Two-wheel Motorcycle RKV125

Instruction and Maintenance Manual

KEEWAY MOTORCYCLE CO., LTD.

Contents

Contents. 2
Preface 5
Preparatory Data 6
Inspection/Adjustment 44
Inspection and Maintenance of Electric System 58
I Battery/Charging System 60
1.1 Preparatory Data 60
1.2 Fault Diagnosis 61
1.3 Storage Battery 62
1.4 Charging System 63
1.5 Voltage-current Regulator 63
1.6 Magneto Charging Coil 64
1.7 Magneto Removal 65
II Ignition System 68
2.1 Preparatory Data 68
2.2 Fault Diagnosis 69
2.3 Ignition System Inspection 70
2.4 CDI Assembly 71
2.5 Ignition Coil 72
2.6 Trigger 73
III Starting System 75
3.1 Preparatory Data 75
3.2 Fault Diagnosis 76
3.3 Starting Motor 76
3.4 Starting Relay 78
IV Bulbs/Switches/Instruments 80
4.1 Preparatory Data 80
4.2 Fault Diagnosis 80
4.3 Headlamp Bulb Replacement 81
4.4 Front Turn Signal Lamp Bulb Replacement 81
4.5 Tail Lamp Bulb Replacement 82
4.6 Instrument 82
4.7 Ignition Switch and Steering Lock 83
4.8 Electric horn 83
4.9 Handle switch 84
Chassis Inspection and Maintenance 85
V Braking System 88
5.1 Maintenance Instruction 88
5.2 Fault Diagnosis 89
5.3 Front Hydraulic Brake 89
5.4 Rear Hydraulic Brake 91
VI Motorcycle Exterior 94

VII Front Wheel/Front Suspension 98
7.1 Preparatory Data 98
7.2 Fault Diagnosis 99
7.3 Front Wheel 99
7.4 Steering Handle 101
7.5 Front Fork 102
VIII Rear Wheel/Rear Suspension 107
8.1 Preparatory Data 107
8.2 Fault Diagnosis 107
8.3 Rear Wheel 108
8.4 Rear Shock Absorber/Rear Swing Arm 110
8.5 Chain Drive Assembly 111
IX Fuel Tank/Seat Cushion 116
9.1 Preparatory Data 116
9.2 Fault Diagnosis 116
9.3 Fuel Tank/Seat Cushion 117
Engine Inspection and Maintenance 118
X Lubricating System 120
10.1 Preparatory Data 120
10.2 Fault Diagnosis 120
10.3 Oil Pump 121
XI Carburetor 125
11.1 Preparatory Data 125
11.2 Fault Diagnosis 125
11.3 Removal of Carburetor 126
11.4 Installation 127
XII Cylinder Head/Valve 129
12.1 Preparatory Data 129
12.2 Fault Diagnosis 130
12.3 Cylinder Head 130
12.4 Valve Inspection 132
12.5 Valve Guide Replacement 134
12.6 Valve Race Fixing and Adjustment 135
12.7 Cylinder Head Installation 136
XIII Cylinder Block and Piston 138
13.1 Service Data 138
13.2 Fault Diagnosis 139
13.3 Cylinder Block 139
13.4 Piston 140
13.5 Install Cylinder 143
XIV Clutch 145
14.1 Preparatory Data 145
14.2 Fault Diagnosis 145
14.3 Clutch 146

14.4 Disassemble Main Shaft and Countershaft 148
XV Reduction Gear 150
15.1 Service Data 151
15.2 Fault Diagnosis 151
15.3 Gearshift Mechanism 151
15.4 Installation 154
XVI Crankcase 155
16.1 Preparatory Data 155
16.2 Fault Diagnosis 156
16.3 Crankcase 156
16.4 Crankshaft Connecting Rod Assembly 158
Exhaust System Inspection and Maintenance 160
XVII Emission Control System 161
17.1 Emission Control System Guarantee 161
17.2 Periodical Maintenance Instructions 161
17.3 Emission Control System Mechanical Functions 162
17.4 Solutions to Idle Exhaust Exceeding Specified Value (4-stroke) 163

Preface

The Instruction and Maintenance Manual contains an introductory description of maintenance means on RKV125 motorcycle.

Preparatory data include attentions that shall be paid on all the maintenance operations in the Instruction and Maintenance Manual. Please read the manual carefully before operation.

Check and adjustment contains main aspects for inspection and adjustment, safety of the vehicle, performance and maintenance of each component. This shall be started from the time of periodical inspection.

The parts following Chapter One demonstrate the main point of disassembly, installation and check of electrics parts, finished vehicle, engine and other components.

System diagrams, breakdown drawings, fault diagnosis, maintenance and other explanatory contents are presented before each part.

Note:

For any pattern and structure change of the motorcycle, or any difference between the product and pictures, drawings and instructions in the manual, the product shall prevail. The product is subject to changes without prior personal notice.

KEEWAY MOTORCYCLE CO., LTD.

Preparatory Data

General Safety Maintenance Rules

Specification Table Fault Diagnosis

General Safety

Carbon monoxide (CO)

When it is necessary to start the engine, please make sure the operation area is well ventilated. Never run the engine in an enclosed place.

Attention

Gas exhausted from the motorcycle contains harmful carbon monoxide, which may lead to loss of consciousness and death.

It is necessary to run the engine in an open area. To run the engine in an enclosed site, ventilation system shall be used.

Gasoline

Operate in well-ventilated site. No fire or smoking is allowed in operation site and gasoline storage place.

Storage Battery

Battery shall be away from spark, fire and smoking places since it may emit explosive gases. Keep it in well-ventilated condition while charging.

Battery has sulphuric acid (electrolyte) in it, which will cause burns when it touches skin or eyes. Please wear protective clothing and mask.

-- If the electrolyte splashes to skin, please flush it with water immediately.

-- If the electrolyte gets into eyes, flush immediately with water for over 15 minutes and call physician.

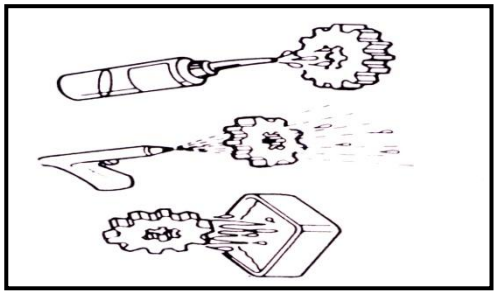
Electrolyte is poisonous. If swallow by mistake, please drink plenty of water, milk and milk of magnesia (a kind of laxative antacid) or vegetable oil and call physician. Keep it out of reach of Children.

Maintenance Rules

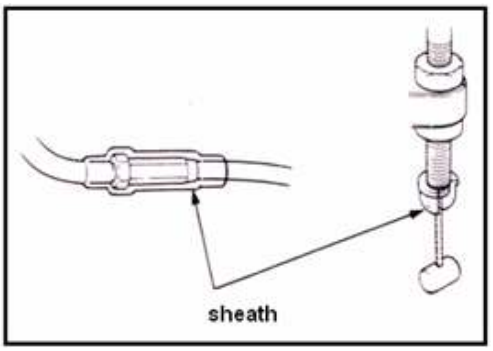
While repairing and servicing, use tools of metric system as possible. Incorrect tools may damage the motorcycle.

Before taking down or opening protecting plate for repair work, please clean the dirt on the external surfaces of components or combination parts and prevent the dirt from falling into engine, chassis or braking system

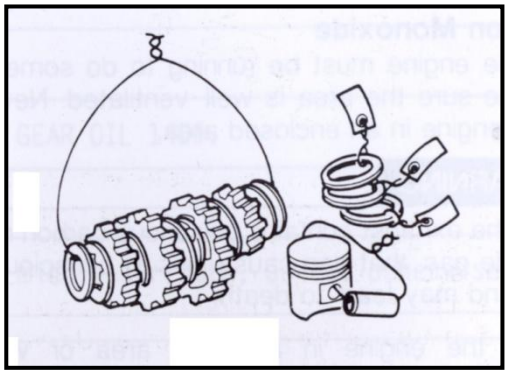
After disassembly and before measuring friction, please clean the components and blow them with compressed air.



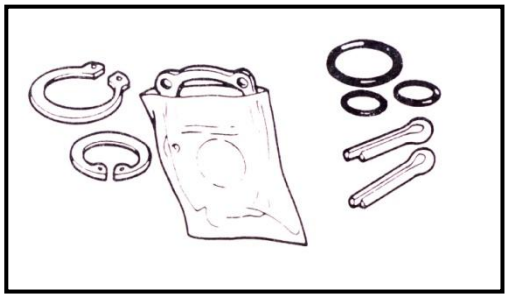
Plastic parts may age and deteriorate, which are apt to be damaged by solvent or oil. Check before re-installation and replace if necessary.



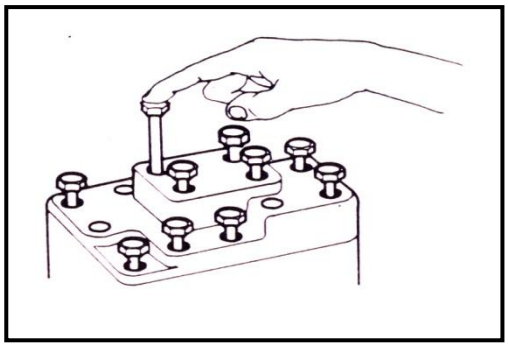
To loose component with many assembling units, it shall start from external to internal and loosen smaller assemblies first. The complicated assemblies such as transmission case shall be put in proper assembling order for easy assembly in the future.



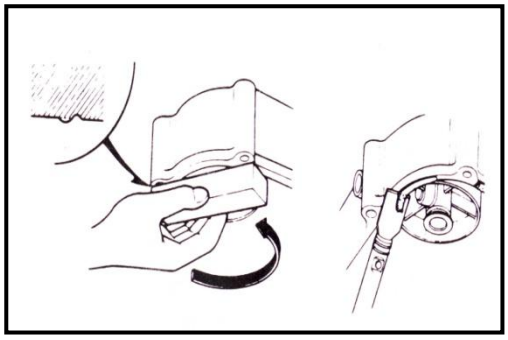
Pay special attention to the key fitting position before disassembly. The components that are not used any more shall be replaced on time before disassembly.



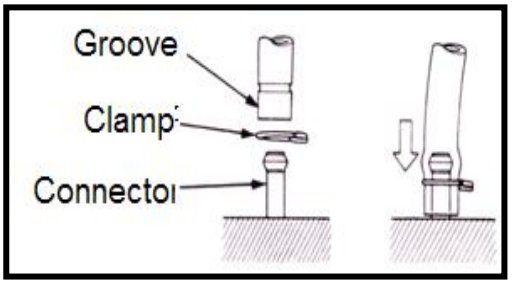
Length of bolts and screws are different for assembly components and protecting plates. They shall be installed at correct positions. If confused, just put the bolt in the hole and see if it matches.



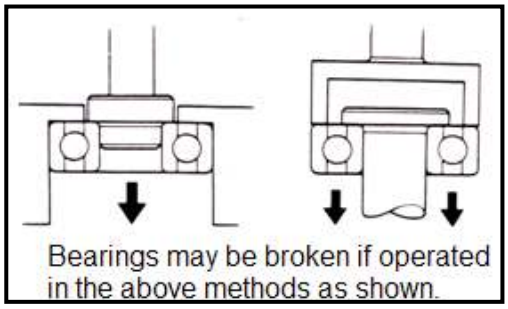
Fill lubricating grease into the groove during oil seal installation. Check if the oil seal is smooth and if there is any damage to it.



Installation of rubber hose (fuel, vacuum, or coolant): insert its end into bottom of connector so that there is enough room for the hose clamp to grip the connector. Install the rubber or plastic dust cover back to its originally designed position



Disassembly of ball bearing: use a tool to push against one or two (internal and external) bearing races. If the force works only on one bearing race (whatever internal or external), it may be damaged when the bearing is disassembled, in which case, it must be replaced



Slack cable implies potential safety hazard on electrics. Check the next cable when the cable is clamped to ensure electric safety;

Cable clamp shall not be bent towards solder joint;

Tie the cable at appointed position;

Do not lay the cable at the end of frame or at the closed angle;

Do not lay the cable at the end of a bolt or screw;

Wiring of cable shall be away from heat source or places where cable may be clipped while moving;

Prevent the cable from being pulled too tightly or slacking too much when the cable is wired along the handle pipe. The cable shall not be affected by any neighbored components at any turning position;

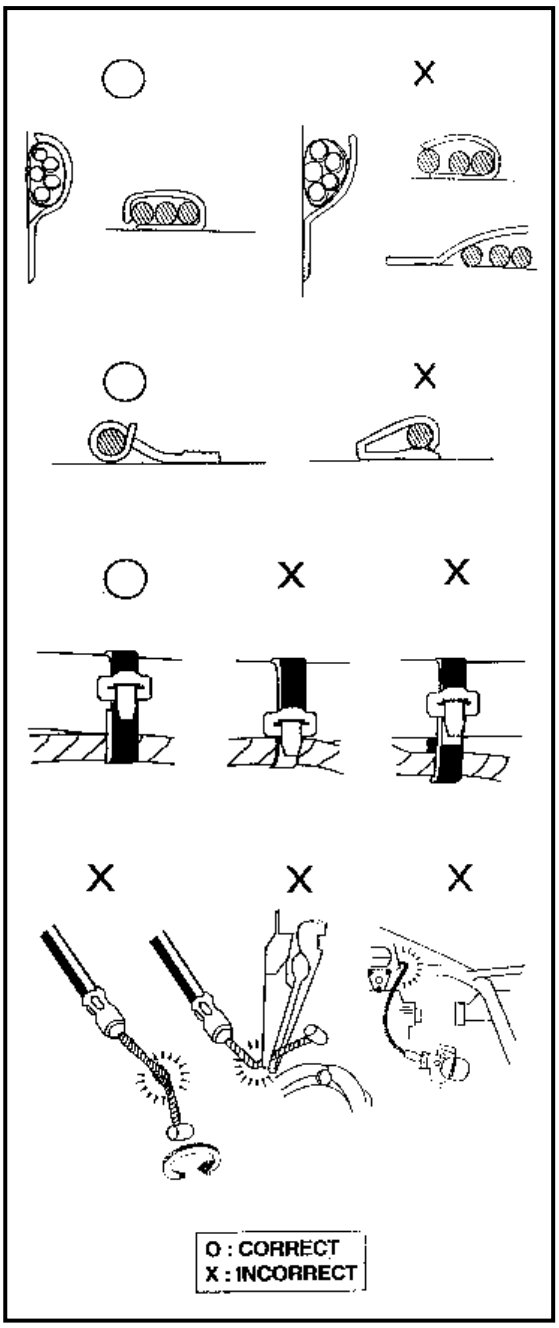
The cable shall be wired smoothly and shall not be knotted or twisted;

Check if the sheath of connector is damaged and if the connector is over stretched before butt joint connection;

If cable runs around the closed angle or the corner, please protect it with tape or hose;

Tie the cable with adhesive tape reliably when it is repaired;

The controlling cable shall not be bent or twisted. Broken controlling cable will result in non-flexible control.



Identification of motorcycle

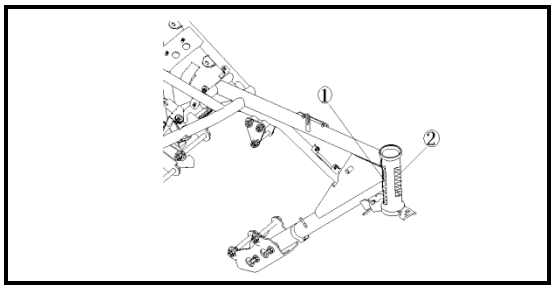


Figure 1-1

1. Frame number ① labeled as: *LBBK6910??????????*, as shown in Figure 1-1.

2. Frame nameplate is riveted at frame Position ②, as shown in Figure 1-1. Words on the nameplate are as described in Figure 1-2.

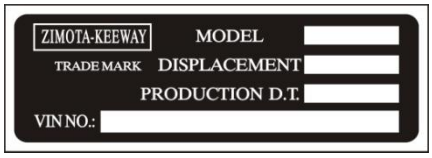


Figure 1-2

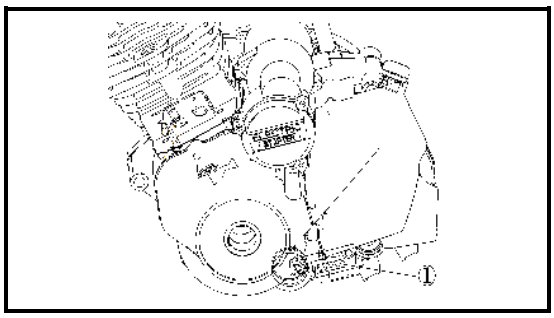


Figure 1-3

3. Serial number of engine ① is marked on the housing of crankcase, as shown in Figure 1-3.

Important Notice

1. Please use spare parts manufactured by KEEWAY Motorcycle Co., Ltd. Components that cannot comply with the designed specifications of KEEWAY Motorcycle Co., Ltd. may result in damage of the engine.
2. Only metric tools can be used for maintenance work. Metric bolts, nuts and screws cannot be exchanged with inch fasteners.
3. While re-assembling, new washers, O rings, cotter pins and locking plates shall be renewed.
4. While tightening bolt or nut, please first fasten bolts of large-diameter or internal bolts; and then tighten gradually to the specified torque in diagonal order. Those with special requirements are excluded.
5. Clean the removed components with cleaning liquid. Lubricate all the sliding surfaces before assembly.
6. After assembly, check that all the components are correctly installed and operated.
7. Remove dirt and oil before measurement; apply recommended lubricant at lubricating positions at assembly.
8. When the engine and transmission system are disassembled/assembled and to be stored for a long time, please apply some lubricant on the surface of the components to avoid rust and dust deposition.

Special Tools

Special tools are known as specially designed tools used at particular places for assembly or disassembly of certain components on a motorcycle. Suitable special tools are essential for complete and accurate adjusting and assembling work. Use of special tools can realize safe, reliable and quick disassembly or assembly of components, as well as working efficiency improvement and labor saving.

1. Tools used for engine overhaul

Specially designed tools are required for smooth assembly and disassembly of some components on the engine. Special tools and pictures for engine component assembly and disassembly are listed in Table 1-1 and Table 1-2.

Table 1-1

Name	Remarks
Special socket wrench	Used for disassembly/assembly of flywheel bolt, Figure 1-3
Clutch holder	Figure 1-4
Flywheel extractor	Figure 1-5
Feeler gauge	Figure 1-6
Bearing puller	Figure 1-7
Bearing installer	Figure 1-8
Oil seal remover	Figure 1-9
Puller handle	Figure 1-10
Piston pin puller	Figure 1-11
Piston ring pliers	Figure 1-12
Spark plug socket wrench	Figure 1-13
Clutch thickness measurement	Figure 1-14
Cylinder bore tester	Figure 1-15
Dial gauge	Measuring inner diameter of piston pin, Figure 1-16
Dial gauge, V-block	Measuring valve stem deflection, Figure 1-17
Micrometer	Measuring OD of valve stem, Figure 1-18
Valve guide remover	Figure 1-19
Valve guide installer	Figure 1-20
Valve clearance adjuster	Figure 1-21
Valve spring remover	Figure 1-22
Valve guide reamer	Figure 1-23
Crankcase remover	Figure 1-24

Continued Table 1-2

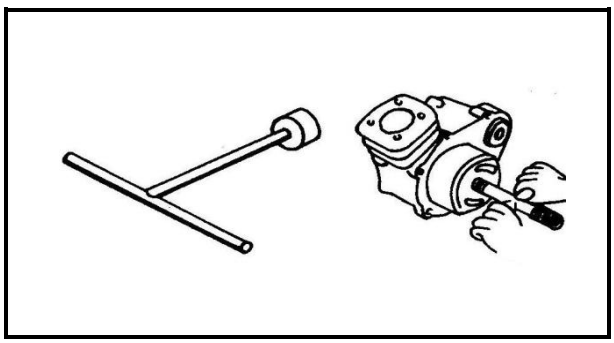


Figure 1-3

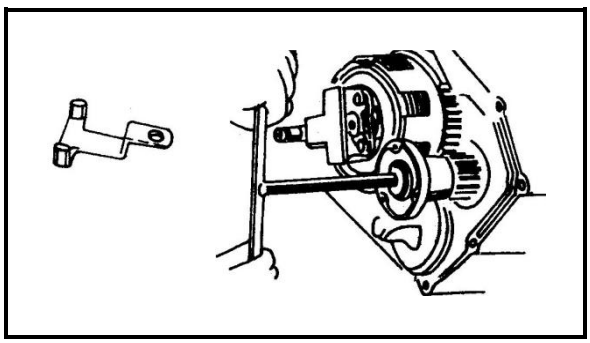


Figure 1-4

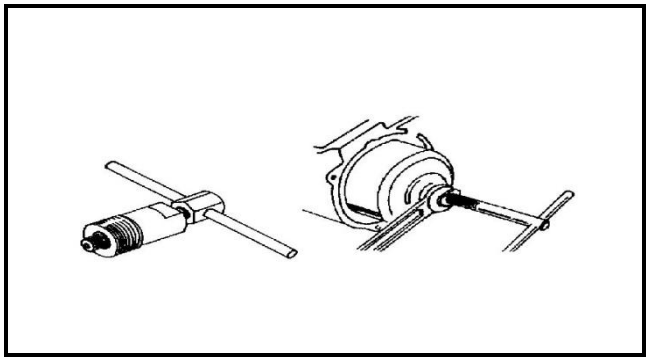


Figure 1-5

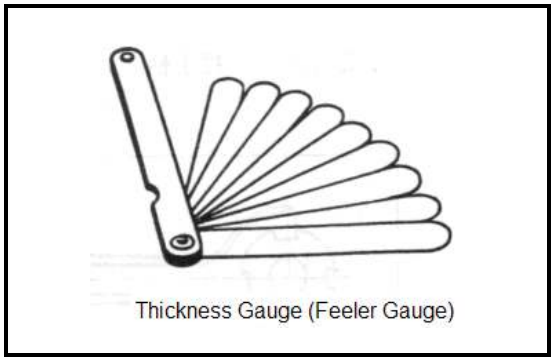


Figure 1-6

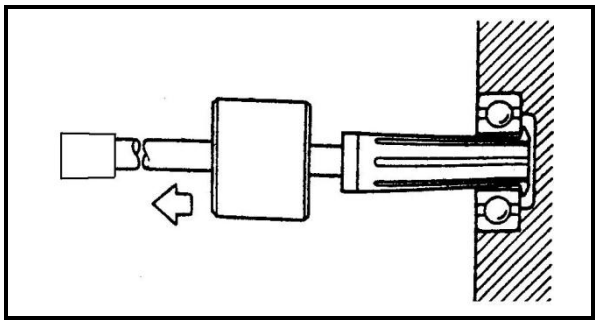


Figure 1-7

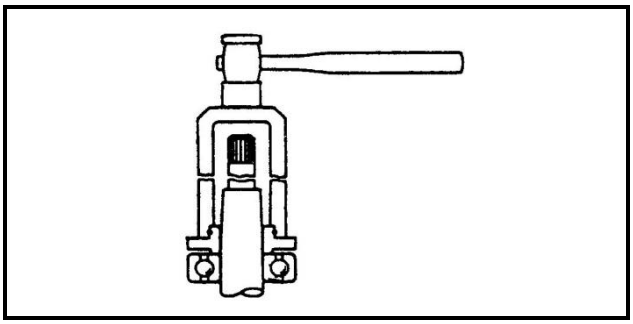


Figure 1-8

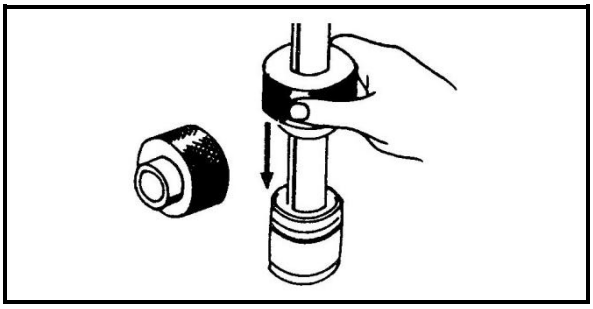


Figure 1-9

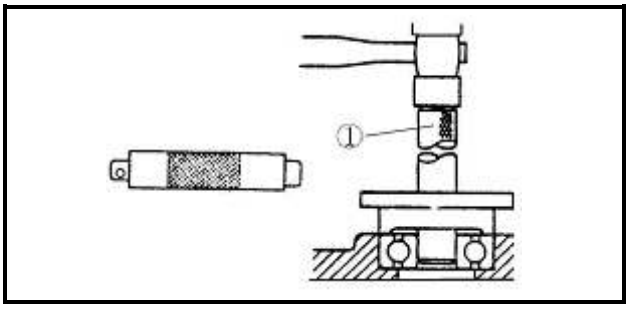


Figure 1-10

① Handle

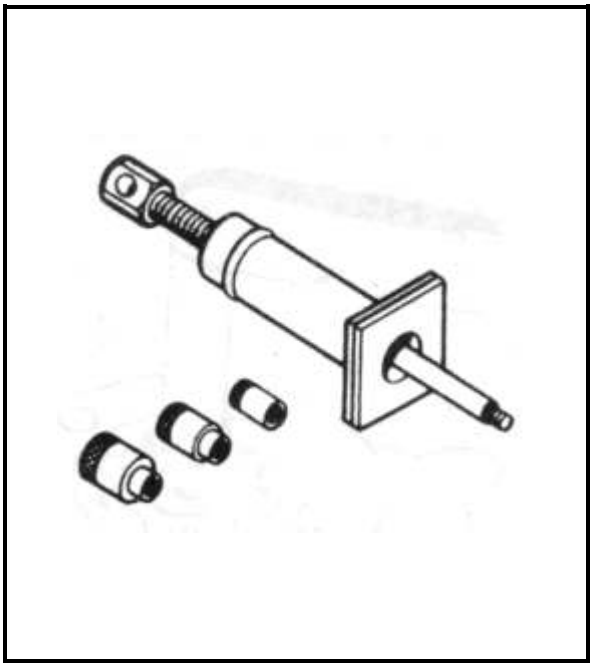


Figure 1-11

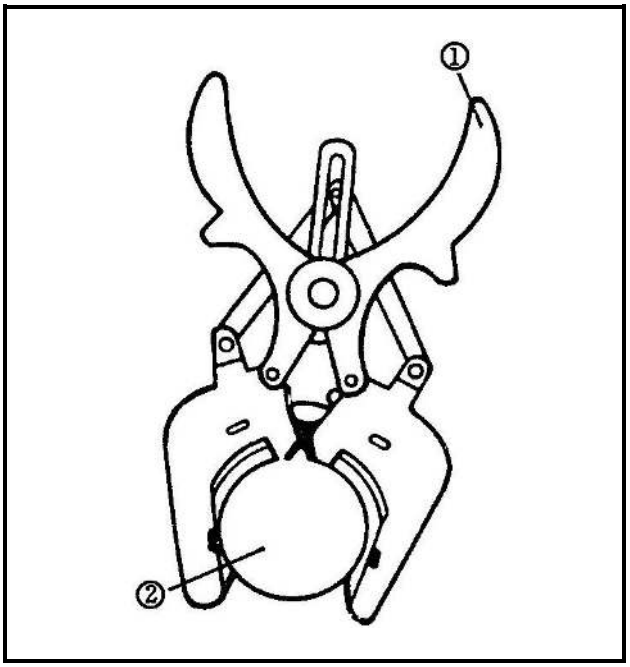


Figure 1-12 ① Pliers ② Piston

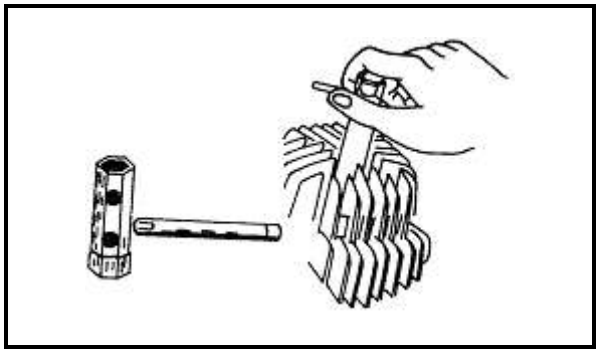


Figure 1-13

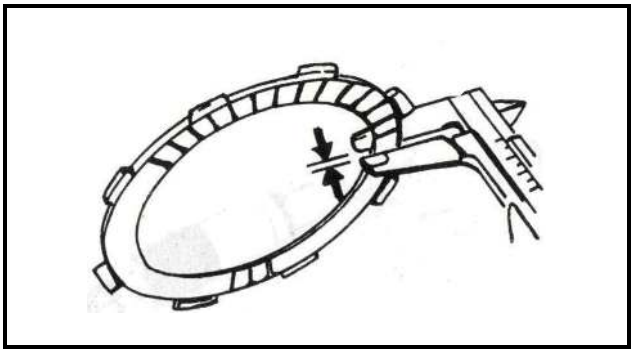


Figure 1-14

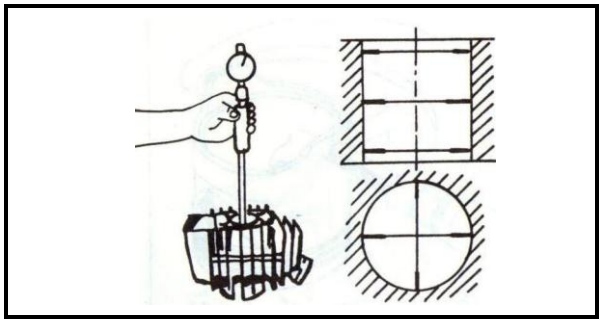


Figure 1-15

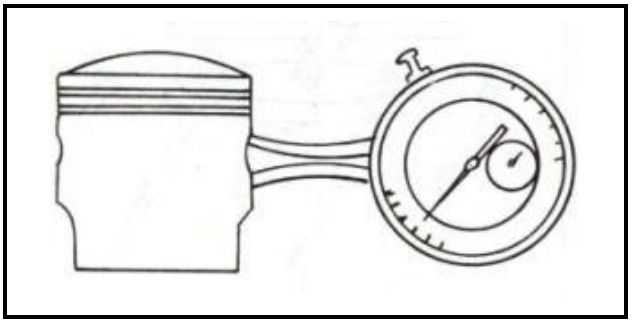


Figure 1-16

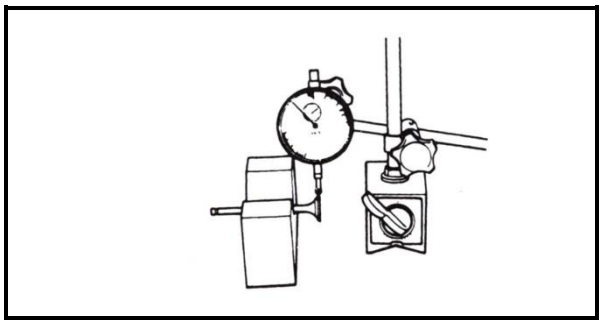


Figure 1-17

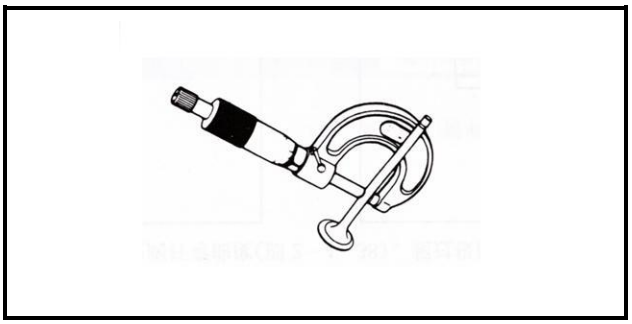


Figure 1-18

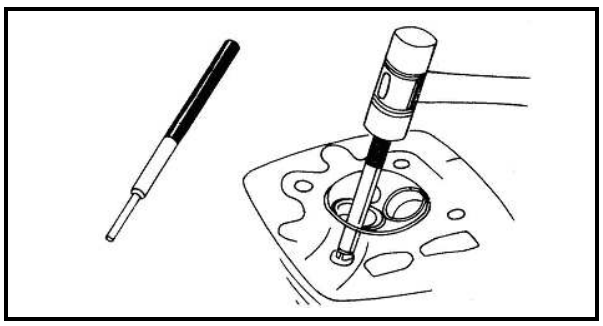


Figure 1-19

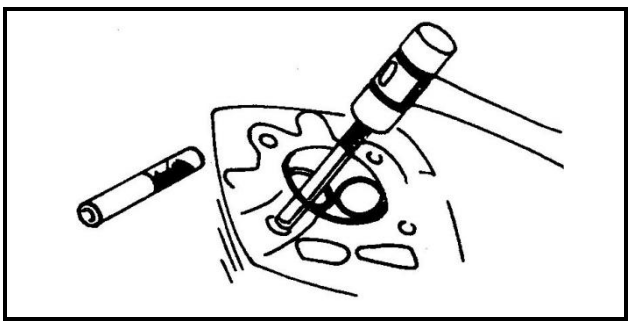


Figure 1-20

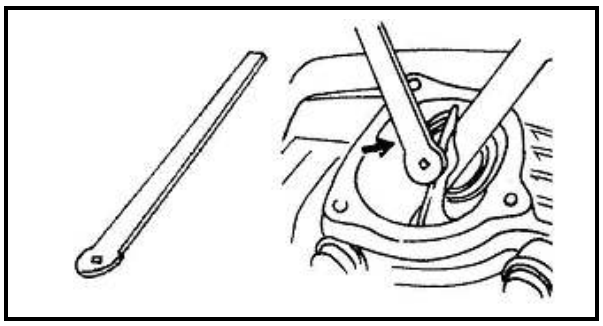


Figure 1-21

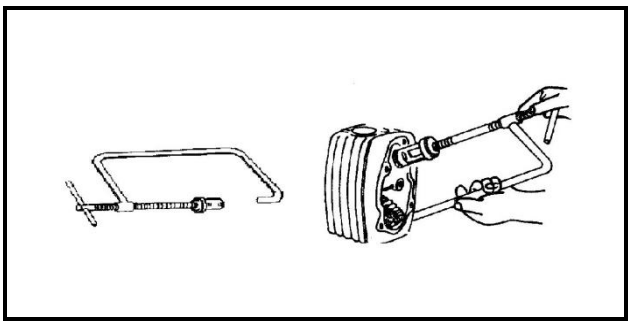


Figure 1-22

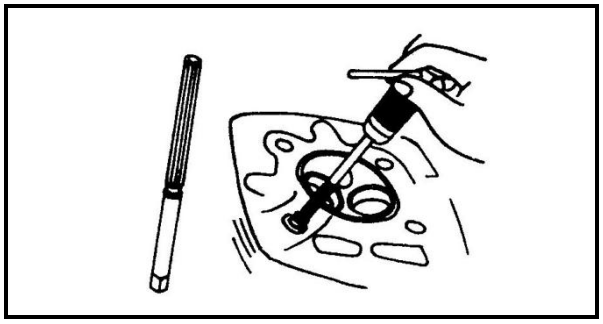


Figure 1-23

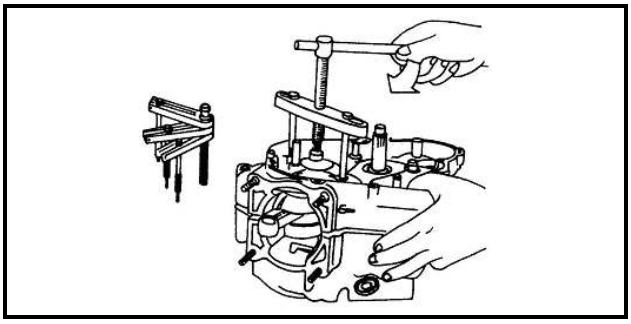


Figure 1-24

2. Tools used for chassis overhaul

Common and special tools, as well as their pictures for chassis component assembly and disassembly are listed in Table 1-25 and Table 1-26.

Table 1-25

Name	Remarks
Torque wrench	Figure 1-27
Allen wrench	Figure 1-28
Socket wrench	Figure 1-29
Micrometer	Figure 1-30
Magnetic stand, V-block	Figure 1-31
Dial gauge	Figure 1-32
Vernier caliper	Figure 1-33
Spring clamp ring pliers	Figure 1-34
Hammer screwdriver	Figure 1-35
Front fork oil seal installer	Figure 1-36
Front fork seal driver	Figure 1-37
Steering nut wrench	Figure 1-38

（1）General tools used for chassis overhaul

Continued Table 1-26

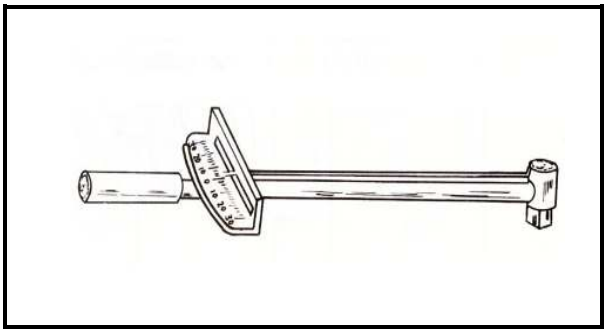


Figure 1-27

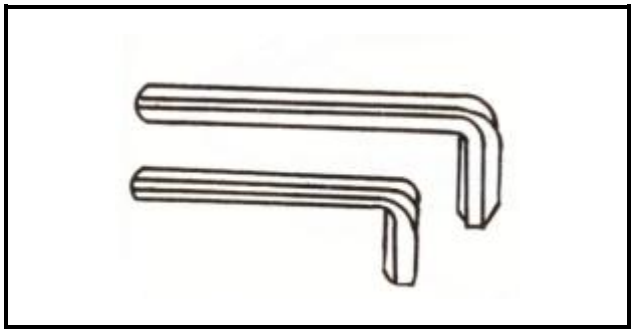


Figure 1-28

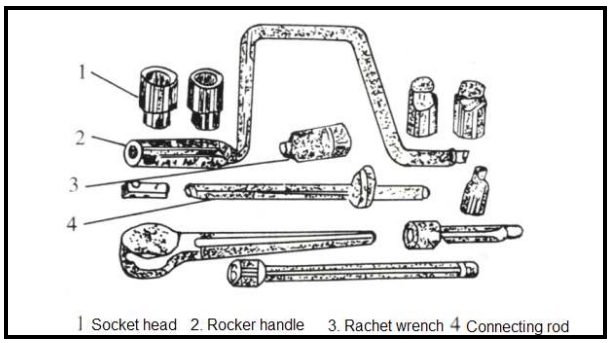


Figure 1-29

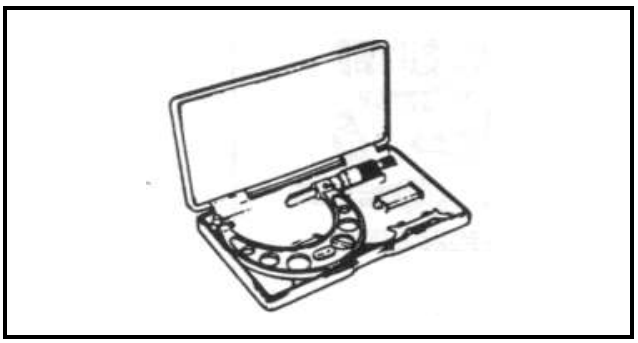


Figure 1-30

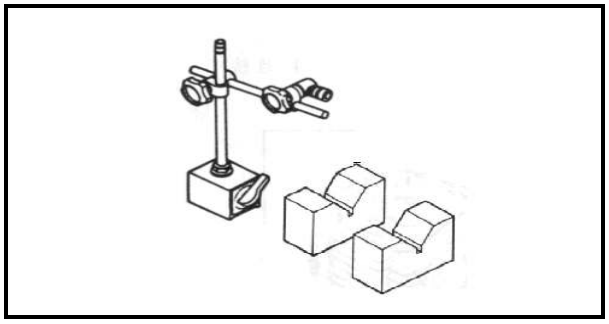


Figure 1-31

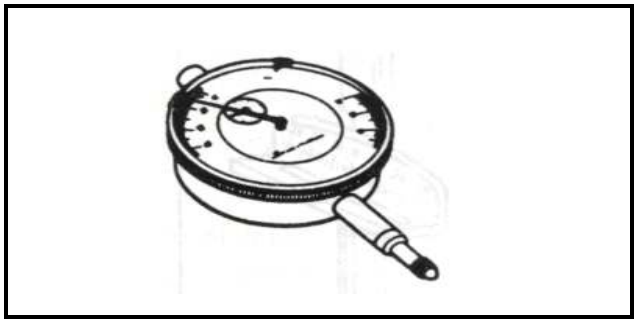


Figure 1-32

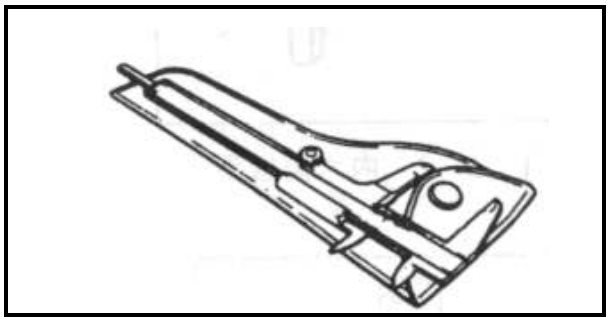


Figure 1-33

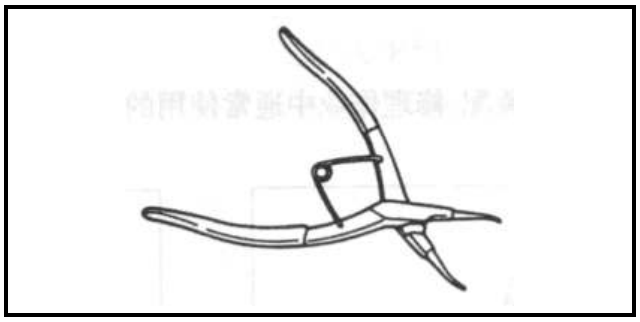


Figure 1-34

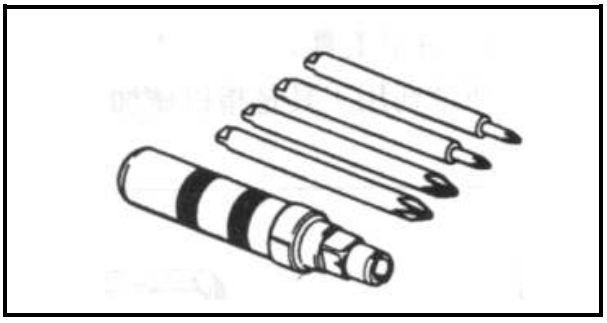


Figure 1-35

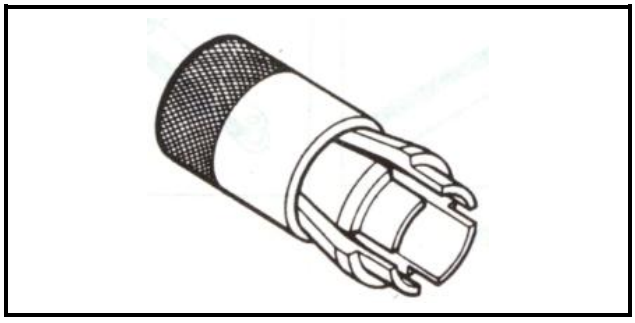


Figure 1-36

（2）Special tools for chassis overhaul: Front fork seal driver

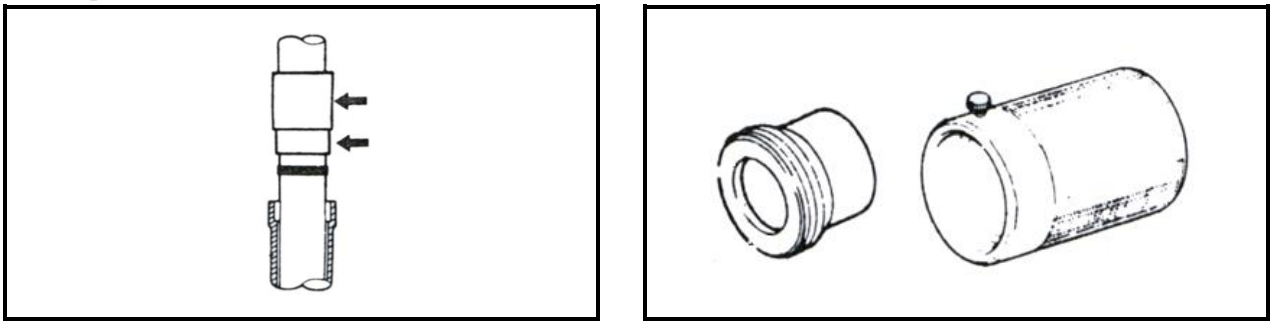


Figure 1-37

（3）Steering nut wrench

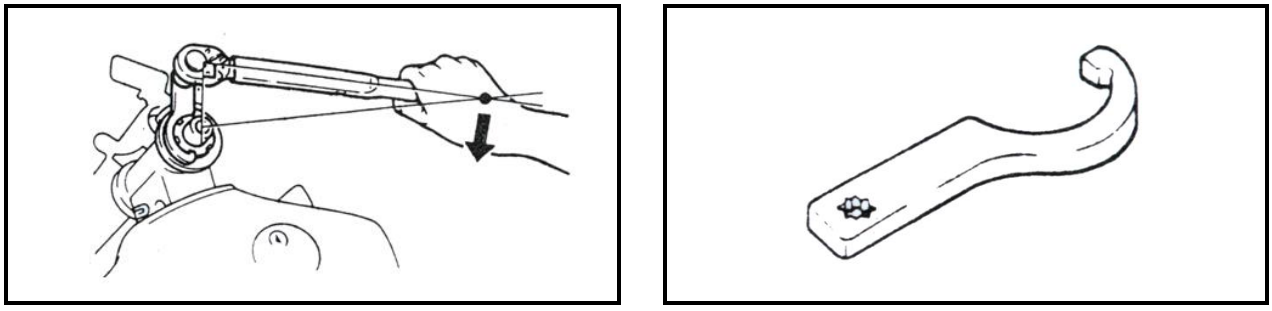


Figure 1-38

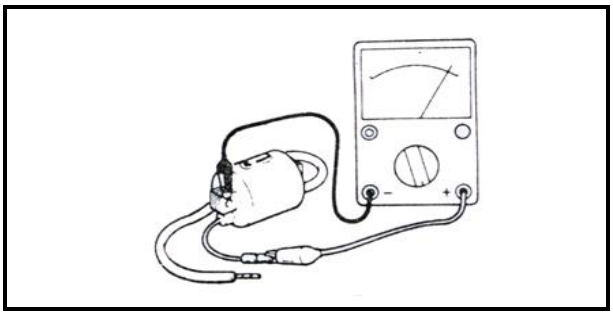
3. Tools used for electrical components

Special tools and their pictures for electrical component test are listed in Table1-39 and 1-40.

