.



b. Find and unplug the three connectors of the oxygen sensor from the water tank bracket, and untie the two cable ties that hold the oxygen sensor harness.

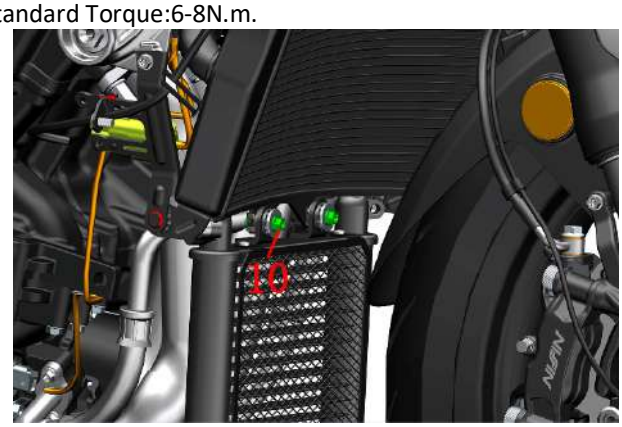


c. Use a #8 socket to remove the 4 M6×16bolts(9) on the engine's oil inlet and outlet pipes; detach the inlet and outlet pipes from the oil cooler. Then adjust the inlet and outlet pipes to the appropriate position. Note: A small amount of engine oil may drip when removing the oil cooler; when installing, check whether the O-rings on the inlet and outlet pipes are damaged. If there is any cutting or damage, replace them immediately.





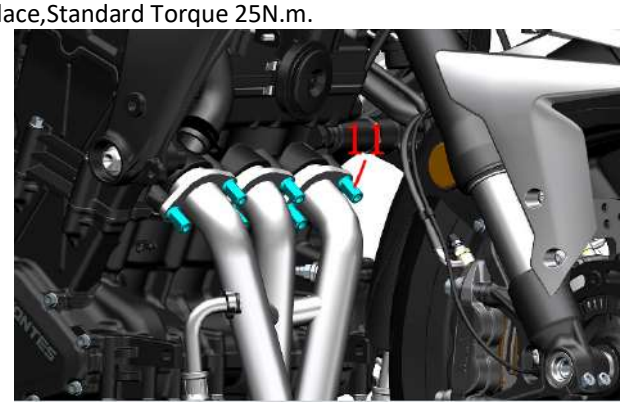
d. Use an 8# socket to remove the 2 M6×22bolts(10) securing the oil cooler, and then remove the oil cooler. Standard Torque:6-8N.m.



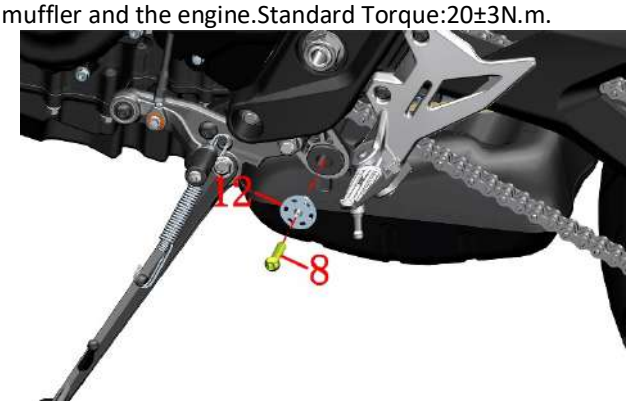
e. Refer to the steps of "Drain Coolant" to drain the coolant from the main water tank.

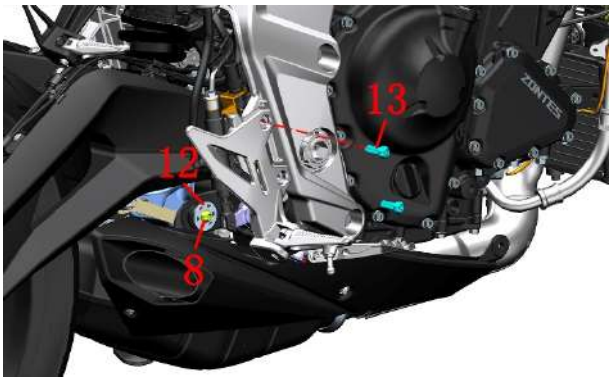
f. Refer to "Disassembling the Main Water Tank Parts" to remove the main water tank.

g. Use the 6# hexagon socket to remove the 6 pieces of M8 nuts that hold the front end of the muffler in place,Standard Torque 25N.m.



h. Use a T45 hollow star wrench to remove the 1 bolt (8) securing the left end of the muffler, and take out the bushing (12). Use a T45 hollow star wrench to remove the 2 bolts (13) securing the right footrest, move the right footrest assembly to a suitable position, then use a T45 hollow star wrench to remove the 1 bolt (8) securing the right end of the muffler, and take out the bushing (12). Note: When removing bolt (8), support the front part of the muffler. When completely removing it, be careful not to lose the engine exhaust port gasket (4)) at the connection between the muffler and the engine.Standard Torque:20±3N.m.





5. Reassembly of mufflers and other components

a. After the muffler is overhauled and maintained, the muffler is installed back in the corresponding position.
Note: Install to ensure that there are no missing engine exhaust gaskets.

b. Refer to the disassembly steps to install the main water tank, oil cooler and other components back, note: during installation, make sure that the O ring on the inlet and outlet oil pipes is not cut or damaged, and if so, it needs to be replaced immediately. The wiring harness of the oxygen sensor should be fixed in the original position according to the disassembly process, and there should be no crimping or knotting when wiring.

c. Refer to "Disassembly of Covers" to replace all disassembled covers.

d. Refer to "Add Coolant to the Main Water Tank" to fill up the coolant in the main water tank, and check whether the coolant in the auxiliary water tank needs to be filled.

DANGER

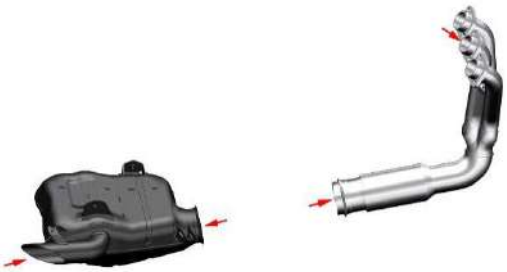
●It is forbidden to touch all metal surfaces of the muffler during engine operation or after riding to prevent burns.
●The motorcycle must be parked on a level, stable ground or lifting platform.
●If a new exhaust gasket is required, the muffler must be completely cooled before operation.

WARNING

●Never hit the throttle for a long time.
●Driving at low speeds for long periods of time with heavy loads can cause damage to the engine and muffler.
●It is forbidden to use leaded gasoline to avoid the failure of the catalyst and the loss of exhaust gas purification ability

CAUTION

●If you need to remove the front muffler or rear muffler for other operations, it is recommended to cover the air intake and outlet holes of the front and rear muffler with masking paper to prevent foreign objects from entering.



●The oil, mud and other stains on the surface of the muffler should be cleaned off in time.

Inspection and replacement of spark plugs

Note:

●Before disassembly, you need to use a dust blowing gun to blow off the dust near the spark plug.

●After removing the spark plug, it is necessary to prevent foreign objects from falling into the engine.

1. Remove the spark plug

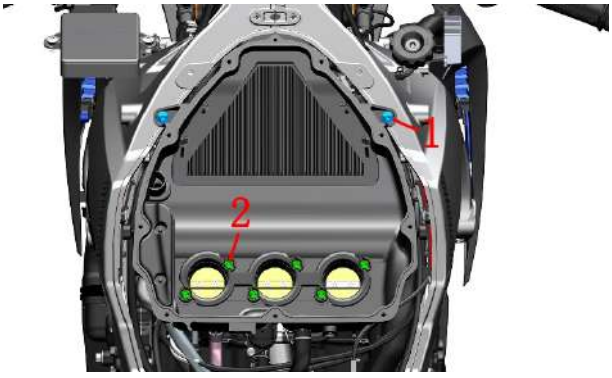
a. Refer to the steps of "Replacing the Fuel Tank" to remove the fuel tank and seat cushion.



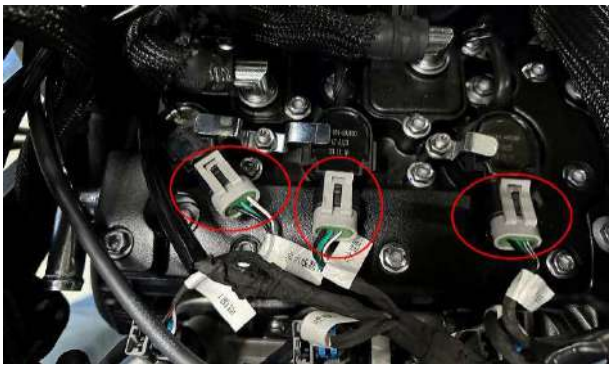
b. Refer to "Removal of Air Filter" to remove the upper cover of the air filter. And put the wiring harness in order.



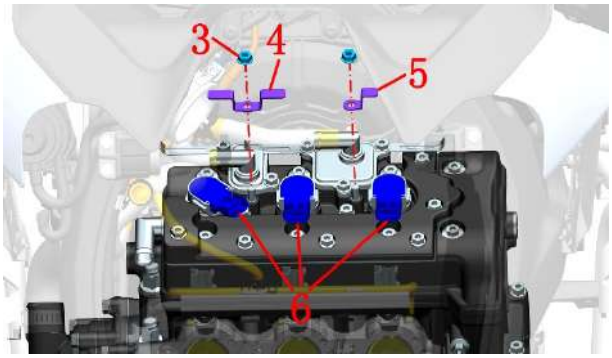
c. Use the T25 plum blossom hexagon to remove the 2 shoulder bolts (1) that fix the lower cover of the air filter, and then use the 6# hexagon to remove the 6 pieces of M6×16 bolts (2) at the outlet pipe of the air filter; Finally, take out the lower cover of the air filter and the air outlet pipe of the air filter and arrange the wiring harness. Note: Do not leak the air filter outlet pipe during installation. Standard Torque: 4-6N.m.



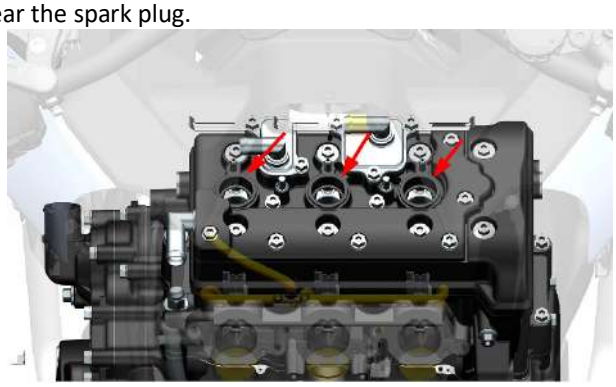
d. Unplug the 3 connectors on the ignition coil. And tidy up the wiring harness.



e. Use a 10# sleeve to fix the nut (3) and the pressing plate (4) and (5) of the ignition coil at 3 places, and then take out 3 ignition coils (6). Standard Torque:11.5±1N.m.



f. Use a dust blow gun to blow off the dust and debris near the spark plug.



g. Remove the spark plug by rotating it counterclockwise with the vehicle-mounted tool or the special 14# spark plug sleeve.

h. After removing the spark plug, seal the spark plug mounting hole with masking paper or other soft plastic bags to prevent foreign matter from entering the engine.

2. Check the spark plug

a. Check whether the insulator is cracked or damaged, and whether the central electrode is worn, fouled, corroded, over-carbonized or discolored (the color of the ceramic insulator around the intermediate electrode of the spark plug should be light brown). If so, replace the spark plugs with new ones.

b. Clean the electrodes with a special spark plug cleaner. Use a winning wire or steel needle to remove the attached carbon deposits.

c. Check the gap between the center electrode and the side electrode with a feeler gauge.



d. If necessary, the gap can be adjusted by bending the side electrode, and pay attention to the strength when adjusting.

e. Clean the surface of the spark plug gasket and the joint surface, and wipe off the dirt on the thread.

f. Screw it back onto the engine by hand, and then use the tool to rotate clockwise to the standard torque.

Spark plug model: BN8RTIP-8 spark plug

The resistance value between the wiring screw and the central electrode: 3~7.5KΩ

Clearance: 0.7-0.9mm (0.031-0.035 in)

Torque: 13N.m

3. Install the spark plug.

Refer to the spark plug removal procedure to restore the spark plug and all parts.

DANGER

●The motorcycle must be parked on level ground or on a lifting platform.

●It is necessary to wait for the engine to cool down completely before operation.

WARNING

●Never pull or tap the center electrode.

●If the engine is damaged by replacing the spark plug with improper calorific value or inferior quality, it is not within the scope of the three guarantees.

●The torque of the spark plug should not be too large, and the threads should be manually screwed in before tightening. If there is no torque wrench, if you change the spark plug with a new one, you can use your hand to screw it until there is resistance, and then rotate1/2 turn, such as using the old spark plug to screw until there is resistance, and then rotate 1/8 turn; If possible, it should be corrected to the standard torque as soon as possible.

●Attention and sequence when disassembling the plastic buckle to avoid buckle breakage.

Overhaul and maintenance of cooling systems

DANGER

●The motorcycle must be parked on a level, stable ground or lifting platform.
●Operation is required to wait for the engine and muffler to cool down.
●Swallowing or inhaling coolant can be harmful to the human body.

CAUTION

●Check the coolant level regularly and always keep it at least the "L" line.
●It is recommended that the 703-RR change the coolant every 3 years or 30,000 kilometers (18,641 miles).
●Swallowing or inhaling coolant can be harmful to the human body. Wash your hands, face, and any exposed skin immediately and thoroughly after each addition of coolant. If swallowed, contact a poison control center or hospital immediately; if inhaled, immediately move into a ventilated environment. If it accidentally gets into your eyes, you should immediately rinse your eyes with plenty of running water and seek medical attention in time. Always keep out of reach of children and pets.
●The engine coolant must be suitable for aluminum radiators, based on glycol. Use a coolant suitable for aluminum radiators, which consists of a coolant concentrate mixed with distilled water in a certain proportion. If water needs to be added, only distilled water can be added, as other water quality may corrode the engine cooling system or cause more serious consequences.
●The appropriate antifreeze should be selected according to the lowest possible temperature in the local area. This motorcycle is equipped with Total -35°C (-31F) green
The total coolant for 703-R is 1900ml, of which 1700ml should be added to the main radiator and 200ml to the auxiliary radiator.
●Coolant may damage the paint finish, care should be taken when adding, and a small amount of splashing should be wiped off immediately with a clean, soft cloth.

1. Check the coolant

a. Place the motorcycle on level ground and inspect it with the engine cold. Locate the auxiliary radiator decorative cover under the left side of the vehicle frame, and check whether the auxiliary radiator coolant level is between the 'H' and 'L' marks on the cover.



2. Addition of coolant (antifreeze) to the auxiliary tank

If the water level of the auxiliary tank is lower than the "L" line, an appropriate amount of coolant needs to be replenished. If there is no coolant in the auxiliary water tank, it is necessary to check whether the cooling system has leakage first, and it must be repaired before it can be replenished.

a. Use a T25 Torx hex key to remove the 2 bolts (1) securing the auxiliary radiator decorative cover, then remove the auxiliary radiator decorative cover (2).

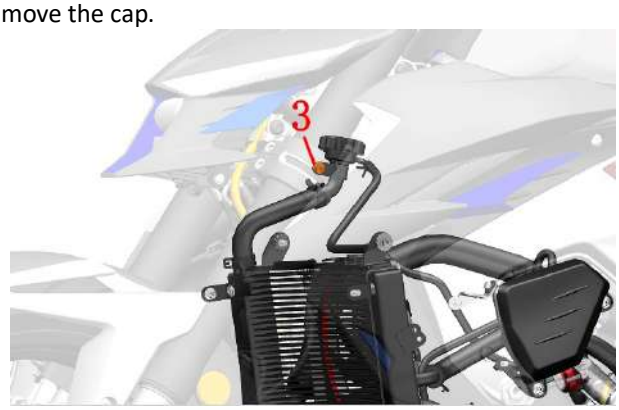


b. Open the cover of the auxiliary water tank, add coolant to the auxiliary water tank with the help of the funnel, pay attention to the small amount and add it between "H" and "L" many times.

c. After refilling the coolant, use a clean towel or non-woven cloth to wipe the filler port clean and replace the auxiliary radiator cap, then use a T25 Torx hex key to reinstall the auxiliary radiator decorative cover.

3. Add coolant (antifreeze) to the main water tank.

a. After parking the vehicle on a flat surface and securing it, adjust the steering wheel to a suitable position. Use a T25 Torx internal hex key to remove the bolt(3) securing the main radiator filler cap. Then, move the filler cap to a suitable position, press it down, and rotate it counterclockwise to remove the cap.



b. Wear waterproof gloves and add coolant to the water filling port of the main water tank with the help of an extended funnel. Until the level of the water filler no longer drops.

c. Turn on the motorcycle and start the engine, let the engine be in the idle state, properly intermittently drain the oil for 3000-4000 rpm, speed up the rise of the water temperature, continue to add coolant after the liquid level of the water nozzle drops, and when the water temperature rises above 90 °C (194F), repeat the operation of refueling and draining the oil and replenishing the coolant until the liquid level no longer drops. Note: Do not touch the coolant in the motorcycle with your hands after starting the motorcycle to prevent burns.

d. Press down on the main water tank filling port and rotate clockwise to tighten the main water tank filling port.

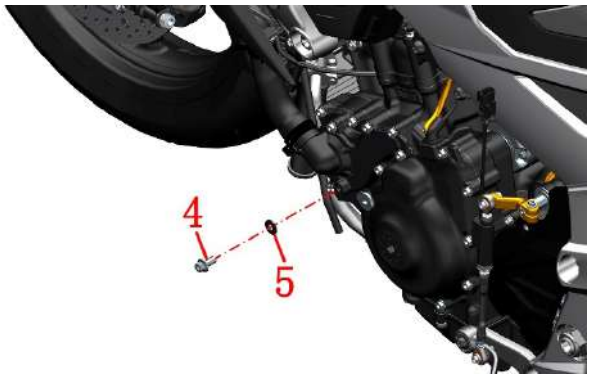
e. Assemble all parts back according to the disassembly steps afterwards.

4. Put coolant.

a. After positioning the vehicle on a flat surface, refer to 'Removal of Covers' to remove the lower air guide assembly, then place an oil drain pan under the drain bolt.



b. Use the 10# sleeve to remove the drain bolt (4) on the water pump cover, and remove the copper pad(5). You can refer to the steps of adding coolant to the main water tank and unscrew the water filling cap to accelerate the outflow of coolant.



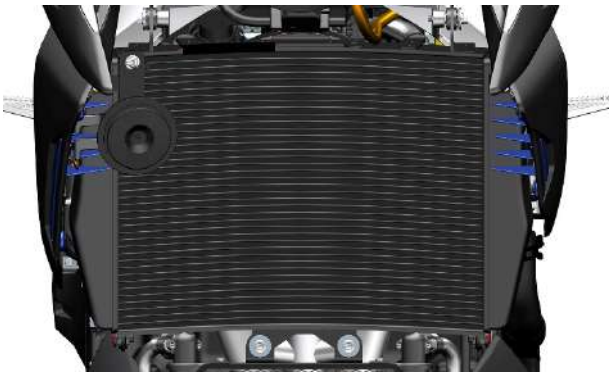
c. Wipe all the joint surfaces clean with non-woven fabrics, check whether there are scratches on the joint surfaces of the drain bolts, and replace them with new ones if there are any. The copper pad needs to be replaced every time it is disassembled.

5. Check whether the fins of the radiator water tank are deformed or whether the air duct is blocked.

a. Refer to the "Disassembly of motorcycle Covers" to remove the left and right surrounding panels and the surrounding middle assembly.



b. Use compressed air or low-pressure water guns, brushes, etc. to remove sediment, insects and other dirt on the surface of the radiator. When using compressed air, be careful not to get too close to the fins. It is forbidden to directly flush the radiator with a high-pressure water gun, so as to avoid the deformation of the fins and the blockage of the air duct.



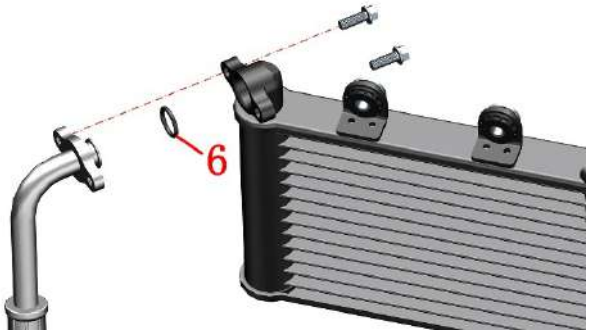
c. Use a flat carving knife or a small flathead screwdriver to straighten the deformed fins. If the fins are deformed by more than 20%, a new radiator will need to be replaced.

6. Overhaul and maintenance of oil cooler

It is recommended to check the oil cooler every time you change the oil.

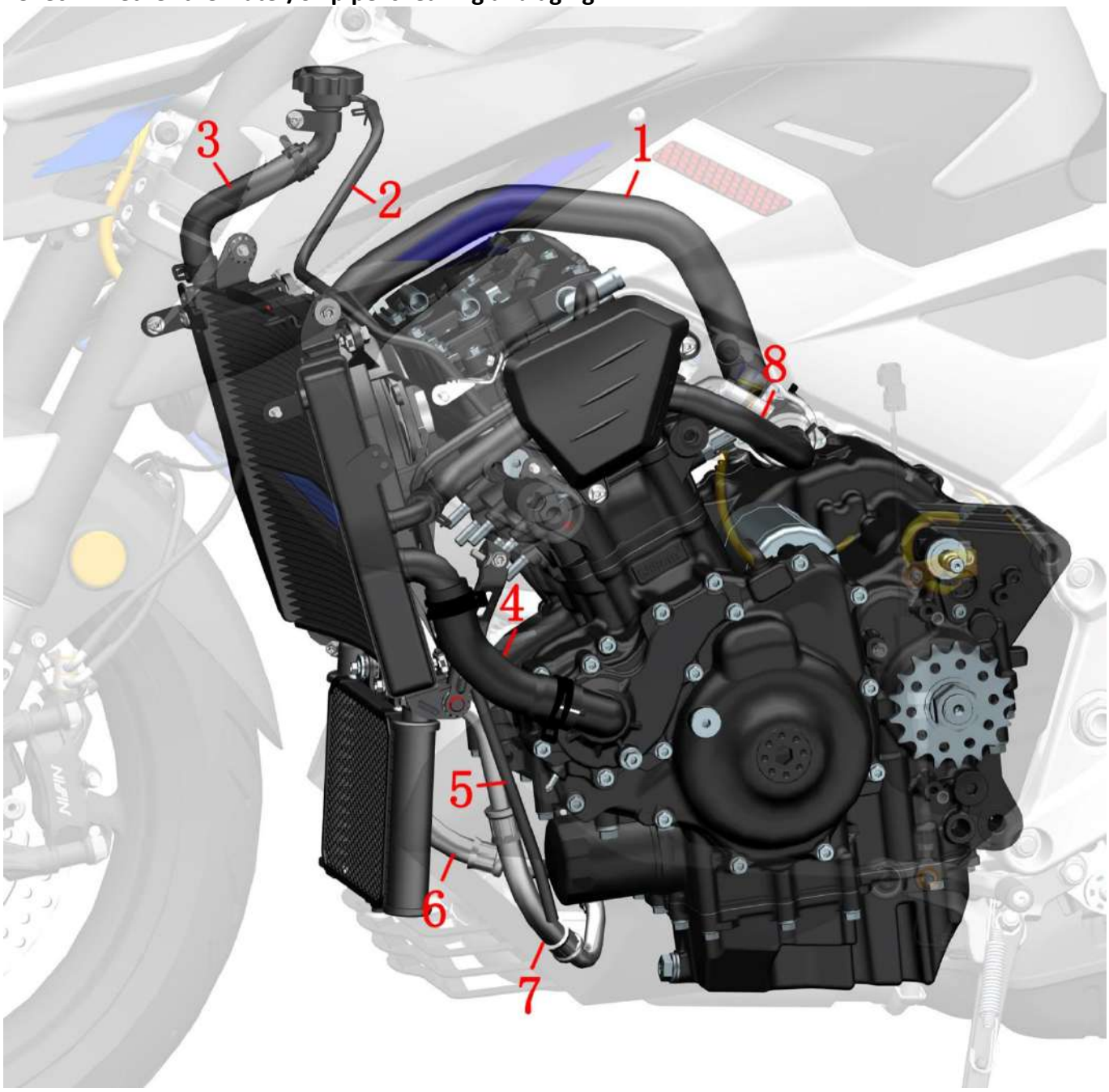
a. Use a clean cloth to wipe the connection between the oil cooler and the inlet/outlet oil pipe to check whether there is oil leakage or leakage.il.

b.If there is slight oil leakage, place the oil drain tray under the corresponding oil pipe, then use the 8# sleeve to remove the oil leakage oil pipe, replace the 13.8×2.5 acrylic glue O-ring on the oil pipe and install the oil pipe again. And tighten the fixing bolts of the tubing; the torque is 12±1.5 N.m. Note: This operation should be performed with the engine cooled down.



c. If the O-ring (6) on the oil pipe cannot solve the oil leakage phenomenon, the corresponding oil leakage oil pipe needs to be replaced.

7. Check whether the water/oil pipe is leaking and aging



1-ZT703-F Main radiator inlet pipe 2-ZT703-R Auxiliary radiator connecting pipe 3-ZT703-RR Radiator filler neck connecting pipe
4-ZT703-RR Engine inlet pipe 5-ZT350T-K Auxiliary radiator connecting pipe 6-ZT703-RR Engine oil inlet pipe
7-ZT703-RR Engine oil outlet pipe

Engine oil and oil filter replacement

DANGER

●The motorcycle must be parked on a level, stable ground or lifting platform.
●Operation is required to wait for the engine and muffler to cool down.
●Add oil to prevent oil from dripping onto the surface of the muffler.
●Motor oil should be kept away from children and pets. Short-term exposure to motor oil may irritate the skin. Please wear long-sleeved clothes or sleeve covers, and wear anti-shake gloves before changing the oil. If it gets on the oil, clean it thoroughly with soapy water.
●The replaced waste engine oil must be collected and handed over to a professional organization for proper disposal, and it is forbidden to dump it at will, dump it into the garbage bin or dump it directly on the ground.

WARNING

●The engine oil and gearbox oil should be changed according to the periodic table specified in the instructions.
●It is necessary to buy a regular and qualified engine oil, as poor quality engine oil will exacerbate engine wear, and in severe cases, it will lead to engine failure and shorten the service life.
●The amount of oil should be as required, too much or too little can cause engine damage.

CAUTION

●Copper gaskets and combination gaskets need to be replaced after disassembly; Both O-rings and gaskets are recommended to be replaced.
●The O-rings need to be assembled in place to avoid trimming.
●Remove the dipstick and fuel filler nut to prevent foreign objects from falling into the engine.

1. Put engine oil

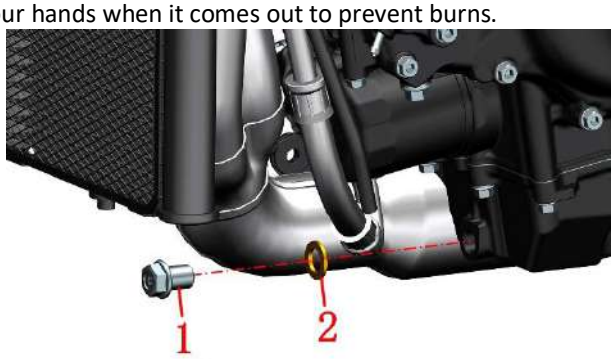
a. Start the vehicle, idle for 3-5 minutes, then turn off for 3-5 minutes (when the temperature is lower than 10°C (50F), the idle running time is appropriately extended).

b. Park the motorcycle firmly with the side Bracket.

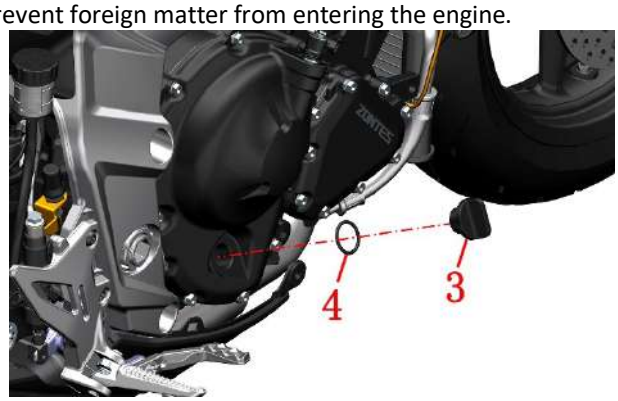
c. Refer to "Removal of Covers" to remove the left envelope panel. Note: Do not touch the muffler when disassembling to prevent burns.

d. Place the oil pan under the drain bolt.

e. Use the 14# sleeve to remove the oil drain bolt (1) and gasket (2).Note: Do not touch the engine oil directly with your hands when it comes out to prevent burns.



f. Unscrew the engine fuel filler cap (3) counterclockwise, remove the fuel filler cap (3) and O ring (4), and use a clean non-woven fabric to put it on top of the fuel filler port to prevent foreign matter from entering the engine.

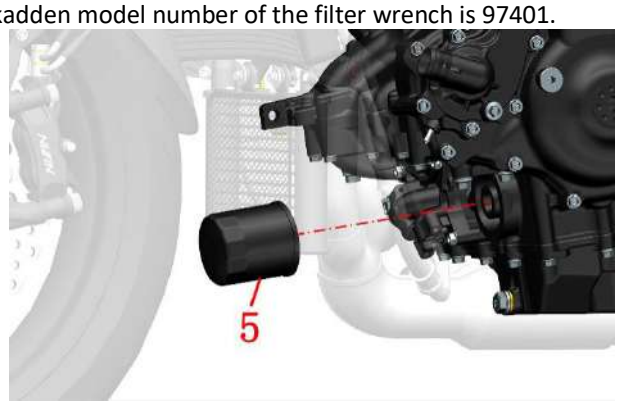


g. After waiting for the oil to flow out completely, wipe the oil drain bolts with a clean non-woven fabric, check whether there are scratches on the joint surface of the oil drain bolts, and replace them. Then use a clean non-woven fabric to wipe the joint surface of the engine and oil drain bolts.

h. Replace the gasket with a new one, and use the 14# sleeve to install the oil drain bolt and gasket back on the engine case. Torque: 40±3 N.m

2. Replace the fine filter

a. Use a 14-sided, 65mm cap filter wrench + a 1/2" (12.5mm) ratchet wrench to remove the fine filter. The Skadden model number of the filter wrench is 97401.



b. Drain the oil from the filter.

c. Use a clean non-woven fabric to wipe off the remaining oil and impurities on the engine.

d. Apply a layer of oil to the new fine filter seal and install it on the engine. Torque: 20±2 N.m.

3. Add engine oil

a. If the filter is replaced, use 3.4L of motorcycle oil with a viscosity of SN10W-50 or higher in a measuring cup, and 3L in a measuring cup if the filter element is not replaced.

b. After removing the refueling cap, use the funnel measuring cup to add oil to the filling port of the right crankcase cover of the engine.

c. Use non-woven fabric to clean the oil filler.

d. Check whether the O ring is damaged or aged, if not, wipe it clean, and replace it if there is. The specifications of the O-ring used in the oil dipstick are: ϕ25×ϕ3.1 hydrogenated nitrile rubber O-ring.

e. Wipe the oil cap clean, rotate the oil cap and O ring clockwise by hand and install the right crankcase cap of the engine.

4. Confirm the oil level.

a.After starting the motorcycle to idle for a few minutes, check whether there is leakage in all disassembled locations, and if so, it needs to be checked.

b. The engine idles for 5 minutes and then turns off for 3 minutes, check whether the oil level meets the standard, if it does not meet the standard, it needs to be withdrawn or replenished to the standard. The inspection method is: keep the motorcycle upright, observe the oil inspection window, and be able to see the oil level and liquid level from the oil inspection window, which means that it meets the standard.

Brake, clutch, cable clearance adjustment

Adjust the clutch handle and clutch line

1. Check

Check whether the rubber sleeve and clutch cable of the left hand are damaged.

b. Whether the free stroke is too large, too large is easy to cause wear and failure of the clutch and shift mechanism (free stroke: 2~4mm).

c. Whether the clutch cable comes out of the card slot.

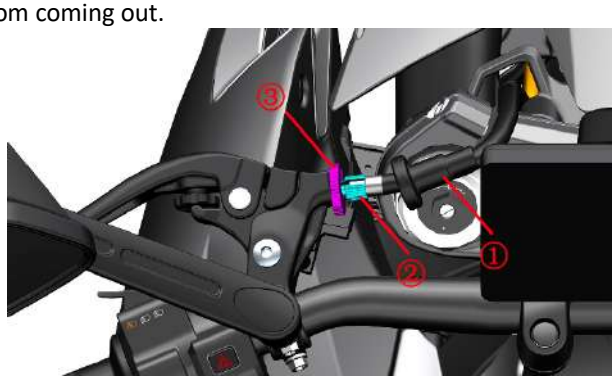
d. Clutch handle free stroke: 10~15mm.

Check the clutch cable for bending or breakage. Replace if necessary. Lubricate the clutch cable with commercially available cable lube oil to prevent premature wear and corrosion.

2. Adjust the clutch cable clearance

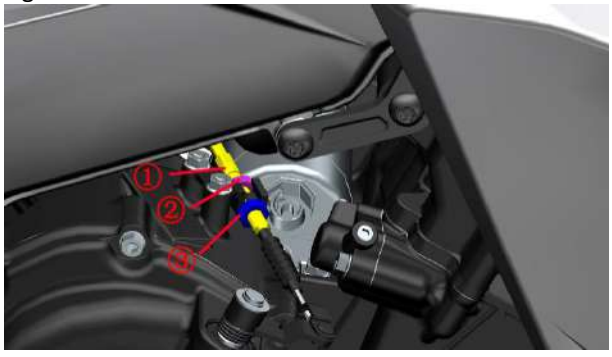
Fine-tuning:

Remove the protective cover①, Then loosen the nut with pliers③,Rotate the adjustment screw②,Finally, tighten the lock nut③ Pay attention to the nut after adjustment③ Adjust the screw② The groove with the rocker arm seat should be staggered to prevent the cable from coming out.



Big Adjustments:

If the fine-tuning cannot meet the requirements, loosen the nuts (3) and (2) with an open wrench, rotate the adjusting screw (1), and finally tighten the lock nuts (3) and (2) again.



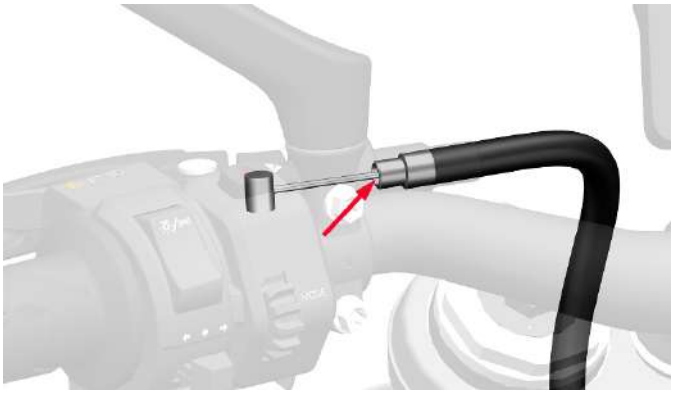
c. If the above two adjustments are invalid, a new clutch cable needs to be replaced.

3. Lubricate the clutch cable

If there is a large rotational resistance and the clutch bending and loose strands of the core are excluded, an appropriate amount of lubricating oil, such as sewing machine oil, can be added. Pay attention to choose a cable with good low temperature resistance to prevent freezing in winter and causing the cable to be unable to move.

a. Screw the slotting of the nut and bolt to the slotting with the clutch rocker arm and take out the clutch line.

b. Use a syringe to absorb the sewing machine oil and inject a small amount from the gap between the clutch cap and the core several times, and turn the throttle while injecting.



c. If the fault of high resistance cannot be solved after lubrication, the throttle cable needs to be replaced.

WARNING

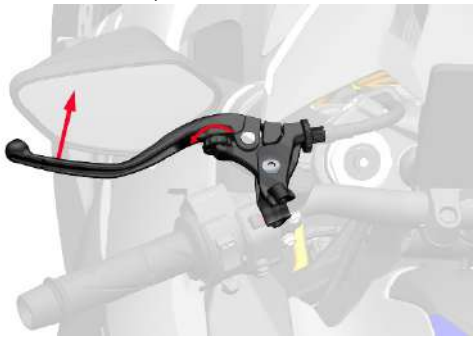
●Excessive free stroke is easy to cause wear and failure of the clutch and shift mechanism.

●After adjustment, be sure to stagger the slotting on the nut, adjusting screw and rocker arm to prevent the cable from coming out of the slot.

●Do not use high viscosity oil to lubricate the cable to prevent excessive viscosity from affecting the free movement of the cable.

4. Adjust the clutch handle

In order to accommodate more drivers driving this model, it is equipped with an adjustable clutch handle. Push the end of the handle to the end in the direction of the arrow, and rotate the adjustment wheel by hand in the direction of the arrow, increasing the distance between the handle and the rubber sleeve, and vice versa.



5. Replace the clutch handle

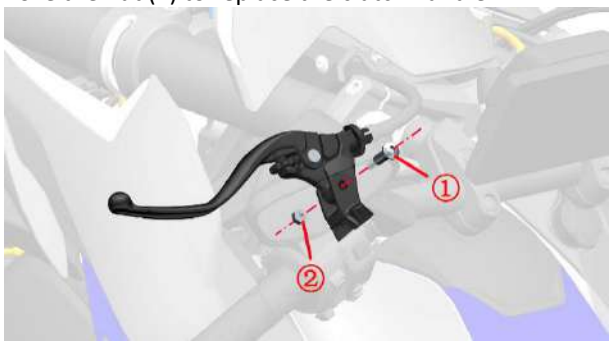
a. Pull out the two plugs of the front brake switch in the direction of the arrow, without distinguishing between the positive and negative poles.

b. Remove the bolts on the clutch switch with a Phillips screwdriver and remove the clutch switch.

c. Replace the new switch, pay attention to aligning the limit hole between the switch boss and the brake main cylinder.



d. Use a 5# Allen wrench to remove the bolt (1) and remove the nut (2) to replace the clutch handle.



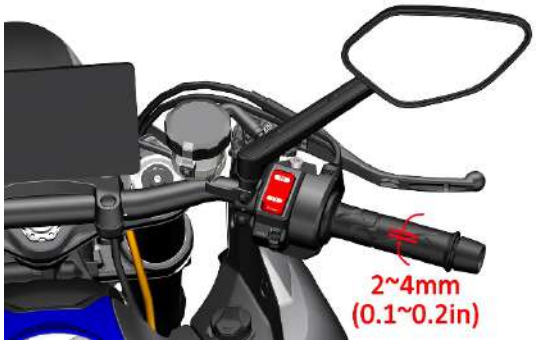
Adjust the brake lever, brake pedal, throttle cable

1. Examine

a. Check whether the rubber sleeve and throttle cable of the right hand handle are damaged.

b. Check whether the right hand handles the rubber sleeve smoothly and whether it can automatically return to its position.

c. Hold the steering handle with both hands, turn to both sides, and turn the right hand handle rubber sleeve at the same time, and confirm whether the throttle can be reset normally at a certain steering angle every turn. If it cannot be reduced, it is necessary to lubricate the cable or the inside of the right handlebar; or replace it with a new throttle cable, or a rubber sleeve for the right hand.



d. After starting the engine, turn the steering knob left and right to ensure that the idle speed remains unchanged during the steering process, and then turn off the engine.

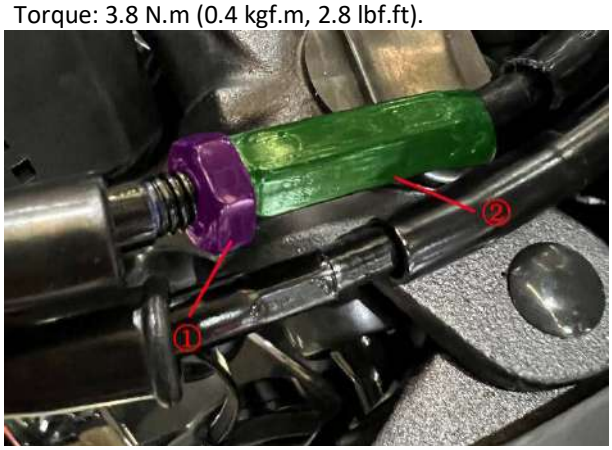
e. Turn the right hand handle to check whether the cable gap is 2~4mm (0.1~0.2 in).

2. Adjust the throttle cable clearance

Fine-tuning:

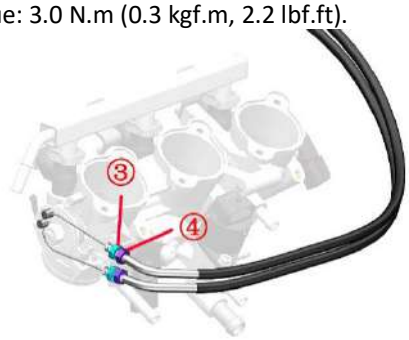
After removing the protective cover, fix the adjusting solenoid (2) with an 8# open end wrench, and then use a 10# open end wrench to loosen the nut (1) counterclockwise. Rotate the adjusting solenoid (2) clockwise to reduce the free stroke, and expand counterclockwise; Adjust the gap to the specified value. After adjusting the clearance, lock the nut (1).

Torque: 3.8 N.m (0.4 kgf.m, 2.8 lbf.ft).



Big Adjustments:

If the above adjustments cannot achieve the desired effect, you can remove the throttle body assembly according to the description in "Removing the Throttle Valve Body Assembly and Cleaning the Carbon Deposition". Use a 10# open-end wrench to loosen the 2 nuts on the bracket to adjust. Torque: 3.0 N.m (0.3 kgf.m, 2.2 lbf.ft).



If neither of these adjustments is effective, a new throttle cable will need to be replaced.

3. Lubricate the throttle cable

If there is a large rotational resistance and the throttle line is bent and the core is scattered, an appropriate amount of lubricating oil, such as sewing machine oil, can be added.

Refer to the disassembly direction to remove the 4 bolts behind the switch with your right hand, and move the upper part of the switch away. Use a syringe to draw a small amount of sewing oil into the gap between the throttle cap and the core several times, and turn the throttle as you inject.



c. If the fault of high resistance cannot be solved after lubrication, the throttle cable needs to be replaced.

WARNING

●After the clearance adjustment of the throttle cable is completed, ensure that the throttle handle can automatically turn back to the closed position, and the engine idle speed cannot be increased due to adjusting the cable.
●After adjustment, the engine idle speed cannot increase when the front of the motorcycle is turned.
●Do not use high viscosity oil to lubricate the cable to prevent excessive viscosity from affecting the free movement of the cable.

4. Adjust the brake lever and brake pedal

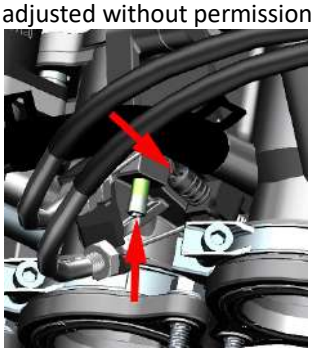
Adjust the brake lever and brake pedal according to the section "Servicing - Braking systems".

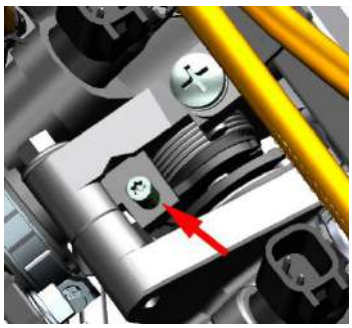
5. Replace the brake handle and brake pedal

Replace the brake lever and brake pedal according to the 'Maintenance - Brake System' section.

Idle speed

Note:
●Before checking the idle speed, other engine maintenance items should be checked and the condition is normal before proceeding.
●The following items should be checked before checking the idle speed:
The maintenance indicator light "🔧" should not be lit.
The spark plug status has been checked.
The air filter and air inlet filter have been inspected or replaced.
Check the throttle clearance.
●The limit screw on the valve body is forbidden to be adjusted without permission.





Check the idle speed:

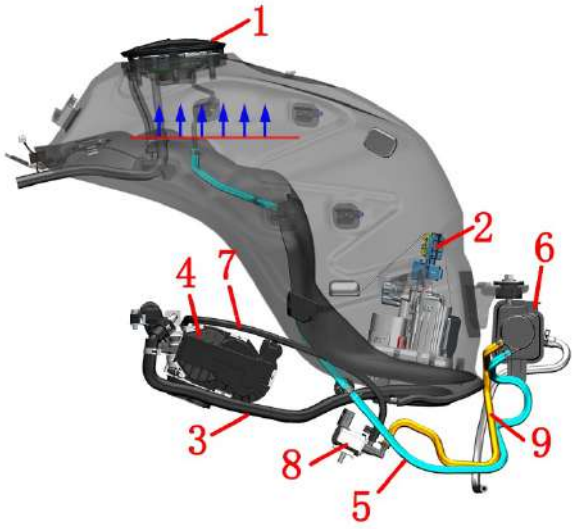
Checking the idle speed of the engine should be done with a hot engine.

Idle speed: 1500±100 rpm.

If the idling speed is not within the standard range or the idle speed is turned off, it should be checked and handled by professional service personnel at the ZONTES special maintenance point or qualified maintenance unit.

Abnormal idle speed or flameout should be checked or repaired according to the troubleshooting process in the chapter "EFI System" in this manual.

703R Fuel Evaporation



1-Fuel Tank Lock 2-Fuel Pump 3-High Pressure Oil Hose
4-Throttle Valve Body Assembly 5-Adsorption/Snorkel
6-Carbon Canister 7-Solenoid Valve Out 6 Air Hose
8-Carbon Canister Solenoid Valve
9-Solenoid Valve Intake Pipe 10-Fuel Tank

Fuel evaporation:
Oil and gas-→-oil and gas separator (inside the tank lock) → adsorption/breather pipe→ solenoid valve inlet pipe→ solenoid valve outlet pipe→ throttle body assembly→ intake manifold→ cylinder

The fuel evaporative contaminant control system can only be inspected after the cover is removed.

Inspect the canister for cracks or damage.

Inspect the adsorption/snorkel for cracks or damage.

Check whether the canister solenoid valve is working properly.

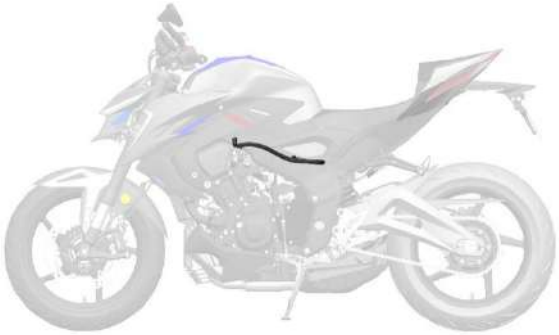
Check whether the inlet and outlet pipes of the solenoid valve are cracked or damaged.

Check that each hose is bent for unsmooth airflow.

Fuel lines

Note:
● When disassembling the high-pressure oil pipe, a small amount of fuel will flow out, and it needs to be undertaken with an oil tray.
● Work should be carried out in an open and ventilated place. Smoking, phone calling, and all other behaviors that may cause sparks are prohibited at the work site.

1. With the help of an endoscope with LED light, the fuel line is inspected for leaks

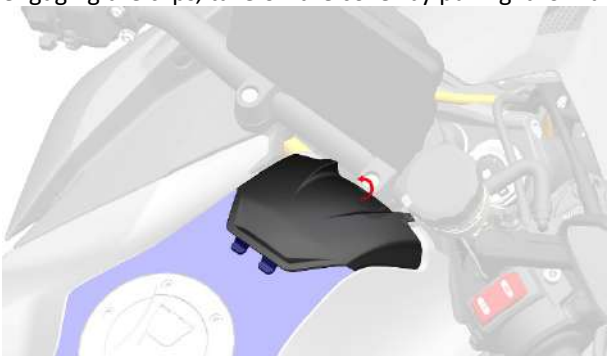




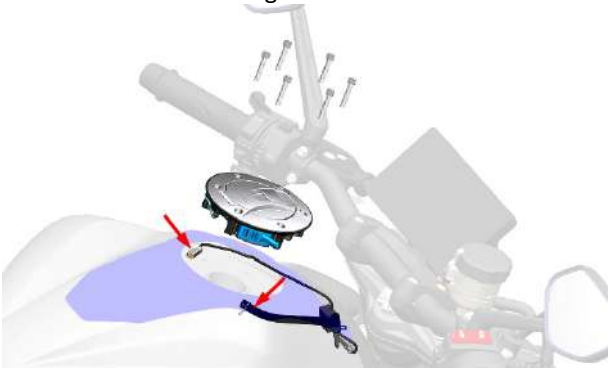
The picture above is a schematic of the equipment with LED endoscope, the picture comes from the Internet, and the copyright belongs to the author of the original picture. Do not use for any other purpose.

2. Replace the high-pressure oil pipe

a. First, remove the seat cushion. Grasp the front end of the fuel tank front cover and gently lift it up; after disengaging the clips, take off the cover by pulling it forward.



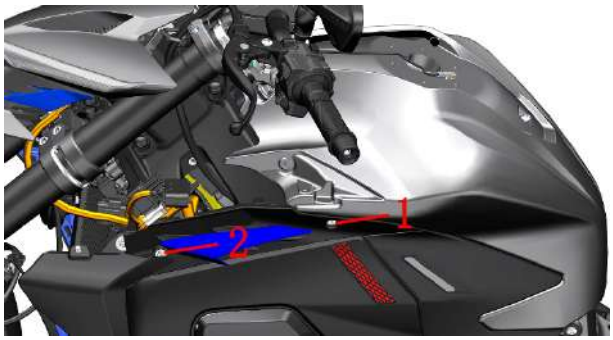
b. Use a #5 hex key tool to remove the 6 bolts. Note to first unplug the tank lock connector and remove the tank lock vent hose before taking off the tank lock.



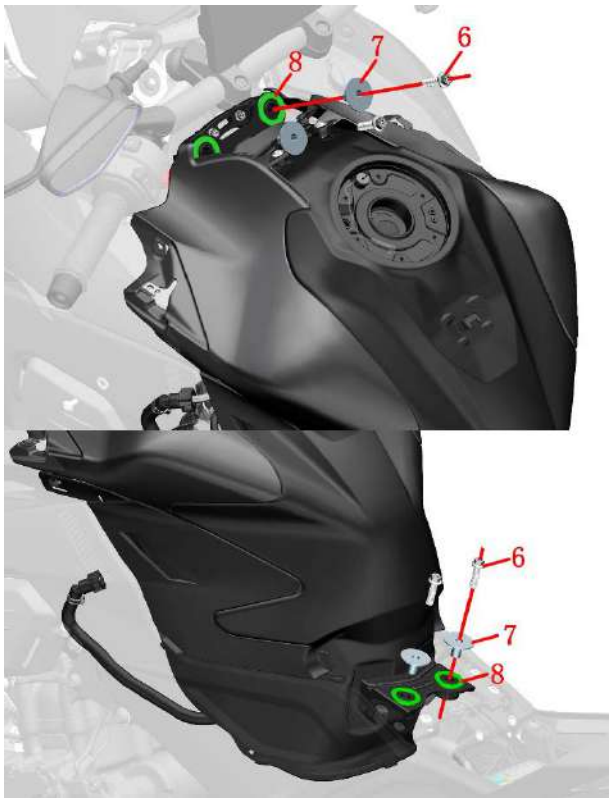
c. Use a T25 Torx wrench to remove the M6×14 bolt (1), then pull out the inner cover of the fuel tank in the direction of the arrow.



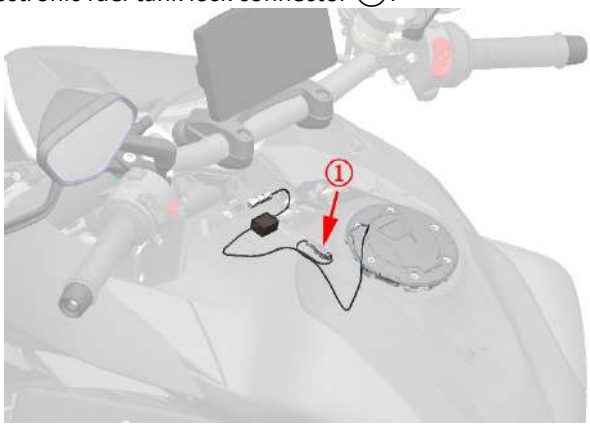
d. Refer to the steps in 'Disassembly of the Fuel Tank Decorative Cover' to remove the fuel tank decorative cover. Use a T25 Torx wrench to remove the two M6×12 bolts (2), then take off the nylon washer (3), the round buffer rubber (4), and the bushing (5), and remove the front part of the left side cover of the fuel tank. Follow the same steps to remove the front part of the right side cover of the fuel tank.



e.Use a #10 socket to remove the four M8×30 bolts (6) at the front and rear endsof the fuel tank, then take off the bushing(7) and the buffer rubber(8).
Standard torque: 30 N·m.



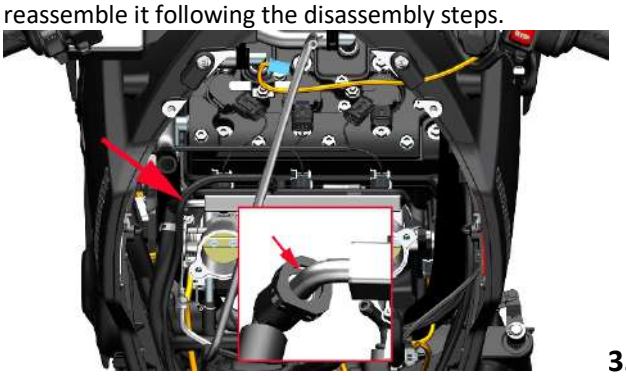
f. Disconnect the fuel tank lock base plate from the electronic fuel tank lock connector ①.



g.Lift the rear of the fuel tank by hand, disconnect the fuel pump connector, power off the vehicle and lock it. Press the anti-disengagement buckle in the direction of the arrow and then pull out the high-pressure fuel pipe, then remove the fuel tank assembly.



h. Refer to the steps for disassembling the air filter to remove the air filter first, then pull out the high-pressure fuel pipe. After replacing with a new high-pressure fuel pipe, reassemble it following the disassembly steps.



3.

Fuel pump

3.1 Fuel pressure is measured using an oil pressure gauge

a. Refer to a~f steps of "replacing the high-pressure oil pipe" in the fuel pipe, first unplug the fuel pump, start the engine and idle until the engine stalls. Turn the engine off switch to " ", and lock the motorcycle after powering off. After wearing waterproof and oilproof gloves, press the anti-release latch, and then pull out the high-pressure oil pipe at the end of the oil pump in the direction of the arrow.

b. Connect the high-pressure oil pipe of the original motorcycle to the pressure gauge, and find a high-pressure oil pipe to connect the pressure gauge and the fuel pump.

Start the motorcycle and let the engine idle and measure the fuel pressure.

The standard pressure is: 450±10kPa (4.59±0.1Kgf/cm2, 65.3±1.45psi). Check valve performance: holding pressure for 1 minute, the pressure should be ≥ 350kPa (3.57 kgf/cm2, 50.75 psi).

3.2 Simple test of fuel pump

If there is no special instrument and equipment, a simple test can be done.

After unlocking the vehicle in the flame-off state, the flame-off switch will be hit "", and the engine will not be started, and the fuel pump should be able to hear the working sound; Or pinch the high-pressure tubing from the bottom by hand, you should be able to feel the obvious pressure, and pay attention to avoid the muffler area to prevent burns. If the engine is in the starting state, the vehicle will be powered off for more than 10 seconds and then check according to the above operation.

4. Abnormal fuel pressure disposal

If the fuel pressure is higher than the standard value, the fuel pump needs to be replaced. If it is below the standard value, the following items should be checked:

a. Whether the fuel line is leaking;

b. whether the tank snorkel is clogged or excessively bent;

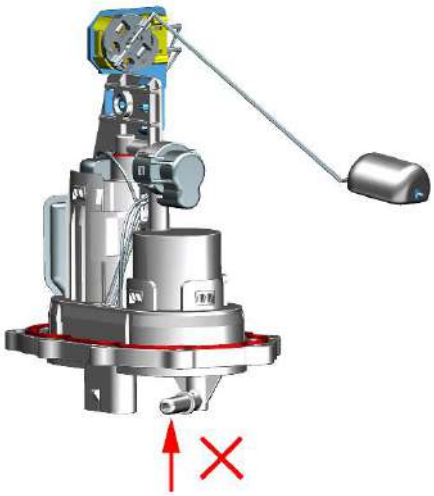
c. whether the fuel pump filter is blocked;

d. Whether the fuel pump is faulty;

e. Whether there is not enough fuel.

WARNING

●When pulling out the executive tubing, pay attention to pulling it out in the direction of the axis, and do not press or push or pull the protruding part of the fuel pump and high-pressure oil rail.





●All actions that may cause a fire, such as smoking, dialing and dialing mobile phones, are prohibited at the demolition site.
●The fuel pump is a precision component,It needs to be assembled in a clean room and requires strict testing, so it is forbidden to disassemble it by yourself.

CAUTION

●After reinstalling the battery, the EFI system needs to be reset. For specific operation, please refer to the precautions in the driver's manual or the throttle valve body section of this manual.

Chain, rear flat fork wear block

Note:

●Before lubricating the chain, it is necessary to ensure that the chain is completely dry. The chain is then lubricated with a special lubricant

●Never use a new chain on a worn sprocket, or the new chain will wear out quickly.

●The open type is convenient for after-sales chain replacement, and the motorcycle is original without opening. A special chain installation tool is required, and the tool needs to be purchased by yourself.

Maintenance and inspection

1. Examine

●Turn off the motorcycle and lower the side brackets to shift the transmission into neutral. Check the slack in the middle of the lower part of the chain between the sprockets.

●Check the sprockets on the engine and the sprockets on the rear wheels for damage, and replace them if necessary.

●Check whether the bolts on the sprocket are loose, if they are loose, tighten them to the specified torque.

Check whether the chain wear block on the rear flat fork is damaged and replace it if necessary.

●Check if the chain is not properly adjusted.

●The chain is dry, badly corroded, or heavily soiled.

●Whether the chain has reached the end of its service life, the normal maintenance service life of the oil seal chain is 10000 to 15,000 kilometers.

●Every 500-1000 kilometers when cleaning the oil seal chain, be sure to check the rear flat fork wear block on the boss surface and plane, when the plane is the chain inside and outside the chain plate contact has a deeper groove of up to 1mm, it is necessary to replace the new rear flat fork wear block, to avoid the rear flat fork wear block is worn through the chain.

●When replacing the new oil seal chain, it is necessary to check the wear and tear of the rear flat fork wear block, such as the rear flat fork wear block is worn to a very thin point by the chain, and there is a 1mm groove in the contact between the inner and outer chain plates of the chain, the new rear flat fork wear block must be replaced to avoid the rear flat fork wear block being worn through by the chain and damaged by the rear flat fork.

2. Maintenance

●Wash the chain with a chain cleaner or neutral detergent designed for use with seals. If the chain is too dirty, clean it with a soft-bristled brush first.

● Wipe off the water and mild detergent and dry the chain

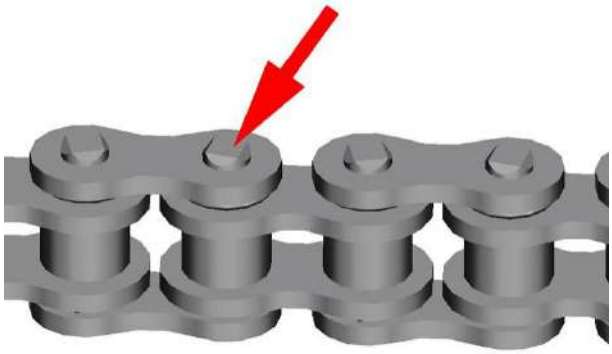
●Chain oil for motorcycle sealing chains, lubricating oil seals, rollers, and inner and outer chain plates are used.

●After fully lubricating the chain, wipe off the excess chain oil and let it stand for more than half an hour to allow the chain oil to fully penetrate and lubricate.

●Keep the chain lubricated

Replace the chain

a. Smooth one end of one of the pins on the chain, remove the chain connecting rod, and remove the chain.



b. Purchase an open-ended chain for installation. Note: Special chain installation tools need to be used for installation, and the tools need to be purchased by themselves.

c. When using the open oil seal chain with union joint, it is necessary to use special tools to rivet, before riveting, it is necessary to evenly apply special lubricating oil to the oil seal of the pin shaft, the oil seal and chain link need to be clean and free of debris, when riveting the hole, it is recommended to rivet the hole many times, the pin hole can not be broken or cracked, and the size of the hole must ensure that the chain link at the riveting place rotates flexibly and the outer chain plate will not deviate or fall off in normal riding.

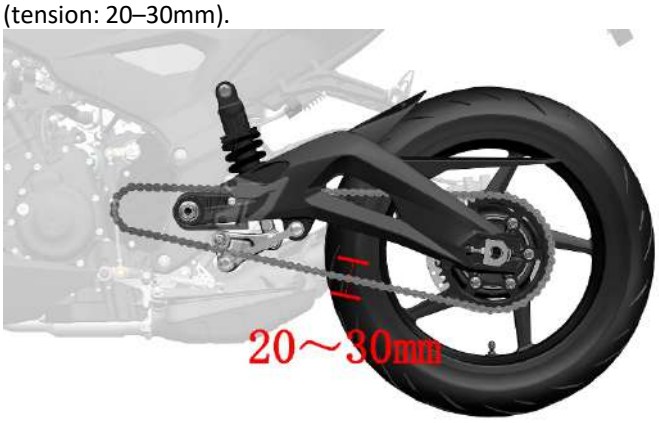
Adjust the chain

Adjust the slack of the drive chain to an appropriate range. Check the chain tension before each ride and adjust if necessary.

a. Support the vehicle securely.

b. Shift the gearbox to neutral.

c. Measure the drive chain tension as shown in the figure (tension: 20–30mm).



d. The tightness of the drive chain is incorrect, and it is adjusted according to the following procedure.

Remove the latch with a vise and loosen the rear axle bolt with a 30# sleeve.

To lock the drive chain, rotate the bolts on the rocker arm toward the rear axle.

To loosen the tight drive chain, rotate the bolts on the rocker arm toward the front axle and push the rear wheel forward.

e. After the adjustment, fix the nut and rear axle nut, install the latch into the corresponding hole, and bend the latch at least 120 degrees with a vise. Standard torque of rear axle nut: 120~130N.m (12.2~13.3 kgf.m, 89~96 lbf. ft).

Replace the rear flat fork wear block

Replace the rear fork and remove the rear fork wear block according to the "Fork Assembly" in this book.



DANGER

●In order to ensure safety, the inspection and adjustment of the transmission chain should be done in advance before driving.

●Never adjust the chain while the engine is running.

●The drive chain is too lax, and if the chain goes off, it may damage the engine,If the rear fork is deformed or broken by a chain cut that is too loose and moving at high speed, please check and adjust the chain slack when using the motorcycle.

WARNING

●Make the transmission chain reach the appropriate relaxation (20～30mm). At the same time, in order to ensure that the front and rear wheels are in a straight line, the scale plates on the left and right sides are adjusted to the same position as the scale mark on the rear flat fork.

●The transmission chain of this motorcycle is refined from special raw materials. It is highly recommended to use our oil seal chain for the replacement of transmission chains. If the strength or quality of other transmission chains is too low, the chain may break and the motorcycle may be damaged or people may be injured. After the oil seal chain is worn and stretched to the service life, it cannot be removed for one or two sections and then riveted for use, which seriously exceeds the fatigue life of the chain, and the chain may be damaged or injured if the chain is broken.

●The rear flat fork wear block fails, and the chain moving at high speed will not only cut and damage the rear flat fork, but also the chain will be damaged, and the rear flat fork or chain break may damage the motorcycle or injured people.

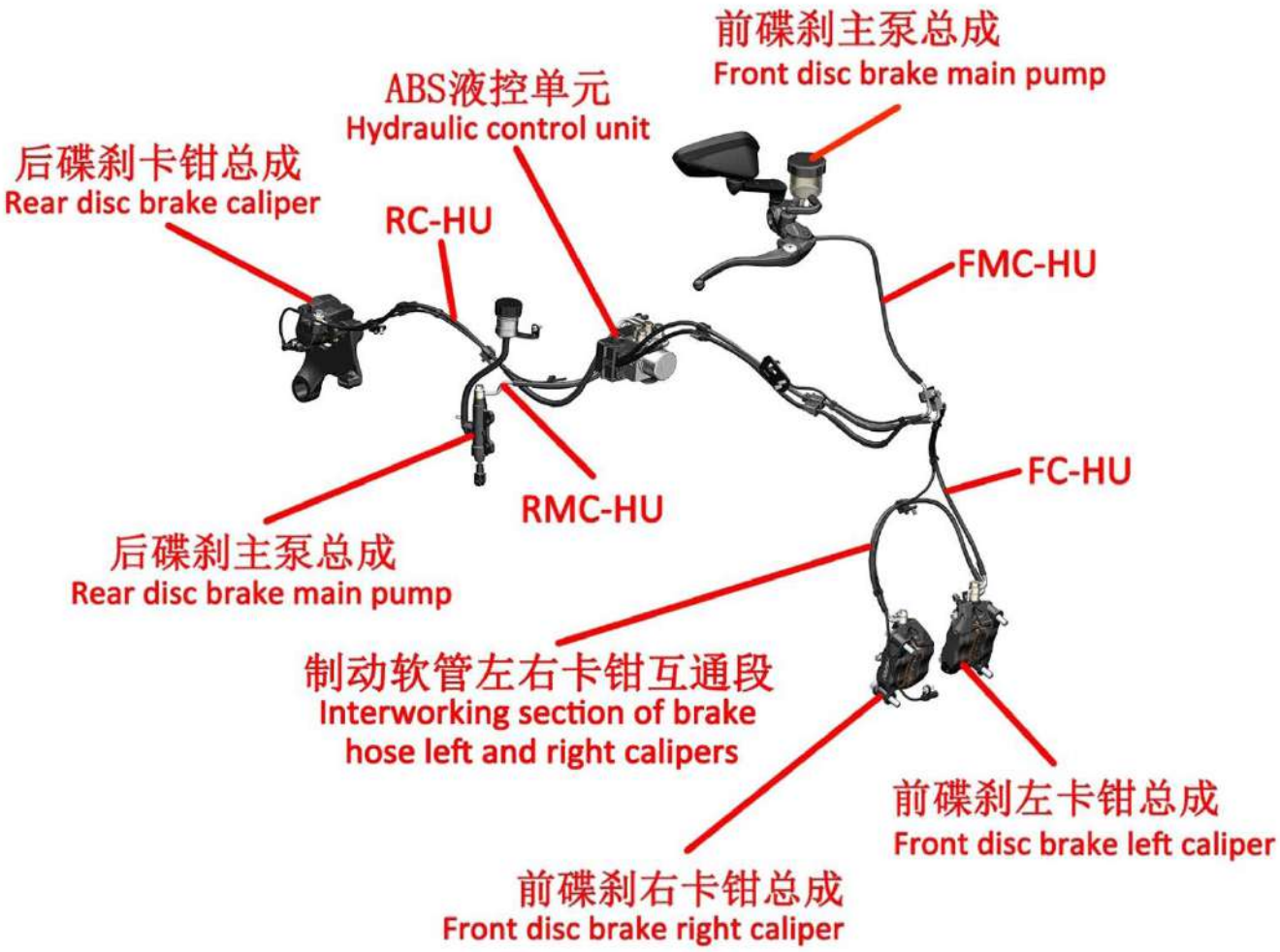
Braking system

Note：

●The arrangement of the brake hose on the motorcycle is detailed in the distribution diagram of the brake system accessories in the "Vehicle Information" chapter of this manual.

Remark:
In order to facilitate after-sales tracking, all those who need to purchase brake hoses, disc brake calipers and disc brake main cylinders, and hydraulic control units need to be reviewed by our company before purchasing. Domestic customers can only purchase after filling in the frame code and engine on the official website.

Brake system component diagram:



Note:

●This inspection should be handed over to a qualified maintenance unit to complete.

●Regularly check whether the level of the brake fluid is 3/4 of the way through the viewing window.

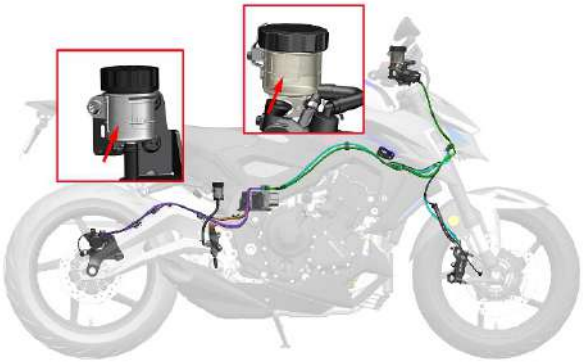
●If brake fluid is swallowed by mistake, contact a poison control center or hospital immediately; In case of accidental contact with eyes, rinse with water and seek medical attention immediately.

●Keep brake fluid away from children and pets.

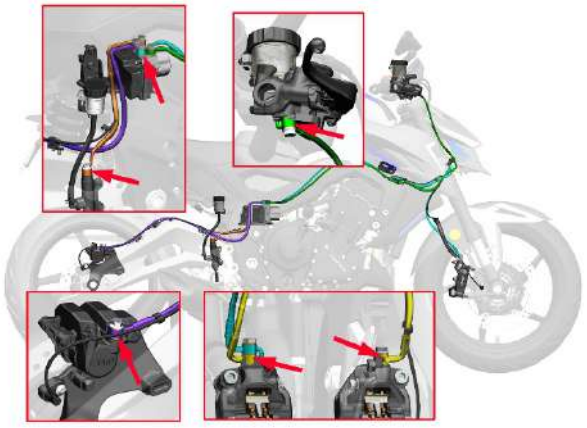
●It is strictly forbidden to flush the main pump directly with high-pressure water.

1. Check the brake components

a. Check whether the liquid level of the front disc brake main pump and the rear disc brake main pump is above the "LOWER" line. Check the oil pipe joints for brake fluid leakage. Observe the color of the brake fluid, the normal should be light yellow, if the color becomes darker, it is recommended to replace the brake fluid.



b. Park the motorcycle on flat ground or on a lifting platform, and use the starting pegs and lifting frame to set up the vehicle. Check the tubing joints of the main pump, ABS hydraulic control unit and caliper for brake fluid leakage. If the brake fluid level in any of the tanks falls below the lower limit level mark, or if the free travel of the brake handle and pedal exceeds the standard, the brake pad wear must be checked. If the brake pads are barely worn, there may be a leak. Please hand it over to the ZONTES special repair shop for maintenance. With the help of an endoscope with LEDs, it is easy to inspect the tubing joints of the ABS hydraulic control unit and the main pump, or to remove the corresponding cover for inspection.



c. Measure the thickness of the front and rear brake discs, and replace them if they are less than 4.5 mm (rear brake discs are less than 4.0 mm). Suspend the front wheels in the air and rotate the front wheels by hand to observe whether there is obvious damage on the surface, such as pits, deep scratches, grooves, etc., if any, it is recommended to replace them. Feel with your hand if there is a noticeable sound of grinding the brake disc when turning the front wheel. Observe whether the brake disc swings when turning the front wheel from the front; If there is oscillation, it needs to be removed according to the steps of removing the brake disc, placed on the standard platform, measured by dial gauge or checked by feeler gauge to check the gap between the brake disc and the standard platform; If the > is 0.08mm, a new brake disc will need to be replaced. Check the rear brake disc in the same way.

WARNING

●Check the brake disc before operating the brake disc until it has cooled down.

●It is forbidden to reduce the temperature of the brake disc by spraying water, which may cause the brake disc to deform and produce abnormal noise.

●If you use a brake disc lock, check whether it has been removed before driving the vehicle.

●The sediment attached to the brake disc should be cleaned diligently.

d. Check the brake caliper bolts

Check the M10×1.5×60 fixing bolt of the left front and right front disc brake calipers with an 8# Allen socket and a torque wrench, the standard torque of this bolt is: 45±5N.m (4.6±0.5 kgf.m, 33±4 lbf.ft).

e. Check brake pad wear from the front. If it is almost worn to the substrate position, it is necessary to replace the brake pads with new ones in pairs.



Front disc brake pad

f. Check the rear caliper brake pads for wear from the rear. If it is close to wear to the base plate, it is necessary to replace the brake pads with new ones in pairs



Western mutual brake pad

DANGER

●Brake pads should be inspected and maintained regularly by a qualified service unit.
●Do not drive immediately after replacing the brake discs or pads with new ones. Be sure to grasp and release the brake handle or pedal a few times to allow the brake disc and pads to fit well to restore normal grip and allow the brake fluid to circulate steadily.
●The braking distance may be longer than the original braking distance after replacing the brake disc or brake pads, and it will take about 300 kilometers (200 miles) of use to achieve the best braking effect after the brake discs and brake pads are fully running-in. Before fully running-in, it is necessary to leave enough braking distance to ensure driving safety.

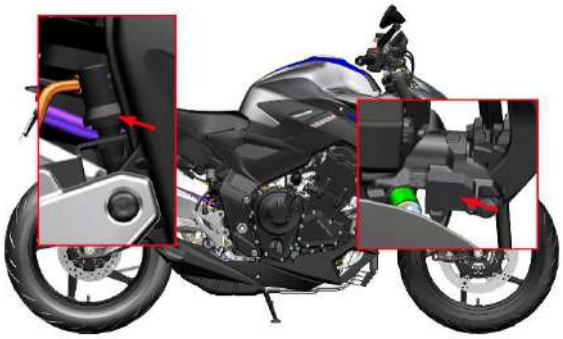
WARNING

●The brake pads must be replaced in pairs, and replacing only one side will cause the brake to be uneven.
●If the brake pads are not in the right position, it is forbidden to operate the brake handle or pedal. Failure to do so will make it difficult for the piston to return and may result in brake fluid leakage.

2. Check the front and rear brake switches

2.1 Check the brake switch

Hold the brake handle of the front main cylinder and press the pedal rocker arm of the rear brake main cylinder to observe whether the rear brake light is on. If it is not lit, it is necessary to check: whether the brake switch is faulty; whether the rear brake light is faulty; whether the fuse has been blown or not; Whether the line is open.



2.2 Replace the brake switch

Front brake switch:



a. Pull out the two plugs of the front brake switch in the direction of the arrow, without distinguishing between positive and negative poles.

b. Use a Phillips screwdriver to remove the bolts and take off the front brake switch.

c. Replace with a new switch, making sure to align the switch protrusion with the limit hole of the brake master cylinder.

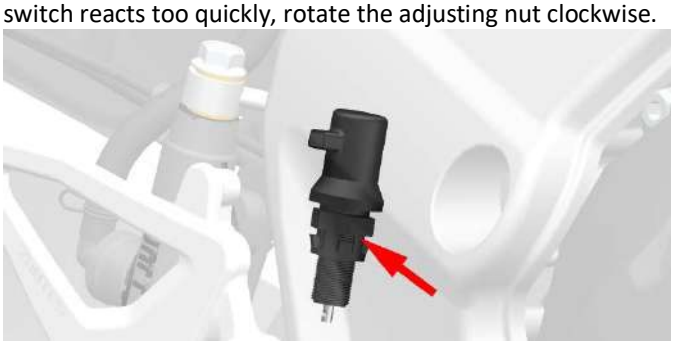
Rear brake switch:

Following the disassembly procedure for the right foot pedal bracket, remove the seat and rear brake pedal bracket, and unplug the connector on the switch.

a. Rotate the nut on the rear brake switch toward the head of the switch to separate the spring from the rear brake switch.

b. Replace with a new switch. To prevent accidental contact, adjust the nut so that the switch catches the spring at the right position, then rotate the adjusting nut downward by half a turn.

Check whether the brake light switch is operating normally. If the switch reacts too slowly, hold the brake light switch and rotate the adjusting nut counterclockwise; if the switch reacts too quickly, rotate the adjusting nut clockwise.



3. Lubricate the brake lever and brake pedal moving parts

3.1 Lubricate the front brake lever



a. Use a #10 plum wrench to turn counterclockwise and remove nut ②.

b. Hold the handle and use a flathead screwdriver to remove bolt ①; remove the brake handle.

c. Wipe the handle push head and the outer end of the piston cleanly with a clean non-woven cloth (at the position indicated by the arrow in the figure), and apply high vacuum grease evenly.

d. Clean bolt ① and evenly apply high vacuum grease.

e. Reassemble.

3.2 Lubricate the rear brake pedal

a. Use a T45 splined wrench to remove the bolts on the brake pedal and take off the brake pedal.

b. Pry open the clip indicated by the arrow, then loosen the two springs on the pedal splined rocker and remove the pedal splined rocker.

c. Wipe the bearing at the rear of the brake pedal clean with a clean non-woven cloth, lubricate and maintain the bearing, and replace the bearing if necessary.

d. Reassemble.



3.3 Replace the brake handle and brake pedal.

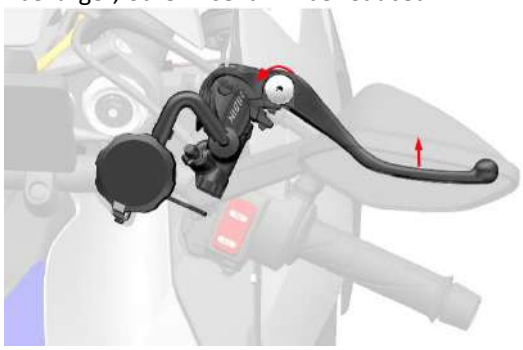
Brake handle: The brake handle can be removed by removing the bolt (1) and nut (2) according to "Lubricating the brake handle".

Brake pedal: Refer to "Lubricated rear brake pedal" and replace the brake pedal after removing it.

4. Adjust the brake handle and brake pedal

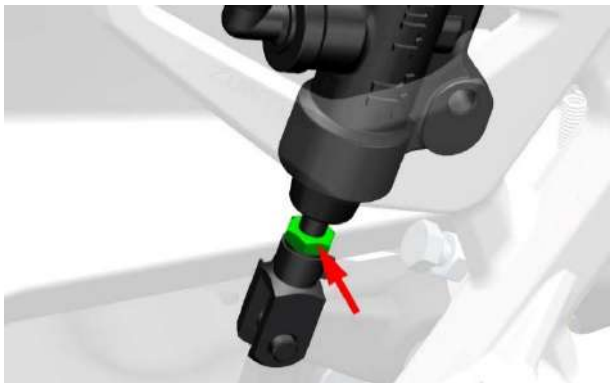
Brake handle:

In order to adapt to the wider range of drivers driving the model, it is equipped with a brake lever that can be adjusted. Rotate and adjust the twist in the direction of the arrow, the distance between the handle and the handle rubber sleeve will be larger, otherwise it will be reduced.

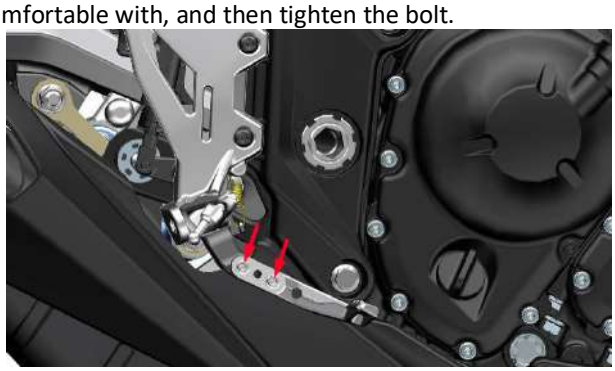


Brake pedal:

Minor adjustment: Use a 10# open-end wrench to adjust the nut on the main cylinder of the rear brake and adjust the brake pedal.



Big adjustment: Loosen the bolt on the brake pedal, adjust the brake pedal to the angle that the driver is comfortable with, and then tighten the bolt.



5. Replace the brake pads

DANGER

●Brake pads should be inspected and maintained regularly by a qualified service unit.

●Do not drive immediately after replacing the brake pads with new ones. Be sure to grasp and release the brake handle a few times to allow the brake discs and pads to fit well and restore normal grip and allow the brake fluid to circulate steadily.

●The braking distance may be longer than the original braking distance after the new brake pads, and it will take about 300 kilometers (200 miles) of use to achieve the best braking effect after the brake disc and brake pads are fully running-in. Before fully running-in, it is necessary to leave enough braking distance to ensure driving safety.

WARNING

●The brake pads must be replaced in pairs, and replacing only one side will cause the brake to be uneven.

●The brake pads must be properly fitted.

●Never operate the brake handle after removing the brake pads.

5.1 Replace Front Brake Pads

The removal and installation methods of the front left caliper and the front right caliper are the same; take the front right caliper as an example.

a. Use a #8 socket to remove pin ①, first take off spring clip ②, then remove brake pad(1).



b. Clean the outer edge of the piston and the pin shaft of dust and other foreign matter.

c. Use a Phillips screwdriver to remove the bolts ③ on the front disc brake master cylinder assembly, take off the upper cover ④, and be careful to protect the rubber sleeve on the upper cover.



f. Push the piston all the way in the direction of the arrow.



g. Reinstall the front disc brake master cylinder assembly, making sure it is assembled accurately in place.

h. Reinstall the two brake pads (1) into the caliper, and place the spring clip (2) between the two brake pads. When assembling, the arrow on the spring clip should point upwards.

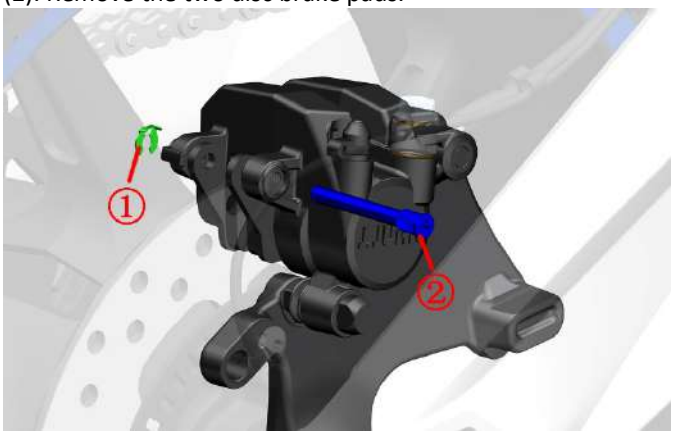


i. Insert pin ① into the hole to secure the brake pad (1), and tighten pin ① with a #8 socket.

j. Repeatedly squeeze the brake lever until braking power is restored.

5.2 Replace the rear brake pads

a. Pull out the circlip (1) with needle-nose pliers and remove the circlip. Use a T25 Torx wrench to remove the bolt (2). Remove the two disc brake pads.



b. With the help of a tool, push the piston in the direction of the arrow to the end. If the resistance is very large, you can refer to the method of adding brake fluid to the front brake main cylinder, remove the upper cover and then push it. If the spring blade on the caliper falls off, it needs to be replaced in the direction shown.



c. Grasp the outer brake pad with the left hand, insert the pin (2) with the right hand, and be careful not to insert it to the end. After the inner brake pad is put in place, insert the pin shaft to the end and lock the pin (2) with a T25 torx wrench, and replace the circlip (1) with needle-nose pliers. Note that the side with grooves is facing the brake disc; The black metal back panel faces the calipers.



d. Repeatedly pinch and release the brake handle to check whether the brake returns to normal hydraulic resistance.

5.3 Abnormal sound of brake pads

The main reasons for the abnormal noise of brake pads are as follows:

a. The brake pads are worn to the limit, and if they are new, check for foreign objects caught between the brake disc and the brake pads. It can be restored after replacing the brake pads with new ones or removing foreign objects.

b. Brake pads that are not too hard from the original factory were used, and the original parts were replaced.

c. The brake disc bolts are loose, and the tightening bolts can return to normal.

d. Failure of the braking system, such as rust on the sliding shaft of the caliper that does not reset; the brake pads and spring pads are not installed correctly. You need to de-rust or reassembled correctly.

e. The runout of the brake disc is out of tolerance, and the new brake disc can be restored to normal.

6. Replace the brake disc

DANGER

●The motorcycle must be parked on a level, stable ground or lifting platform.

●After replacing the brake discs and pads or reassembling the front and rear wheels, the brake handle must be operated repeatedly until the brake restores the braking effect.

●Soiled disc and pads can reduce braking effectiveness, so replace them with new ones and clean the soiled discs.

WARNING

●Do not operate the brake handle after the brake disc or rim assembly is removed.

●The new brake disc runout ≤ should be checked for 0.08 mm (0.003 in) before assembly.

6.1 Replace the front brake disc

The front brake disc can be removed by referring to the steps described in this manual "Fork Assembly" to remove the front wheel assembly.

6.2 Replace the rear brake disc

Refer to the steps for removing the rear wheel assembly in this manual "Fork Assembly".The rear wheel assembly can be removed.

Brake hose

Note:

● This inspection should be carried out by a qualified maintenance unit.

● Regularly check the brake hoses according to the maintenance schedule.

Referring to steps 1 and 2 for inspecting brake components in the braking system, an endoscope with an LED can be used to facilitate the inspection of the ABS hydraulic unit and the master pump's oil pipe connections, or the corresponding cover can be removed for inspection.

Brake fluid

Note:

●This inspection should be handed over to a qualified maintenance unit to complete.

●It is strictly forbidden to flush the main pump directly with high-pressure water.

●After disassembly, make sure that all parts are properly replaced.

●It is strictly forbidden to mix with water, dust, impurities and silicic acid or petroleum liquids, otherwise it will cause serious damage to the braking system.

●This motorcycle uses DOT4 brake fluid, and it is forbidden to mix it with other brake fluids.

●Wear protective gloves/protective clothing/goggles/protective masks.

●The brake fluid must be used in time after opening, and it must be sealed and moisture-proof when stored; It is recommended not to exceed 1 month. Inferior or damp brake fluid can adversely affect the braking system, which can lead to brake failure if the impact is severe.

●Brake fluid should be avoided from dripping onto the paint surface of the covering parts or parts surface, and rinse with clean water immediately if accidentally splashed.

DANGER

●If brake fluid is swallowed by mistake, contact a poison control center or hospital immediately; In case of accidental contact with eyes, rinse with water and seek medical attention immediately.

●Keep brake fluid away from children and pets.

●The motorcycle must be parked on a level, stable ground or lifting platform.

1. Brake fluid is added to the front and rear disc brake main cylinders

1.1 Add front brake master cylinder brake fluid

a. Place the vehicle.

b. Wrap the main cylinder around the main cylinder with an oil-resistant plastic film to prevent brake fluid from dripping onto the surface of the parts and damaging the paint layer.

c. Remove the two bolts with a Phillips screwdriver and remove the upper cover. Be careful not to lose the sealant sleeve.

d. Use the brake fluid moisture content tester to measure the water content, if it is > 2%, all brake fluid needs to be replaced; If 2% is ≤, add freshly opened DOT 4 brake fluid to 3/4 of the clear viewing window of the front disc brake main cylinder. It is recommended that the water content should be less than 1.5%. TOTAL Total HBF 4 (DOT 4) brake fluid 0.22L (0.23 US qt, 0.19 lmp qt, 0.06 US gal, 0.05 lmp gal).



The picture above shows the brake fluid moisture content tester, the picture comes from the Internet, and the copyright belongs to the author of the original picture. Do not use for any other purpose.

e. Clean up the foreign matter before reassembling.

1.2 Add brake fluid to the rear brake master cylinder

a. Use a T30 Torx wrench or a #8 socket to remove the bolts, then pull out the rear brake fluid reservoir. Wrap the area around the master cylinder with oil-resistant plastic film to prevent brake fluid from dripping onto component surfaces and damaging the paint.



b. Unscrew the main pump cover counterclockwise and remove the rubber sleeve inside. Add an appropriate amount of brake fluid.



2. Change the brake fluid

Follow the steps on the previous page to add brake fluid, and if the measured water content is > 2%, the brake fluid needs to be replaced. This test should be done every 5,000 kilometers (3,106 miles) or every 12 months. It is recommended to replace the brakes every two years. If the brake fluid is not replaced for a long time, it will form flocculent materials to block the oil pipe, the oil hole of the disc brake main cylinder or the piston to stagnate, resulting in poor braking effect or failure, and then affecting driving safety.

2.1 Change the front brake fluid

a. Wrap the area around the front brake main pump with oil-resistant plastic film.

b. Take the former right caliper as an example. Pull out the rubber cap (1) of the deflating nozzle and put on the 8# plum wrench. Slip a 6mm (0.23 in) hose into the vent nozzle (2), being careful not to remove the torx wrench.



c. Place the other end of the hose in the oil can.

d. Follow the steps for adding brake fluid to remove the upper cover of the front brake main cylinder.

e. Turn the 8# Torx wrench counterclockwise with your right hand to release the air vent, and pinch the front brake handle with your left hand slowly and at a constant speed to the end and keep it still. Lock the deflation valve clockwise and slowly release the handle. Pay close attention to the fluid level of the front brake main cylinder, and add it in time when it is too low to avoid air bubbles entering the brake hose. Repeat the previous steps until clear, clean, light yellow brake fluid comes out.

f. Observe whether the liquid level height of the main pump is at 3/4 of the transparent inspection point, if it is no longer necessary to add or use a syringe to extract or discharge.

g. Unplug the 6mm (0.23 in) hose after the brake fluid is replaced; Use a torque wrench to tighten the bleed nozzle to the standard torque: 10 N.m (1 kgf.m, 7 lbf.ft). After that, the rubber cap is back to the venting nozzle.

h. Swap out the old brake fluid in the front left caliper in the same way. Pay close attention to the fluid level in the front brake main pump.

i. Replace the main pump cap.

j. Repeat the pinch and pinch of the brake handle to check whether the brake returns to normal hydraulic resistance.

⚠WARNING

●The discharged brake fluid should be properly disposed of and no further use should be prohibited. It is forbidden to pollute the environment by dumping at will; or feel free to place, etc. It should be handed over to a qualified recycling unit for proper disposal.
●The steps to drain the brake fluid must be strictly implemented and must not be disordered; Avoid air bubbles from entering the brake line.
●Pinch the brake lever at a slow and uniform speed to avoid air bubbles entering the brake line.
●The deflation nozzle must be locked in place before the brake handle can be released, and semi-locking is prohibited; And don't overexert yourself.

2.2 Replace the rear brake fluid

Refer to the previous steps to add the brake fluid of the rear brake main cylinder and remove the upper cover and sealant sleeve of the rear brake main cylinder.

Refer to the method of the front right caliper, and change the brake fluid in the rear brake caliper.

3. Brake system exhaust

If the brake handle is soft and the braking performance is significantly reduced, you should first check whether the brake fluid level of the main cylinder is lower than the "LOW" line and whether the braking system is leaking. If the problem persists after excluding the above two items, you can try venting the operation. The exhaust operation is similar to that of changing the brake fluid at the front. Changing the brake fluid requires a steady flow of clean, transparent light yellow brake fluid, and a foamy brake fluid during the exhaust operation.

After the exhaust is completed, it is necessary to check whether the brake fluid level of the main cylinder meets the standard.

⚠WARNING

●The discharged brake fluid should be properly disposed of and no further use should be prohibited. It is forbidden to pollute the environment by dumping at will; or feel free to place, etc. It should be handed over to a qualified recycling unit for proper disposal.
●During operation, it is necessary to pay close attention to the liquid level height in the main pump, and it is necessary to replenish it in time to avoid air entering the brake hose.

Rims and tires

⚠DANGER

●Check the condition and pressure of your tires before driving.
●When the tire is worn to the limit or there are cracks and wounds on the surface, it should be replaced in time.
●When using new tires, you need to pay extra attention to driving safety, as new tires that are not properly run in may slip and cause the motorcycle to lose control.
●Avoid acceleration, sharp turns, and emergency braking for 150 kilometers (100 miles) after replacing new tires.
●The front tires are 120-70ZR17 and the rear tires are 180-55ZR17. When changing tires, you should change to standard tires, and problems may occur when using non-standard tires.
●It is not recommended to repair the tire by external repair, and the tire needs to be disassembled for internal repair. Temporary emergency can be used external compensation, but the speed should be reduced, and as soon as possible to the maintenance unit for internal compensation. If there are bumps, punctures, scratches on the sidewall, and large holes in the tread damage, it should be replaced directly. After repairing the tire, the dynamic balance should be re-done.
●Do not fit an inner tube inside the tubeless tires of this motorcycle. Too much heat can cause the inner tube to burst. This motorcycle can only be used on tubeless tires. Rims are designed to use tubeless tires, and when accelerating or braking hard, the tires with inner tubes can slide on the rims, causing rapid air bleats.
●In order to ensure the safe operation of the motorcycle, it is necessary to ensure that the wheels are absolutely rounded. Loose spokes and wheel loss can cause instability at high speeds and may cause loss of motorcycle control.

The wheels do not need to be removed to perform the maintenance work recommended in the maintenance schedule.

1. Inspect the rim for damage.
2. Slowly rotate the wheel to see if it "wobbles". If it is found to be wobbly, the rim is not round or "absolutely" round. If the shaking is obvious, please hand it over to the ZONTES special maintenance shop for maintenance.



⚠WARNING

●Check the tire pressure regularly, the standard is 250kPa (2.55 kgf/cm^2, 36 PSI) at room temperature for the front and rear wheels; Maximum tire pressure must not be greater than 290 kPa (2.96 kgf/cm2, 42 PSI) in cold.
●When you find that the tire pressure drops, you should check whether the tire has nails and small holes; whether there is a collision on the side of the rim that has caused deformation or cracks.
●When using a tire scraper to remove a tire, take care to avoid the valve position. Pay attention to protect the contact area between the rim and the tire lip, if it is scratched, it may cause air leakage.
●If the tire pressure is too high, the contact area with the ground is reduced, and it is easy to slip and lose control, and

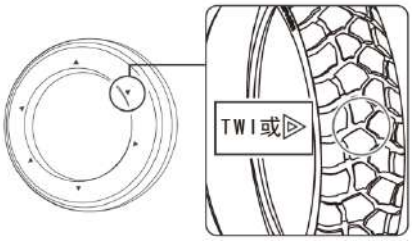
it is also more likely to cause a puncture in summer. Too low can lead to steering difficulties, accelerated wear and increased engine load and increased fuel consumption.
●Frequent exposure to the sun will cause tires to crack and age, so it is recommended to park the motorcycle in a dustproof, sunscreen, and ventilated place; Or cover the motorcycle to protect the body parts, but also better protect the tires. If you do not drive for a long time, you should support the motorcycle firmly and let the tires hang in the air to avoid deformation caused by long-term load in contact with the ground.
●It should not be used because tire self-replenishment may clog the air holes of the tire pressure monitoring sensor, causing difficulty inflation or tire pressure monitoring failure.

1. Check the tires

Check your tires and check your tire pressure using an air pressure gauge before each unpaved ride and when you return from your unpaved ride. If you're only riding on the road, check the pressure at least once a month or when you notice a lack of tire pressure. Check the tire pressure while the tires are cooling.

a. Park the motorcycle on a flat and stable ground or lifting platform, and use a jack to lift the front and rear wheels 2cm off the ground. Inspect the tire for cuts, cracks, exposed fabric or tire lines, or nails or other foreign objects embedded in the side or tread of the tire. Also check the sidewall of the tire for any abnormal bulges or bulges.

b. Support the front wheels with suitable tools, let the front tires hang in the air, and then turn the tires to carefully check for abnormalities, such as eccentric wear, nails, cracks, etc. Clean up small stones or other foreign objects embedded in the tread. Check whether the tread and sidewall have been worn to the mark, if it is close to or has been worn to the mark, it should be replaced with a new tire of the same specification in time. Use the tire pressure gauge to measure the tire pressure when the tire is cold, and replenish or deflate to the standard value.



The sidewall triangle (△T.W.I.) markings indicate the position of the wear strips. If it is worn to the marked point, it means that it has been worn to the limit, and it will be a safety hazard to continue driving, and it must be replaced with new tires of the same specification.

c. The rear tire inspection is consistent with the front tire and will not be repeated here.

2. Replace the tires

a. Replace the front tire

The front wheel assembly can be removed by referring to the step-by-step description of removing the front wheel assembly in this manual "Front Fork Assembly". Use a tire scraper to remove the tire, pay attention to avoid the valve position when disassembling, and never use a crowbar to pry the tire at the valve position to avoid damaging the tire pressure sensor. Before press-fitting the tire, it should be installed according to the direction of rotation indicated on the sidewall, and the yellow marked tap should be aligned with the valve position. After replacing the new tires or repairing the tires, you need to rebalance the dynamic to avoid the front wheel shaking caused by imbalance affecting the driving experience.

b. Replace the rear tire

Refer to the description of the steps in this manual "Fork Assembly" to remove the rear wheel assembly. Other operations are similar to changing the front tire and will not be repeated here.

c.Propose:Do not handle tires below -10℃ to prevent damage.

Steering mechanism

Note:

●Regularly inspect the steering mechanism according to the requirements of the regular maintenance schedule.
●Park the motorcycle on a flat, stable ground or lifting platform and use a jack to support the vehicle.
●Too little clearance of the steering mechanism can lead to inflexible steering and accelerate bearing wear. If it is too large, it will cause driving shaking, and there will be abnormal noise when braking.

1. Check the steering mechanism

a. Support the front wheels with appropriate tools, let the front tires float in the air, and then turn the steering knob left and right to confirm whether the rotation is flexible and smooth; Whether there are signs of pulling on the cables and cables.

b. Keep the front wheels in the air, and shake the front wheel assembly in multiple directions, forward, backward, left, and right, to confirm whether the fork assembly is axially series or radially loose.



2. Adjust the steering mechanism

If the steering is not flexible or loose, the axial bearing clearance should be adjusted.

a. Refer to the steps for disassembling the upper plate assembly in this manual "Fork Assembly", and pull out the direction handle and the upper plate assembly upward.



b. For the sake of illustration, other components are hidden here. Move the washer (1) up first, and then loosen the adjusting nut (2a).



c. If the steering is heavy, loosen the adjusting nut (2b) counterclockwise. Tighten clockwise to 35 N.m (3.6 kgf.m, 26 lbf.ft), then 1/4 turn counterclockwise, then 13 N.m (1.3 kgf.m, 10 lbf.ft).

d. If there is any loosening, it should be tightened directly clockwise to 35N.m (3.6 kgf.m, 26 lbf.ft), then 1/4 turn counterclockwise, and then 13N.m (1.3 kgf.m, 10 lbf.ft).

e. After adjustment, confirm whether the steering is restored, if it returns to normal, rotate the nut (2a) clockwise, and after touching the rubber pad (3), align the anti-loosening washer (1) with the grooves of nuts (2a) and (2b).



f. Assemble the orientation assembly back.

g. The front wheel is suspended in the air to correct the steering handle, and the steering mechanism is smooth and free of stagnation by gently pushing and pulling the steering handle with your hand. The fork assembly should be able to slowly deflect to the bottom under its own weight when slightly tilted to one side, and readjust if it is fast to the end.

3. Maintain the steering bearing

If the clearance of the steering bearing cannot be restored by adjusting the steering bearing, the steering bearing needs to be removed and checked for wear or rust of the bearing and housing ring, lack of grease, etc.

Refer to the steps for replacing the lower plate in this manual "Fork Assembly", which will not be repeated

4. Fault

If you feel more strenuous to turn the handlebar normally, you need to investigate the following reasons:

a. Whether the steering mechanism is too tight, refer to the previous steps to adjust the steering mechanism to solve;

b. The bearing of the steering mechanism is rusty, the seat ring or the steel ball is damaged, and it needs to be disassembled and replaced;

c. If the front tire pressure is insufficient, it needs to be charged to the standard tire pressure, which is 250kPa (2.55 kgf/cm2, 36 PSI) at room temperature;

d. The lower plate column is deformed and needs to be removed and replaced.

Front shock absorber

Note:

●Every 10,000 km (6,200 miles) and 20,000 km (12,400 miles) or every 12 months, the fork should be checked for leakage or deformation and bending, and whether the shock absorption rebound is normal.

●Before each ride, check whether the front shock absorber is leaking and whether the fasteners are loose to ensure driving safety.

●Bolt torque at the hollow shaft of the front wheel of the shock absorber bottom barrel: 20 N.m (2.0 kgf.m, 15 lbf.ft).

●To replace the hydraulic oil, all parts should be thoroughly cleaned with kerosene or diesel, and 7.5W hydraulic oil should be poured at one time using a graduated cylinder to avoid mixing different hydraulic oils. 410ml(13.8 US oz,14.4 Imp oz, 25 cu-in).

●After passing on dusty or muddy roads, the foreign objects on the fork pipe (exposed chrome section cylinder) should be cleaned up in time to avoid scratching the dust or oil seal causing leakage; Can be wiped clean with a soft cloth.

●Do not use a high-pressure water gun to rinse directly against the dust seal at close range.

●If the motorcycle is not driven for a long time, it should be parked in a ventilated and dry environment, as the dark and humid environment can easily lead to rust of the fork pipe and rust other parts of the vehicle. Coastal areas should be dampened more frequently before maintenance than inland areas. After wiping it clean, you can spray a small amount of anti-rust oil to prevent rust.

1. Check the appearance

a. After the motorcycle is parked firmly, let the front wheels hang in the air, and rotate the direction to observe whether there is leakage in the front shock absorber, and whether there are scratches, pits, rust on the surface of the fork tube. Shallow scratches, small pits, and slight rust can be smoothed with fine sandpaper of about 2000 mesh. Wipe off dust or foreign objects from the dust seal. If there is a dust jacket, remove it before checking.



b. Check whether the bottom cylinder is peeling off the paint; Signs of whether the mounting points of the front fenders, front wheel hollow shaft and front brake calipers are broken or cracked. Check the bottom of the bottom barrel for leaks.



c. If a large amount of hydraulic fluid is attached to the fork tube, wipe it clean before riding and observing. If there is no oil stain or slight oil stain, it is the hydraulic oil accumulated during the assembly of the dust seal, and it can be judged that the oil seal is not leaking. If a small amount of oil stains or sludge mixture is attached, wipe the surface of the fork tube and oil seal after removing the dust seal, compress it once, absorb the shock before wiping it clean, and then press it; Repeat 10 times. Observe whether there is still on the fork tube, if there is, the front shock absorber oil leakage needs to replace the dust seal and oil seal, if not, a small amount of hydraulic oil accumulated during assembly is normal.

d. Check whether there is leakage at the bottom of the bottom cylinder with the help of a mirror or mobile phone lens, if there is a slight leakage, check whether the bolt is loose, where the bolt torque is 20~26N.m (2~2.7 kgf.m, 15~19 lbf.ft). If there is still leakage after tightening, the gasket should be replaced.



2. Check the shock absorption performance

Pinch the front brake handle and press down hard in the direction of the handle, after letting go, it should be able to compress smoothly and then return to normal, repeat the operation several times to check. If there is blockage, it is necessary to remove the shock absorber for investigation. If there is a collision with the front wheel or a high-speed hurdle, the shock absorption should be checked for deformation. Check the damping performance according to the maintenance periodic table. It is necessary to prevent the motorcycle from rolling over during operation.

3. Adjust the preload

For detailed steps, please refer to the assembly video "ZT703-RR Front and Rear Shock Absorption Adjustment Video Tutorial" and the "User Manual" delivered with the vehicle.

4. Shock absorption before disassembly

Remove the front shock by referring to the steps for removing the front shock absorber in this manual "Fork Assembly".

5. Straighten the fork tube

If the front wheels of the motorcycle cross the hurdle at high speed or after the impact, check whether the fork pipe is deformed. Take the left shock absorption as an example, use the end face of the front axle of the shock absorbing bottom cylinder and the end face of the front fender installation point to fix the shock absorption; Or remove the fork tube. Use the dial gauge to detect the deformation of the fork tube in the axial direction, and turn the fork tube to measure different positions.



The slight deformation of the deformation < 0.2mm (0.008 in) can be supported by a V-shaped iron block to support the fork tube and place soft rubber or rubber, copper sheet, etc. on the contact surface to prevent the fork tube from scratching, use the press slowly, small pressure and small stroke to straighten it many times, and measure while straightening, and the radial runout should be < 0.05mm (0.002 in) after correction. If the original bending deformation part is out of circle after correction, it should be replaced. If the deformation is too large, the shock absorber should be replaced.



6. Troubleshooting

a. If there is a significant impact sound when driving on uneven roads or when braking urgently, the following items need to be checked:

Whether the shock absorber spring is broken and the elastic force decreases;

Whether the hydraulic oil is insufficient or air is entered;

Whether there is too much hydraulic fluid;

Whether the spring is axially bent and rubs against the fork tube.

b. The following items should be checked if the shock absorption is too hard:

Whether there is too much hydraulic fluid;

Whether the fork tube is bent and deformed;

Whether the springs have been modified.

c. If the shock absorption is too soft, the following items should be checked:

Whether or not the hydraulic fluid with low viscosity has been changed;

Whether the spring force decreases;

Whether there is too little hydraulic fluid.

Rear shock absorber

Note:

●Every 10,000 km (6,200 miles) or every 12 months, the fork should be checked for leakage and normal shock rebound.

●If there is a lot of sediment attached to the shock absorption, it should be cleaned in time to prevent the soft and large stones from scratching the chrome parts and causing rust.

● Non-professionals should never disassemble the rear shock absorber by themselves.

●It should be maintained according to the regular maintenance table.

1. Examine

a. One person straightens and holds the motorcycle steady, and the other person presses the rear armrest in the back to observe whether the rear shock absorption can be smoothly recovered.

b. Check whether the shock absorber bolt is loose.

c. Check whether there is leakage at the bottom weld of the shock absorption.

2. Adjust the preload

For detailed steps, please refer to the "User Manual" of the on-board delivery of ZONTES Mall.

3. Shock absorption after replacement

Remove the rear shock absorber by referring to the "Fork Assembly" section of this book.

Bolt/Nut/Fastener

Note:

● Regularly check the vehicle body fasteners according to the maintenance schedule.

Check the fasteners of key components

Check whether the front disc brake caliper bolts, front shock absorber lower tube bolts, upper and lower link plate bolts, disc brake and sprocket bolts, rear axle nuts and cotter pins, side stand engine kill switch bolts, upper link plate decorative nuts, rear swingarm axle nuts, engine mount bolts, and regulator bolts and nuts are loose.



Side brackets

Note:

●Park the motorcycle on a flat, stable ground or lift platform and lower the side bracket.

●When disassembling and installing the spring, it is necessary to prevent the spring from suddenly flying off and causing personal injury.

1. Examine

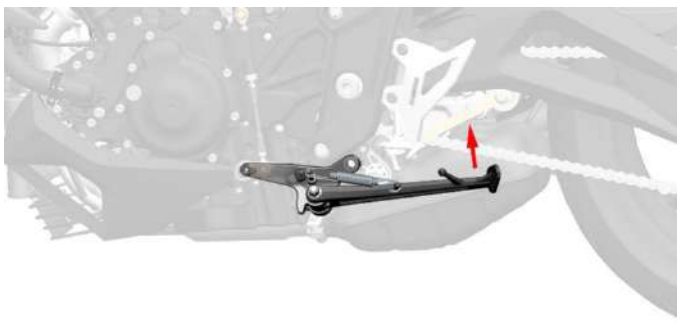


① the parking position ② the driving position

a. Check whether the spring of the side bracket is damaged and whether the elastic force is normal.

b. Check whether the side bracket rotates normally. Turn to the angle of Figure 1 should be able to automatically turn to the parking space under the spring elastic force; At the angle of Figure 2, it can automatically turn to the parking space. If necessary, the side brackets can be removed for lubrication.





c. Check whether the ignition switch function is normal

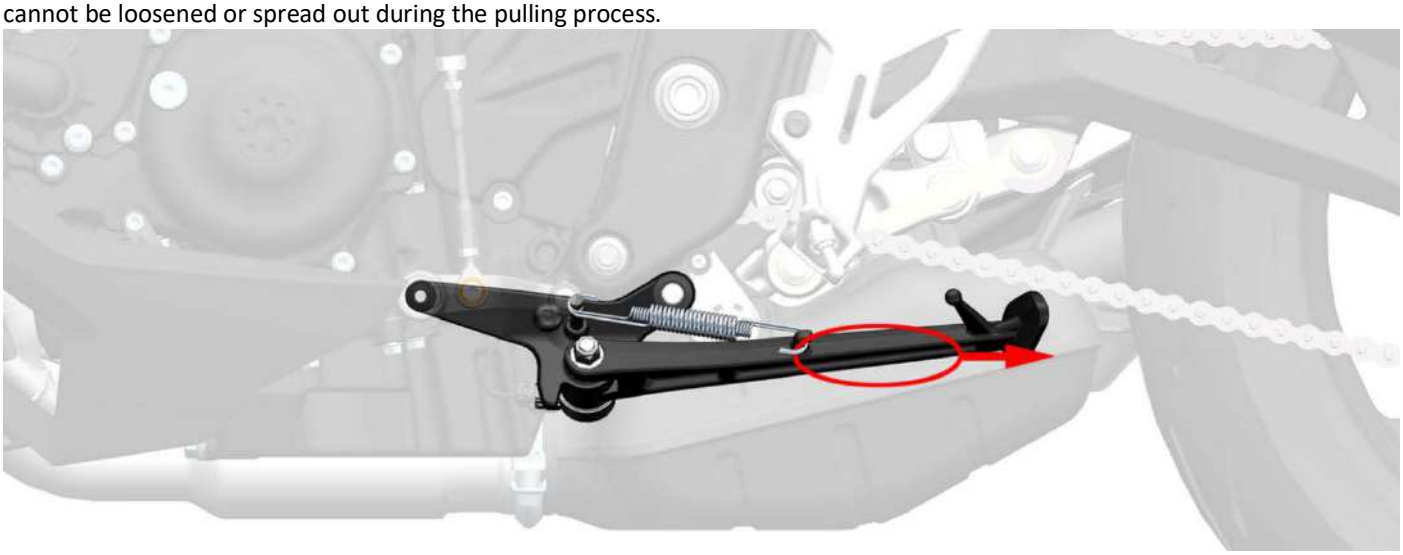
Put down the side bracket (parking position) should not be able to start the vehicle; put down the side bracket (driving position) without pinching the front or rear brake handle should not start the vehicle; after starting the vehicle, put down the side bracket should automatically turn off, otherwise it is necessary to check the fault of the stop switch or brake switch.

d.Check whether the side bracket mounting plate is deformed or cracked.

2. Lubrication

a. Retract the side bracket so that the spring is in the shortest position for easy removal.

b. The coarse steel wire can be rolled into a circle and sleeved into the spring hook, and it should be noted that the steel wire cannot be loosened or spread out during the pulling process.

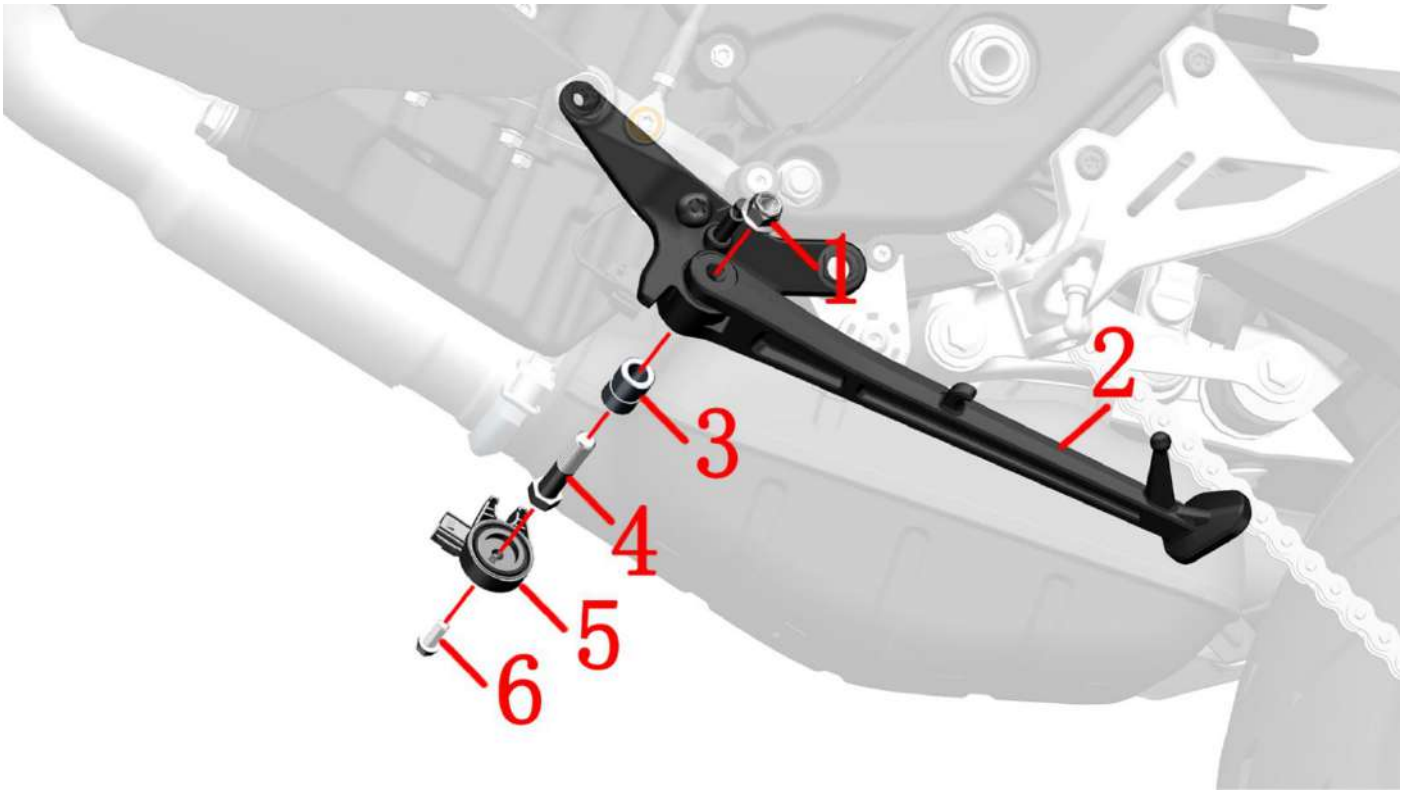


c. Grab the side bracket with one hand and pull the other hand in the direction of the arrow to remove the spring.