Table 1-39

Name	Remarks
Multimeter	Figure 1-41
Ignition tester	Figure 1-42

Continued Table 1-40



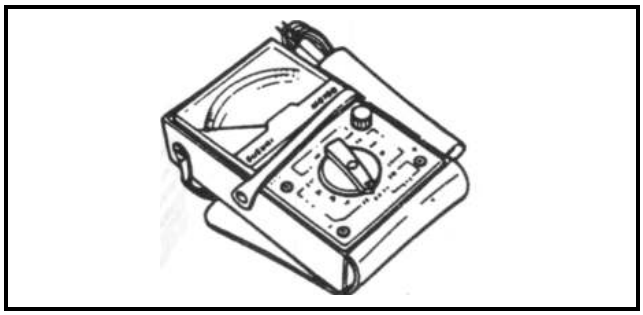


Figure 1-41

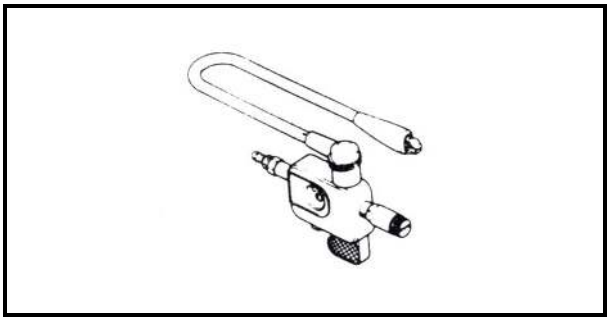
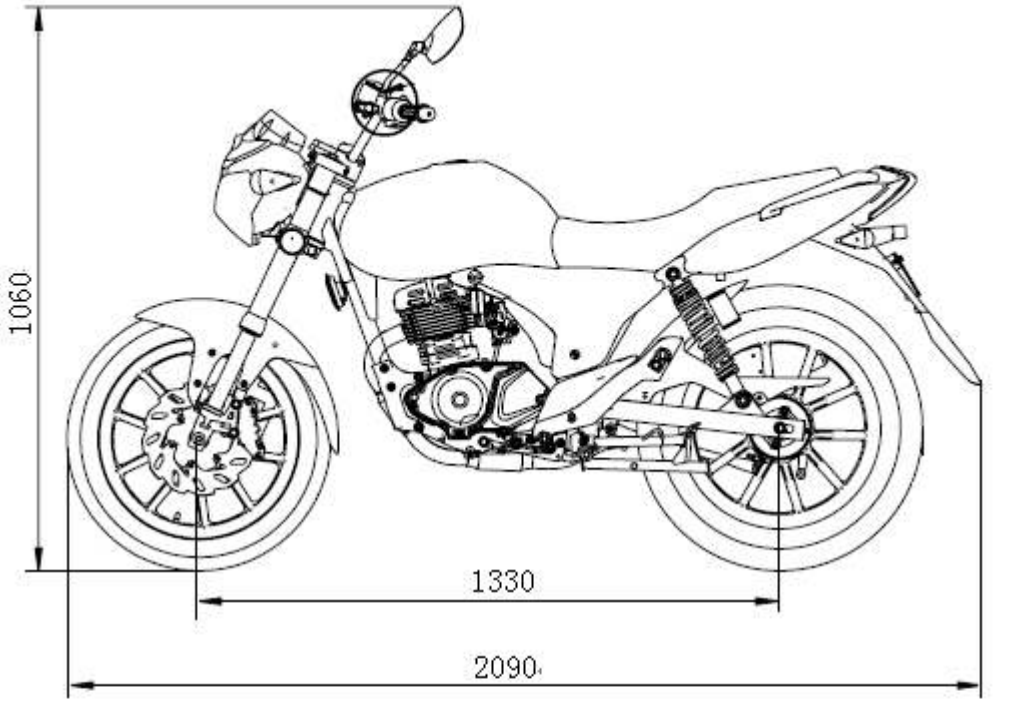


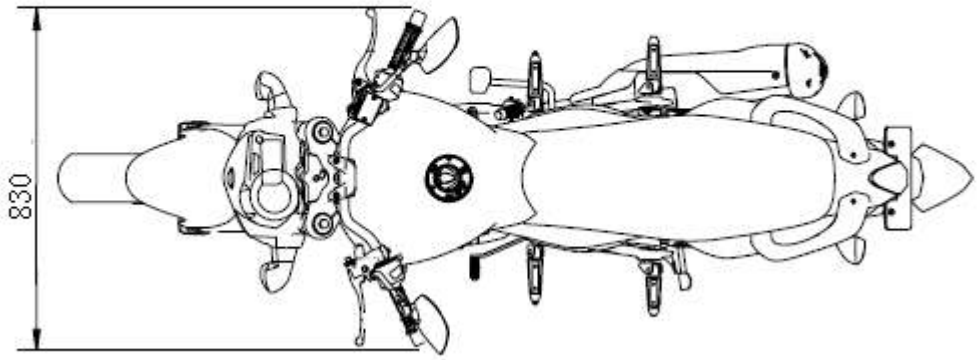
Figure 1-42

Specifications (RKV125)

Model		**RKV125**			**Engine type**	**KW157FMI-2B**
Overall Length		2090mm			Fuel	90# or higher unleaded gasoline
Overall Width		830mm			Number of cylinders	1
Overall height		1,060mm			Bore*stroke	57.0×48.8
Wheelbase		1,330mm			Displacement	125cc
Weight (kg) (Dry weight)		**Front axle**	56		Starting mode	Electric
		Rear axle	79		Cooling mode	Air cooled
		Total	135		Lubricating mode	Force-feed and splash lubrication
Tyre		Front tubeless tyre	100/80-17		Air cleaner	Dry
		Rear tubeless tyre	130/70-17			
Drive Train	Clutch type	Wet multi-plate friction type			Fuel tank capacity	17±0.5L
	Gear shift pattern	Five-speed left foot control			Carburetor type	PD26JS
	Transmission	Chain drive			Idle speed-rpm	1,400±100rpm/min
Electrical	Battery capacity/type	12V dry-charged type			Max. torque	9.2N·m/7,000rpm
	Max. magneto load	120W			Max. power	8.2kW/9,000rpm
	Spark plug	NGK DR8EA			Compression ratio	10.6 : 1
	Spark plug clearance	0.6-0.7mm			Top speed	100km/h
	Ignition type	C.D.I ignition			Diameter of front brake disc	φ260mm
					Diameter of rear brake disc	φ240mm

RKV125

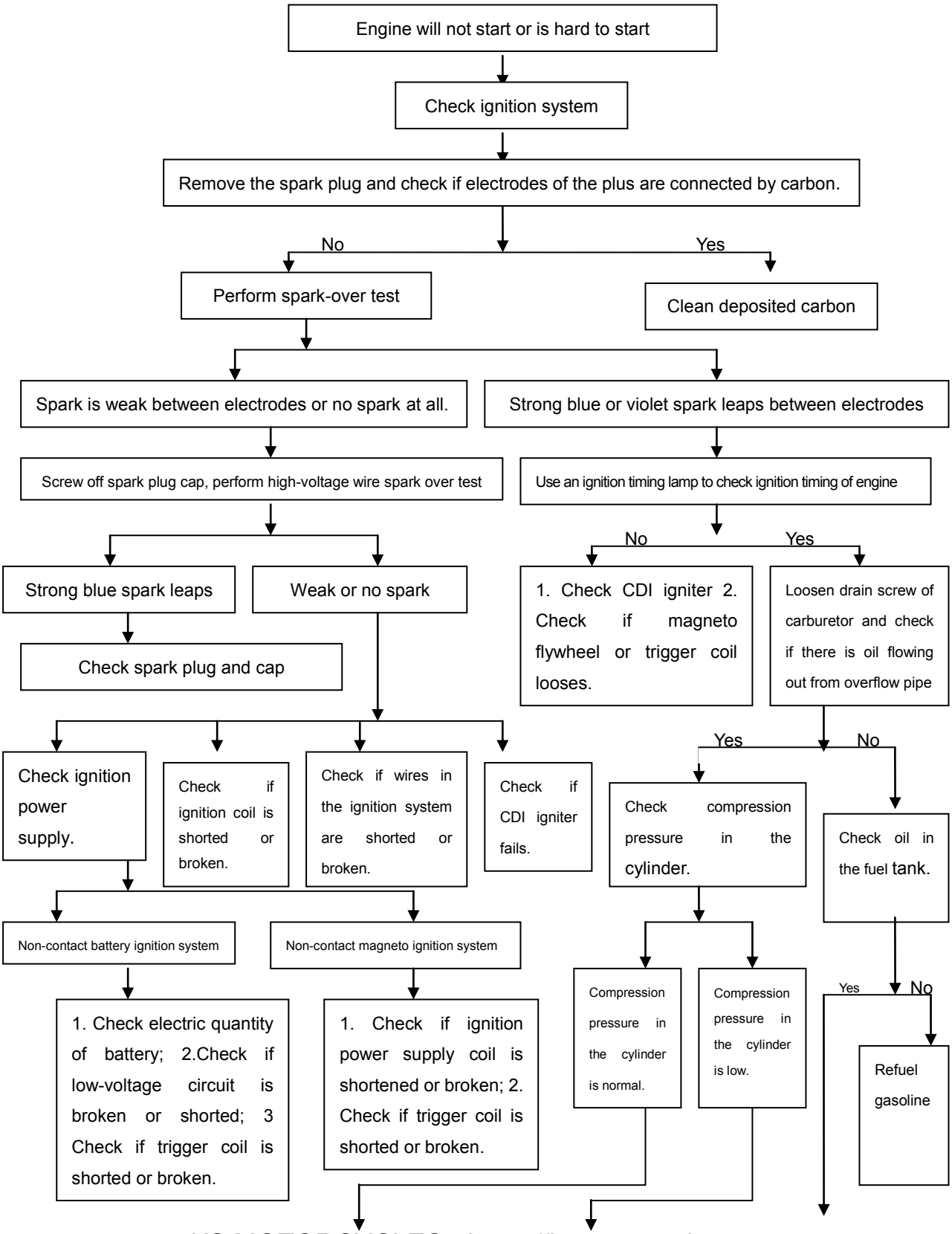


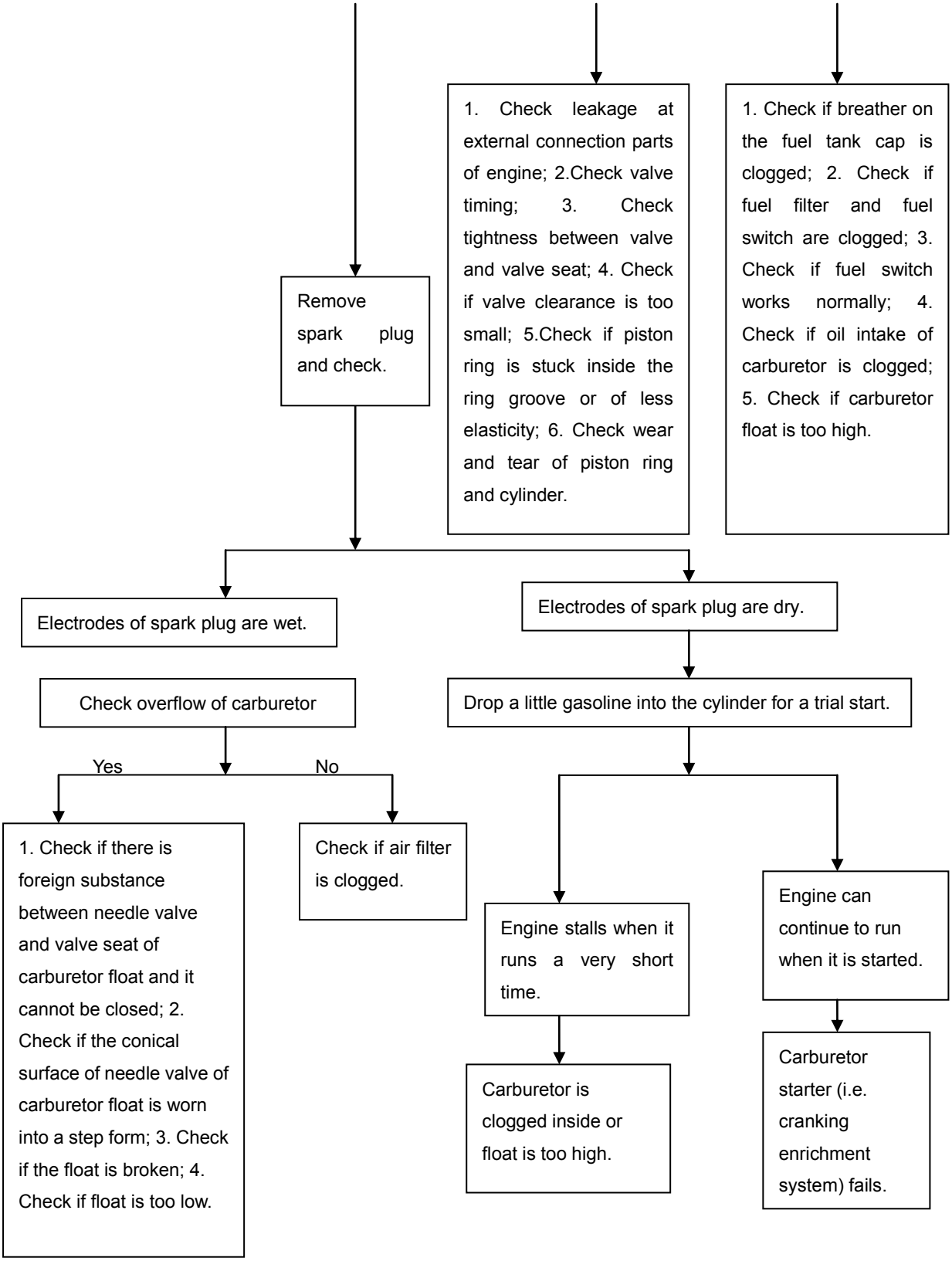


Fault Diagnosis

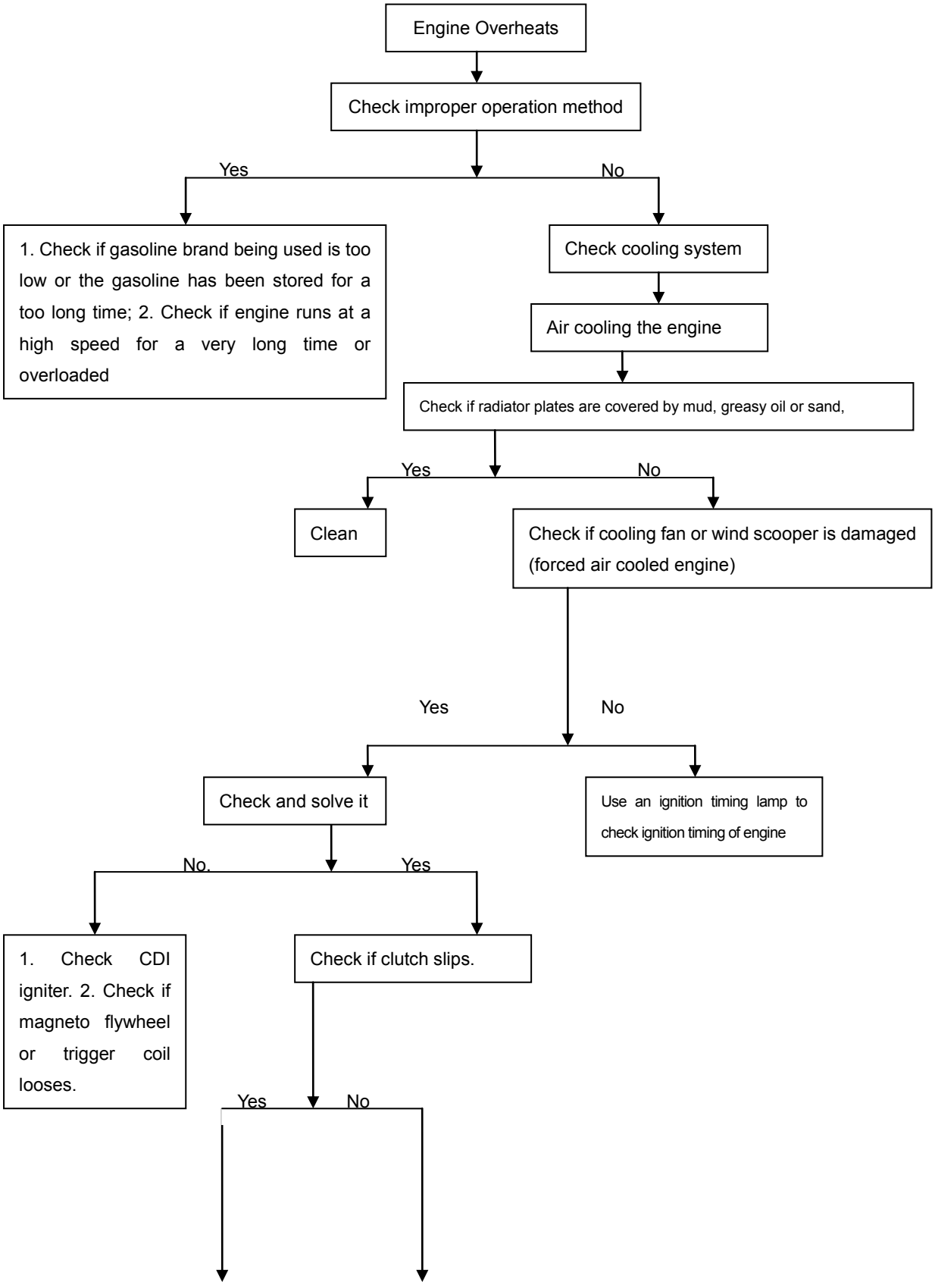
Symptom: Engine will not start or is hard to start

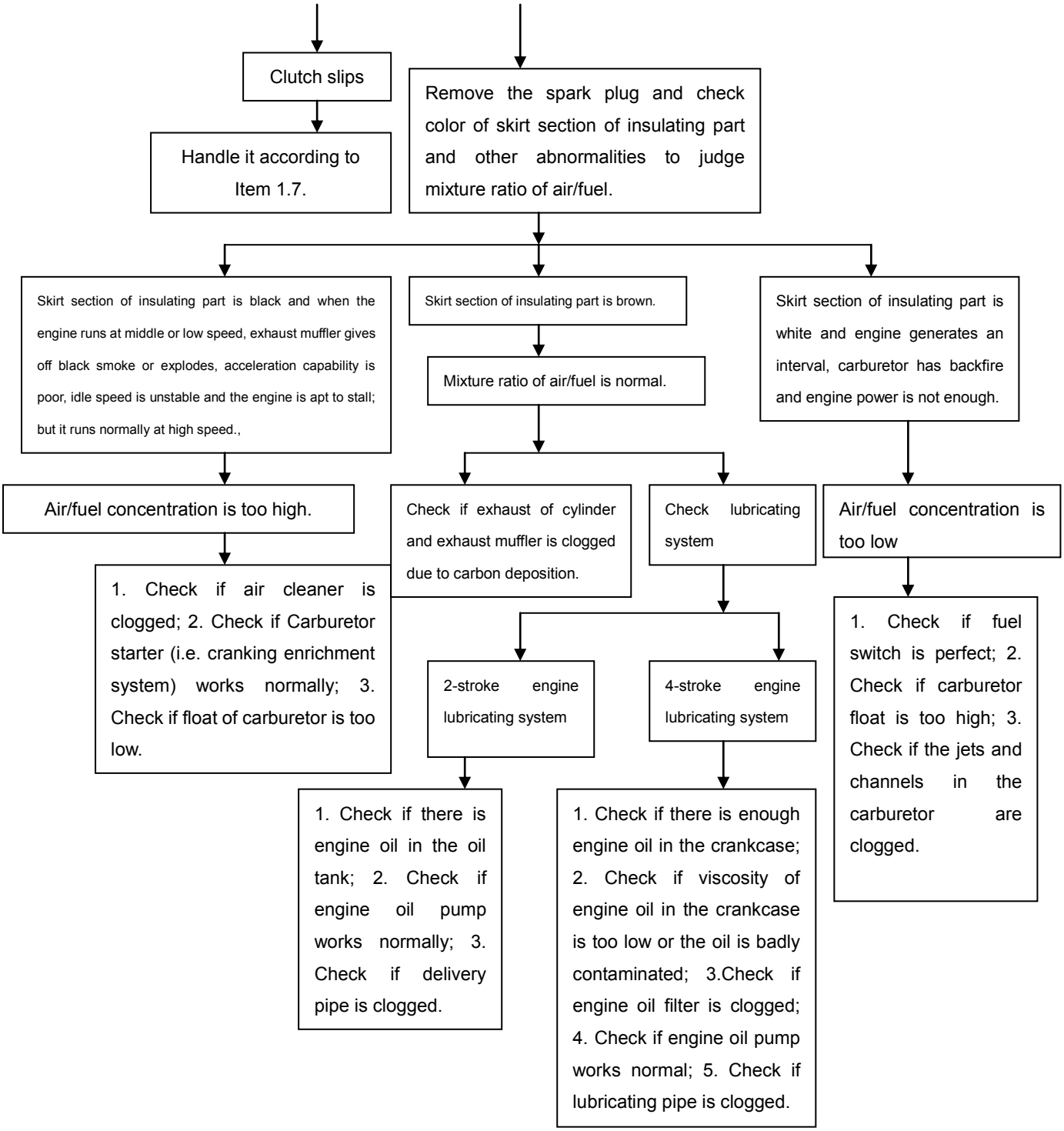
Diagnosis procedures



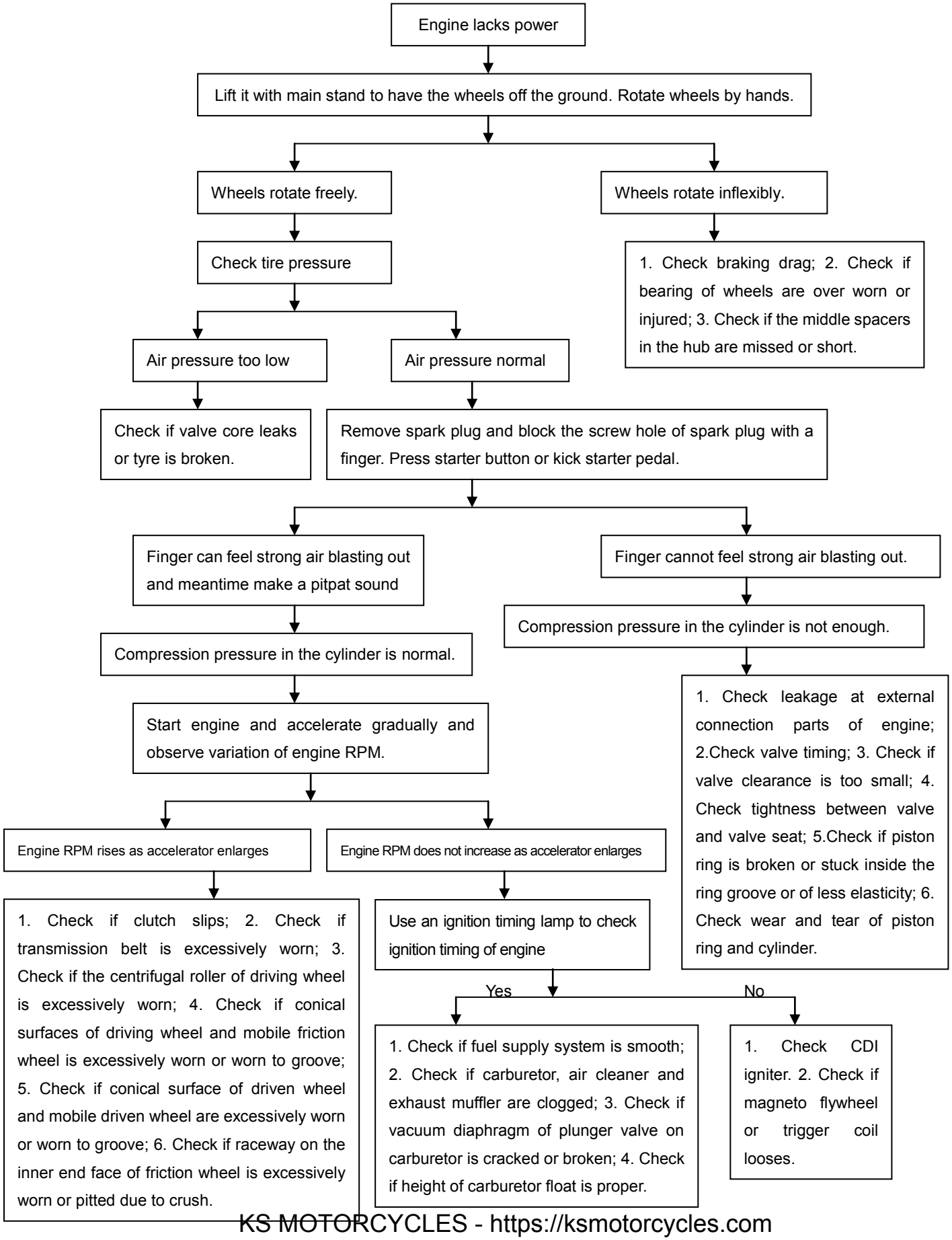

Remove spark plug and check.
1. Check leakage at external connection parts of engine; 2.Check valve timing; 3. Check tightness between valve and valve seat; 4. Check if valve clearance is too small; 5.Check if piston ring is stuck inside the ring groove or of less elasticity; 6. Check wear and tear of piston ring and cylinder.
1. Check if breather on the fuel tank cap is clogged; 2. Check if fuel filter and fuel switch are clogged; 3. Check if fuel switch works normally; 4. Check if oil intake of carburetor is clogged; 5. Check if carburetor float is too high.
Electrodes of spark plug are wet.
Electrodes of spark plug are dry.
Check overflow of carburetor
Drop a little gasoline into the cylinder for a trial start.
Yes
No
1. Check if there is foreign substance between needle valve and valve seat of carburetor float and it cannot be closed; 2. Check if the conical surface of needle valve of carburetor float is worn into a step form; 3. Check if the float is broken; 4. Check if float is too low.
Check if air filter is clogged.
Engine stalls when it runs a very short time.
Engine can continue to run when it is started.
Carburetor is clogged inside or float is too high.
Carburetor starter (i.e. cranking enrichment system) fails.

Symptom: Engine Overheats **Diagnosis procedures**



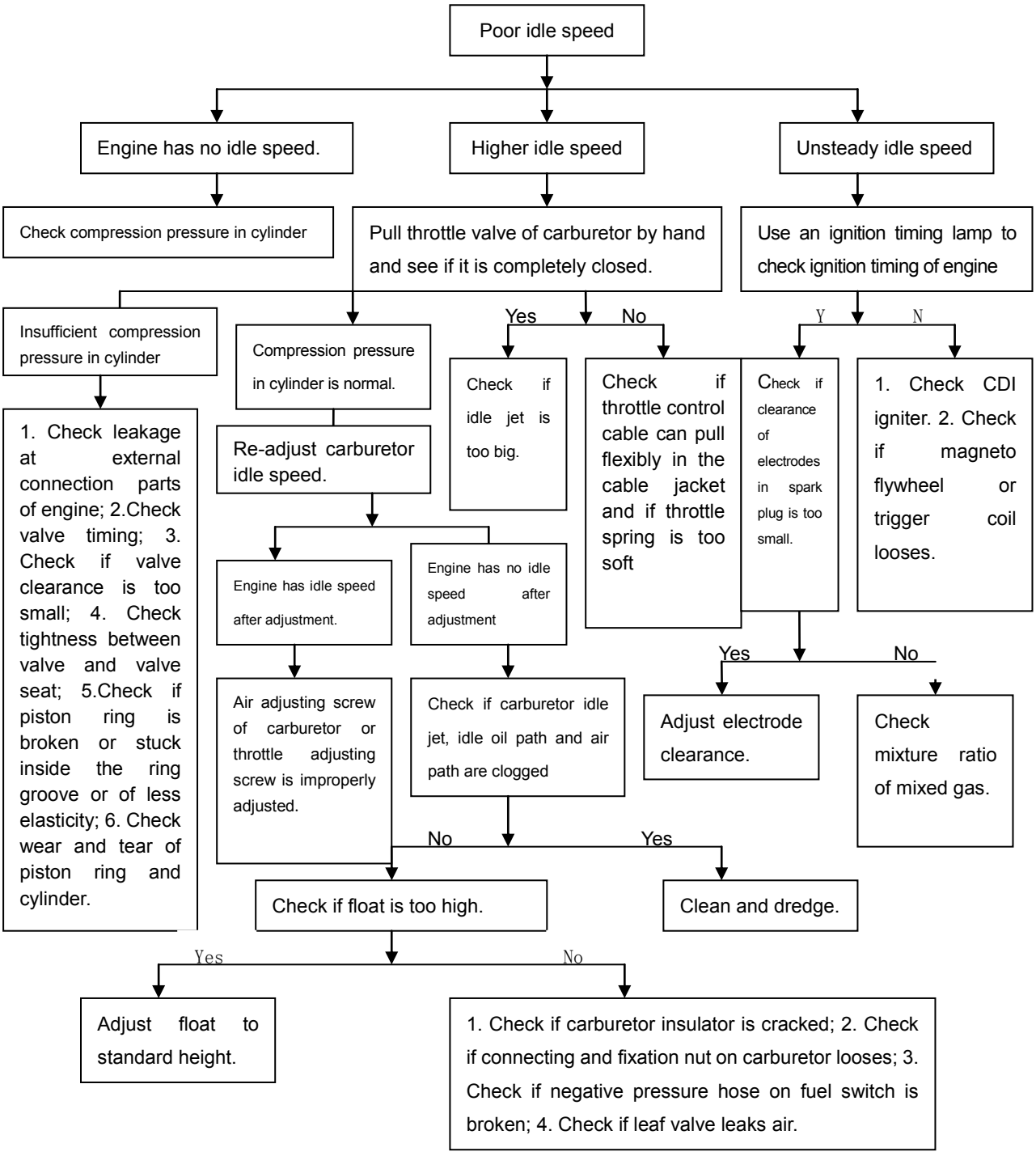

Clutch slips
Handle it according to Item 1.7.
Remove the spark plug and check color of skirt section of insulating part and other abnormalities to judge mixture ratio of air/fuel.
Skirt section of insulating part is black and when the engine runs at middle or low speed, exhaust muffler gives off black smoke or explodes, acceleration capability is poor, idle speed is unstable and the engine is apt to stall; but it runs normally at high speed.,
Skirt section of insulating part is brown.
Skirt section of insulating part is white and engine generates an interval, carburetor has backfire and engine power is not enough.
Air/fuel concentration is too high.
Mixture ratio of air/fuel is normal.
Check if exhaust of cylinder and exhaust muffler is clogged due to carbon deposition.
Check lubricating system
Air/fuel concentration is too low
1. Check if air cleaner is clogged; 2. Check if Carburetor starter (i.e. cranking enrichment system) works normally; 3. Check if float of carburetor is too low.
2-stroke engine lubricating system
4-stroke engine lubricating system
1. Check if fuel switch is perfect; 2. Check if carburetor float is too high; 3. Check if the jets and channels in the carburetor are clogged.
1. Check if there is engine oil in the oil tank; 2. Check if engine oil pump works normally; 3. Check if delivery pipe is clogged.
1. Check if there is enough engine oil in the crankcase; 2. Check if viscosity of engine oil in the crankcase is too low or the oil is badly contaminated; 3.Check if engine oil filter is clogged; 4. Check if engine oil pump works normal; 5. Check if lubricating pipe is clogged.

Symptom: Engine lacks power **Diagnosis procedures**

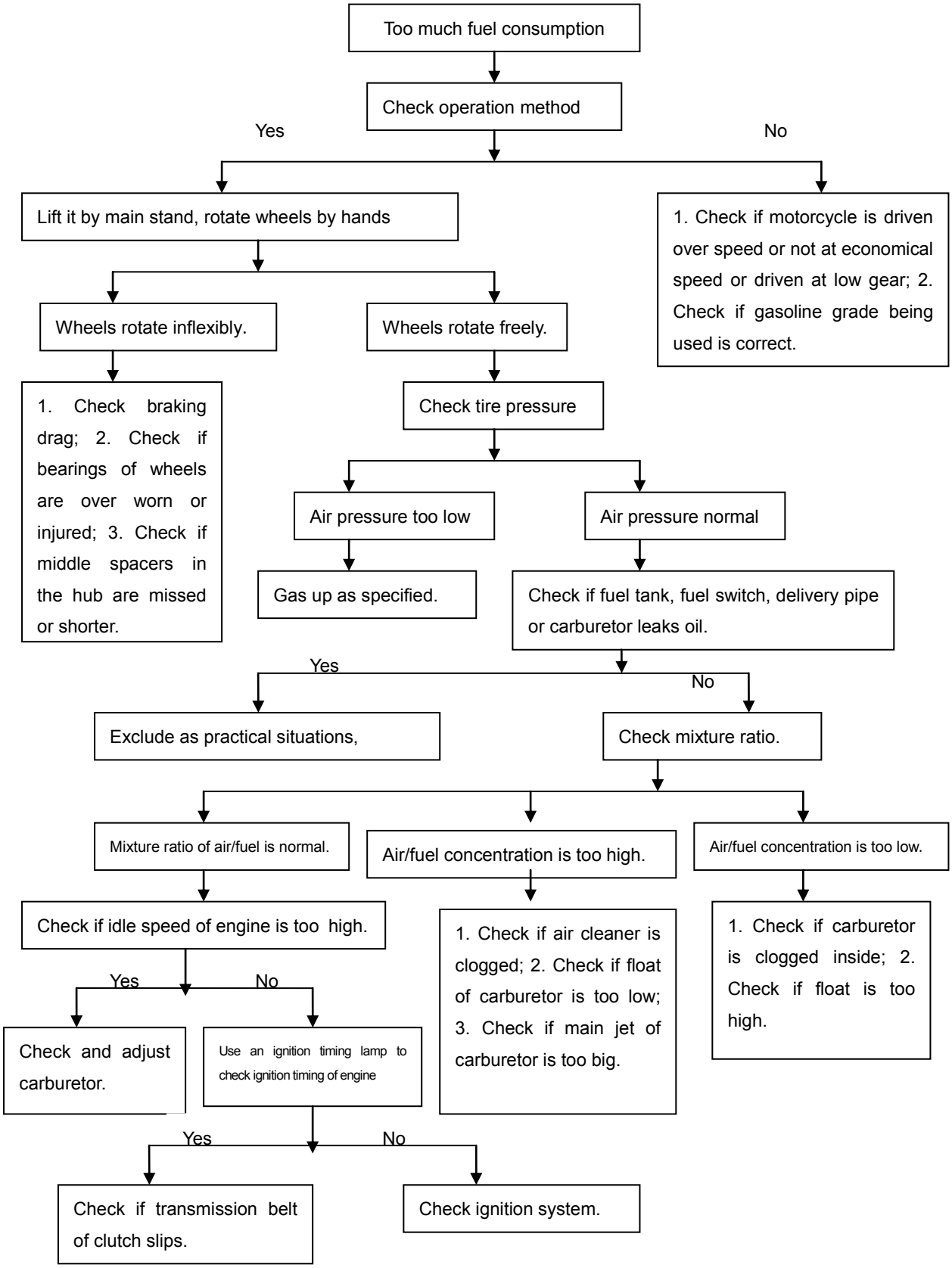


Symptom: Poor idle speed of engine

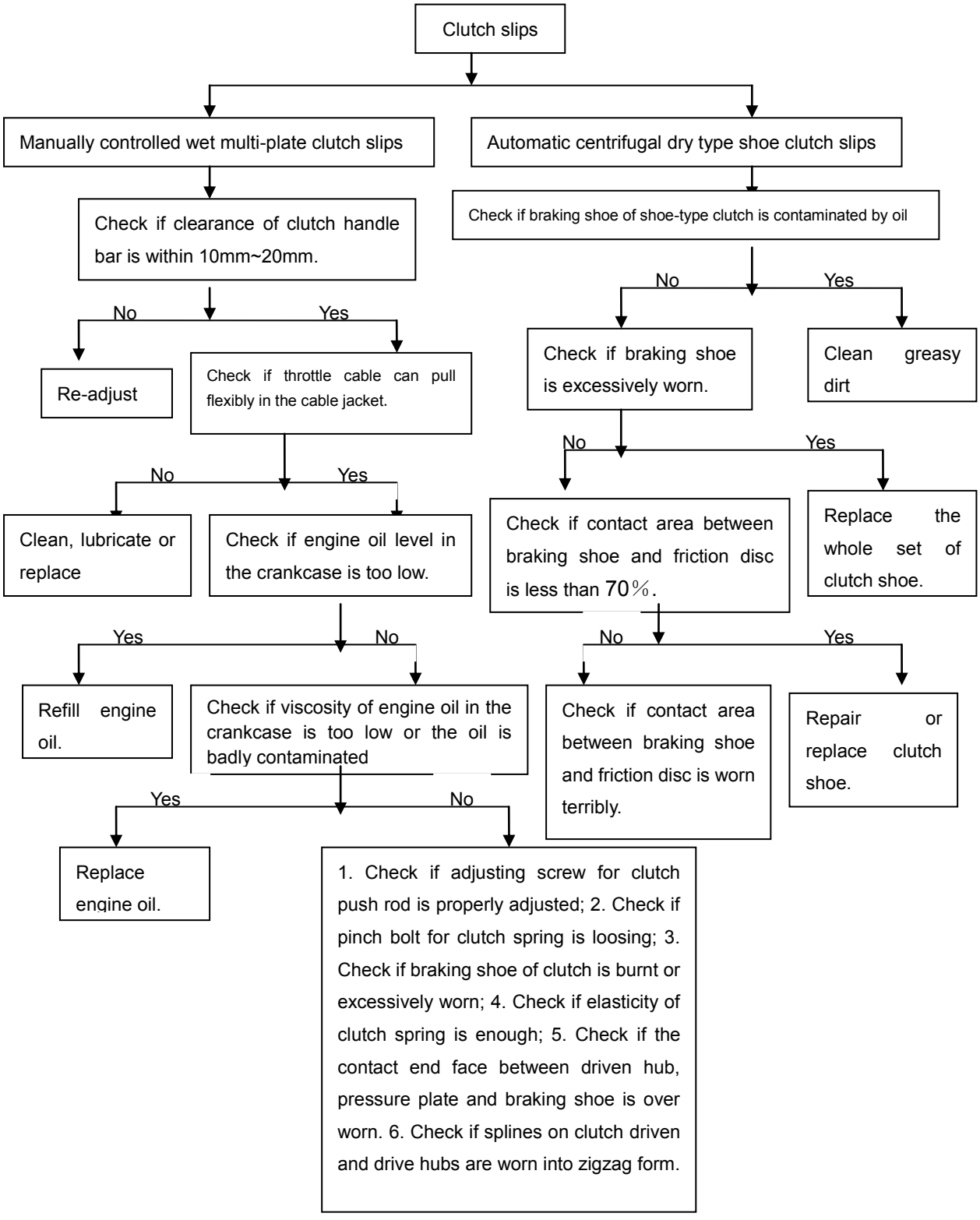
Diagnosis procedures



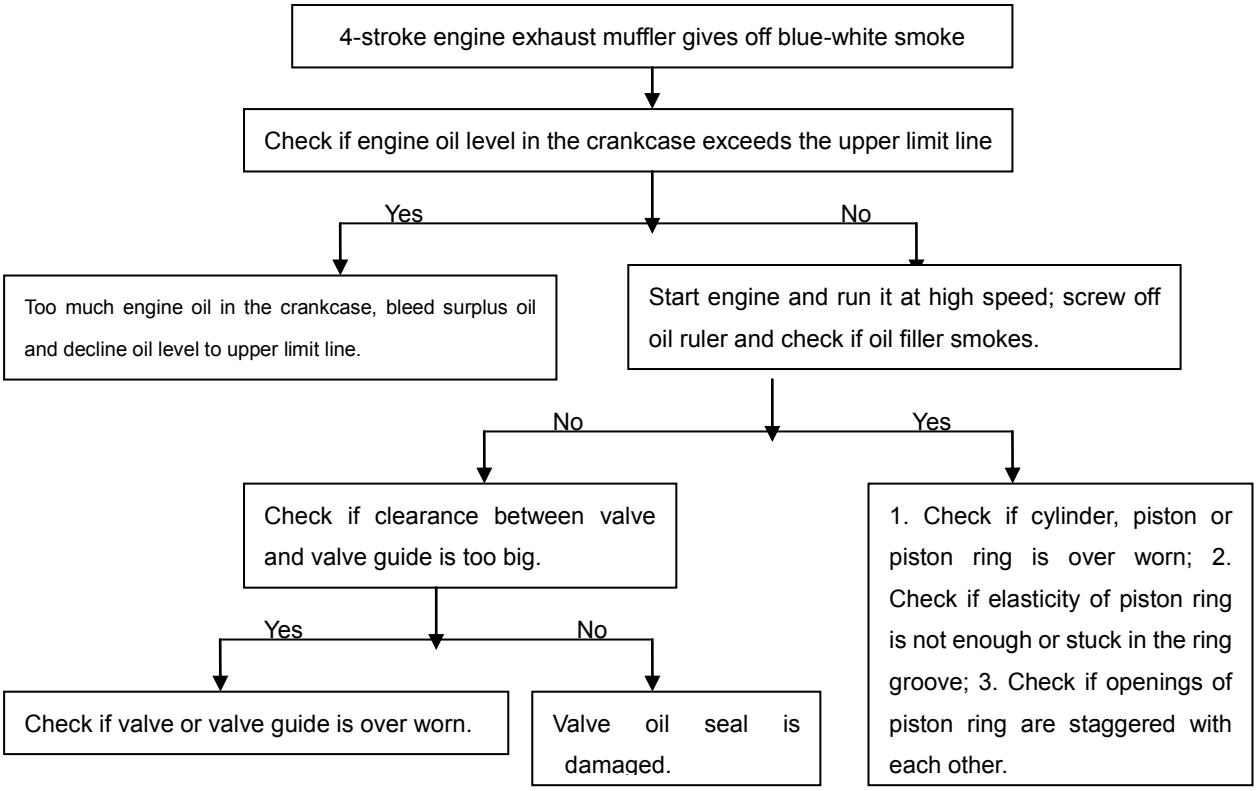
Symptom: Too much fuel consumption by the engine **Diagnosis procedures**