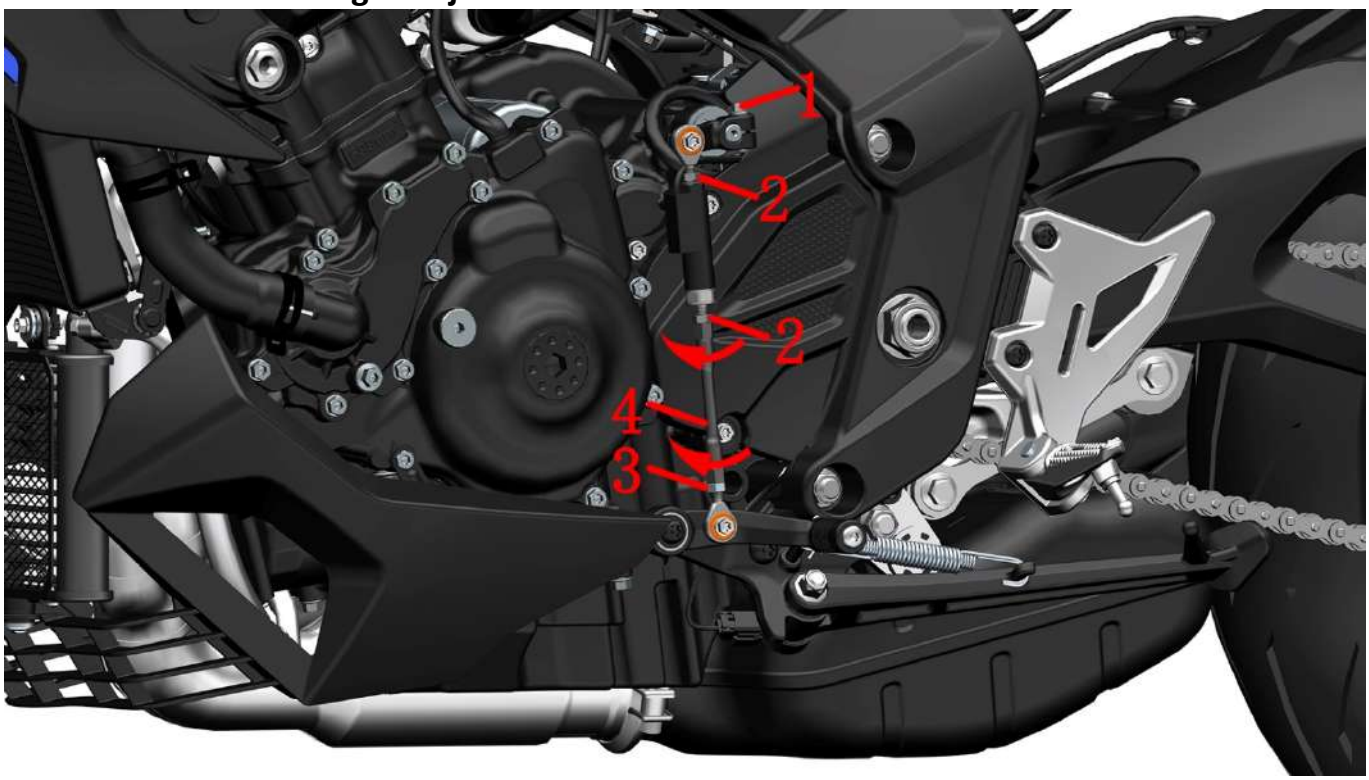
d.Put down the side stand, use a #14 socket or a box wrench to secure bolt (1).Use the #14 socket to remove bolt (4). Remove the side stand (3).

e.Remove the side stand bushing (2) from the foot pedal bracket.

f. Use diesel or kerosene, or a clean rag to wipe off any remaining grease. Apply an appropriate amount of grease to the two mounting planes on the inside of the side bracket (3) and the outer cylindrical surface of the bushing (2), and try not to apply it to the threaded hole.



Gear shift lever arm height adjustment



1-M6×22 Bolt 2-GB6170 M6-LH 3-GB6170 M6 4-Adjusting Screw

To fine-tune the height of the gear shift lever arm, use a #10 open-end wrench to secure the adjustment screw (④), then use a #10 open-end wrench to loosen nuts (②) and (③) in the direction of the arrow. Rotate the adjustment screw to set the gear shift lever arm to the appropriate height, and then retighten the nuts.

If the suitable position cannot be achieved using the above method, use a #8 box wrench or a short socket to remove bolt (①). Use a flathead screwdriver to slightly spread the slotted middle of the splined lever arm while pulling it outwards. Adjust to the appropriate height, then reassemble, making sure to align the groove in the middle of the spline.

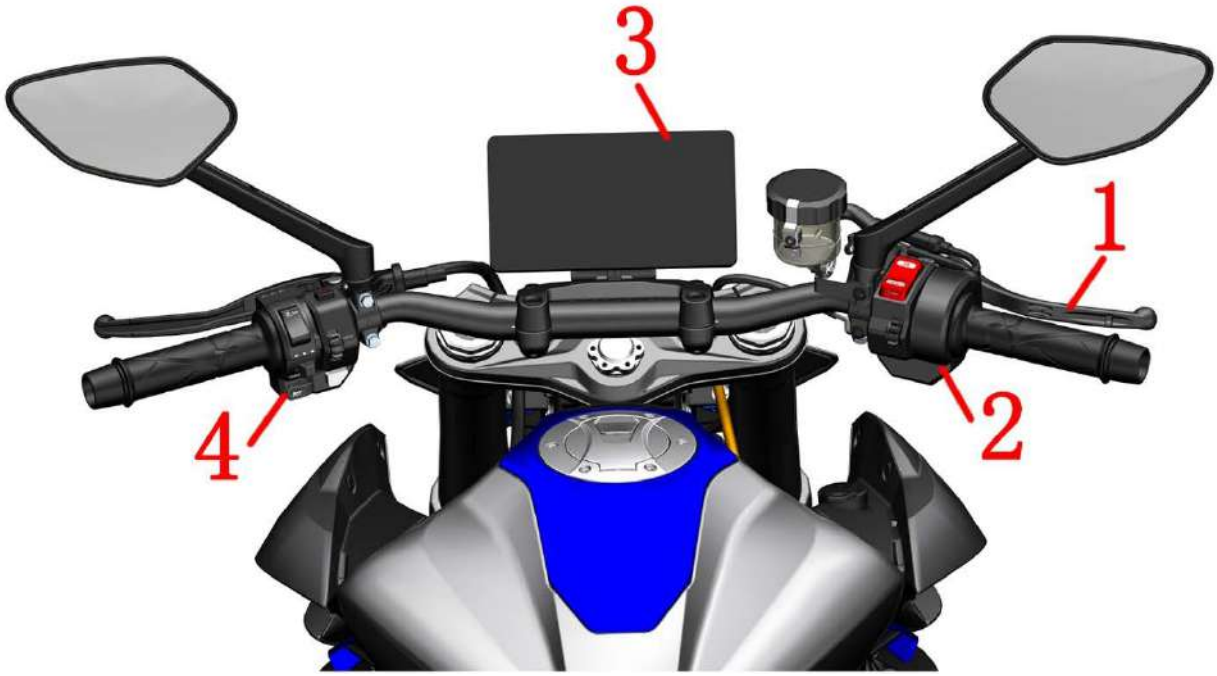
Audio, optical and electrical device inspection

Note:

●Before driving, you should check whether the lights of the whole motorcycle are normal, including turn signals, tail lights, brake lights, headlights, etc. Whether the horn is normal. Whether the windshield is raised and lowered normally.

1. Examine

For details of the lamps and lanterns in this manual, please refer to the distribution map of lamps and lanterns in the motorcycle information of this manual.



1. Front brake handle 2.Right hand handle switch 3.Meter 4.Left hand handle switch

a. Park the motorcycle on flat ground or on a lifting platform, lower the main bracket and retract the side brackets.

b. The function of the right-hand handle switch is shown in the figure below



Power on button

Short press to power on, long press again to power off

Flame-out ignition switch

This switch is installed on the right-hand handle switch, which is a rocker type switch, and the rocker shaft is located in the center of the rocker. When the switch is in the"⛒"position, the vehicle is turned off, when the switch is in the " ↻ " position, the ECU is powered on, the oil pump is self-checked, at this time pinch the clutch, press the switch, and when it is in the " ↻ " position, the engine is ignited.

MENU button

For specific function operation, please refer to the instrument function description.

c.The function of the left-hand handle switch is shown in the figure below

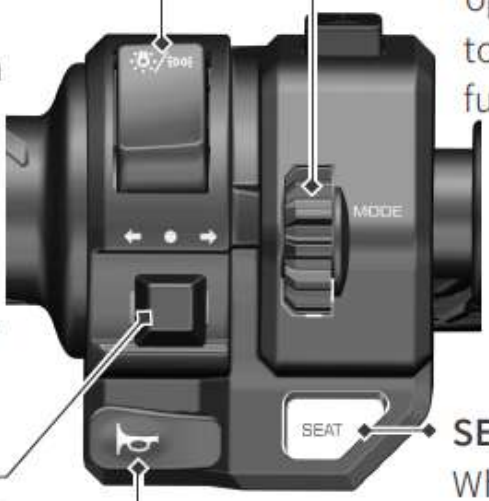
Left-hand handle switch

Full light switch

When the vehicle is started, press once to turn on the high and low beams to turn off the daytime running lights, and then press to turn off the high and low beams to turn on the daytime running lights. (Cycle Control)

Turn signal operation

The switch is pushed to the left ⬅ and the left turn signal flashes. When pushed to the right ➡ the right turn signal flashes, and the corresponding turn indicator on the instrument panel lights up at the same time.



MODE button

For specific function operation, please refer to the instrument function description.

SEAT switch

When powered on, short press to open the cushion lock.

Horn button

Press the button and the horn sounds.

⚠ Hazard warning lights

Press to turn on the hazard warning light, and press again to turn off the hazard warning light.



High and low beam overtaking light buttons

By default, turn on the high beam upwards and press down to turn on the overtaking lights.

: High beam

: Low beam

: Overtaking lights

Switch operation guide

MODE:

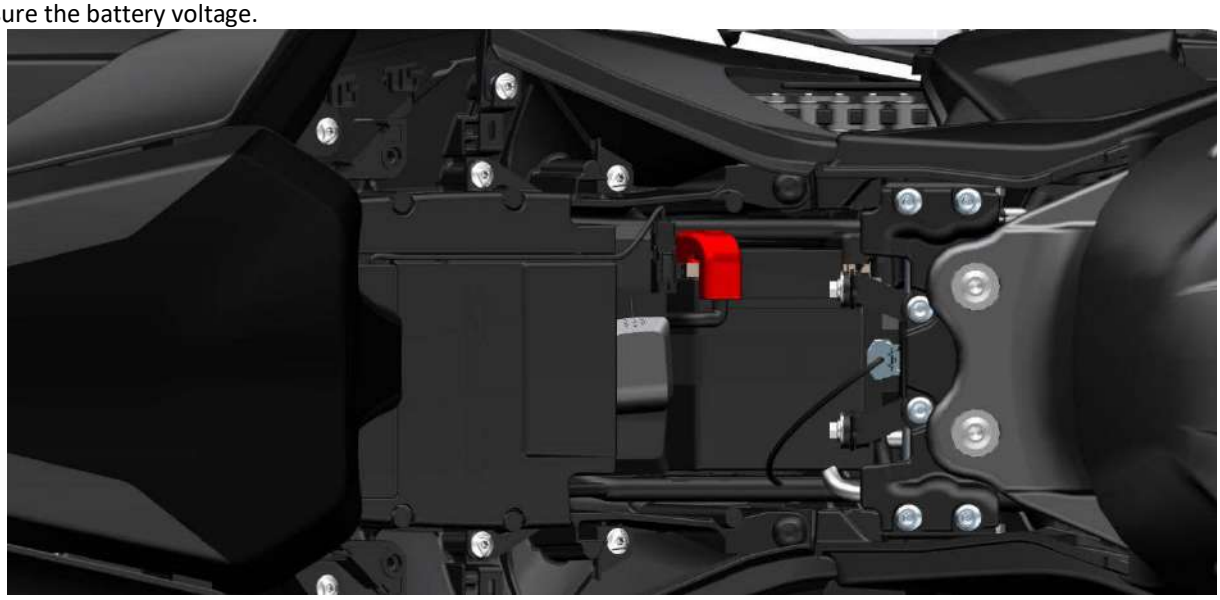
Mode	MODE		Flip up	Flip down
	Long press	short press	once	once
Main interface	Short mileage, average fuel consumption, average speed to zero	Slide out the shortcut menu from the left	1. When a call comes in, give priority to turning up to answer 2. Flip up to take a photo	Reject or hang up the phone
Menu interface	Go back to the previous level	Determine the settings	Toggle options	Toggle the options down

MENU:

Mode	MENU		Flip up	Flip down
	Long press	short press	once	once
Main interface	Go back to the main interface	\	Toggle up the line signal information to display the content	Toggle down the line signal information to display the content
shortcut menu	Go back to the main interface	Go to the current option and determine the current item	Toggle the options upwards	Toggle the options downwards
Quick menu	Enter the menu	Clear Lap record	\	\

d. Check the battery voltage

Open the cushion, lift the protective rubber case of the positive and negative electrodes of the battery, and use a multimeter to measure the battery voltage.



The charging voltage of the charger should not be higher than 15V. When the motorcycle is not used for a long time, it should be charged regularly in accordance with the requirements of the driver's manual. If the battery fails to be properly disposed of by a professional recycling organization, do not throw it away to avoid polluting the environment.

If the battery feed cannot be started, it can be charged through the PKE charging port. The rear fender cover needs to be removed first, please refer to the section "Charging System" for details.

It is recommended to purchase a cover plate with an opening hole in the modification parts, or open a ϕ12 through hole after removing it for easy charging.

Remove the rubber plug and insert the DC plug of the charger that comes standard with the original factory. Then plug the AC socket into a 110-220V power supply. If the battery is damaged by using an inferior charger, it is not within the scope of the three guarantees.



●Note: When reassembling the battery or fuse, please remember to reset the EFI hardware, as detailed in the service information in this section.

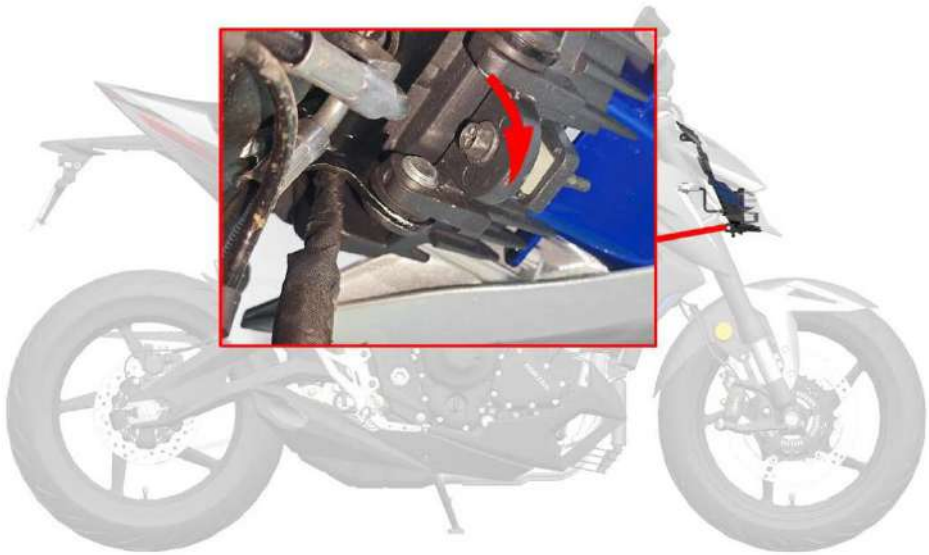
2. Headlight Beam Height Adjustment

Note:

●The headlight beam being too high or too low can affect safe driving. The beam height should be adjusted appropriately based on the presence of passengers and changes in the driver's weight.

●It is strictly forbidden to adjust the height of the lights while riding. It is recommended to find a relatively flat road with a straight distance of about 150 meters at night, without affecting traffic safety, to make adjustments.

Find the dimming bolt at the bottom of the headlight, and use a #8 short socket or open-end wrench to turn the bolt clockwise in the direction of the arrow to raise the light height, or counterclockwise to lower it.



3. Fuse box

Note:

●If the fuse is blown, the fuse of the same specification must be replaced, and it is forbidden to use wires such as copper and iron wire for direct connection.

●If it is fused again after replacement, it is necessary to check the fault of the motorcycle cable before replacement.

●This motorcycle uses a small fuse. It is about 11mm wide, 17mm long, and 4mm thick.

●You can use the buzzer of the multimeter to connect the exposed metal part of the upper part of the fuse to determine whether it has been blown or not, or use a tool to unplug it and observe.





4. Troubleshooting

If the button does not move, it is directly judged to be a switch problem. If there is no response when pressed, it is necessary to determine the problem of the switch, line, or electrical device itself.

4.1 Horn

Note:

●When adjusting or checking the horn, the interval should be more than 5 seconds, and continuous beeping may cause ablation of the coil inside the horn.

●The horn is a riveted structure, which is difficult to recover after disassembly.

●The nut on the bracket (where the arrow indicates) is forbidden to be adjusted.

a. If the horn switch does not respond, please refer to the troubleshooting process of the left-hand handle switch on the next page

b. The sound of the horn is abnormal

If the voice is low, hoarse, etc., first confirm whether the power is sufficient, and then turn on the headlights to judge whether the power is sufficient according to the brightness of the light. The sound of starting the engine to pull up the rpm is normal, and the low rpm is not normal can also be judged as the battery is insufficient. The battery needs to be charged.

If the multimeter detects that the battery is sufficient, it can be connected to a battery with sufficient power. If the fault is still there, first unplug the two plugs of the horn, directly connect the two wires to touch the horn, if there is a sound, the horn is normal, you need to check the line between the horn and the LCM controller; If there is no sound, the horn is faulty and needs to be replaced.



If you need to remove the horn, use the T25 Torx wrench to remove the 1 bolts. Pull the horn out and remove it after pulling the plug.

4.2 Lamps

Note:

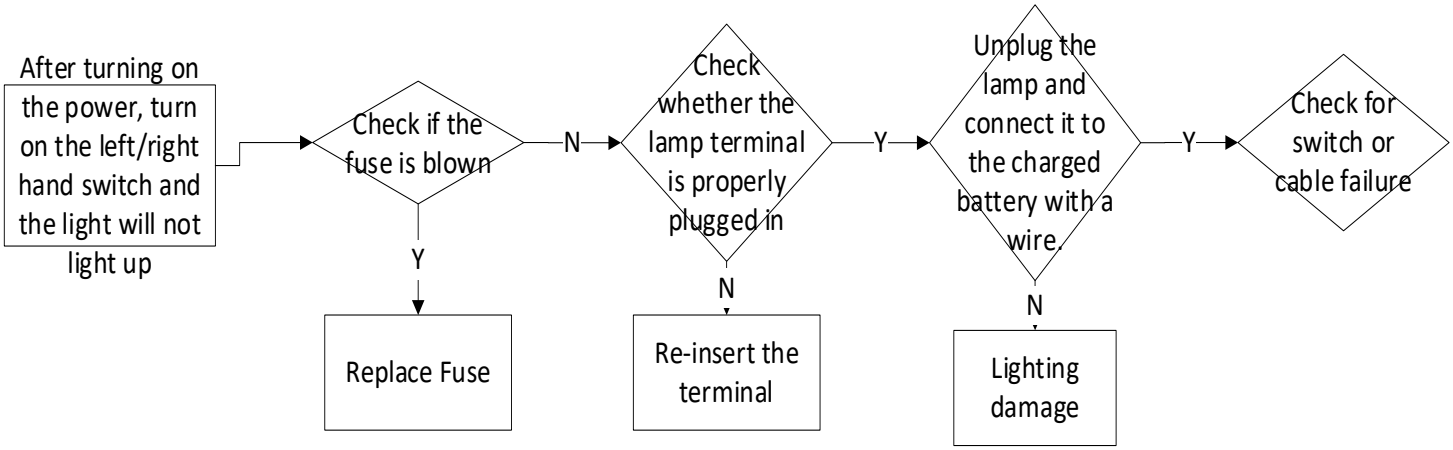
●When using wires to detect lamps, it is necessary to pay attention to distinguishing between positive and negative poles, and the detailed line color can refer to the electrical schematic diagram in the driver's manual provided with the vehicle.

The troubleshooting method of lamps and lanterns is basically the same, you can first directly lead the wire to the battery with a battery, if the lamp is normal, you need to check the cable or switch failure, if it is not normal, it is a lamp failure. The lamps and lanterns of this motorcycle are all LED, and the shells of the lamps are generally ultrasonic welding or sealant bonding, and the waterproof performance will fail after disassembly.

●There are ventilation holes reserved on the lamp, which may form water mist inside the lamp when the ambient humidity is high, which generally does not affect the use. It will disappear automatically when the humidity drops.

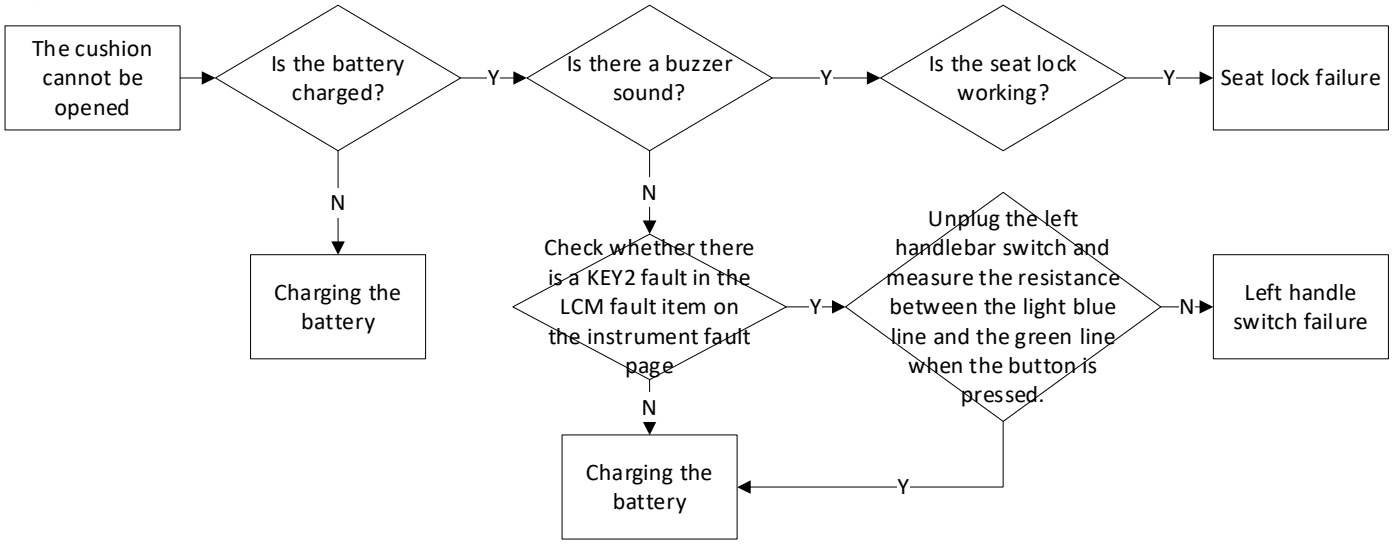
●The surface of the lamp should be kept clean, and it can be gently wiped with a clean soft cloth after being moistened with water, and the soft cloth should be changed to a different position or cleaned with clean water every time it is wiped. If you wipe it directly, it may cause the remaining fine sand particles to scratch the surface of the lamp.

The general process of troubleshooting lamps：



The "SEAT" button is malfunctioning

If the battery is out of power and is not convenient for charging, or the cushion lock fails and cannot be opened, you can fill in the quality feedback form, and the engineer will guide you to manually open the cushion. For safety reasons, this manual does not provide this method.



3. EFI system

Pre-Service Notice

1. The structure and working principle of the EFI system are complex, and it is necessary to have a certain understanding of the working principle and structural characteristics of each EFI system before checking and troubleshooting. The content of this chapter requires certain maintenance experience, and it is recommended to go to a maintenance unit with maintenance qualifications for inspection or maintenance.

2. Please keep the fuel in the fuel tank not less than 3L (3.17 US qt, 2.64 lmp qt, 0.79 US gal, 0.66 lmp gal), otherwise it will affect the normal operation of the EFI system, and replenish the fuel as soon as possible when the meter oil level shows 1 bar.

3. Before the initial start of the motorcycle with a static parking time of more than 3 hours, the whole motorcycle should be energized, and the stop-off switch should be turned on.

4. If the start fails many times, the cylinder may have been flooded, and you need to tighten the throttle to the end and press the start button for 3 seconds to perform the cylinder cleaning procedure.

5. If the battery low voltage prompt symbol flashes, the battery should be charged in time; Too low a voltage may cause the EFI parts to not work properly, fail to start or have difficulty starting, lack of power, etc.

6. When the battery is reinstalled, the power is suddenly cut off during driving, the idle speed is abnormal, and the insurance is replugged and unplugged. Here's how:

Turn on the electric door lock switch and engine shutdown switch of the whole vehicle, turn off the engine shutdown switch for 60 seconds, and then power it back on.

7. Pay attention when checking or troubleshooting the EFI system:

a. After powering on, the parts connected to the 12V power supply should not be dismantled at will, so as to avoid the coil in the appliance from self-induction and instantaneous voltage damage to the ECU or sensor.

b. In the event of a failure, it should not be blindly dismantled and inspected. The mechanical part should be confirmed to be normal before checking the electronic control part.

c. In fault diagnosis, the diagnostic instrument is preferentially used to read the fault code or determine the fault code according to the flashing frequency of the fault indicator, and conduct targeted inspections.

d. Pay attention to check whether the EFI parts are oxidized and whether the connection is reliable.

Tool:

MST-500Pro Diagnostic Instrument	PT300 Electrojet Brush Writing Diagnostic Instrument (16PIN)	multimeter	Tool	Torque wrench
				

●Both of the above diagnostic instruments can read fault codes; The PT300 diagnostic device can be flashed into the program.

8. Each motorcycle has different driving conditions and maintenance conditions, so it is not possible to list all the fault phenomena and troubleshooting procedures. Only some of the more common faults can be listed. Maintenance personnel themselves also need to have a certain amount of professional knowledge and experience accumulation process.

9. If there is a " " symbol on the right side of the step, you can click to quickly jump to the corresponding step.

WARNING

●For new vehicles or vehicles that are about to run out of fuel, never turn on the kill switch. Be sure to fill up with enough fuel before turning it on, otherwise the fuel pump will dry without oil and cause damage.

●Do not plug and unplug the plugs of each part at will, and do not directly clean the plug with water. Always check that it is properly plugged back in after plugging and unplugging.

Fault codes

Note:

●The motorcycle is unlocked and the ignition switch is turned on, and the EFI fault light is always on when it is not started, and the motorcycle cannot be started if it is not lit.

●After starting the vehicle, if the fault light lights up to report the EFI fault, it means that the EFI system is abnormal.

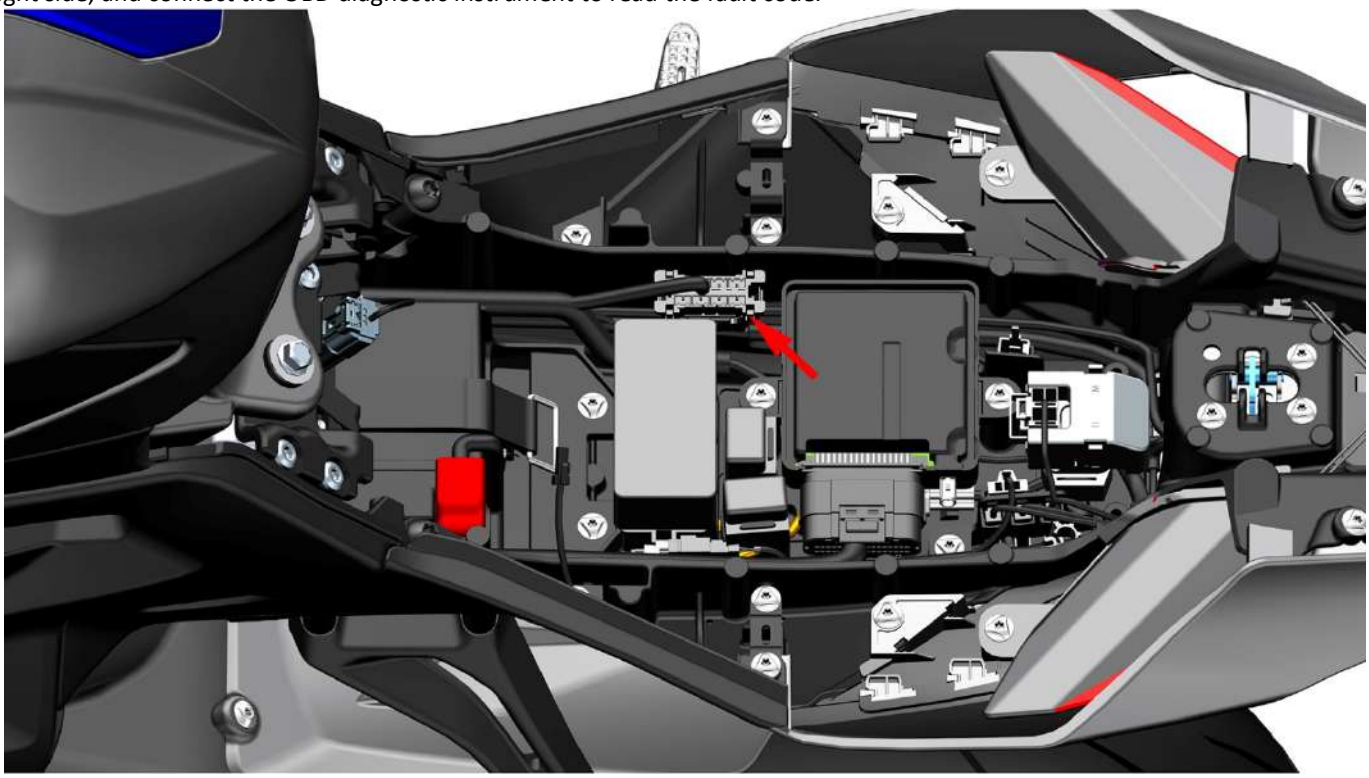
●When the EFI system reports a malfunction, continuing to drive the motorcycle may cause damage. Please contact a qualified maintenance unit or our special maintenance point for investigation in time.

1. Read the fault code through the instrument

You can read the fault code directly → the fault information page in the instrument menu, or read the fault code in the Zontes smart APP.

2. The fault code is read by the diagnostic

Open the back cushion, remove the main cushion and the cushion waterproof rubber pad, find the OBD interface on the right side, and connect the OBD diagnostic instrument to read the fault code.



3. Information on common fault codes

code	Fault code description	code	Fault code description
P0105	Intake Air Pressure Sensor Electrical Fault	P0353	Cylinder 3 Ignition Coil Electrical Fault
P0110	Intake Air Temperature Sensor Electrical Fault	P0201	Cylinder 1 Injector Electrical Fault
P0115	Cylinder Temperature Sensor Electrical Fault	P0202	Cylinder 2 Injector Electrical Fault
P0336	Crankshaft Position Sensor Signal Implausible	P0203	Cylinder 3 Injector Electrical Fault
P0120	Throttle Position Sensor 1 Electrical Fault	P0443	Canister Purge Solenoid Valve Electrical Fault
P0220	Throttle Position Sensor 2 Electrical Fault	P0410	Secondary Air Injection Valve Electrical Fault
P2135	Throttle Position Sensor Signal Correlation Fault	P0230	Fuel Pump Relay Electrical Fault
P2100	Throttle Body Motor Electrical Fault	P0480	Fan Relay Electrical Fault
P0638	Throttle Position Error	P1762	Tip-over Switch Electrical Fault
P0121	Throttle Position Sensor 1 Rationality Fault	P0914	Gear Position Sensor Electrical Fault
P0221	Throttle Position Sensor 2 Rationality Fault	P060B	ECU Internal A/D Converter Module Error
P0130	Front Oxygen Sensor Electrical Fault	P0604	RAM Fault
P0030	Front Oxygen Sensor Heater Electrical Fault	P0601	EEPROM Fault
P0225	Accelerator Pedal Position Sensor 1 Electrical Fault	C001	CAN Bus Communication Interrupted
P2140	Accelerator Pedal Position Sensor 2 Electrical Fault	C121	CAN Bus ABS Signal Fault
P2130	Accelerator Pedal Position Sensor Signal Correlation Fault	P0500	CAN Bus Front Wheel Speed Signal Fault
P0351	Cylinder 1 Ignition Coil Electrical Fault	P1615	ROM Checksum Failure
P0352	Cylinder 2 Ignition Coil Electrical Fault	P1900	Quick Shifter Sensor Electrical Fault

4. Clear the fault code

When the EFI fault is checked, it needs to be cleared manually or through a diagnostic instrument.

4.1 Manual purge (i.e., perform a reset operation)

a. Unlock the vehicle

b. Continuously switch on and off the flame-out switch for five or more times, and when the flame-out switch is turned on again, the blowtorch does not light up, that is, the reset is successful.

4.2 Clear with a diagnostic device

The steps may vary depending on the brand or model, so follow the description in the diagnostic instrument manual to clear the fault code.

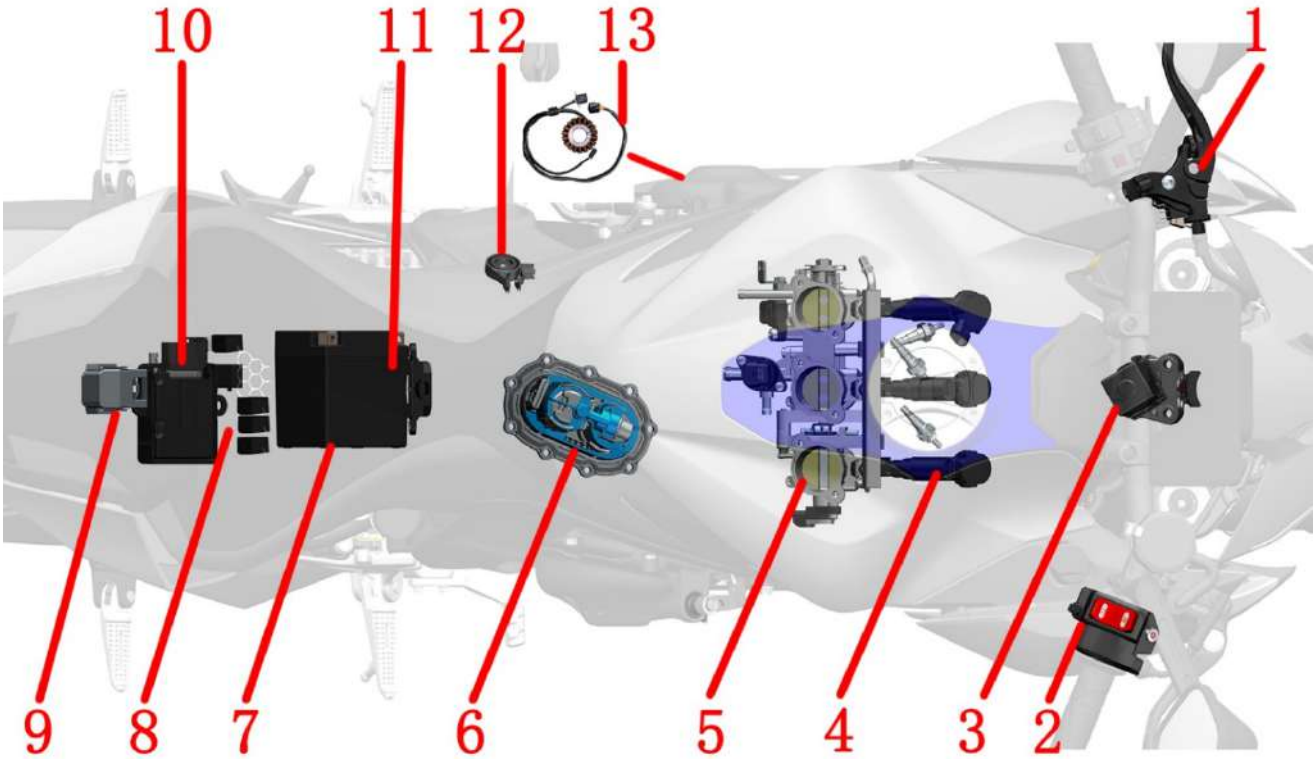
CAUTION

●During the operation of the engine, the fault light is not lit, and the fault light flashes after the ignition is a historical fault, which has no impact on the whole motorcycle and will disappear by itself in the future.

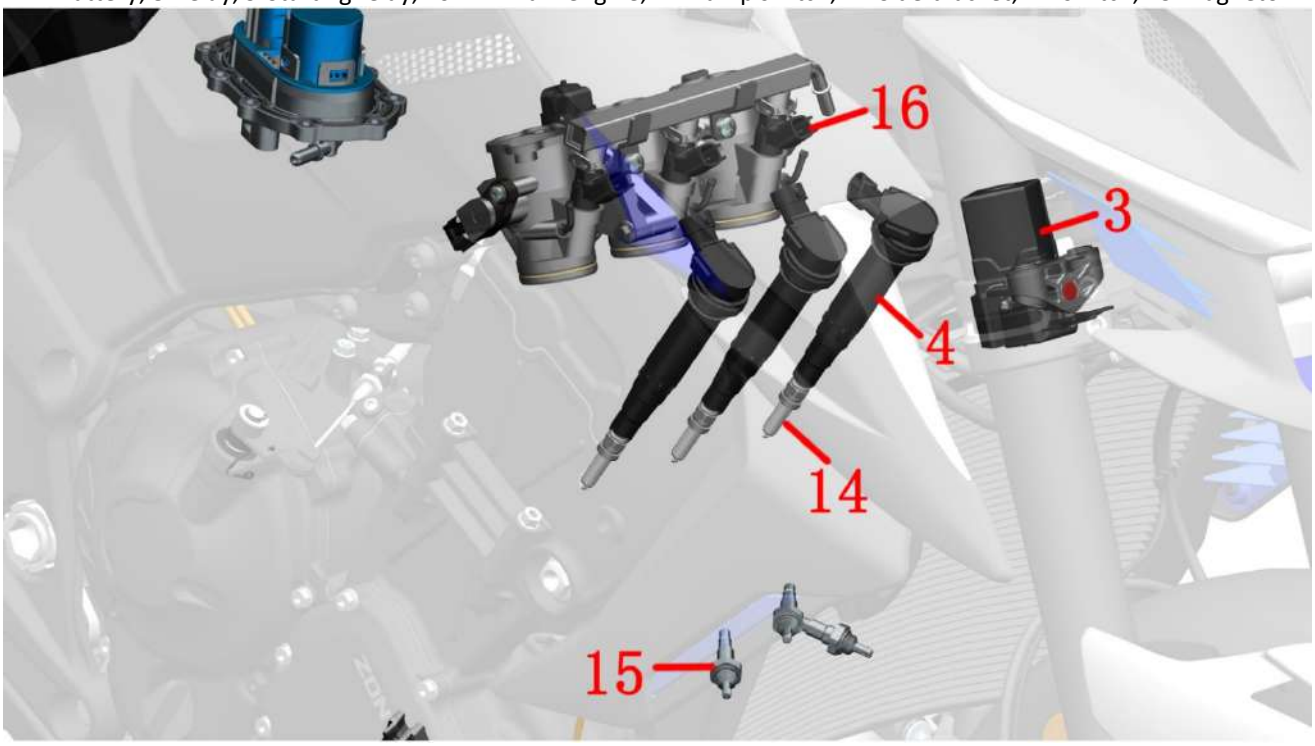
EFI parts

1	2	3	4	5	6
Dump switch	OBD Diagnostic Interface (Main Cable)	Fuel pump	Canister solenoid valve	Relay (KH-1A4T-R/NO)	Injector
					
7	8	9	10	11	12
Oxygen sensor	Start the relay	Water and oil share sensors	ECU	Throttle	Ignition coil
					
13	14				
Secondary make-up valve	Crankshaft position sensor				
					

EFI parts layout drawing



1-Clutch rocker arm assembly; 2-Right hand handle switch; 3-Faucet lock; 4- Ignition coil; 5-Throttle assembly; 6-Oil pump pump; 7-Battery; 8-Relay; 9-Starting relay; 10-PKE main engine; 11-Dump switch; 12-Side bracket; Kill switch; 13-Magneto



14-spark plug 15-oxygen sensor 16-fuel injector

Fault diagnosis and troubleshooting of EFI parts

Note:

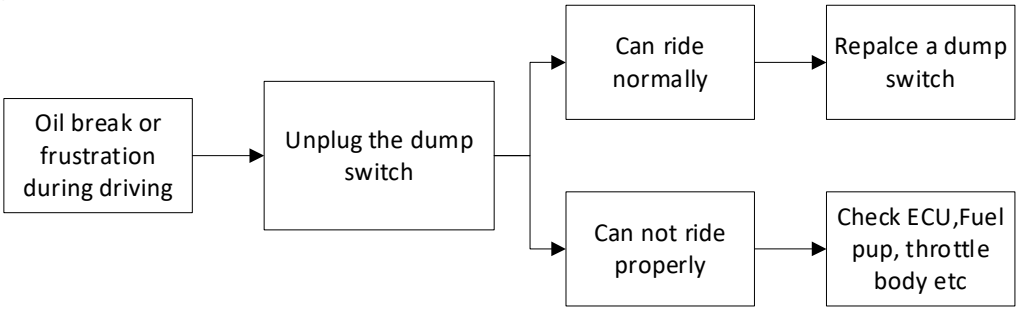
●Once the EFI parts are disassembled, the EFI system needs to be reset. For details, see the service information in this section.

●Fuel pumps, three-in-one sensors, stepper motors, ECUs and other precision parts, such as dismantling without permission, may cause damage, and are not within the scope of the three guarantees for human reasons.

●After disassembling the throttle valve body, the air outlet and intake manifold of the air filter should be sealed with a lint-free cloth or masking paper to prevent foreign matter from entering.

1. Dump Switch

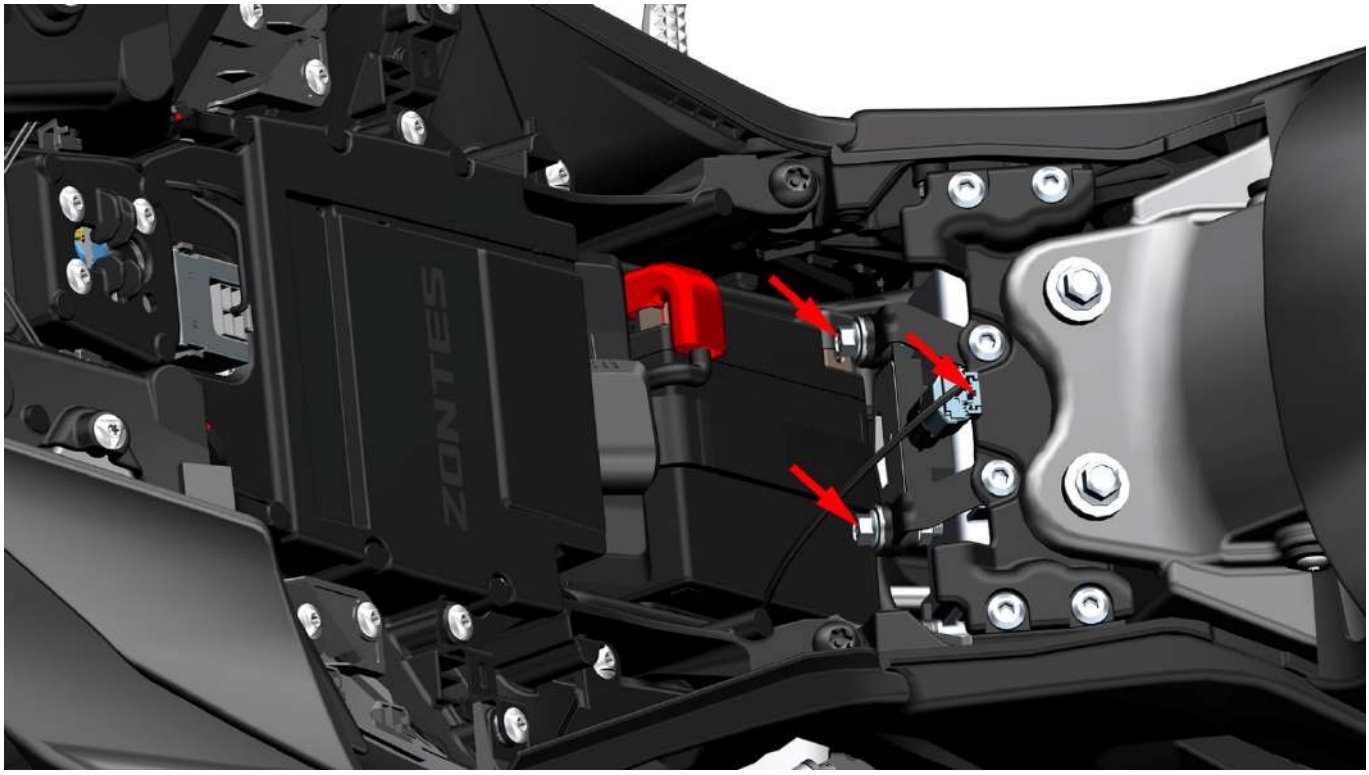
Troubleshooting process



Disassembly

Remove the front and rear cushions first.

Press the anti-disengagement clip and pull the plug out. Use the 10# sleeve to remove the two bolts to remove the dump switch from the bracket.



Examine

Remove the pour switch without turning the plug on.

The OBD diagnostic instrument can be used to detect if the dump switch is faulty.

If there is no diagnostic instrument, use a multimeter to detect the output voltage and determine whether there is a fault.

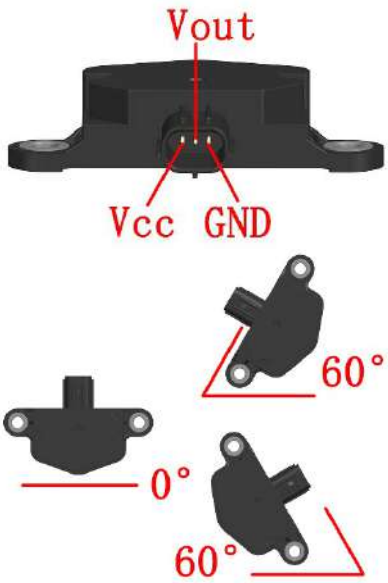
Standard:

Horizontal position: 0.4-1.4V

About 60°:3.7-4.4V

Functional checks

Remove the dump switch without pulling the plug, place the dump switch horizontally and start the engine. Tilt the dump switch to the left or right about 60° .The engine should be turned off for a short time, otherwise the tilt switch will fail.



2. OBD interface

The main line cable comes with an OBD interface, and the location is shown in the previous one, and the fault code is read through the diagnostic instrument. The diagnostic instrument can be used to read historical fault codes, current fault codes, clear fault codes, and read the status of the ECU using the diagnostic interface.



3. Fuel pump

Note:

●The fuel pump is a precision component, which needs to be assembled in a dust-free workshop and requires strict testing, so it is forbidden to disassemble it by yourself.

●The engine of this motorcycle is designed with a high compression ratio, it is recommended to add 95# and above unleaded gasoline for a long time, in order to prolong the service life of the vehicle, please be sure to refuel at a regular gas station.

●It is forbidden to carry out the operation test of the fuel pump in the dry state or in the water, otherwise its service life will be shortened, and in serious cases, it will be directly damaged. The positive and negative wires of the fuel pump cannot be reversed. It is forbidden to disassemble the inlet filter, which can easily cause foreign matter to enter the fuel pump or block the injector.

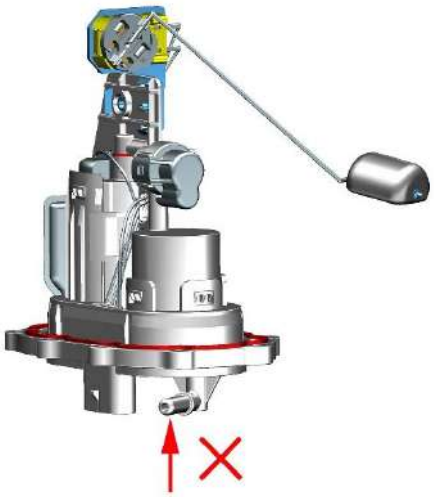
●Dismantling the fuel pump or high-pressure oil pipe should be carried out in a well-ventilated, dust-free or dust-free environment; Dangerous operations such as fireworks or mobile phone calls should be strictly prohibited in the dismantling site. When there is difficulty in engine starting or dust-free starting; Poor engine work, unstable operation, etc.; The injector does not inject fuel; When the engine is running weakly and the acceleration performance deteriorates, it is necessary to check whether the fuel pump is abnormal.

Refer to the steps in this manual to remove the fuel tank assembly and high-pressure oil pipe. Refer to the section "Maintenance - Fuel Line - Fuel Pump" to measure the fuel pressure using an oil pressure gauge, or a simple test method to test whether the fuel pump is normal.

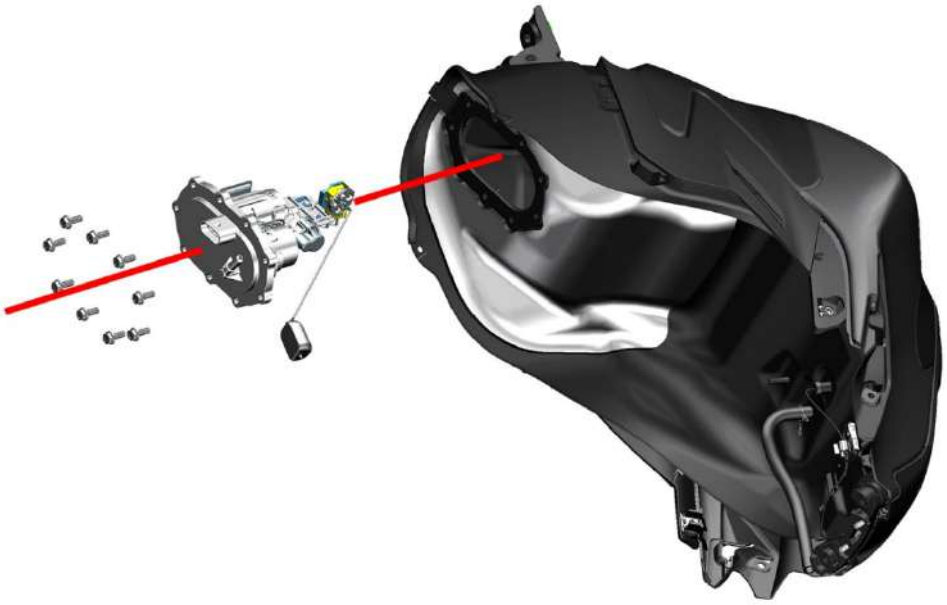


When disassembling and assembling the fuel tank, after removing the fixing screws of the fuel tank, you must first gently lift it from the tail of the fuel tank, raise it until your hand can just reach into it, and then pull out the high-pressure oil pipe connected to the oil pump.

Be careful not to press the outlet line indicated by the red arrow, and only replace the entire fuel pump assembly if damaged.

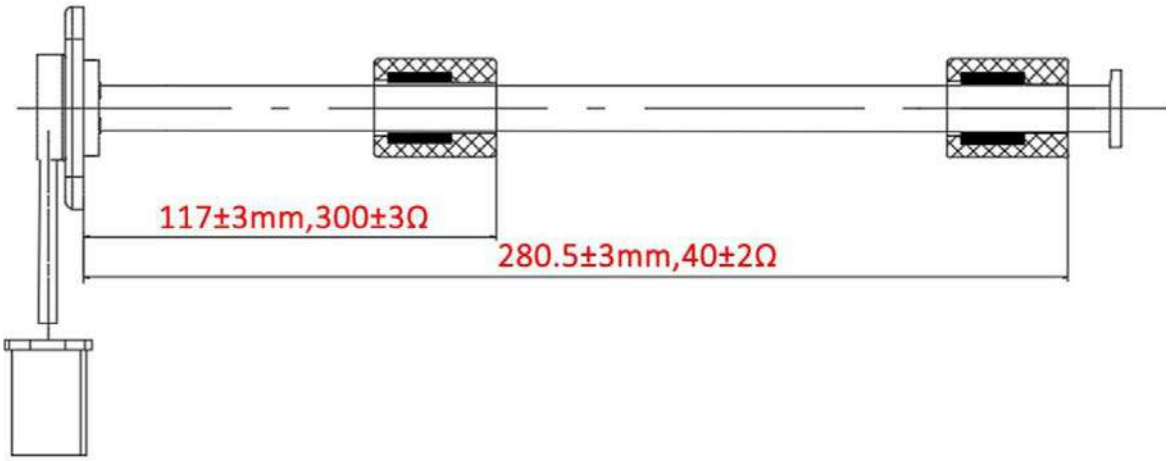


If the fuel pump needs to be removed from the vehicle, the fuel in the fuel tank can be emptied using a fuel pump. Turn the fuel tank assembly over to the back and use a #10 socket to remove the nine M6 bolts, torque standard: 10 N·m, then the fuel pump can be removed. The fuel pump has a built-in fuel level sensor, torque standard: 8 N·m.



The oil level sensor detection method is as follows:

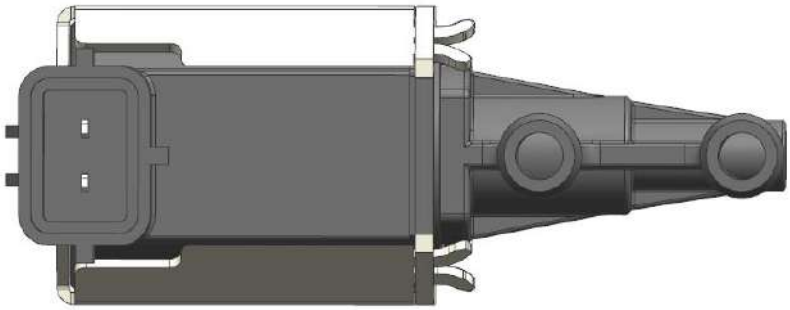
Measure the illustrated distance from the reference surface to the top surface of the float, and use a multimeter on the resistance setting to check whether it is within the range; otherwise, it needs to be replaced.



4. Canister solenoid valve

When there is suboptimal engine performance; Poor idling; When the air-fuel ratio is incorrect, the solenoid valve of the carbon canister should be checked.

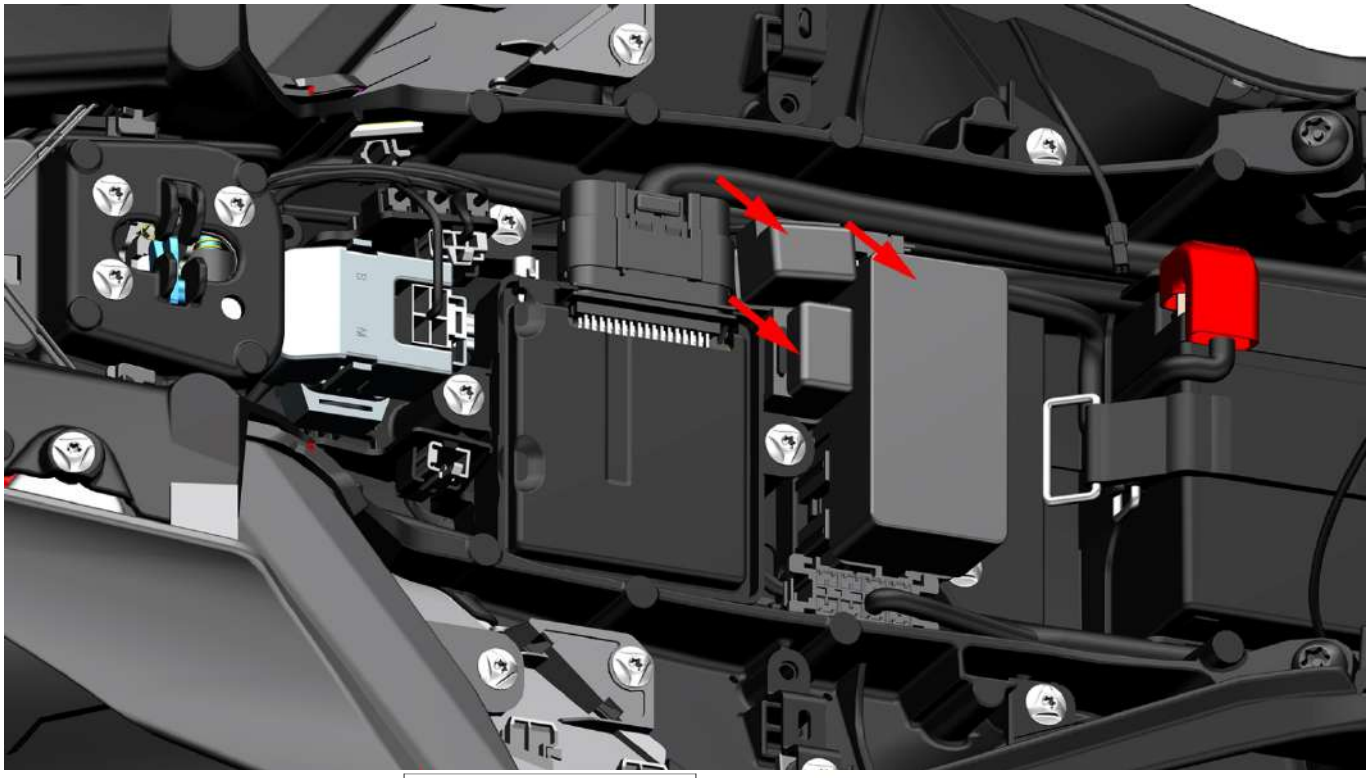
Use a multimeter to measure the resistance between the two tabs of the solenoid valve plug of the canister should be 35±2Ω, otherwise the solenoid valve fault can be judged.

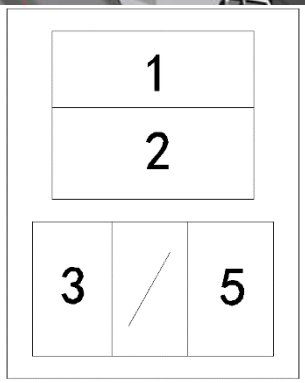




5. Relay (KH-1A4T-R)

Remove the front and rear cushions, remove the upper cover of the electrical device box with a T25 Torx wrench, and find the fuse box in the position shown. 3 pieces of relays are visible after removing the protective cover in the fuse box; The other 2 are in the sheath next to the fuse box, and the sheath needs to be removed before they can be removed. As shown in the figure below:





Cable end



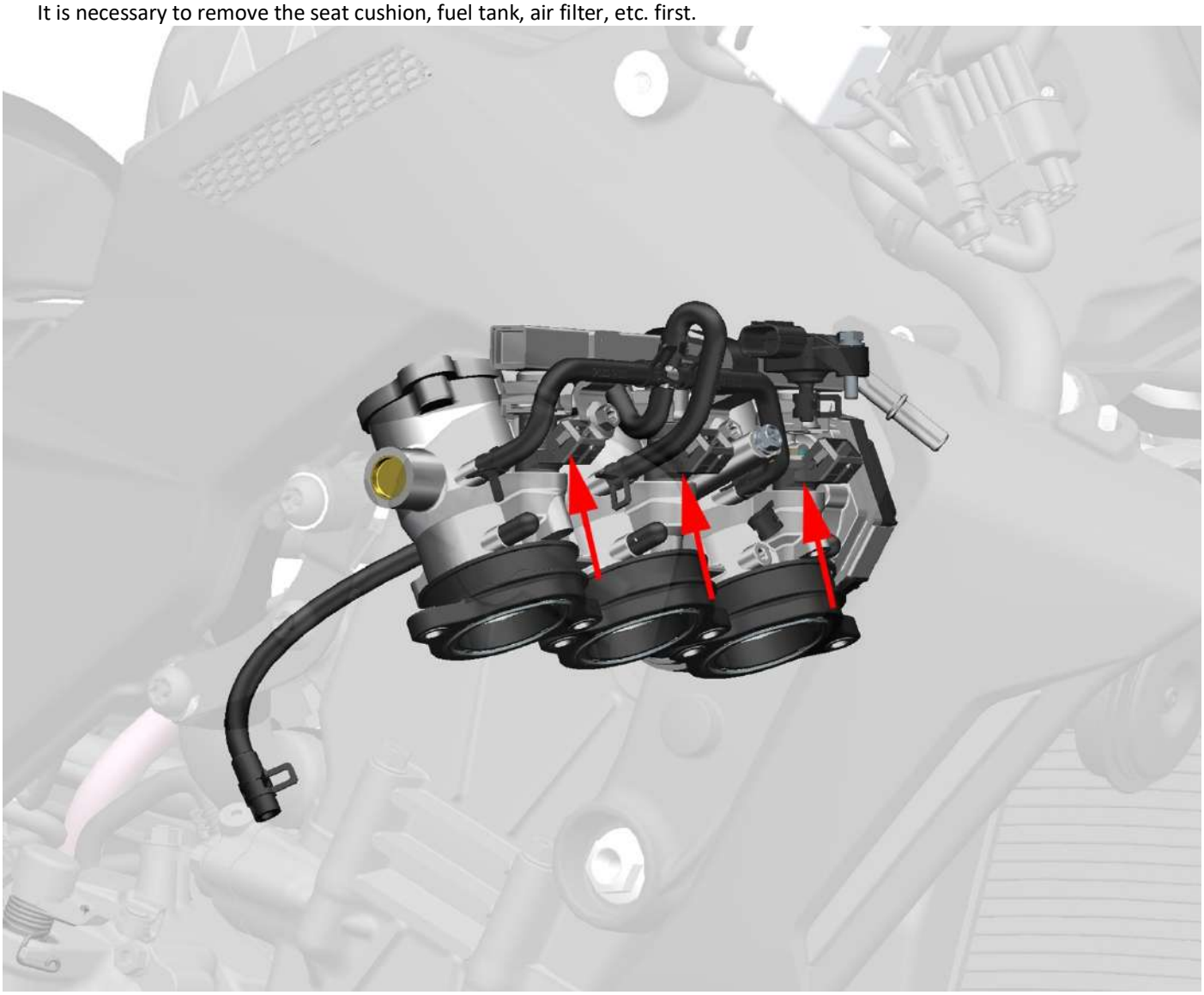
Relay

After pulling out the relay, use the buzzer of the multimeter to measure that pins 1 and 2 should be normally open, and the buzzer of the multimeter bee will not sound at this time; Power on pins 3 and 5, measure pins 1 and 2 again, and the buzzer of the multimeter bee will sound normally. Otherwise, it can be judged as a relay failure.

6. Injector

When the engine idle speed is unstable, easy to stall, or can not start, it is necessary to check whether the injector is normal when reporting the injector failure.

It is necessary to remove the seat cushion, fuel tank, air filter, etc. first.

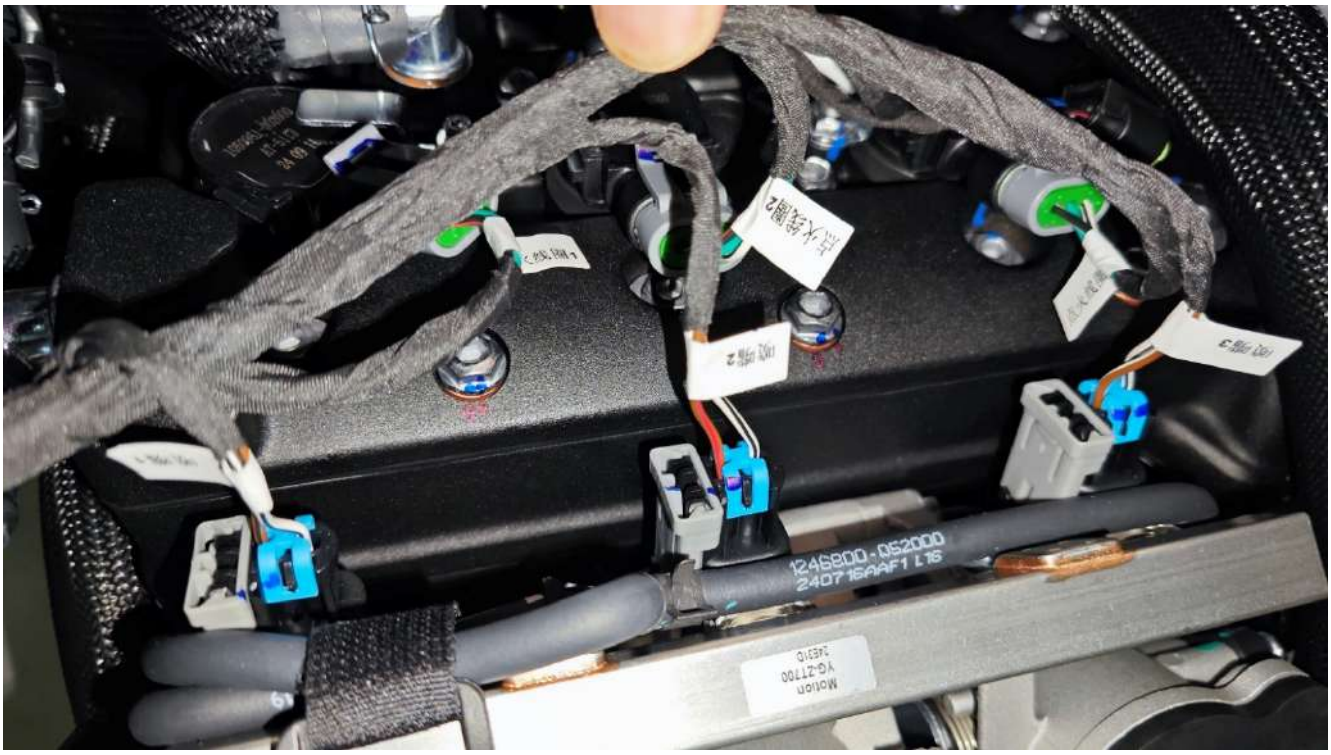


It can be judged by the following methods:

a. Start the engine after the motorcycle is parked firmly and make the engine idle. With the help of a stethoscope needle or stethoscope to listen to the working sound of the cylinder, you should be able to hear the rhythmic working sound of the injector, and the sound is crisp and even, it will work normally, if the sound is small or inaudible, you need to remove the injector for troubleshooting. Or when the injector plug is unplugged, the engine stalls indicating that the injector is normal.



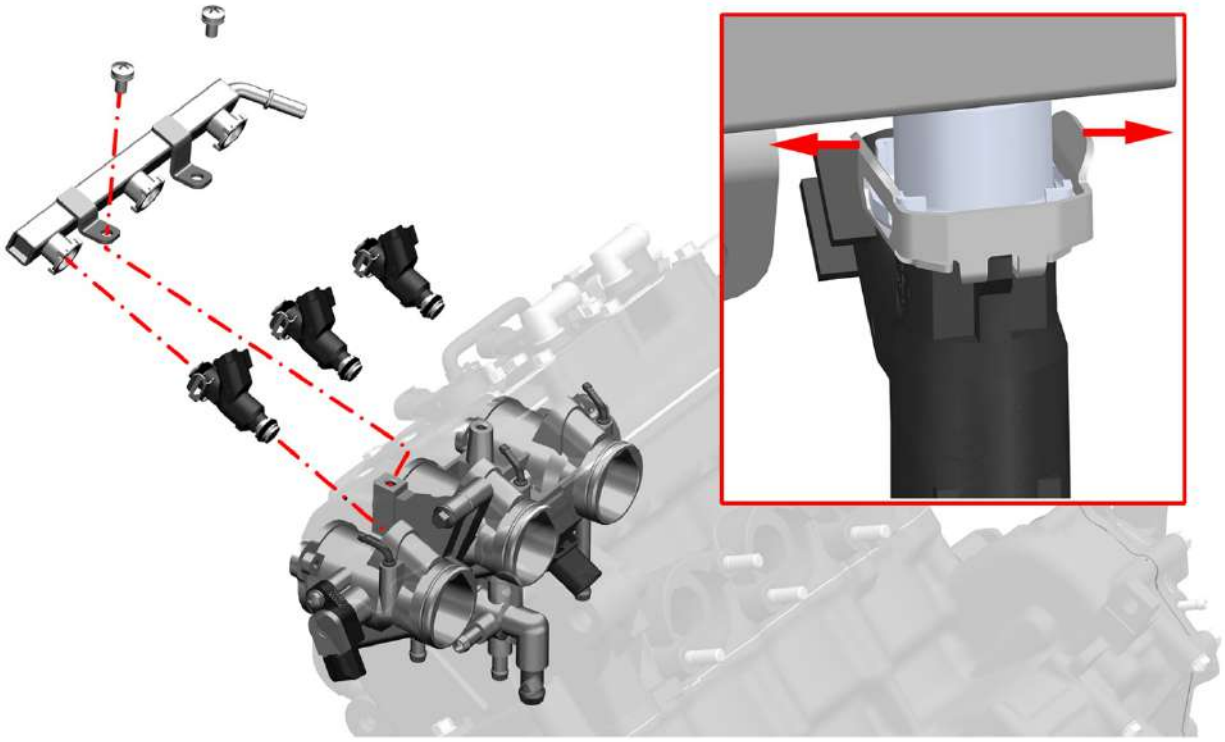
b. Press the anti-release latch and slide it outwards before pulling out the plug.



The static coil resistance measured with a multimeter should be 12±0.6Ω, otherwise the injector will fail and need to be replaced.



If you need to replace the injectors, wait until the engine and muffler have cooled down. Use a Phillips screwdriver to remove the two screws that hold the slide rail in place and remove the rail and injector together. Use a flathead screwdriver to pry open the clip of the injector to remove the injector.



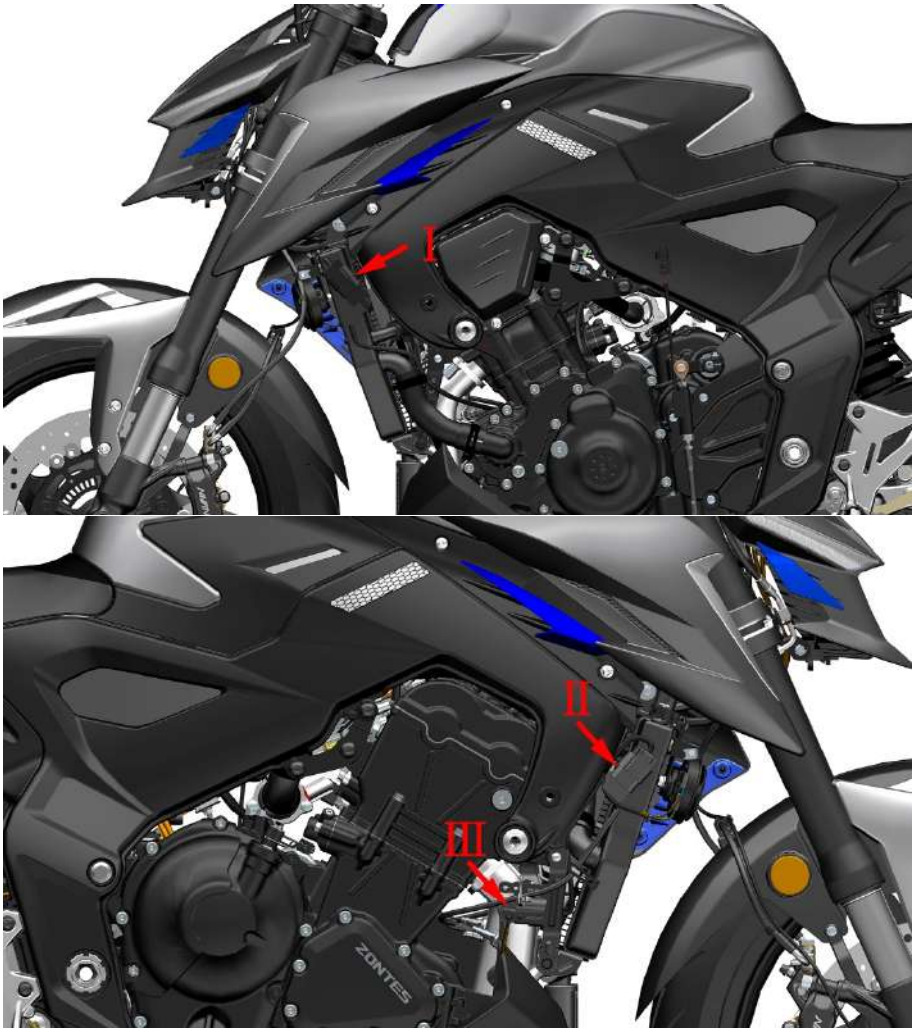
7. Oxygen sensor

WARNING

●Always wait until the engine and muffler have cooled completely before removing the oxygen sensor.
When the instrument shows that the oxygen sensor is faulty, the engine performance is poor, the idle speed is unstable, and the fuel consumption is high, the oxygen sensor needs to be checked. The fault code can be read by the diagnostic instrument to confirm whether the oxygen sensor is faulty.

7.1 Testing

When an oxygen sensor heater fault code appears, first try to use a diagnostic tool to clear the fault code. If, after clearing, the engine is started and run more than four times without the fault recurring, no further action is required. If the fault persists, remove the cover to check the resistance of the oxygen sensor. As shown in the figure, if the fault code indicates cylinder 1, remove the left radiator cover to access the oxygen sensor connector. If the fault code indicates a cylinder 2 or 3 oxygen sensor issue, remove the right radiator cover.



After removing the cover, you can see the way the oxygen sensor is fixed as shown in the above picture. Push the mushroom head out of the mounting hole and unplug the oxygen sensor connector to measure it. Use a multimeter to measure the resistance between the pins corresponding to the purple and white wires of the oxygen sensor. The standard value is 12.5 ± 1.7 Ω; if the resistance is very small or infinite, replacement is required.

When an oxygen sensor signal fault occurs, first try to use a diagnostic tool to clear the fault codes. If after clearing, the engine starts and runs for more than four times without the fault reappearing, no further action is needed. If the fault persists, check the engine data stream and locate the oxygen sensor voltage signal for the corresponding cylinder. After starting the engine and allowing it to idle steadily for half a minute, the voltage signal should fluctuate within the 0.1 to 0.9V range. If the voltage signal remains consistently too low or too high, first check whether the oxygen sensor wiring is damaged or improperly grounded. If the wiring is normal, the oxygen sensor needs to be replaced.

Note: The ceramic inside the oxygen sensor is hard and brittle. Do not hit it with hard objects or blow it with strong air, as this may easily cause damage.

7.2 Replacement

Take out the cover piece according to the above operation, take out the fixing buckle, cut off the cable tie and pull out the plug, and then use a 17# open end wrench to remove the oxygen sensor counterclockwise from the muffler tube. Clean the mounting surface before installation.





The new sensor threads are coated with a special paste thread anti-sintering agent to prevent air leakage and facilitate subsequent re-disassembly. If the old inspection is fine, it is necessary to apply an appropriate amount of anti-sintering agent to the thread before installation. Torque standard: 18±1.5N.m.

The oxygen sensor thread is M12×1.25.



8. Start the relay

For details, see the section on Starting Relays in the chapter "Starting Systems".

9. Water and oil share sensors

If the instrument fails to light up, the fault information is 0118 fault code. If the diagnosticator shows that the fault exists and cannot be cleared, the engine data stream is viewed, the engine water temperature parameter is found, and the water temperature parameter is judged to be reasonable according to the current engine surface temperature. If the data shows a large difference from the actual situation, check whether the resistance of the water temperature sensor meets the standard.

The water and oil common sensor is located in the middle cylinder position of the engine, and the two-pin resistance of the sensor is detected after the plug is removed. Pinch the top of the plug first, press the anti-disconnection card, and then pull the plug outward.



The two-pin resistance value of the multimeter at room temperature is: 3.74~1.22kΩ (10~40°C); 1.22~0.27kΩ (40~90°C).

Due to limited space, it is recommended to use a 72-tooth 17# ratchet torx wrench counterclockwise to remove the water and oil common sensor and remove the 9×2 EPDM O-ring. When reassembling, replace the O-ring with a new one to avoid leakage.

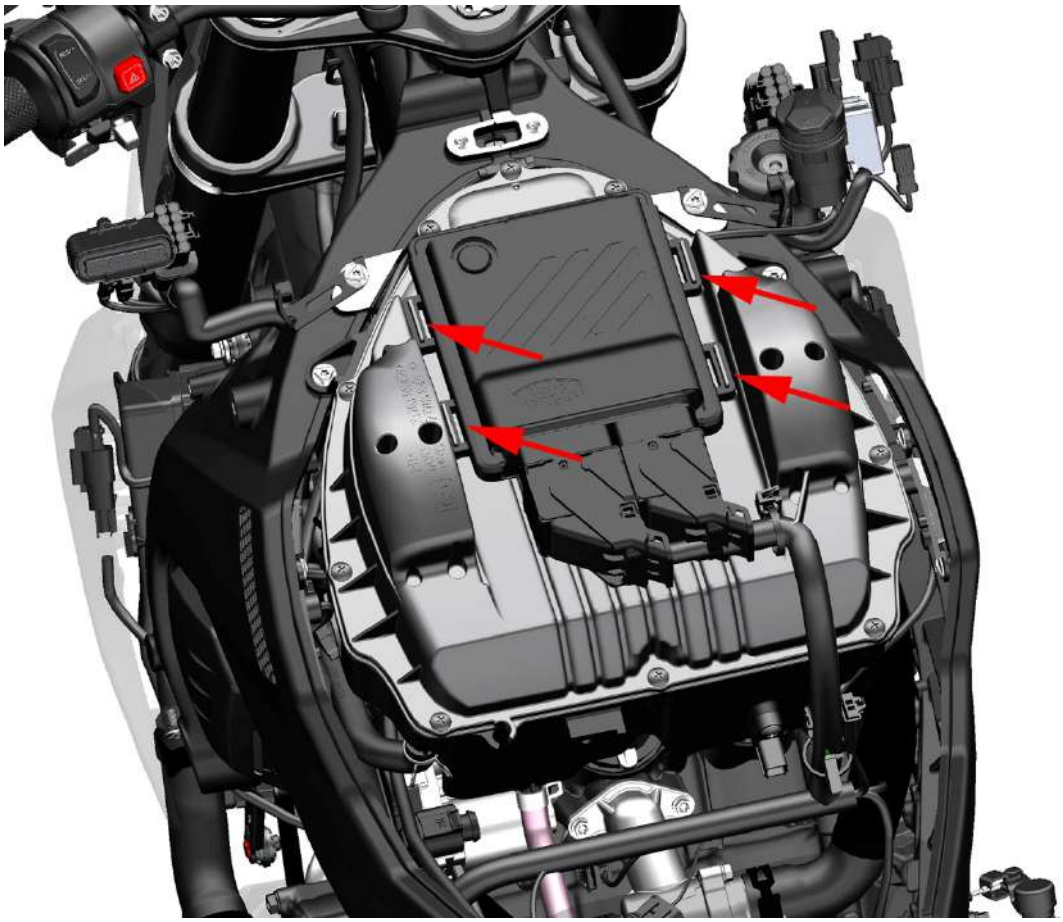


Standard torque: 13±1.5N.m (1.3±0.2 kgf.m, 10±1 lbf.ft)

10. ECU

When the engine cannot be started, the fault light is not lit after the ignition switch is pressed, and the EFI system is not powered on. First, check whether the ECM fuse is burned and whether the main relay is engaged. Because the ECU is complex and difficult to judge, the elimination method can generally be used to remove the ECU from the normal motorcycle of the same model and replace it with the faulty vehicle.

After the ECU connector and directly pull out the four locking tabs held by the ECU sleeve. The ECU can be removed from the sleeve.



Note: To replace the ECU, you need to shut down the whole motorcycle and wait for 10 seconds before operating to avoid the abnormality of the EFI system.

11. Throttle body

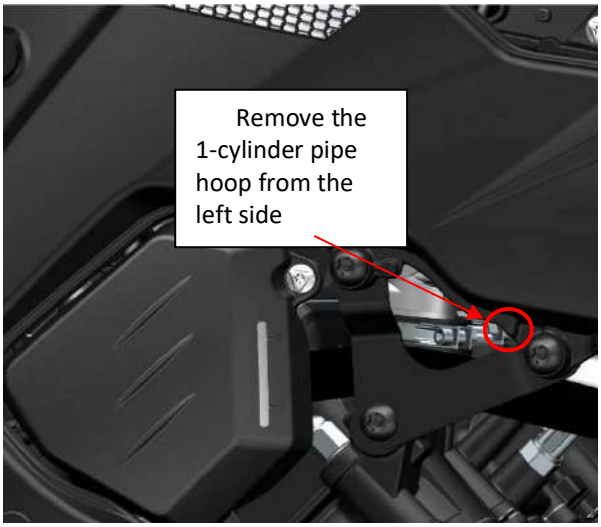
11.1 Common fault signs

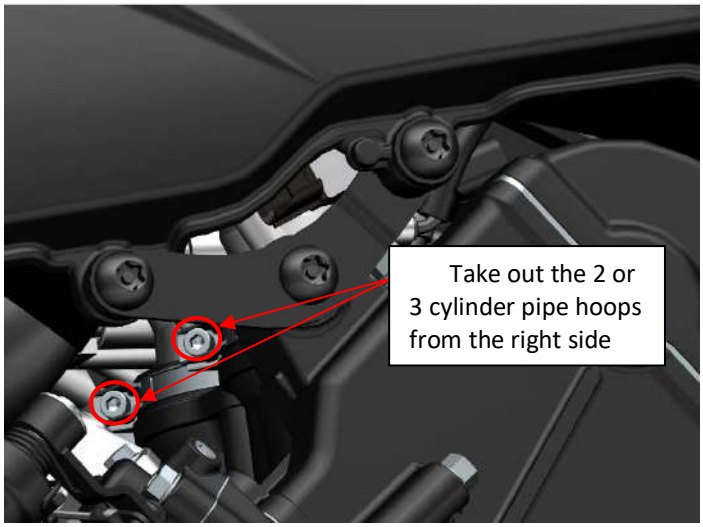
1. During riding, the fault light is on, and there are fault codes related to the intake pressure, temperature, and throttle position sensors.
2. It cannot be started by ignition, the idle speed of the start is too low or too high, unstable, etc.
3. There is a certain position or overall stuckness during the rotation of the throttle handlebar.

11.2 Disassembly

It is necessary to follow the steps described above, remove the fuel tank and air filter after shutdown, and unplug the electrical device plug, rubber pipe, and high-pressure oil pipe connected to the throttle. Then use a long 4# Allen wrench to loosen the three pipe clamps that hold the throttle and the intake manifold into the appropriate position, and then the throttle can be removed as a whole.







11.3 Troubleshoot the process

When the vehicle malfunction indicator light comes on and any of the fault codes 0120, 0220, or 2100 is reported, the following steps should be taken for inspection:

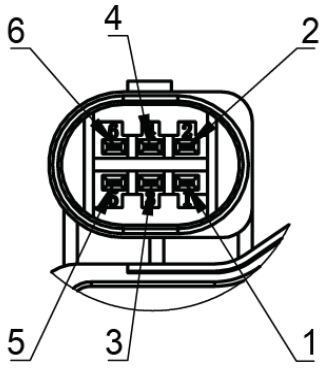
1. Check the appearance of the throttle motor module for any signs of external impact, cracking, and whether the plug is loose or fallen out. After confirming that there are no issues, unplug the throttle motor plug with the vehicle turned off, and check whether the sensor pins are skewed or missing.

2. After confirming that there are no abnormalities in the above steps, remove the throttle. After unplugging the motor plug, if the vehicle reports fault code 0120, measure the resistance between pins 1 and 6; if the vehicle reports fault code 0220, measure the resistance between pins 4 and 6, both of which should be 9.9 kΩ. If the vehicle reports fault code 2100, measure the resistance between pins 3 and 5, which should be approximately 17.5 Ω. If the resistance does not meet the standard, the throttle body needs to be replaced (resistance is affected by the current temperature, and some deviation is normal). Remember to reconnect the plug after the inspection.

3. For those with a diagnostic instrument, connect to the OBD port for troubleshooting. Turn off the ignition switch without starting the engine, use the diagnostic instrument to read the engine parameters for judgment, select the EFI system that matches the current vehicle model to enter, and increase the throttle from idle to full open. The normal data should be: the voltage signal of the throttle on channel 1 will increase from 0.5 ± 0.2 V to 4.6 ± 0.2 V. If it does not meet the standard, perform the inspection as described above.

4. If the above troubleshooting does not meet the standard, this part needs to be replaced. If the measurement is normal, check whether the cables connecting the sensor are damaged or broken.

PIN Definition	
1	TPS 1
2	+5V
3	M+
4	TPS 2
5	M-
6	GND



When the sensor malfunctions, in addition to the malfunction indicator light coming on, the following situations may also occur:

1. The idle speed is too high. At this time, check whether the 7 steel pipes a of the throttle valve are loose, whether the rubber tubes that mate with the steel pipes are loose, cracked, etc.; also check whether the 6 idle speed screws b are loose, exposed on the surface, or have fallen off.



2. Idling is unstable, with the engine speed fluctuating up and down. At this time, connect the diagnostic tool and check that the throttle signal voltage fluctuation must not exceed 0.08V, and the throttle opening fluctuation must not exceed 0.5%. If any of the above is abnormal, the throttle body needs to be replaced.

11.4 sensor

If a fault indicator light appears on the instrument panel and the displayed fault information relates to sensors associated with the throttle, such as intake air temperature, pressure, stepper motor, or position, you can use a diagnostic tool to retrieve the fault codes. This will help determine whether the issue is a current fault or a historical fault. When using the diagnostic tool, first turn the ignition switch to the "ON" position without starting the engine. Then locate the OBD diagnostic port under the seat and connect the diagnostic tool. Select the Moshen "PE08 Electronic Fuel Injection System" for diagnostics or choose the generic OBDII protocol to proceed.

External intake air pressure sensor (2026 model)

When the vehicle's malfunction indicator light comes on, reporting fault codes 0106, 0107, 0108, and the vehicle is difficult to start or fails to start, the following inspection methods should be followed:

1. Check whether the appearance of the pressure sensor has been impacted by external force, cracked, and whether the plug is loose or fallen out. After checking and confirming no issues, unplug the pressure sensor plug with the vehicle turned off, and check whether the pins of the pressure sensor are skewed or missing.

2. Turn off the vehicle, unplug the pressure sensor plug, and measure the resistance between the sensor pins. As shown in the figure, the resistance between pins 1 and 2 of a normal pressure sensor is 210±50Ω, the resistance between pins 1 and 3 is 260±50Ω, and the resistance between pins 2 and 3 is 60±25Ω. Remember to reconnect the plug after the inspection.

3. Turn on the vehicle, turn on the engine stop switch without ignition, use a diagnostic tool to read the engine parameters for judgment, select the EFI system that matches the current vehicle model to enter, and check the current intake manifold pressure parameter. Under normal circumstances, the parameter is approximately equal to the local atmospheric pressure. Then start the engine by ignition. After the water temperature reaches 80°C, the manifold pressure is 38~44kpa. (The idle pressure of a new vehicle will be higher than this value and will decrease after running-in). If the idle intake pressure of the vehicle after running-in is greater than 44kpa, check whether the cylinder head is leaking.



4. If the above inspections do not meet the standards, replace this part; otherwise, check whether the cables connecting the sensor are damaged or broken.

12. Ignition coil

No high-pressure sparks; Weak strength of high-pressure sparks; When the engine fails to start, check whether the ignition coil is normal. In general, common faults of ignition coils, such as short circuits, open circuits or lapping of coil windings, will lead to no high voltage electricity; In addition, the ignition coil insulation material is aging, the insulation performance becomes poor, and the ignition coil leaks, which makes the electric spark weak and the ignition energy insufficient, resulting in unstable idling, intermittent flameout and failure to ignite. In case of this kind of failure, it is necessary to check whether the resistance and insulation properties of the ignition coil meet the requirements, and if it does not meet the requirements, it must be replaced.

Follow the steps in the section "Maintenance - Spark Plug - Removing the Spark Plug" to remove the spark plug from the engine and install it on the high-pressure cap. Put away the side bracket, use the main bracket to park the motorcycle firmly and unlock the vehicle, hit the ignition switch, hold the clutch handle tightly and put the spark plug close to the engine head cover or box (it should be far away from the spark plug installation screw hole), press the start button If the spark plug electrode finds a

blue spark, the ignition system is normal, otherwise please check the resistance of the ignition coil, as shown in the figure below, use a multimeter, adjust to the resistance level, select the appropriate range, and measure the resistance of the outermost two pins of the ignition coil (the standard value is 0.69±10%Ω).

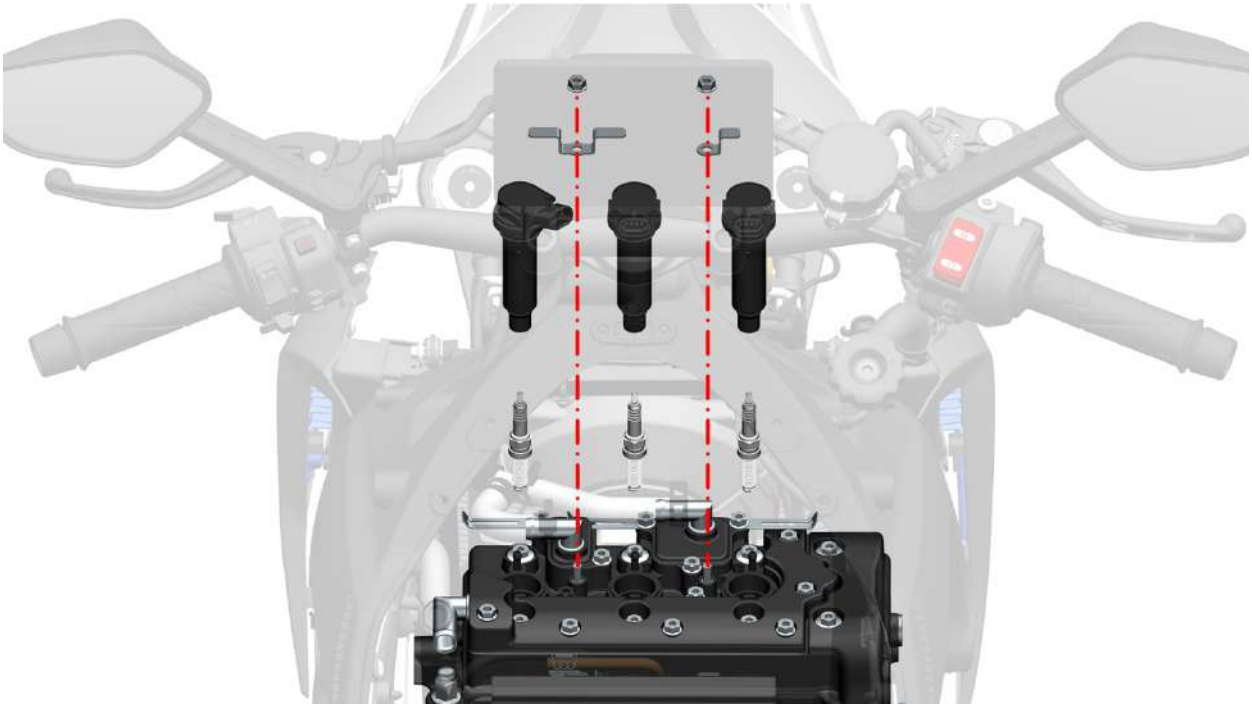


If you want to replace the ignition coil, you can follow these steps:

It is necessary to remove the fuel tank, surrounding, air filter housing, etc. Use a dust blow gun to blow off foreign objects and dust at the cylinder head. Unplug 3 plugs.



Remove the nut with the 10# sleeve and remove the ignition coil pressure plate. Remove the ignition coil. Use the 14# sleeve to remove the spark plug. If the fit is tight, you can shake it slightly from side to side to take out the ignition coil.

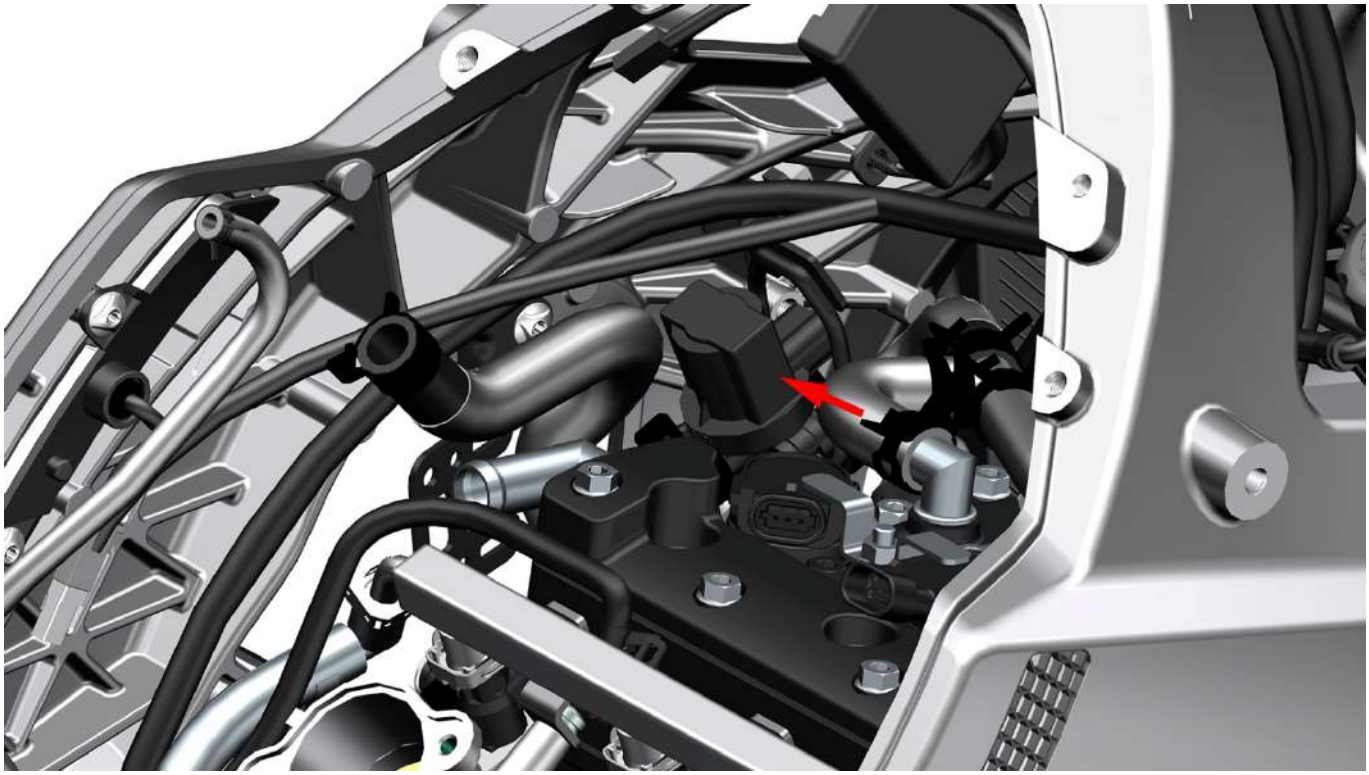


When installing the ignition coil back, first insert the ignition coil back into the bottom, and turn the ignition coil plug towards the position shown in the figure above, then put it back into the pressure plate, and put the nut back tight, and the torque standard is 11.5±1N.m.

13. Secondary make-up valve

After unplugging, use a multimeter to measure whether the resistance of the two pins is 20±2Ω. Or blow in compressed air in the direction of the arrow for ventilation detection.



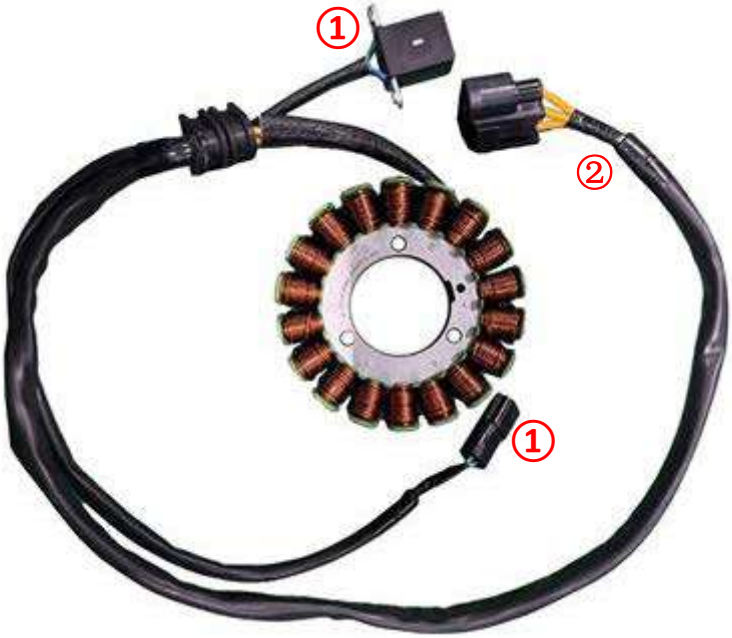


14. Crankshaft position sensor

If the engine fails to start and the instrument panel does not display the engine speed, and the diagnostic tool indicates a crankshaft position sensor fault, the crankshaft position sensor should be inspected.

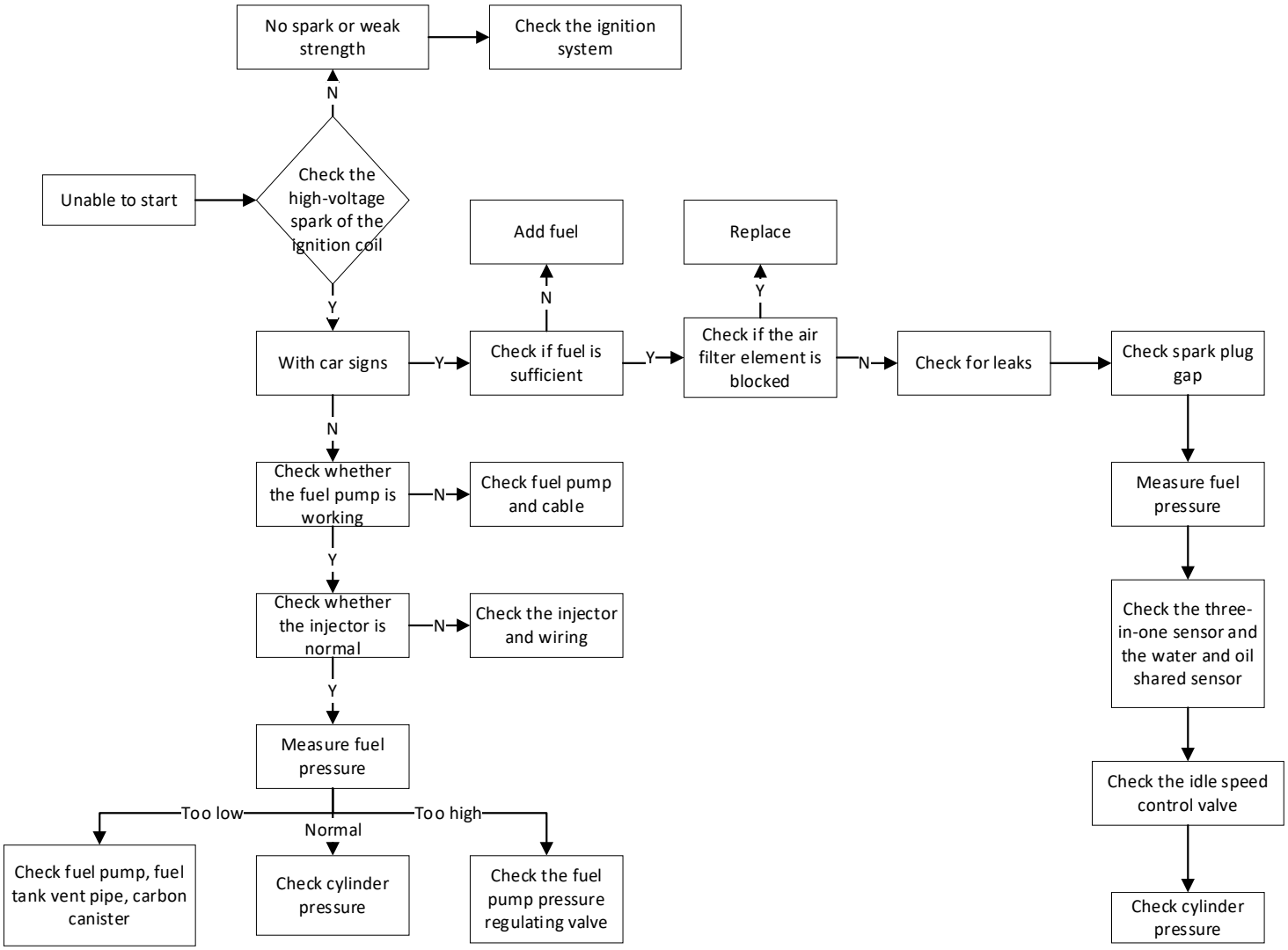
The crankshaft position sensor is integrated with the stator of the magneto and is located on the left crankcase cover. Locate the sensor connector on the left side of the vehicle, press the anti-disconnection lock on the head of the connector, and unplug it. Use a multimeter to measure the resistance of the crankshaft position sensor①. At 25°C, the resistance should be 300 ± 20 Ω.

Additionally, use a multimeter to measure the resistance of the stator's three-pin connector ②. The resistance between any two terminals (phase-to-phase resistance) at 25°C should be 0.5 ± 0.3 Ω.



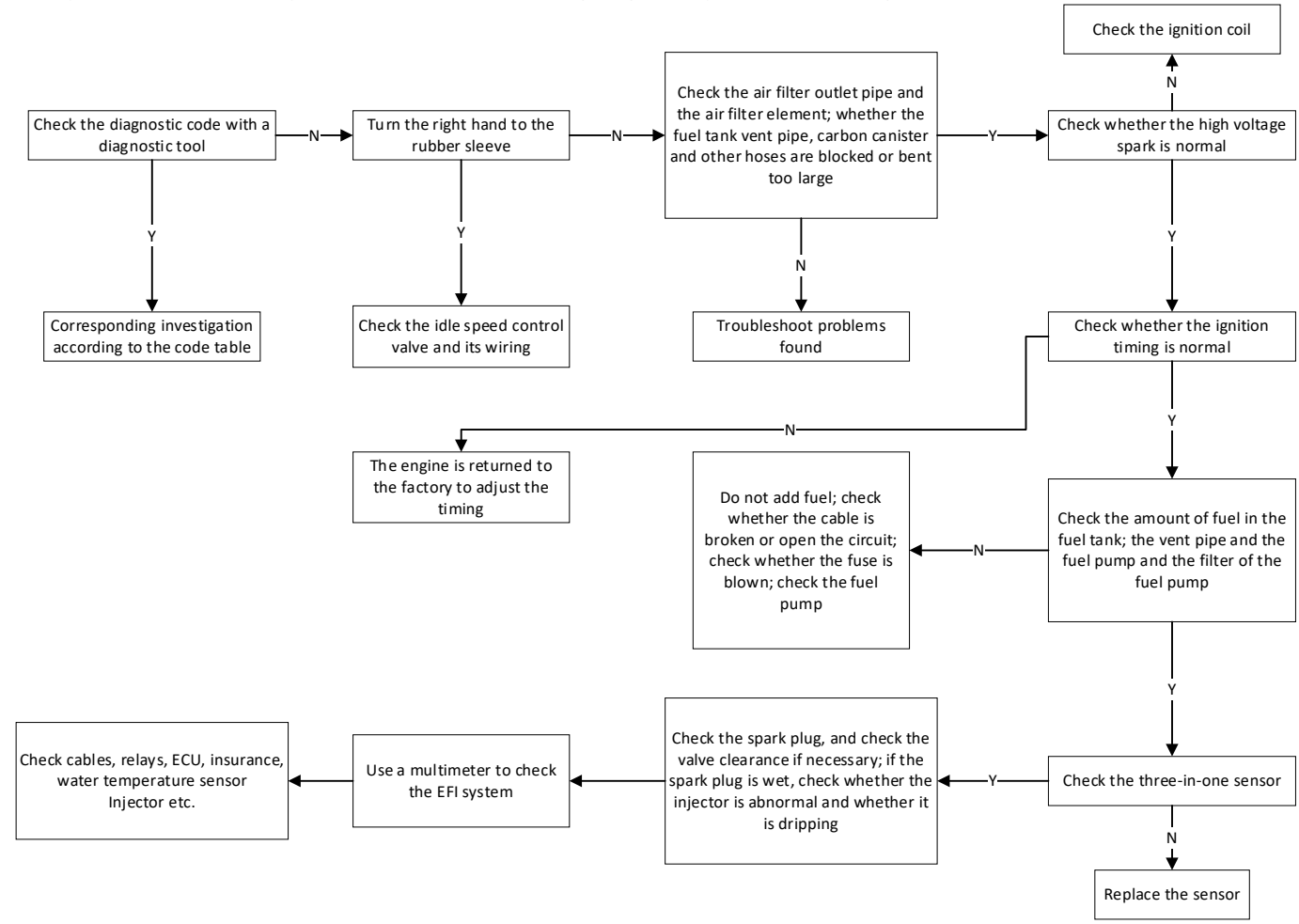
Troubleshooting process when the engine does not start and there are no signs of landing

When the start button is pressed, the starter motor can drive the engine to run normally, but the engine cannot work normally, and there are no signs of landing, you can refer to the following diagnostic process to investigate the cause of the fault.



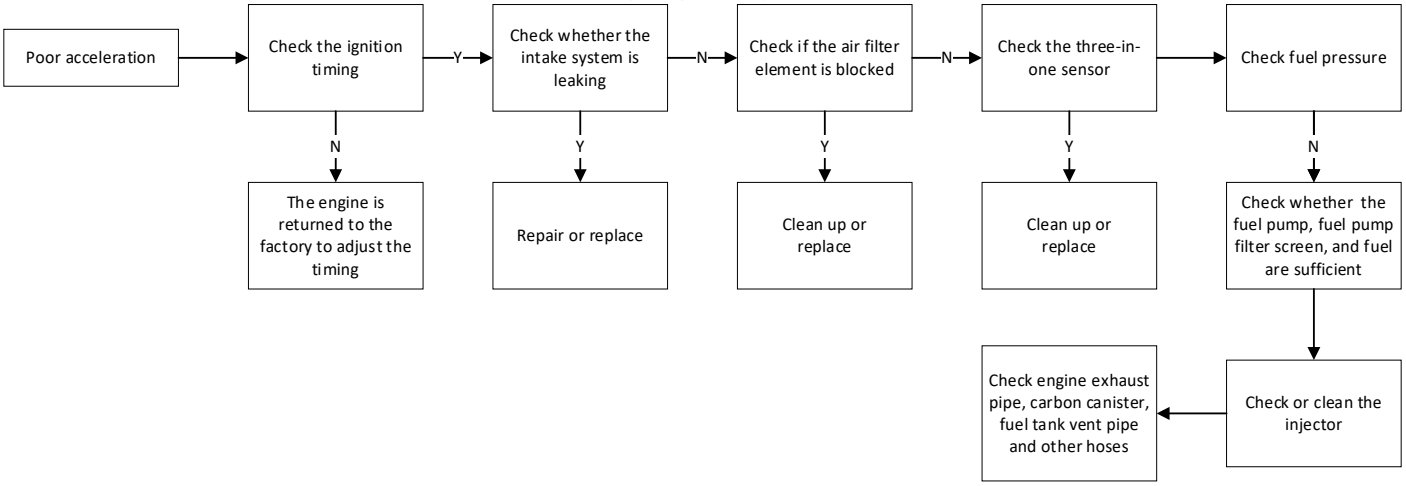
Troubleshooting process when the engine does not start and there are signs of landing

When the start button is pressed, the starter motor can drive the engine to run normally, and when there are signs of the motocycle but cannot start, you can refer to the following diagnostic process to investigate the cause of the failure.



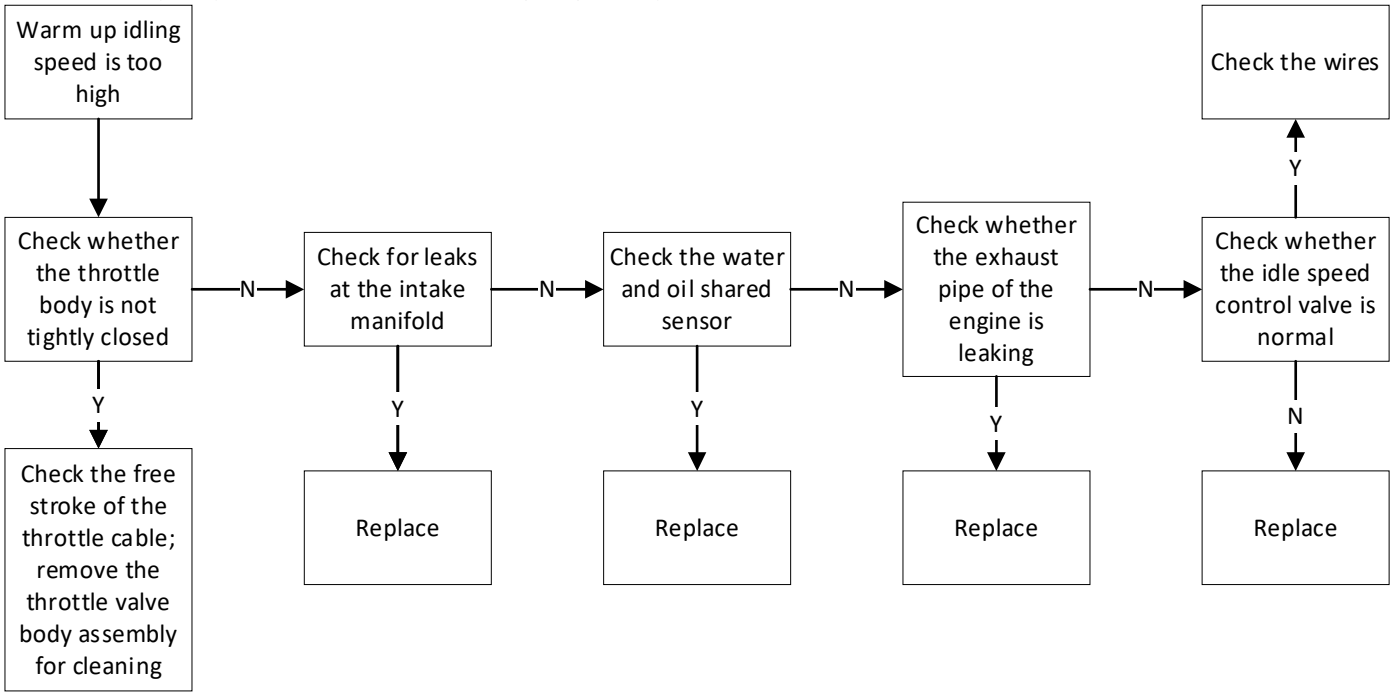
Poor acceleration

Rotate the right hand handle rubber sleeve, the engine speed can not be increased immediately, there is a lag phenomenon, and the acceleration is slow; You can refer to the following diagnostic process to troubleshoot the cause of the fault.

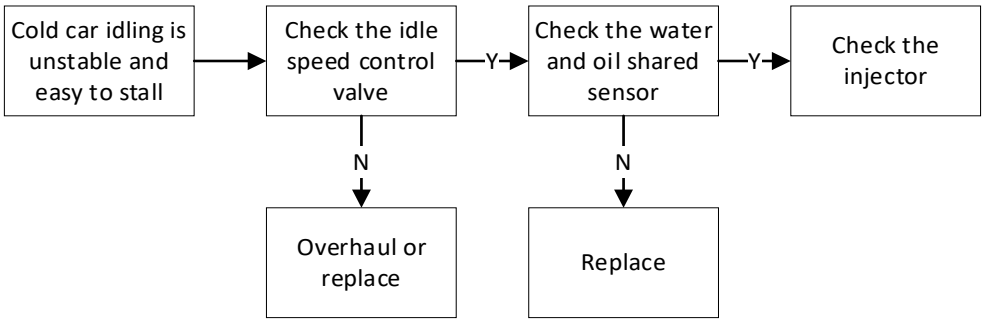


The idle speed of the hot motocycle is high

When there is a cold motocycle, it can run normally and quickly, and the idle speed does not fall back to 1500±100 rpm after the hot motocycle, you can refer to the following diagnostic process to troubleshoot the cause of the failure.

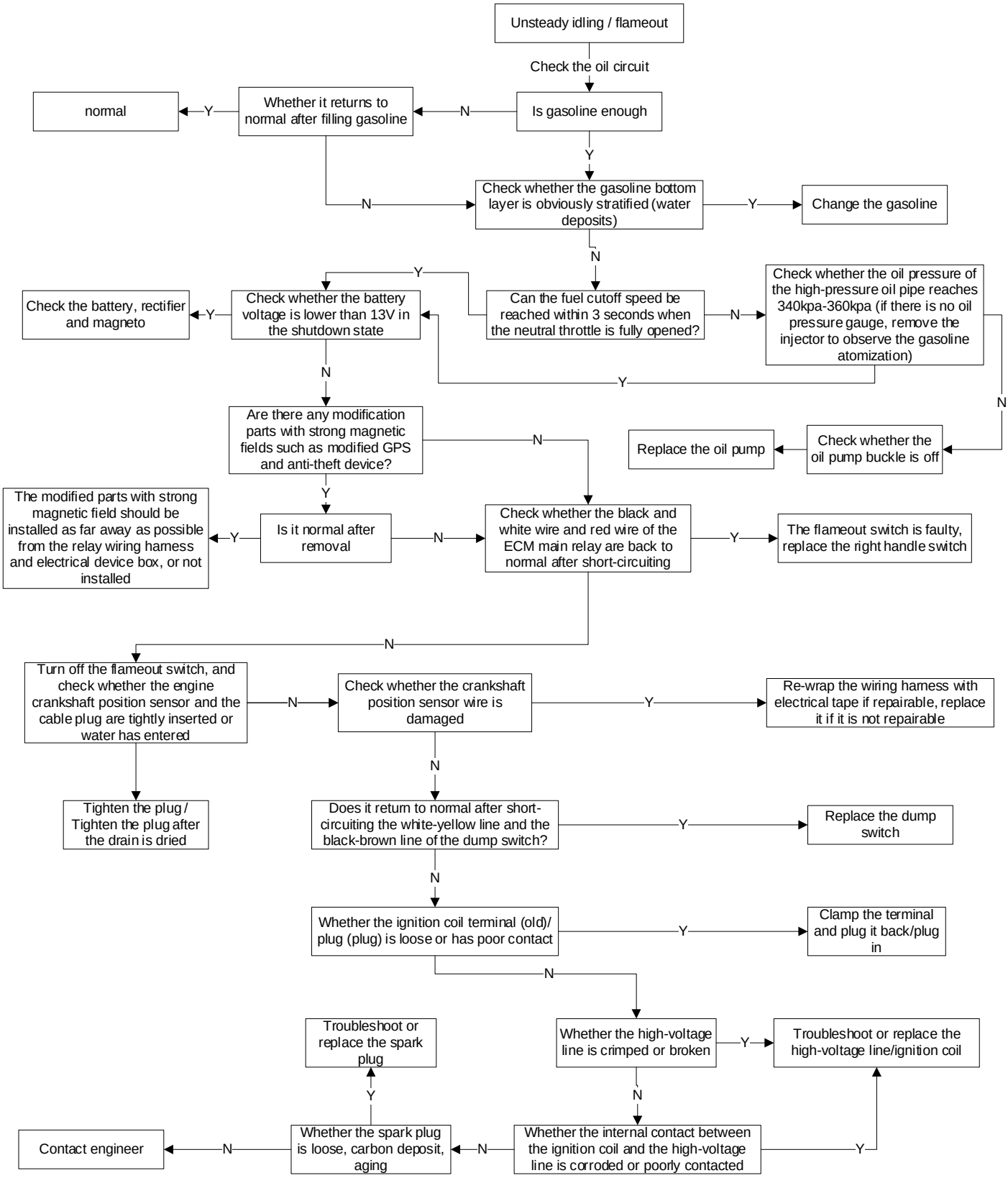


The cooling motocycle is unstable at idle



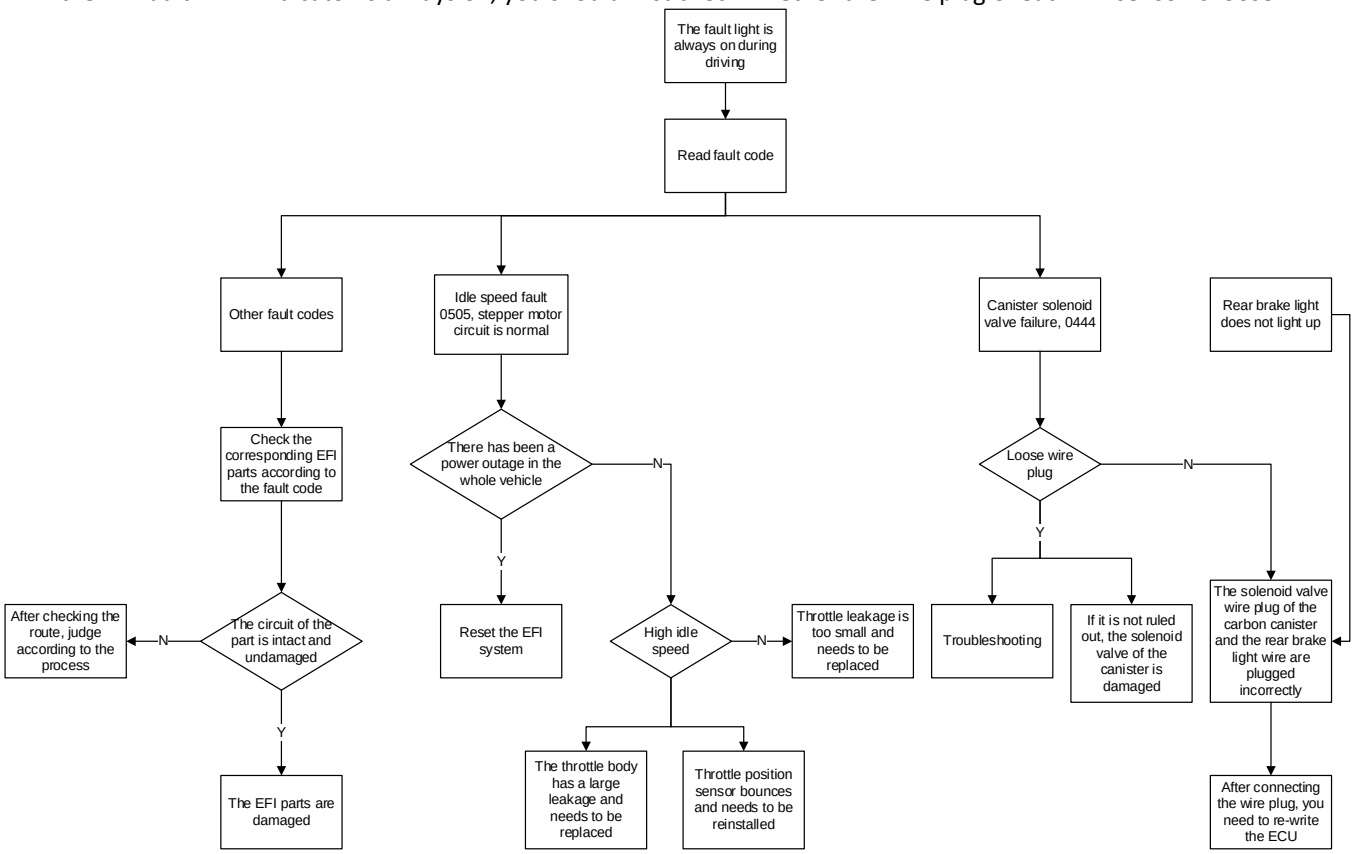
The idle speed is unstable and easy to stall

The engine is unstable in idling and easy to stall, and it can return to normal after hot it up. You can refer to the following diagnostic process to troubleshoot the cause of the fault.