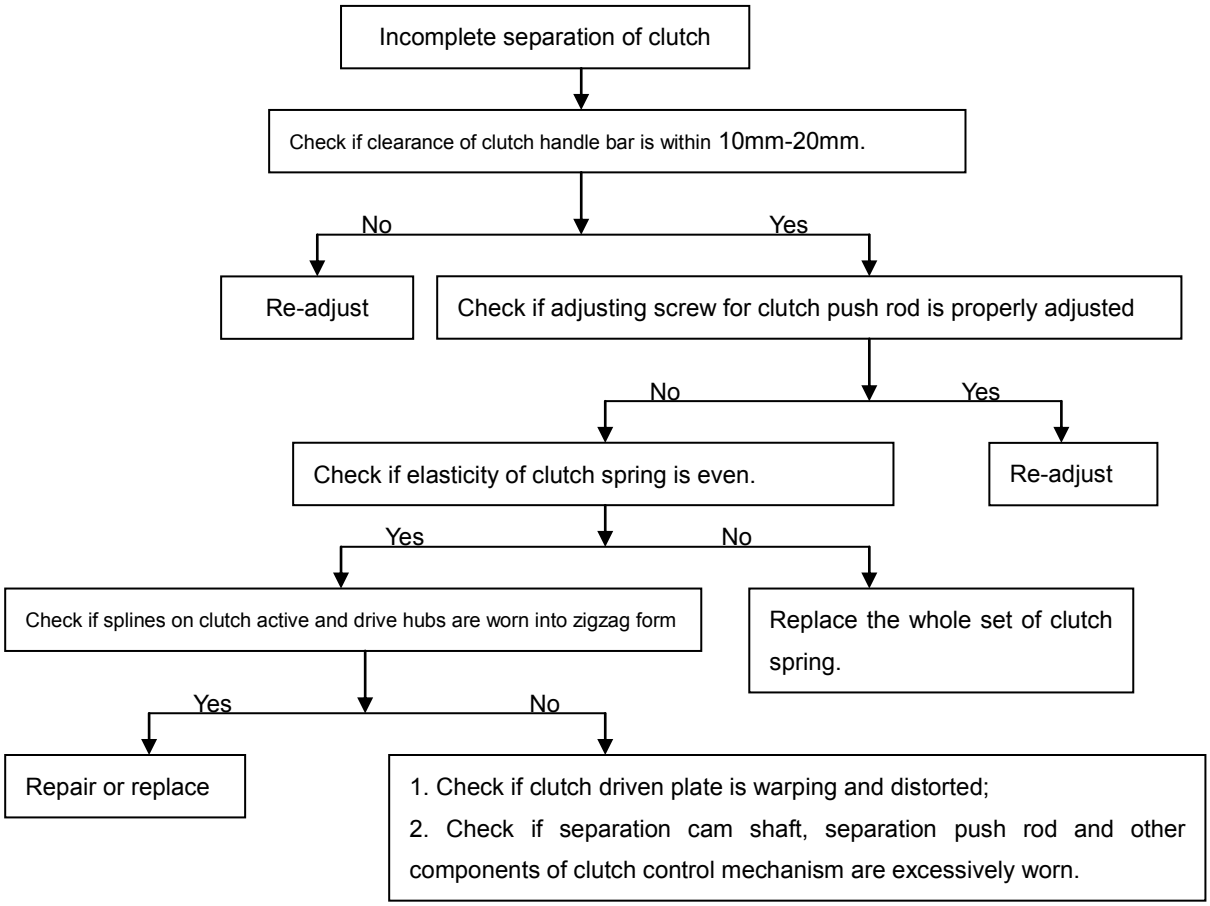
Symptom: Clutch slips **Diagnosis procedures**



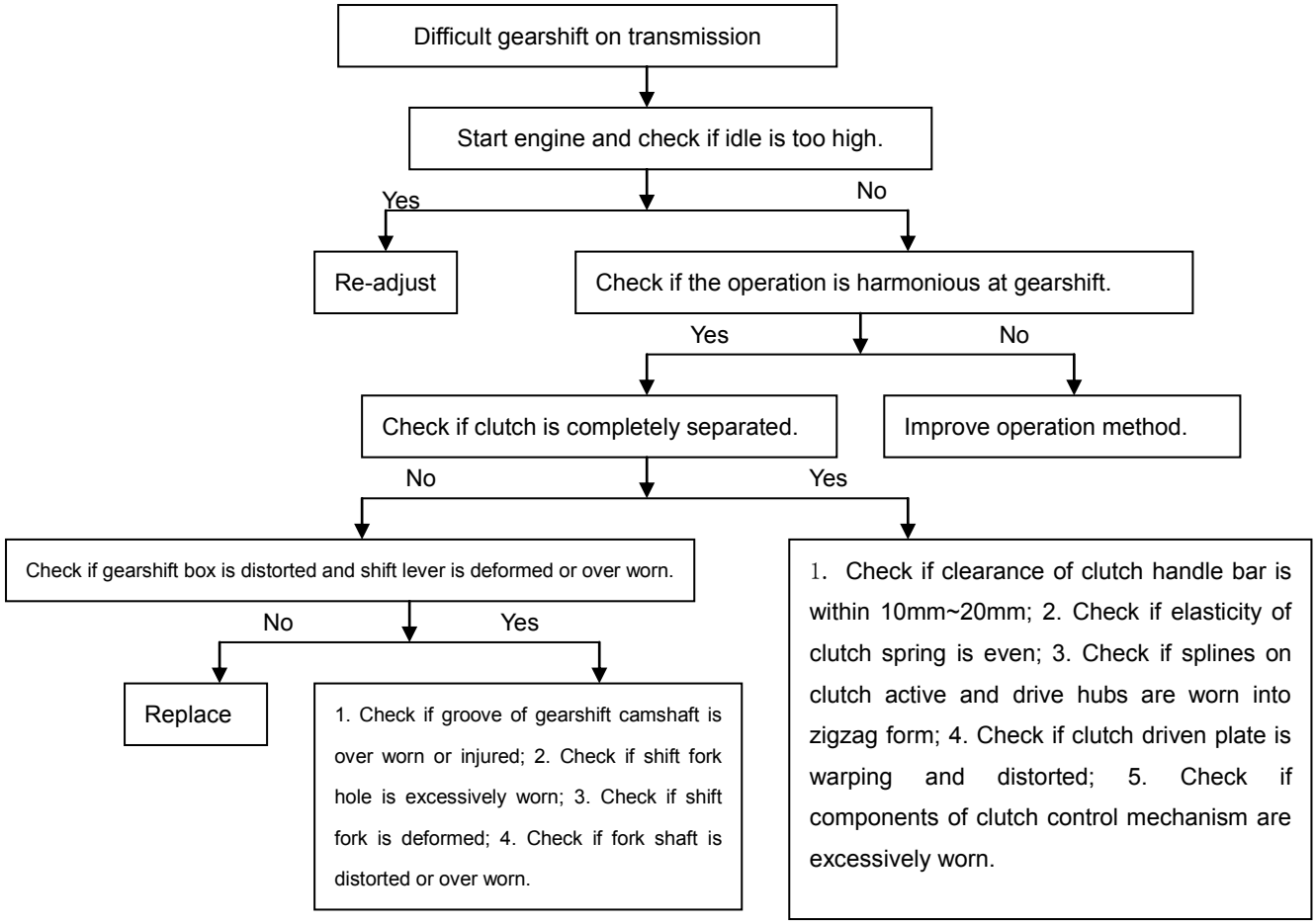
Symptom: 4-stroke engine exhaust muffler gives off blue-white smoke Diagnosis procedures



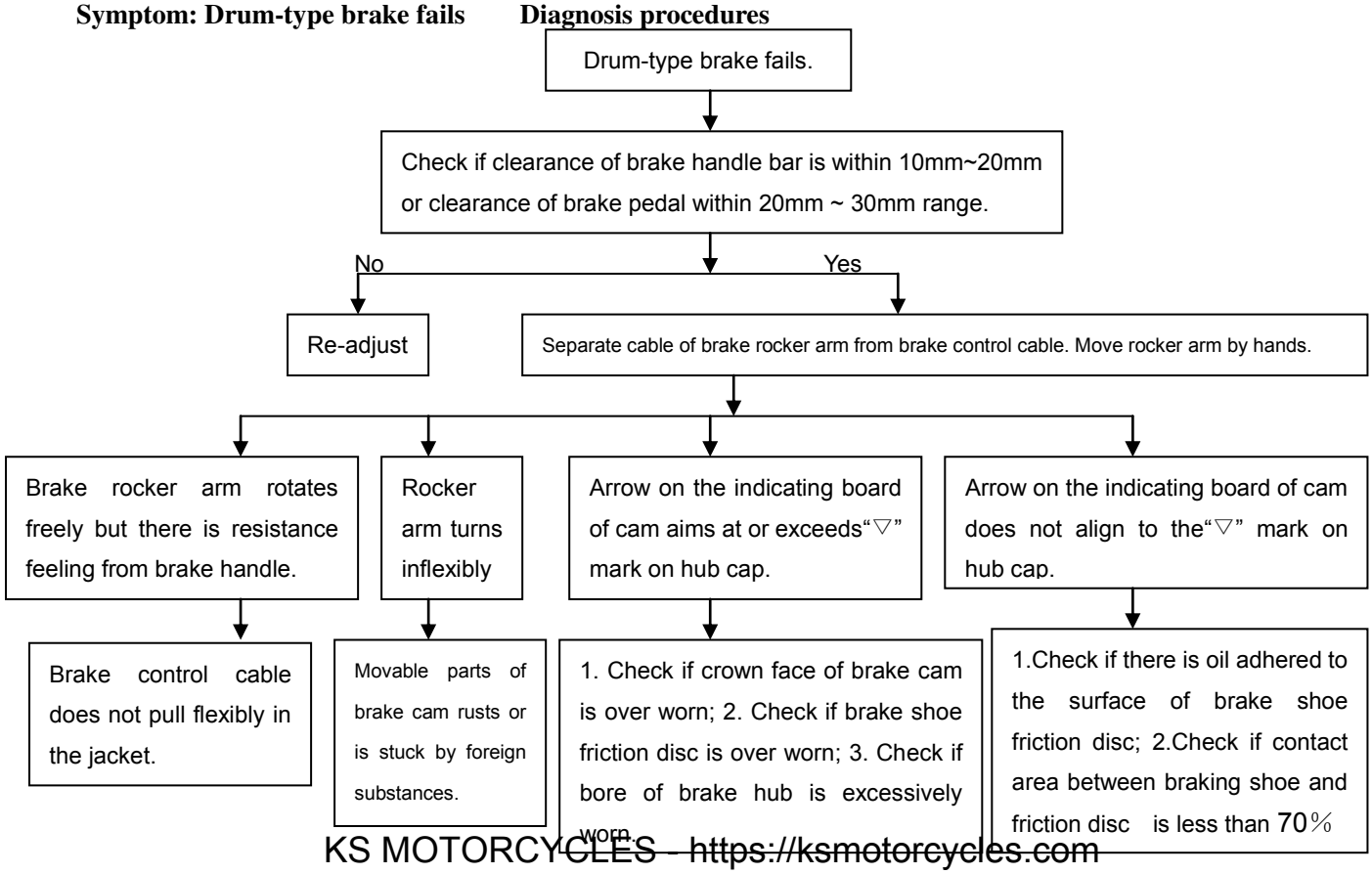
Symptom: Incomplete separation of clutch Diagnosis procedures



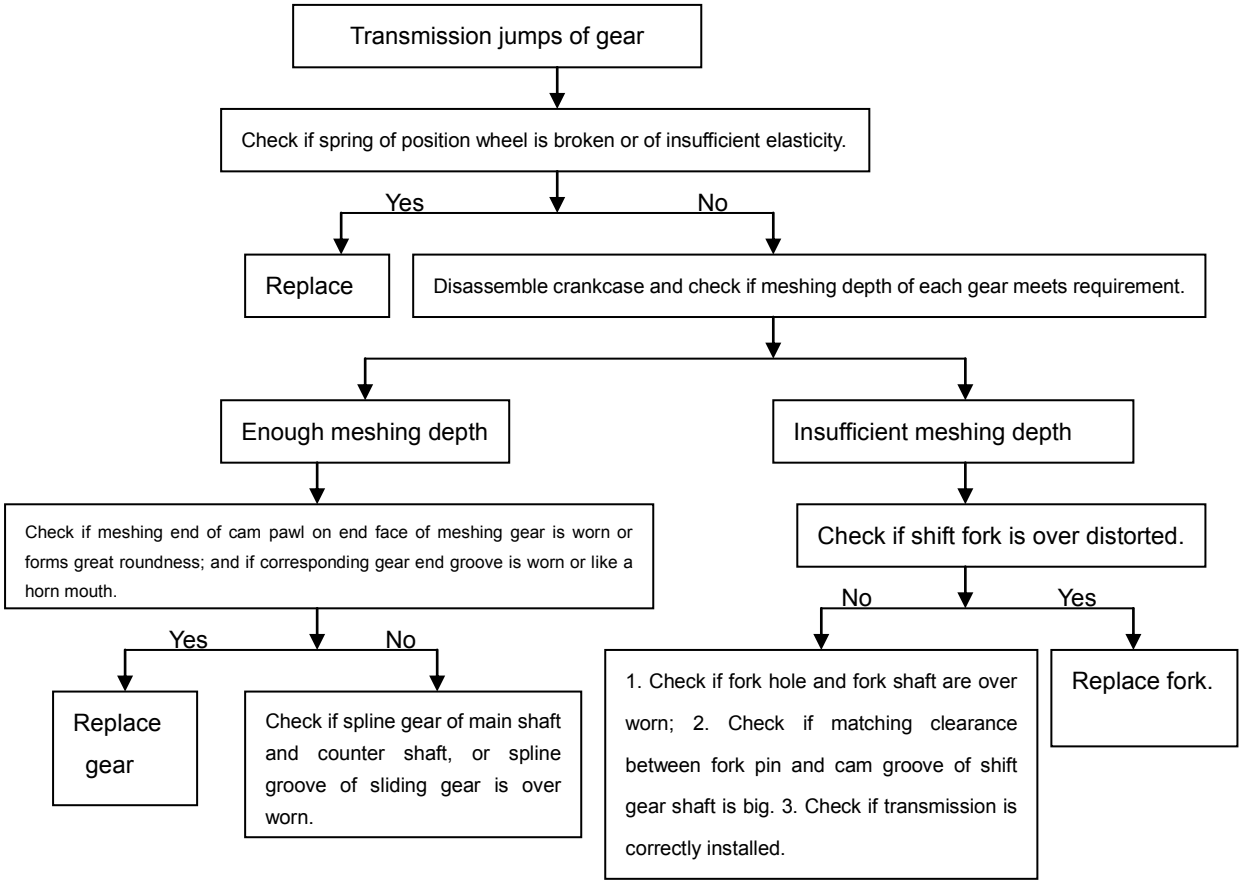
Symptom: Difficult gearshift on transmission Diagnosis procedures



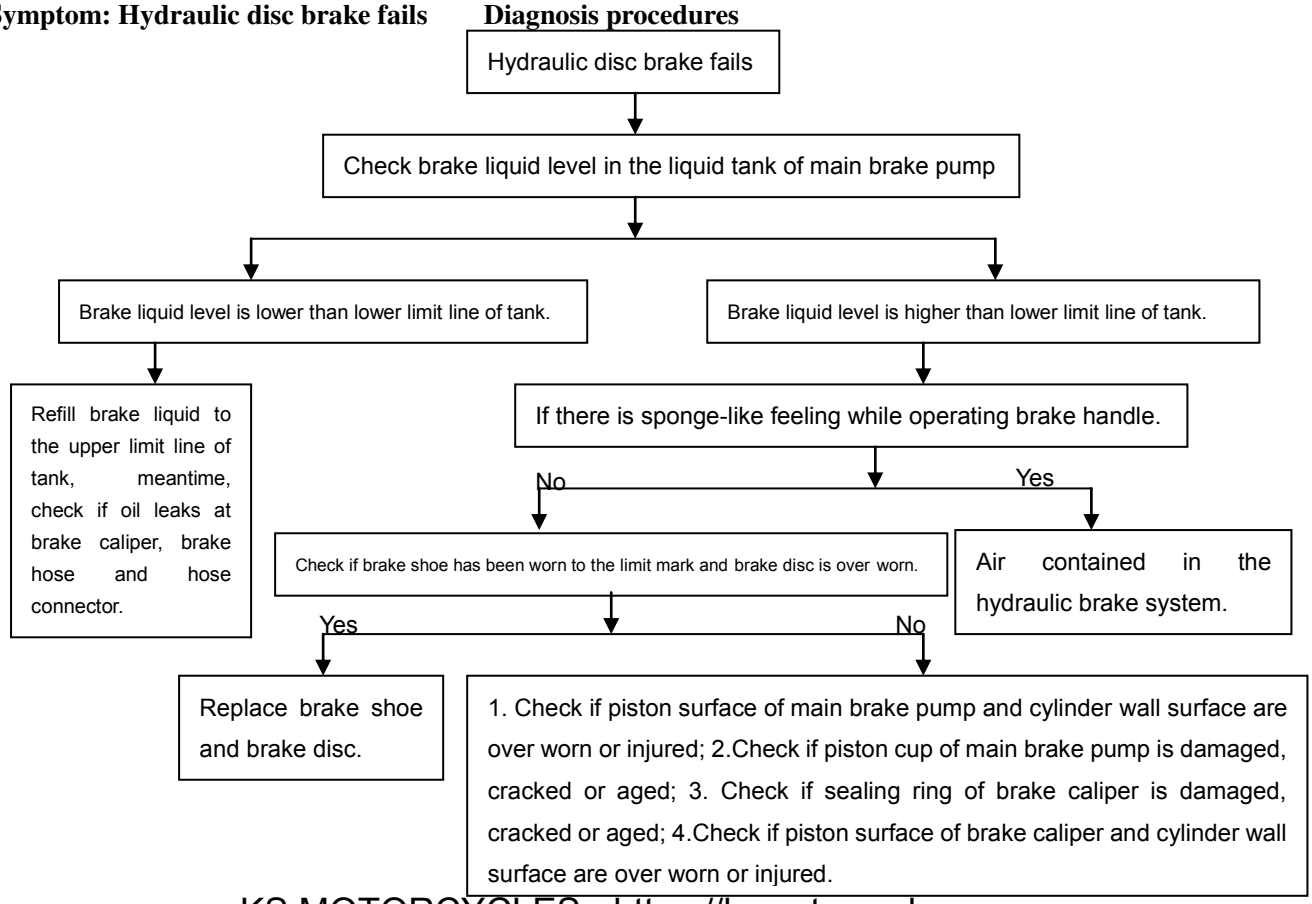
Symptom: Drum-type brake fails Diagnosis procedures



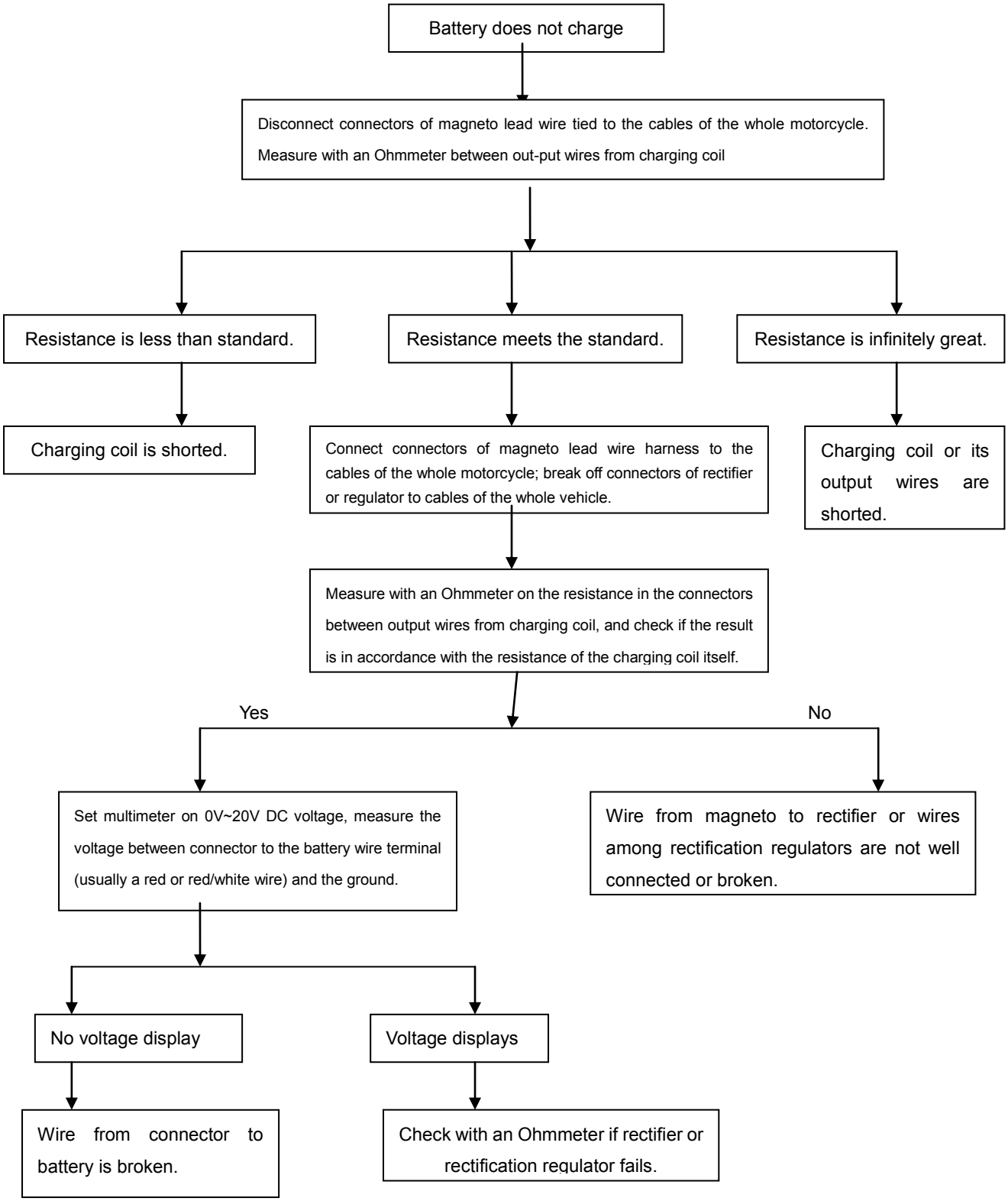
Symptom: Transmission jumps of gear Diagnosis procedures



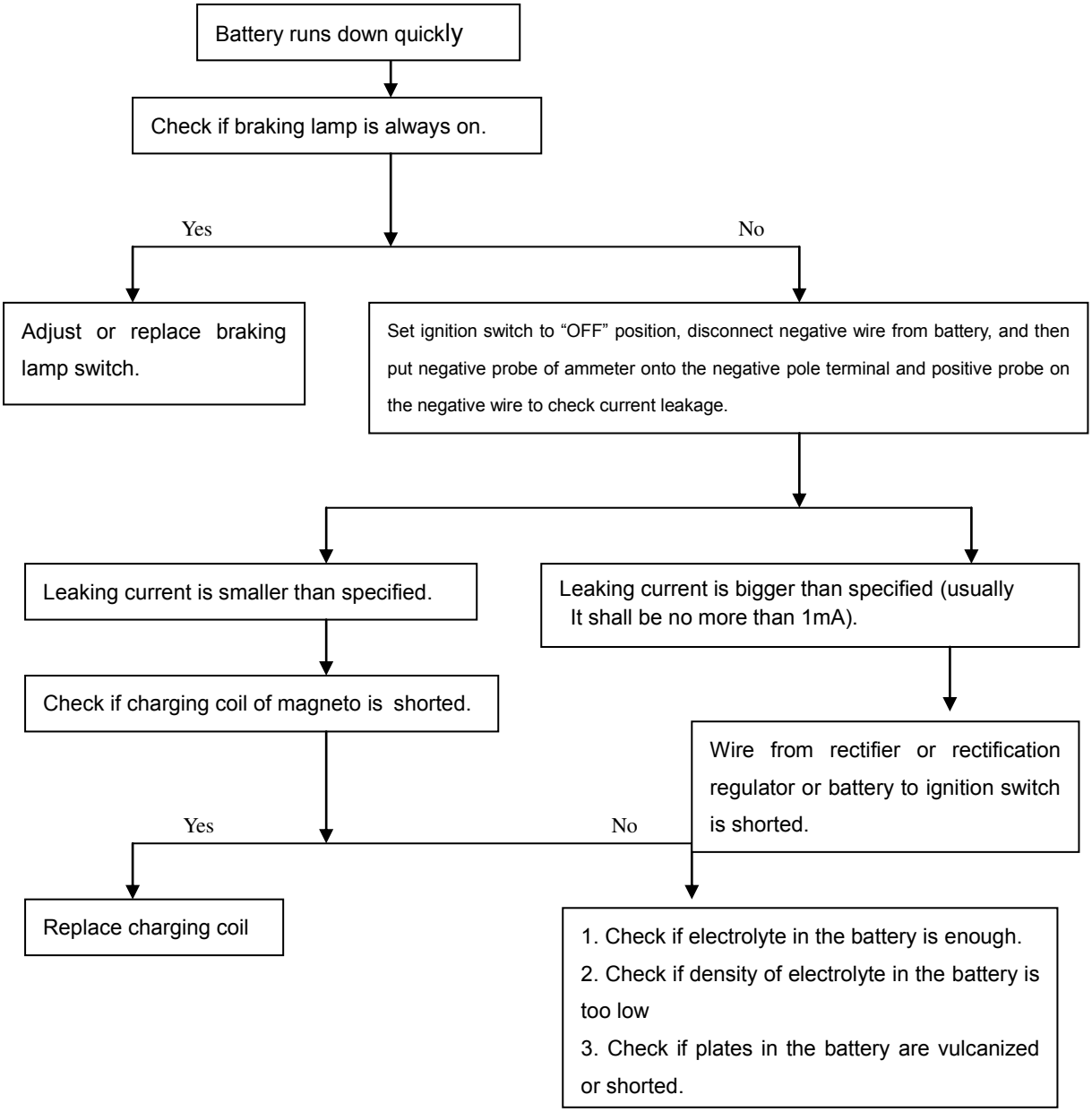
Symptom: Hydraulic disc brake fails Diagnosis procedures



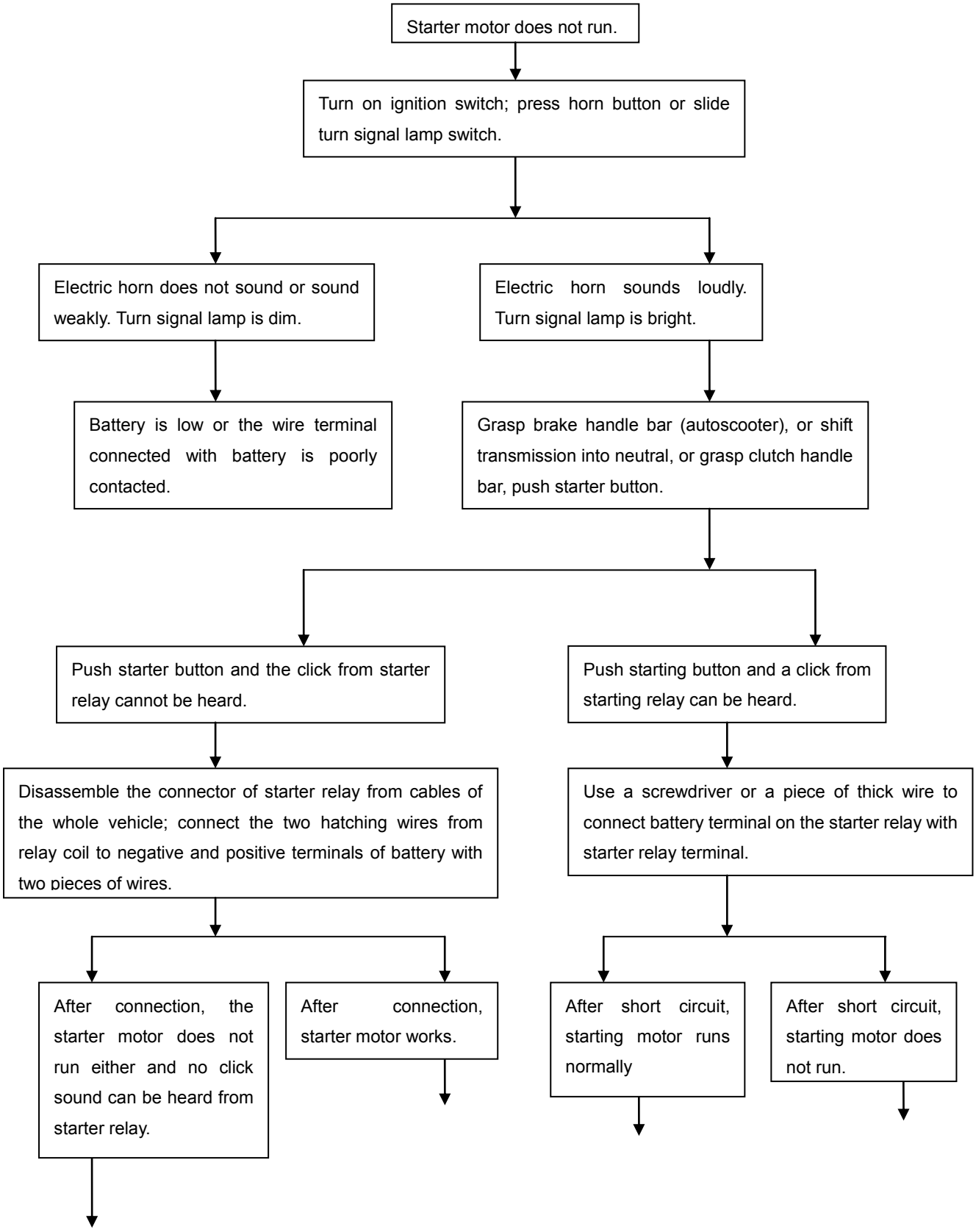
Symptom: Battery does not charge **Diagnosis procedures**

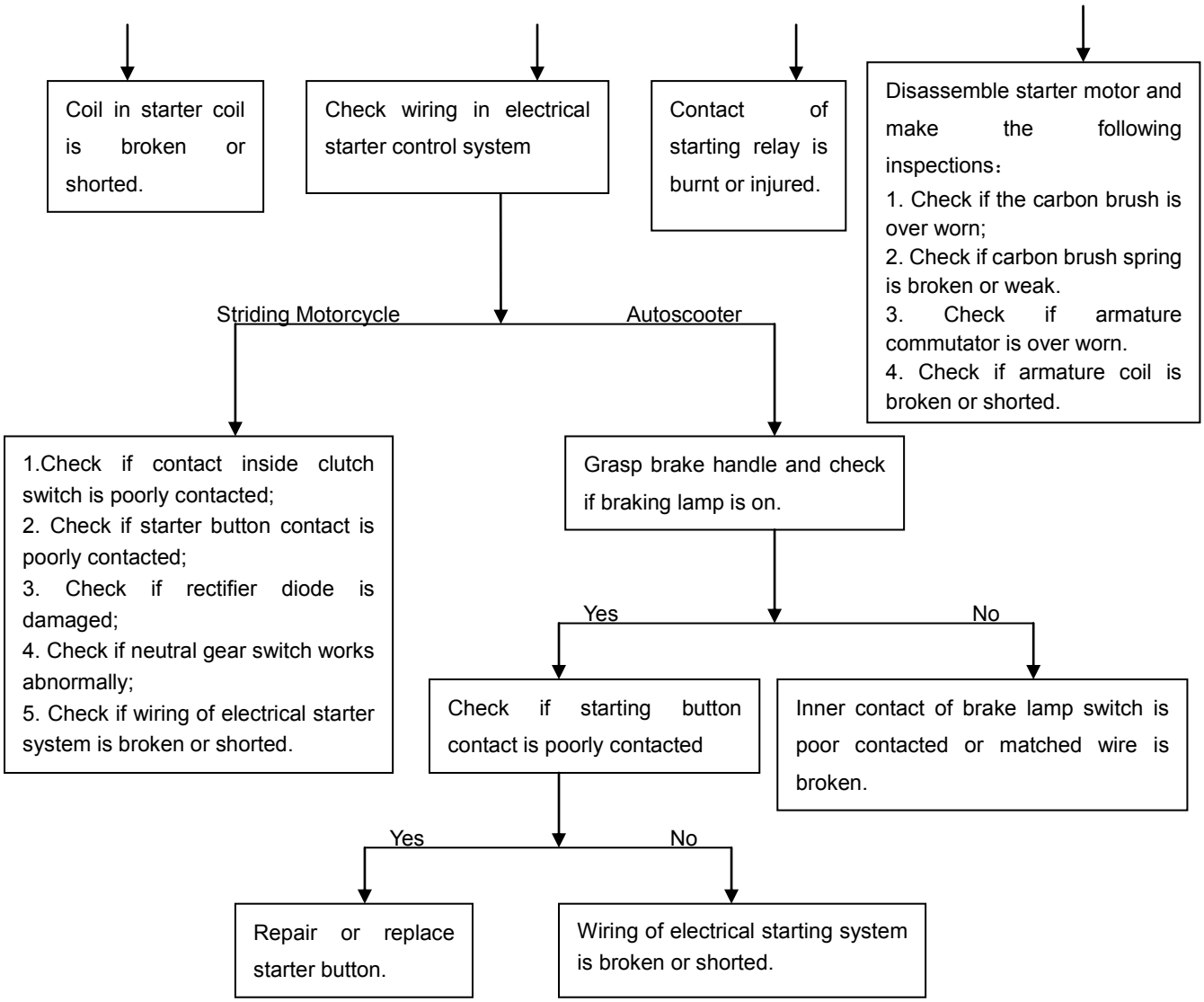


Symptom: Battery runs down quickly Diagnosis procedures

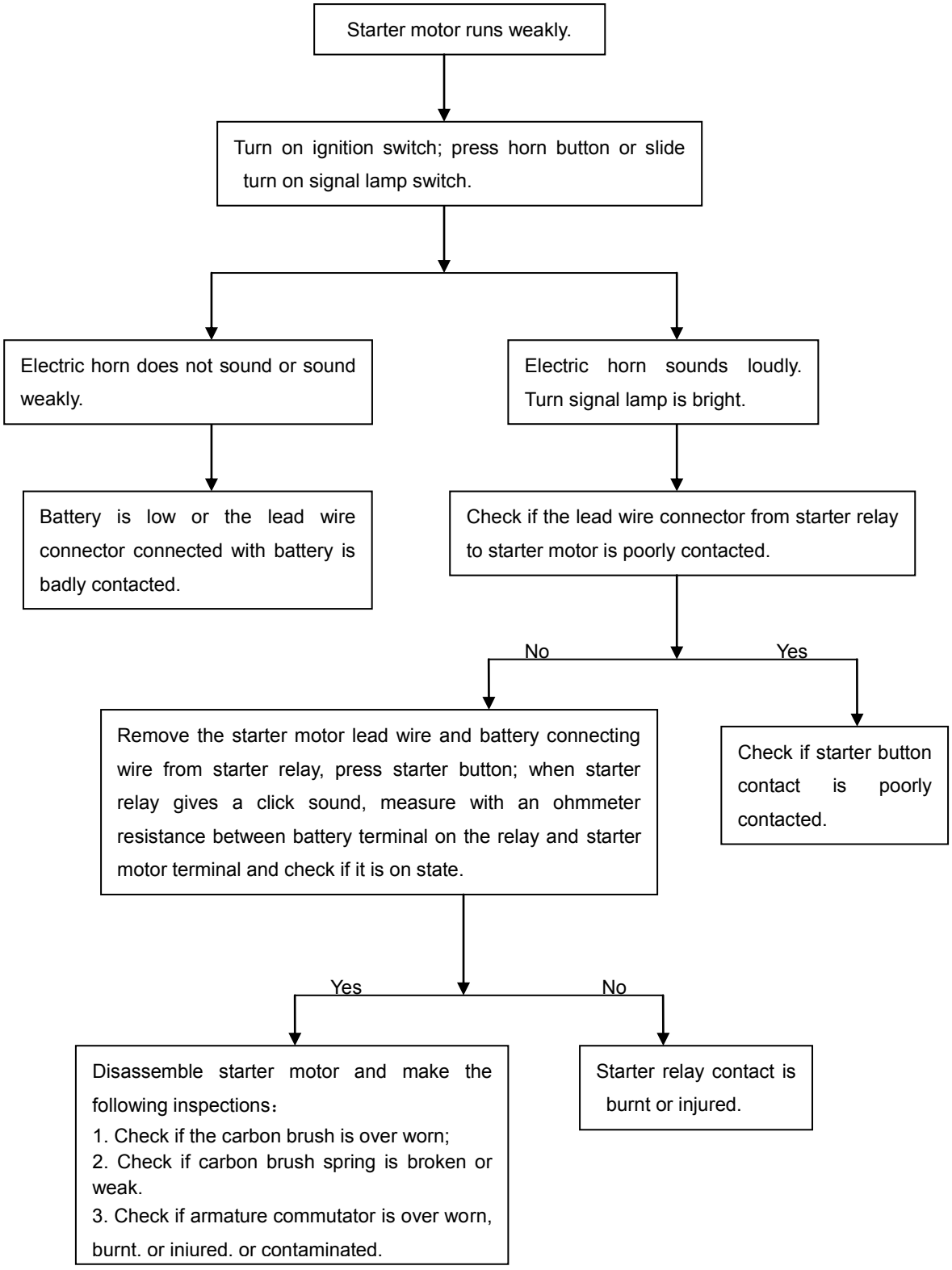


Symptom: Starting motor does not run **Diagnosis procedures**

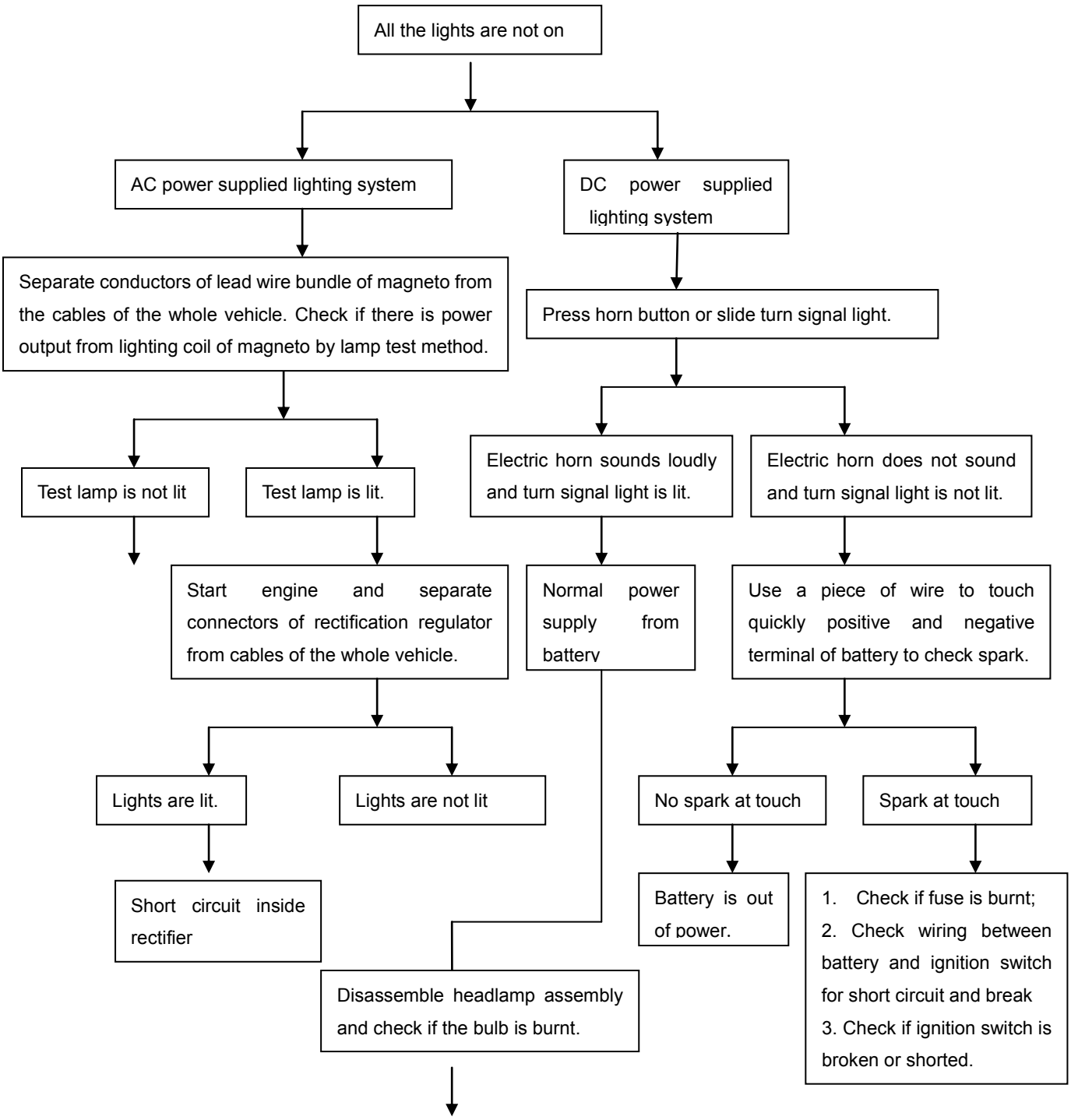


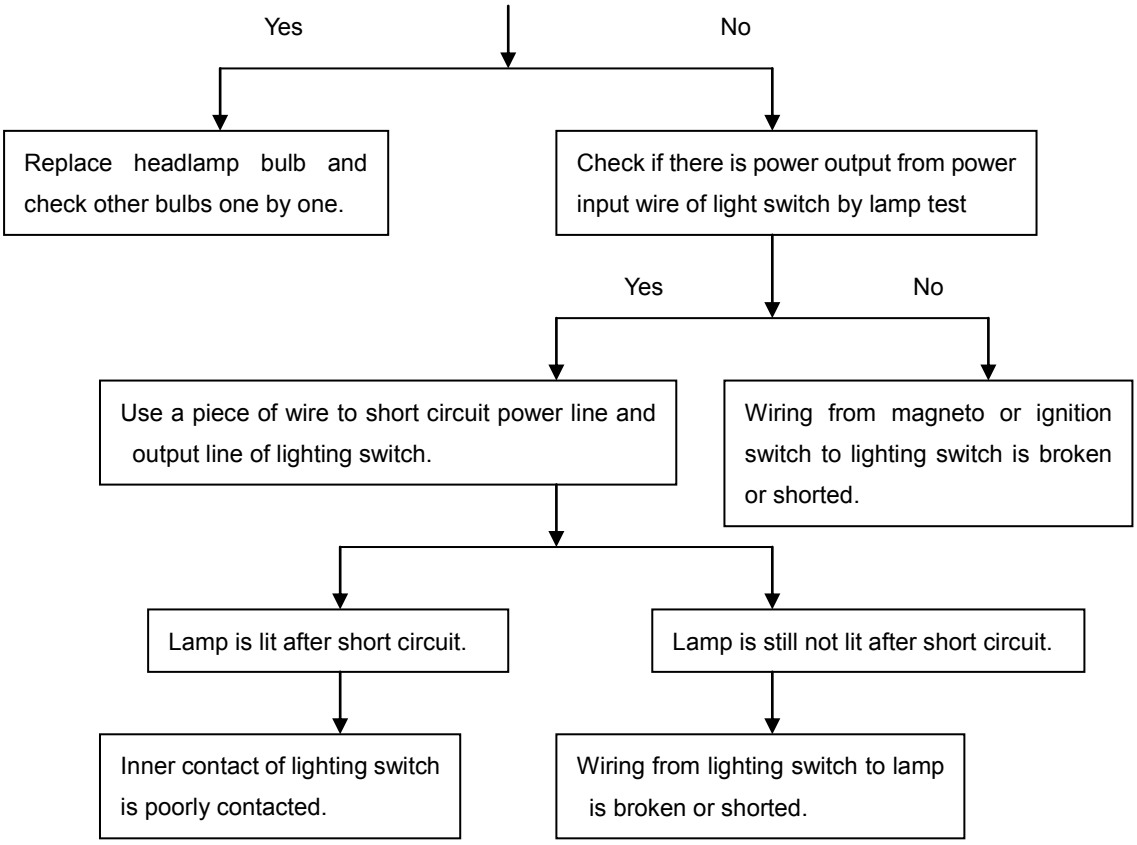

Coil in starter coil is broken or shorted.
Check wiring in electrical starter control system
Contact of starting relay is burnt or injured.
Disassemble starter motor and make the following inspections：
1. Check if the carbon brush is over worn;
2. Check if carbon brush spring is broken or weak.
3. Check if armature commutator is over worn.
4. Check if armature coil is broken or shorted.
Striding Motorcycle
Autoscooter
1.Check if contact inside clutch switch is poorly contacted;
2. Check if starter button contact is poorly contacted;
3. Check if rectifier diode is damaged;
4. Check if neutral gear switch works abnormally;
5. Check if wiring of electrical starter system is broken or shorted.
Grasp brake handle and check if braking lamp is on.
Yes
No
Check if starting button contact is poorly contacted
Inner contact of brake lamp switch is poor contacted or matched wire is broken.
Yes
No
Repair or replace starter button.
Wiring of electrical starting system is broken or shorted.