EFI fault indicator is always on analysis flow chart

If the EFI fault“” indicator is always on, you should first check whether the wire plug of each EFI sensor is loose.



4. Ignition system

Pre-Service Notice

1. The content of this chapter requires certain maintenance experience, and it is recommended to go to a maintenance unit with maintenance qualifications for inspection or maintenance.

2. After powering on, the parts connected to the 12V power supply should not be removed at will, so as to avoid the coil in the appliance from self-induction and instantaneous voltage damage to the ECU or sensor.

3. Use a spark plug with the correct calorific value, a spark plug with an inappropriate calorific value may damage the engine.

4. Ignition system failures are common in the form of poor plug connections and corrosion of terminal blocks, both of which should be checked as a priority.

5. Since the ECU is factory preset, the ignition timing cannot be adjusted. If you need to adjust the ignition timing, you can only return to the factory for maintenance.

6. Make sure the battery is fully charged, if it is not charged, it may result in a slower start or weak or no spark from the spark plug.

Tool:

multimeter	Tool	Torque wrench
		

7. Each vehicle has different driving conditions and maintenance conditions, so it is impossible to list all the fault phenomena and troubleshooting procedures. Only some of the more common faults can be listed. Maintenance personnel themselves also need to have a certain amount of professional knowledge and experience accumulation process.

8. Spark plug disassembly and inspection are detailed in the "Spark Plugs" section of the "Maintenance" chapter of this manual. Before removing the spark plug, you need to use a dust blow gun to clean up the surrounding debris and dust, and after removing it, you need to block the spark plug mouth to prevent foreign objects from falling into the engine.

9. If there is a "  " symbol on the right side of the step, you can click to quickly jump to the corresponding step.



●Do not plug and unplug the plugs of each part at will, and do not directly clean the plug with water. Always check that it is properly plugged back in after plugging and unplugging.

Troubleshooting

Check the following items before diagnosing the ignition system

a. Check the spark plug for abnormalities;

b. Check that the ignition coil high-voltage cap or plug is not loose;

c. Check the high-pressure cap for water ingress;

d. If there is no spark, first find the ignition coil of the same model to confirm that there is no fault, install it on the faulty car, and test whether there is a spark;

e. Check whether the "initial voltage" of the ignition primary coil is consistent with the battery voltage when the engine is not activated when the motorcycle is unlocked.

There are no sparks from the spark plugs

1. Improper spark plug clearance

If the gap is too small, the electrode has a "flame suppression" effect to inhibit the generation of flames, and the spark strength is weak; If it is too large, the ignition voltage will cause no sparks. Adjust to the standard 0.7-0.9mm.

2. A film of oil is attached to the surface of the spark plug electrode

Oil or gasoline enters the combustion chamber and adheres to the electrode surface, causing the electrode to be short-circuited and resulting in no sparks. The oil is generally channeled into the gap between the piston and the cylinder wall and the valve guide, check whether the gap is normal, and replace the corresponding parts if it is abnormal. The accumulated gasoline may be caused by the mixture being too thick when the chiller starts, so you can clean it up before trying to ignite it.

3. The skirt of the spark plug is broken

The high-voltage current breaks down and leaks from the broken part of the skirt, and the spark plug needs to be replaced.

4. The electrode has carbon deposits, and the central electrode leaks electricity to the periphery without discharging to the electrode

Excessive carbon accumulation or oil accumulation on the electrode causes short circuit; and may cause the insulator to burn out. Clean up carbon deposits or replace spark plugs.

5. Damaged electrodes

The central electrode is chemically corroded by electric sparks or combustion gases for a long time, resulting in electrode damage; It needs to be replaced.

6. The spark plug insulation is reduced

Reduced insulation weakens the ignition voltage, resulting in weaker or no spark strength; It needs to be replaced

7. Ignition coil high-voltage wire short circuit

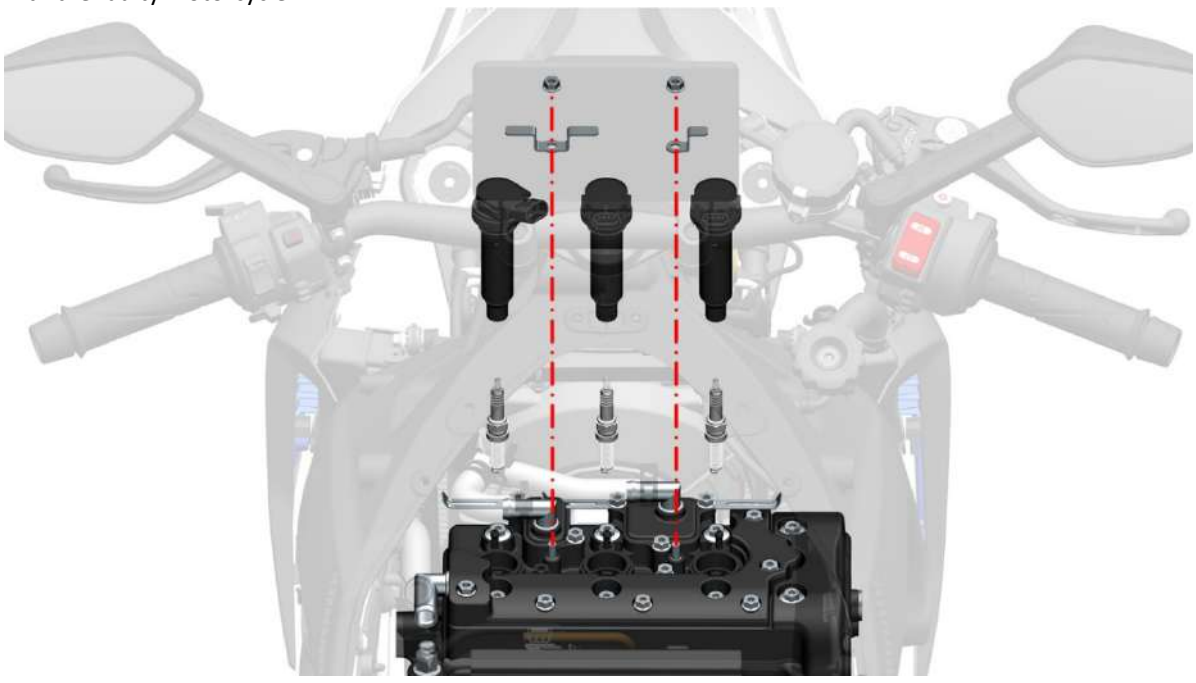
The ignition coil needs to be replaced

8. The battery is insufficient

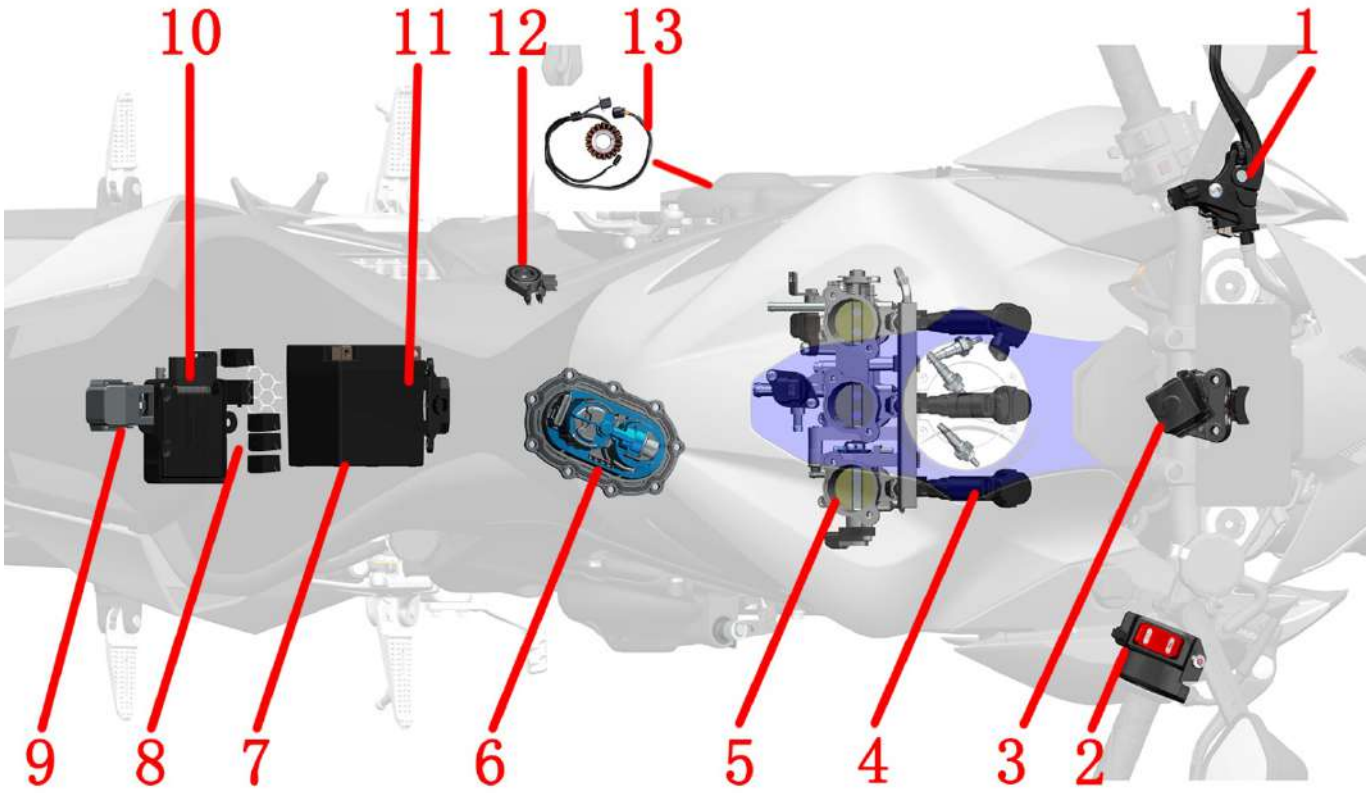
If the spark strength is weak or no spark due to insufficient power, charge it with the charger provided with the car. Or ride long distances to recharge.

9. ECU failure

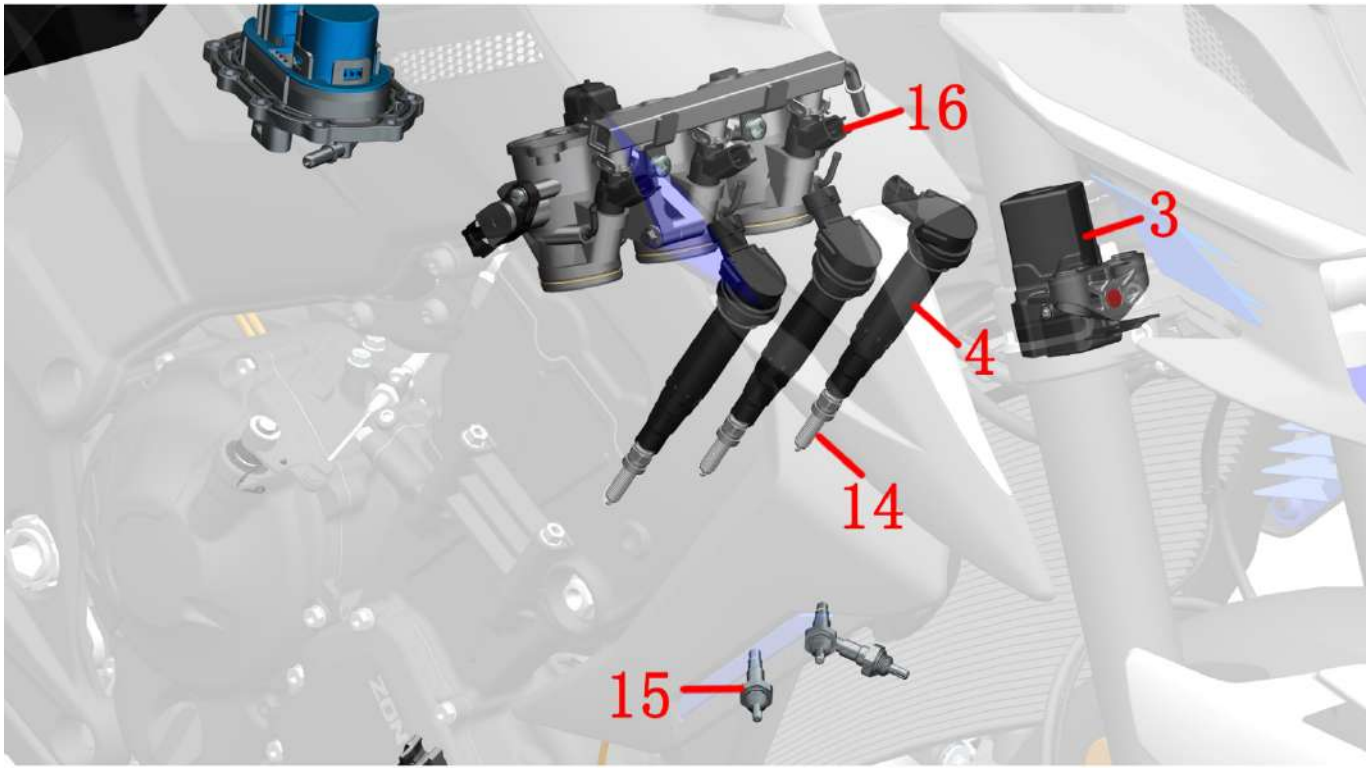
After eliminating the above reasons, it can be judged from the good ECU removed from the same model motorcycle and replaced with the faulty motorcycle.



Ignition system layout



1-Clutch rocker arm assembly; 2-Right hand handle switch; 3-Faucet lock; 4- Ignition coil; 5-Throttle assembly; 6-Oil pump pump; 7-Battery; 8-Relay; 9-Starting relay; 10-PKE main engine; 11-Dump switch; 12-Side bracket; Kill switch; 13-Magneto



14-spark plug 15-oxygen sensor 16-fuel injector

Note:

●The fuse box comes with the main harness, and the detailed diagram can be found in the EFI relay section of "EFI Parts Fault Diagnosis and Troubleshooting" in the chapter "EFI System" of this manual.

●The magneto stator and crankshaft position sensor are integrated into one part and cannot be replaced individually. For details about the troubleshooting of the crankshaft position sensor, please refer to the section of the crankshaft position sensor in the "EFI Parts" section of the "EFI Systems" chapter of this manual.

Ignition system check

Note:

●If there is no spark from the spark plug, all cable joints should be checked for loose or poor contact before the ignition system is checked.

●Use a high-precision digital multimeter.

For details of the ignition coil test method, please refer to the ignition coil section in the "EFI Parts Fault Diagnosis and Troubleshooting" chapter of this manual.

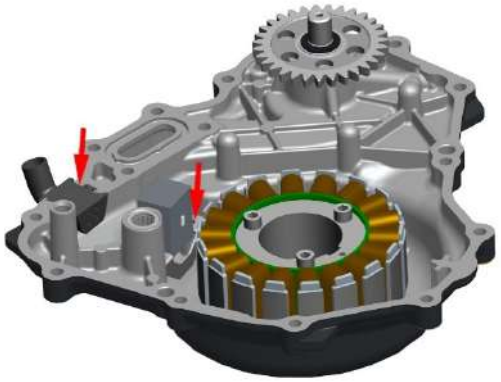
Pull out the high-pressure cap, find a spark plug of the same model to confirm that there is no abnormality, install it on the high-pressure cap, close to the cylinder head cover for ignition test, and confirm whether the ignition coil is faulty.

Refer to the crankshaft position sensor section in the "EFI Systems" chapter of this manual "EFI Systems" to check whether there is any abnormality.

Ignition coil

For details of the ignition coil disassembly and test method, please refer to the ignition coil section in the "EFI Parts Fault Diagnosis and Troubleshooting" chapter of this manual.

Crankshaft position sensor



Disassembly

Remove the right crankcase cover

Remove the two bolts that hold the sensor in place. Remove the black rubber sleeve again.

Installation

Contrary to the order of disassembly

●A ring of flat sealant needs to be applied to the joint surface of the black rubber sleeve and the left engine cover.

Detect

For details of the detection method, please refer to the section on fault diagnosis and troubleshooting of EFI parts in "EFI System".

5. Starting system

Pre-Service Notice

1. If there is a current flowing through the starter motor when the engine is not started, it can be judged that the starter motor is damaged and needs to be replaced.

2. Before repairing the starter motor, the engine shutdown switch must be turned to " " to prevent personal injury caused by the sudden start of the starter motor caused by misoperation.

3. When the power is insufficient, the engine may not be able to start quickly, or the ignition current may not be provided.

4. You can refer to the steps in the troubleshooting process to check or repair the start-up system.

5. If there is a " " symbol on the right side of the step, you can click to quickly jump to the corresponding step.

WARNING

● When the engine cannot be started, please do not press the electric start button frequently. Frequent operation can lead to overheating or damage to the starter motor, flooding of the cylinder, battery feeding, etc.

Tool	Multimeter	Torque wrench
		

Troubleshooting

Note:

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

●Check whether the main fuse (25A) and ECM fuse (15A) are fused. If the fuse is replaced and burned again, the circuit fault needs to be checked first.

● The starter motor should work under the following conditions:

a. unlock the vehicle;

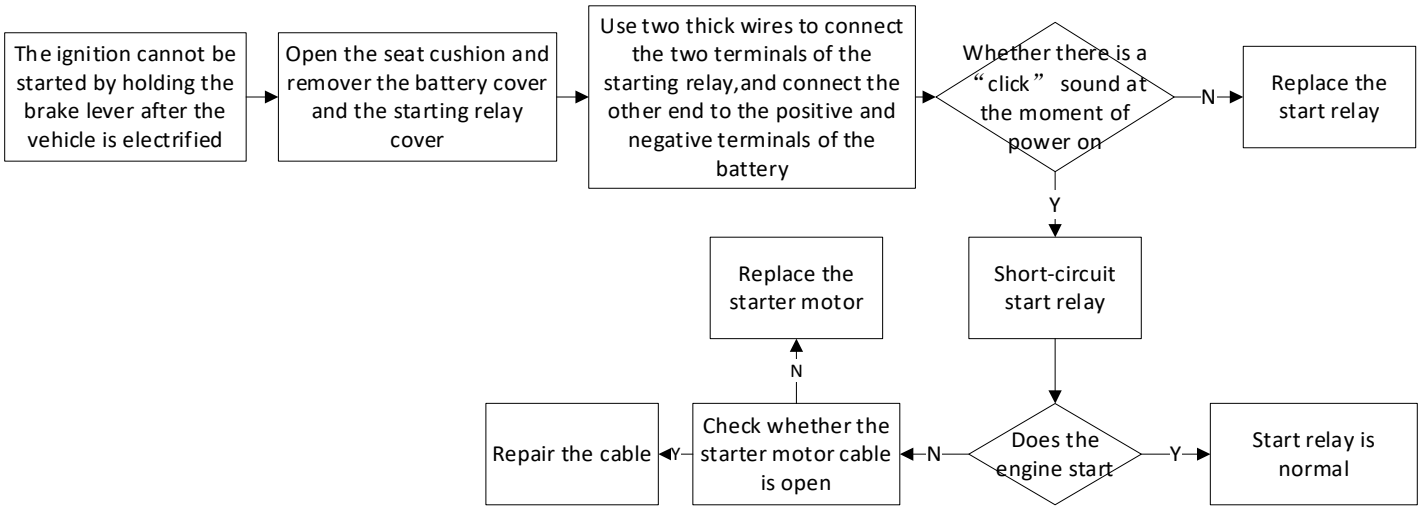
b. retract the side support;

c. The engine stop switch hits "";

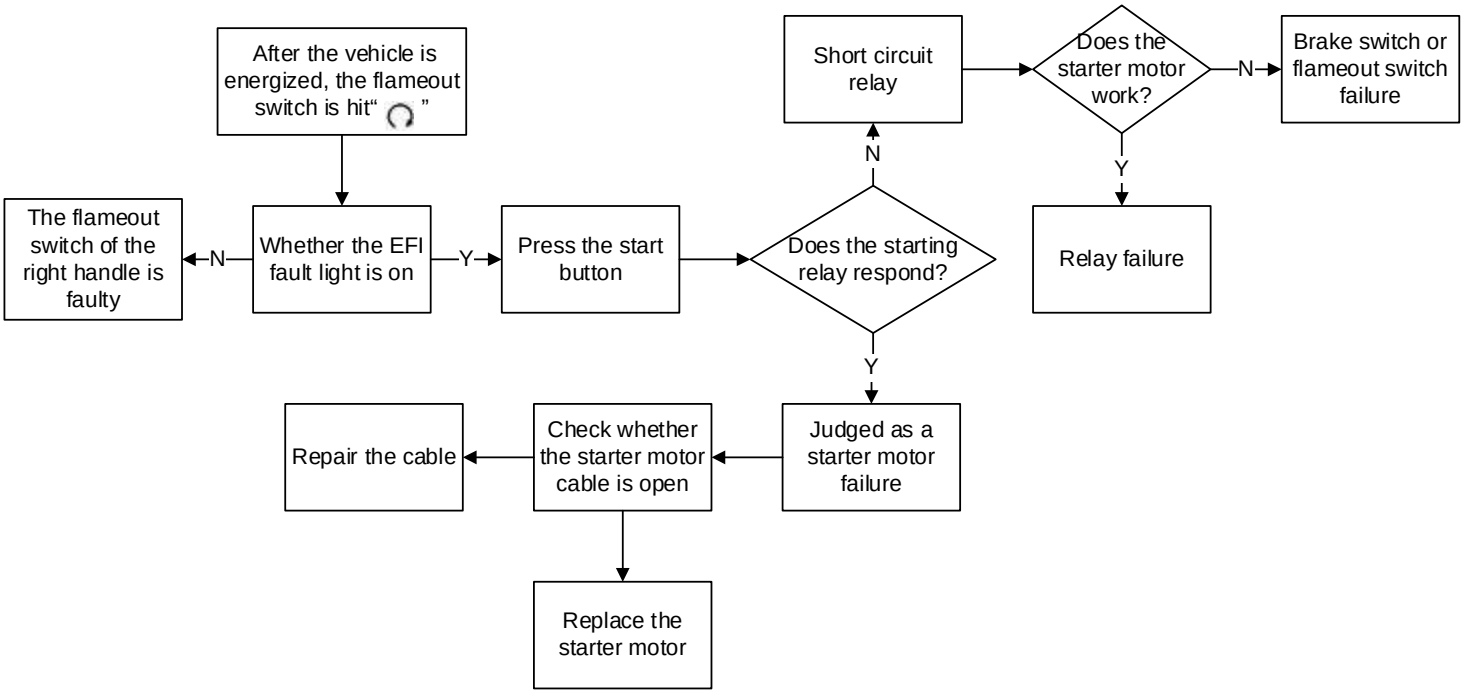
d. Press the start button.

Troubleshooting process when the starter motor is not running:

1. Starter relay



2. Starter motor



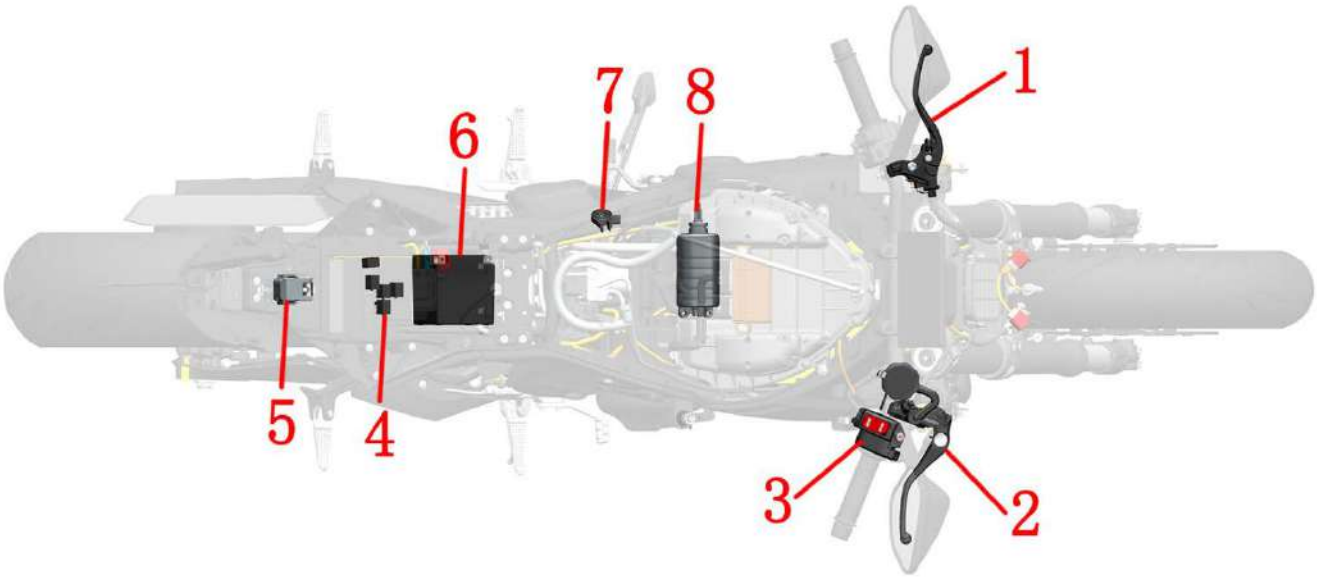
3. The starter motor runs slowly

Check if the battery is insufficient；
Check whether the battery cable connector is in poor contact；
Check whether the starter motor cables are in poor contact；
Check whether the starter motor is abnormal.

4. The starter motor is working fine, but the engine does not start

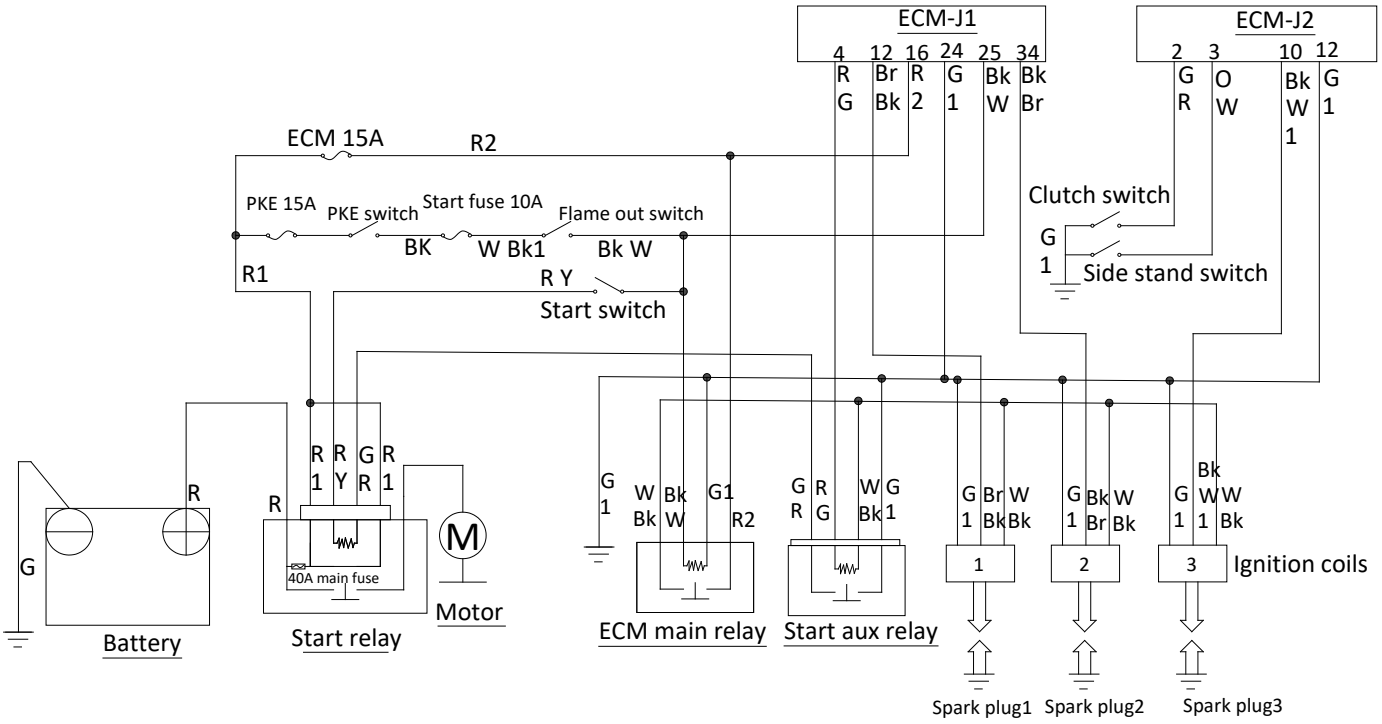
Check the starter gear train for malfunction；
Check for ignition system failures.

Starting system layout



1-Clutch rocker arm (clutch switch) 2-Front disc brake main cylinder (front brake switch) 3-Right hand handle switch
4- Fuse box 5- Starter relay 6-Battery 7- Side bracket power out switch 8- Starter motor

Electrical schematic diagram of the starting system



Starter motor

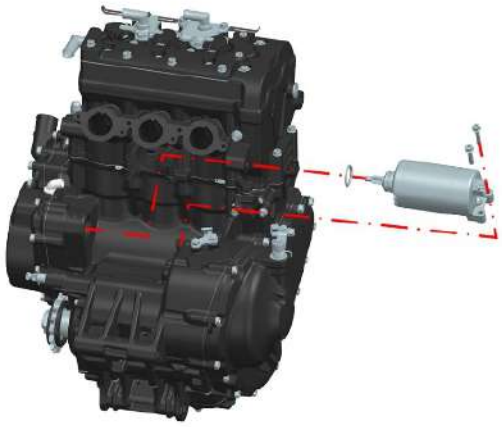
Note:

●If the starter motor is removed for maintenance, replace it with a new O-ring and apply an appropriate amount of oil.

●Our company only sells starter motor assemblies, and does not sell O-rings and motor parts separately. The O-ring has an inner diameter of ϕ25mm (0.98in) and a wire diameter of 3mm (0.12in).

1. Remove the starter motor

a. Disconnect the negative electrode of the battery first. Disconnect the magneton cable, remove the two bolts that hold the motor with a 10# sleeve or 5# hexagon socket to remove the motor from the engine. Remove the O-ring.



b. When reinstalling, pay attention not to miss the O ring of the starting motor, and align the teeth of the electric starting reduction gear. Note that the O-ring should be properly fitted into the box and properly lubricated, as cutting edges may cause leakage. Torque of the two bolts that fix the starter motor: 12±1.5 N.m. and mark with a marker.

2. Disassemble the starter motor

Note:

●If the magnetic tile pulls the pistle towards the motor housing, the coil may be damaged.

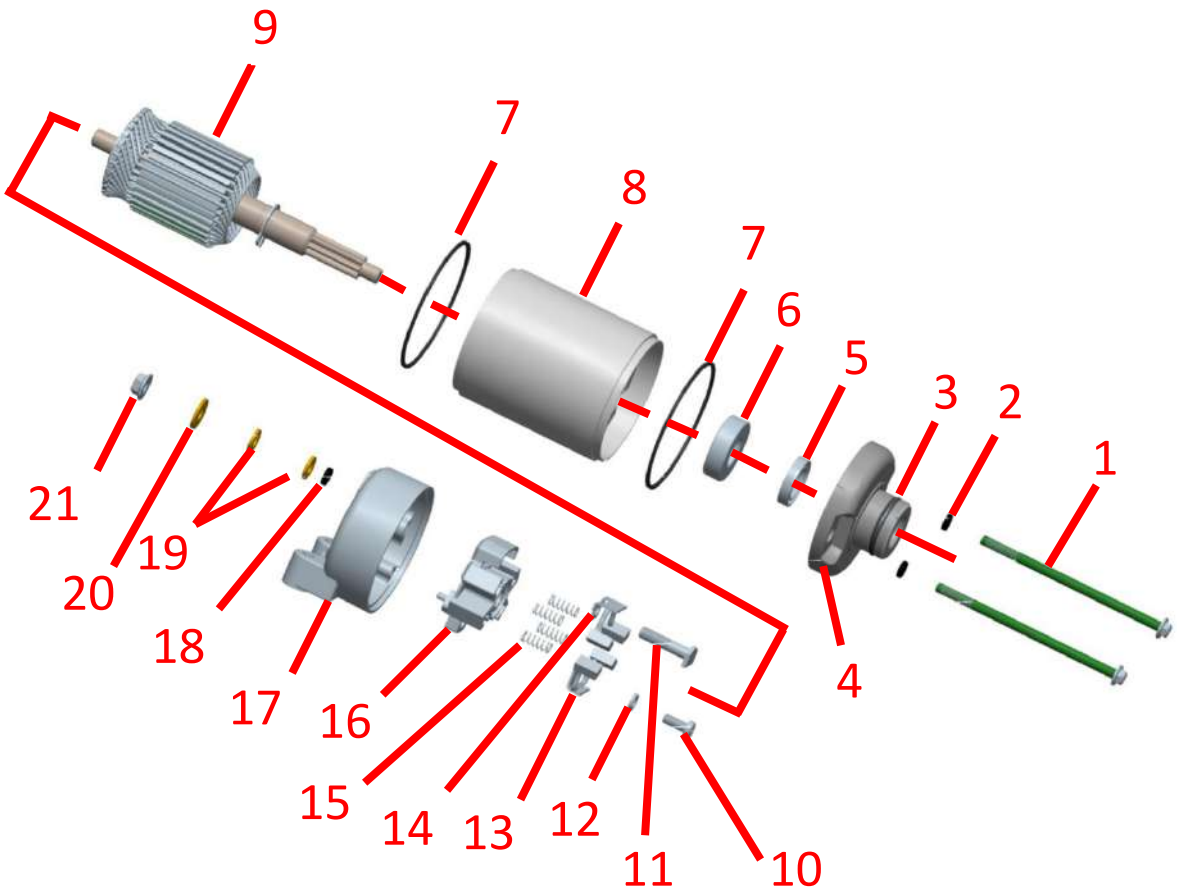
●When attaching the electric stick from the starter motor housing slot to the housing, make the commutator strip facing the rear;

●When installing the back cover of the starter motor, align the marker line with the index line;

●When installing the front cover of the starter motor, pay attention to prevent damage to the oil seal lip of the electric shaft, and align the marking line of the front cover with the index line on the motor housing.

Disassemble and assemble the starter motor as shown below.





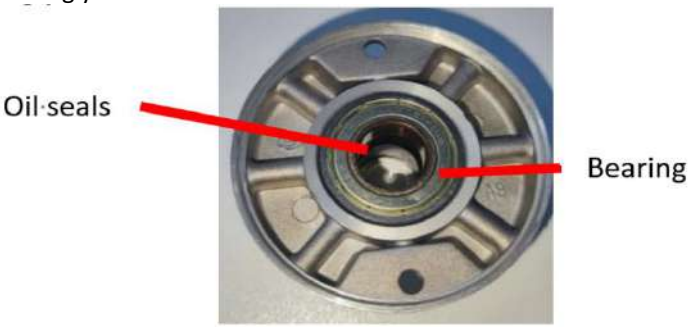
1-M5×98 bolt× 2 2-O ring×2 3-O ring 4-starter motor front cover 5-oil seal 6-bearing 7-rectangular sealing ring 8-starter motor outer shell 7-rectangular sealing ring 9-electric pestle 10-screw ×2 11-head screw with limit 12-washer 13-negative brush×2 14-positive brush×2 15-worm spring ×4 16-insulating brush frame 17-starter motor back cover 18-sealing rubber ring 19-insulating gasket 20-anti-loosening gasket 21-nut

Examine

Starter motor front cover

Check the oil seal of the front cover for wear and damage;

Also check that the bearing fits snugly with the front cover.



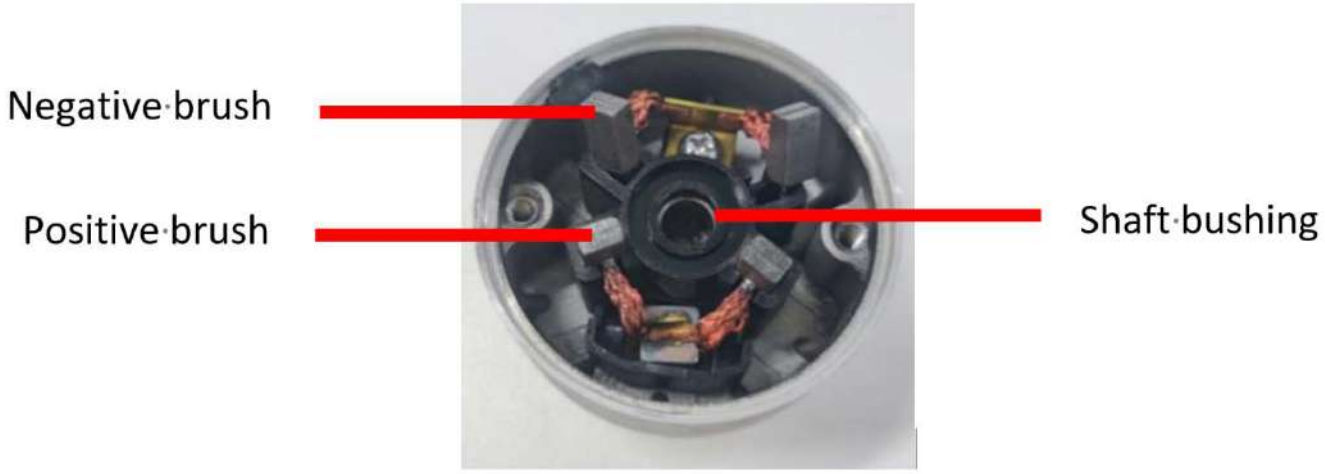
Starter motor back cover

Check whether the bushing of the back cover is worn or damaged;

Check the brushes for damage, measure the length of the brushes, and use the limit of 11.5mm (0.45in).

The connection of the back cover is checked as follows：

The positive brush is connected to the end of the cable; There is no connection between the end of the cable and the back cover; The negative brush is connected to the back cover.



Electropestle

Clean the metal debris on the electric pestle and check whether the commutator strip has discoloration;

Check that there should be a gap between the commutator and the machine shaft.



Check the starting relay

1. Operational checks

a. Remove the seat cushion and the upper cover of the subframe electrical device box.



b. Unlock the vehicle, the engine shutdown switch hits " ", retract the side bracket, pinch the brake handle and press the start button should be able to hear the sound of the starting relay sucking, otherwise the starting line should be checked.

2. Check the relay coil

2.1 Input line

Adjust the multimeter to DC voltage 20V (or DC voltage if it is an auto-ranging multimeter). Insert a red watch pen into the yellow/red wire rubber sleeve and fit snugly with the terminals.

When the motorcycle is unlocked, the engine stop switch hits " ", and the black watch pen can select any of the nearest bolts connected to the frame. When the brake lever is pinched and the start button is pressed, the voltage measured between the yellow/red line and the ground wire should be the battery voltage.

2.2 Ground wire

The motorcycle is locked when the power is off. Turn the multimeter to the buzzer setting, connect one to the green/red line, and one to any bolt connected to the frame, and it should be able to turn on when you press the start button.

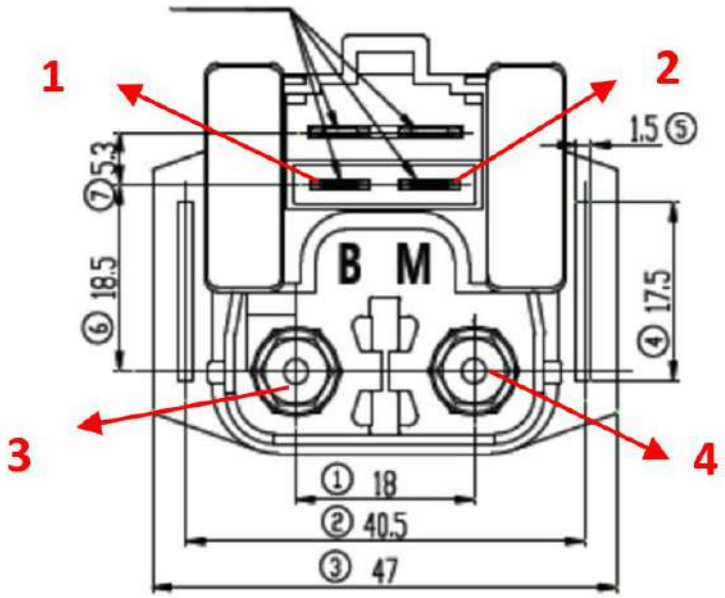
3. Check the starting relay

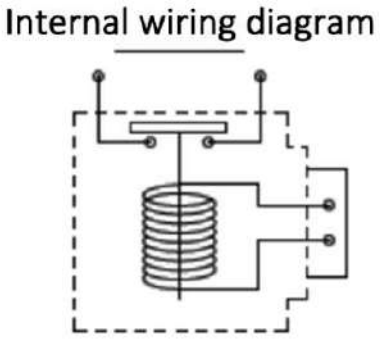
Connect the 12V battery directly to the relay with thicker wires. Use the multimeter's buzzer to measure the green/red and red-yellow lines should be able to turn on, and should be disconnected when the battery is disconnected.

The rated voltage of the starting relay is DC 12V, the operating temperature is -40~+80°C, the operating voltage is DC≤7.5V (20°C), the recovery voltage is DC≤3.5V (20°C), and the coil current is 4A (12V 20°C) or less. Insulation resistance DC500V megohmmeter 5MΩ or more.

The detection methods are as follows:

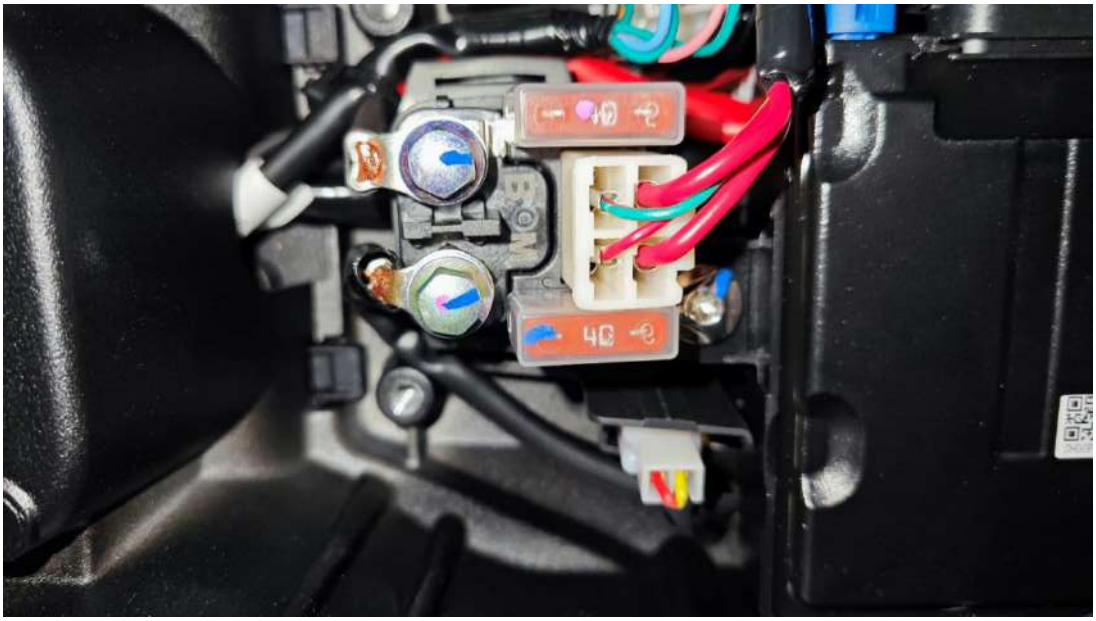
After pulling out the relay plug, use the buzzer of the multimeter to measure that pins 1 and 2 should be normally closed, and the buzzer of the multimeter should sound at this time; Connecting pins 3 and 4 is normally open at this time, and the buzzer should not sound. Connect the No. 1 and No. 2 pins to the battery or DC12V power supply with wires, and measure the buzzer sound of the 3 and 4 pins to indicate that the relay is normal, otherwise it is abnormal and needs to be replaced.





4. Disassemble and assemble the starting relay

After lifting the white protective cover of the starter relay, remove the M6 bolt with the 8# sleeve, and screw the bolt back after taking out the wire to prevent loss; Remove the other end in the same way. Unplug the relay connector.



When reinstalling the relay, the red wire is installed on the threaded hole of the relay marked "B", and the black wire is installed on the threaded hole of the relay marked "M". Make sure the protective cap is closed after the screws are tightened, and then plug in the relay connector.

6. Oil supply system

Pre-Service Notice

1. Bending or twisting the control cable can affect smooth operation and can cause a short circuit or open circuit, causing the motorcycle to lose control.

2. Work should be carried out in an open and ventilated place. Smoking, phone calling, and all other behaviors that may cause sparks are prohibited at the work site.

3. Before operation, the high-pressure oil pipe should be depressurized as follows: unplug the fuel pump and start the engine to idle until the engine is turned off. Turn the engine stop switch to " ", and lock the motorcycle after the motorcycle is powered off.

4. Do not manually open the throttle body after removing the throttle cable, which may cause abnormal idling.

5. After removing the throttle body, use masking paper or a clean non-woven fabric to block the air intake to prevent foreign objects from falling into the engine.

6. Do not damage or operate the throttle valve body, which may cause abnormal throttle operation.

7. After removing the throttle body, dust or foreign objects should be prevented from entering the throttle hole or air passage. If necessary, it can be cleaned with dry compressed air.

8. It is forbidden to loosen or tighten bolts or nuts marked with a marker on the throttle, as it may cause abnormal throttle opening and closing and idle control.

9. Carburetor cleaner cannot be used.

10. Throttle body parts not indicated in this manual must not be disassembled.

11. If there is a " " symbol on the right side of the step, you can click to quickly jump to the corresponding step.

Tool	multimeter	Torque wrench
		

CAUTION

●After reinstalling the battery or EFI parts, the EFI system needs to be reset. For specific operation, please refer to the precautions in the driver's manual or the throttle valve body section of this manual.

Fuel tank assembly removal

Note:

●The dismantling site must be ventilated and pay attention to fire prevention. The details are described in the previous section and will not be repeated here.

●Use the suction pump first or wait until the fuel in the tank is about to run out before dismantling.

●Pay attention to protect the oil outlet of the oil pump, and only pull out the high-pressure oil pipe axially. Be careful not to force the port radially or press out.



1. Disassemble the tank assembly

a. Refer to the a~h steps of "replacing the high-pressure oil pipe" in the fuel pipe, first unplug the fuel pump, start the engine and idle until the engine stalls. Turn the engine stop switch to " ", and lock the motorcycle after the motorcycle is powered off. After wearing waterproof and oilproof gloves, press the anti-release latch, and then pull out the high-pressure oil pipe at the end of the oil pump in the direction of the arrow.

b. Use a #4 Allen wrench to remove the 6 bolts (1), and then remove the fuel tank lock (2).



c.Tear off the rear part of the fuel tank side cover by hand, pull it out in the direction of the arrow, and remove the left and right fuel tank side covers.





d. Use a T25 Torx wrench to remove the 4 M6×12 bolts, then take off the left and right front decorative covers of the fuel tank.

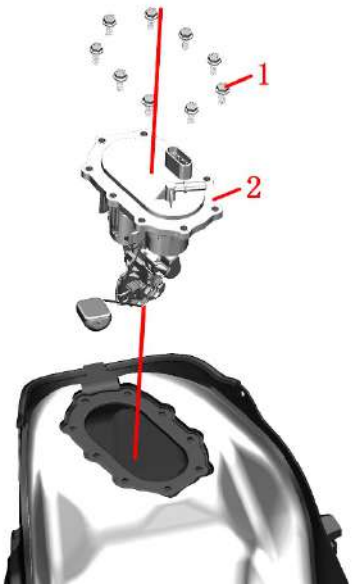




2. Disassemble the fuel pump

Flip the fuel tank assembly so that the fuel pump is positioned upwards and stable. You can use a small wooden stool to flip it over, with the stool surface facing down, and place the fuel tank assembly on top.

Loosen the 9 M6×16 bolts (1)diagonally one by one using an #8 socket, then remove them. Pull the fuel pump (2) outward.



Note: Do not pull forcefully to avoid deforming the float link, which could cause a larger deviation in the fuel level display. When reassembling, first tighten diagonally before fully tightening the 9 bolts (1); otherwise, the sealing gasket of the fuel pump (2) may be unevenly compressed, leading to leakage and posing a safety hazard.

The fuel pump is a precision component that must be assembled in a dust-free workshop and undergo strict testing, so self-disassembly is prohibited. Therefore, the process of disassembling the fuel pump will not be explained here.

Examine

1. Fuel pressure test

The test methods are detailed in the Fuel Pumps section of the Maintenance chapter.

2. Fuel pump check

When the motorcycle is unlocked, the engine stop switch hits " " and the sound of the fuel pump running should be heard. If you don't hear the sound of the fuel pump running, turn off the ignition and power first. Refer to the steps for replacing the high-pressure oil line in the "Maintenance" chapter and unplug the fuel pump.

Use a multimeter to measure the voltage at the cable end of the fuel pump plug, unlock the vehicle, and the fuel pump accumulates pressure for about 5 seconds when the engine shutdown switch hits " ", during which the battery voltage should be measured.

If the engine can be measured until the battery voltage can be measured until the pressure is accumulated, the oil pump relay needs to be checked to see if it is normal, and if the relay is normal, the fuel pump is abnormal and needs to be replaced.

3. Oil level sensor

For disassembly, assembly, and inspection methods, see the section 'Electronic Fuel Injection System'.

Check the appearance of the float; there should be no damage.

7. Cooling system and air intake system

Pre-Service Notice

1. Corresponding precautions for coolant (antifreeze) are detailed in the radiator section of the "Maintenance" chapter of this manual.

2. Check the cooling water pipes; Checking the coolant level height, adding and draining the coolant is detailed in the radiator section of the Maintenance chapter and will not be repeated here.

Tool:

			
Hoop pliers	multimeter	Air source with adjustable air pressure	Homemade header *

It can be plugged with a soft rubber plug, or folded in half with a hose and tied with a rope or wire as a plug for a small tube to test the tightness of the water tank filling port. A section of the water pipe with an inner diameter of 16mm can be found and assembled firmly with a suitable air pipe joint and clamp at one end to test the tightness of the water tank filling port and the main water tank and small water tank.

3. If there is a "  "symbol on the right side of the step, you can click to quickly jump to the corresponding step.



●When the engine is not completely cooled, opening the tank lid may cause coolant to eject and cause burns. Be sure to wait for the tank and engine to cool down before opening the tank cover.

Troubleshooting

1. The engine temperature is too high

a. The coolant temperature of the meter is abnormal or the water temperature sensor is abnormal;
b. Thermostat abnormality;
c. Insufficient coolant;
d. Radiators, water pipes, water tanks are clogged;
e. There is air entering the cooling system;
f. The cooling fan is faulty;
g. Cooling fan relay failure (see EFI Relays section of the EFI Systems chapter).

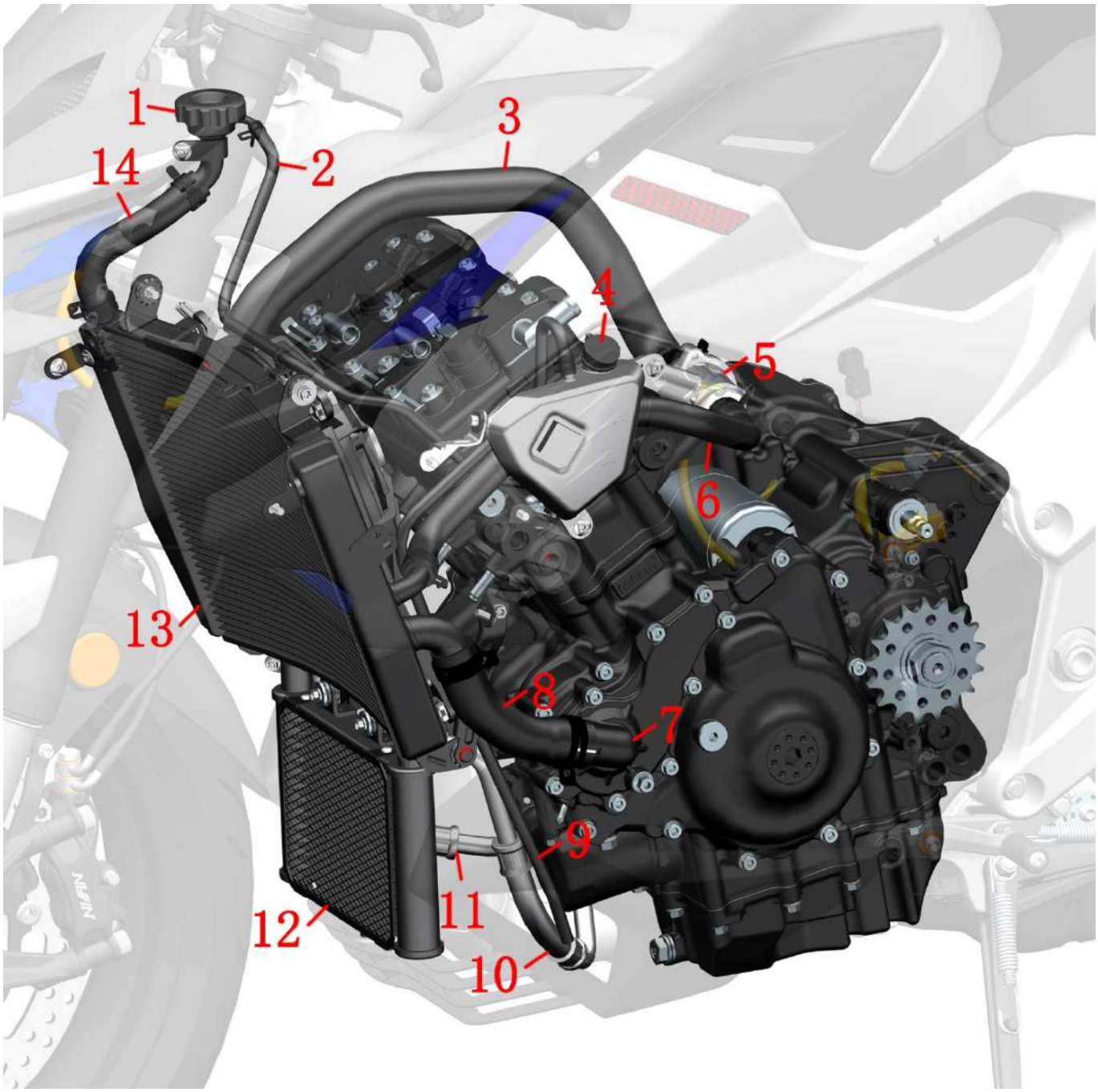
2. The engine temperature is too low

a. The coolant temperature of the meter is abnormal or the water temperature sensor is abnormal;
b. Thermostat abnormality;
c. Cooling fan relay failure (see EFI Relays section of the EFI Systems chapter).

3. Coolant leakage

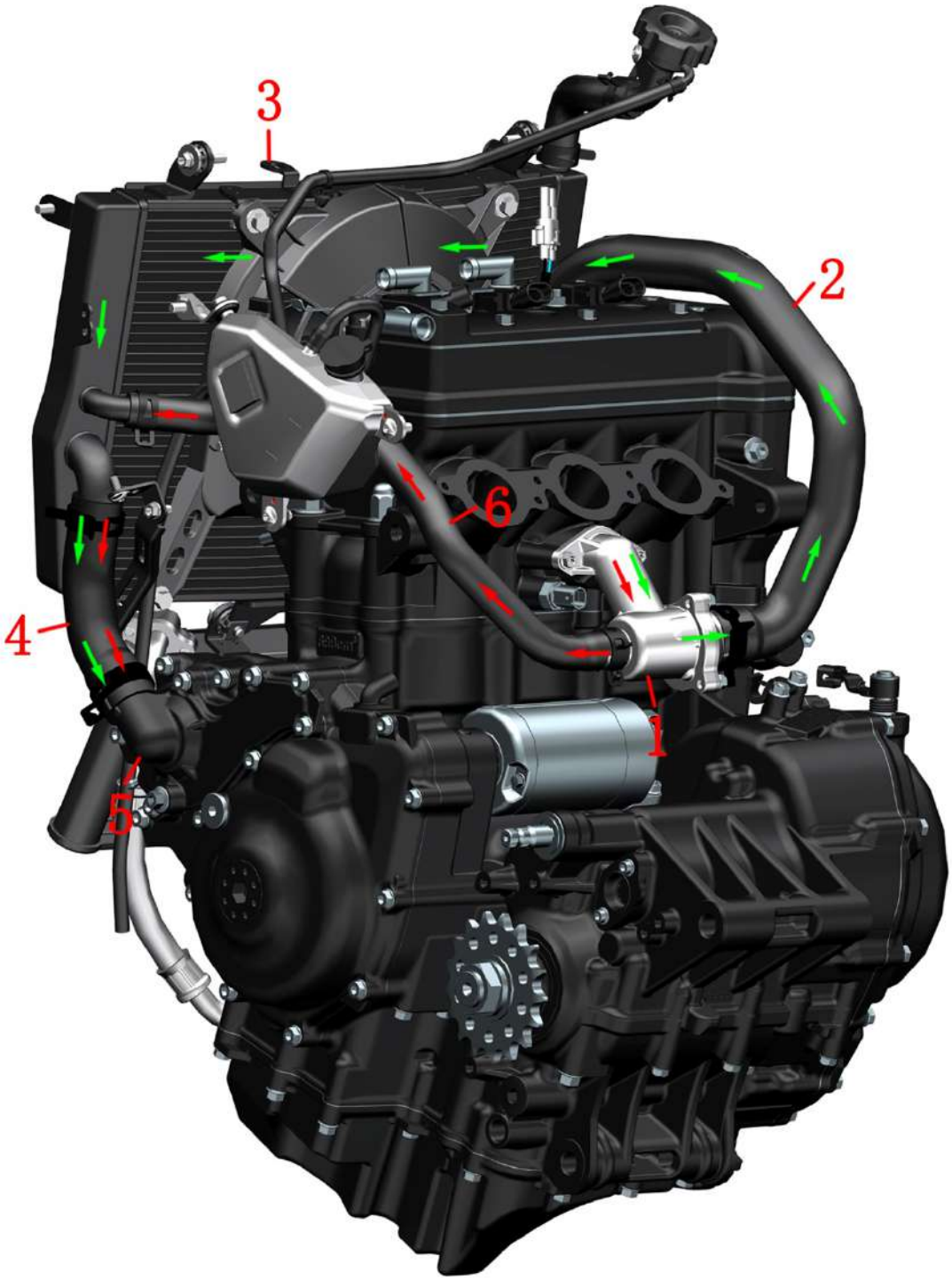
a. The water pump seal fails;
b. O-rings are broken or deteriorated;
c. The radiator cover is broken;
d. Broken or aging gaskets fail;
e. Broken water pipes;
f. The radiator is broken.

Cooling system distribution map



1-ZT703-RR Radiator Water Inlet 2-ZT703-R Auxiliary Radiator Connecting Water Pipe 3-ZT703-F Main Radiator Inlet Pipe
4-ZT703-R Auxiliary Radiator 5-ZT703 Thermostat 6-ZT703-F Small Circulation Water Pipe 7-Water Pump Cover Assembly
8-ZT703-RR Engine Inlet Pipe 9-ZT350T-K Auxiliary Radiator Connecting Water Pipe 10-ZT703-RR Engine Oil Outlet Pipe (TFL)
11-ZT703-RR Engine Oil Inlet Pipe (TFL) 12-ZT703-T Oil Cooler 13-ZT703-R Main Radiator
14-ZT703-RR Radiator Water Inlet Connecting Water Pipe

Schematic diagram of coolant flow



1-Thermostat assembly 2-Main water tank inlet pipe 3-Main water tank
4-Engine water inlet pipe 5-Water pump cover assembly 6-Small circulation water pipe

703R Water Cooling System:
Small loops (indicated by red arrows):
Thermostat assemblies→ small circulating water pipes→ main water tanks (not cooled), → engine inlet pipes→ pump assemblies

Large loop (indicated by green arrows):
Thermostat assemblies → main tank inlet pipes→ main tanks→ engine inlet pipes→ pump assemblies

Disassembly of the cooling system

Note:

●Before disassembly, refer to the coolant discharge step in the cooling system section of the "Maintenance" chapter, and drain all the coolant.

●This chapter is to disassemble the cooling system completely, if you only need to disassemble a component separately, please read the whole chapter and have a certain understanding of the cooling system before disassembling it yourself.

●During the disassembly process, wear waterproof gloves, protective glasses and other protective measures, and avoid the coolant from touching the skin.

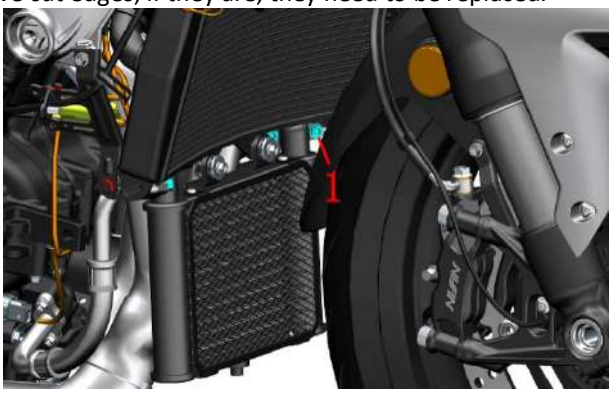
●It is important to wait until the engine, radiator, and muffler have cooled down completely before dismantling the operation.

1. Remove the oil cooler and tubing assembly

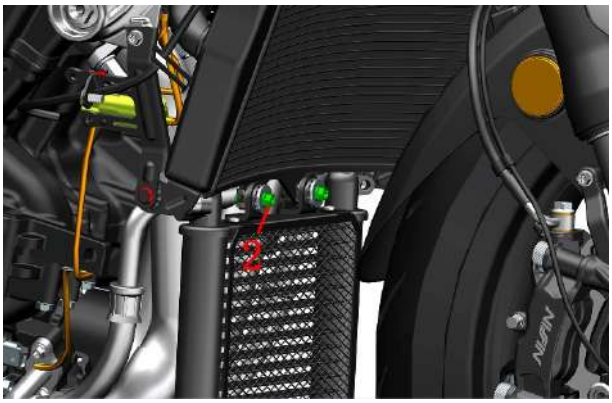
a. Refer to the steps of "Disassembly of Covers" to remove the left and right surrounding panels and the middle part of the envelope, and place the oil drain pan under the oil cooler. Note: When disassembling, you need to wait until the engine is cold to disassemble to prevent being burned by the muffler.



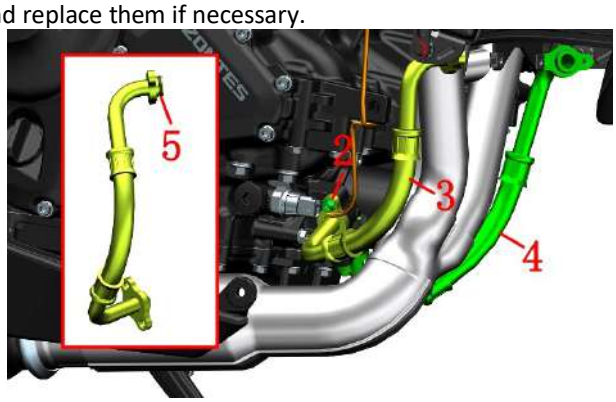
b. Use an 8# socket to remove the 4 M6×16 bolts (1) that secure the engine oil inlet and outlet pipes. Then, detach one end of the engine oil inlet and outlet pipes from the oil cooler. Note: Both ends of the oil pipe are fitted with O-rings. When installing, check whether the O-rings are damaged or have cut edges; if they are, they need to be replaced.



c. Use an 8# socket to remove the two M6×22 bolts(2) securing the oil cooler, and then remove the oil cooler.



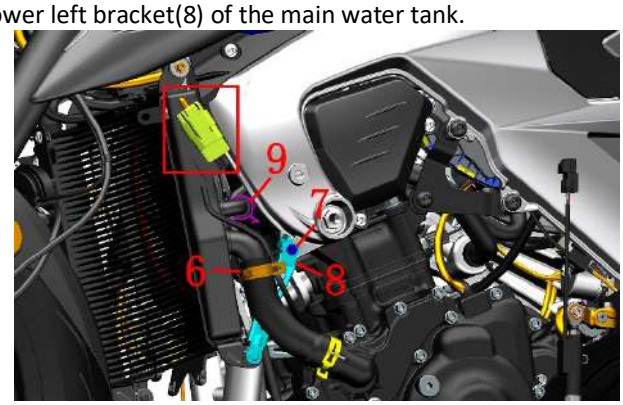
d. Use an #8 socket to remove the four M6×22 bolts (2) securing the engine fuel inlet pipe (3) and the engine oil outlet pipe (4) to the engine, then remove the engine fuel inlet pipe (3) and the engine oil outlet pipe (4). Note: Both ends of the pipes are fitted with O-rings (5). When installing, check whether the O-rings (5) are damaged or have burrs, and replace them if necessary.



2. Removing the Main Radiator Assembly

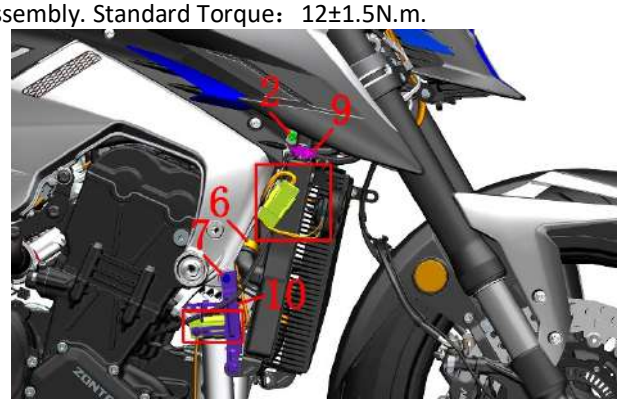
a. Refer to the procedure in "Draining Coolant" to fully drain the coolant from the main radiator, and place a suitable drip tray underneath the main radiator to prevent any residual coolant from dripping.

b. After arranging the wiring harness of the oxygen sensor fixed on the left main water tank, remove it, then use clamp pliers to move the ϕ32 clamp(6) and the ϕ22 clamp(9) to appropriate positions before pulling out the water pipe; use an 8# socket to remove a M6×12 bolt(7) and take out the lower left bracket(8) of the main water tank.



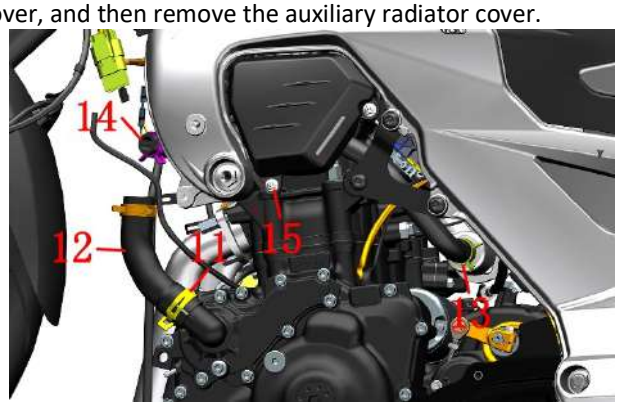
c. After organizing the wiring harness, disconnect the oxygen sensor and horn connector fixed to the main radiator. Then, remove the oxygen sensor connector fixed to the lower right bracket(10) of the main radiator and organize the wiring harness. Next, use hose clamp pliers to move the ϕ32 clamp(6) and ϕ22 clamp(9) to appropriate positions and then remove the water pipe. Use an No. 8 socket to remove one M6×12 bolt(7), and take out the lower right bracket(10) of

the main radiator. Finally, remove the main radiator assembly. Standard Torque：12±1.5N.m.



3. Disassemble the water pipe and auxiliary water tank assembly

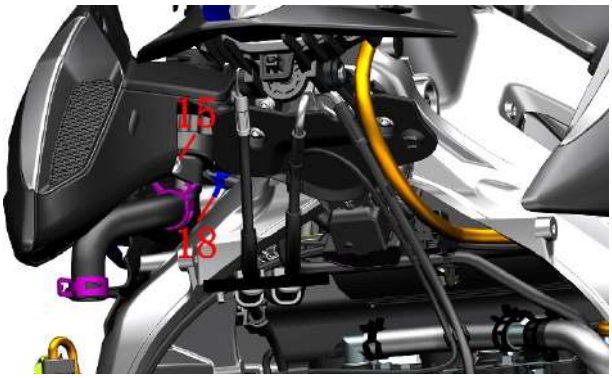
a. Use hose clamp pliers to remove the ϕ35 hose clamp (11)from the engine inlet hose(12), then the engine inlet hose(12) can be pulled out. Next, use hose clamp pliers to remove the ϕ24 hose clamp(13) and then pull out the small circulation hose(14). Use a T25 Torx internal hex wrench to remove the 2 shoulder bolts(15) on the auxiliary radiator cover, and then remove the auxiliary radiator cover.



b. Use the band clamp pliers to move the ϕ36 band clamp(16) to the appropriate position, then pull out the main water tank inlet pipe(17) and remove it from the front.



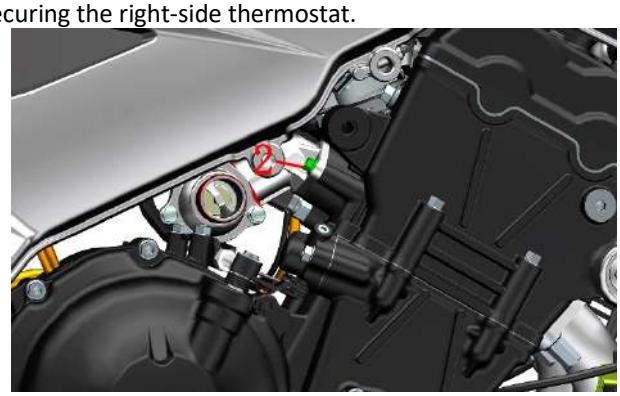
c. Use a hose clamp plier to move the Ø9 clamp connecting the main water tank filler neck to the appropriate position, then disconnect the auxiliary water tank hose. Next, use a T25 Torx internal hex wrench to remove bolt ⑫ and remove the main water tank filler neck assembly.



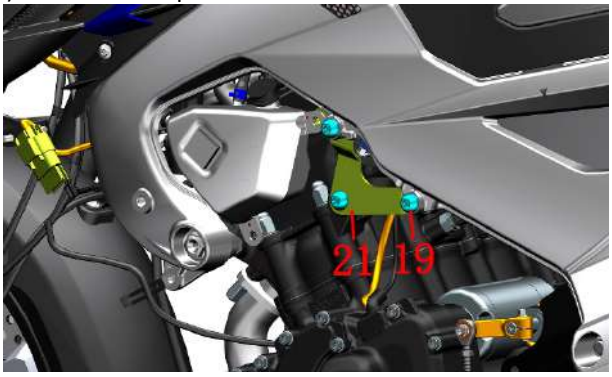
d. Use a T50 slotted Torx wrench to remove the M10×30 bolts(19), bolts (21)and bolts (22), and then remove the engine mounting bracket(20). Standard Torque：50±5N.m.



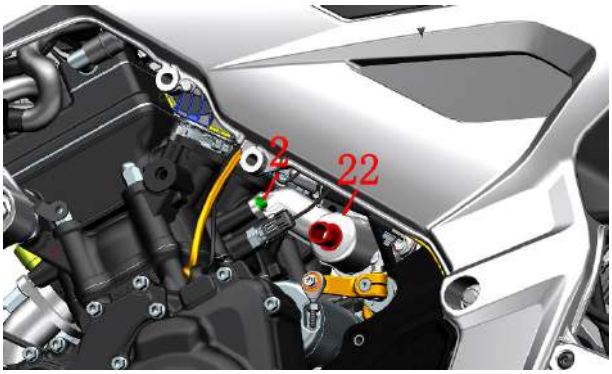
e. Use an #8 hex wrench to remove the M6×22 bolt(2) securing the right-side thermostat.



f. Pull the auxiliary water tank out from under the left side of the chassis; use a T50 hollow star wrench to remove the three M10×30 bolts ⑥ securing the left engine lifting bracket (21), and then remove the left engine lifting bracket (21). Standard Torque：50±5N.m.



g. Use an #8 crowfoot wrench to remove the M6×22 bolt(2) that secures the left-side thermostat. Remove the thermostat assembly (22).



Cooling system accessories

Note:

●Specialized ventilation fixtures (gas pressure reducing valves, air guns, sealing tubes) are required for testing.

●After the water soaking inspection is completed, wipe the water stains clean in time, or use a dust blow gun to dry them. If the main water tank and small water tank are dried with dust blowing loose, attention should be paid to the wind pressure should not be too large, and it should be kept away from the heat dissipation fins, so as not to cause damage or deformation of the heat dissipation fins.

●In addition to the special description of the gas pressure, 160kPa compressed air is introduced when doing the air tightness test, and the parts are soaked in water and allowed to stand for 10s.

●The heat sink fins are allowed to have a small amount of lodging deformation, and if the lodging area is too large and affects the heat dissipation effect, it is recommended to replace them. A small amount of deformation can be straightened with a small flathead screwdriver.

●It is forbidden to use high-pressure water guns or high-pressure air to directly flush or blow the heat sink of the main water tank and small water tank.

●Before further testing, the appearance should be checked for signs of leakage. If there is a slight leak, try to repair it, otherwise it should be replaced.

1. The main water tank

Check whether the buffer adhesive is aged and cracked.

Plug the A, B, and C ports with a homemade head, and ventilate from the D port to check the tightness. A gas with a pressure of 160kPa (1.63 Kgf/cm2, 23.2 psi) is introduced to ensure that there is no air leakage at the nozzle position, and the water tank is immersed in water and allowed to stand for 10s to observe whether there are bubbles.



Check whether the fan and grille are firmly assembled, and the rotating fan blades should be free of jamming. Check whether the buffer adhesive is aged and cracked. Check the fan cable for damage.

The fan plug is blue for the positive pole and black for the negative pole. Find a battery with sufficient power and connect the cable according to the positive and negative poles, and check whether the fan is pumping backwards.

Compressed air with low air pressure can be blown to the tank from the back to remove foreign matter from the surface. Or use a water gun with a lower pressure water gun to spray the heat sink at a distance to clean the surface of foreign objects.

2. Water tank filling port

2.1 Overall tightness check



Seal the small tube and ventilate the large tube for air tightness check. A gas with a pressure of 160kPa (1.63 Kgf/cm2, 23.2 psi) is introduced to ensure that there is no air leakage at the nozzle position, and the water filling port is put into the water and let stand for 10s to observe whether there are bubbles

2.2 Pressure relief valve inspection

Inject 100kPa compressed air into the large tube once, put the water filling port into the water and let it stand for 10s, the small tube should have no bubbles, and then raise the compressed air to 110kPa, there should be bubbles.

3. Auxiliary tank



Check whether the plastic cover is aged and cracked, and if so, it needs to be replaced. If the appearance is good, the air tightness inspection will be carried out.

Seal the two small water outlets, and open the black plastic cover of the water tank for air tightness inspection.

Continue to block the small water outlet, pour water into the auxiliary water tank and turn the auxiliary water tank upside down, and observe whether the rubber cover of the water tank is seeping, if there is seepage, it is unqualified. After the tightness check, pour out the water, remove the plug and let the auxiliary tank dry naturally or blow dry with a blow gun.

4. Oil cooler

4.1 Air tightness check



Check whether the buffer adhesive is aged and cracked.

Plug any end of the oil cooler connector and pass compressed air with a pressure of 200 kPa from the other side of the connector to ensure that there is no air leakage at the nozzle position.

4.2 Ventilation test

Blow air from the joint on one side, check whether the joint on the other side has air blowing, if there is air blowing, it is normal, otherwise it is badly blocked. Compressed air with low air pressure can be blown to the tank from the back to remove foreign matter from the surface. Or use a water gun with a lower pressure water gun to spray the heat sink at a distance to clean the surface of foreign objects.

5. Thermostat

5.1 Inspection of hermostats



Check the appearance for damage and leakage; Simple test method (test on the whole vehicle):

After the cold motorcycle starts, open the water inlet cover immediately, if the liquid level does not fluctuate, the thermostat is normal, otherwise it is abnormal. When the water temperature is lower than 80 °C, the thermostat should be in the closed state of the valve, and when the temperature is higher than the initial opening temperature, the expansion valve of the expansion cylinder will gradually open, and the circulating coolant in the radiator will begin to flow. After the temperature rises, check the inlet pipe of the small water tank, which should clearly feel the signs of water flow or feel the temperature of the pipe wall, otherwise the pump or water channel will be blocked.

When the temperature reaches 90°C, the heating rate slows down, and the thermostat is working properly. If the water temperature rises rapidly, when the internal pressure reaches a certain level, the boiling water suddenly overflows, indicating that the valve is stuck. When there is stuck or the closure is not tight, it can be removed for cleaning or repair, otherwise it should be replaced.

5.2 Fault phenomenon

When the water temperature gauge indicates that the indication is high, the engine temperature is overheated, but the coolant temperature in the water tank is not high, it is not hot when touching the radiator with your hands, and the fan of the small water tank rotates normally. It indicates that the general circulation is blocked or blocked, and it can be preliminarily judged to be abnormal thermostat.

There are generally two types of thermostat abnormalities:

a. The main valve is closed for a long time, and the coolant circulates according to a small circulation route regardless of the water temperature, causing the engine to overheat.

b. The main valve is open for a long time, and the phenomenon is that the water temperature rises slowly when starting, especially in winter, the slow rise of the coolant temperature makes the engine not work at normal temperature, and the engine temperature is too low.

6. Water pipes

Check whether there are cracks, bulges and other undesirable phenomena on the surface of each water pipe. Plug one end of the hose, ventilate the other end and put the hose into the nozzle to check for air bubbles and replace them if so.

7. Rubing

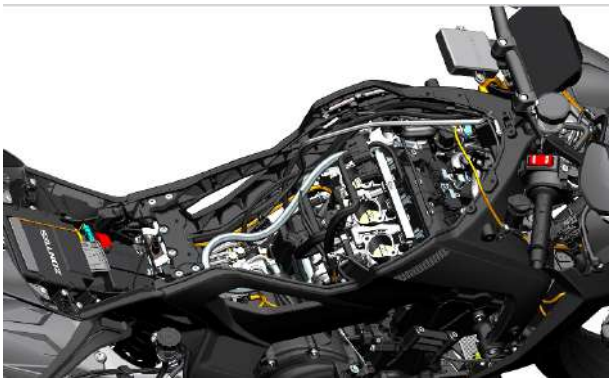
Use a plug to block one end of the tubing, and introduce a stream of water with a water pressure of 1960 kPa or compressed air with an air pressure of 980 kPa to the other end, and check for leakage within 1 minute. A leak is an indication that the tubing needs to be replaced.

Air intake system

Disassembly of the air intake system

1. Disassembly of air filter

a. Refer to the steps in 'Replacing the Spark Plugs' to remove the entire air filter.

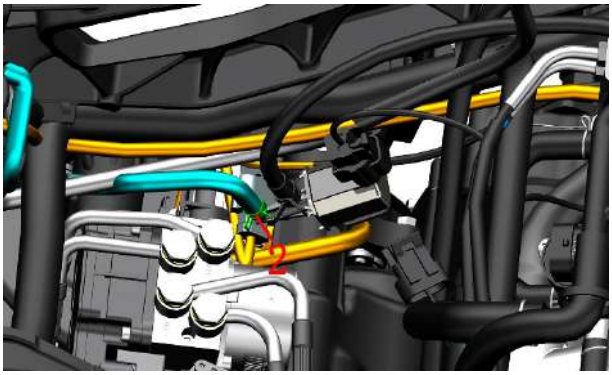


2. Removal of the carbon canister

a. Use a #5 hex key to remove the two M6×16 bolts (1) securing the carbon canister. Torque Standard：2-3N.m.



b. Then locate the vent pipe (2) of the charcoal canister on the canister solenoid valve and pull it out to remove the charcoal canister.

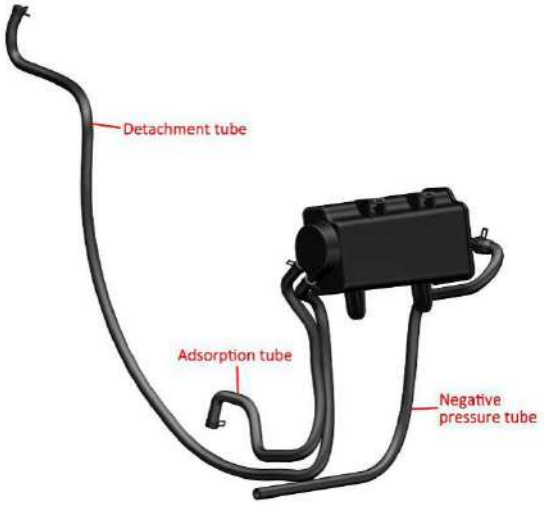


Air filter system accessories

1. Carbon canisters

Check whether the adsorption tube, desorption tube and negative pressure tube on the carbon canister are aging. Check whether the adsorption tube and desorption tube harden under the erosion of gasoline for a long time. Remove the adsorption tube and desorption tube on the carbon canister, block one end of the tube with the corresponding head, and pass in compressed air with 10-20kPa air pressure from the other end, and then put it in water for 10 seconds to check whether the rubber tube is leaking.

After removing the adsorption tube, desorption tube and negative pressure tube on the carbon canister, check whether there is toner falling off all outlets, if a very small part of the toner flies out is normal, if a large amount of toner falls, the carbon canister needs to be replaced.



2. YH secondary air supply valve

Use a multimeter to detect the pins of the connector on the air supply valve to detect whether the resistance value is 20±2Ω; If the resistance value exceeds this range, the make-up valve needs to be replaced.



Use an air puff gun to blow on one nozzle above the make-up valve to detect if there is gas ejecting from the other nozzle.

3. Connecting pipes

Check whether there are cracks, bulges and other undesirable phenomena on the surface of each connecting pipe. Plug one end of the connecting tube, ventilate the other end and place the connecting tube into the water nozzle, check for air bubbles, and replace if so.

4. Air filter housing Check

Whether there are defects such as damage or pits on the surface of the shell, check whether there are signs of falling off of various inserts on the shell, and whether the threads have slippage.





8. Braking system

Pre-Service Notice

1. The content of this section requires certain maintenance experience. It is recommended to have inspections or repairs conducted at a qualified maintenance facility.

2. Frequently inhaling brake pad dust, regardless of its composition, may have adverse effects on health. Avoid inhaling dust particles.

3. Do not use an air blow gun or brush to clean the brake assembly. A vacuum cleaner should be used instead.

4. Avoid allowing brake fluid to drip onto painted coverings or component surfaces. If accidental spills occur, immediately wash with water.

5. When removing the front and rear disc brake master cylinders, ensure that the brake fluid in the reservoir is at a horizontal level. Do not invert it to prevent air from entering, which can affect braking performance and, in severe cases, may lead to brake failure and personal injury.

6. The steps for replacing brake fluid and bleeding the system are the same. Detailed steps are provided in the Brake Fluid section of the "Maintenance" chapter.

7. Oil contamination on brake pads or brake discs will reduce braking power. Contaminated brake pads should be replaced, and high-quality oil cleaner can be used to remove oil contamination from brake discs.

8. After removing the master cylinder reservoir cap, prevent dust, water, etc., from entering.

9. When adding brake fluid after maintaining the brake system, only newly unsealed DOT4 brake fluid must be used. Mixing with other brake fluids is prohibited.

10. Do not disconnect the ABS hydraulic control unit plug while the vehicle is powered on, as excessive voltage may damage the hydraulic control unit. The vehicle must be fully powered off before maintenance.

11. The hydraulic control unit is a precision component and should not be disassembled by non-professionals.

12. If there is a " 📖 " symbol on the right side of a step, you can click it to quickly jump to the corresponding step.

13. For Brembo calipers, please refer to this section. The following illustrations use the J.JUAN caliper as a demonstration.

Tool	Torque wrench
	

DANGER

●If brake fluid is swallowed, contact a poison control center or hospital immediately; In case of accidental contact with eyes, rinse with water and seek medical attention immediately.

● Keep brake fluid away from children and pets.

● The vehicle must be parked on a level, stable ground or lifting platform.

WARNING

●Wear protective gloves/protective clothing/protective goggles/protective masks to maintain the braking system.

●It is strictly forbidden to flush the main pump directly with high-pressure water.

Troubleshooting

The brake handle is soft

a. Air enters the oil circuit of the braking system
b. Brake fluid leakage
c. Brake pads or discs are oily
d. Worn brake calipers or disc main cylinder piston seals
e. Worn brake pads or discs
f. Disc brake calipers are oil-stained
g. The disc brake main pump is oil-stained
h. The disc brake caliper slides inflexibly
i. Insufficient brake fluid
j. The brake oil circuit is not smooth
k. The brake disc is twisted and deformed
l. Disc brakes, calipers, pistons are worn and sticky
m. The disc brake main pump piston is worn and sticky

The brake handle is hard

a. The brake oil circuit is blocked
b. Disc brakes, calipers, pistons are worn and sticky
c. The disc brake main pump piston is worn and sticky
d. The disc brake caliper does not slide properly
e. Worn brake calipers or disc main cylinder piston seals

Disassemble the disc brake master cylinder and caliper

Note:

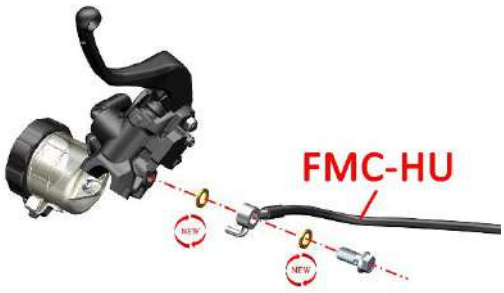
●Precautions and brake fluid hazards have already been explained and will not be repeated here.
●Disassemble the caliper, the ϕ15×ϕ10.2×1.5 copper pad at the brake hose at the main cylinder must be replaced to avoid leakage. The surface of the disc brake oil pipe bolt and the copper gasket can be reused if there is no scratch.
●Disassembling the main pump and caliper requires a high level of hands-on ability and is recommended to be carried out by a professional person or maintenance unit. The replaced waste brake fluid should be handed over to a professional unit for recycling and proper disposal.
●The consequences caused by human disassembly or improper assembly are the responsibility of the operator, and are not within the scope of the three guarantees.
●It should be operated in a dry, dust-free or dust-free environment.

Disassemble the front disc brake main pump

a. After grasping the front brake main pump, use the 8# sleeve to remove the 2 M6×22 bolts, and separate the front disc brake half cover and the front brake main cylinder.
Standard Torque：12±1.5N.m



b. Tilt the front brake main cylinder so that the bolts are facing upward, remove the bolts with a 12# sleeve after wearing waterproof gloves, remove the copper pad and remove the FMC-HU oil pipe, and pour out the brake fluid in the main cylinder. Bolt standard torque: 32N.m (3.3 kgf.m, 24 lbf.ft).



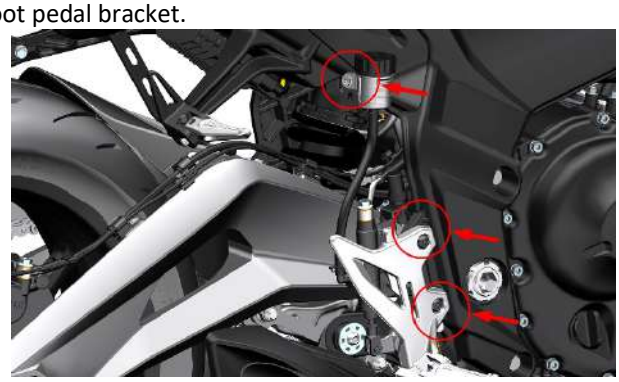
c. Remove the upper cover according to the steps for adding brake fluid; Remove the brake switch and brake lever by referring to check the brake accessories in "Repairs".

d. Blockages can be unblocked with a blow gun or a fine needle-like tool. After disassembly, use a soft-bristled brush that does not shed to clean all parts. It is not recommended to use a dust blow gun to dry, as the air compressor with incomplete water vapor separation or poor filtration effect may blow dust, water vapor or other debris into the cleaned main pump housing through the dust blow gun; A vacuum cleaner with a high vacuum level can be used. Piston assemblies and springs can be fitted with a small amount of DOT4 brake fluid and should not be coated with other lubricating materials such as oil, grease or anti-rust oil. The inside of the main pump cannot be cleaned with diesel or kerosene.

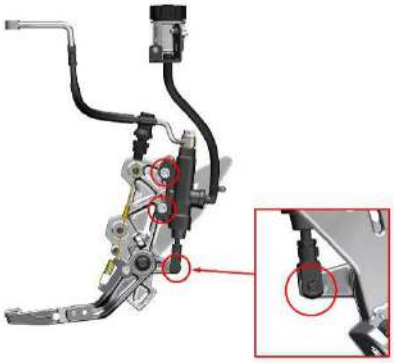
e. Refer to the requirements of the front lubrication handle moving parts, apply an appropriate amount of high-vacuum silicone grease to the outer end of the handle bolt and piston assembly. Replace it according to the removal procedure, and follow the previous steps to add the newly opened brake fluid and perform the exhaust operation. Note that the copper pad needs to be replaced with new parts to prevent leakage. After assembly, it is necessary to confirm that the brakes have been restored before driving the vehicle.

Disassembled disc brake master cylinder

a. Use a T45 star wrench to remove the two M8 star socket screws with pin-heads (at the foot pedal support by the arrows), Standard Torque：25±3N.m, use a T30 star wrench or #8 socket to remove the M6 screw securing the brake fluid reservoir and fasten it safely (at the positions indicated by the arrows), Standard Torque：6-9N.m, then remove the rear brake master cylinder and the right front foot pedal bracket.



b. Use a #8 socket to remove the two bolts on the rear brake switch bracket and the pin that secures the rear brake master cylinder to the rear section of the brake pedal. After wearing waterproof gloves, use a #12 socket to remove the disc brake hose bolt, remove the copper washer, and move the RMC-HU hose aside. Pour out the brake fluid from the master cylinder. The standard torque for the disc brake hose bolt is 32 N·m (3.3 kgf·m, 24 lbf·ft).



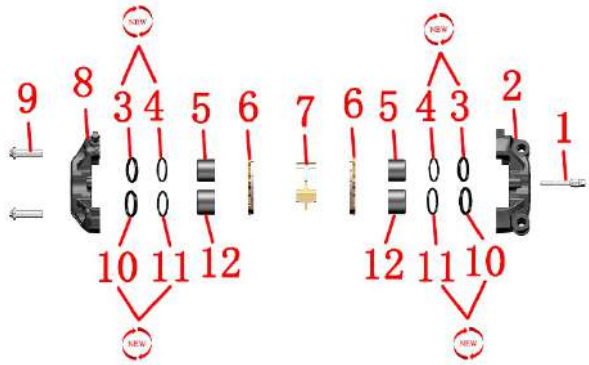
Disassemble the front disc brake caliper

a. The disassembly method of the front left caliper is similar to that of the front right caliper, and the disassembly of the front right caliper is an example.

b. Use 14# to loosen the tubing bolts (shown in the arrow) without leakage. Then remove 2 bolts (shown in the circle) with 8# hexagon socket, the standard torque of the bolt: 45±5N.m (4.6±0.5 kgf.m, 33±4 lbf.ft). Never operate the brake lever after removing the caliper.



c. Front disc brake caliper disassembly



1-Bolt 2-Circlip 3-Caliper inner housing 4-ϕ30 oil seal 5-ϕ30 dust seal 6-ϕ30 piston 7-brake pad 8-brake pad spring 9-caliper outer housing 10-pin 11-ϕ34 oil seal 12-ϕ34 dust seal 13-ϕ34 piston

The piston can be blown out by blowing compressed air from the oil port with a dust blowing gun. Pay attention to placing towels or other soft materials at the piston to prevent damage caused by collision of the piston; In addition, the dust blowing gun needs to be far away from the caliper body, which is easy to cause damage caused by the piston suddenly flying out when the distance is too close. Inspect the piston and caliper cylinders for scratches, damage, pits, etc. Check whether the pin is deformed.

Note:

● Apply silicone grease to the surfaces of the two pins indicated by the arrows.

● After removing the oil seal and dust boot, replace them with new ones. Before assembling the oil seal and piston, apply DOT4 brake fluid; apply silicone grease to the outer ring of the dust boot.

● Apply thread-locking adhesive to the caliper pin threads. Torque: 22 N·m (2.2 kgf·m, 16 lbf·ft).

● Bleeder screw torque: 7–9 N·m (0.7–0.9 kgf·m, 5–7 lbf·ft).

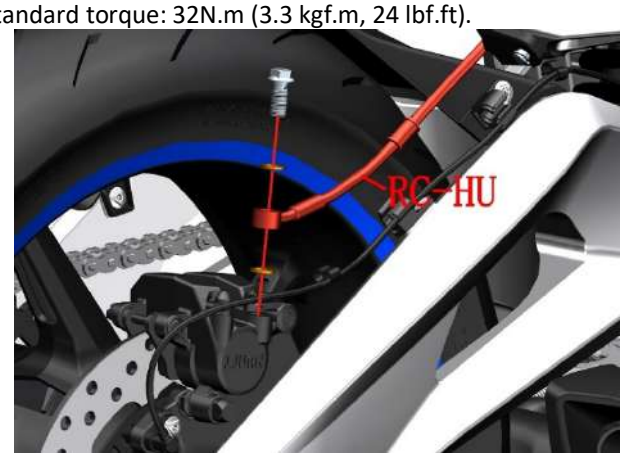
● The piston open end should face the caliper mounting plate; do not install it in reverse.

● If the piston surface has slight rust, it can be polished off with 2000-grit fine sandpaper.

e. Reassemble all components according to the disassembly steps and add new DOT4 brake fluid following the steps used before replacing the disc brake fluid. Only drive the vehicle after confirming that the brakes have recovered.

Disassemble the rear disc brake caliper

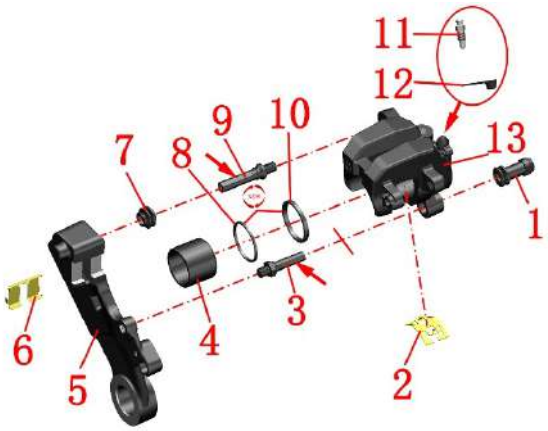
a. Place the oil tray at the bottom of the caliper, loosen the bolt with a 12# sleeve after wearing waterproof gloves, remove the copper pad, and remove the RC-HU tubing. Follow the steps for adding the brake fluid of the rear disc brake main cylinder, remove the upper cover of the main cylinder, and accelerate the discharge of the brake fluid. Bolt standard torque: 32N.m (3.3 kgf.m, 24 lbf.ft).



b. Remove the rear caliper and brake pads first by following the steps for removing the rear wheel and replacing the brake plate.

c. Disassemble the rear disc brake caliper

You can disassemble the rear disc brake caliper piston by following the previous steps for disassembling the front disc brake caliper piston. Inspect the piston and caliper cylinders for scratches, damage, pits, etc. Check whether the pin is deformed. The points that should be paid attention to in the assembly are described in detail and will not be repeated here.



1-Caliper mounting plate pin cap 2-elastic card
3-lower sliding shaft 4-piston 5-caliper mounting plate 6-card
7-caliper pin cap 8-dust seal 9-upper sliding shaft 10-oil seal
11-air nozzle 12-air nozzle rubber cap 13-caliper housing

Note:

●The pins and bushings indicated by the arrows are coated with silicone grease.

●After the oil seal and dust seal are disassembled, they should be replaced with new parts, the oil seal and piston should be coated with DOT4 brake fluid before assembly, and the outer ring of the dust seal should be coated with silicone grease.

●Thread fastening glue applied to the threads of caliper pins, torque: 27N.m (2.8 kgf.m, 20 lbf.ft).

●Vent nozzle torque: 7~9N.m (0.7~0.9 kgf.m, 5~7 lbf.ft).

●The open end of the piston should be facing the caliper mounting plate, not reversed.

●If there is slight rust on the surface of the piston, it can be sanded off with 2000 mesh fine sandpaper.

Brake hose and wheel speed sensor

Wheel speed sensor and inductive ring gear clearance check

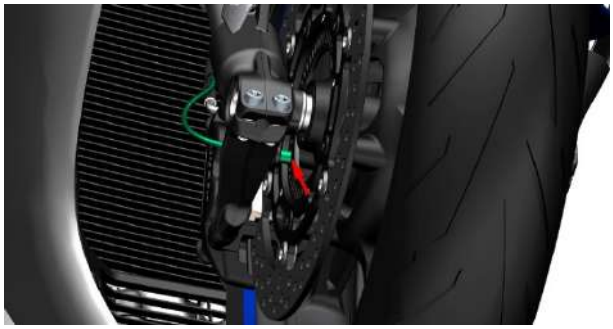
Note:

●The motorcycle needs to be parked on a stable lifting platform or on level, level ground.

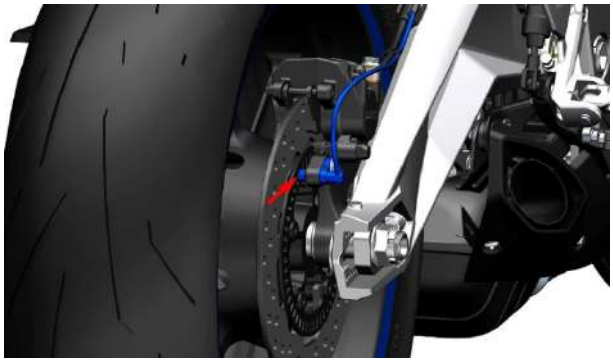
Lower the side bracket to park the motorcycle securely and let the rear wheels hang in the air.

Use a feeler gauge to check whether the gap between the wheel speed sensor and the ABS sensing ring gear is 0.4-1.2mm (0.02-0.05in).

If the clearance is not within the specified range, it is necessary to check whether the wheel speed sensor is damaged and whether the ABS induction ring gear is loose or deformed. The front wheel needs to check whether the position of the sensor on the front right shock absorber cylinder is deformed, and the rear wheel should check whether the caliper mounting plate is deformed and whether the rear wheel nut is loose.



Front wheel



Rear wheels

Remove the brake hose and wheel speed sensor

Note:

●The brake hose should be checked regularly according to the maintenance table.

●Before disassembling the brake hose, the brake fluid should be drained before operation.

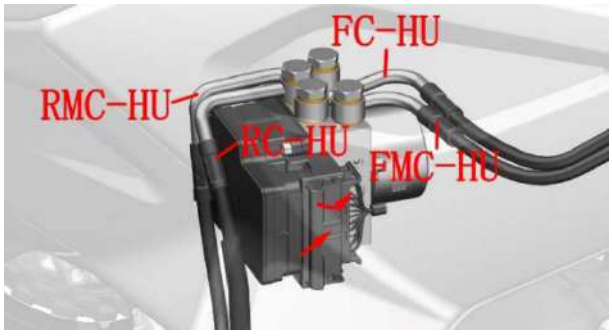
●Before removing the hose, remove the upper cover of the front and rear disc brake main cylinders, and loosen the disc brake hose bolts from the front and rear disc brake calipers to drain the brake fluid.

●The discharged brake fluid should be properly disposed of and no further use should be prohibited. It is forbidden to pollute the environment by dumping at will; or feel free to place, etc. It should be handed over to a qualified recycling unit for proper disposal.

Release the brake fluid

a. First, refer to the previous steps. Place oil drip pans under the front and rear calipers. Remove the bolt and copper gasket from the disc brake oil line to drain the brake fluid into the pans. Then, refer to the steps for adding brake fluid to the front and rear disc brake master cylinders, and remove the top cover of the master cylinder to expedite the drainage of brake fluid. Next, detach the bolt and copper gasket from the disc brake oil line at the front and rear disc brake master cylinders. Here, only the removal steps for the brake hose will be explained.

b. Refer to the "Removing Coverings" section to remove the seat cushion and fuel tank. Press the latch indicated by the arrow and rotate the plug pushrod in the direction indicated by the arrow to disconnect the plug. To prevent residual brake fluid from entering the plug during the next step of removing the hose, wrap the plug of the hydraulic control unit with an oil-resistant plastic film bag.



FMC-HU:Front disc brake main pump - hydraulic control unit

FC-HU:Front disc brake caliper-hydraulic control unit

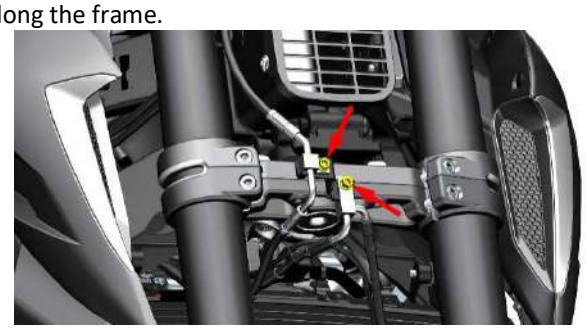
RMC-HU:Rear disc brake main pump - hydraulic control unit

RC-HU:Rear disc brake caliper-hydraulic control unit

An oil-resistant plastic bag or plastic film can be placed around the bottom of the hydraulic control unit and fixed with tape to prevent the residual brake fluid from dripping onto the parts when loosening the tubing nut joint. Use a 12# open-end wrench to loosen the tubing bolts at the hydraulic control unit counterclockwise. The bolt is 24N.m. Wipe off any remaining brake fluid with a clean non-woven fabric, taking precautions to prevent dripping onto the cover or cable connectors.

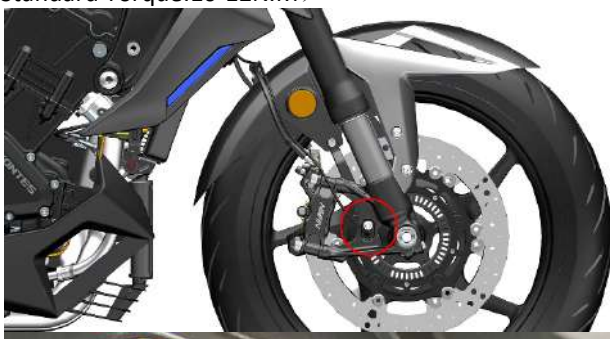
FMC-HU and FC-HU, wheel speed sensors (front wheel)

a. Use a T30 Torx wrench or an #8 socket to remove the two M6 bolts, loosen the FMC-HU hose, the forward brake double-connection bracket, and the FC-HU hose. After disconnecting the hydraulic unit hoses, remove the hoses along the frame.



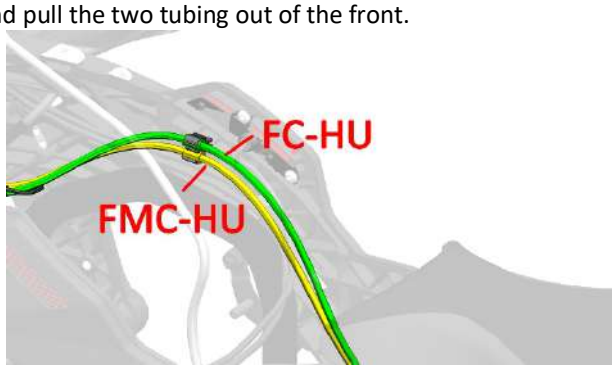
b. Use a T30 Torx wrench or a #8 socket to remove the following two bolts, then remove the front brake hose upper mounting bracket, and pull out the front wheel speed sensor connector from the frame. For details, please refer to the air filter assembly removal steps. The connector fixed on the right frame can only be found after removing the air filter. Press the locking tab on the connector to pull it out.

（Standard Torque:10-12N.M）





c. Undo the two-hole pipe clamp inside the right frame and pull the two tubing out of the front.



d. Check whether the cable is damaged, if there is wear and tear on the cable sheath, it needs to be wrapped with electrical tape to avoid short circuit and motorcycle failure. Wrap it with electrical tape to avoid short circuits and motorcycle breakdowns.

e. Check whether the surface of the removed hose has

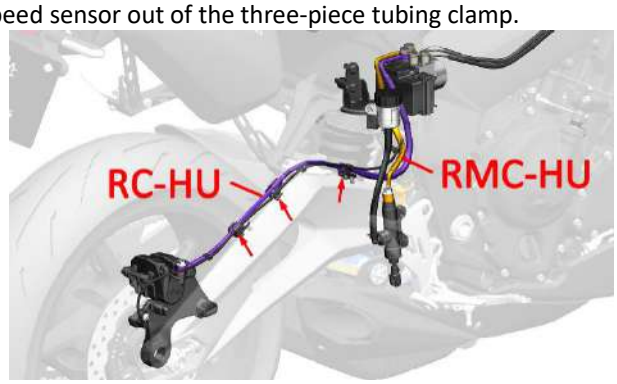
aging cracks, damage, wear and other undesirable phenomena. After wiping off the remaining brake fluid with a non-woven fabric, wrap both ends of the hose with plastic wrap or plastic bag to prevent foreign objects from entering. Check whether the cable sheath of the wheel speed sensor cable is damaged, and if it is worn out, it can be glued with electrical tape to prevent short circuit.

RC-HU and RMC-HU, Wheel Speed Sensor (Rear)

a. Find the reverse buckle Velcro strap next to the hydraulic control unit on the right side of the main frame, take out and unplug the rear wheel speed sensor.



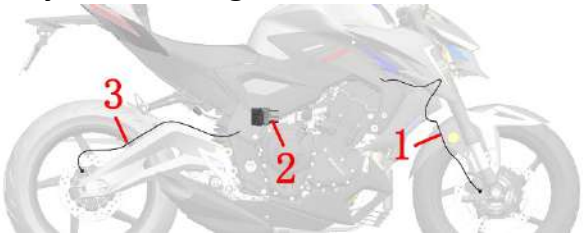
b. The RMC-HU removal method is detailed in the section on removing the rear disc brake caliper at the front. Directly remove the RMC-HU tubing. Pull the RC-HU tubing and wheel speed sensor out of the three-piece tubing clamp.



c. The removal method of the RC-HU and wheel speed sensor calipers is detailed in the section on removing the front disc brake calipers above.

d. Check the surface of the removed hose for signs of aging, cracks, breakage, wear and tear. After wiping off the remaining brake fluid with a non-woven fabric, wrap both ends of the hose with plastic wrap or plastic bag to prevent foreign objects from entering. Check whether the cable sheath of the wheel speed sensor cable is damaged, and if it is worn out, it can be glued with electrical tape to prevent short circuit.

ABS system arrangement



1-Front wheel speed sensor 2-ABS hydraulic control unit
3-Rear wheel speed sensor

ABS hydraulic control unit

Note:

●Before disassembling the liquid control unit, the positive and negative electrodes of the battery need to be removed to prevent damage to the electrical components caused by misoperation.

●Brake fluid is toxic and needs to be protected. For specific precautions, please refer to the pre-service instructions.

●When disassembling the brake hose fitting, be careful not to bend or bend. The cable connector has an anti-disconnection buckle and cannot be forcibly pulled out. After removing the hose, it is necessary to prevent the ingress of foreign matter.

●A small amount of brake fluid should be applied to the threads before reassembling the hose fittings at the hydraulic control unit.

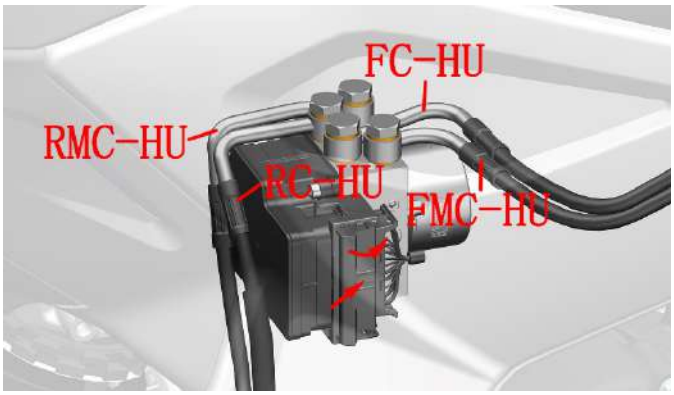
●After replacing the hydraulic control unit with a new one, you need to refill the brake fluid and exhaust the air to ensure that the brakes are restored to normal before driving the vehicle.

Disassemble

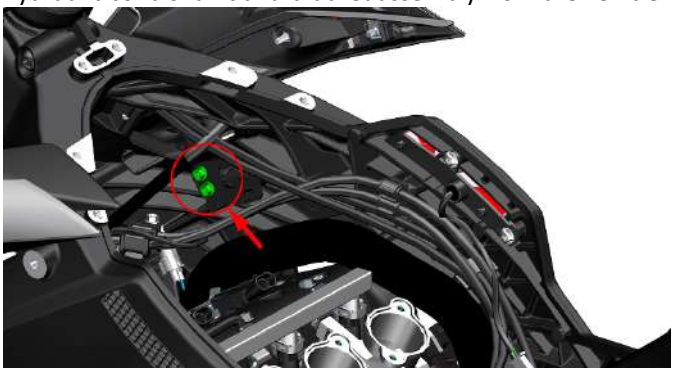
a. Remove the front and rear seat cushions, and refer to the steps in 'Replacing the High-Pressure Oil Pipe' to disassemble the fuel tank assembly. Refer to 'Cooling System and Intake System' to remove the air filter assembly.



b. Referring to the previous steps for releasing the brake fluid, disconnect the 4 hose fittings and unplug the cable connectors.



c. Use a T30 Torx wrench or #8 socket to remove the two bolts of the hydraulic control unit bracket, and detach the hydraulic control unit and bracket assembly from the vehicle.



d. Hold the hydraulic control unit firmly and use a T25 Torx wrench to remove the two M6×16 bolts to detach the hydraulic control unit. If the bracket needs to be replaced, the flanged bushing and buffer rubber must also be removed.



9. Battery/charging system

Pre-Service Notice

1. Waste batteries should be disposed of properly so as not to pollute the environment. It is recommended to hand over the waste battery to a professional recycling agency for recycling.

2. It is forbidden to use a charger that has not been tested to charge the battery.

3. When the battery is reinstalled, the power is suddenly cut off during driving, the idle speed is abnormal, and the insurance is replugged and unplugged, etc., the EFI system needs to be reset. Specific methods as follows：

Turn on the electric door lock switch and the engine flameout switch, pinch the clutch to start the engine in neutral for 60 seconds, turn off the engine flameout switch, and repeat the above operation again after 10 seconds.

4. Before disassembling the battery, the vehicle should be de-energized before proceeding.

5. Before troubleshooting the charging system, you should check whether the battery is in normal use and maintenance. Check with the owner to see if you regularly use high-powered electrical appliances, or if you don't drive your motorcycle for a long time, or if you turn on the lights for a long time without starting the vehicle.

6. If there is a “  " symbol on the right side of the step, you can click to quickly jump to the corresponding step.

Tool	multimeter	Torque wrench
		



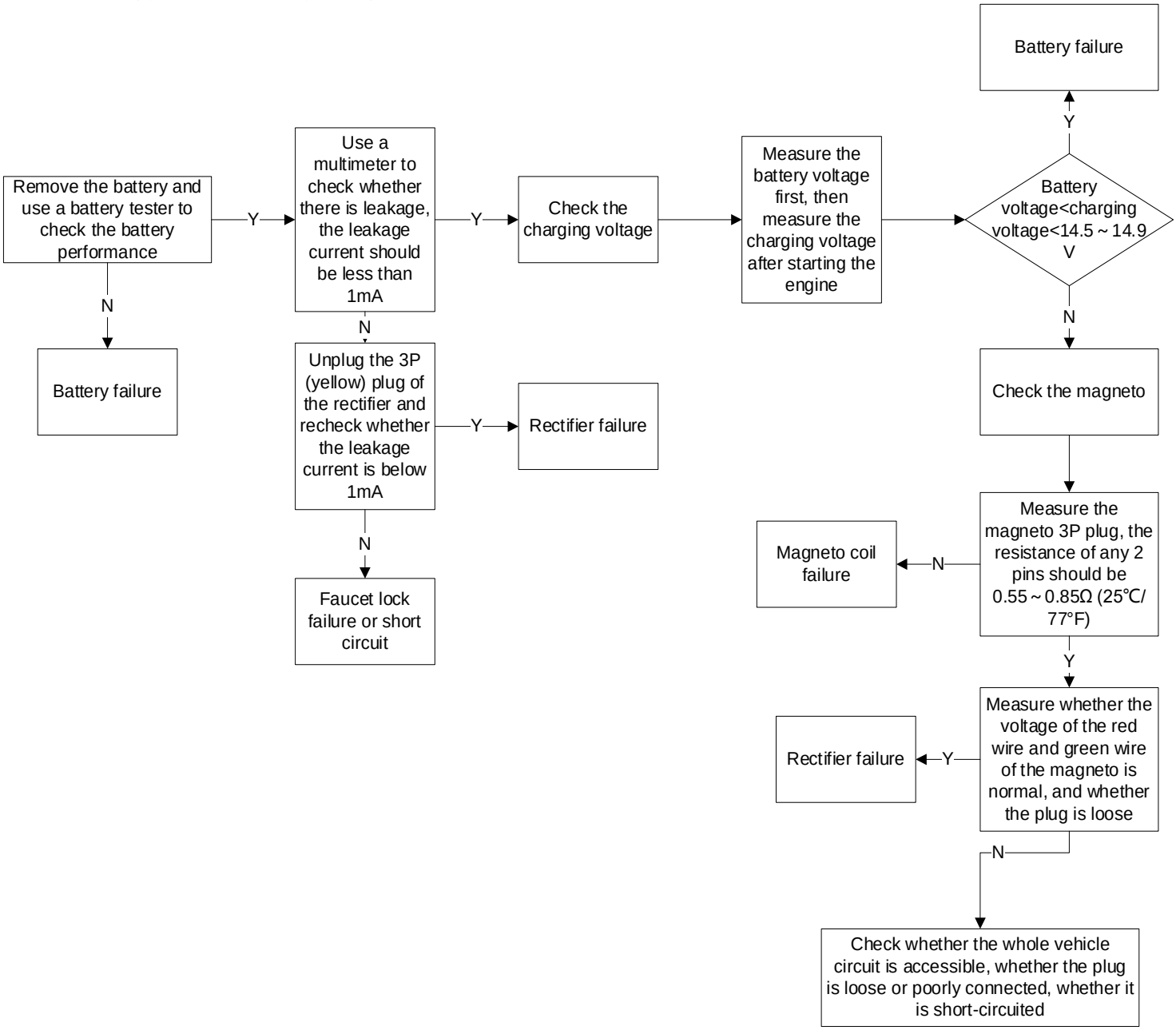
●When the engine cannot be started, never press the electric start button frequently. Frequent operation can lead to overheating or damage to the starter motor, flooding of the cylinder, battery feeding, etc.