Symptom: Starting motor runs weakly Diagnosis procedures

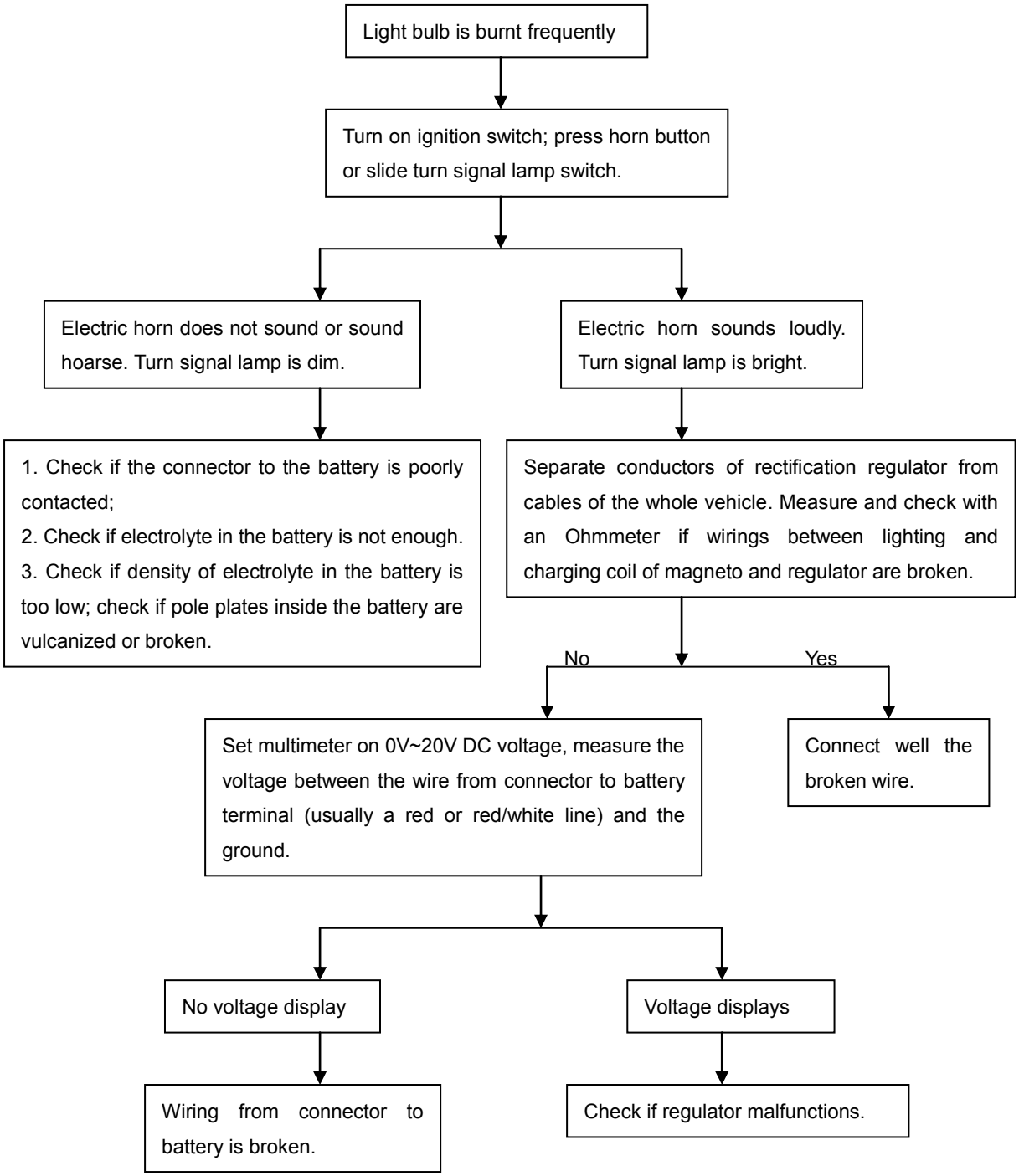


Symptom: All the lights are not on Diagnosis procedures

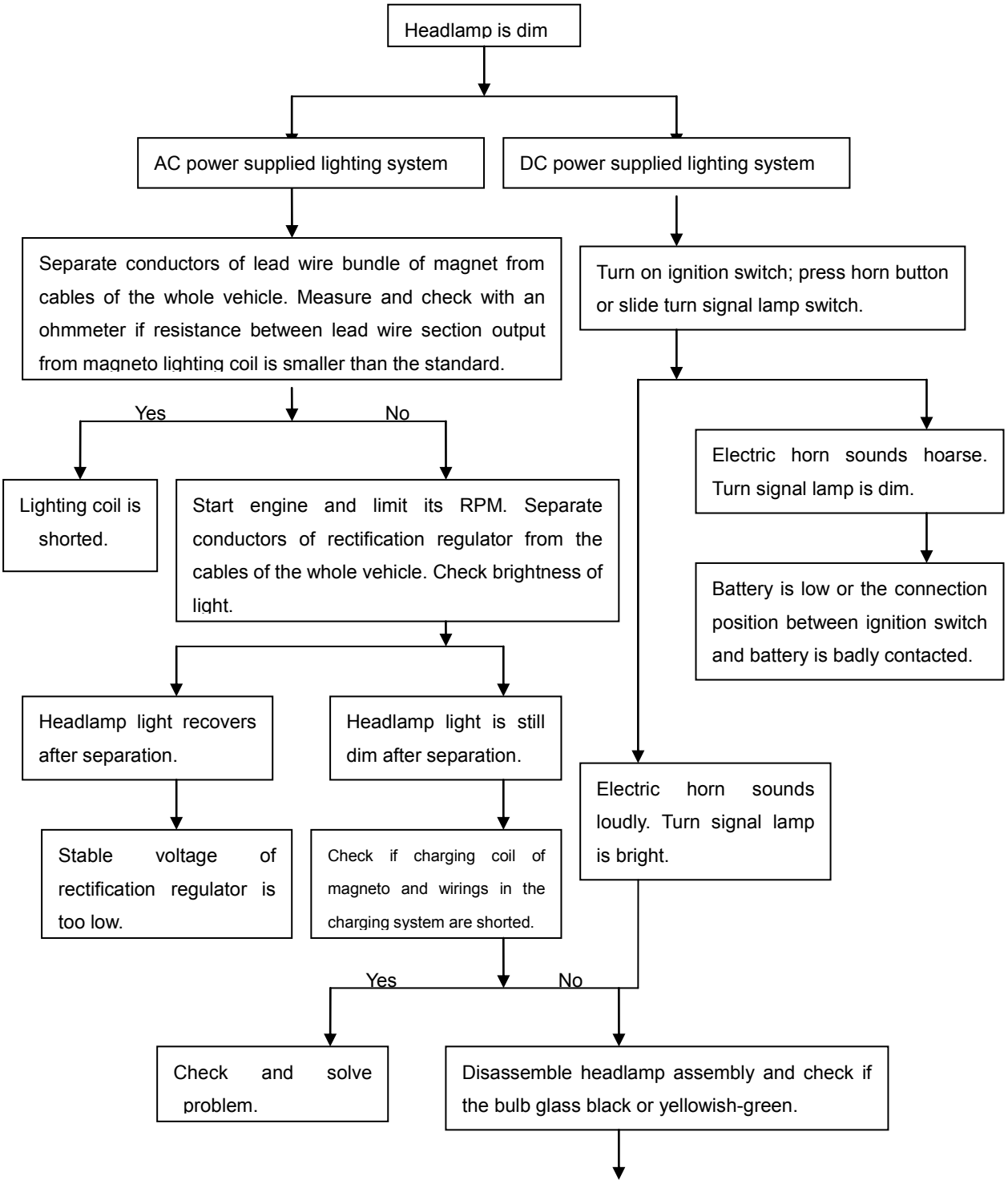


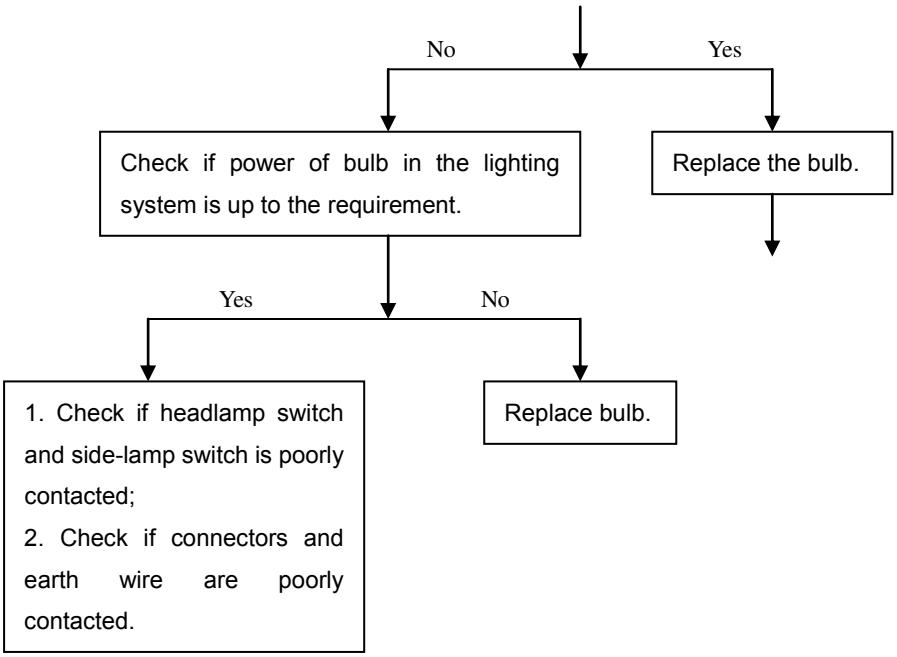

Yes
No
Replace headlamp bulb and check other bulbs one by one.
Check if there is power output from power input wire of light switch by lamp test
Yes
No
Use a piece of wire to short circuit power line and output line of lighting switch.
Wiring from magneto or ignition switch to lighting switch is broken or shorted.
Lamp is lit after short circuit.
Lamp is still not lit after short circuit.
Inner contact of lighting switch is poorly contacted.
Wiring from lighting switch to lamp is broken or shorted.

Symptom: Light bulb is burnt frequently Diagnosis procedures

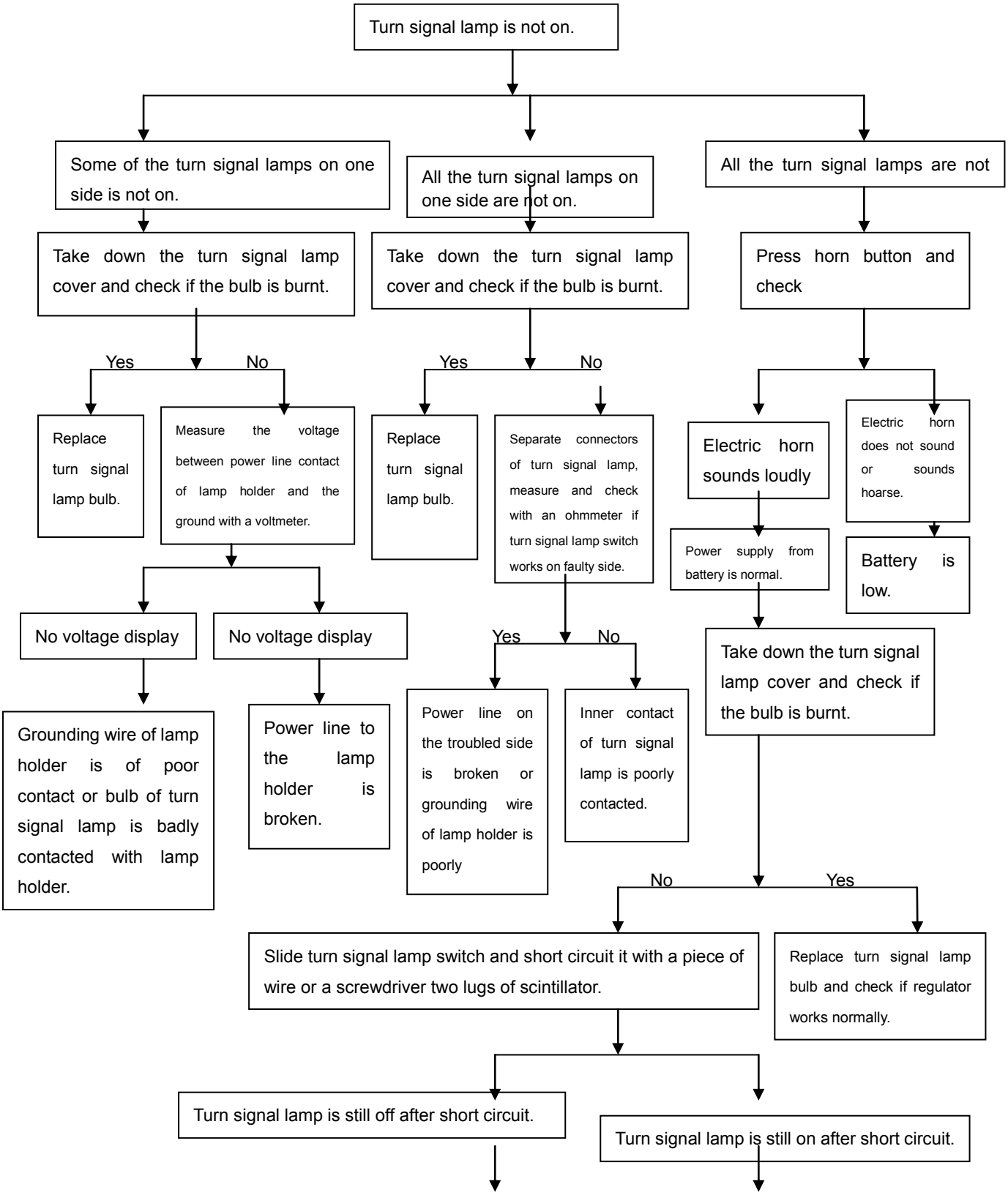


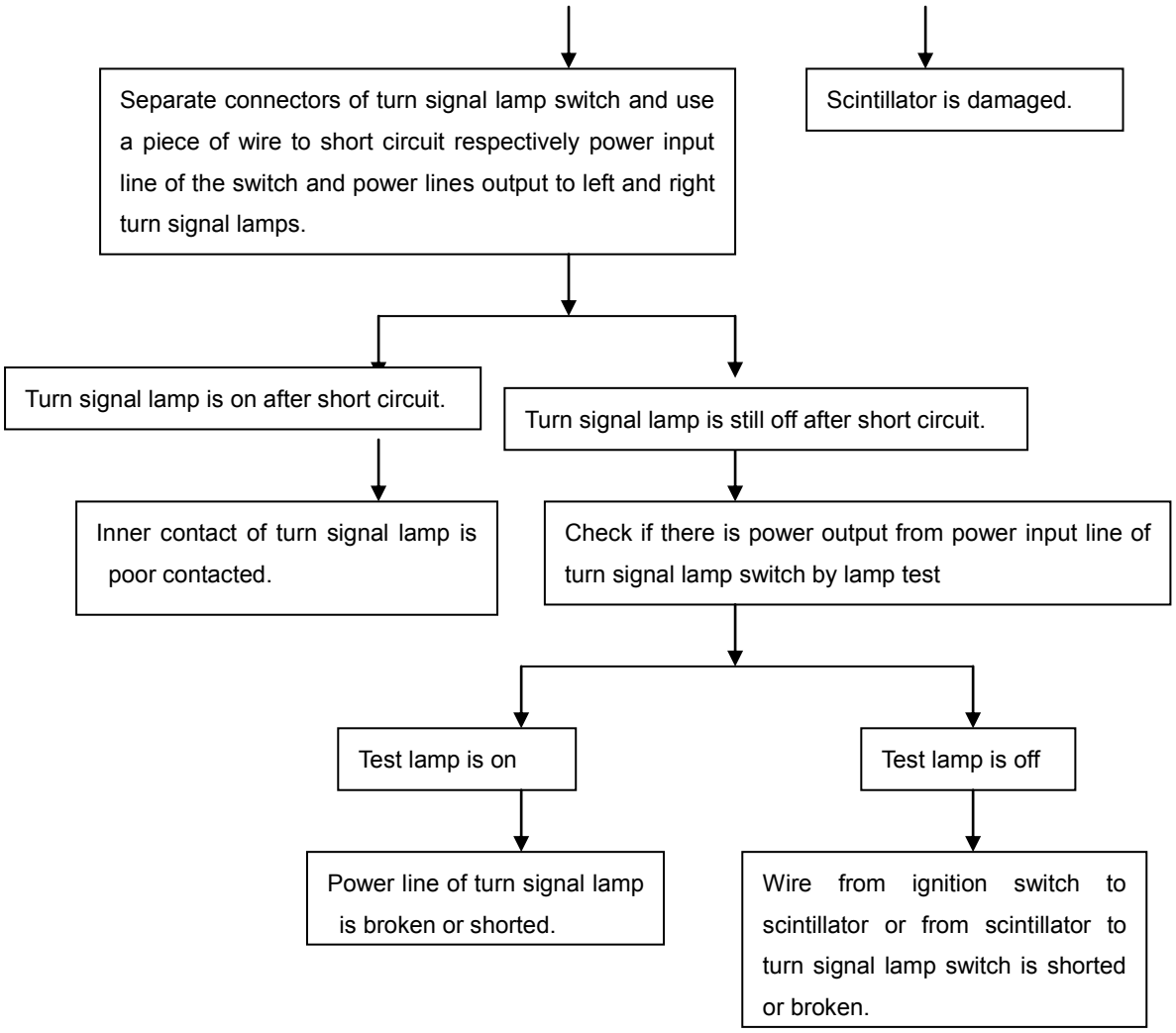
Symptom: Headlamp is dim. Diagnosis procedures



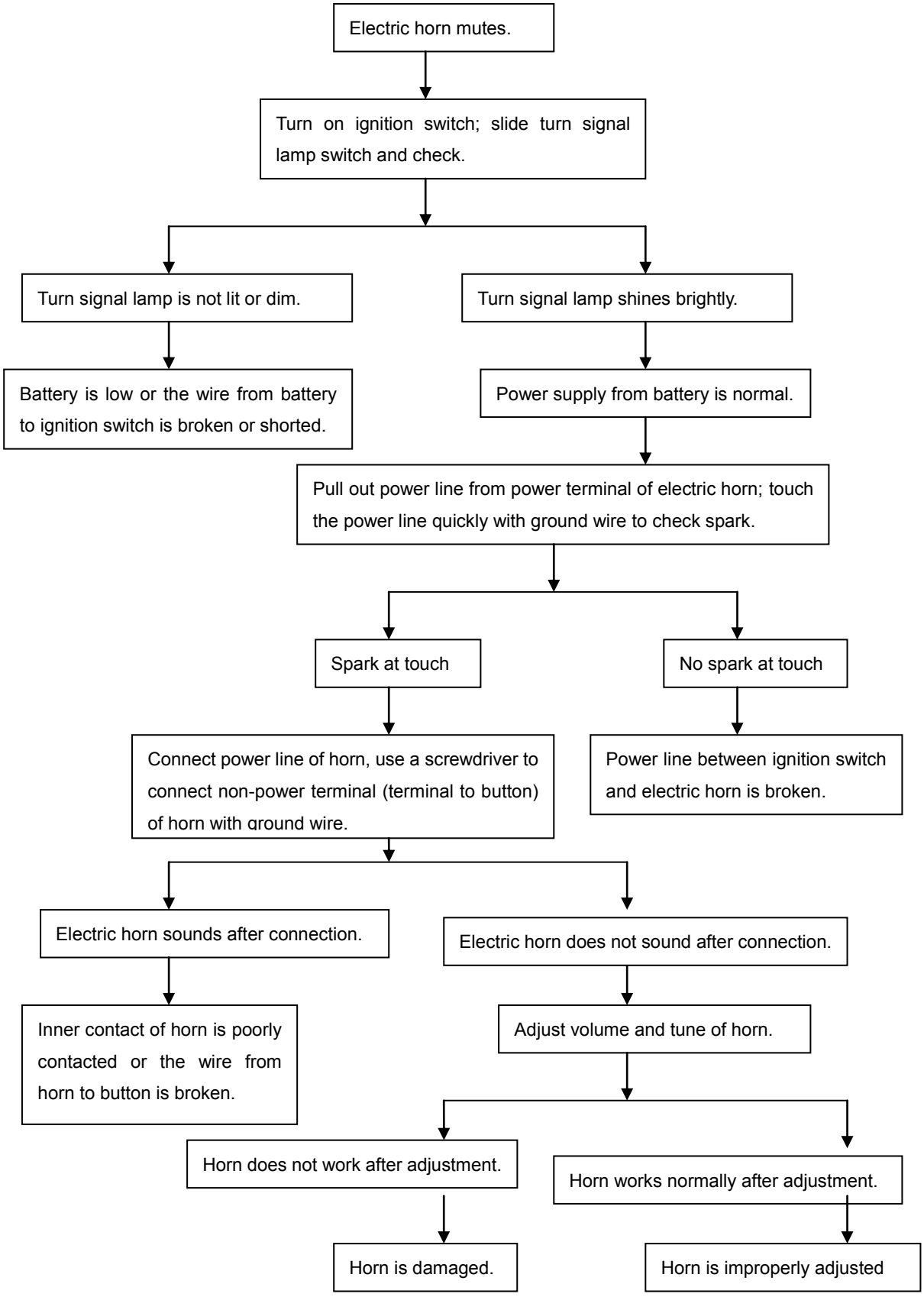

No
Yes
Check if power of bulb in the lighting system is up to the requirement.
Replace the bulb.
Yes
No
1. Check if headlamp switch and side-lamp switch is poorly contacted;
2. Check if connectors and earth wire are poorly contacted.
Replace bulb.

Symptom: Turn signal lamp is off. Diagnosis procedures

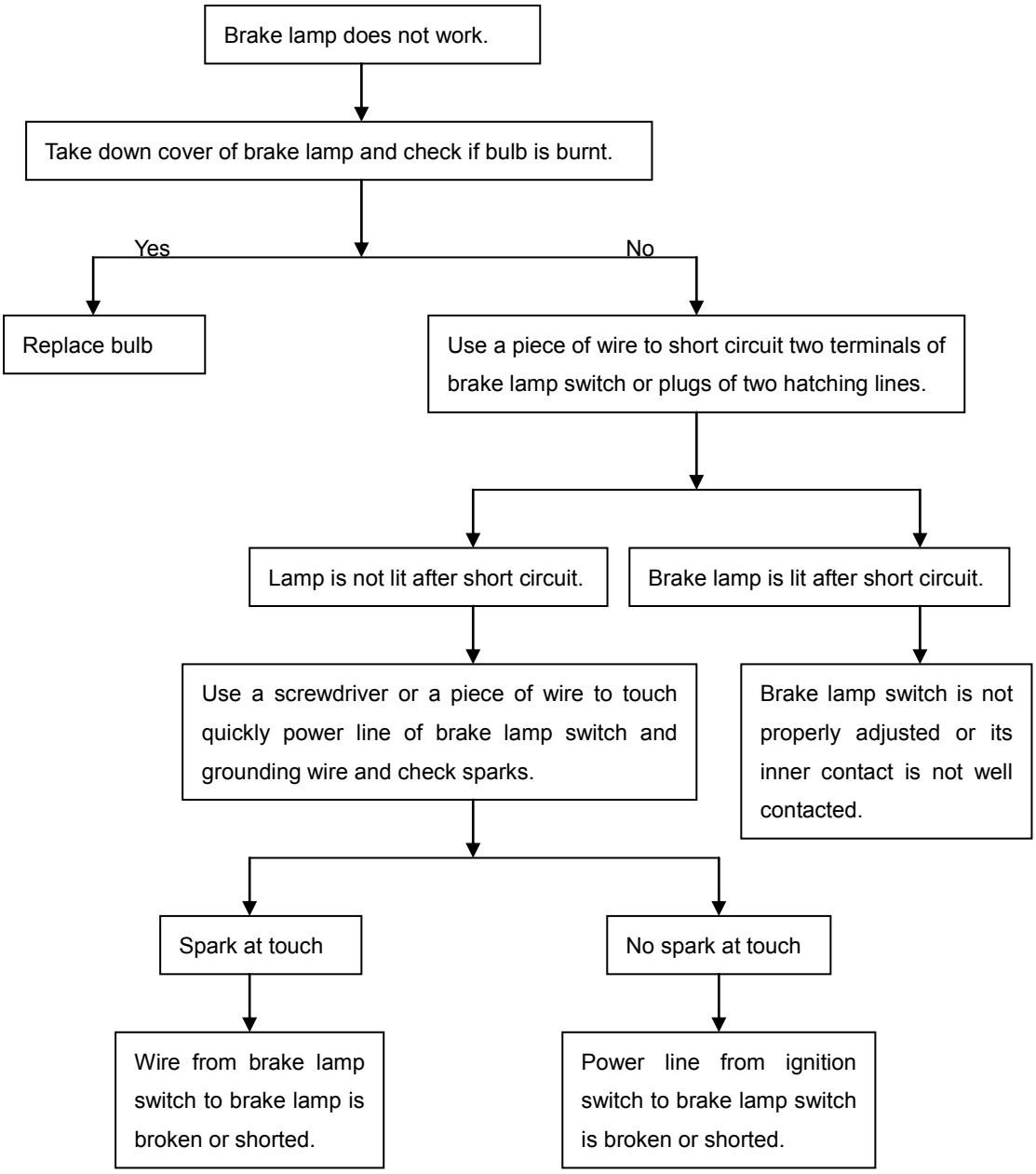



Separate connectors of turn signal lamp switch and use a piece of wire to short circuit respectively power input line of the switch and power lines output to left and right turn signal lamps.
Scintillator is damaged.
Turn signal lamp is on after short circuit.
Turn signal lamp is still off after short circuit.
Inner contact of turn signal lamp is poor contacted.
Check if there is power output from power input line of turn signal lamp switch by lamp test
Test lamp is on
Test lamp is off
Power line of turn signal lamp is broken or shorted.
Wire from ignition switch to scintillator or from scintillator to turn signal lamp switch is shorted or broken.

Symptom: Electric horn mutes. Diagnosis procedures



Symptom: Brake lamp does not work. Diagnosis procedures



Inspection/Adjustment

Preparatory standard

Periodic maintenance schedule chart

Engine oil/filter

Steering stem bearing and handle fixation

Throttle cable adjustment

Air cleaner

Spark plug

Battery

Carburetor

Ignition timing

Wheel rim/tyre

Compression pressure of cylinder

Engine oil

Replacement of engine oil

Drive chain slackness

Front/rear brake clearance

Headlamp

Clutch

Front/rear suspension system

Bolt/nut/fastening part

Tyre specification

Preparatory Standard

General

Warning!

• Before running the engine, please make sure the area you are working in is well ventilated. You shall never run the engine in an enclosed site. Gas exhausted from the motorcycle contains carbon monoxide, which may lead to loss of consciousness and result in death.

• Under certain conditions, gasoline is highly volatile. Work in well-ventilated site. Fire and smoking are forbidden in working site or gasoline storage place.

Specifications

Engine

Idle speed	1400±100rpm/min
Spark plug clearance	0.6-0.7mm
Spark plug type	NGK DR8EA
Combustion chamber	Ball type
Ignition time	BTDC15°±1° 1400±100rpm

Frame

<table>
<tr><td colspan="2">Clearance of front brake handle</td><td colspan="4">10-20mm</td></tr>
<tr><td colspan="2">Clearance of rear brake pedal</td><td colspan="4">20-30mm</td></tr>
<tr><td colspan="2" rowspan="3">Pneumatic pressure unit of tyre：Kpa</td><td colspan="3">Specification</td><td>Tyre pressure</td></tr>
<tr><td rowspan="2">RKV125</td><td>Front wheel</td><td>100/80-17</td><td>210±10kPa</td></tr>
<tr><td>Rear wheel</td><td>130/70-17</td><td>210±10kPa</td></tr>
<tr><td rowspan="2">Torque</td><td>Front shaft locknut</td><td colspan="4">55-62 N·m</td></tr>
<tr><td>Rear shaft locknut</td><td colspan="4">85-98 N·m</td></tr>
</table>

Periodic Maintenance Schedule

	Mileage and interval / Items	Every 300 KM	Every 1000 KM	Every 3000 KM	Every 6000 KM	Every 12000 KM	Every 14500 KM	Tools
		New Vehicle	One month	three months	Six months	Twelve months	Fifteen months	
*	Air cleaner	I		C	C	R	C	Common tool
*	Gasoline filter	I			I	R		Common tool
*	Engine oil filter	C			C	C		Common tool
	Engine oil replacement	R	Once every 1000KM					Common tool
	Tyre pressure	I	I	I	I	I	I	Tyre pressure gauge, air inflator
	Battery inspection	I	I	I	I	I	I	Densimeter, multimter
	Actuating clearance inspection	I	I	I	I	I	I	Common tool
	Inspection of steering handle bar looseness	I			I	I		Common tool
	Shock absorber actuating inspection	I			I	I		Common tool
	Inspection of looseness of bolts at all positions	I	I	I	I	I	I	Torque wrench
	Check if gearbox leaks oil	I	I	I	I	I	I	Common tool
*	Spark plug inspection and replacement	I		I	R	R	I	Common tool
*	Gearbox oil replacement	I	Once every 5000KM					Common tool
	Lubrication of all the places on the vehicle				L	L		Lubricant injector
	Muffler	I	I	I	I	I	I	Common tool
*	Ignition timing	I	I	I	I	I	I	Timing light
*	Carburetor	A	I	A	A	A	A	Tachometer, CO HC analyzer
*	Idle exhaust gas inspection	A	I	A	A	A	A	
*	Throttle inspection	I		I	I	I	I	Common tool
	Fuel hose inspection	I		I	I	I	I	Common tool
	Light instrument and electric apparatus	I	I	I	I	I	I	Visual multimeter
	Main stand and side stand	I			I	I		Common tool
	Shock absorber			I	I	I	I	Common tool
*	Torque of engine bolt	I		I	I	I	I	Torque wrench
	Front/rear brake			I	I	I	I	Common tool
	Drive chain		I	I	I	I	A	Common tool
	Clutch			I	I	I	I	Common tool
*	Valve		I	I	I	I	I	Feeler gauge

Expected Inspection

1	Ignition system -- perform maintenance inspection on obvious and continuous ignition malfunctions, engine on fire, overheated back burning and others.
2	Carbon deposit removal -- obvious underpowered, get rid of carbon deposit at cylinder head, piston head and air exhaust system.
3	Piston and cylinder -- when cylinder is over worn or stuck, please replace it.

Please go to your local KEEWAY Motorcycle dealer periodically for inspection and adjustment to keep your vehicle in best conditions.

In above table, monthly 1000km travel is employed as reference.

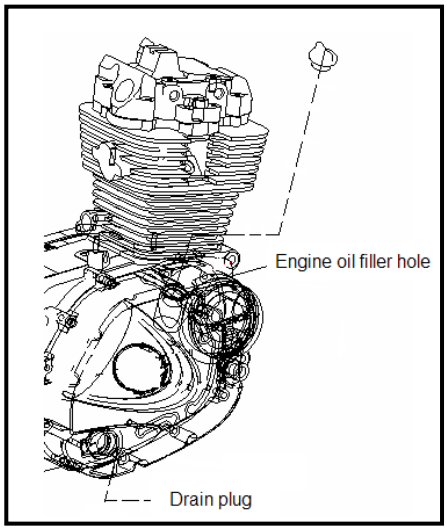
I— Inspect A—Adjust R—Replace C—Clean L—Lubricate

Note: 1."*" for items involved in exhaust gas, which meets regulations of China Environmental Protection Agency. Normal maintenance shall be performed according to specifications on the user's manual; unauthorized repair and adjustment are forbidden. We will not be responsible for the results.

2. You shall clean more frequently the air cleaner to extend its service life when your motorcycle is used on sand-gravel roads or in severely polluted environment.

3. More frequent servicing may be required when the motorcycle is often driven at high speed or travels a long distance.

Engine Oil/Filter



Engine oil level

***Attention**

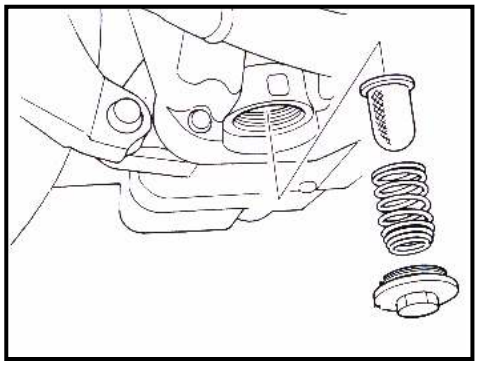
• Motorcycle shall stand on the flat ground while checking engine oil level.

•Inspect engine oil level when the engine has run for 2~3mintues or stopped for 2~3minutes.

Check engine oil level

When the engine oil level sensor alarms, refill engine oil to its upper limit.

Engine oil replacement



*** Attention**

When the engine is warmed up, replace engine oil. The oil can flow out easily.

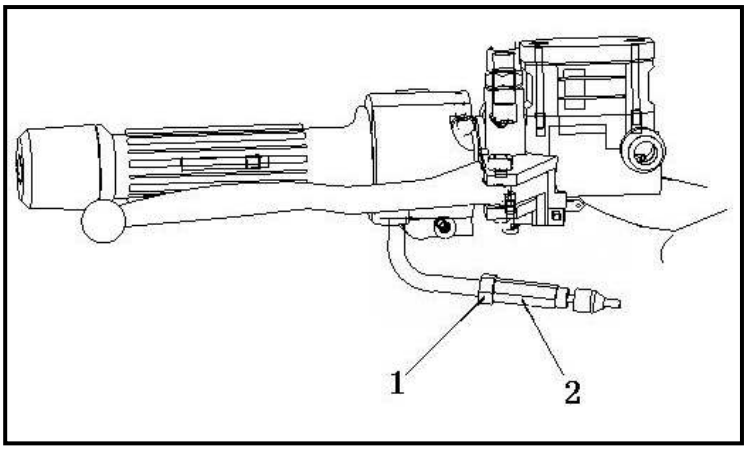
Shut down engine.

Screw off the drain plug at the bottom of crankcase (1) to drain engine oil.

When the engine oil is completely drained, put back cleaned drain plug and sealing ring.
Refill engine oil to specified level.
Check if there is engine oil leakage. Start the engine and run the engine on idle for a few minutes.
Check engine oil level again.

Throttle Cable Adjustment

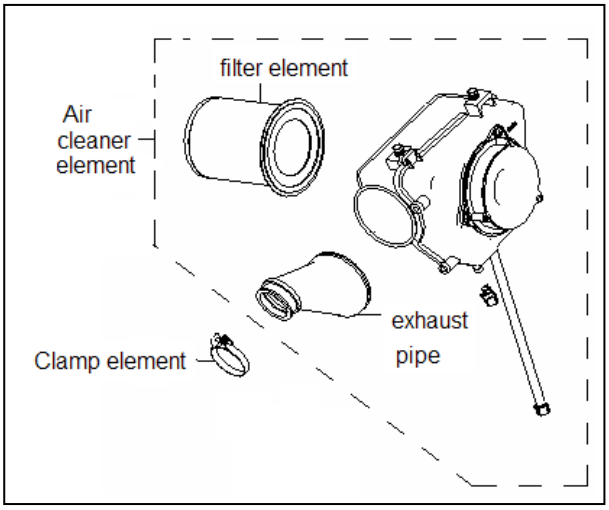
***Attention**
Adjust properly engine idle before adjustment of throttle cable clearance.



Check clearance of throttle cable, clearance shall be 3-5mm.
If the clearance is not up to the specified, adjust it.

Adjust clearance of throttle cable.
Procedures:
Loosen locknut (1).
Rotate adjusting nut (2) inward or outward till it achieves specified clearance.
Rotate inward to increase clearance; rotate outward to reduce clearance.
Tighten locknut.
When the clearance is adjusted, rotate handle leftward and rightward to make sure idle of engine does not change.

Air Cleaner



Replace air cleaner.

Take down the left protecting plate.
Take air cleaner cover.
Take out filter element and filter guide of air cleaner.

Check if filter element is polluted or injured. If necessary, replace it with a new one.
Clean air filter element.
Thoroughly and gently wash filter element with detergent.
Never use gasoline oil as cleaning agent, it may cause fire.
Please do not twist filter element in case the foam material is damaged.
Apply engine oil onto the filter element and then compress surplus engine oil so that the filter element is wet but not dropping oil.

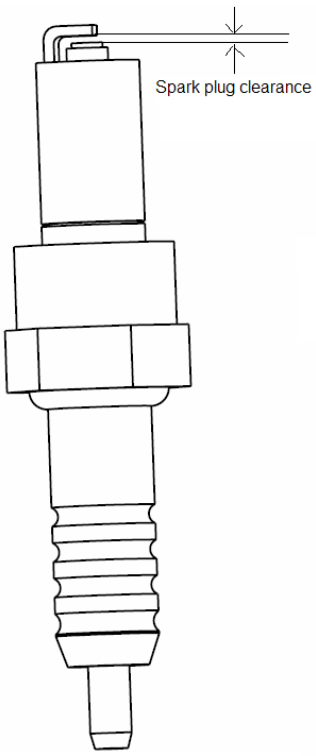
Replacing Time

If driving under dusty condition or in rainy days frequently, replace the air cleaner earlier.

*** Attention**

While removing filter element of air cleaner, please do not run the engine, in case unfiltered air comes into the engine, which may result in fast wear of some components or damage the engine. On the other hand, rotation of engine without filter element may affect the carburetor and the carburetor will not work normally afterwards, which may result in overheated engine. Install filter element guide, filter element, air cleaner housing cover, stop valve assembly and left protecting plate.

Spark Plug



Disconnect lead wire of spark plug cap.
Remove spark plug with a spark plug wrench or other applicable tools.

Inspection

- If the insulator is cracked or damaged;
- If electrodes are worn;
- Combustion condition and color
  —Light grey color means excellent combustion condition.
  —Pale color indicates that ignition system fails or lean fuel/air mixture.
  —Wet appearing or dark carbon deposition means higher fuel/air mixture.

If the above-mentioned appears, please remove them with spark plug cleaner or wire brush. If necessary, replace the spark plug.
Spark plug visual inspection
If the insulator is cracked or worn, please replace it with a new one.

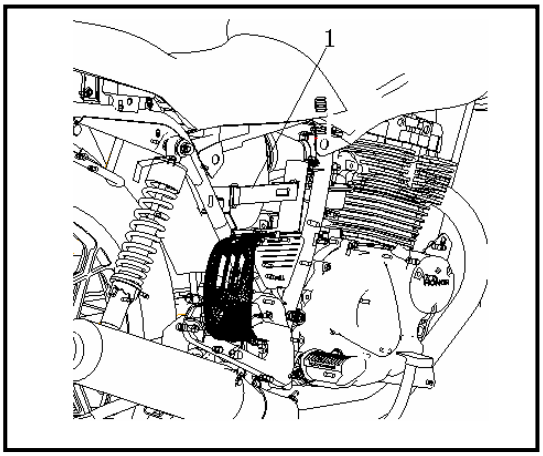
Spark plug clearance inspection
Clearance: 0.6-0.7mm

*** Attention**

Reinstall the spark plug into the cylinder head and tighten it with the specified torque.
Tightening torque: 18N.m
Screw the spark plug into the cylinder head first with fingers, and then tighten it with spark plug wrench.

Battery

Removal

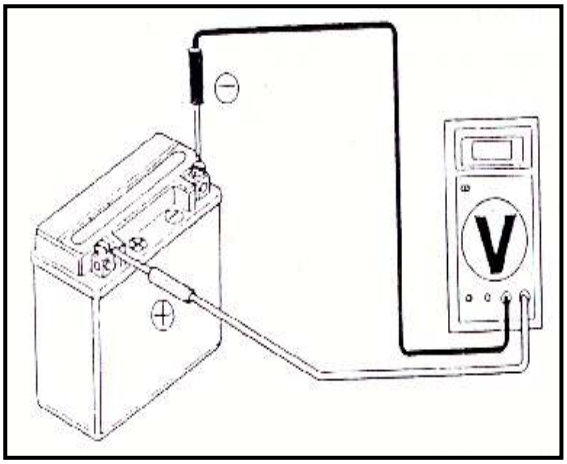


Remove the seat and take down the right protecting plate.
Remove the battery from the battery case (1).
Disconnect the battery negative (-) lead wire first and then the positive (+) lead wire.
Remove the battery.

Warning!
During positive lead wire disconnection, be sure to prevent the tools being used from touching the frame; or it will result in short circuit sparks, which may ignite gasoline and damage battery. It is dangerous!

Install the battery in reverse order of removal.

Warning!
To avoid short circuit, please connect positive (+) lead wire first, then the negative (-) lead wire.
During the whole motorcycle adjustment, please do not disconnect the battery, which may result in interior component damage of the whole vehicle.



Battery charging (circuit voltage) inspection

Open the seat cushion and take down the right protecting plate.
Disassemble the battery from the battery case (1).
Disconnect the battery negative (-) lead wire first and then the positive (+) lead wire.
Remove the battery.
Measure the battery voltage using a voltmeter.
Fully charged: 13.1V
Undercharge: 12.3V (battery not work for one hour)
*** Attention**
Voltmeter shall be used for charging inspection.


Voltmeter

Charging

Connection method: Positive pole of battery charger is connected to battery positive lead wire; Negative pole of battery charger is connected to battery negative lead wire.

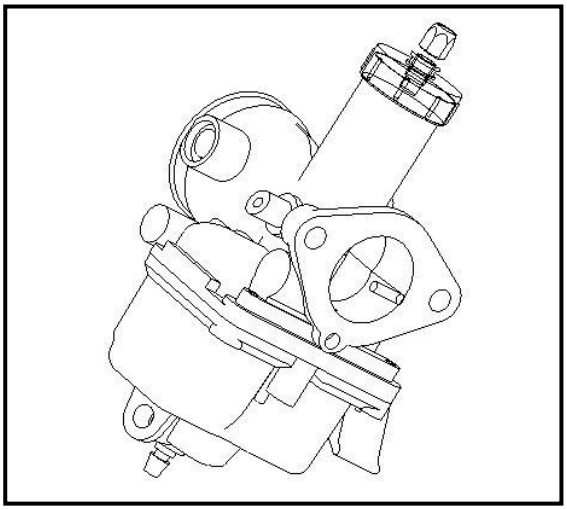
Warning!

• Battery shall be away from fire.
• Shut off charger switch first before or after charging in case sparks may be generated at connection parts, which may result in explosion.
• During charging, please take the current time labeled on the battery as basic time.

*** Attention**
• Battery quick recharging is not recommended except in case of emergency.
• After recharging, wait at least 30minutes and then measure the battery voltage.

Recharging current:	**Standard: 0.3A**
	Quick recharging: 3.0A
Recharging time:	**Standard: 10-15hours**
	Quick recharging: 30minutes
After recharging:	**Open circuit voltage: over 12.8V**

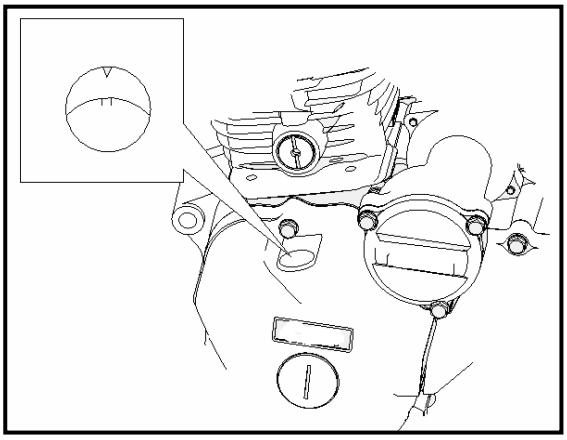
Carburetor



Idle speed adjustment

***Attention**
Perform idle speed adjustment when the engine is warm.

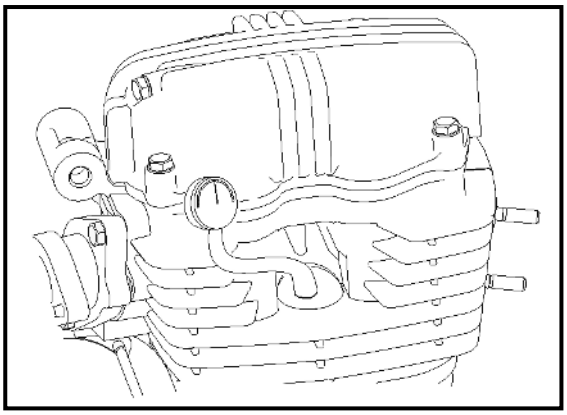
Warm up the engine and then adjust idle speed.
Run the engine and connect engine tachometer.
Adjust the throttle cable lock-screw to specified RPM.
Idle speed RPM: 1400±100rpm/min
If idle speed RPM is unsteady, or idle speed is not smooth when gently raise engine speed, adjust idle speed adjusting screw again.



Ignition Timing

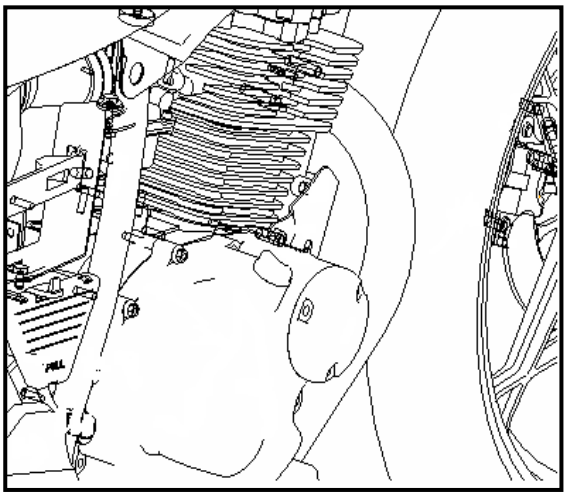
***Attention**
Inspect ignition system when the ignition timing is incorrect.
Warm up the engine for 3~5 minutes
Stop the engine and connect the timing light to lead wire of spark plug.
Remove timing hole cap.
Start engine and idle it.
Inspect ignition timing.
If symbol “F” aligns with the mark on the right crankcase, it indicates that the ignition timing is correct. Increase engine speed and check if Symbol “F” begins to move.

Compression Pressure of Cylinder



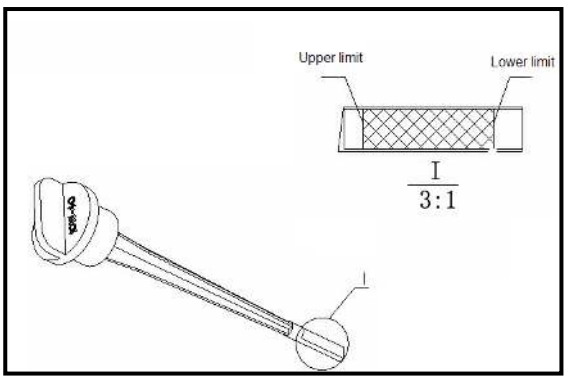
Warm up engine.
Insert the pressure gauge.
Turn choke valve to its full open position.
Set throttle handle to its full open position and kick start the engine.
Compression pressure of cylinder: 1-1.2 mpa
*** Attention**
Start the engine till reading of pressure gauge does not rise.
Causes for low pressure:
. Valve improperly adjusted
. Valve leaks air.
. Worn piston ring or cylinder
Causes for high pressure:
. Carbon deposition in combustion chamber or on piston
Stop engine and remove spark plug and spark plug cap.

Engine oil



Engine oil level inspection

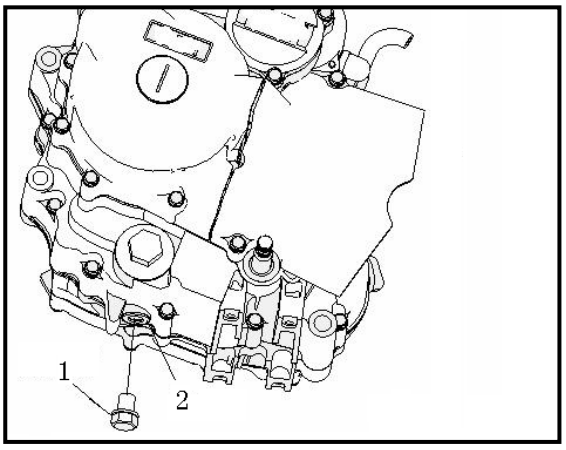
*** Attention**
During engine oil inspection, please do not tighten engine oil ruler.
Oil level inspection. Stop the motorcycle on the flat ground with its middle stand and stand the vehicle vertically.
When engine oil is consumed continually, you shall inspect oil level regularly and refill to proper position if necessary.
Engine oil volume: 0.8L for oil replacement
1.1L for engine overhaul
If engine oil level is too high, operation of engine and clutch will be affected；
Too low engine oil level will result in overheated engine and premature component wear.
Refilling engine oil of poor quality or different types or brands will reduce lubrication effects.



Remove engine oil ruler when the engine stops. Dry the oil on the ruler with a piece of clean cloth.
Stand the engine on a horizontal plane and put the engine oil ruler into the engine. Do not tighten the ruler.
Take out the engine oil ruler and inspect oil level.
If oil level is lower or approaches the lower limit, add recommended oil to the upper limit mark.

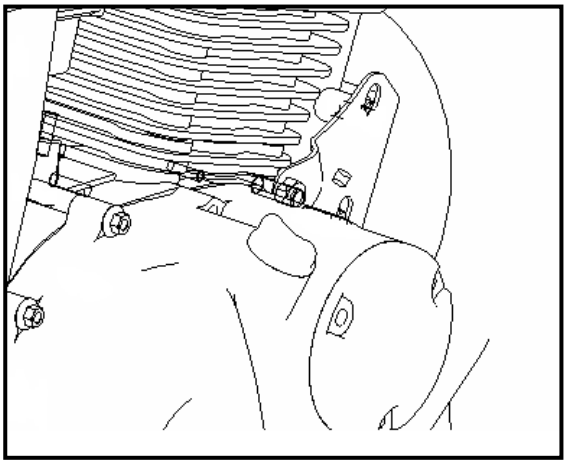
*** Attention**
Check if sealing ring is damaged.
Install the engine oil ruler.

Engine Oil Replacement



Warm up engine.
Place an oil pan below the engine and drain engine oil by removing drain plug and oil ruler.
Kick start engine several times to drain thoroughly the engine oil.
After drainage, inspect and clean engine oil filter.
Be sure that filter screen, spring, O ring and drain plug are perfect and then put them back onto the engine.

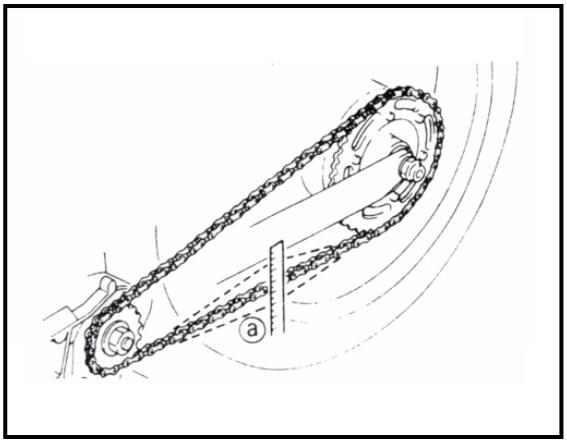
*** Attention**
Oil should be changed when the engine is warm. Place the engine on the side stand.
Make sure all the engine oil is completely and quickly drained.
When the drain plug is removed, engine oil filter and spring will be ejected.



Tighten the drain plug.
Add recommended engine oil into the crankcase.
Install engine oil leveler. Start the engine and let it run for 2~3minutes at idle.
Stop the engine and check if engine oil level is at upper limit mark in a few minutes.
Stand the engine vertically on the ground to check oil level.
Make sure no oil leaks.

Drive Chain Slackness

Stand vertically the motorcycle on the flat ground and check drive chain slackness ⓐ.



Drive chain slackness: 10-20mm

If the drive chain does not meet the specification, adjust it.
Adjust drive chain slackness:

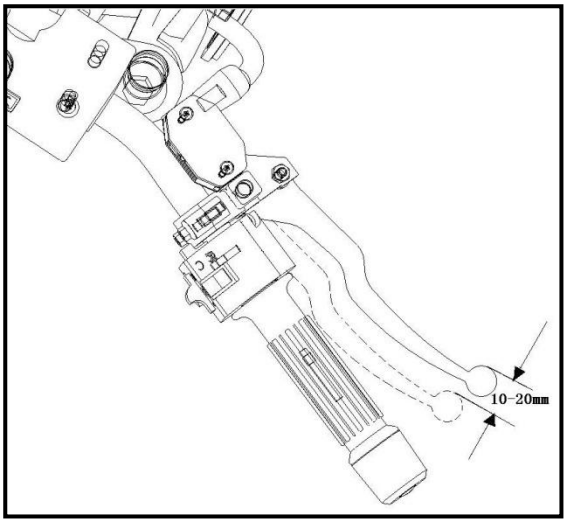
Screw off rear shaft nut and lock-nuts of adjusters on both drive chains.
Rotate uniformly both adjusters till the drive chains gain normal slackness.

*** Attention**

Do not install new drive chains onto worn sprockets or install worn drive chains onto the new sprockets.

Keep both sprocket and drive chain in good conditions, or newly replaced chain or sprocket will be worn soon.

Clearance of Front/Rear Brake



Front brake clearance

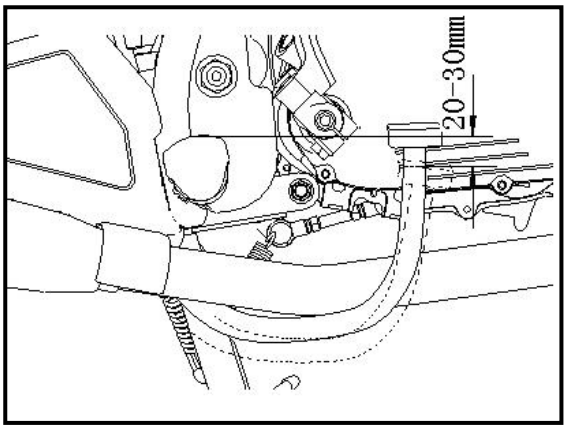
Measure the clearance of front brake at the tip of front brake handle.

Clearance: 10-20mm

Brake pedal clearance

Measure brake pedal clearance.

Clearance: 20-30mm.



If the clearance measured does not meet the specified value, adjust it.

Adjust clearance of brake pedal.

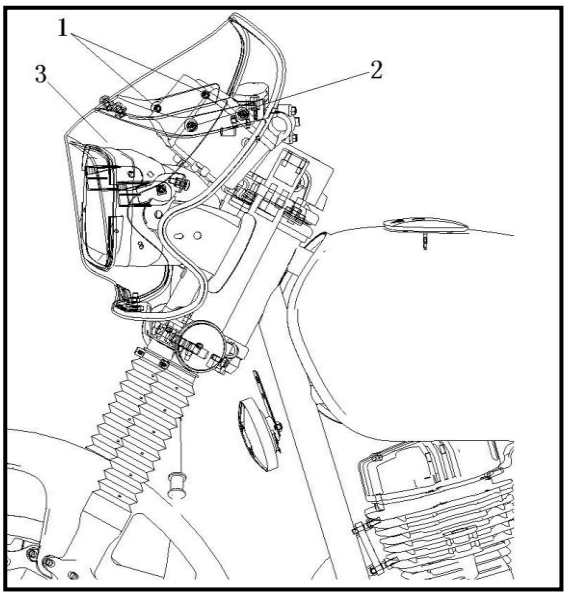
Screw in or screw off adjuster.

If the adjuster is screwed in, clearance is decreased; if screwed out, clearance is increased.

Adjust till the clearance is up to the specification.

After adjustment, brake does not drag.

Headlamp



Remove mounting screw (1) of cowling.

Remove cowling (3), headlamp hood and headlamp.

Pull out headlamp holder and remove the reflector. Release the circlip and take out lamp adapter.

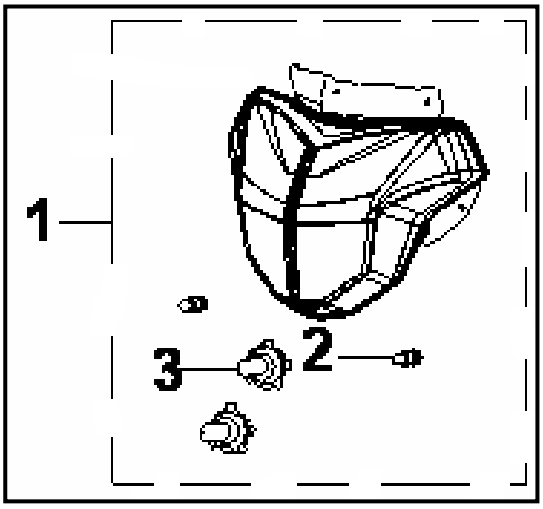
*** Attention**

When the bulb is lit, keep your hands and inflammable materials with some distance away from it. If lighting bulb is hot, touch it when it cools down.

Install a new headlamp bulb (3).
Screw tightly the new bulb into the adapter.

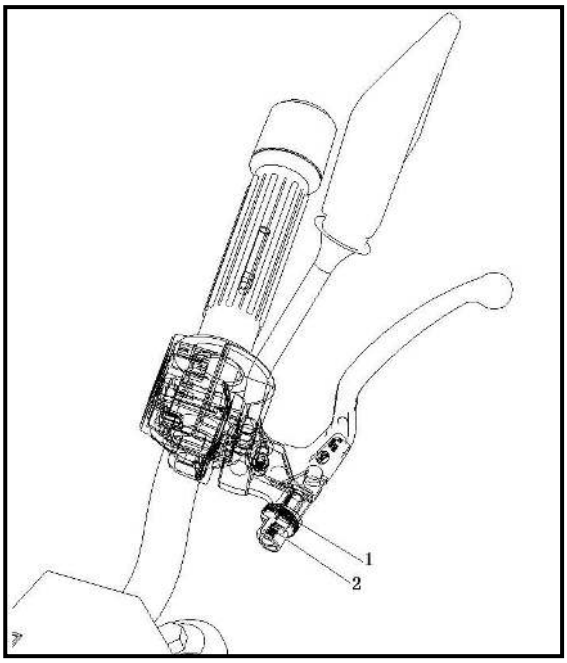
Avoid touching bulb glass with your bare hands during installation and staining it with oil, which may affect transparency, service life and luminous flux of bulb.
If oil is adhered to the bulb, clean it with a cloth moistened with alcohol or highly volatile rubber solution.

Install headlamp assembly.



Clutch

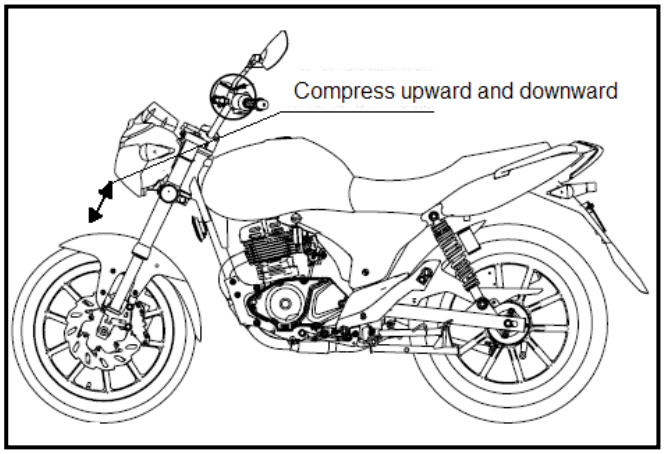
Check clearance of clutch cable.
Clearance: 10-15mm.
Adjust clearance of clutch cable.
First loosen lock nut (1).
Screw in or screw off adjuster (2) till clearance meets the specified value.
Finally tighten the locknut.



Front/Rear Suspension System

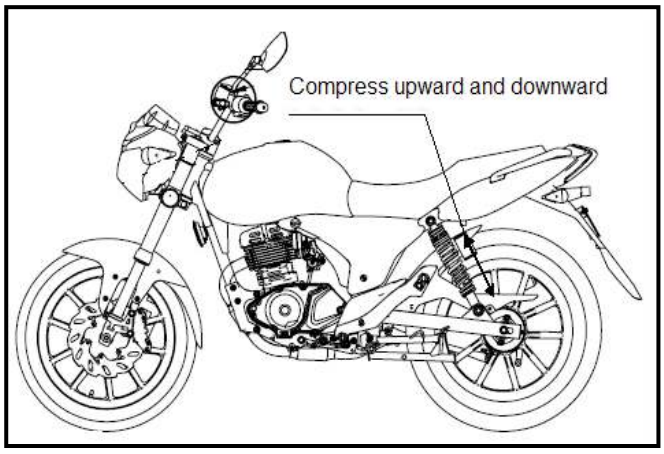
Front suspension

Grasp the front brake handle and compress upward and downward the front shock absorber to check its actuator.
Check if the front shock absorber leaks oil and if the components are loosened.



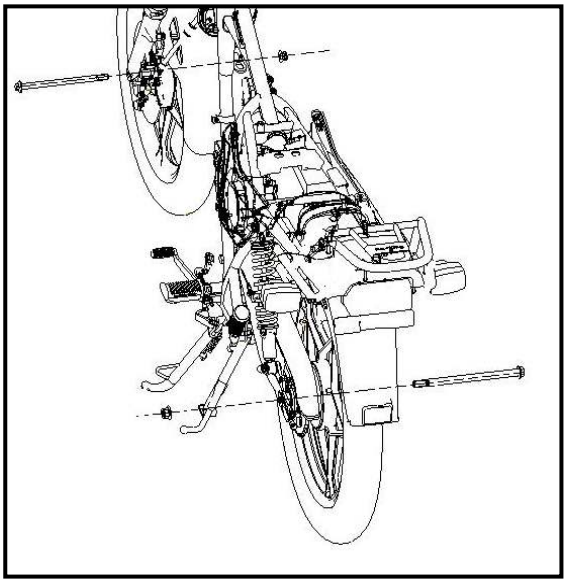
Rear suspension

Compress upward and downward the rear shock absorber to check its actuator.
Check if components on the rear shock absorber are loosened or injured.
Lift and support the rear wheel and swing the wheel to check if engine suspension bushing is loosened.



Bolt/Nut/Fastening Part

Inspect bolts, nuts and fastening parts at every part of the motorcycle for looseness.
If it is loose, tighten it to specified torque.



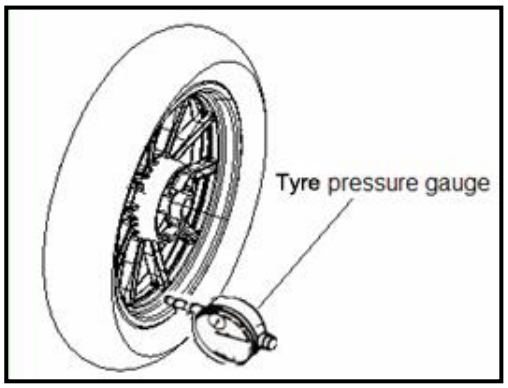
Wheel Rim/Tyre

Check if there is crack, nails and similar sharp objects, and other injuries on the tyres.
Inspect pneumatic pressure of tyres.

*** Attention**
Measure cold inflation tyre pressure

Specified air pressure Unit: Kpa

Tyre specifications			Tyre pressure
RKV125	Front tyre	100/70-17	210±10kPa
	Rear tyre	130//60-17	210±10kPa

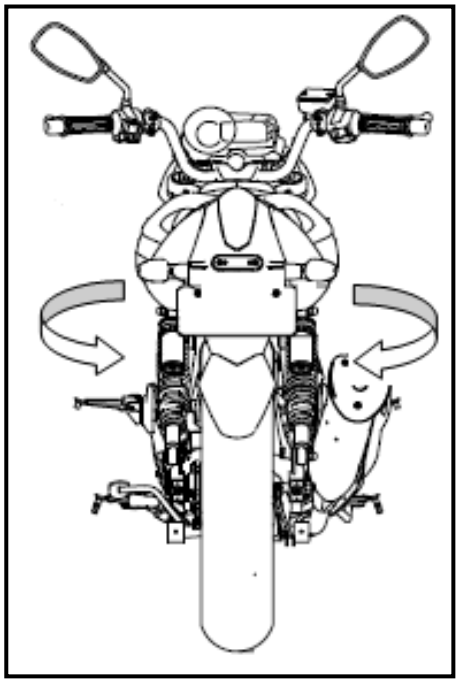


Tyre Specifications

RKV125	Front tubeless tyre	100/70-17
	Rear tubeless tyre	130//60-17

Check if lock nut of front shaft is loosened.
Check if lock nut of rear shaft is loosened.
If loosened, tighten it to specified torque.

Tightening torque:	**Front shaft lock nut**	**40-60**	**N·m**
	Rear shaft lock nut	**85-98**	**N·m**



Steering Stem Bearing and Handle Fixation

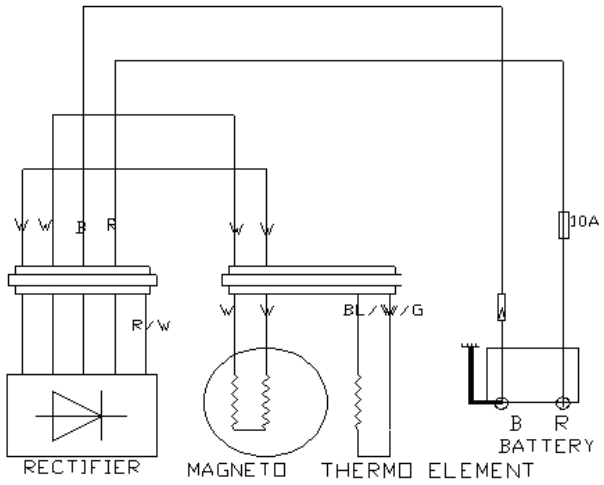
Move the left and right handle and check if lead wires disturb it.
Rotate front wheel and confirm handle can move smoothly.
If the handle does not move smoothly and is loosened, check steering stem bearing.

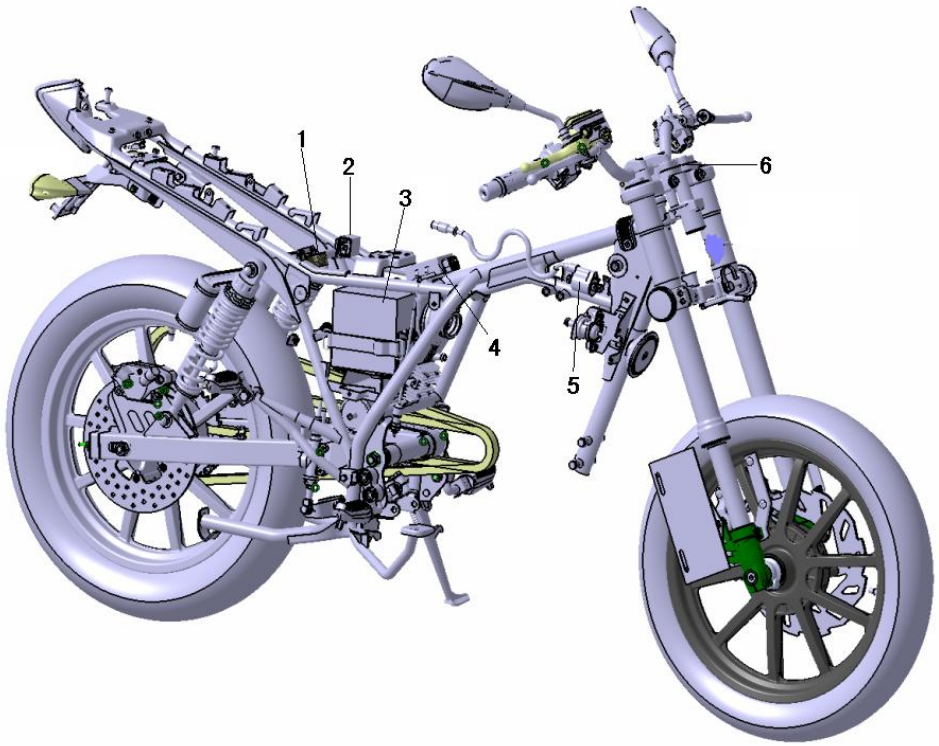
Inspection and Maintenance of Electric System

Table of tightening torque for fastening parts used in electric system

Fastening position and fastening part name	Tightening torque (N·m)
Starting motor clutch cover bolt	12
Starting motor clutch locknut	95
Rectifier bolt	5.0
High-voltage coil pinch bolt	9.0
Flywheel locknut	5.0
Vehicle block protecting plate bolt	9.0

Charging system





1. Starting relay 2. Scintillator 3. Battery 4. Electric igniter 5 High-voltage ignition coil
6. Power lock assembly

I Battery/Charging System

Preparatory data----------1.1 Fault diagnosis----------1.2

Battery----------1.3 Charging system----------1.4

Voltage/current adjuster------1.5

Magneto charging coil------- 1.6

Removal of magneto--------- 1.7

1.1 Preparatory Data

Precautions on operation

*** Attentions**

1. The battery can be charged and discharged, and used repeatedly. If a battery is laid aside after discharging, its service life will be shortened and its performance is degraded. Performance of a battery is usually reduced after about 2-3 years' run. Voltage of the performance-reduced (capacity drops) battery can be resumed, but the voltage will run down quickly while loading.
2. Overcharging of battery: Usually overcharging is demonstrated by the battery itself. If short circuit occurs inside the battery, there will be no voltage or very low voltage on the terminals of the battery. Adjuster fails: it indicates too high voltage on the battery, the life-span of the battery will be shortened.
3. When the battery is not be used for a long period, it will self-discharge and its capacitance will drop. The battery should be recharged every three months.
4. Charging system inspection: please perform inspection in the sequence listed in the fault diagnosis table.
5. If there is current going through the electric part, please do not remove the connector, or the voltage will be very high and electronic components inside the voltage adjuster will be damaged. Set ignition switch at "Off" position and then begin your operation.
6. It is not necessary to inspect maintenance-free (dry-charged type) battery. You don't need to add electrolyte and distilled water for it.
7. Inspect the entire electric load.
8. Quick charging is forbidden except in emergency.
9. During quick recharging, the battery must be removed from the motorcycle and recharged.
10. While battery is exchanged, please do not use liquid-feeding battery.
11. A voltmeter shall be employed to check recharged battery.

Preparatory Standard

Item			Specification
Battery	Capacity/type		12V dry-charged type
	Voltage（20℃）	Fully recharged	13.1V
		Must be recharged	12.3V (not work for one hour)
	Recharging current		Standard: 0.9A, Quick: 9A
	Recharging time		Standard: 10-15hours; Quick: 30minutes
Magneto	Max. capacity		120W
	Coiling impedance value（20℃）		White-white 0.5-10Ω
Voltage regulator	Type		Full-wave rectification
	Battery recharging voltage		14.5V±0.4V/5.000rpm

Tightening torque

Rectifier bolt	**5.0 N·m**
High-voltage coil pinch bolt	**9.0 N·m**
Flywheel locknut	**5.0 N·m**
Vehicle block protecting plate bolt	**9.0 N·m**

Tools

Universal non-adjustable spanner
Flywheel remover
Testing device
Multimeter

1.2 Fault Diagnosis

No power

Battery over discharged
Lead wire of battery is not connected.
Fuse is broken.
Power switch is poorly contacted.

Unstable power

Lead wire of battery is poorly contacted.
Discharging system is of poor contact.
Lighting system is of poor contact or short circuit.

Low voltage

Battery is poorly recharged.
Poor contact.
Poor charging system
Bad voltage and current adjuster

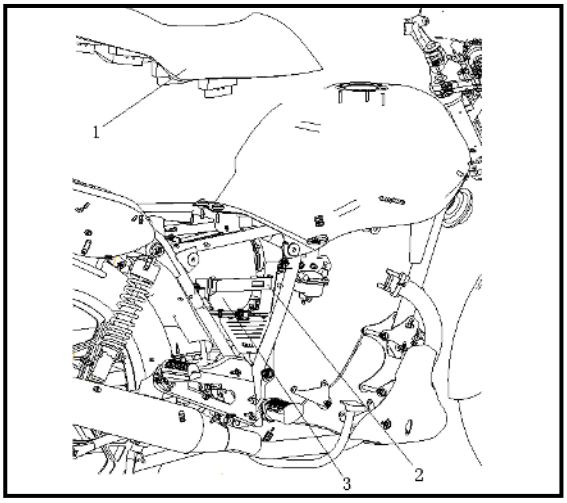
Poor charging system

Wire connector is of poor contact, short circuit or short line.
Defective voltage and current adjuster
Magneto does not work well.

1.3 Storage Battery

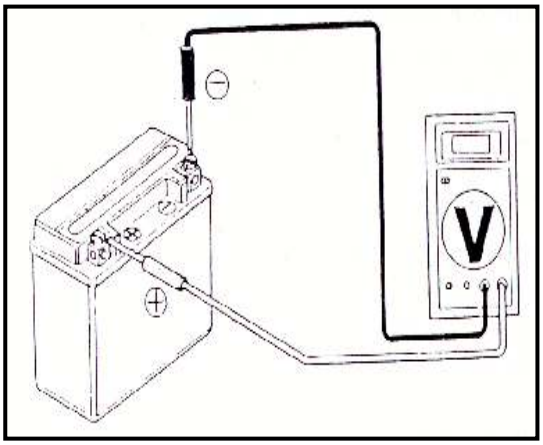
1.3.1 Battery Removal

Take down the right protecting plate (1).
Disconnect the battery negative (-) lead wire first and then the positive (+) lead wire.
Remove the battery breather.
Remove battery mounting bracket (2).
Remove the battery (3).



Warning!
During positive lead wire disconnection, be sure to prevent the tools being used from touching the frame; or it will result in short circuit sparks, which may ignite gasoline and damage battery. It is dangerous!
During the whole motorcycle adjustment, please do not disconnect the battery, which may result in interior component damage of the whole vehicle
Install the battery in the reverse order of removal.

***Attention**
To avoid short circuit, please connect positive (+) lead wire first, then the negative (-) lead wire.
Battery charging (circuit voltage) inspection
Open the battery cover and remove battery pressure plate assembly.
Disconnect lead wire of the battery connector.
Measure voltage between terminals of the battery
Fully charged: 13.1V
Undercharged: 12.3V (battery does not work for 1hour)



*** Attention**
A voltmeter shall be employed to check recharged battery.

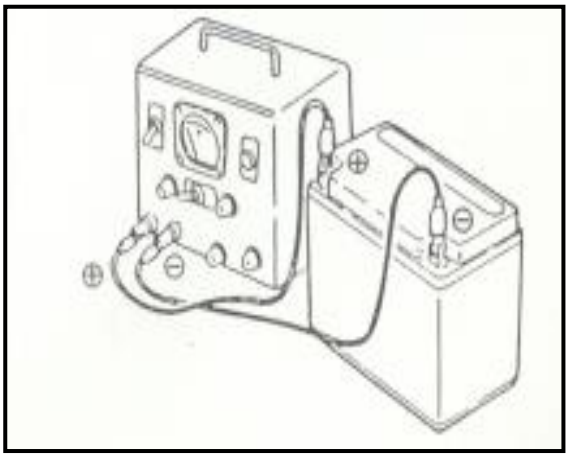
1.3.2 Charging

Connection method: positive pole of battery charger is connected to battery positive lead wire; Negative pole of battery charger is connected to battery negative lead wire.

Warning!
• Battery shall be away from fire.
• Shut off charger switch first before or after charging in case sparks may be generated at connection parts, which may result in explosion.
• During charging, please take the current time labeled on the battery as basic time.

*** Attention**
• Battery quick recharging is not recommended except in case of emergency.
• After recharging, wait at least 30minutes and then measure the battery voltage.

Recharging current: **Standard: 0.3A**
Quick charging: 3.0A
Recharging time: **Standard: 10-15hours**
Quick recharging: 30minutes
Recharging completed: Open circuit voltage: over 12.8V



1.4 Charging System

1.4.1 Short circuit test

Disconnect the grounding wire from the battery and use a voltmeter to connect battery negative lead wire with grounding wire. Set the switch at OFF position and check if it is shorted.

*** Attention**
Positive lead wire of multimeter is connected to negative lead wire of battery.

If abnormality found, check if there is short circuit on ignition switch and main wiring.

1.4.2 Charging state inspection

While inspection, battery shall be fully charged and a multimeter be used for the test.
Warm up the engine and then install fully charged battery onto the motorcycle.
Connect voltmeter between terminals of the battery.
Remove the main fuse and connect ammeter between the two terminals.
Start engine and slowly raise RPM. Measure limited voltage and current.


Multimeter

Limited voltage/rpm: 14-15V (5.000rpm)
If limited voltage is beyond the specified range, check voltage regulator.
Inspect limited voltage in lighting system.

*** Attention**
Set multimeter to position of AC voltage

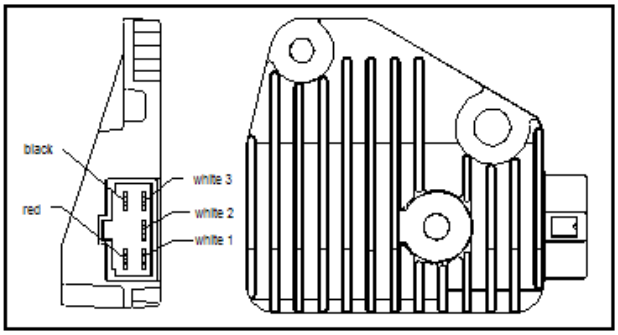
1.5 Voltage-current Regulator

1.5.1 Loop inspection on main wiring terminals

Disconnect the 6P plug on the voltage-current regulator.

Check continuity between main wiring terminals in the following way:

Item (wire color)	Judgment
Battery (red) and ground of vehicle block	It is battery voltage.
Ground wire (black) and ground of vehicle block	There is a lead wire.
Charging coil (white) and ground of vehicle block	No power flowing between magneto coil and ground
Between charging coils (while 1 and white 2)	There is resistance between coils



1.5.2 Voltage-current regulator inspection

When main wiring terminal is normal, check if plug of voltage-current regulator is of poor contact and measure impedance value between terminals of voltage-current regulator itself.

*** Attention**

• Do not touch the metal part of multimeter probe with your finger.

• Check with a multimeter. If impedance values measured by different multimeters are not the same, it perhaps the inspection is not correct.

When impedance value between terminals is abnormal, replace voltage regulator.

Multimeter + / -	White1	Red/white	Red	Black	White2
	Unit: MΩ				
White1		No	No	0.1~3	10~90
red/white	No		No	0.1~3	No
Red	0.1~3	No		1.2~5	0.1~3
Black	No	No	No		No
White2	60~80	No	No	0.1~3	

1.6 Magneto Charging Coil

*** Attention**

Inspection of magneto charging coil can be performed on the engine.

Inspection

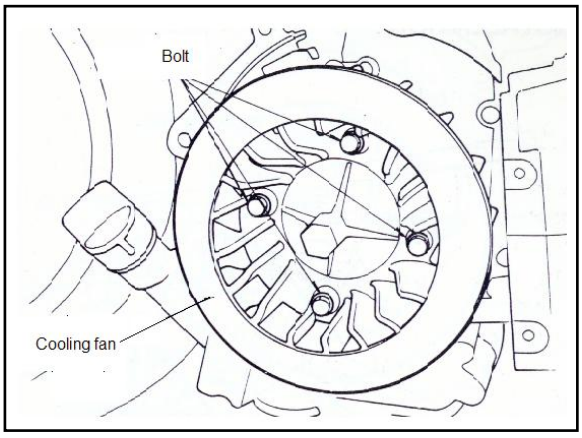
Disconnect the 6P connector on the magneto.

Use a multimeter to measure impedance value between white coil of magneto and vehicle block.

Standard value: 0.5-10Ω (20℃)

If measured value exceeds the standard, the magneto coiling shall be replaced.

1.7 Magneto Removal



*** Attention**

Inspection of magneto lighting coil can be performed on the engine.

1.7.1 Inspection

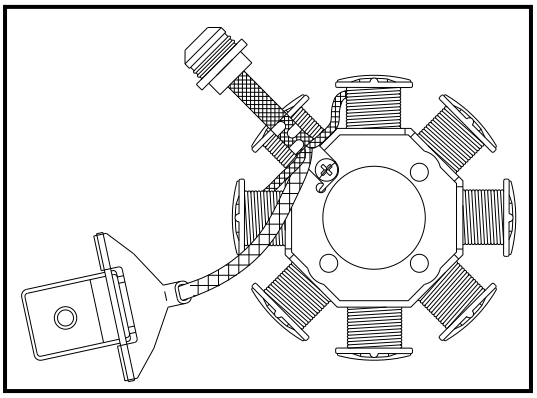
Disconnect the 4P connector on the magneto.

Use a multimeter to measure impedance value between yellow coil of magneto and ground wire of vehicle block.

Standard value：0.4-0.6Ω (20℃)

If measured value exceeds the standard, the magneto coiling shall be replaced.

1.7.2 Removal



Remove vehicle block protecting plate.

Remove protecting plate of engine on the left side.

Remove flywheel locknut.

Use a flywheel remover to take down the flywheel.

Remove the fixation key.

Disconnect lead-wire connector of magneto.

Remove stator of magneto.

1.7.3 Installation

Install the magneto stator onto the engine box.

Connect lead-wire connector magneto.

Clean crankshaft and conical part of flywheel.

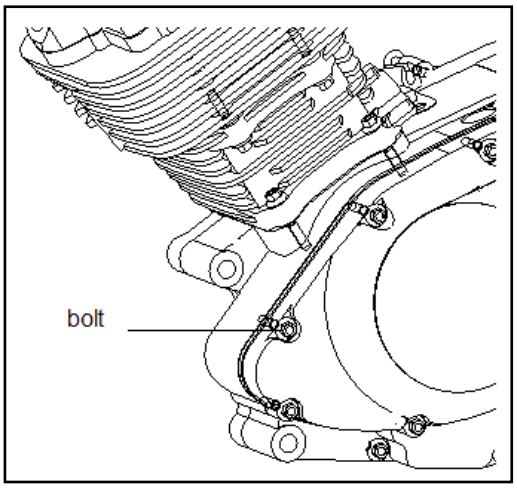
Make sure the fixation key is installed into the key slot on the crankshaft.

Align the groove on the flywheel to the fixation key on the crankshaft**.**

*** Attention**

There is magnetism on the inner surface of flywheel, ensure there is no bolt on it.

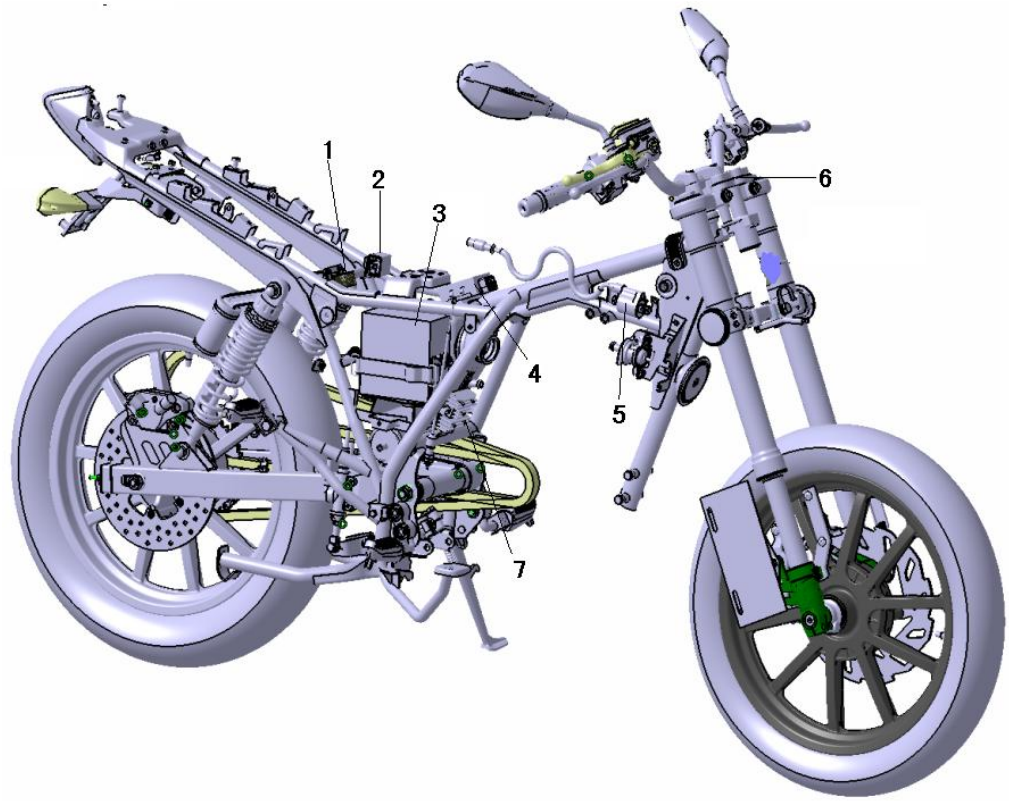
Fix the flywheel using a universal non-adjustable spanner and then tighten the locknut.

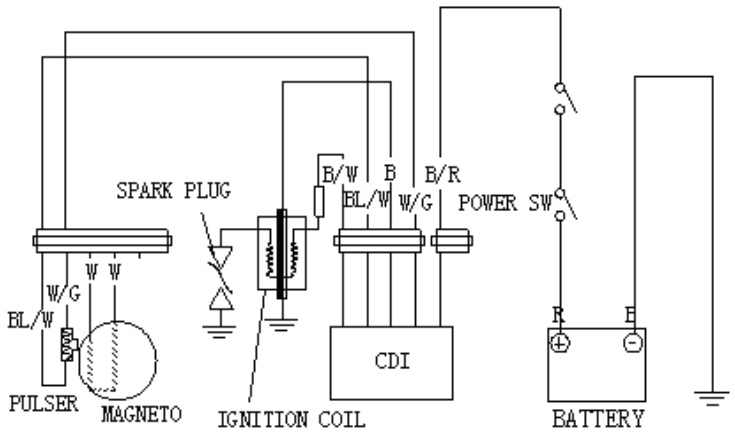


Torque value: 9.0 N·m

Install protecting plate on the left side.