●When the vehicle is powered on, connecting or unplugging may cause damage to some electrical components.

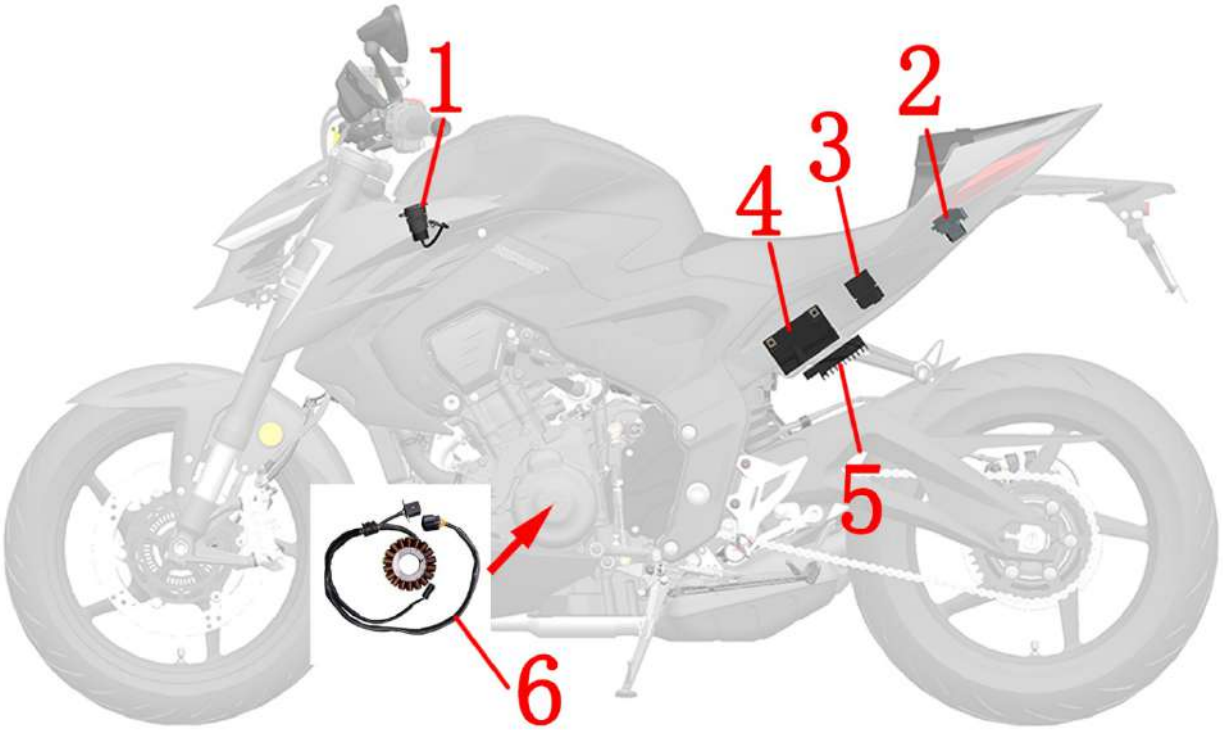
●Overcharging or undercharging, or discharging for a long time can cause damage to the battery.

Troubleshooting

Troubleshooting process for battery damage or attenuation

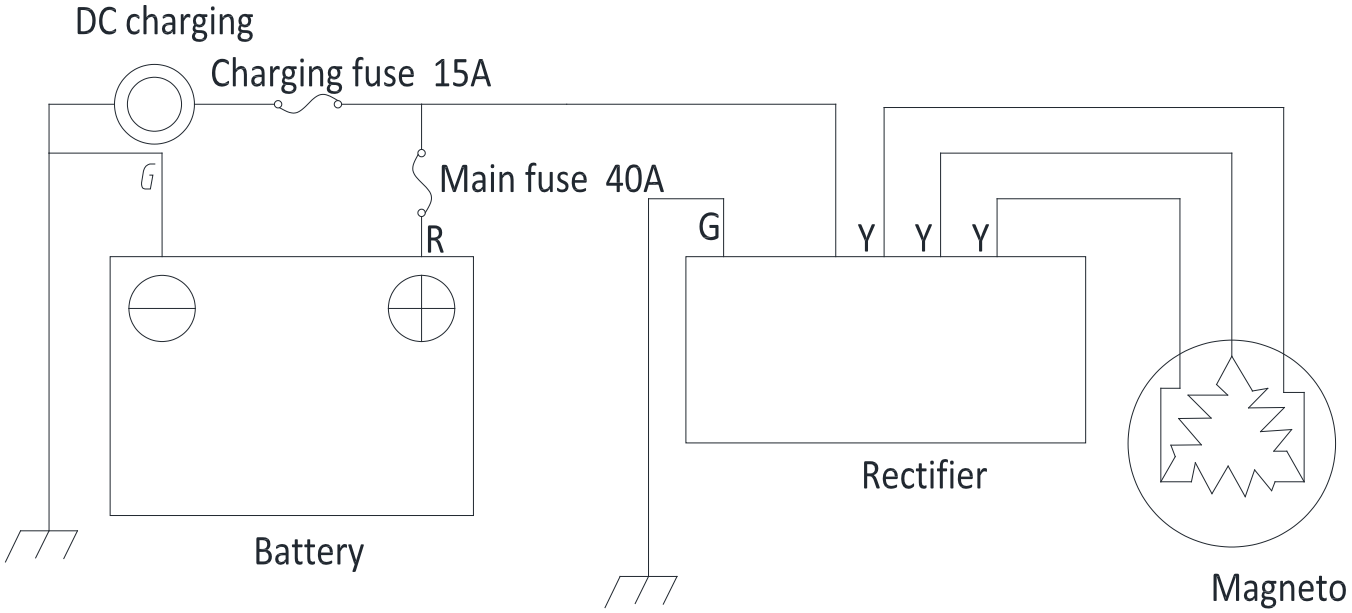


Charging system layout diagram



1-Bidirectional USB Charging Cable 2-Starting relay (40A) 3-Fuse box 4-Battery 5-Rectifier 6-Magneto

Electrical schematic



Letter	G	R	Y
Chinese	绿	红	黄
English	Green	Red	Yellow

Battery disassembly and assembly

1. Disassembly

Note:

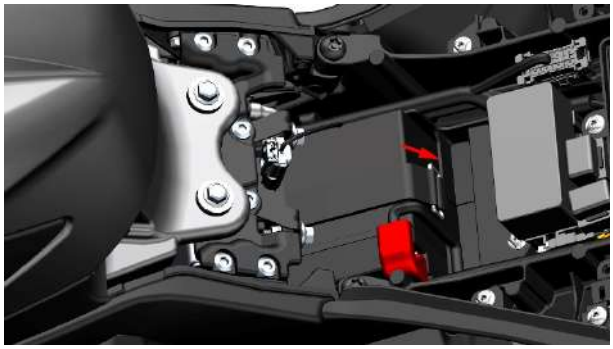
●The whole motorcycle must be powered off before dismantling the battery.

●The negative electrode must be removed first, and then the positive electrode. It's the other way around when it comes to installation.

●The positive and negative electrode protective caps must be covered when reinstalled.

●After removing the battery, you need to reset the meter time and reset the EFI system.

a. Stretch the battery strap in the direction of the arrow and remove it from the electrical component box on the subframe.



b. After pulling out the battery, first disconnect the negative terminal by removing the black protective cap, followed by the positive terminal. Then, remove the battery.

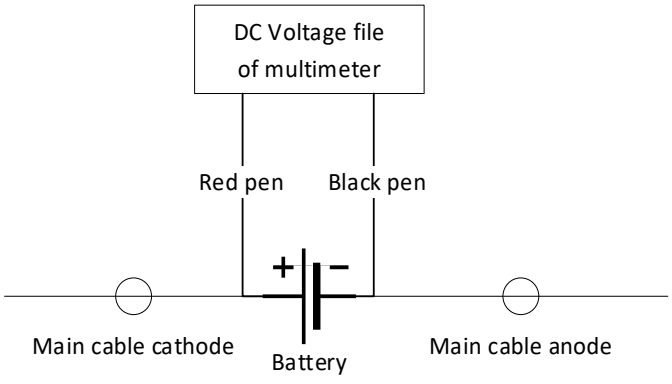
2. Examine

After opening the cushion, remove the protective caps of the positive and negative poles, and use a multimeter to measure the battery voltage. Note: The whole motorcycle should be turned off before measuring the voltage.

voltage	Full charge voltage	13.3V
	Charging voltage is required for unloaded vehicles	≤12.8V
	Charging voltage is required for loading	≤12.5V

Attention:

●Freshly charged batteries need to be left for about 30 minutes before measurement, and the voltage of the freshly charged batteries will fluctuate.

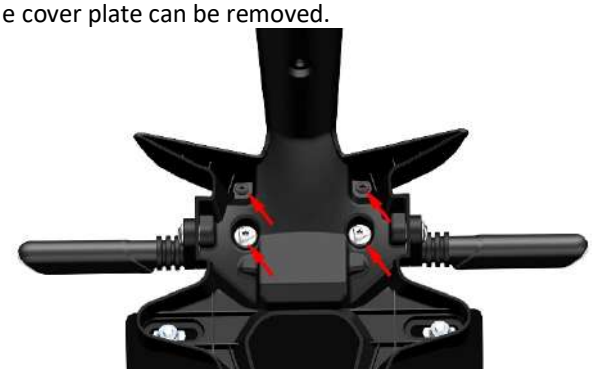


3. Charging

If the battery cannot start the vehicle due to insufficient power, the charger provided with the car can be used for charging. Use a T25 Torx wrench to remove the bolts securing the upper part of the mudguard.



Use a T25 Torx wrench to remove 2 screws, and use a Phillips screwdriver to remove 2 self-tapping screws, then the cover plate can be removed.



If the vehicle is not frequently ridden or is often used for short-distance trips, it is recommended to choose a cover plate with an opening when selecting modification parts, or to remove it and make a ϕ12 through hole yourself to facilitate charging. For the charging method after modification or self-drilling, please refer to the "ZT703-RR PKE Charging Port Charging Demonstration Video Tutorial" in the assembly video.

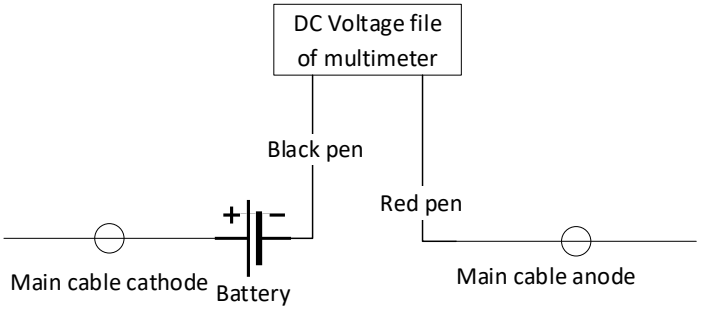
Charging system check

1. Leakage test

a. The motorcycle is turned off and the power is off, and the negative wire of the battery is removed.

b. Turn the multimeter to the current setting. The black pen is connected to the negative terminal of the battery, and the red pen is connected to the removed negative wire. Pay attention to adjust the current to a high gear first, and then gradually reduce it to a suitable setting.

c. Measure whether the leakage current is less than 1mA. If the standard value is exceeded, it is necessary to check whether the circuit has a short circuit.



2. Check the charging voltage

Note:

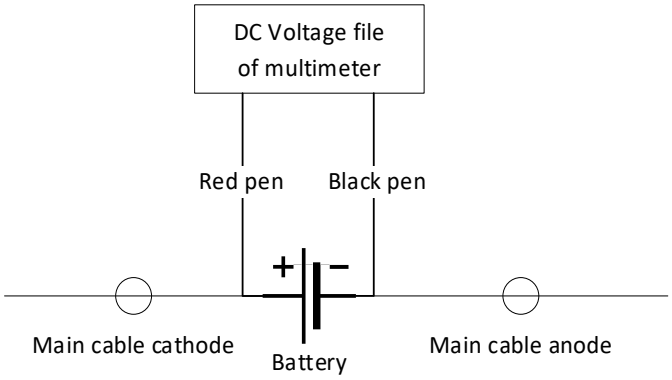
●Make sure the battery is in good condition before testing.
●The battery or any electrical device cannot be disconnected before the whole motorcycle is powered off.

a. Preheat the engine to normal operating temperature first, and then turn off the engine.

b. Connect the red pen of the multimeter to the positive pole of the battery, and the black pen to the negative pole directly. Adjust the multimeter to the 20V DC voltage level. Turn on the high beams of the headlights and start the engine. Measure the charging voltage at 5000 rpm of the engine.

Standard:

Battery voltage < charging voltage< 15V



3. Magneto stator charging coil inspection

a. Use an 8# socket or torx wrench with ratchet to remove the two bolts that hold the rectifier in place.



b. Unplug the 3 wires. Check the plug for looseness or corrosion.

c. Use the resistance of the multimeter resistance to measure the resistance of any two wires of the yellow wire color 3P plug on the stator side of the magneto, the standard is 0.55~0.85Ω (25°C).



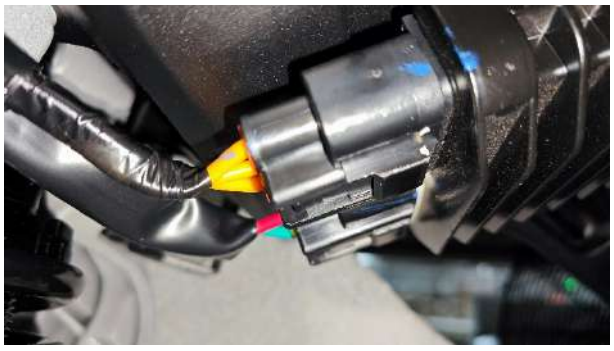
d. Check whether the yellow wire color 3P plug on the stator side of the magneto is not conductive with the ground. If the resistance value or the conduction with the ground, the magneto stator needs to be replaced.

Rectifier

Dismantle the rectifier

Use an 8# socket or torx wrench with ratchet to remove the two bolts that hold the rectifier and unplug the two plugs of the rectifier.





Rectifier detection

Check the plug for looseness or corrosion. Use the DC voltage of the multimeter to detect the 2P plug on the harness side, and the battery voltage should be measured between the red wire and the green wire. Otherwise exceptional.

10. Front fork assembly

Pre-Service Notice

1. Use high-quality tools or special tools and fixtures designed by our company. Using inferior tools may cause damage to parts, coating shedding, inadequate assembly, etc.

2. O-rings, paper gaskets, copper gaskets, component sealing rings, etc. used for sealing must be replaced before assembly.

3. Fasteners with torque requirements need to use a torque wrench to check the torque; those without torque requirements refer to the general torque values recommended for general fasteners.

4. Clean before assembly; check whether the assembly is correct and in place after assembly.

5. The vehicle should be parked in a balanced position and attention should be paid to safety during disassembly and assembly. This includes but is not limited to the use of electric tools, hand tools, pneumatic tools, hydraulic tools, and handling; avoid contact with skin, eyes, burns, etc.

6. All types of replaced oils, liquids, batteries, etc. must be collected and handed over to qualified institutions for disposal; it is prohibited to dump them at will to pollute the environment or water sources.

7. Swallowing or inhaling coolant, brake fluid, etc. will cause certain harm to the human body. Wash hands, face and any exposed skin thoroughly after each addition. If swallowed by mistake, contact the poison control center or hospital immediately; if inhaled, go to a ventilated environment immediately. If accidentally splashed into the eyes, rinse the eyes immediately with plenty of running water and seek medical attention or treatment in time. Keep away from children and pets.

8. When replacing the front wheel, a jack or similar device is required to support the entire vehicle.

9. Contaminated disc brake discs and disc brake pads will reduce the braking effect. Please replace new disc brake pads and clean contaminated brake discs.

10. When the front wheel is removed, please do not operate the brake handle.

11. After the front wheel is installed, press the brake handle repeatedly until the brakes regain their braking effect.

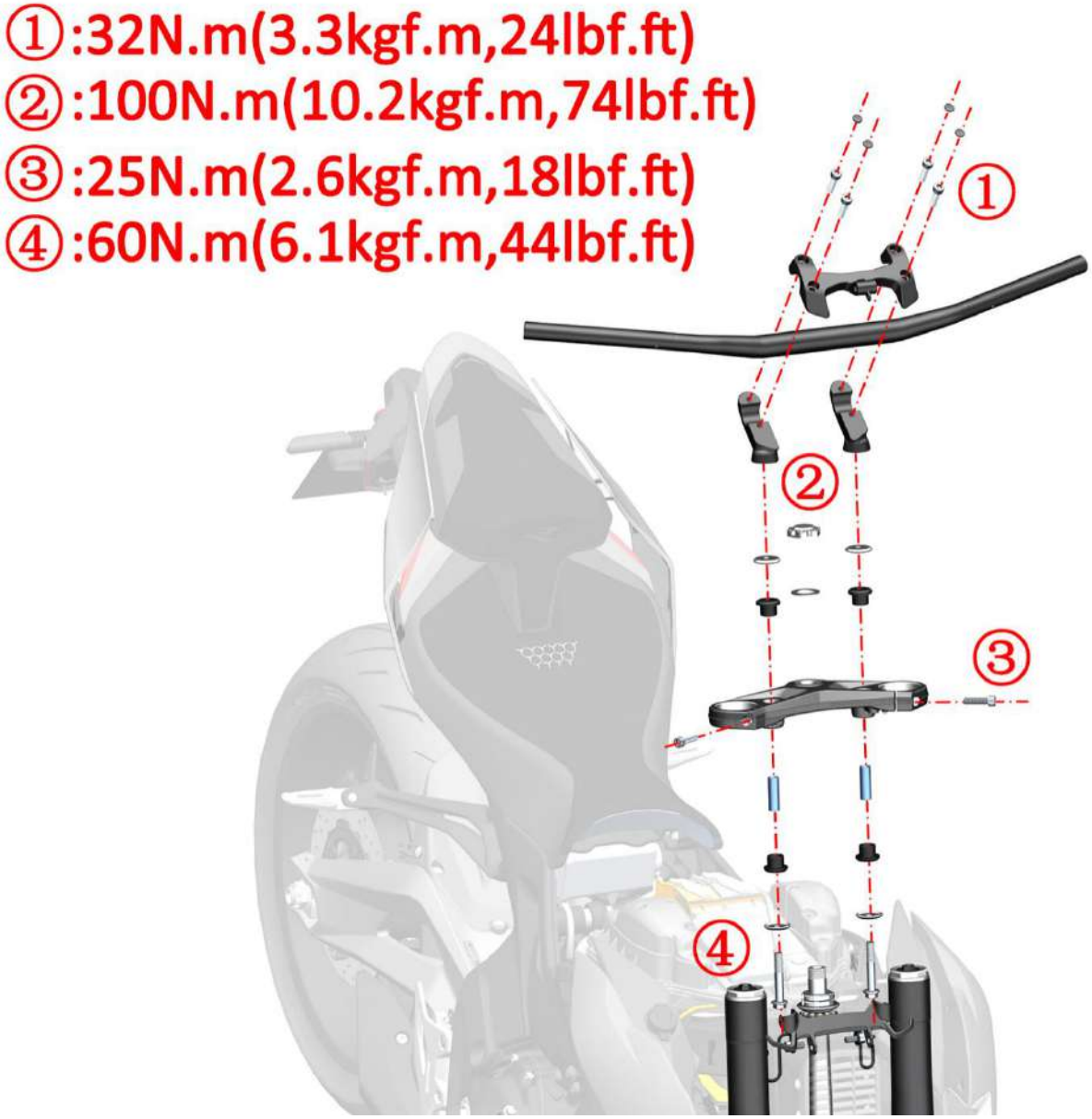
12. If there is a " " symbol on the right side of the step, you can click it to quickly jump to the corresponding step.

Tool	Torque wrench
	

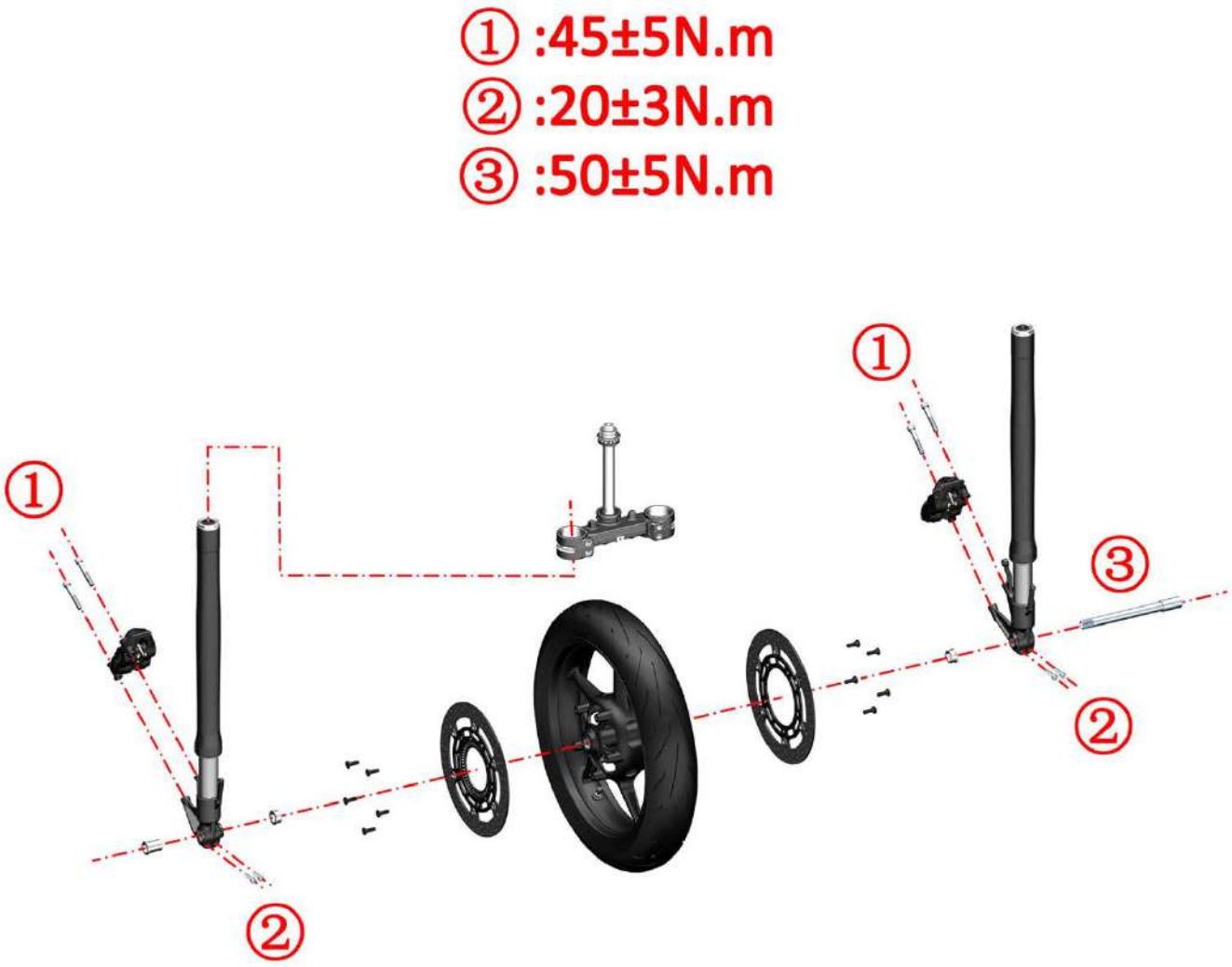
It is only possible to list some of the things that need to be paid attention to and the basic requirements for preventing accidental injuries; it is impossible to list all situations in detail. Be sure to stay vigilant during the disassembly and assembly process to prevent accidents.

Exploded view of fork components

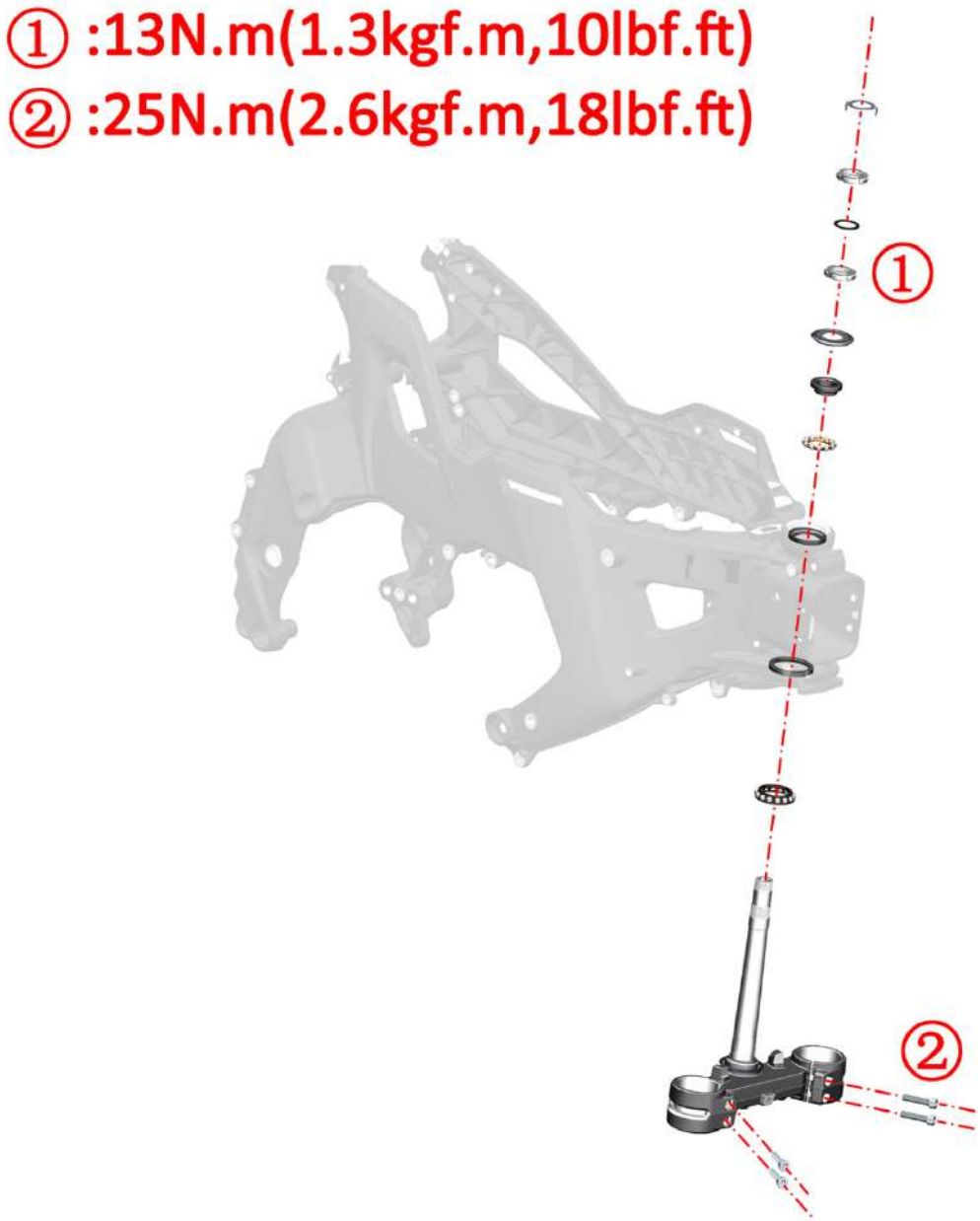
Exploded View of the steering handlebar



Fork exploded



Exploded view of the lower panel



Replace the steering handlebar

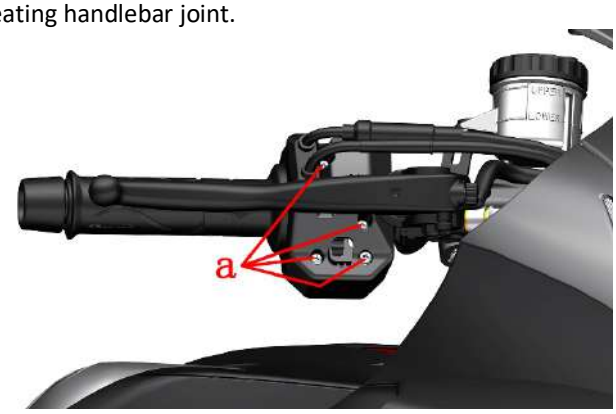
Note:

●The disc brake cup must be removed vertically upwards to prevent air from entering the brake line.

●When disassembling and assembling the handlebar switch, pay attention to adjusting the internal wiring harness and turn signal wiring harness of the switch to avoid the shell or bolt column clamping the wire skin.

1. Disassemble the direction of the component

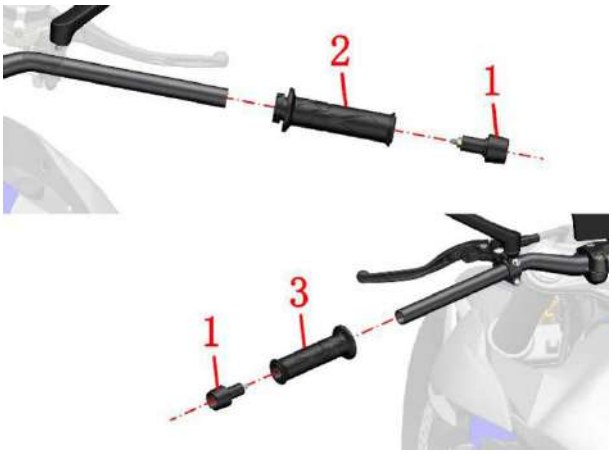
a. Use a Phillips screwdriver to remove the 4 bolts of the back shell of the switch with your right hand and separate the switch with your right hand. Remove the waterproof rubber sleeve of the throttle cable and adjust the refueling cable to the loosest position. Use the pick needle to remove the refueling line and return line, and then remove the heating handlebar joint.



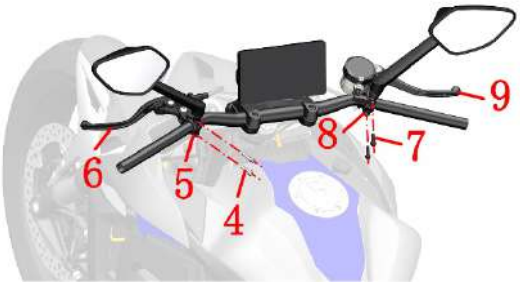
b. Use a Phillips screwdriver to remove the three bolts securing the rear cover of the left handlebar switch, and then take off the rear part of the left handlebar switch. Disconnect the heater harness connector and remove the bolt securing the front part to detach the front of the switch.



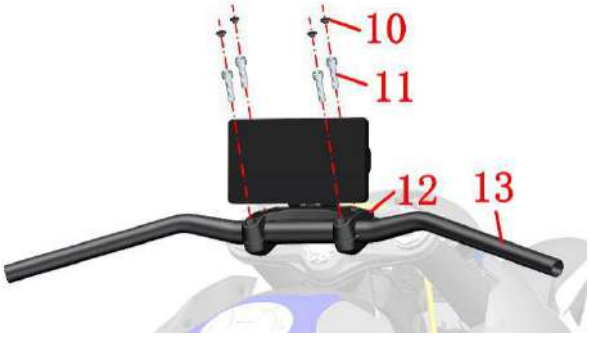
c. Use a 5# Allen wrench to loosen the M-bolt on the right counterweight (1) by five turns counterclockwise. Be cautious not to over-loosen it, as this may cause the nut attached to the counterweight to fall inside the handlebar, making it more difficult to remove the counterweight. After placing the 5# Allen wrench on the bolt head, use a rubber mallet to tap the bolt inward to loosen the cushioning rubber and nut of the counterweight for easier removal of the counterweight assembly. Firmly hold the counterweight and shake it up and down, left and right while pulling it outward to remove the right heated handlebar (2). Use the same method to pull out the left counterweight (1) and left heated handlebar (3).



d. Use an 8# socket to remove 2 M6×22 bolts(4) and 2 M6×25 bolts(7). Remove the clutch rocker half cover(5), clutch rocker assembly(6), front disc brake half cover(8), and front disc brake master cylinder(9).



e. Using a flathead screwdriver, remove the four decorative buttons(10), then use a #6 hex wrench to remove the four bolts(11). Next, remove the front clamp of the handlebar(12) and the handlebar(13) in sequence.



2. Install the direction handle assembly

a. Reinstall the steering handle according to the disassembly steps.

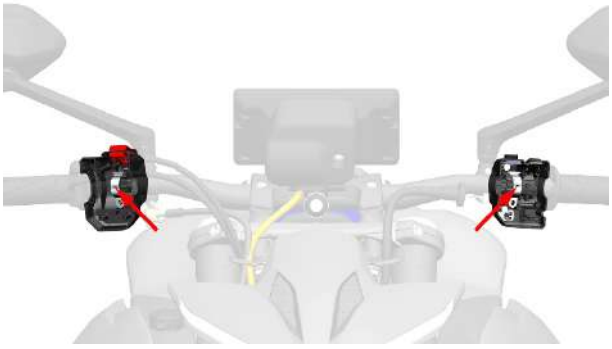
b. Apply an appropriate amount of specialized glue to the inner wall of the left handlebar grip to prevent loosening. The length of the glue application should be 1/3 of the grip. Then install the left handlebar grip onto the handlebar. Do not apply glue to the inner wall of the right handlebar grip; simply install it directly. Reattach the left and right counterweights following the disassembly steps and tighten the bolts attached to the counterweights using a 5# Allen wrench.

c. Connect the left heated handlebar connector. When installing the left handlebar switch, align the limiting iron plate with the positioning hole on the handlebar, then use bolts to secure the limiting iron plate. Place the heated handlebar connector back onto the clip inside the handlebar switch and tighten the three bolts securing the left handlebar

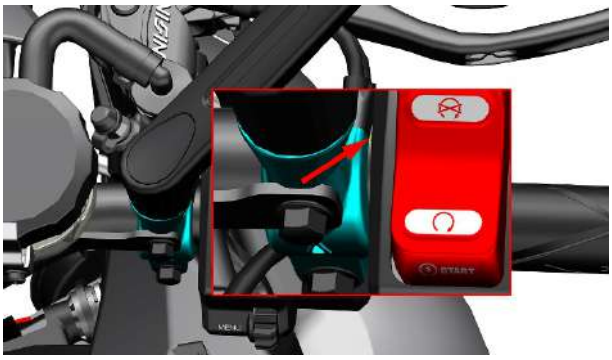
switch using a Phillips screwdriver.

Connect the right heated handlebar connector. Install the fuel return line and fuel supply line onto the right heated handlebar in sequence, and reinstall the heated handlebar connector onto its retaining clip. When installing the right handlebar switch, align the limiting iron plate with the positioning hole on the handlebar, cover the rear part of the handlebar switch, and use a Phillips screwdriver to tighten the four bolts securing the handlebar switch.

Adjust the throttle cable bolt to suit your personal driving preference, then tighten the fixing bolt using a 10# open-end wrench and cover the throttle cable adjustment bolt with the waterproof rubber sleeve.



d. When installing the front disc brake half cover or clutch rocker arm half cover, the half cover and the disc brake main pump or the combination of the half cover and the clutch rocker arm need to align the round hole on the direction handle, and then use the 8# sleeve to tighten the bolts. Note that the top bolt needs to be tightened first, and then the bottom bolt should be locked.



WARNING

●After installation, check whether the throttle cable is assembled in place and whether the return is flexible.
●After the installation is completed, check the buttons of the left and right hand switches, check whether they can be used normally, and check whether there is a pressure line.

Replace the front wheel

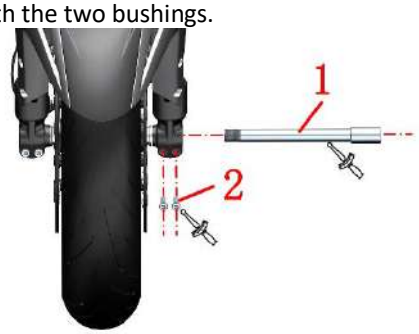
Note:

●Be careful not to damage the ABS ring gear when disassembling.
●After the front wheel is removed, do not press the brake handle.
●The motorcycle must be parked on a level, stable ground or lifting platform.
●It is forbidden to use a high-pressure water gun to flush the oil seal at close range.

1. Disassemble the front wheel assembly

a. Securely support the vehicle, then use a jack or suitable device to support the entire vehicle, lifting the front wheels off the ground.

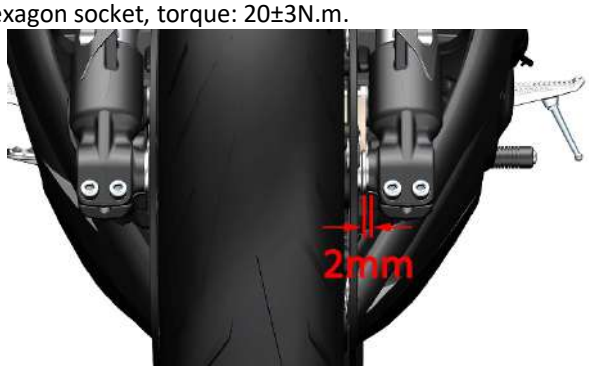
b. Use a #6 hex key to loosen the two M8×30 bolts (2) at the front left shock absorber, then use a #17 hex key to remove the front wheel axle (1), and remove the front wheel along with the two bushings.



2. Install the front wheel assembly

a. Use a batch to separate the 2 brake pads in the brake caliper, if the resistance is very large, the 2 brake pads can not be separated, you can refer to the method of "adding brake fluid" to remove the disc brake oil cup cover and then separate the 2 brake pads.

b. Put the front wheel into the middle of the front shock absorber, shake the front wheel left and right, make the disc brake disc stuck in the middle of the brake pad, align the axle hole, insert the front wheel axle, and tighten the front wheel axle with 17# hexagon inner hexagon, torque: 50±5N.m (5.1±0.5 kgf.m, 37±4 lbf.ft), after the front wheel axle is tightened, there is a gap of about 2mm between the left bushing of the front wheel and the shock absorption; Tighten the 2 M8×30 bolts at the front left shock absorber with 6# hexagon socket, torque: 20±3N.m.



DANGER

●After the front wheel is installed, press the brake handle repeatedly until the brake restores the braking effect.
●Soiled disc and pads can reduce braking effectiveness, so replace them with new ones and clean the soiled discs.

WARNING

●After each replacement of the front wheel, it is necessary to go to a professional institution for dynamic balance testing.
●It should not be used because tire self-replenishment may clog the air holes of the tire pressure monitoring sensor, causing difficulty inflation or tire pressure monitoring failure.

Exploded view of the front wheel assembly:



Serial number	Name	Quantity	Remark
1	Non-standard plum groove shoulder bolt M8×25-ϕ10×6	10	25 N.m(2.5 kgf.m,18 lbf.ft)
2	Front left brake disc assembly	1	
3	Oil seal TC ϕ28× ϕ42×7	2	The front rim comes with it
4	GB276 deep groove ball bearing 6004-2RS-C3	2	The front rim comes with it
5	Tire pressure sensor	1	
6	Spacer	1	The front rim comes with it
7	Front right brake disc assembly	1	

Inspection and maintenance of front wheel components

Notice:

●This inspection should be handed over to a qualified maintenance unit to complete.

●Do not press the brake handle after the front wheel is disassembled

●Be careful not to damage the ABS coil when disassembling.

●The motorcycle must be parked on a level, stable ground or lifting platform

●It is forbidden to use a high-pressure water gun to flush the oil seal at close range.

1. Disc brake discs

1.1 The service life of the disc brake disc

Under normal circumstances, the replacement mileage of the brake disc is about 40,000 kilometers, and the replacement mileage is not absolute, and it needs to be determined according to the owner's travel habits (whether he likes to brake sharply), road conditions, maintenance cycles and other factors, but if he reaches any of the following three situations, he must be replaced.

a. Use vernier calipers to measure the thickness of the disc brake disc less than 4.0mm.

b. Suspend the front wheel in the air, and observe whether the disc brake disc swings when the front wheel rotates from the front, so as to detect whether the disc brake disc is deformed.

c. Touch the surface of the disc brake disc with your hand to detect whether there are obvious pits, and visually inspect whether there are deep scratches or grooves.

1.2 Replacement method of disc brake disc



a. Refer to "Replacing the Front Wheel" to remove the front wheel assembly.

b. Use a T45 torx wrench to remove the 5 M8×25 bolts and remove the disc brake disc.

c. After replacing the new disc brake disc, use a T45 torx wrench to tighten the 5 M8×25 bolts. Torque: 25N.m (2.5 kgf.m, 18lbf.ft).

d. Replace the front wheel assembly.

2. Front wheel oil seals and bearings

2.1 The service life of the front wheel oil seals and bearings

Under normal circumstances, the bearings and oil seals in the front axle need to be checked for 50,000 kilometers, but the bearings and oil seals in the front axle need to be checked according to the actual conditions of the vehicle's driving road conditions and the size of the load, for example, after the motorcycle wades, the water will enter the oil seal and the bearing, and the fine dust in the water will accelerate the wear between the bearing and the oil seal, and at the same time, the water and grease will become emulsion after mixing and rubbing, and lose the original lubrication effect. This also shortens the service life between the oil seal and the bearing. When the following situation occurs, the front wheel oil seal and bearing should be checked in advancea. There is an abnormal sound of the front wheel when riding/

b. When the steering knob shakes from side to side while riding.

2.2 How to replace the oil seals and bearings of the front wheels



a. Refer to "Replacing the Front Wheel" to remove the front wheel assembly.

b. Use a flathead screwdriver to warp out the oil seals on the left and right sides of the front wheel, check whether the oil seal is damaged and deformed, check whether the outer ring of the bearing fits tightly with the rim, if there is no abnormality, then rotate the inner ring of the bearing by hand, check whether the rotation of the bearing is smooth, if there is jamming or abnormal noise, the front wheel bearing and oil seal need to be replaced.

c. The replacement of the front wheel oil seal and bearing needs to be completed by a professional maintenance unit.

d. If there is no problem, apply an appropriate amount of butter to the front wheel bearing, and then use a copper rod and rubber hammer of the appropriate size to press the oil seal to its original position.

e. Replace the front wheel assembly.

3. Front rims and tires

3.1 The service life of the front rim and tires

Generally speaking, there is no limit to the age and kilometers of the rim, but the rim must be replaced in the following cases.

a. The rim is deformed or warped.

b. Cracks or breaks in the rim

Under normal circumstances, the tires of the front wheels can be used for about 20,000 kilometers, and the normal situation means that the road conditions are not bad and there are no punctures. Because the tires are in rubber products, there will be aging, and the tires will be replaced in about 4 years. If you don't change it, you need to check it frequently to see if the tire is aging, whether the tire has cracks, etc. Tires must be replaced if:

a. The tires have been repaired several times.

b. When the tire tread wear reaches the limit position of the design.

c. There are many aging and cracking phenomena in tires.

3.2 How to replace the front rim and tires



a. Refer to "Replacing the Front Wheel" to remove the front wheel assembly.

b. The removed front wheel assembly is removed using a tire scraper to remove the tire.

c. Use a picker to assemble new rims or new tires. And press the front tire to the standard value. Front tire pressure: 250kPa (36 PSI).

d. After balancing, the assembled front wheel assembly is installed back on the vehicle.

3.3 Balancing

The wheel is a whole composed of tires and rims, due to manufacturing reasons, the mass distribution of each part of the wheel may not be very uniform, when the wheel rotates at high speed, it will form a dynamic unbalanced state, resulting in the phenomenon of wheel shaking and direction shaking in the motorcycle while driving, in order to avoid this phenomenon or eliminate this phenomenon that has

occurred, it is necessary to make the wheel correct the balance of each edge part by increasing the counterweight in the dynamic situation, and this correction process is what we call dynamic balance. The dynamic balance of the wheels can ensure that the wheels rotate more smoothly, reduce vibration and shaking, improve the stability and comfort of the vehicle, and facilitate safe driving.a. After each replacement of the front and rear wheels, please go to a professionally qualified institution to test the dynamic balance. b. The dynamic balance weight must be affixed to the plane specified by the rim.



Replace the front shock absorber

Note:

●After the front wheel is removed, do not press the brake handle.

●Be careful not to damage the ABS coil when disassembling.

●When disassembling the front mud plate, be careful not to scratch the shock absorber or the front mud board.

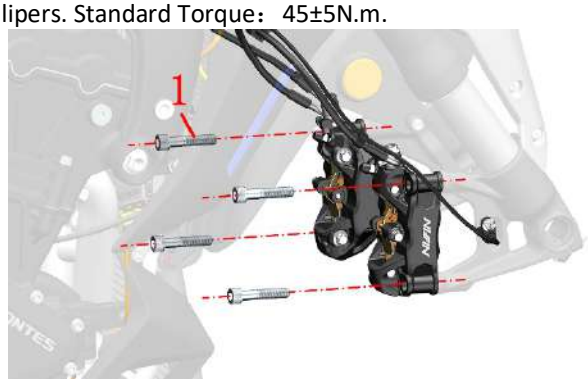
●When dismantling the shock absorber, you should first remove the 2 bolts that fix the same shock absorber, remove one side of the shock absorber, and then remove the other side

●When adjusting the front shock absorber, do not turn the adjustment knob beyond its limit, and the preload of the left and right shock absorbers should be adjusted to the same position.

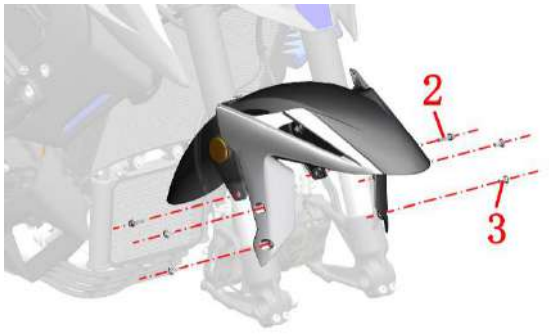
1. Remove the front fender assembly and lower fender assembly

a. Refer to "Replacing the Front Wheel" to remove the front wheel.

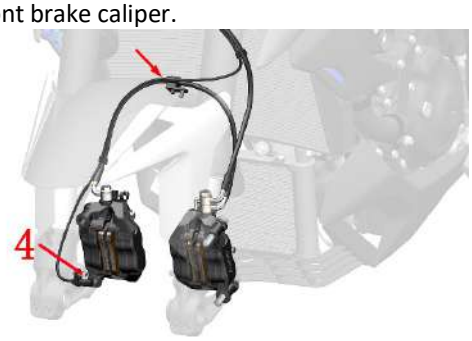
b. Then use the 8# hexagon to remove the 4 bolts (1) that fix the caliper, and remove the front left and right brake calipers. Standard Torque：45±5N.m.



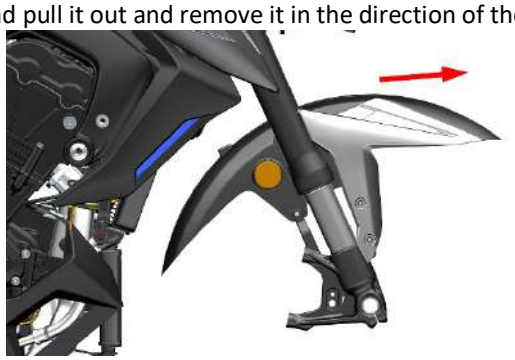
c. Use a T25 torx wrench to remove the 4 M6×14 shaft shoulder bolts (3) on the left and right sides of the front mud plate; Then use the 8# sleeve to remove the 2 M6×22 bolts (2) on both sides.



d. Remove the wheel speed sensor and brake hose from the front fender. Remove the M25 bolt (6×16) on the wheel speed sensor with a T4 torx wrench and remove the sensor. Remove the front brake caliper.

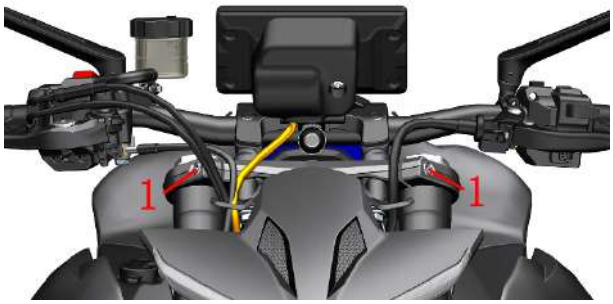


e. Move the front mud board up to the appropriate part and pull it out and remove it in the direction of the big arrow.

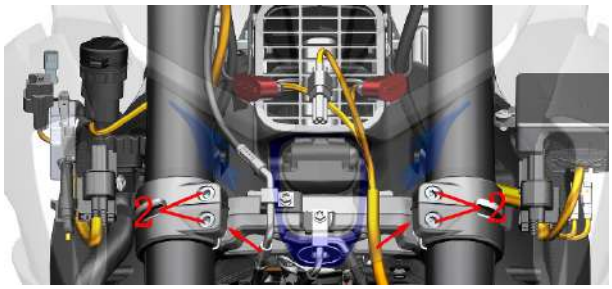


2. Remove the front left and right shock absorbers

a. Use a #6 Allen wrench to loosen the two bolts（1）on the upper connecting plate 5-8 turns.

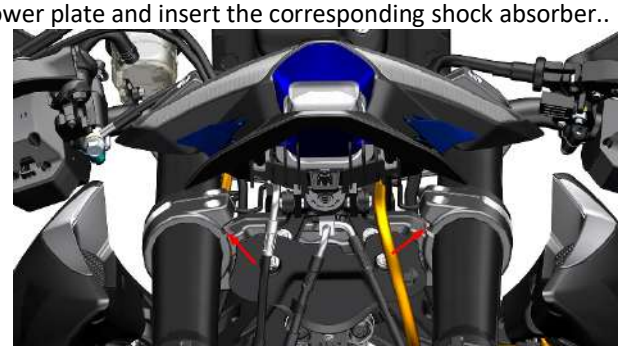


b. Use a #6 Allen wrench to loosen the four M8×35 bolts(8) by 5-8 turns, use a flathead screwdriver to pry open the gap on the lower link plate (as indicated by the arrow in the figure), and remove the left front shock absorber and right front shock absorber.



3. Replace the shock absorber, front mud plate, front wheel and other components

a. Use a flathead screwdriver to pry open a gap in the lower plate and insert the corresponding shock absorber..



b. Reserve enough position for the shock absorber port of the upper plate to insert the corresponding shock absorber, and adjust the shock absorber to the position of just exposing the end cover (as shown in the figure). Use a T45 torx wrench with holes to tighten the bolts at the upper plate, torque standard: 25N.m.



c. Attach the two M8×35 bolts to the lower plate and insert the other shock absorber in the same way.

d. After picking up the front wheel and installing the bushing, align the mounting hole between the two shock absorbers, penetrate the front wheel axle, and use the 17# hexagon socket to tighten the front wheel axle, torque: 50±5N.m (5.1±0.5 kgf.m, 37±4 lbf.ft). If one of the shock absorbers is not installed in place, the front axle will not be tightened or the right shock will not be able to penetrate, and the shock absorbers that are not installed in place will need to be removed and installed again.

e. After the front wheel is installed, use the 6# hexagon socket to tighten the two M8×30 bolts in the lower part of the left front shock absorber, torque: 20±3N.m (2±0.3 kgf.m, 15±2 lbf.ft).

f. Use a slotted screwdriver to separate the brake pads inside the brake caliper, if the resistance is too large and the brake pads cannot be separated, you can refer to the method of "adding brake fluid" to remove the upper cover of the disc brake cup, and then separate the brake pads, and then align the gap between the two brake pads in the disc brake caliper to the brake disc on the front wheel and then install it. Then use 8# hexagon socket to tighten 2 bolts, torque: 45±5N.m (4.6±0.5 kgf.m, 33±4 lbf.ft). Attach the disc brake calipers on both sides. Tighten the bolt on the wheel speed sensor on the right shock with a T25 Torx wrench.g. After the front fender is replaced, use a T25 Torx wrench to replace the 4 M6×14 shoulder bolts. Then use the 8# socket to replace the 2 M6×22 bolts, and finally put the oil pipe and wheel speed sensor back into the retaining clip on the upper part of the fender.

4. Adjust the front shock absorber

For specific steps, please refer to the user manual or the "ZT703-RR Front and Rear Shock Absorption Adjustment Video Tutorial" in the corresponding model of Zontes Mall. It will not be repeated here.

Replace the upper and lower boards

Note:

●After the front wheel is removed, do not press the brake handle.

●The disc brake cup must be removed vertically upwards to prevent air from entering the brake line.

●After disassembly, make sure that all parts are properly replaced

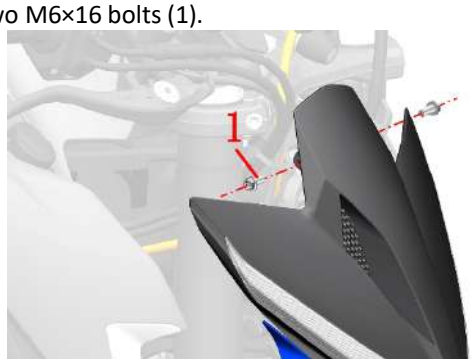
●Bearings should be installed with an appropriate amount of grease

1. Disassemble parts in advance

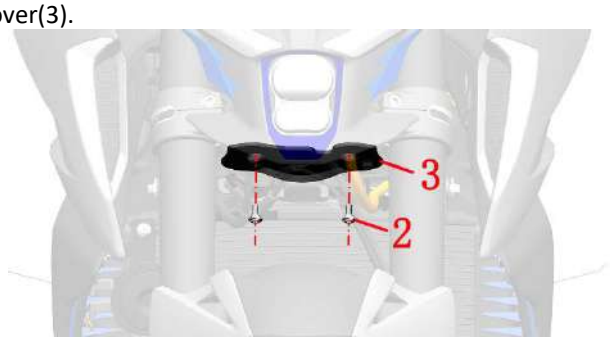
a. Refer to ‘Replacing the Front Wheel’, ‘Replacing the Front Shock Absorber’, and ‘Replacing the Handlebar’ to remove the front wheel, front shock absorber, and handlebar.

2. Disassemble the upper link plate and the steering handle spacer

a. Use a T30 Torx wrench or an #8 socket to remove the two M6×16 bolts (1).



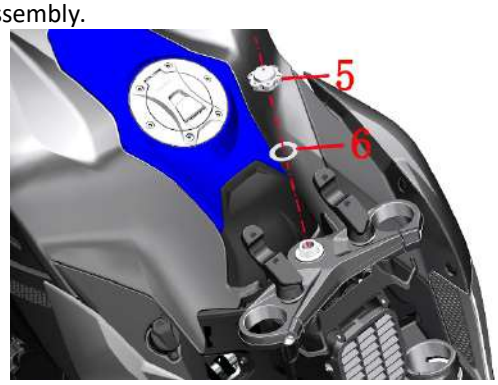
b. Use a T25 Torx wrench to remove the 2 M6×14 shoulder bolts(2), and take off the lower connecting plate cover(3).



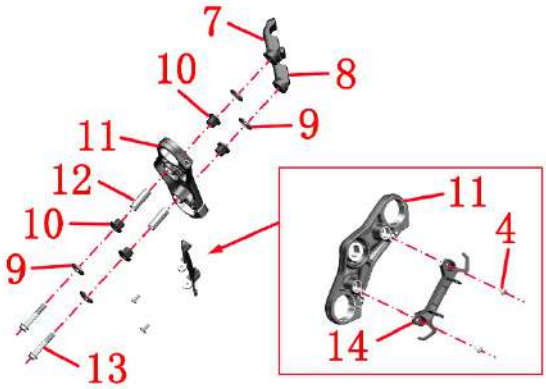
c. Use a T25 plum blossom wrench to remove the 2 M6×16 bolts(4), and take off the head assembly.



d. Use a jack to support the entire vehicle, lifting the front wheels 2 cm off the ground. Use the 703R decorative nut to remove the fixture and take off the decorative nut (5), then remove the washer (6) and the upper link plate assembly.

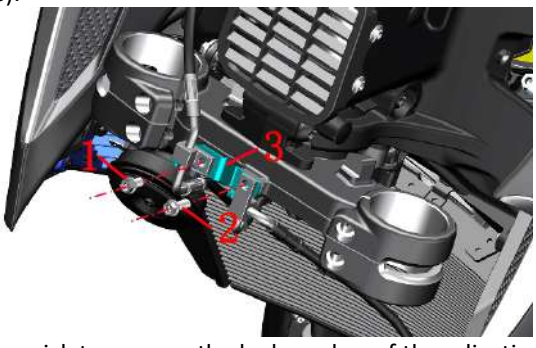


e. Use a #14 socket to remove the two bolts(13) fixed on the upper tie plate(11), then remove the left shim(8), right shim(7), gasket(9), buffer rubber(10), and bushing(12) in sequence. Use a T25 Torx wrench to remove the two M6×16 bolts(4), and take off the head bracket(14).