Ignition System





Ignition System

1 Relay 2 Scintillator 3 Battery 4 Igniter 5 High-voltage ignition coil
6. Power lock assembly 7 Voltage regulator

II Ignition System

Preparatory data----------2.1
Fault diagnosis----------2.2
Ignition system inspection-------2.3
CDI assembly----------2.4
Ignition coil----------2.5
Trigger----------2.6

2.1 Preparatory Data

Precautions on operation

1. Ignition system inspection: please perform inspection in the sequence listed in the fault diagnosis table.
2. Ignition system uses electronic-type automatic timing device, which is solidified in the CDI assembly, so it is unnecessary to adjust the ignition time.
3. Ignition system inspection: please perform inspection in accordance with the sequence listed in the fault diagnosis table.
4. Ignition system CDI shall not be dropped and hung, or heavily knocked (this is also the main reason for its failure). Pay special attention to this while removing it.
5. Most of the ignition system problem due to poor contact of sockets. Please check first if parts of the connector are well contacted.
6. Check if heat value of spark plug is proper. Improper spark plug may result in unsmooth engine running or burn of spark plug.
7. The maximum voltage is taken to introduce inspection items in this Part. Inspection methods for impedance value of ignition coil are also recorded and judged.
8. Check ignition switch according to the continuity test table.
9. Remove magneto and stator on operation instructions.

Preparatory data

Item			Standard Value
Spark plug	Standard		NGK DR8EA
Spark plug clearance			0.6-0.7mm
Ignition coil impedance value（20℃）	Primary coil		0.4Ω±10％
	Secondary coil	With spark plug cap	8-11KΩ
		Without spark plug cap	3-5.5KΩ
Impedance value of trigger（20℃）			100-200Ω
Impedance value of charging coil（20℃）			600-800Ω
Ignition coil primary peak voltage			300V
Trigger voltage			Higher than 1.7V

Tools

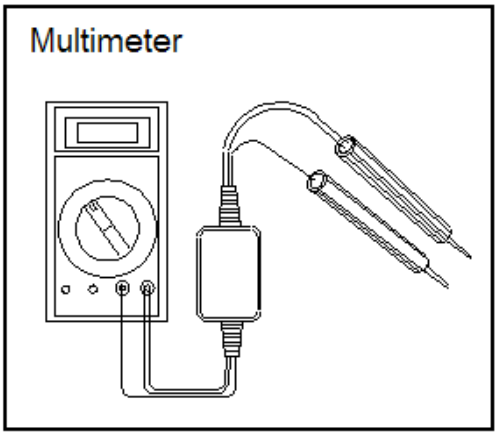
Accessory for voltmeter with maximum range
Multimeter

2.2 Fault Diagnosis

Spark plug not sparking

	Symptom	Possible causes (Determine the cause from 1 in sequence)
Ignition coil	When the high voltage power is too low.	① Inner impedance is too small. Use appointed tester to test. ②Crankshaft rpm is too low. ③Tester is disturbed (it is normal when more than one time's measured voltage is above the basic). ④Wiring of ignition system is poorly contacted. ⑤Ignition coil is no good. ⑥Charging coil is bad. (Peak voltage measurement)
Secondary side voltage	While no high-voltage power supply, high voltage power is sporadic.	①Tester is wrongly connected. ②Poor ignition switch. ③Connector of CDI assembly is poorly contacted. ④Ground wire for CDI assembly is shorted or poorly contacted. ⑤ Poor charging coil (Peak voltage measurement). ⑥ Defective trigger (Peak voltage measurement). ⑦ Connector of high voltage wire is not good. ⑧ Inferior CDI assembly (after items ①-⑦ are tested and proved abnormal or spark plug no sparking)
	High-voltage power is normal, spark plug no sparking.	①Inferior spark plug or secondary leakage of the ignition coil. ② Bad ignition coil.
Charging coil	No high-voltage power supply	①Inner impedance is too small. Use appointed tester to test. ②Crankshaft rpm is too low. ③Tester is disturbed (it is normal when more than one time's measured voltage is above the basic). ④Charging coil is bad. (when items ①-③ are proved normal)
	No high-voltage power supply or high voltage power is sporadic.	①Defective ignition coil. ②Defective charging coil.
Trigger	When high-voltage power supply is too low.	①Inner impedance is too small. Use appointed tester to test. ②Crankshaft rpm is too low. ③Tester is disturbed (it is normal when more than one time's measured voltage is above the basic). ④Trigger is bad. (when items ①-③ are proved normal)
	No high-voltage power supply or high voltage power is sporadic.	①Bad ignition coil. ②Bad trigger.

2.3 Ignition System Inspection



*** Attention**

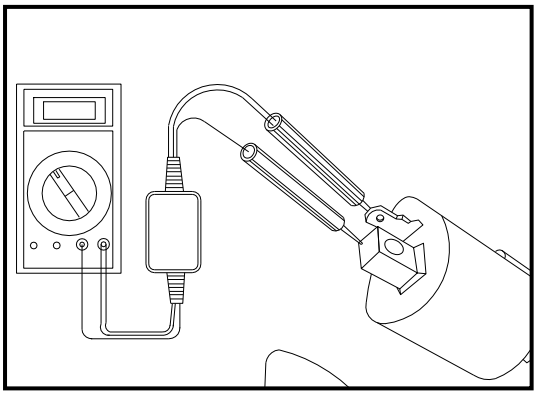
• When the spark plug is not sparking, check if components of wiring are loosened or badly contacted and make sure if all the voltage values are normal.

• There are many brands of multimeters with different interior impedance. The values they measured are not the same.

Connect a high-voltage shunt or an ammeter with input impedance higher than 10MΩ 10CV to the multimeter.

2.3.1 Primary voltage of ignition coil

If an old spark plug is removed and replaced with a good one, ground it with engine.



*** Attention**

Test when wirings of all the circuits are correct. Normal cylinder compression pressure means to test with spark plug installed on the cylinder head.

Connect lead wire of ignition coil; a shunt is connected between the terminal (black/white) of primary coil and the grounding vehicle block.

Press starting motor button or kick starting pedal to measure primary peak voltage of ignition coil.

Min. voltage: over 95V.

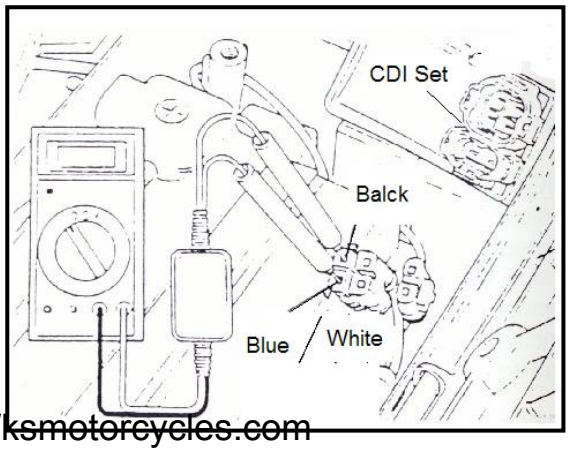
***Attention**

Please do not touch the metal parts of testing probe with your fingers while measuring the voltage, or you will be shocked. Please take care.

2.3.2 Trigger

*** Attention**

Inspect when spark plug is installed on the cylinder head and compression pressure is normal.



Disconnect connector 4P and 2P from CDI assembly. A peak-voltage shunt is indirectly connected to the 4P connector (black terminal) and 2P wiring-terminal connector of trigger (blue/white terminal). Press starting motor button or kick pedal level to measure primary peak voltage of trigger.

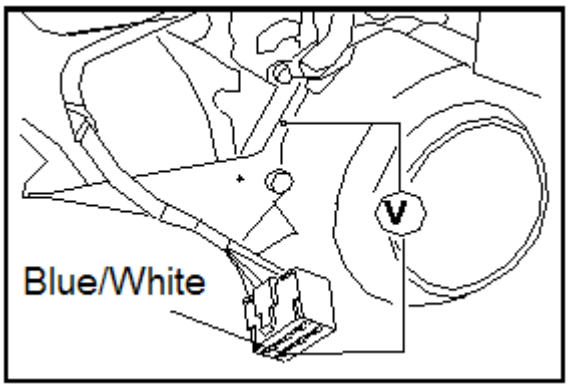
Connecting method: positive (+) to blue/white, negative (-) to

green/white.

Min. voltage: higher than 1.7V.

*** Attention**

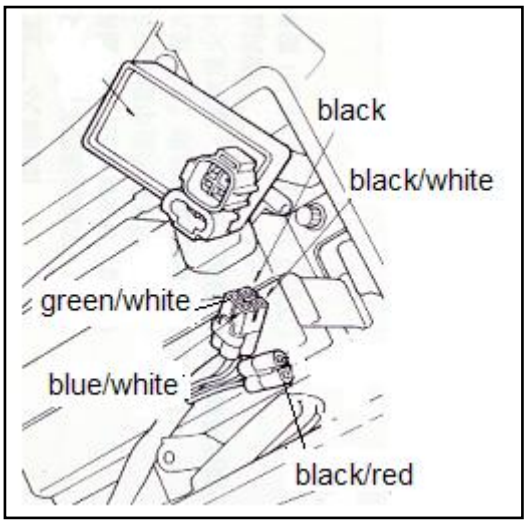
Please do not touch the metal parts of testing probe with your fingers while measuring the voltage, or you will be shocked. Please take care.



When the peak voltage measured at connector of CDI assembly is abnormal, take down the protecting plate on the right side of vehicle and remove connector of magneto. Trigger (blue/white) is connected with a shunt.

- When the measured voltage at CDI assembly terminal is abnormal, but measured voltage at magneto terminal is normal, it indicates that the connector is of poor contact or wiring is broken.
- When measured results at both sides are abnormal, the trigger is damaged. Please refer to items listed in Diagnosis Table and check.

2.4 CDI Assembly



2.4.1 System Inspection

System inspection

Remove CDI assembly and check components related to the ignition system at wiring terminal.

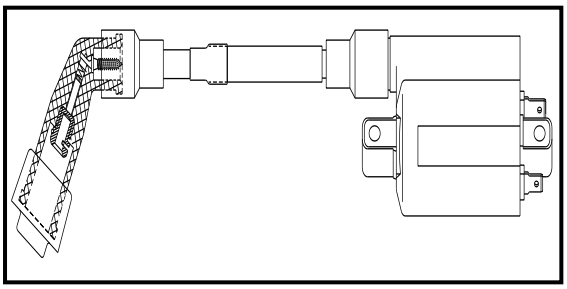
2.4.2 Inspection

Remove CDI assembly and check if connectors are loose or corrosive.

Item	Measuring terminal	Standard Value（20℃）
Main switch	Red—Red/White	On continuity when main switch is “OFF”.
Trigger	Blue/White-White/Green	100-200Ω
Primary coil of ignition coil	Black/White—Black	0.4Ω±10％
Secondary coil of ignition coil	Black—spark plug cap（not including spark plug）	3-5.5KΩ±10％

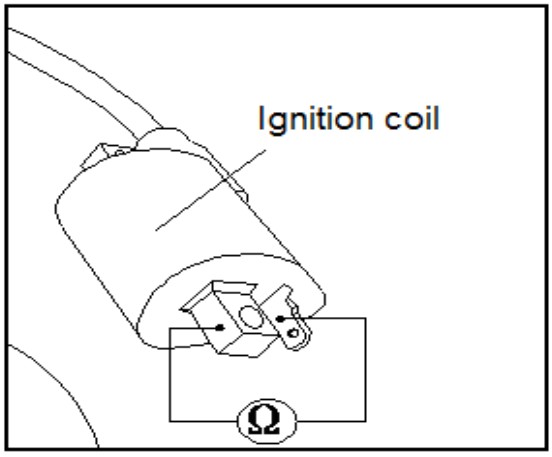
2.5 Ignition Coil

2.5.1 Removal



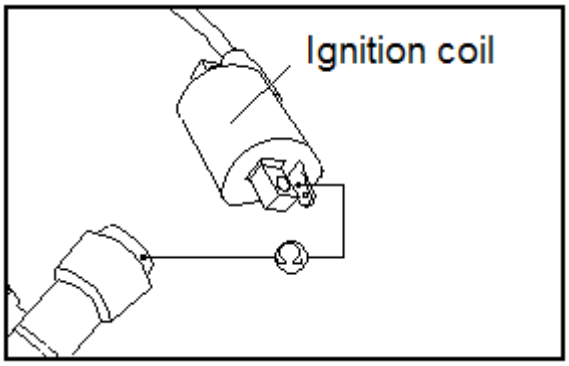
Remove protecting plate of vehicle block.
Remove spark plug cap.
Remove primary lead wire of ignition coil.
Remove locknut of ignition coil and take out the ignition coil.
Install it in the reverse order of removal.
***Attention**
The primary coil is installed with black/white wire connector.

2.5.2 Primary coil inspection



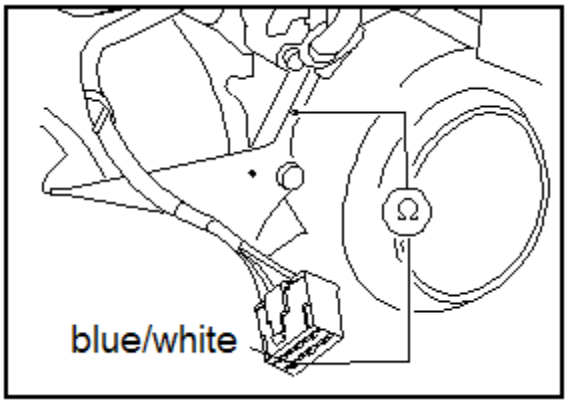
Measure the impedance between terminals of primary coil.
Standard value: 0.4Ω±10% (20℃)
Impedance value within the range is good.
Impedance value "∞" indicates broken wire inside the coil. The coil shall be replaced.

2.5.3 Secondary coil



Attached with the spark plug, and measure the impedance between lead-wire side of spark plug cap and terminal.
Standard value: 8-11KΩ (20℃)
Impedance value within the range is good.
Impedance value "∞" indicates broken wire inside the coil.
Remove the spark plug cap and measure impedance value between primary side lead-wire of ignition coil cap and negative terminal.
Standard value: 3-5.5KΩ±10% (20℃)

2.6 Trigger



*** Attention**

Trigger inspection can be performed on the engine.

Inspection

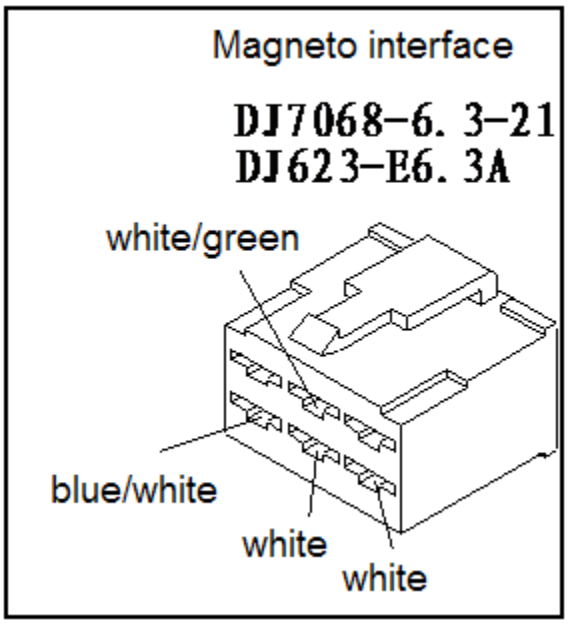
Remove protecting plate of vehicle block.

Remove lead-wire connector of trigger.

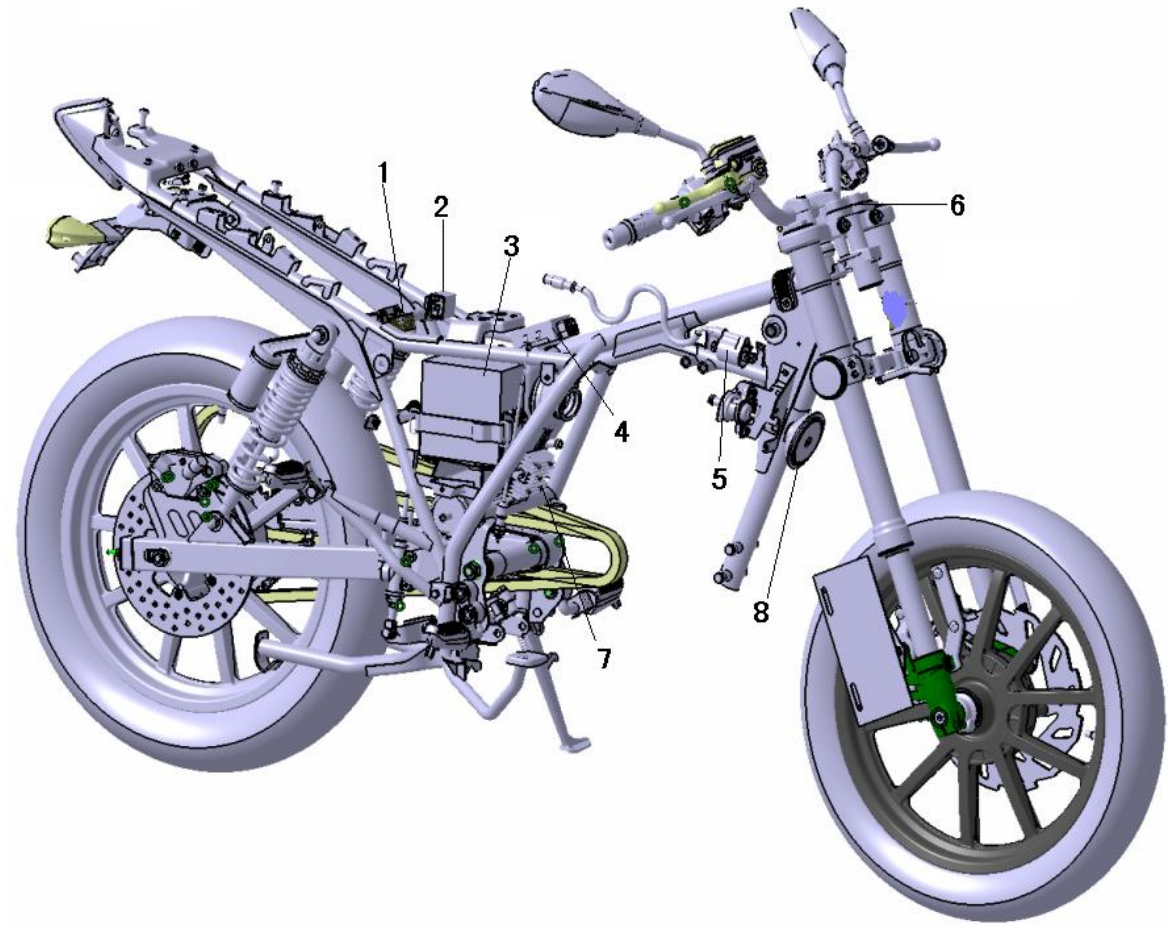
Measure the impedance between blue/white terminal of lead wire at engine side and grounding vehicle block.

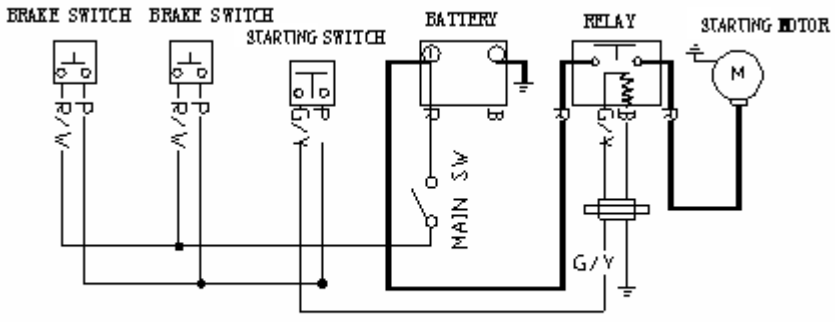
Standard value: 100-200Ω (20℃)

If measured impedance value is beyond the range, please replace the magneto.



Starting System





Starting Diagram

1 Starting relay 2 Scintillator 3 Battery 4 Electronic igniter 5 high-voltage ignition coil
6 Power lock assembly 7 Rectifier 8 Electric horn

III Starting System

Preparatory data-------- 3.1

Fault diagnosis----------3.2

Starting motor----------3.3

Starting relay----------3.4

3.1 Preparatory Data

Precautions on operation

Starting motor removal can be performed on the engine.
Starting clutch removal refers to removal instruction.

Basic data

Item	Standard	Service Limit
Length of starting carbon brush	12.5mm	8.5mm
Starting idler shaft bushing		8.3mm
Starting idler shaft OD		7.94mm

Tightening torque

Starting motor clutch cap bolt **12 N·m**
Starting motor clutch locknut **95 N·m**

Tools
Locknut wrench
Universal un-adjustable wrench

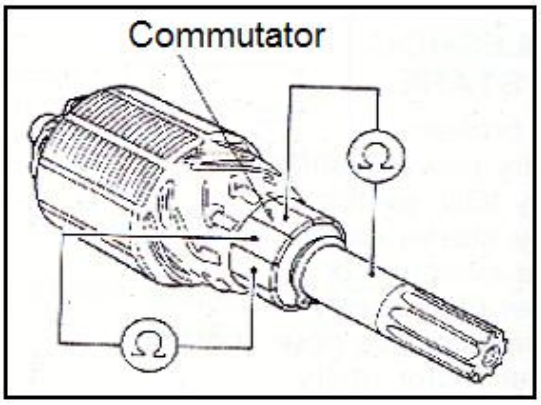
3.2 Fault Diagnosis

Starting motor will not run
- •Broken Fuse
- •Low battery
- •Defective ignition switch
- •Defective starting clutch
- •Defective braking switch
- •Defective starting relay
- •Poor connecting wire contact
- •Defective starting motor

Starting motor runs weakly
- •Low battery
- •Poor connecting wire contact
- •Starting motor gear stuck by foreign substances

Starting motor runs but the engine does not
- •Defective starting clutch
- •Starting motor counter-rotate
- •Low battery

3.3 Starting Motor



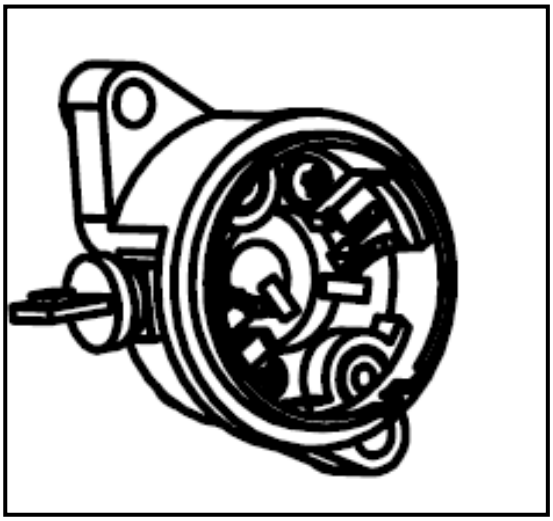
3.3.1 Removal

*** Attention**

Before removing starting motor, the ignition switch must be set at "OFF" position. Disconnect battery grounding wire and then turn on the power supply to check if starting motor runs to confirm your operation is safe.

First remove the lead-wire clip of starting engine.
Remove starting motor pinch bolt and take down the starting motor.
Roll up the rubber waterproof jacket and remove starting motor connector.

3.3.2 Disassembly



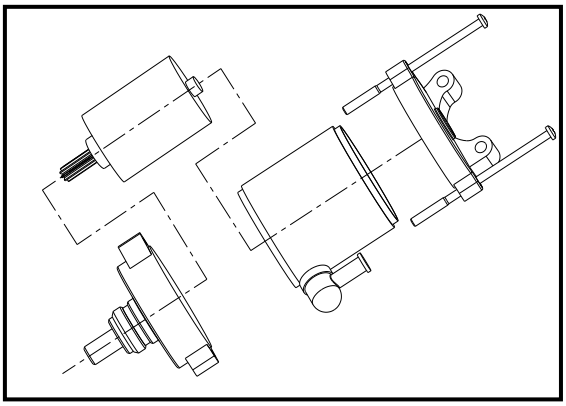
Disassemble housing screw, front cover, motor housing and other parts.

3.3.3 Inspection

Inspect other component assemblies.
Replace with a new one when there is surface partial friction, injuries or burn.
The commutator shall be cleaned when there is metal particles adhered to its surface.
Inspect for continuity between contact surfaces of other assemblies.
Confirm the discontinuity of armature shaft among surfaces of commutator.
Inspect for continuity of starting motor housing.
Confirm the continuity between conducting terminal and starting motor housing.

Inspect continuity between conducting terminal and brush.
Replace it with a new one if abnormality exits.
Inspect carbon brush holder for continuity. If there is continuity, replace it.
Measure carbon brush length
Service limit: replace it when it is shorter than 8.5mm
Check rotation smoothness of the needle bearing in the front cover and whether it is loosened when it is pressed in.
If there is abnormality, replace it with a new one.
Check the oil seal for wear and injury.

3.3.4 Assembly



Apply lubricating grease on the oil seal in the front cover.
Install brush onto the carbon brush holder.
Apply lubricating grease on movable parts at both ends of brush shaft.
Press brush into its holder and install front cover of electrodes.

*** Attention**
• There should be no hurt on the contact surface of brush and armature. Take care.
• Installation shaft of armature cannot hurt lip of oil seal. Take care.

Install a new O ring onto the front cover.
Align and install the boss of motor housing to the recess of front cover.
Tighten housing screws.

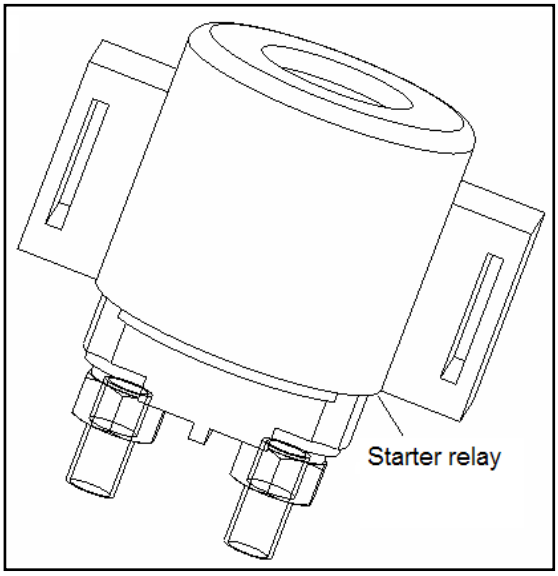
*** Attention**
When assembling housing and front cover, armature can work as a magnet to easily pull the front cover up; and then gently press it down to complete the assembly.

3.3.5 Installation

Install lead wire of starting motor and be sure to install the dust seal.
Check if the O ring is damaged and replace it if necessary.
Apply some engine oil onto the O ring and then install the starting motor
Install rear brake wire clip.

3.4 Starting Relay

3.4.1 Actuation Inspection

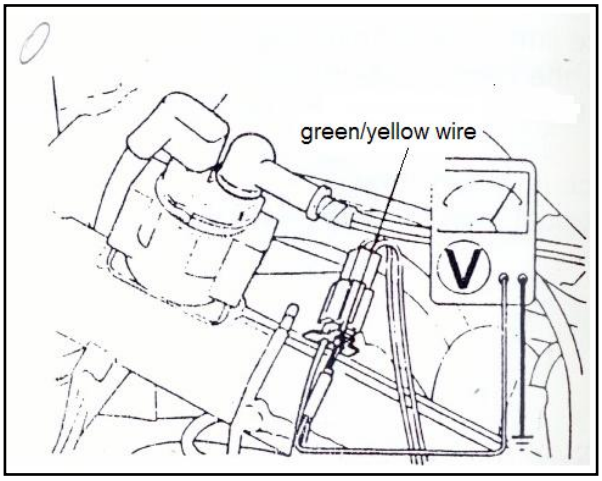


Take down the protecting plate of vehicle block.
When the ignition switch is set at “ON” position, press starting motor and a “Click” sound can be heard.
“Click” sound indicates normal.
No sound: • Check starting relay voltage.
• Check starting relay ground wire loop.
• Inspect starting relay actuation.

3.4.2 Starting relay voltage inspection

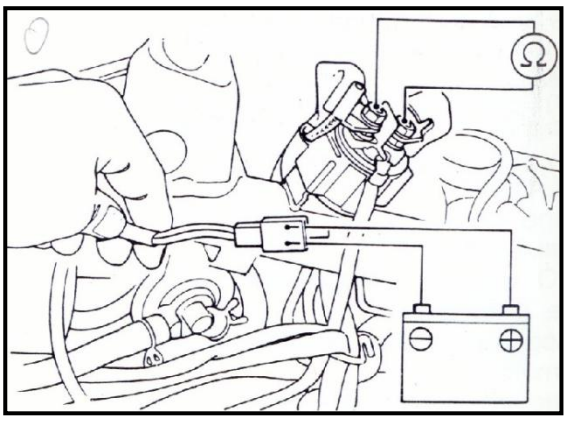
Lift and support the main stand. Measure the voltage between negative pole (green/yellow) of starting relay connector and vehicle ground wire.
Set ignition switch at “ON” position and catch the brake lever. Battery voltage shall meet the specified.
When there is no voltage at wire terminal of starting relay, inspect braking switch continuity and lead wire.

3.4.3 Starting relay ground loop inspection



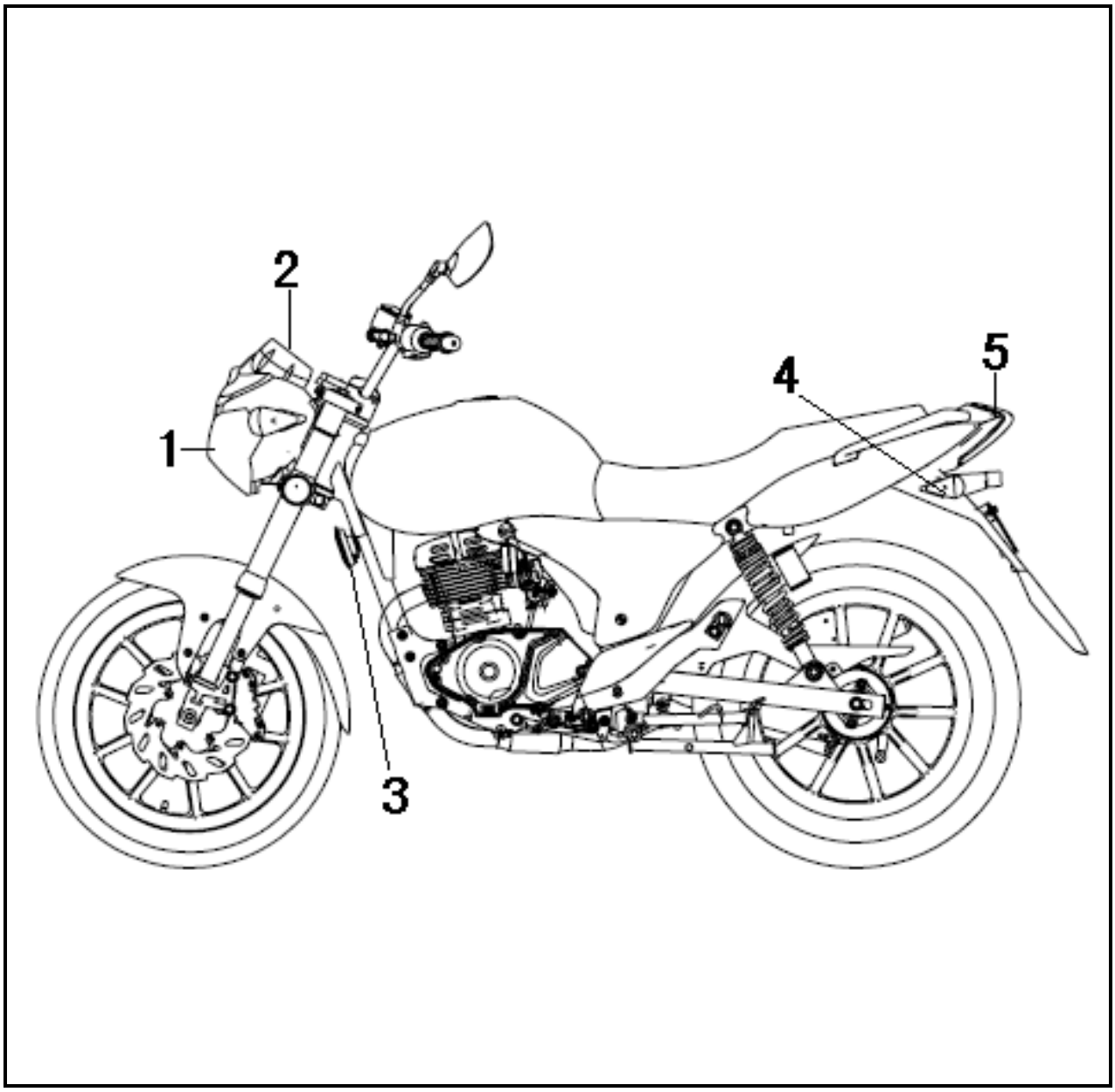
Remove starting relay connector.
Inspect continuity between black wire of connector terminal and vehicle ground wire.
When the starting button is pressed, continuity between black wire of connector and vehicle ground wire shall be fine.
If there is no continuity, inspect starting button continuity and lead wire.

3.4.4 Actuation Inspection



Connect starting relay with battery and connect terminal of starting motor with multimeter.
Connect fully charged battery between black wire and green/yellow wire of relay. A “tap” sound of operation can be heard on the relay and resistance displayed by multimeter is zero.

Bulbs/Switches/Instruments



1 Headlamp 2 Instruments 3 Electric horn 4 Left rear turn signal lamp 5 Tail lamp

IV Bulbs/Switches/Instruments

Preparatory data----------4.1

Fault diagnosis----------4.2

Headlamp bulb replacement----------4.3

Front turn signal lamp bulb replacement----------4.4

Tail lamp bulb replacement ----------4.5

Instrument----------4.6

Ignition switch----------4.7

Electric horn----------4.8

Handle switch----------4.9

4.1 Preparatory Data

Precautions on operation

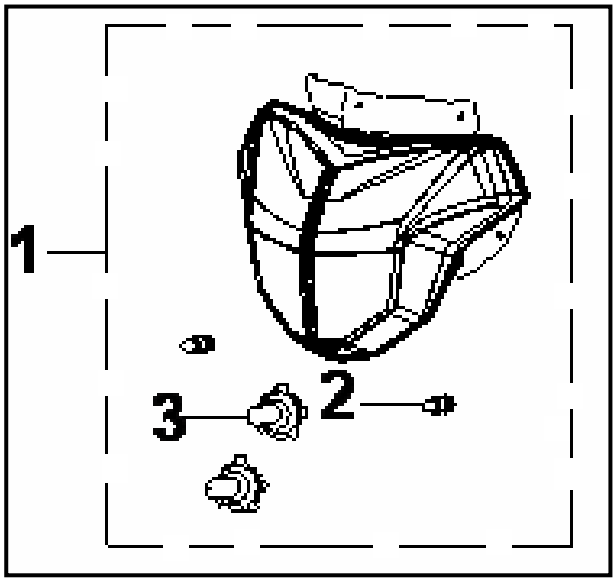
Remove switches from the motorcycle and perform continuity test.
All the plastic connectors have pawls on them. Release clamping of the pawl before removal. Align pawl to its hole when it is reinstalled.
While trouble shooting electric faults, please check continuity of electric component as current flowing over it.
Confirm state of battery before any inspection, including battery voltage.

4.2 Fault Diagnosis

"ON" lamp of Ignition switch is not on.
• Bulb burnt.
• Defective switch.
• Poor contact of connector or broken wire.
• Low battery power or no voltage.

4.3 Headlamp Bulb Replacement

4.3.1 Removal



Screw off with a wrench locknut (1) of headlamp and take down the headlamp.
Pull out socket of headlamp adapter and remove the rear cover. Release circlip and take out of the lamp adapter.

*** Attention**
When the bulb is lit, keep you hands and inflammable materials some distance away from it. Lighting bulb is hot; touch it when it cools down.

4.3.2 Installation

Install the new bulb, adapter and headlamp rear cover.
Tighten the new bulb into the socket.

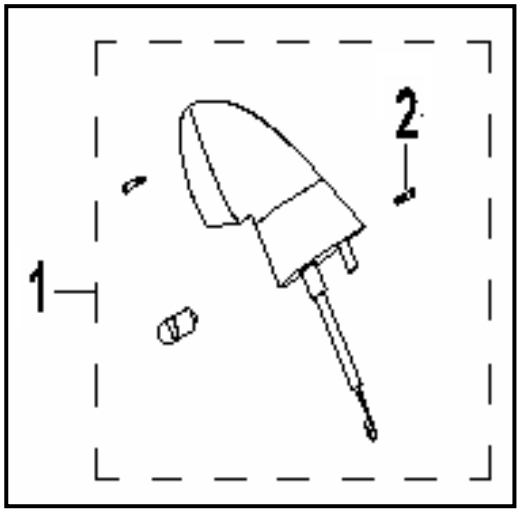
Avoid touching bulb glass with your bare hands during installation and staining it with oil, which may affect transparency, service life and luminous flux of bulb.

If oil is adhered to the bulb, clean it with a cloth moistened with alcohol or highly volatile rubber solution.

Install headlamp assembly.

4.4 Front Turn Signal Lamp Bulb Replacement

4.4.1 Removal



Disconnect wire to turn signal lamp.
Screw off self-tapping screw (2) on the turn signal lamp.
Remove the bulb socket from the lamp.
Remove the bulb from lamp adapter.

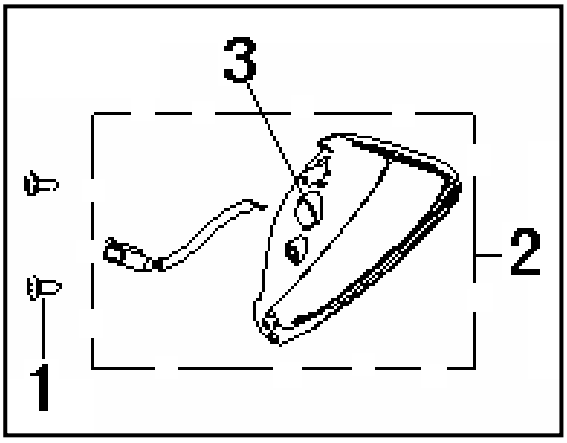
4.4.2 Installation

Install the bulb in the reverse order of removal.

4.5 Tail Lamp Bulb Replacement

4.5.1 Removal

Screw off the two bolts (1).
Remove the tail lamp hood.
Disconnect wire connector to the tail lamp.
While pressing down the tail lamp, rotate it counterclockwise
Remove the tail lamp.



4.5.2 Installation

Install the tail lamp in the reverse order of removal.

*** Attention**
While installing tail lamp, be sure that sealing washer on the tail lamp hood is in good condition and correct position.

4.5.3 Tail lamp bulb replacement

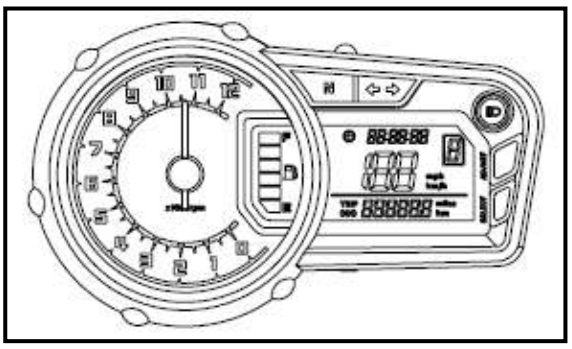
4.5.3.1 Removal

Screw off mounting bolts on the tail lamp hood.
Remove tail lamp hood (3) so that tail lamp bulb can be removed.
Remove the tail lamp bulb from lamp adapter (2).

4.5.3.2 Installation

Install the tail lamp bulb in the reverse order of removal.

4.6 Instrument



Remove rear mirror.
Take down the handle hood and pull out waterproof connector.
Remove the bolts.
Remove odometer assembly.
Remove the instrument.
Install the instrument orderly in the reverse order of removal.

4.7 Ignition Switch and Steering Lock

4.7.1 Inspection

Remove the headlamp from the cover.
Remove ignition switch-wire connector.

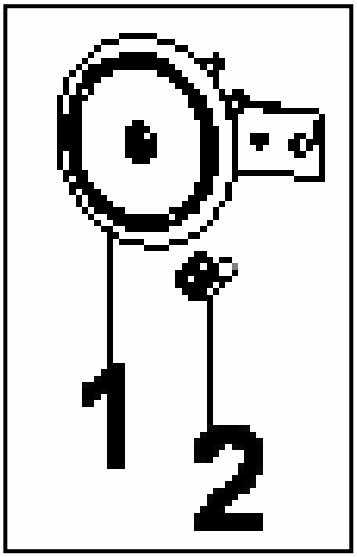
Inspect continuity of connector terminal.
This kind of power lock has electromagnetic anti-theft function. When the switch under the power lock is moved to “OPEN” position, you can insert key into the keyhole above to operate. When the switch under the power lock is moved to “SHUT” position, the keyhole above is closed. You can use “key handle switch” to resume it to “OPEN” position and the keyhole above is open.

“⊠”(OFF) position: All the circuits are broken.
“ ”(ON) position: Ignition circuit is switched on and engine can be started.
“ ”(Stop) position: Turn the key counterclockwise to “ ”position, lock cylinder protrudes, lock the handle pipe.

4.7.2 Ignition switch replacement

Remove the headlamp.
Screw off the mounting bolts and remove the ignition switch holder.
Remove the mounting bolts and replace ignition switch.

4.8 Electric horn

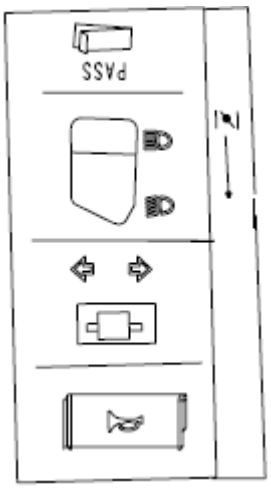


Inspection

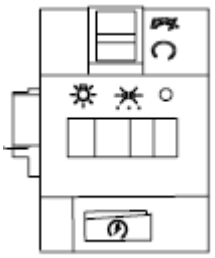
Disconnect wire to the electric horn.
Connect lead wire of horn with the battery. When the electric horn sounds, it indicates the horn is in good condition.

4.9 Handle switch

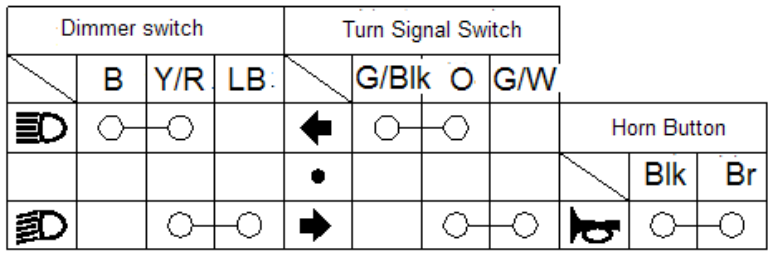
Remove protecting plate of steering handle.
Screw off mounting bolt on the brake lever and take down the bracket.
Remove bracket for the rear brake lever.
Remove throttle handle and bolts.
Take down throttle handle from the handle and remove the throttle cable.



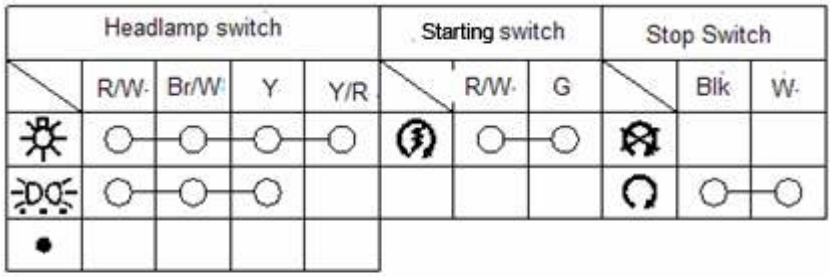
Remove locknut on the handle and take down the handle.



Schematic Diagram



B-blue Y/R-yellow/red LB-light blue O-orange
G/Blk-green/black G/W-green/white Blk-black Br-Brown



R/W-red/white Br/W-brown/white Y-yellow Y/R-yellow/red

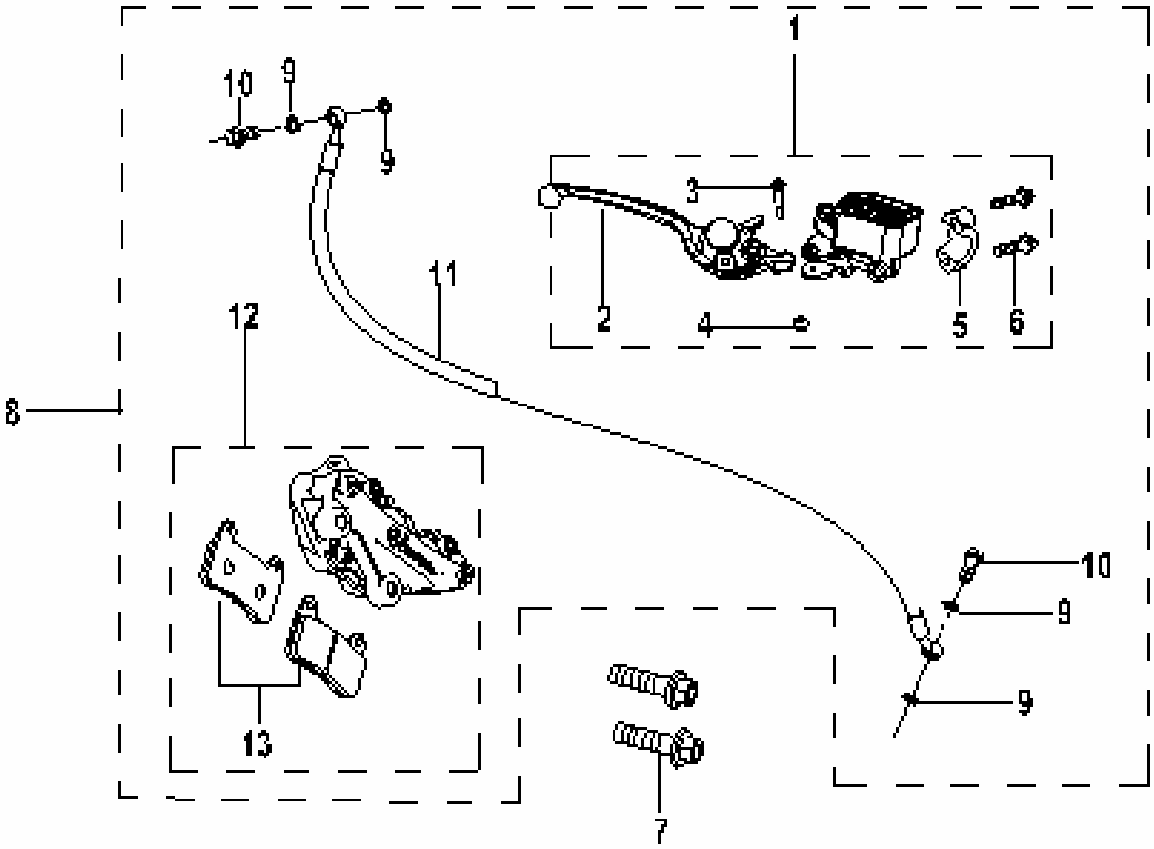
G=green Blk-black W-white

Chassis Inspection and Maintenance

Tightening Torque of Fastening Part on Chassis

Fastening position and part name	Tightening Torque (N·m)
Oil pump block assembly mounting bolt	5-9
Front brake cylinder assembly mounting bolt	22-29
Rear brake rocker arm mounting bolt	5-9
Rear shaft locknut	85-98
Upper bracket assembly mounting bolt	40-60
Front shaft locknut	55-62
Front shock absorber mounting bolt	37-44
Rear shaft locknut	85-98
Rear shock absorber top nut	37-44
Rear shock absorber bottom nut	22-29
Seat cushion mounting bolt	22-29
Fuel tank mounting bolt	5-9
Gasoline switch mounting bolt	5-9
Protecting hood mounting bolt	5-9
Sprocket mounting bolt	22-29
Rear swing arm shaft nut	70-83

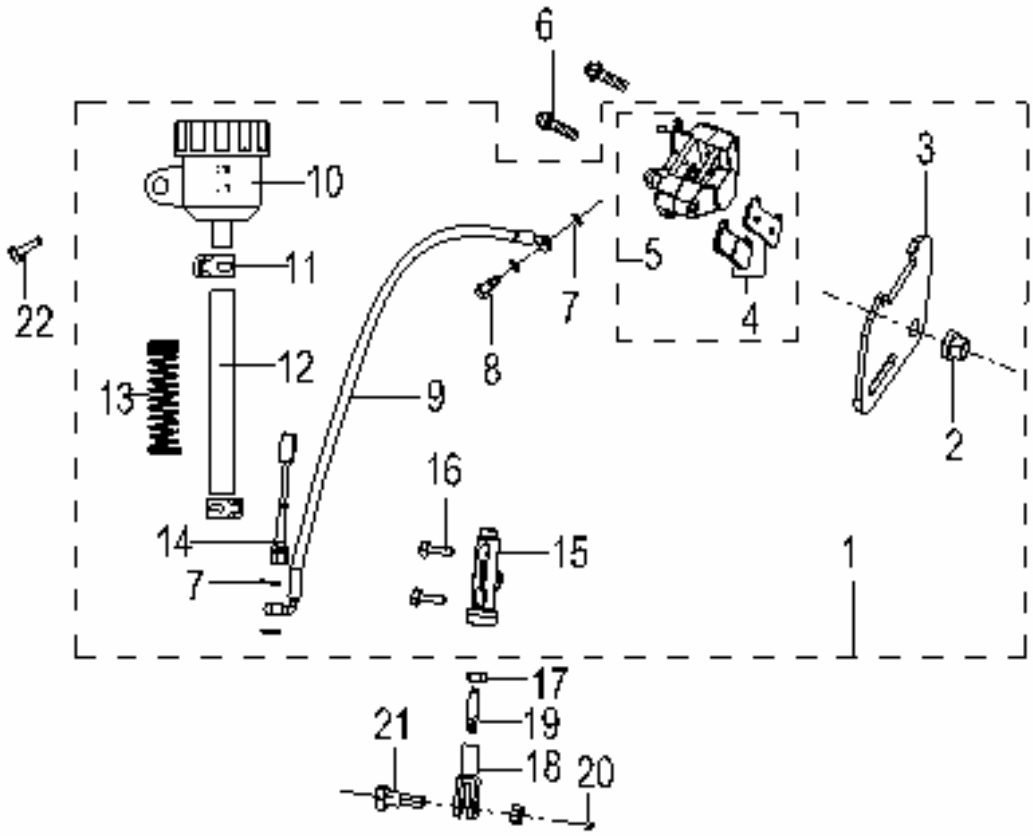
Front Hydraulic Brake



A	Front brake disc diameter：260mm
B	Front brake disc thickness：4.0mm Service limit：3.0
C	Brake shoe thickness：4 mm Service limit：3mm
D	Mounting torque for Bolt 7 in the diagram： 22-29 N·m

1 Oil pump block assembly 2 Hydraulic brake handle 3 Handle mounting bolt 4 Nut M6 5 Fixing cover
6 Bolt M6×23 7 Front hydraulic brake mounting bolt 8 Front hydraulic brake assembly 9 Washer
10 Oil hose mounting bolt 11 Brake hose assembly 12 Brake cylinder assembly 13 Brake shoe assembly

Rear Hydraulic Brake



A	Rear brake disc diameter：240mm
B	Rear brake disc thickness：5.0mm Service limit：4.0
C	Brake shoe thickness：5mm Service limit：4mm
D	Mounting torque for Bolt 7 in the diagram：22-29 N·m

1 Rear hydraulic brake assembly 2 Bushing Ⅱ 3 Bracket 4 Friction disc assembly 5 Brake cylinder assembly
6 Bolt M8×16 7 Sealing ring 8 Hex. Flange head bolt 9 Brake hose assembly 10 Oil cup assembly
11 Collar 12 Oil hose 13 Protecting spring 14Brake switch assembly 15 Oil pump block assembly
16 Bolt M6×20 17 Nut M6 18 Lever 19 Draw-bar 20 Cotter pin 2.5×25 21 Mounting bolt 22 Bolt M6×12

V Braking System

Maintenance instruction----------5.1

Fault diagnosis----------5.2

Front hydraulic disc brake---------- 5.3

Rear drum brake----------5.4

5.1 Maintenance Instruction

Precautions on operation

*** Attention**

• Plea se do not contaminate braking assembly with oil while assembly or disassembly. • Please use specified detergent to clean the braking assembly, or it may reduce braking performance.

* Please check braking system before driving your motorcycle.*

5.1.1 Specifications

Item	Standard Value (mm)	Service Limit (mm)
Front brake disc thickness	4.0	3.0
Front brake shoe thickness	4	3
Front brake disc diameter	φ260	-
Rear brake shoe thickness	5	4
Rear brake disc diameter	φ240	-

5.1.2 Tightening Torque Value

Front wheel shaft locknut	**55-62**	**N·m**	**Front brake cylinder assembly mounting bolt**	**22-29**	**N·m**
Rear wheel shaft locknut	**85-98**	**N·m**			

5.2 Fault Diagnosis

Braking System

Poor braking performance

1. Improper brake adjustment
2. Worn braking shoe assembly and brake disc
3. Braking shoe assembly improperly installed
4. Braking shoe assembly and brake disc contaminated

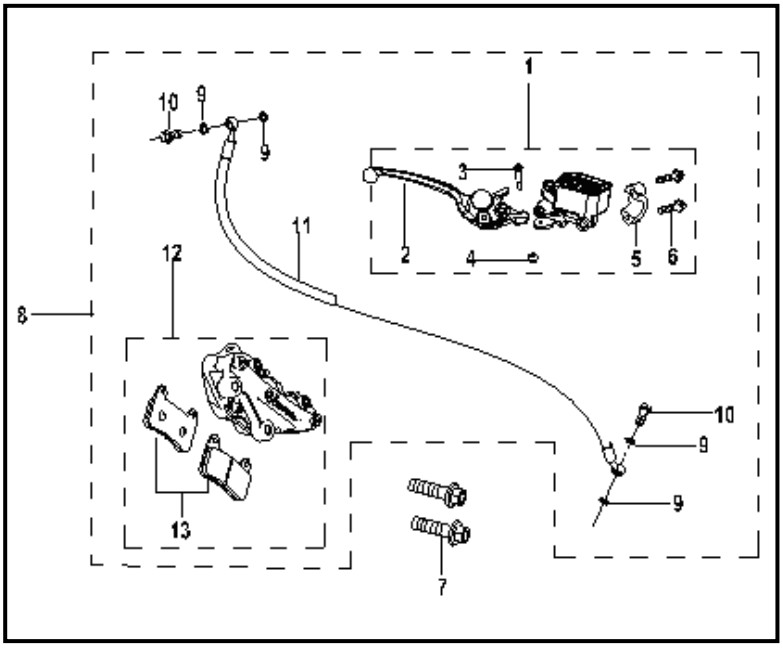
Brake drags or tight handle

1. Improper brake adjustment
2. Worn braking shoe assembly and brake disc
3. Braking shoe assembly improperly installed

Noisy Braking

1. Braking shoe assembly and brake disc are worn.
2. Braking shoe assembly and brake disc are contaminated

5.3 Front Hydraulic Brake



5.3.1 Removal

*** Attention**

• Replace braking shoe assembly.

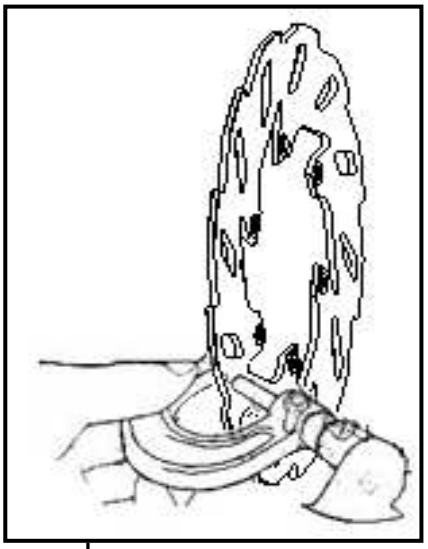
• If a braking shoe assembly will be used again, please mark it on the side before removal so as to re-install it to its original place.

Remove from right handle and front shock absorber the following assemblies.

Front brake:

1. Hydraulic brake handle (7)
2. Oil pump block assembly (5)
3. Braking hose assembly (4)
4. Braking cylinder assembly (6)
5. Hydraulic brake disc (2)

Note: Detailed breakdown drawing refers to P85.



*** Attention**

•Please do not contaminate braking shoe assembly with oil while assembly or disassembly

•Please use specified detergent to clean the braking assembly, or it may reduce braking performance.

Screw off braking cylinder assembly mounting bolt.
Remove the braking cylinder assembly from front shock absorber.
Remove front shaft.
Remove front wheel.
Remove brake disc from the front wheel.

5.3.2 Inspection

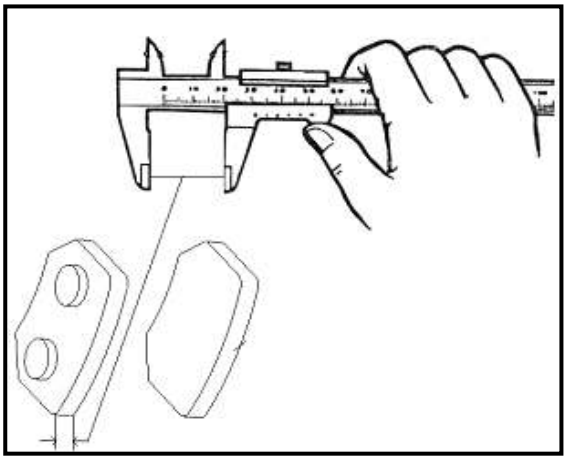
Check if braking shoe assembly and brake disc are worn. Replace them if necessary.
Measure braking shoe and brake disc and record the maximum values.

Specifications

KW125	**Front brake disc diameter**	**φ260mm**
	Front brake disc thickness	**4.0mm**

*** Attention**

• Micrometer shall be used for the measurement.



Measure the thickness of braking shoe.
If brake disc and braking shoe are contaminated by grease or their thickness is smaller than service limit, replace them.

Service limit:	**Braking shoe:**	**3mm**
	Brake disc:	**3mm**

Note:
Braking shoes shall be replaced in pairs.

5.3.3 Installation

Install brake disc and front wheel.
Install front brake hose assembly and brake cylinder assembly.
Please do not contaminate braking shoe and brake disc with oil.

*** Attention**
A contaminated braking shoe will reduce braking performance and result in brake failure.

Tighten bolt and nut to their specified torque value.

Torque value:

Oil pump block assembly mounting bolt	**5-9**	**N·m**
Front brake cylinder assembly mounting bolt	**22-29**	**N·m**

Do not contaminate braking shoe with oil.
If a braking shoe is polluted by oil, clean it with brake cleaner.

***Attention**

A contaminated braking shoe will reduce braking performance.

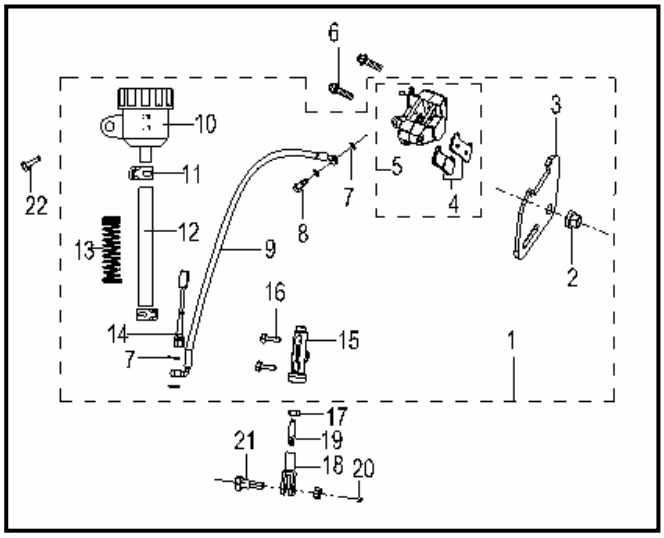
*** Attention**

• Please do not contaminate braking shoe assembly with oil while assembly or disassembly

• Please use specified detergent to clean the braking assembly, or it may reduce braking performance.

5.4 Rear Hydraulic Brake

5.4.1 Removal



*** Attention**

• Replace braking shoe.

• If a braking shoe assembly will be used again, please mark it on the side before removal so as to re-install it onto its original place.

Remove the following rear brake assembly from the rear wheel:

1. Bolt M6X35 (23)
2. Rear brake rocker arm (1)
3. Nut M6 (22)
4. Rear indicator
5. Rear brake return spring
6. Rear brake cam shaft (2)
7. Braking shoe assembly (12)
8. Braking shoe return spring (8)
9. Tyre 3.00-18 (18)
10. Rear wheel (9)
11. Rear shaft locknut (6)_

Note: Detailed exploded view refers to P86.

5.4.2 Inspection

Check if braking shoe assembly and brake drum are worn. Replace them if necessary.

Measure braking shoe thickness and brake drum ID and record the maximum values.

*** Attention**

• Micrometer shall be used for the measurement.

Measure the thickness of braking shoe and the inner diameter of brake drum.

If the braking shoes are contaminated by oil or their thickness is smaller than service limit, replace them.

Braking shoes shall be replaced in pairs.

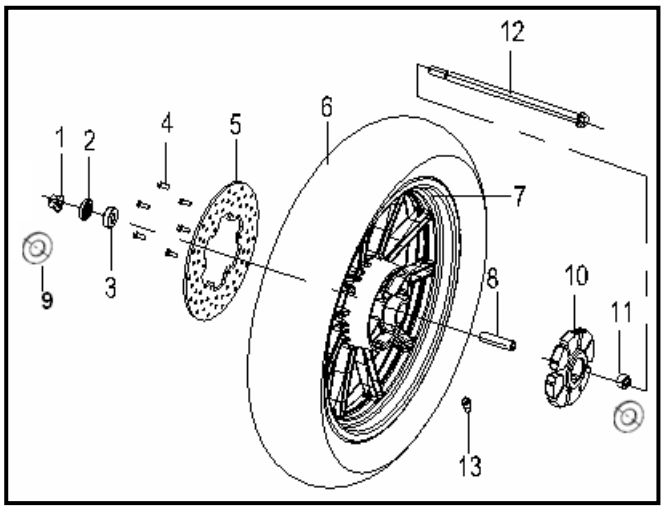
Diameter of rear brake disc		**φ240mm**
Thickness of rear brake disc		**5mm**
Service limit:	**Braking shoe**	**4mm**
	Brake disc	**4mm**

5.4.3 Installation

Install braking shoe assembly
Install rear wheel.
Install muffler assembly (24).
Install brake pedal assembly (21).

*** Attention**

A contaminated braking shoe will reduce braking performance and result in braking failure.



Tighten bolt and nut to their specified torque value.

Torque value:
Rear wheel locknut: 85-98 N·m

Do not contaminate braking shoe with oil.
If a braking shoe is polluted by oil, clean it with brake cleaner.

Rear brake:

1. Rear brake disc (5)
2. Locking nut M14×1.5 (1)
3. Rear wheel rim (7)
4. Brake disc mounting bolt M6×16 (4)
5. Rolling bearing 6302-2RS (3)
6. Front wheel oil seal assembly (2)
7. Rear wheel damper (10)
8. Bearing spacer (8)
9. Left shaft sleeve assembly (11)
10. Washer φ16×φ32×2 (9)
11. Tubeless tyre 130/70-17 (6)
12 Rear shaft M14×1.5×292

*** Attention**

A contaminated braking shoe will reduce braking performance

Note: Detailed breakdown drawing refers to P86.

Exterior Parts

Attention

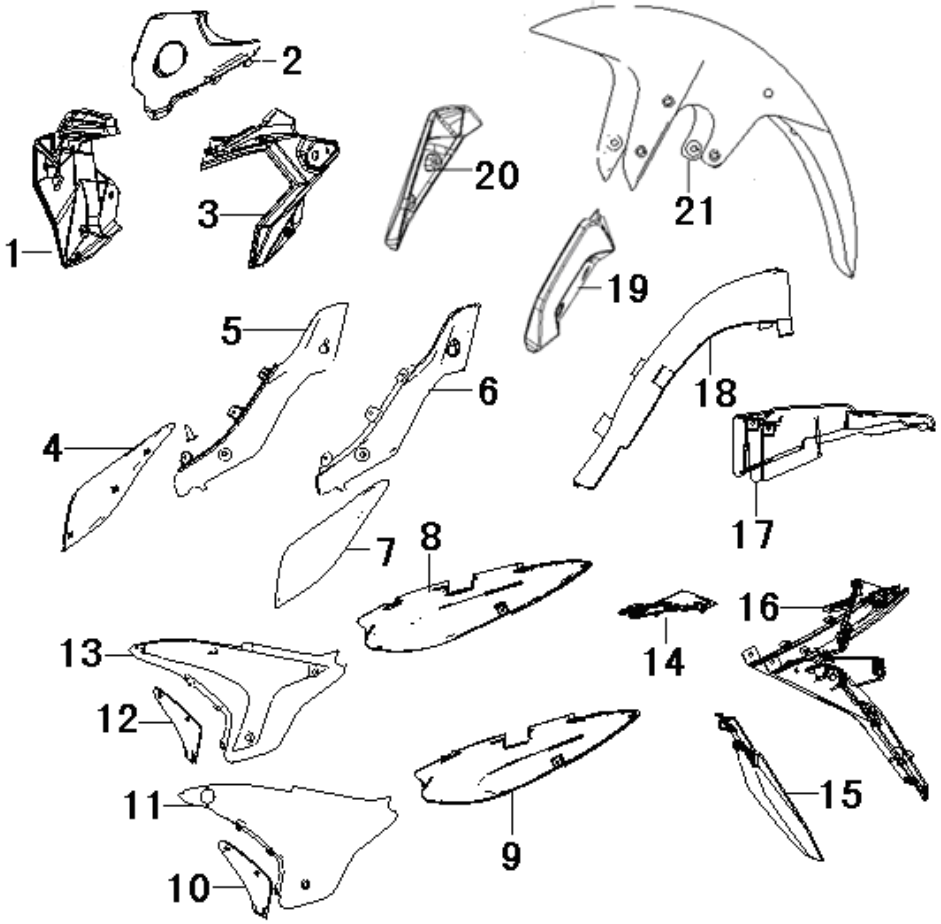
Do not damage exterior parts during disassembly and assembly.

Do not damage the pawls on the exterior parts of the vehicle during assembly or disassembly.

Align built-in panel and cover plate to their grooves respectively.

Correctly install jaw of each part during combination.

Do not damage the fittings during exterior part installation.



1 Right cowling installation plate 2 Cowling installation plate 3 Left cowling installation plate 4 Right decorative panel II 5 Right decorative panel I 6 Left decorative panel I 7 Left decorative panel II 8 Right tail cover 9 Left tail cover 10 Decorative panel for left protecting plate 11 Left protecting plate 12 Decorative panel for right protecting plate 13 Right protecting plate 14 Tail cover bracket 15 Rear mudguard II 16 Rear mudguard I 17 Front part of rear mudguard II 18 Front part of rear mudguard 19 Left decorative panel for front mudguard 20 Right decorative panel for front mudguard 21 Front mudguard

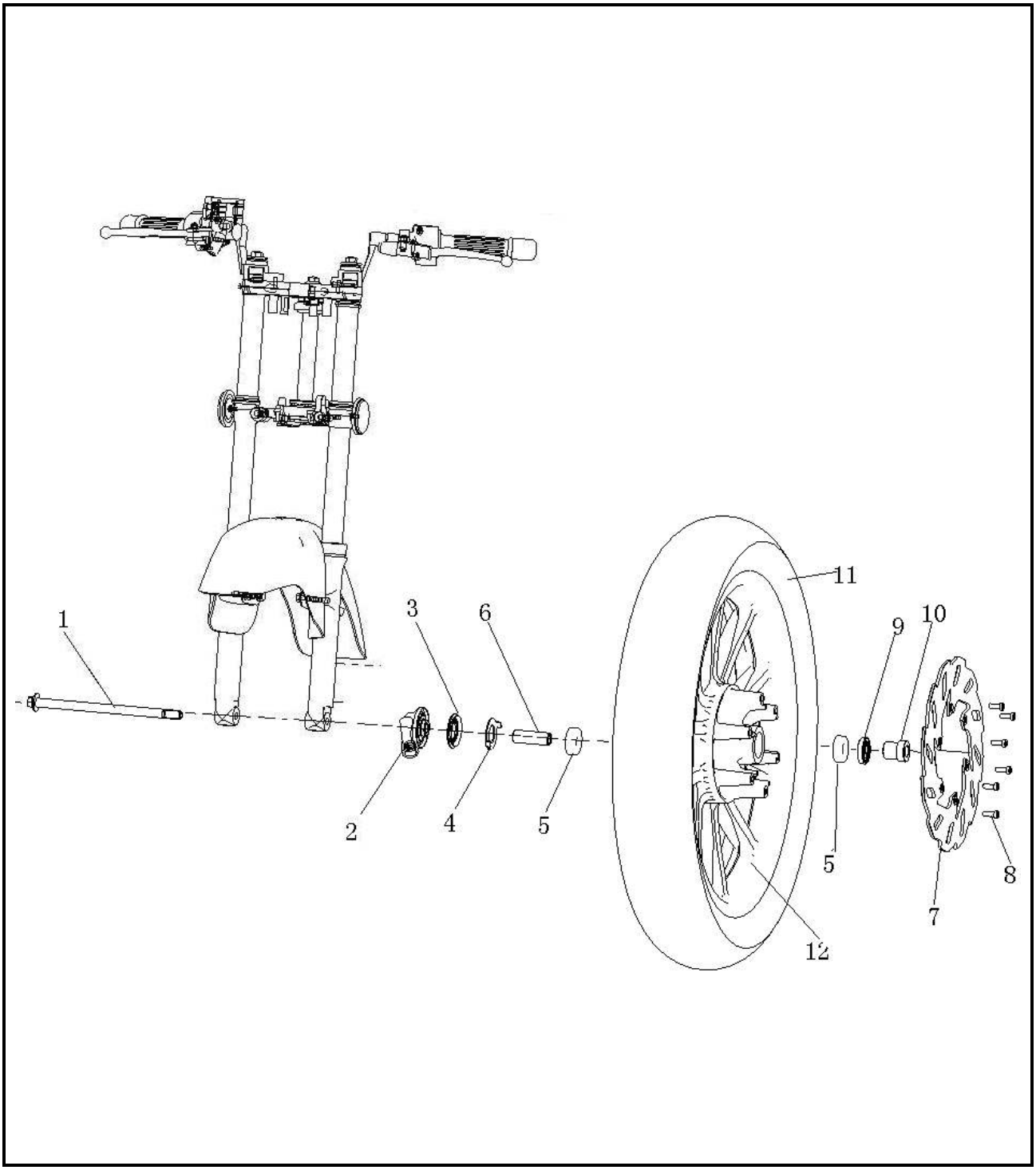
VI Motorcycle Exterior

Disassemble the exterior parts in the following sequence:

Seat cushion assembly → Left and right protecting plate assemblies → Left and right tail covers → Left and right hanger → Left and right hanger → ↓
Left and right pedals → Front mudguard brace panel → Front mudguard → Rear mudguard assembly → Rear rail → Rear tail cover connecting board → Tail lamp → Tail lamp support

*** Attention**
Do not damage exterior parts during assembly and disassembly.
Do not damage the jaws on the exterior parts of the vehicle during assembly or disassembly.
Align built-in panel and cover plate to their grooves respectively.
Correctly install paw of each part during combination.
Do not damage the fittings during exterior part installation.

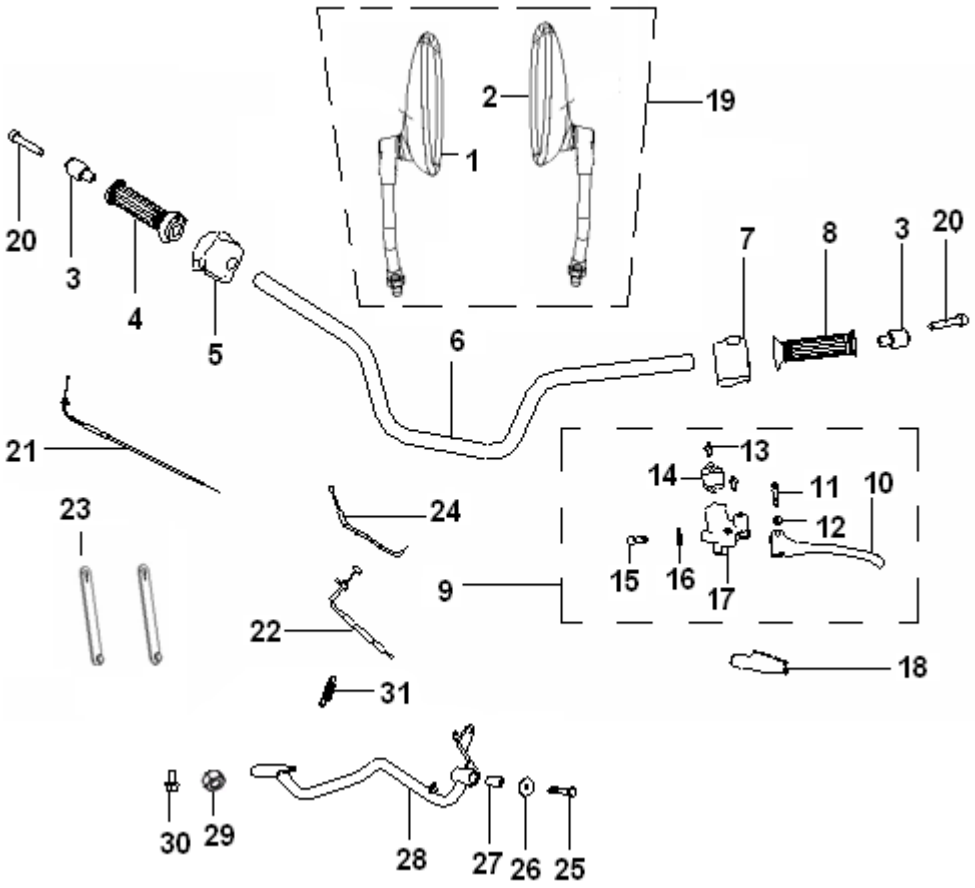
Front wheel / Front Suspension



1 Front shaft 2 Gear seat assembly 3 Gear seat oil seal 4 Drive plate 5 Bearing 6301 6 Front wheel middle shaft sleeve 7 Front brake disc 8 Front brake disc mounting bolt 9 Front wheel oil seal assembly 10 Front wheel left shaft sleeve 11 Tubeless tyre 12 Front wheel rim

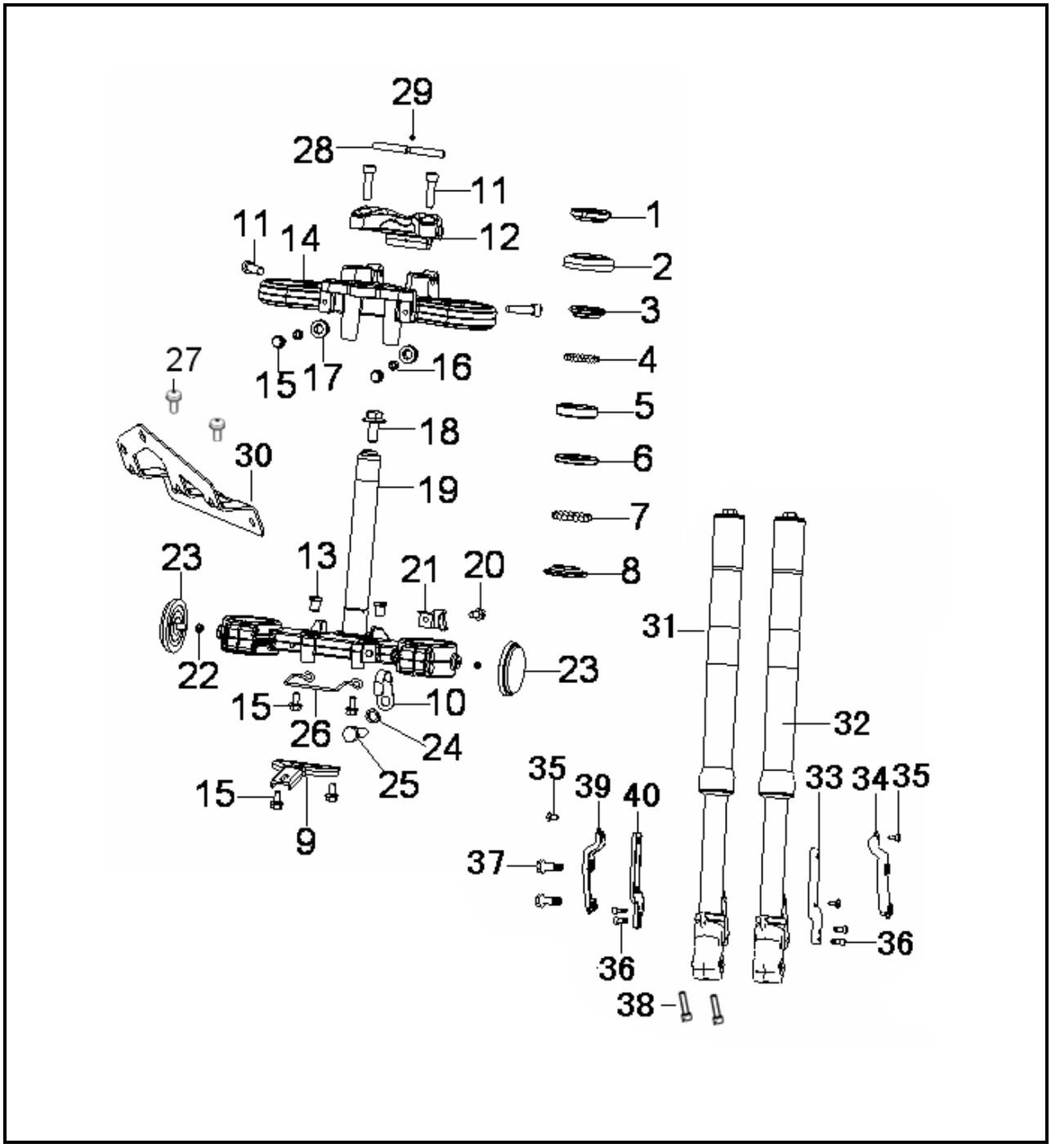
Control Assembly

A	Tightening torque of hexagon socket Bolt 2：37-44 N·m
B	Tightening torque of Nut 19：5-9 N·m
C	Tightening torque of Bolt 20：5-9N·m



1 Right rear mirror assembly 2 Left rear mirror assembly 3 Handle gear block 4 Right handle assembly 5 Right combination switch 6 Handle welded assembly 7 Left combination switch 8 Left handle grip 9 Left handle assembly 10 Left handle 11 Handle mounting bolt 12 Nut M6 13 Bolt M6×25 14 Fixed cover 15 Adjusting screw tube 16 Slotted nut 17 Left rear mirror holder 18 Clutch cable jacket 19 Rear mirror assembly 20 Hexagon socket bolt M6×35 21 Throttle cable assembly 22 Clutch cable assembly 23 Stop valve wire clamp 24 Choke cable assembly 25 Brake pedal mounting bolt 26 Spring retainer 10 27 Bushing 28 Brake pedal welded assembly 29 Bolt M6×40 30 Nut M6 31 Brake pedal return spring

Front Fork Assembly



1 Steering lever nut 2 Dust cover 3 Upper steel bowl of upper bearing 4 Steel ball 3/16 inch 5 Lower steel bowl of upper bearing 6 Upper steel bowl of lower bearing 7 Steel ball 1/4 inch 8 Lower steel bowl of lower bearing 9 Lower bracket of headlamp 10 Main cable clamp 11 Hexagon socket bolt 8x30 12 Steering handle upper holder 13 Bracket lower washer 14 Upper bracket assembly 15 Bolt M6×16 16 Bushing 17 Rubber bush 18 Stem bolt 19 Lower bracket assembly 20 Combination bolt M6×12 21 Wire clamp 22 Nut M6 23 Side reflector assembly 24 Washer 10 25 Bolt M10×16 26 Cable clip 27 Combination bolt M6×16 28 Location pin 29 Hexagon socket set screws with flat point M4×6 30 License plate bracket 31 Right front shock absorber assembly 32 Left front shock absorber assembly 33 Front mudguard bracket I assembly 34 Front mud guard bracket II assembly 35 Bolt M6×15.2 36 Hexagon socket bolt M6×16 37 Front license plate mounting bolt M10×1.25×30 38 Hexagon socket bolt M6×30 39 Front mudguard right bracket II

assembly 40 Front mudguard right bracket I assembly

VII Front Wheel/Front Suspension

Preparatory data----------7.1

Fault diagnosis----------7.2

Front wheel----------7.3

Control assembly----------7.4

Front fork assembly----------7.5

7.1 Preparatory Data

Precautions on operation

Before removing the front wheel, lift and support the bottom of motorcycle with a jack or other available device. The front wheel is off the ground. Take care not to rotate the wheel reversely.
Attention: Please do not let oil contaminate braking shoe, braking shoe assembly and brake disc.

Basic data of the motorcycle as a whole

Measuring position	Item	Standard value(mm)	Service Limit(mm)	
Front wheel shaft	Curvature		0.2	
Front wheel	Wheel shimmy	Longitudinal		2.0
		Transversal	Within 1.0	2.0

Tightening torque

			Tools
Upper bracket assembly mounting bolt	**40-60**	**N·m**	**Bearing remover**
Front wheel shaft locknut	**55-62**	**N·m**	**Locknut wrench**
Front shock absorber mounting bolt	**37-44**	**N·m**	

7.2 Fault Diagnosis

7.2.1 Heavy Steering Handle

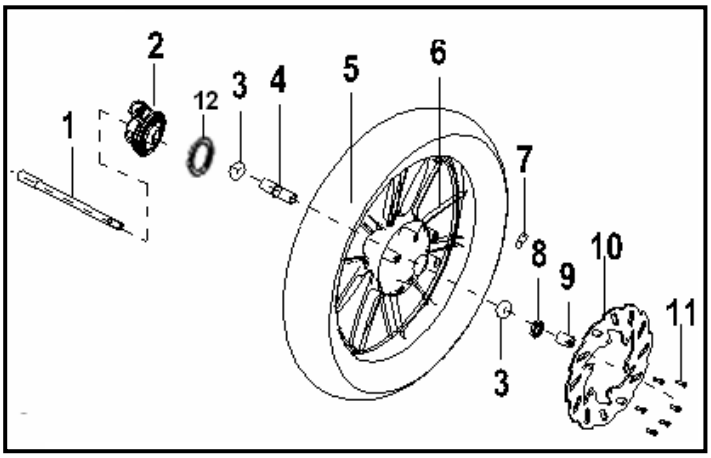
Handle bearing damaged
Too low tyre pressure
Tyre leakage

7.2.2 Wobbly Direction Handle

Damaged handle bearing
Not enough tyre pressure.
Front fork bent, front wheel shaft bent.
Distorted and crooked front wheel tyre.

7.2.3 Wobbly Front Wheel

Distorted wheel rim
Worn front wheel bearing
Defective front tyre



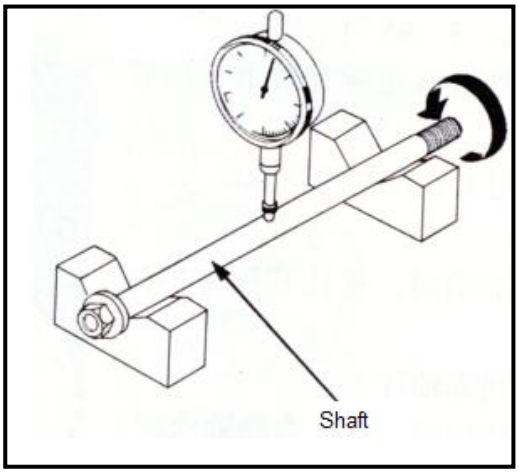
7.2.4 Difficult Rotation of Wheel

shaft or bearing seat fault
Braked

7.2.5 Noisy Front Shock Absorber

Friction sound of shock absorber protecting plate.
Loosened bolts on the shock absorber.

7.3 Front Wheel



7.3.1 Disassembly

Attention:
Stand the motorcycle reliably.
Screw off speedometer mounting bolts and remove speedometer cable.
Screw off front shaft locknuts.
Remove front shaft (1), take down bearing seat assembly (2) and front wheel.
Screw off bolts and remove front mudguard and lead wire of odometer.
Remove front brake hose.
Remove oil seal assembly (8) and bearing (3) with an oil seal remover and a bearing remover respectively.

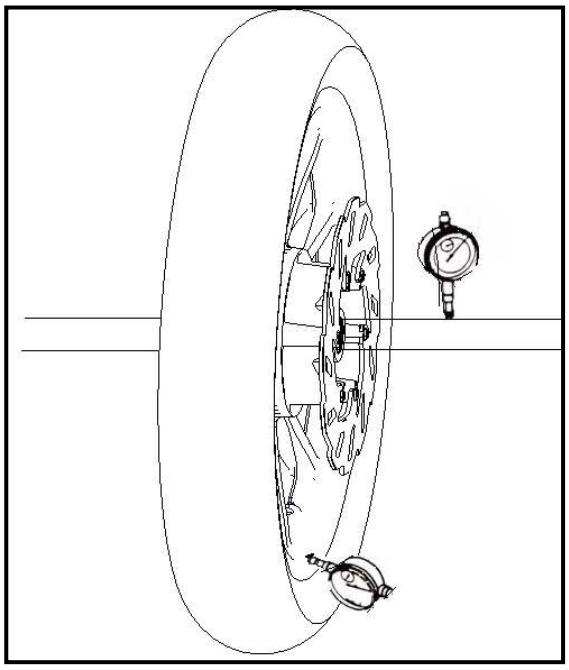
*** Note: Refer to Page 95 of the manual for detailed KW125 Motorcycle front wheel disassembly and assembly diagram.**

7.3.2 Inspection

7.3.2.1 Shaft Bow Inspection

Place the shaft onto a V block and measure its eccentricity with a dial gauge.

Service limit: When the measured value exceeds 0.2mm, replace it.



7.3.2.2 Wheel Shimmy Inspection

Place the wheel onto a precise support and check its amplitude of shimmy.

Rotate the wheel with your hands and read out shimmy amplitude.

Service limit:

Longitudinal: replace it when it is over 2.0mm

Transversal: replace it when it is over 2.0mm.

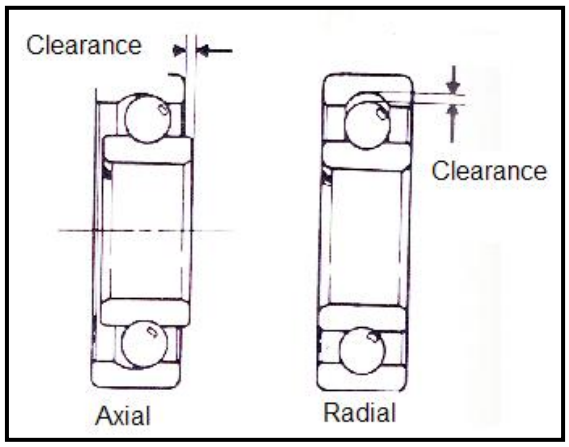
7.3.2.3 Front Bearing Inspection

Remove front shaft (1) and brake disc (10).

Remove left shaft sleeve (9) of front wheel.

Remove oil seal assembly (8).

Remove bearing (3).



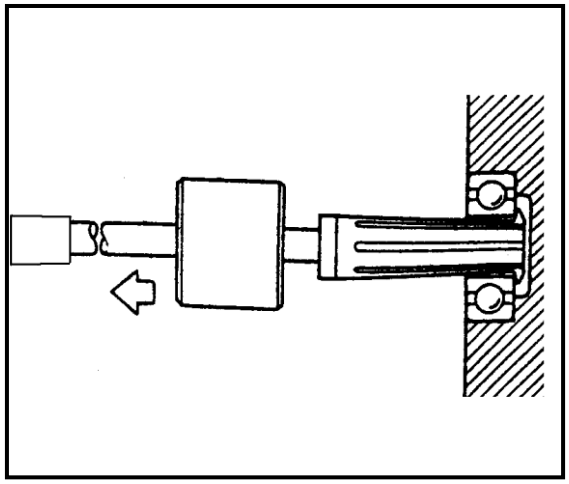
Inspect rolling of bearing.

If bearing does not roll, roll smoothly or unsteadily, or bearing is worn or loosened, replace it with a new one.

7.3.3 Bearing Replacement

Remove front shaft, front wheel and left shaft sleeve and middle shaft sleeve (4) of front wheel.

Remove oil seal assembly (8) and bearing (3) with an oil seal remover and a bearing remover respectively.