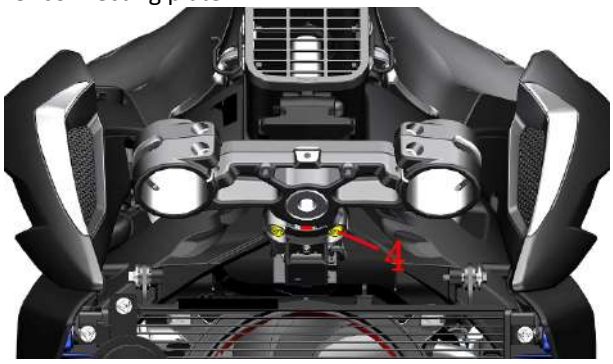
3. Dismantle the lower link plate assembly

a. Use a T30 Torx wrench or an #8 socket to remove the M6×12 bolt (1) and the M6×16 bolt (2), then remove the bracket (3).



b. Use a pick to remove the lock washer of the adjusting nut, then unscrew the adjusting nut of the first steering column and remove the adjusting nut washer. One person should support the lower connecting plate by hand, and use a ratchet wrench and adjusting nut tool to remove the adjusting nut of the second steering column, and then remove the upper dust cover. Refer to the lower connecting plate disassembly diagram for guidance.

c. Use a T45 torx wrench to loosen the 2 M8 bolts of the faucet lock (4), then shake the faucet lock and remove the lower connecting plate.



4. Install the upper and lower connecting plate assemblies

a. After applying an appropriate amount of grease to the new lower link plate assembly, install it from beneath the frame.



b. Sequentially place the lubricated bearing, shaft ring, and dust cover above the lower assembly plate, then screw in one steering column adjustment nut. Use a four-jaw socket to tighten the steering column adjustment nut to a torque of 35 N·m. After ensuring that the upper assembly plate does not move up or down, loosen the steering column adjustment nut by 1/4 turn counterclockwise, and finally tighten it using a torque wrench to 15 N·m. Place a rubber pad on the steering column adjustment nut; then screw in the second steering column adjustment nut. Adjust the second steering column adjustment nut so that its notch aligns with that of the first adjustment nut, and insert the lock washer for the adjustment nut. Referring to the disassembly steps of the lower assembly plate, reattach the two oil pipes and the bracket to the lower assembly plate.



c. After installing the upper link plate assembly, tighten

nut(5) using the decorative nut tool, torque: 100 N·m. Use a T45 slotted star wrench to tighten bolt (6) on the upper link plate, torque: 25 N·m.



d. Referring to the steps in 'Replacing the Front Shock Absorber', 'Replacing the Front Wheel', and 'Removing the Upper Link Plate and Handlebar Spacer', reinstall the handlebar assembly, head assembly, front shock absorber, front wheel assembly, and front fender.

DANGER

●The motorcycle must be parked on a level, stable ground or lifting platform.
●After each front wheel disassembly, the brake handle must be pressed repeatedly until the motorcycle regains braking effect.

11. Rear fork assembly

Pre-Service Notice

1. High quality tools or specialized tools, fixtures, etc. designed by our company are required. Using inferior tools may cause damage to parts, peeling of coatings, improper assembly, etc.

2. O-rings, paper pads, copper pads, component sealing rings, etc. used for sealing must be replaced before assembly.

3. Fasteners with torque requirements require the use of a torque wrench to verify the torque; Recommended universal torque values for reference universal fasteners that do not require torque.

4. Clean thoroughly before assembly; After assembly, it is necessary to check whether the assembly is correct and in place.

5. The vehicle should be parked and balanced, and safety should be taken into account during disassembly and assembly. Including but not limited to the use of electric tools, manual tools, pneumatic tools, hydraulic tools, and handling; Prevent contact with skin, eyes, burns, etc.

6. All types of oil, fluids, batteries, etc. that have been replaced must be collected and handed over to qualified institutions for disposal; It is prohibited to dump pollutants into the environment or water sources at will.

7. Swallowing or inhaling coolant, brake fluid, etc. can cause certain harm to the human body. After each addition, any exposed skin such as hands and face should be thoroughly cleaned in a timely manner. If accidentally swallowed, immediately contact the poison control center or hospital; If inhaled, immediately enter a ventilated environment. If accidentally splashed into the eyes, immediately rinse the eyes with plenty of running water and seek medical attention promptly. Be sure to stay away from children and pets.

8. When replacing the rear wheels, a jack or similar device is needed to support the entire vehicle.

9. Contaminated disc brakes and discs will reduce braking effectiveness. Please replace with new discs and clean the contaminated discs.

10. Do not operate the brake pedal when the rear wheels are removed.

11. After the rear wheel installation is completed, please press the brake pedal repeatedly until the braking effect is restored.

12. If there is a "  " symbol on the right side of the step, you can click to quickly jump to the corresponding step.

Tool	Torque wrench
	

Only some basic requirements for precautions and prevention of accidental injuries can be listed; It is not possible to list all the situations in detail. Be vigilant during the disassembly process to prevent accidents.

Replace the rear wheels

Note:

●The motorcycle must be parked on a level, stable ground or lifting platform.

●The rear brake caliper cannot be pressed after it is removed.

●Use appropriate tools to support the motorcycle to prevent accidents caused by motorcycle tipping during disassembly; It is strictly forbidden to operate alone.

●It is strictly forbidden to hit the rear axle thread part, disc brake caliper assembly, etc. with a hammer.

1. Disassemble the rear wheel assembly

a. Use a jack or an appropriate device to support the entire vehicle, lifting the rear wheels off the ground.

b. Remove the wheel speed sensor and brake hose from the disc brake hose clamp. Use pliers to straighten the slatter pin and remove it, and use a 30# sleeve to remove the rear axle nut. Use a 13# open-end wrench to turn the nuts of the chain adjuster on both sides to the rear axle to contact the head of the chain adjuster bolt, and then turn the bolts to the end in the direction of the front of the vehicle. Hold the rear wheel assembly, hit the rear wheel hollow shaft with a rubber hammer, expose the left end of the axle head, pull the axle head outward with the left hand at the same time, shake the tire left and right, and complete the disassembly of the wheel axle. Move the brake caliper aside and remove the rear wheel assembly and its accessories.



2. Remove the brake disc

Use the T45 Torx wrench to remove the five bolts on the brake disc, remove the rear brake disc and induction ring.



3. Remove the sprocket seat

Use a 14# Sleeve to remove the 6 self-locking nuts that fix the sprocket, torque: 65±5N.m. Remove the sprocket and sprocket holder.



4. Install the rear wheel assembly

Refer to the disassembly instructions to reinstall the sprocket carrier and brake disc.

a. Use a flathead screwdriver to separate the brake pads within the brake caliper. If significant resistance prevents separation, refer to the "Adding Brake Fluid" instructions to remove the top cover of the brake fluid reservoir before separating the brake pads.

b. Place the rear wheel in the middle of the rear swingarm and gently shake it side to side to ensure the brake disc is seated between the brake pads. Place a cloth between the rim and the sprocket carrier, then hang the chain onto the cloth. Install the left bushing and the outer oil seal of the sprocket carrier. Slide the rear wheel axle into the left chain adjuster and insert it from left to right. As you approach the right bushing, install it first, align the rear caliper mounting plate, and then thread the rear wheel axle through. Install the right chain adjuster and preload the rear wheel axle nut. Attach the chain to the gear. To tighten the drive chain, rotate the bolt on the swingarm towards the rear wheel axle; to loosen it, rotate the bolt towards the front wheel axle. Then, push the rear wheel forward. Finally, tighten the rear wheel axle nut with a 30# socket wrench to a torque of 120–130 N.m (12.2–13.3 kgf.m, 89–96 lbf.ft). Insert the pin into the corresponding hole and bend it at least 120 degrees using pliers.

DANGER

●After the rear wheel is installed, press the brake pedal repeatedly until the brake restores the braking effect.

●Soiled disc and pads can reduce braking effectiveness, so replace them with new ones and clean the soiled discs.

●All standard parts must meet the standard torque value when reassembling.

●When disassembling the rear wheel assembly, the rear disc brake caliper should not be higher than the disc brake oil cup, otherwise the brake will become soft or fail due to air entering the line. Due to the extremely high vacuum

requirements of the brake line, it is necessary to ensure that there is enough capacity for repair and disassembly

WARNING

●After each replacement of the rear wheel, it is necessary to go to a professional institution for dynamic balance testing.
●It should not be used because tire self-replenishment may clog the air holes of the tire pressure monitoring sensor.

Rear wheel assembly exploded view:



Serial number	Name	Quantity	Remark
1	Non-standard plum groove shoulder bolt M8×25-ϕ10×6	5	24±3N.m
2	Induction teeth	1	Generally, the inner ring is marked outward
3	Rear brake disc	1	
4	ZT703-RR Rear Wheel Right Axle Sleeve(ϕ25×ϕ32×15.5/Shoulderϕ37)	1	
5	Tire pressure sensor	1	
6	Sprocket seat buffer	6	Sprocket seat buffer
7	ZT703-RR Single Bearing Sprocket Seat Bushing	1	
8	ZT703-RR new sprocket seat	1	
9	ZT703-RR Single Bearing Rear Wheel Left Axle Sleeve(ϕ25×ϕ35×25.8 Shoulderϕ42)	1	
10	ZT703-RR 525-42T sprocket	1	
11	Non-standard nut M10×1.5 (Dacromet)	6	14# Sleeve, 65±5N.m

Rear wheel assembly inspection and maintenance

Note:
●This inspection should be handed over to a qualified maintenance unit to complete.
●After the rear wheel is disassembled, do not press the brake pedal
●Be careful not to damage the ABS coil when disassembling.
●The motorcycle must be parked on a level, stable ground or lifting platform
●It is forbidden to use a high-pressure water gun to flush the oil seal at close range.

1. Disc brake discs

1.1 The service life of the disc brake disc

Under normal circumstances, the replacement mileage of the brake disc is about 40,000 kilometers, and the replacement mileage is not absolute, and it needs to be determined according to the owner's travel habits (whether he likes to brake sharply), road conditions, maintenance cycles and other factors, but if he reaches any of the following three situations, he must be replaced.

a. Use vernier calipers to measure the thickness of the disc brake disc less than 4.0mm.

b. Suspend the rear wheel in the air and observe whether the disc brake disc swings when the front wheel rotates from the rear, so as to detect whether the disc brake disc is deformed.

c. Touch the surface of the disc brake disc with your hand to detect any visible pits, and visually inspect for deep scratches or grooves.

1.2 How to replace the disc brake disc

a. Refer to "Replacing the Rear Wheel" to remove the rear wheel assembly.

b. Use a T45 Torx wrench to remove the bolts and remove the induction coil and the damaged disc.

c. Once the induction coil and new disc brake rotor are replaced, tighten the bolts using a T45 Torx wrench. Torque: 24±3N.m.

d. Replace the rear wheel assembly.

2. Rear wheel oil seals and bearings

2.1 Service life of rear wheel seals and bearings

Under normal circumstances, the bearing and oil seal in the rear axle need to be checked at 50,000 kilometers, but the bearing and oil seal in the rear axle need to be checked according to the actual situation of the vehicle's driving road

conditions and the size of the load, for example, after the motorcycle wades, the water will enter the oil seal and the bearing, and the fine dust in the water will accelerate the wear between the bearing and the oil seal, and at the same time, the water and grease will become emulsion after mixing and rubbing, and lose the original lubrication effect. This also shortens the service life between the oil seal and the bearing. When the following situation occurs, the rear wheel oil seal and bearing should be checked in advanceaThere is an abnormal sound of the rear wheel while riding.

b. Fork sway when riding.

2.2 How to replace the oil seals and bearings of the rear wheel

a. Refer to "Replacing the Rear Wheel" to remove the rear wheel assembly.

b.Use a flathead screwdriver to warp out the oil seals on the left and right sides of the front wheel, check whether the oil seal is damaged and deformed, check whether the outer ring of the bearing fits tightly with the rim, if there is no abnormality, then rotate the inner ring of the bearing by hand, check whether the rotation of the bearing is smooth, if there is jamming or abnormal noise, the front wheel bearing and oil seal need to be replaced.

c. The replacement of the rear wheel oil seal and bearing needs to be completed by a professional maintenance unit.

d. If there is no problem with the inspection, apply an appropriate amount of butter to the rear wheel bearing, and then use a copper rod and rubber hammer of the appropriate size to press the oil seal to its original position.

e. Replace the rear wheel assembly.

3. Rear rims and tires

3.1The service life of the rear rim and tires

Generally speaking, there is no limit to the age and kilometers of the rim, but the rim must be replaced in the following cases.

a. The rim is deformed or warped.

b. Cracks or breaks in the rim

Under normal circumstances, the rear tires can be used for about 20,000 kilometers, and the normal situation means that the road conditions are not bad and there are no punctures. Because the tires are in rubber products, there will be aging, and the tires will be replaced in about 4 years. If you don't change it, you need to check it frequently to see if the tire is aging, whether the tire has cracks, etc. Tires must be replaced if:

a. The tires have been repaired several times.

b. When the tire tread wear reaches the limit position of the design.

c.There are many aging and cracking phenomena in tires.

3.2 How to replace the rear rim and tires

a. Refer to "Replacing the Rear Wheel" to remove the rear wheel assembly.

b. The removed rear wheel assembly is removed using a tire scraper to remove the tire.

c. Use a picker to assemble new rims or new tires. And press the rear tire to the standard value. Rear tire pressure: 250kPa (36 PSI).

d. Assemble the assembled rear wheel assembly back onto the vehicle.

3.3 Balancing

The wheel is a whole composed of tires and rims, due to manufacturing reasons, the mass distribution of each part of the wheel may not be very uniform, when the wheel rotates at high speed, it will form a dynamic unbalanced state, resulting in the phenomenon of wheel shaking and direction shaking in the motorcycle while driving, in order to avoid this phenomenon or eliminate this phenomenon that has occurred, it is necessary to make the wheel correct the balance of each edge part by increasing the counterweight in the dynamic situation, and this correction process is what we call dynamic balance.

The dynamic balance of the wheels can ensure that the wheels rotate more smoothly, reduce vibration and shaking, improve the stability and comfort of the vehicle, and facilitate safe driving.

a.After each replacement of the front and rear wheels, please go to a professionally qualified institution to test the dynamic balance.

b.The moving balance weight must be affixed to the plane specified by the rim.

Replace the rear flat fork

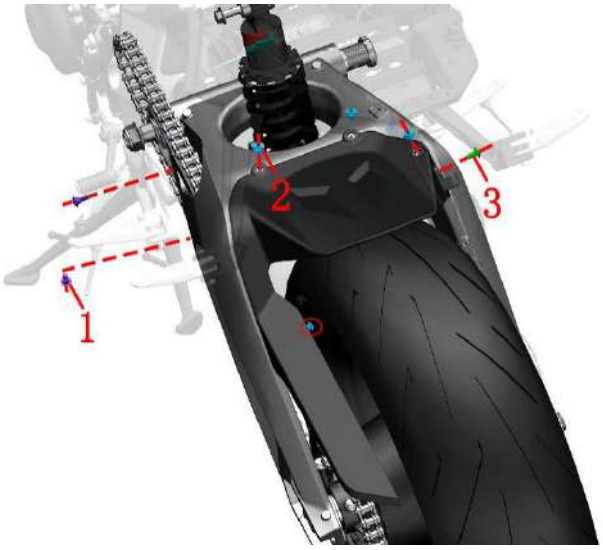
Note:

●It is strictly forbidden to hit the threaded part of the rear flat fork shaft with a hammer.

●Be sure to secure the motorcycle during the disassembly process.

1. Remove the inner clay slab

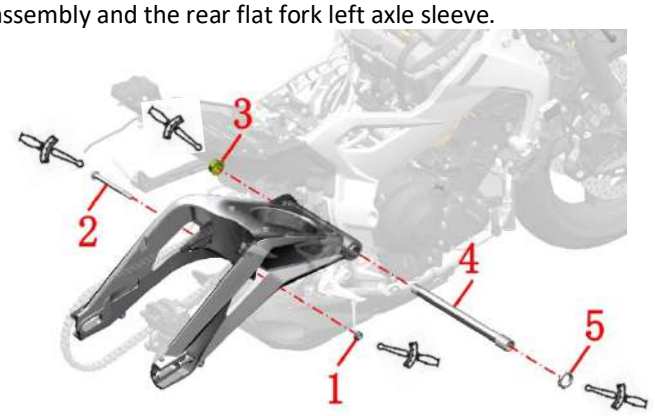
a. Use a T25 torx wrench to remove the 2 bolts (1) on the rear flat fork wear block, and remove the rear flat fork wear block. Use a T25 Torx wrench to remove the 5 bolts (2) (3) on the inner mud board and remove the inner mud board.



2. Remove the rear flat fork

a. Refer to "Replacing the Rear Wheel" to remove the rear wheel assembly.

b. Move the chain aside and remove the tubing and wheel speed sensor from the tubing clamp in the rear flat fork. One person fixes the bolt (2) with a 14# sleeve on the left side, and the other removes the nut (1) with a 17# sleeve on the left side. First, use a six-jaw tool to remove the six-groove lock nut (5), one person uses a 21# hexagon to fix the right head of the rear flat fork shaft (4), and the other person uses a 30# sleeve to remove the nut (3). One person holds the rear flat fork assembly, and the other person uses the 21# hexagon to push the rear flat fork shaft out from the left side of the body to the right, and removes the rear flat fork assembly and the rear flat fork left axle sleeve.



c. Use a 13# open-end wrench to remove the two bolts and nuts in the grooves of the rear flat fork.



3. Replace the rear flat fork

Refer to the disassembly method to assemble it back, and all standard parts must reach the standard torque value when reassembling.

When installing the rear flat fork assembly, one person uses a 17# hexagon socket to install the rear flat fork shaft back and fix it, and the torque: 7±1.5N.m (0.7±0.2 f.m, 5±1 bf.ft). One person reinserts the nut with a 30# sleeve, torque: 105±10N.m (10.7±1 kgf.m, 77±7 lbf.ft). Then use a six-jaw tool to tighten the six-groove lock nut on the right side of the rear flat fork shaft, torque: 65±5N.m (6.6±0.5 kgf.m, 48±4 lbf.ft). Note about 0.6ml thread fastening glue to be used for this nut. One person fixes the bolt with a 12# hexagon socket, and the other uses a 17# sleeve to put the nut back, and the nut torque: 85±5N.m (8.7±0.5 kgf.m, 63±4 lbf.ft).

DANGER

●Use appropriate tools to support the motorcycle to prevent accidents caused by motorcycle tipping during disassembly; It is strictly forbidden to operate alone.
●All standard parts must meet the standard torque value when reassembling.

WARNING

●When disassembling the rear wheel assembly, the rear disc brake caliper should not be higher than the disc brake oil cup, otherwise the brake will become soft or fail due to air entering the line. Due to the extremely high vacuum requirements of the brake line, it is necessary to ensure that there is enough capacity for repair and disassembly.
●The oil seal and needle roller bearing of the rear flat fork are interference press-fitting, please ensure that you have the ability to disassemble and assemble by yourself and then disassemble by hand.

Shock absorption after replacement

Note:

●Use appropriate tools to support the entire motorcycle to prevent it from tipping over and causing accidents during the disassembly process; single-person operation is strictly prohibited.
●When reassembling, ensure that all standard components are tightened to the specified torque values.
●Do not rotate the adjuster beyond its limit.

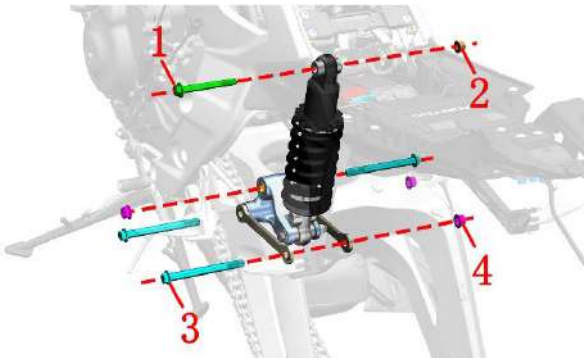
1. Dismantle the shock absorber

Refer to "Replacing the Rear Wheel" to remove the rear wheel assembly.

Refer to "Replacing the Rear Flat Fork" to remove the rear flat fork assembly.

Refer to the "Vehicle Cover Disassembly and Assembly" to remove the left and right side covers of the main frame.

a. One person fixes the head of the bolt (1) with a 14# sleeve, and one person removes the nut (2) with a 17# sleeve and takes out the bolt (1). One person uses a 14# sleeve to hold the head of the bolt (3), and one person uses a 14# sleeve to remove the nut (4), remove the bolt (3), and remove the rear shock absorber assembly. Nut (2) torque: 65±5N.m (6.6±0.5 kgf.m, 48±4 lbf.ft). Nut (4) torque: 85±5N.m (8.7±0.5 kgf.m, 63±4 lbf.ft).



b. One person uses a 14# sleeve to fix the head of the bolt, and one person uses a 14# sleeve to remove the nut, remove the bolt, and remove the rear shock absorber and triangle bar assembly. Nut torque: 65±5N.m (6.6±0.5 kgf.m, 48±4 lbf.ft)



2. Put back the shock absorber

Follow the previous steps to put the shock absorber back on. Note: All standard parts must reach the standard torque value when reassembling.

3. Rear shock absorption adjustment and inspection

●Examine

One person straightens and holds the motorcycle steady, and the other person presses the rear armrest in the back to observe whether the rear shock absorption can be smoothly recovered.

Check if the shock absorber bolts are loose

For specific steps, please refer to the user manual or the "ZT703-RR Front and Rear Shock Absorption Adjustment Video Tutorial" in the corresponding model of Zontes Mall. It will not be repeated here.

●Troubleshooting

If there is a noticeable impact sound when driving on uneven roads or when braking suddenly, the following items need to be checked:

1. Whether the shock absorber spring is broken or the elastic force is reduced;
2. Whether the hydraulic oil is insufficient or air is entered;
3. Whether there is too much hydraulic fluid;
4. Whether the spring is axially bent and rubs against the fork tube.

The following items should be checked if the shock absorption is too hard:

1. Whether there is too much hydraulic fluid;
2. Whether the fork tube is bent and deformed;
3. Whether the springs have been modified.

If the shock absorption is too soft, the following items should be checked:

Whether or not the hydraulic fluid with low viscosity has been changed.

WARNING

●When disassembling the rear wheel assembly, the rear disc brake caliper should not be higher than the disc brake oil cup, otherwise the brake will become soft or fail due to air entering the line. Due to the extremely high vacuum requirements of the brake line, it is necessary to ensure that there is enough capacity for repair and disassembly.

●The oil seals and needle roller bearings of the rear shock-absorbing triangle connecting rod and the rear shock-absorbing straight connecting rod are interference press-fitting, please ensure that you have the ability to disassemble and assemble by yourself before disassembling by hand.

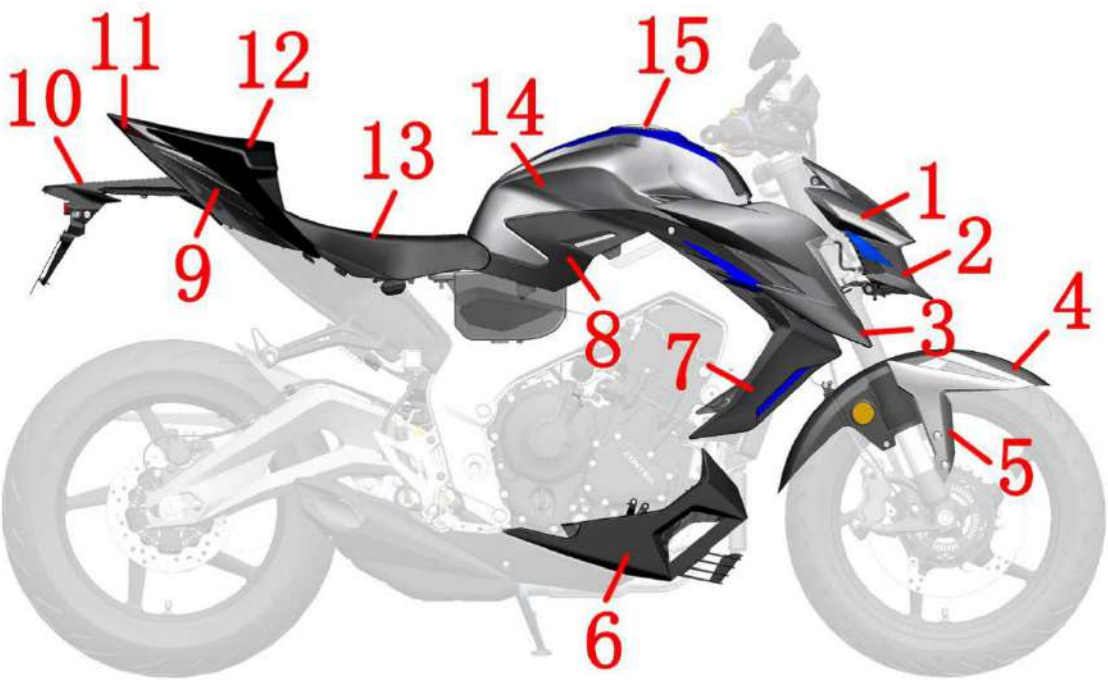
12. Disassembly and assembly of motorcycle covers

Note:

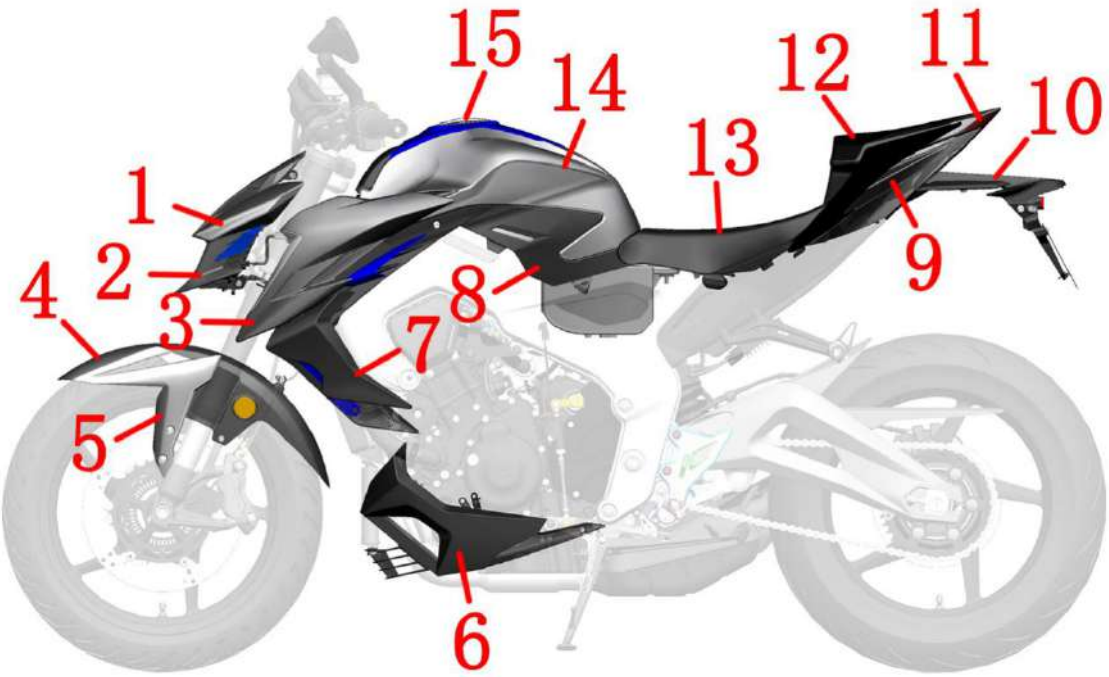
●The motorcycle must be parked on a level, stable ground or lifting platform.

●Operation is required until the engine and muffler have cooled down completely.

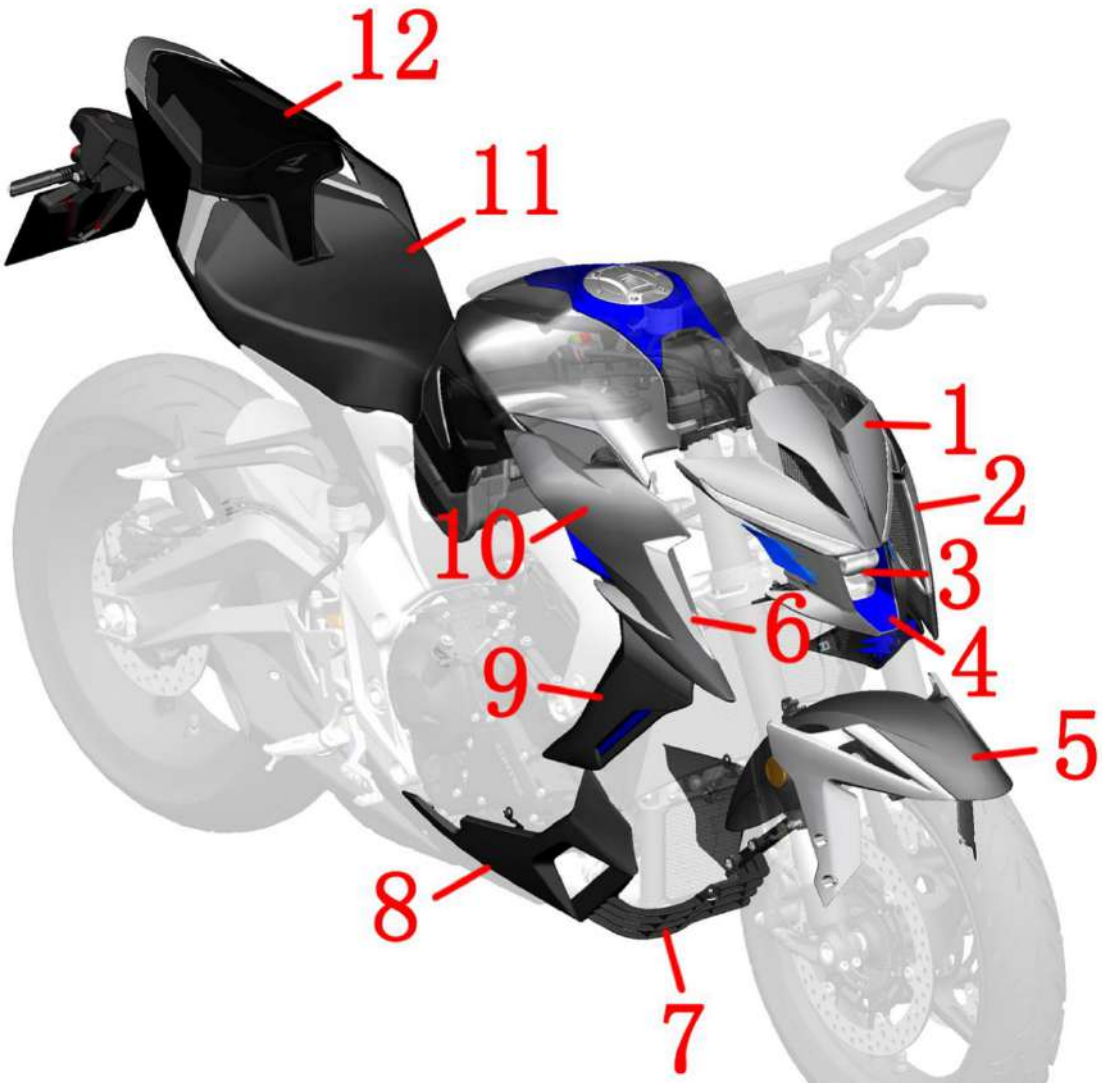
●Attention and sequence when disassembling the plastic buckle to avoid buckle breakage



1-Right front position light 2-Hood 3-Right fuel tank decorative cover 4-Middle of front fender 5-Right part of front fender
6-Lower right fairing 7-Right radiator cover 8-Rear part of right side fuel tank cover 9-Rear right position light
10-Rear mudguard 11-Brake light 12-Rear seat cushion 13-Main seat cushion 14-Fuel tank 15-Fuel tank lock



1-Left front position light 2-Hood 3-Left fuel tank decorative cover 4-Middle of front mudguard 5-Left front mudguard
6-Left lower fairing 7-Left radiator decorative cover 8-Rear part of left side fuel tank cover 9-Rear left position light
10-Rear mudguard 11-Brake light 12-Rear seat cushion 13-Main seat cushion 14-Fuel tank 15-Fuel tank lock



1-Left front position light 2-Left turn signal light 3-Front headlight 4-Headlight trim 5-Middle of front fender 6-Right turn signal light 7-Middle of lower air deflector 8-Right part of lower air deflector 9-Right radiator cover 10-Right fuel tank cover 11-Main seat cushion 12-Rear seat cushion

Note:

●When disassembling, please pay attention to the size of the control force to prevent breaking the buckle.

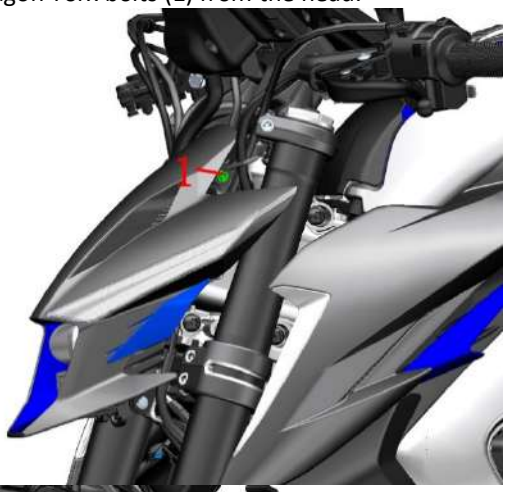
●When disassembling the cover, please remove it in strict order, and do not forcibly disassemble the cover, so as to prevent irreparable damage to the corresponding cover.

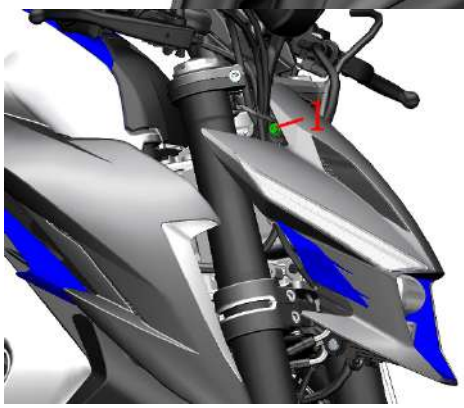
●When pulling out the plug, please control the size of the force and the method of disassembly, and do not forcibly pull the plug to prevent damage to the plug, which may lead to poor contact of the wiring harness joint and affect the function of each part.

●When installing the wiring harness plug, please check whether the wiring harness ejector pin in the wiring harness male plug is deformed or misaligned, so as to prevent the wiring harness plug from damaging the wiring harness ejector pin in the wiring harness male plug during installation, and then affect the function of each part.

Removal of the hood

a. Use a T30 Torx wrench or a #8 socket to remove the 2 M6×16 hexagon Torx bolts (1) from the head.

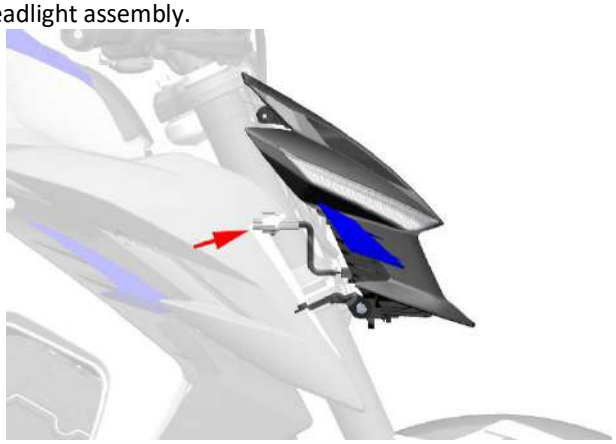




b. Refer to the 'Front Fork Assembly' to remove the lower triple clamp cover plate, and use a T25 Torx wrench to remove the two M6×16 bolts (2).

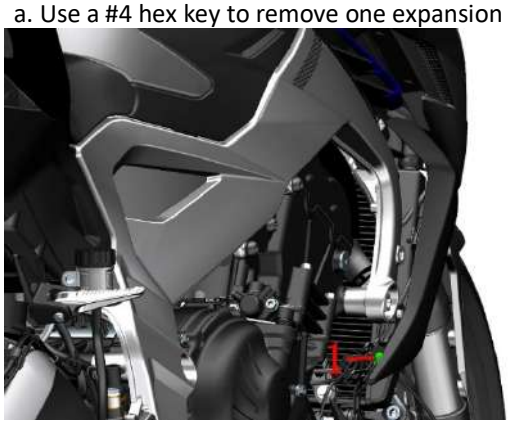


c. Disconnect the headlight plug and remove the headlight assembly.



Disassembly of the radiator cover

a. Use a #4 hex key to remove one expansion bolt (1)

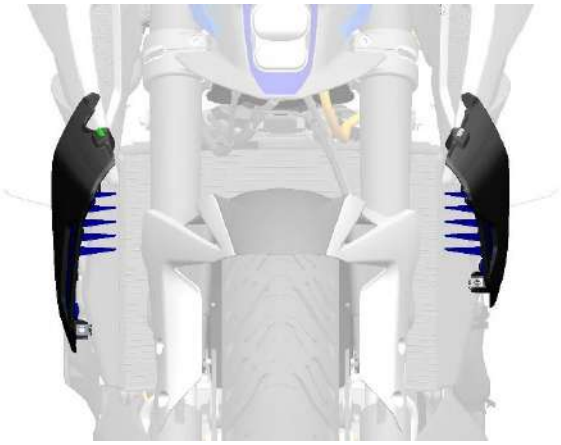


b. Use a T25 Torx wrench to remove the 2 M6×12 bolts (2).

Note: When reinstalling bolt (a), the right fuel tank decorative cover must be removed.

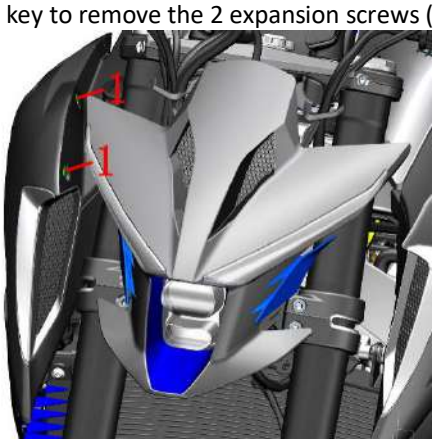


c. Remove the left and right radiator tank trim cover assemblies.



Removal of the fuel tank trim cover

a. Use a #4 hex key to remove the 2 expansion screws (1).

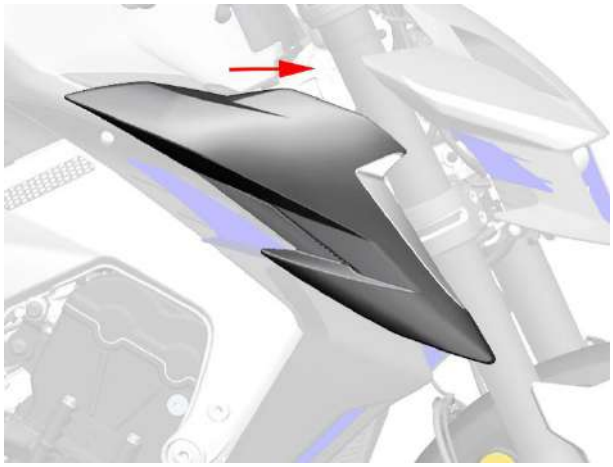


b. Use a #4 hex key to remove one expansion bolt (1). Use a T25 Torx wrench to remove one M6×12 bolt (2).



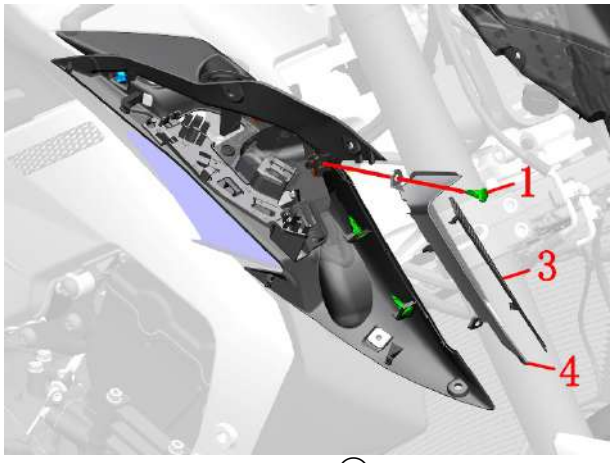
c. Gently tap the fuel tank trim cover in the direction of the arrow to pull out the fuel tank trim cover assembly. Disconnect the connector of the right turn signal and remove the right fuel tank trim cover assembly. The left fuel tank trim cover assembly is removed in the same way.



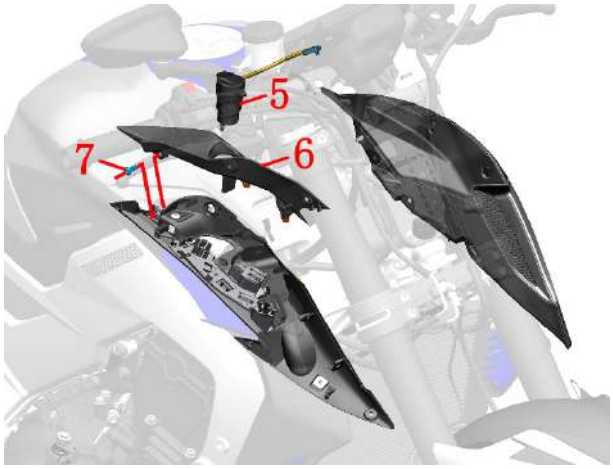


d. The removal method for the left fuel tank decorative cover assembly refers to the removal procedure of the right decorative cover assembly mentioned above.

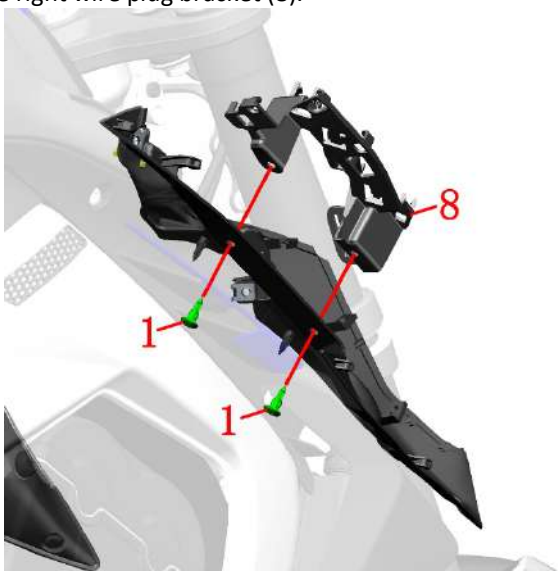
e. Use a #4 Allen wrench to remove the 3 expansion bolts (1), then take off the central part of the right fuel tank rear cover (4) and the decorative grille cover (3). The disassembly method for the left-side trim is the same.



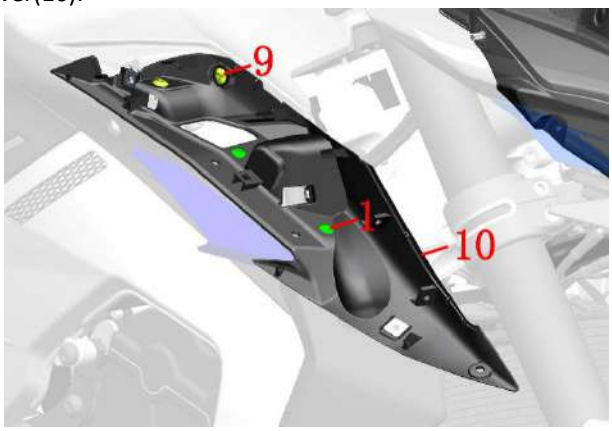
f. Remove the charging dock (⑤), use a #5 hex key to unscrew one M6×16 bolt (⑦), and remove the upper part of the rear cover of the right fuel tank trim (⑥). The removal method for the upper part of the left fuel tank trim rear cover is the same.



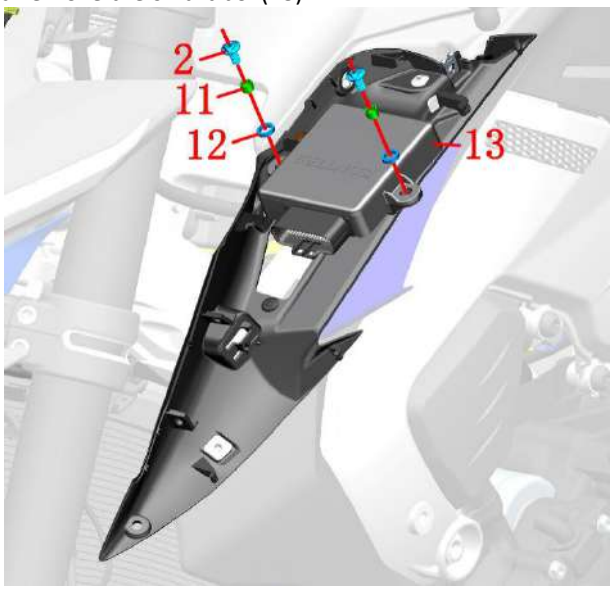
g. Remove all connectors from the fixed online plug bracket (8), use a #4 hex key to remove the 2 expansion bolts (1), and after organizing the attached wiring harness, remove the right wire plug bracket (8).



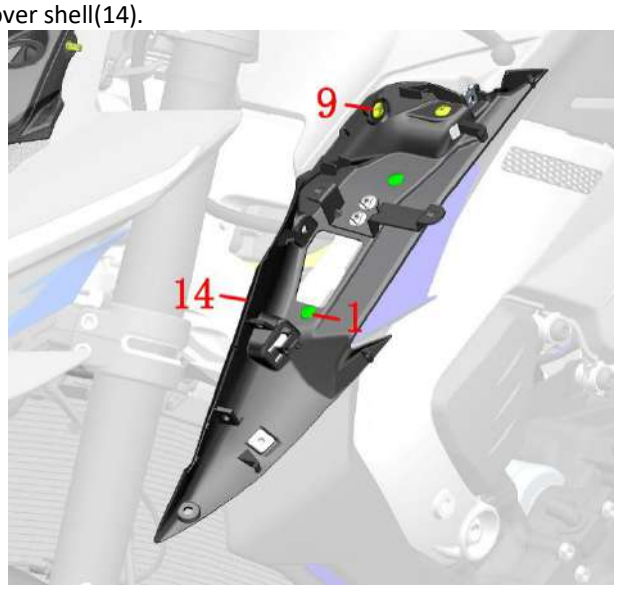
h. Use a T25 Torx wrench to remove the 2 bolts(9), use a #4 Allen wrench to remove the 2 expansion screws(1), and then remove the lower part of the right fuel tank decorative cover(10).



i. Pull out the connector of the smart box(13) and use a T25 Torx wrench to remove the two M6×12 bolts(2), then take off the two bushings(11) and two buffer rubbers(12), and remove the smart box(13).

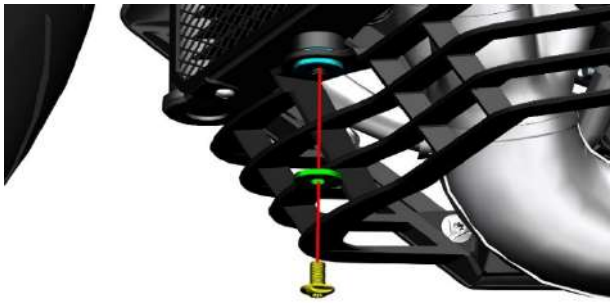


j. Use a T25 Torx wrench to remove the 2 bolts(9), use a #4 Allen wrench to remove the 2 expansion bolts(1), and then remove the lower part of the left fuel tank decorative cover shell(14).

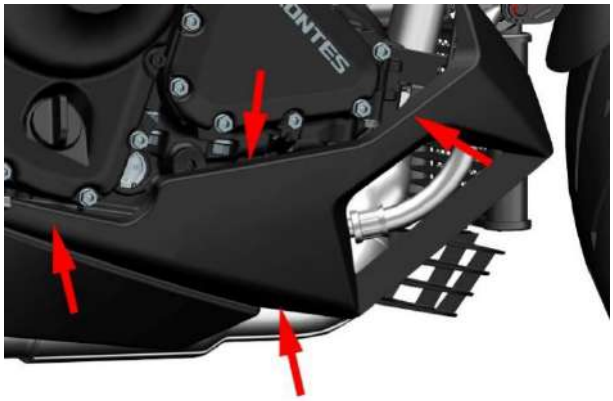


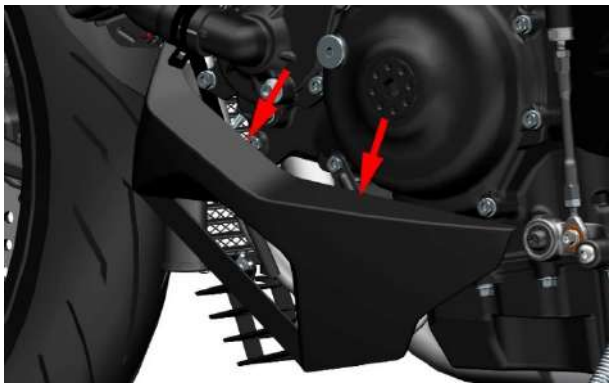
Disassembly of the lower cowling assembly

a. Use a T25 Torx wrench to remove an M6 internal Torx bolt, then take out the washer. Note that the cushioning rubber is still in the middle upper part of the lower shroud, so be careful not to lose it.

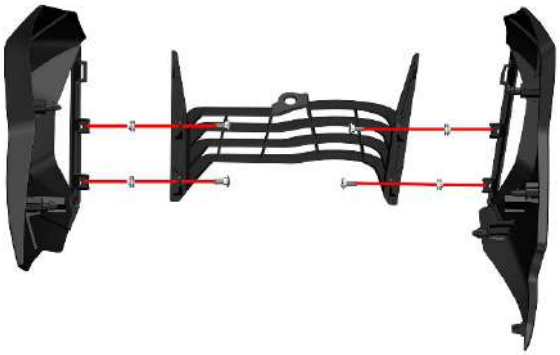


b. Hold both ends of the left and right deflector covers with your hands, and pull the clip out from under the side cover rubber. Be careful, the side cover rubber may remain on the deflector cover bracket or may come out with the clip. Make sure to keep the side cover rubber and do not lose it. (The detailed disassembly process can be referred to in the official website's video for changing the engine oil for this vehicle model.) The illustration shows the clip positions. Note that there is another clip at the rear of the lower right deflector cover.



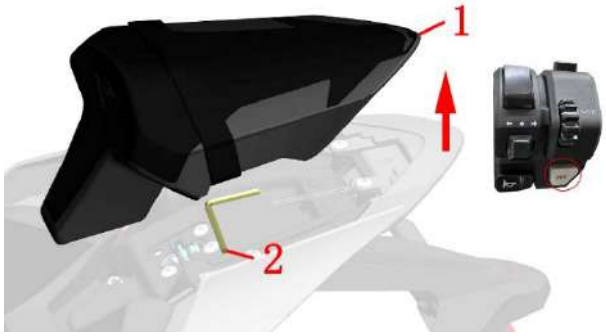


c. Use a T25 Torx wrench to remove the 4 M6 shoulder bolts, which will allow the left, middle, and right parts of the lower deflector to separate. At this time, there are two clamps on both the left and right deflectors, so be sure to keep them safe.

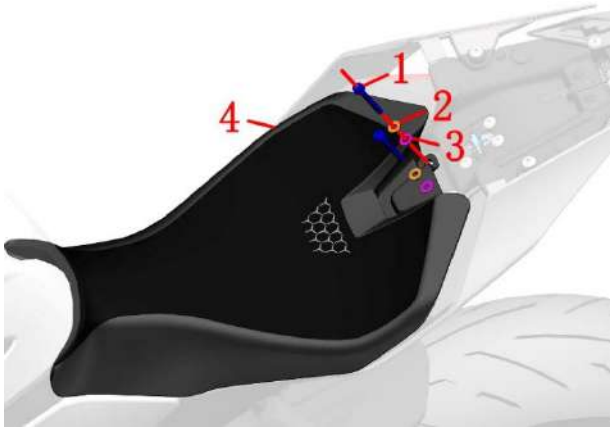


Removal of the seat cushion

a. Press the "SEAT" button on the motorcycle's cushion lock switch to open the cushion lock. Then lift the sub-cushion (1) upwards and take out the 5# hexagon (2) on the back.



b. and use the 5# hexagon that has just been taken out to remove the 2 fixing screws (1), 2 flanging bushings (2) and 2 flanging bushing buffer glues (3) that fix the main cushion, gently push back the main cushion (4) with your hand, and remove the main cushion (4); For more information, please watch the 703RR saddle removal video.

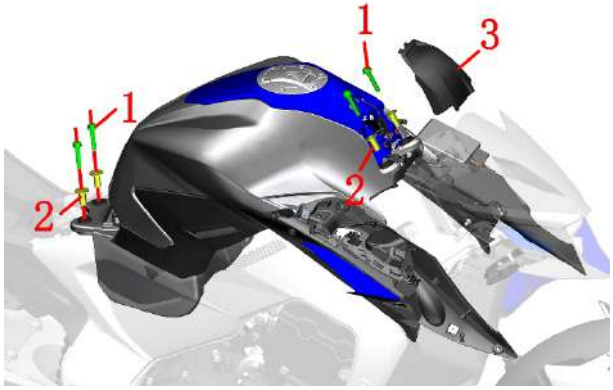


Disassembly of the fuel tank

a. Refer to the 'Removal of Fuel Tank Covers' for disassembling and assembling the covers. Remove the left and right fuel tank covers, specifically the upper part of the rear shell of the fuel tank cover. Then, using a T25 Torx wrench, remove the four M5×13 shoulder bolts at the bottom of the rear shell of the left and right fuel tank covers and the two M5×13 shoulder bolts at the front of the fuel tank lid plate. Standard Torque：6-8N·m.



b. Referring to the removal procedure for the cover components in 'Seat Cushion Removal,' remove the main seat cushion. Using a #12 socket, remove the 2 M8×35 bolts(1) securing the rear side of the fuel tank, take out the bushings(2), and directly pry off the front cover plate of the fuel tank(3) by hand. Then, using a #12 socket, remove the 2 M8×35 bolts(1) securing the front side of the fuel tank, and remove the bushings(2). Standard Torque：20N·m.

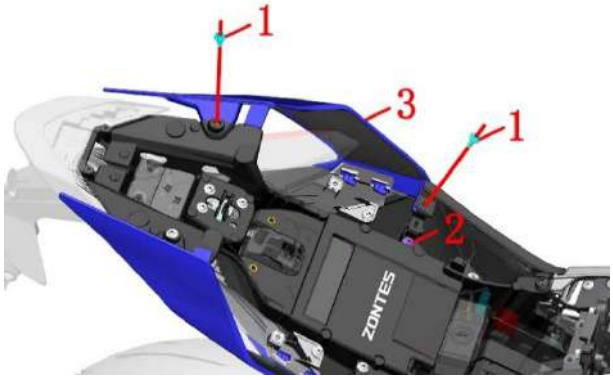


c. Lift the fuel tank, disconnect the high-pressure fuel pipe, and disconnect the fuel tank locking connector, then the fuel tank assembly can be removed.



Removal of the left and right side skirts

a. Use a T25 Torx wrench to remove the two bolts(1) securing the left rear skirt (it is necessary to loosen one bolt(2) of the seat bracket to facilitate removing the rear skirt); then remove the left part of the rear skirt(3); the right part of the rear skirt is removed in the same way.



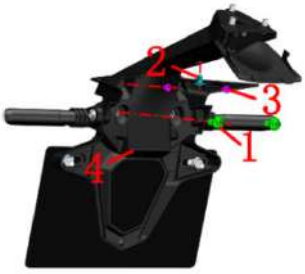
Removal of the rear position light

a. Use a T25 Torx wrench to remove the six M6×14 Torx shoulder bolts (1) securing the rear brake light and the left and right position lights; then remove the rear brake light (2) and the left and right position lights (3).

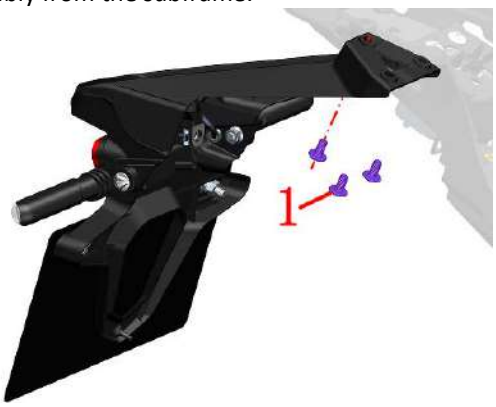


Removal of the rear fender

a. Use a T25 Torx wrench to remove 2 M6 Torx shoulder bolts (1) and 1 M6×8 bolt (2); Use the cross batch to remove the 2 self-tapping nails (3) and remove the rear fender bottom cover (4) according to the video method.



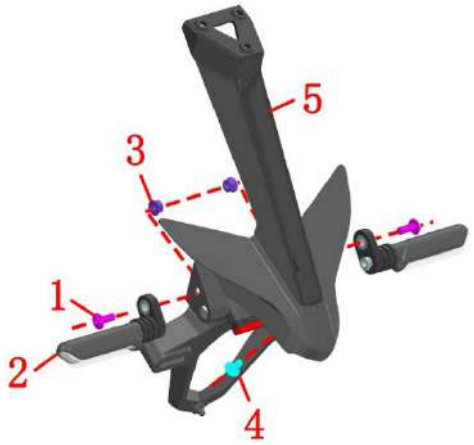
b. Use a T25 torx wrench to remove the 3 inner torx M6 bolts (1) that fix the subframe, and then remove the rear fender assembly from the subframe.



c. Use a T25 Torx wrench to remove 2 M6 bolts (1), then remove 2 M6 nuts (2), and then separate the rear license plate (3) from the rear fender assembly (4).



d.Use a T25 torx wrench to remove the two M6×16 inner torx shaft shoulder bolts (1) on the left and right sides, remove the left and right turn signals (2), then remove the two M6 nuts (3), and use the T25 torx wrench to remove one M6 bolt (4) that fixes the rear fender bracket (5), and then take out the rear fender bracket (5).



e. First, use a Phillips screwdriver to remove one non-standard Phillips screw (1) that fixes the license plate light, then remove the license plate light (2), remove the rear reflector (3) from the rear fender assembly, and then take out two splint nuts (4); For more information, please watch the video of the 703RR rear fender assembly disassembly.