Note: Removed bearing shall be replaced with a new bearing.

Apply some lubricating grease on the bearing at installation.

And then press the bearing in with bearing installer.

*** Attention**

• The bearing must be pushed in parallel.

7.3.4 Installation

Install the bearing in the reverse order of removal.

Attentions:

Lubricate front shaft, gear seat assembly, oil seal (lip), shaft sleeve, bearing 6301-2RS, and middle sleeve.

Recommended lubricant is calcium base grease.

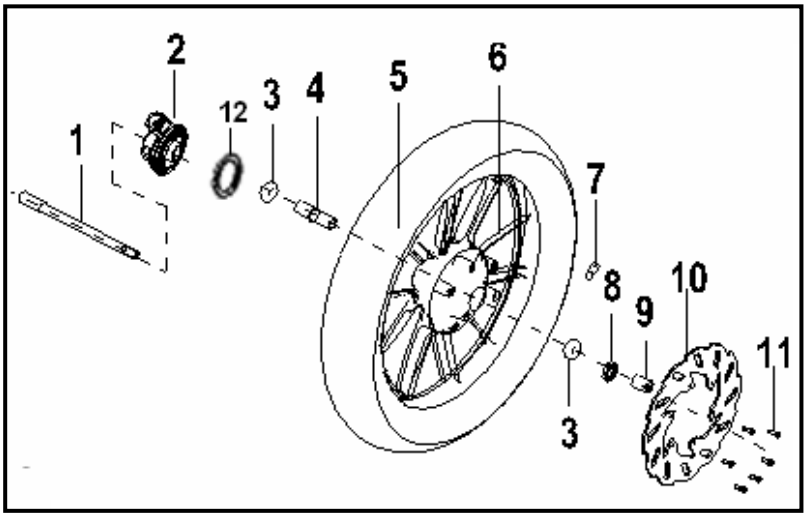
Install front shaft (3), front wheel, gear seat assembly (5) and Nut M12X1.25 (14).

Gear seat assembly shall be halved at installation.

If odometer gear seat assembly does not align and lock the front shaft, the odometer gear seat will be distorted.

Install front brake assembly to the front brake disc.

Tighten front shaft.

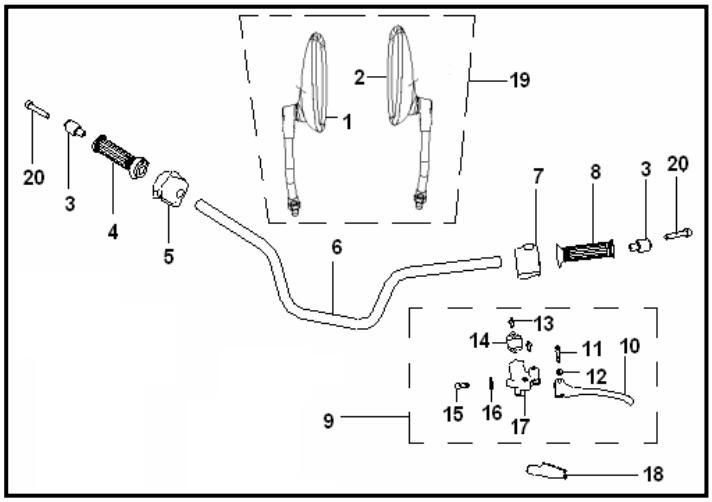


*** Note: Refer to Page 95 of the manual for detailed KW125 Motorcycle front wheel disassembly and assembly diagram**

Front wheel locknut tightening torque: 55-62 N·m

7.4 Steering Handle

7.4.1 Removal



Remove left and right rear mirror assemblies (1) and (2).

Open the fixed cover

Remove left handle assembly (10) of front brake.

Remove balancer assemblies (3) and (20).

Remove left and right combination switches (5) and (7).

Remove left handle grip assembly (8), throttle control handle (3) and steering handle upper holder mounting bolt (hexagon socket bolt M8X25) (13).

Take down steering handle upper holder (17).

Remove steering handle assembly (6).

7.4.2 Installation

*** Note: Refer to Page 96 of the manual for KW125 Motorcycle steering handle disassembly and assembly diagram.**

Install the steering handle in the reverse order of removal.

Top bracket assembly mounting bolt

Tightening torque: 40-60 N·m

7.5 Front Fork

7.5.1 Removal

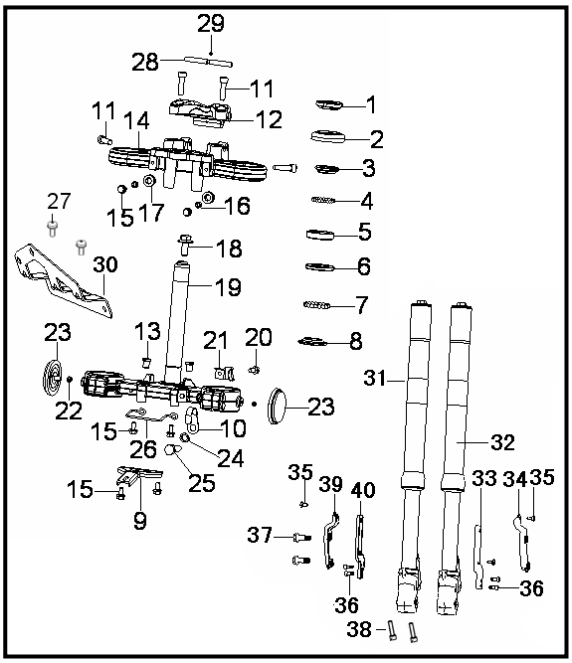
Support the motorcycle with the middle stand.

Remove front wheel.

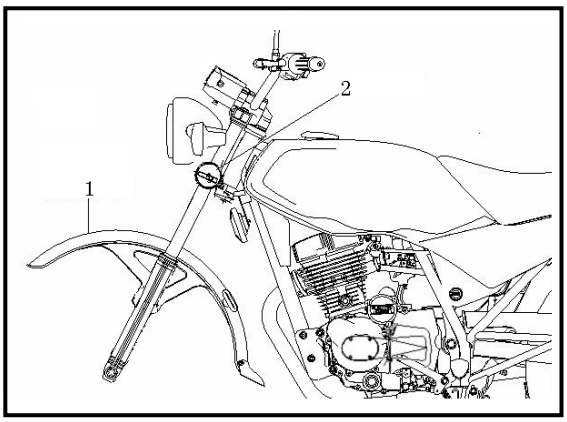
Remove brake caliper and brake pipe clip.

Remove front mudguard (1) and reflector (2).

Remove the handle.



Screw off upper bracket mounting bolt and lower bracket pinch bolt.



Remove headlamp bracket.

Remove the front fork.

Tools:

Steering handle welded assembly mounting bolt wrench.

Locknut wrench

Special remover for bearing steel bowl

*** Attention:**

Clean the opening part of protecting plate of motorcycle block with a cloth.

Upper and lower bearing steel bowls shall be removed with special bearing steel bowl remover.

7.5.3 Installation

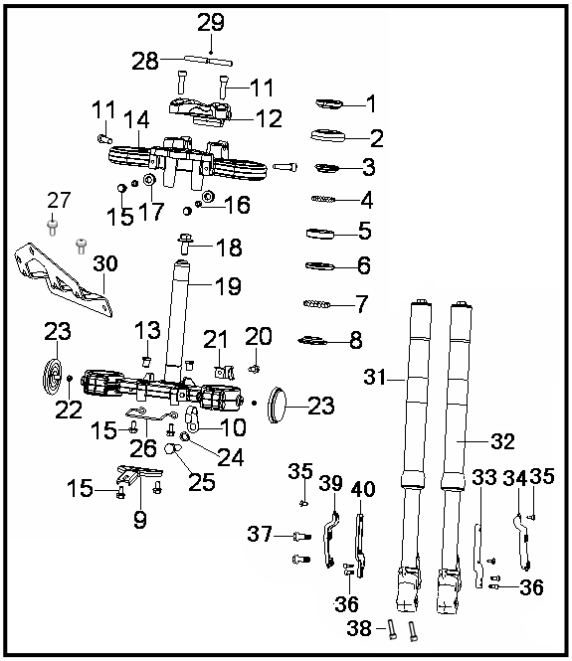
Apply lubricating grease onto the bottom bearing steel bowl and confirm the number of steel balls (23balls).

Steering handle shall not be rotated in case of steel ball falling off; then install steering rod.

Support the steering handle and apply lubricating grease on to the top bearing steel bowl and confirm the number of steel balls (19 balls).

Apply lubricating grease on the top holder race.

Swing steering handle left and right to have steel balls closely fit.



Tools:

Locknut wrench

Rotate the front fork left and right to be sure of its smoothness and there shall be no looseness.

Procedures：

Install it in the reverse order of removal.

Before installing the front fork, tighten pinch bolt first.

Make sure that end of inner fork pipe is parallel and level with handle head.

Tighten lower bracket pinch bolt (25), bolt (15) and steering stem pinch bolt (18).

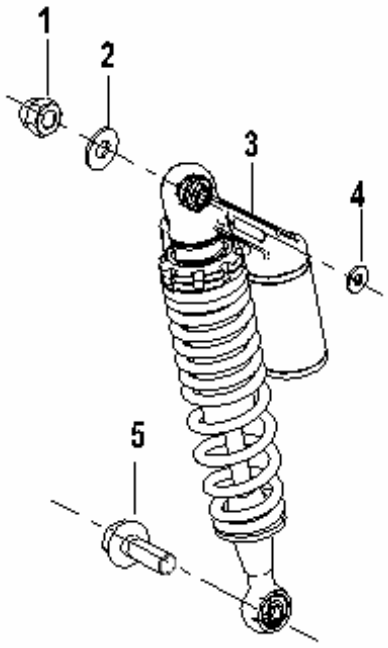
*** Note: Refer to Page 97 of the manual for KW125 Motorcycle front fork disassembly and assembly diagram.**

Rear Wheel/Rear Suspension

1 Rear shock absorber assembly 2 Rear brake rocker arm 3 Rear shaft 4 Nut M8 5 Sprocket stopper
6 Sprocket 43 teeth 7 Oil seal 8 Rolling bearing 6204-2RS 9 Chain drive sleeve 10 Sprocket hub
11 Sprocket mounting bolt 12 Rear wheel left sleeve assembly 13 Rear wheel buffer 14 Bearing spacer
15 Tubeless tyre 130/70-17 16 Rear brake disc 17 Hydraulic brake disc mounting bolt M6×16
18 Rolling bearing 6302-2RS 19 Front wheel oil seal assembly 20 Locking nut M14×1.5

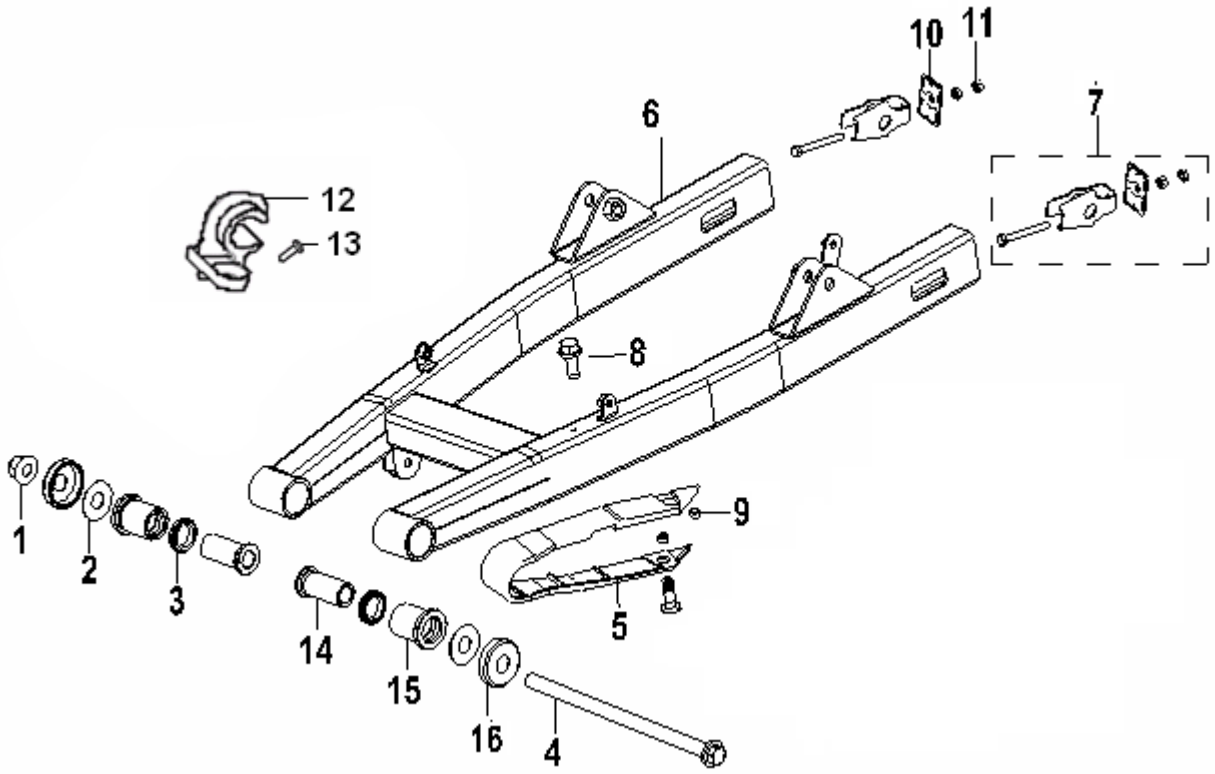
Rear Shock Absorber

1 Cap nut M10×1.25 2 Rear shock absorber mounting gasket 3 Rear shock absorber assembly
4 Washer 12 Bolt M10×1.25×40



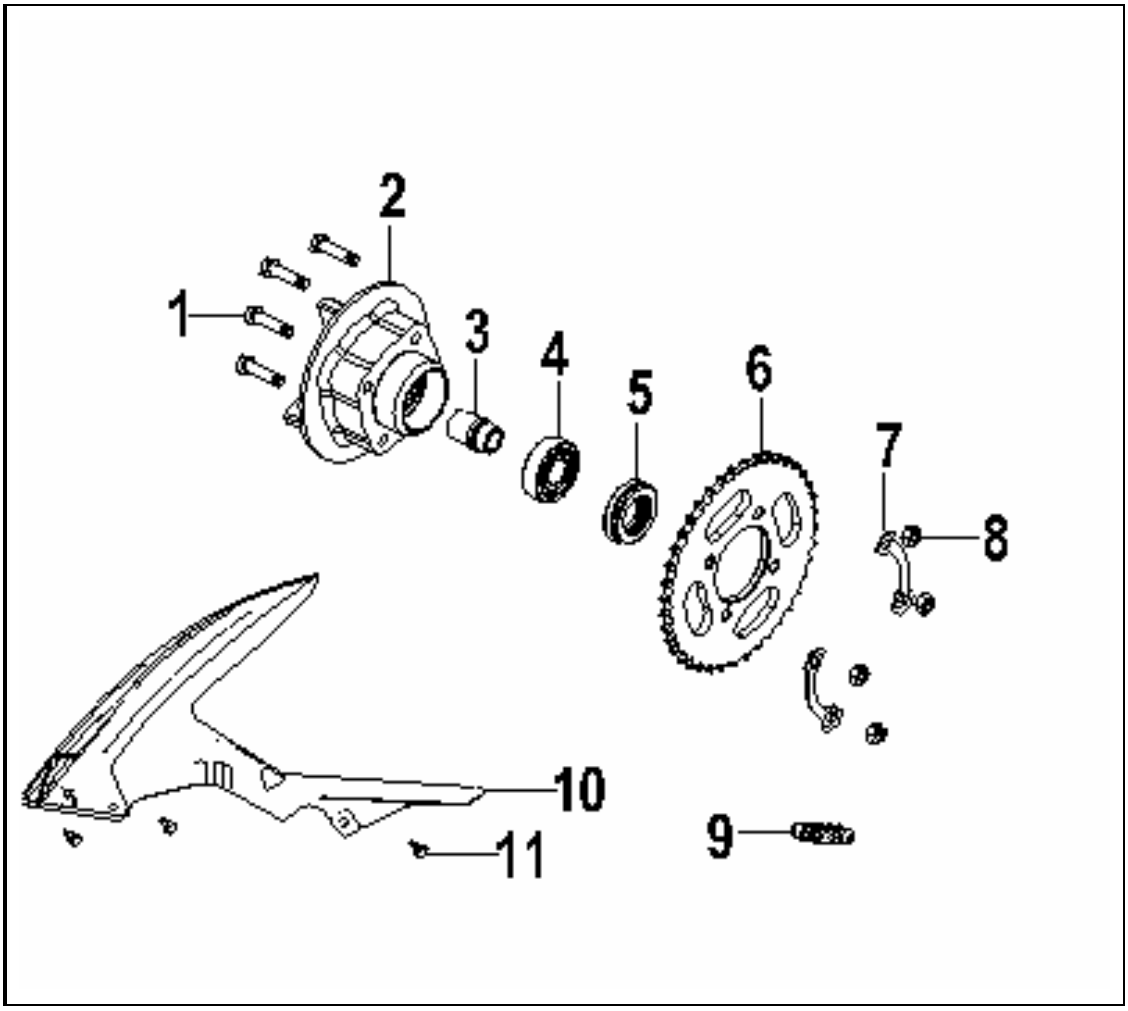
Rear Swing Arm

A	Side clearance (opening swing arm end) limit value：1.0mm
B	Tightening torque of Nut 3 in the diagram is：70-83 N·m



1 Locking nut M14X1.5 2 Rear swing arm mounting washer 3 Oil seal 4 Rear swing arm shaft
5 Chain protector 6 Rear swing arm welded assembly 7 Chain adjuster 8 Screw M5X12 9 Spacer 2
10 Chain adjuster plate 11 Nut M8 12 Rear hydraulic brake wire clip 13 Screw M6X12
14 Intermediate spacer 15 Rear swing arm bush 16 Dust ring assembly

Chain Drive Assembly



1 Sprocket mounting bolt 2 Sprocket hub 3 Chain drive sleeve 4 Rolling bearing 6204-2RS 5 Oil seal 6 Sprocket 43 teeth 7 Sprocket stopper 8 Nut M8 9 Chain 428HG-1×126 10 Chain guard 11 Boss bolt 1

A	Tightening torque of Bolt 1 in the diagram is：22-29 N·m
B	Drive chain specification： 428HG-1×126

VIII Rear Wheel/Rear Suspension

Preparatory data---------- 8.1

Fault diagnosis----------8.2

Rear wheel----------8.3

Rear shock absorber/rear swing arm---------- 8.4

Chain drive assembly----------8.5

8.1 Preparatory Data

Precautions on operation

Do not contaminate braking shoe ad brake disc with oil.

Basic preparatory data

Item	Standard Value（mm）	Service Limit（mm）	
Rear wheel Shimmy	Longitudinal		2.0
	Transversal		2.0

Tightening torque

Rear shat locknut	**85 - 98 N·m**
Rear shock absorber top nut	**37 - 44 N·m**
Rear shock absorber bottom nut	**37 - 44 N·m**

8.2 Fault Diagnosis

8.2.1 Shimmy Rear Wheel

Distorted wheel rim
Worn rear bearing
Troubled tyre

Worn or injured swing arm pivot bush
Improper adjustment of drive chain adjuster
Bent frame or swing arm

8.2.2 Inflexible Wheel Rotation

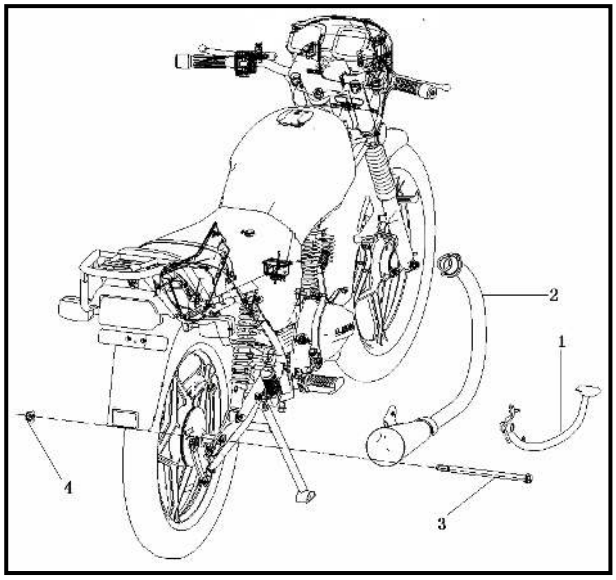
Incorrect brake adjustment
Worn rear bearing
Too tight drive chain

8.2.3 Poor Braking Performance

Incorrect brake adjustment
Worn braking shoe
Worn brake drum
Incorrect installation of braking shoe

8.2.4 Brake Pedal Inflexible or Slow Return

Incorrect brake adjustment
Worn or contaminated brake drum
Incorrect installation of braking shoe



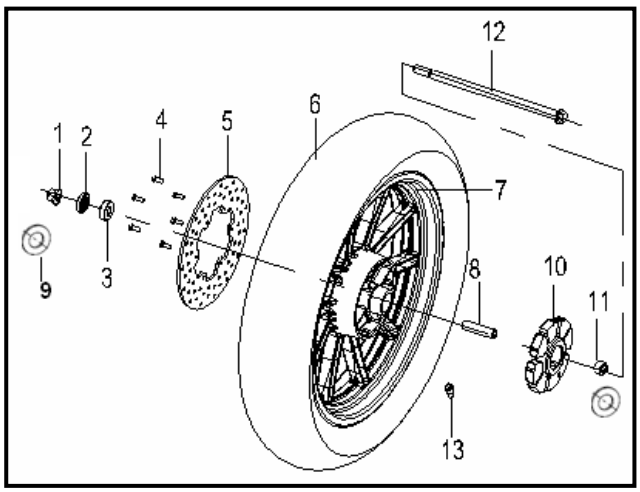
8.2.5 Noisy Brake

Worn braking shoe
Worn brake drum
Contaminated braking shoe
Contaminated brake drum

8.3 Rear Wheel

8.3.1 Removal

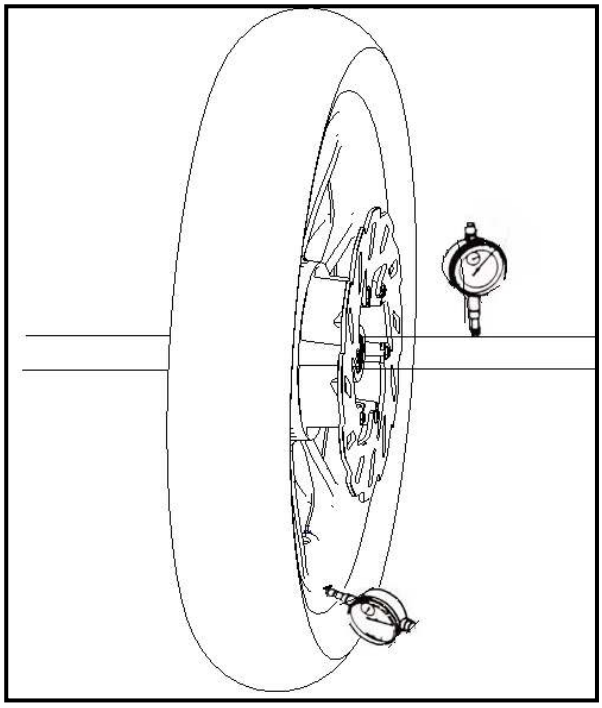
Stand the motorcycle steadily and rear wheel is off the ground.
Remove rear brake pedal assembly (1).
Remove muffler assembly (2).
Screw off rear wheel adjuster.
Take down the brake rod from brake arm.
Remove connector and spring on the brake arm.
Remove brake pin, washer, rear wheel buffer and brake nut.
Remove torque linked arm from rear drum brake.
Screw off drive chain adjuster (20).
Remove rear shaft locknut (21) and rear shaft (4).
Move forward rear wheel. Remove the drive chain from the rear drive sprocket.
Remove the rear wheel.



8.3.2 Inspection

8.3.2.1 Wheel Shimmy Inspection

Rotate the wheel by hands and measure its eccentricity with a dial gauge.



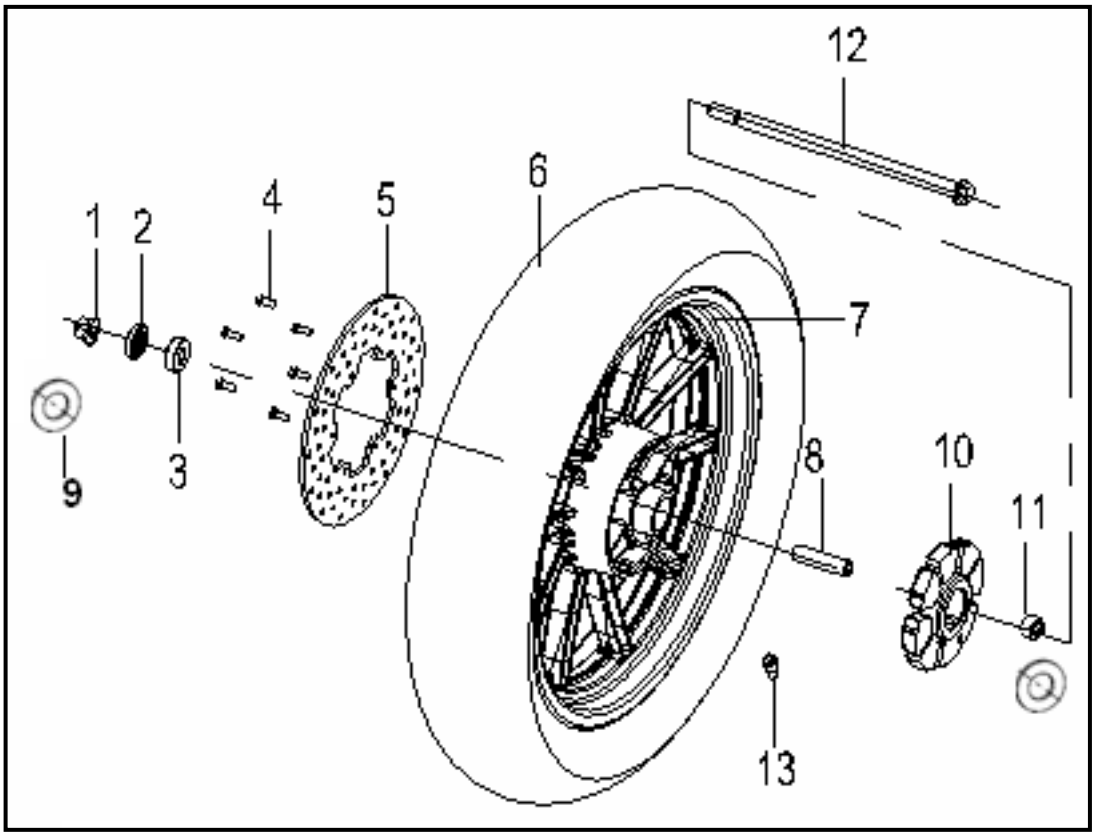
Service limit:
Longitudinal: Replace it when the measured value exceeds 2.0mm.
Transversal: Replace it when the measured value exceeds 2.0mm.

When rear wheel shimmy exceeds service limit, rear wheel bearing is loosened, which results in wobbly rear wheel. Check and replace rear wheel bearing.

8.3.3 Installation

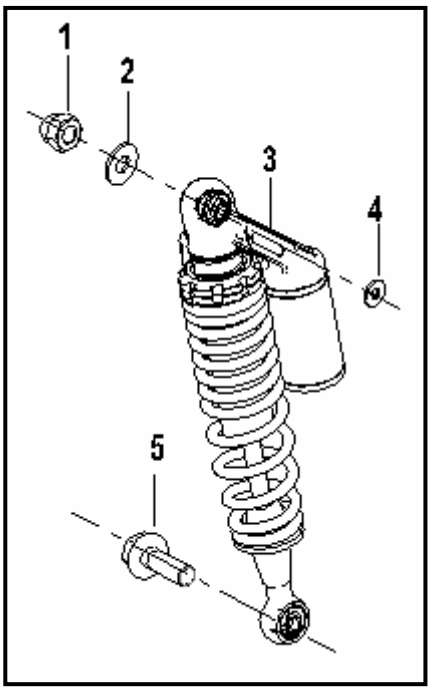
Install the rear wheel in the reverse order of removal and tighten the nut.
Rear wheel shaft locknut
Tightening torque: 85-98N·m

RKV125 Rear Wheel



8.4 Rear Shock Absorber/Rear Swing Arm

8.4.1 Remove Rear Shock Absorber



Remove left and right protecting plates, seat cushion assembly and hood.
Screw off mounting bolt and cap nut (1) from rear shock absorber.
Remove rear shock absorber.

8.4.2 Rear Shock Absorber Inspection

Check rear shock absorber rod. If the rod is bent or damaged, please replace rear shock absorber assembly.
Check fatigue of spring. If it is, replace rear shock absorber assembly.

8.4. Install Rear Shock Absorber

Install the rear shock absorber in the reverse order of removal.
Install upper locknut and lower mounting bolt on the rear shock absorber
Tighten them to specified torque.

Locknut
Tightening torque: 37-44 N·m

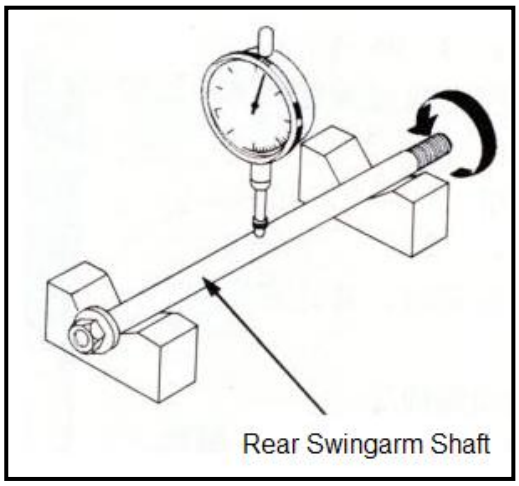
8.4.4 Remove Rear Swing Arm

Remove rear wheel.
Remove bolt and drive chain cover.
Screw off the lower mounting bolts on the shock absorber at both sides.
Screw off swing arm pivot nut (3) from the frame.
Remove rear swing arm shaft (2) and rear swing arm assembly (1).

Note: Refer to Page 106 for detailed disassembly and assembly diagram.

8.4.5 Rear Swing Arm Inspection

Check rear swing arm installation shaft. Rotate the shaft on a flat surface or measure it with a dial gauge. If it is bent, replace it.



*** Attention**

Don't attempt to straighten bent shaft.

Wash in solvent the components for rear swing arm installation shaft.

Check sleeve assembly (7) and intermediate sleeve (5) of rear swing arm.

If they are damaged, replace them.

8.4.6 Install Rear Swing arm

Install the rear swing arm in the reverse order of removal.

Apply lubricating grease on to pivot bush.

Install rear swing arm sleeve assembly (15) and intermediate sleeve (14).

Install rear swing arm assembly (6).

Install rear swing arm onto the frame and insert rear swing arm shaft.

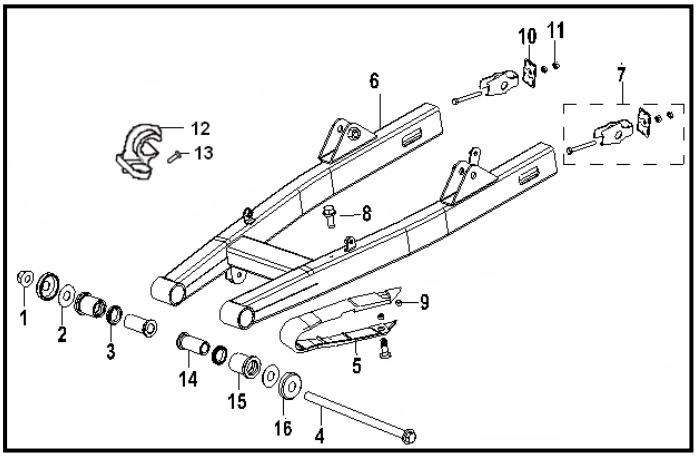
Install and tighten rear swing arm shaft nut to specified torque.

Install lower mounting bolt on rear shock absorber.

Install drive chain cover.

Install the two connecting bolts.

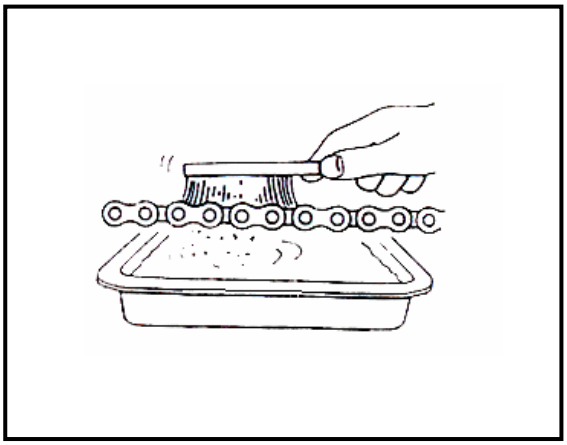
Install rear wheel.



Install rear swing arm nut

Tightening torque: 70-83N·m

8.5 Chain Drive Assembly



8.5.1. Removal

Stop the motorcycle on the flat ground and stand it steadily.

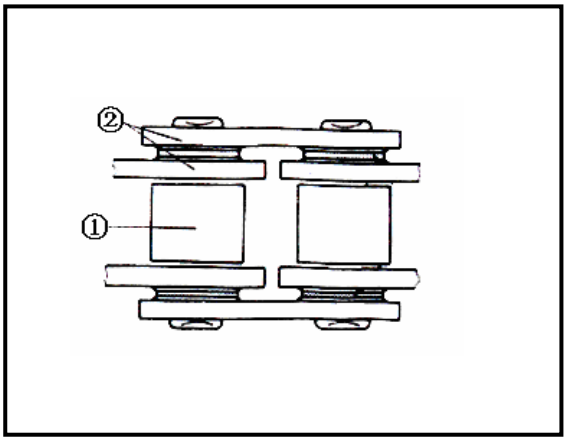
Remove gearshift pedal connecting parts, drive chain cover and drive sprocket.

Remove rear wheel, rear shock absorber, chain cover and drive chain.

8.5.2. Inspection

Measure length ⓐ of 10 chain links. If they cannot meet the specified value, replace the drive chain.

Length limit of 10 chain links is 127mm.



*** Attention:**

• Stretch the chain by hands and then measure it.

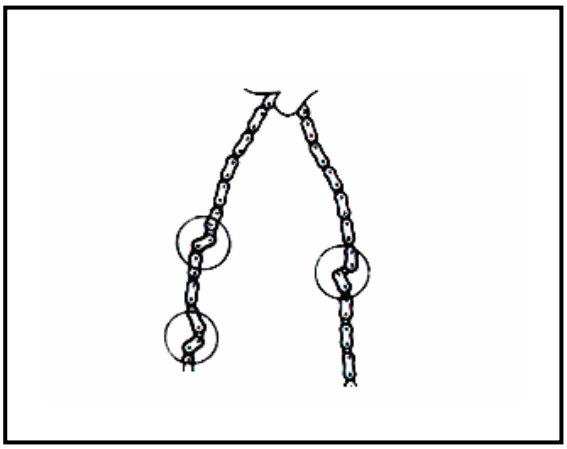
• The measuring range is from chain link roller ① to inner side of roller ⑪.

• Measure length of 10 chain links.

• Measure length of 10 chain links for 2-3 times at different positions.

Clean drive chain. Immerse it into kerosene and brush the dust on it as possible as one can.

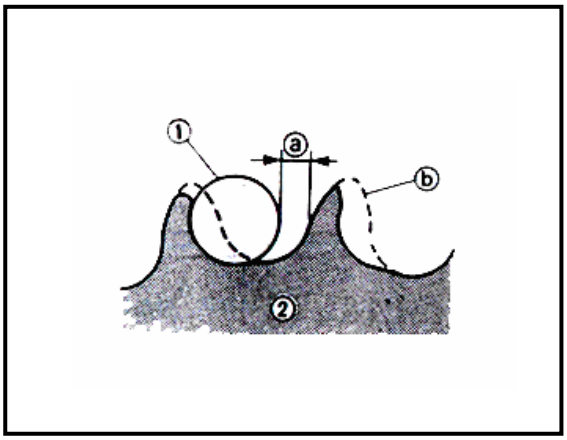
Take the cleaned chain from kerosene and dry it in the air.



Inspect roller ① and its side plate ②. If it is damaged or worn, replace the drive chain.

Lubricate drive chain. Drive chain lubricant can be purchased from the local dealer.

Inspect rigidity of drive chain. If it is rigid, you can clean, lubricate or replace it.



Check driving sprocket and driven sprocket.

If 1/4 of the gear teeth are worn ⓐ, replace the sprocket; so does with bent teeth.

Check rear brake. If it is cracked or worn, replace it.

Check rear wheel buffer, replace it with a new one if it is worn or damaged.

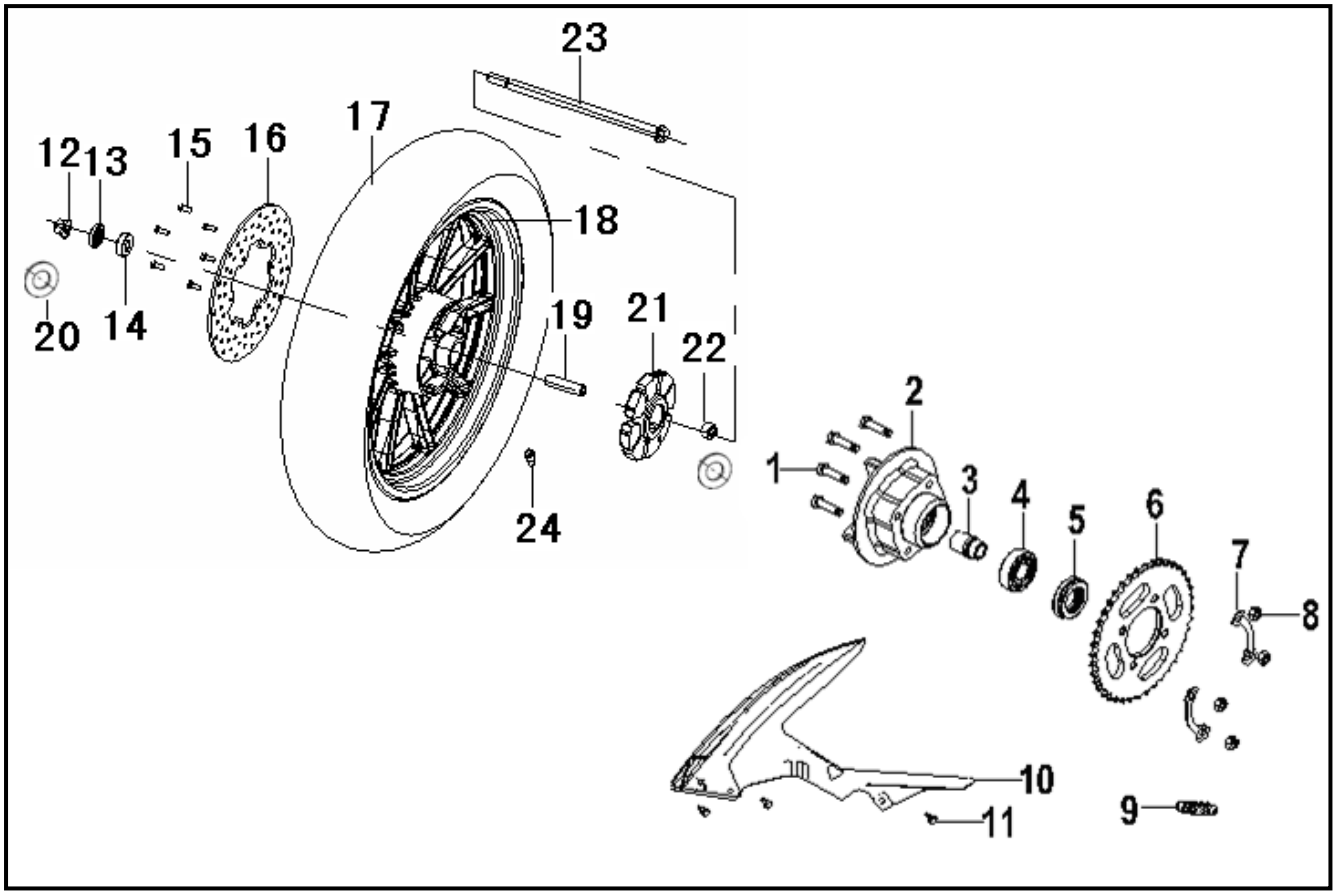
Check wheel bearing. If there is bearing clearance in the wheel hub or rotation of the wheel is unbalanced, replace it with a new one.

Check oil seal. If it is worn or broken, replace it with a new one.

8.5.4. Installation

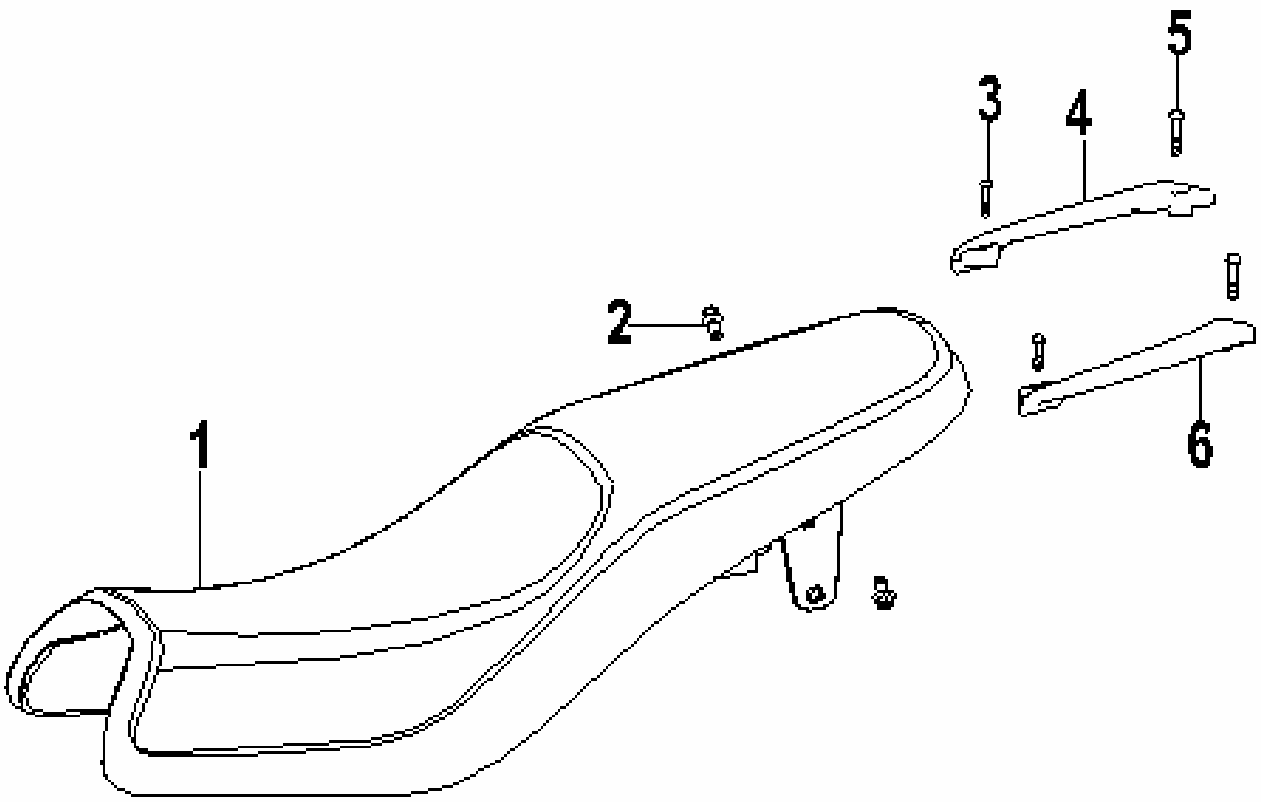
Install it in the reverse order of removal.
Install drive chain, chain cover, rear left shock absorber, rear wheel and drive sprocket cover.

Adjust slackness of drive chain and clearance of brake pedal.
If slackness of drive chain is too small, engine and other important components will work overload.



Keep the slackness of drive chain in specified limit range.

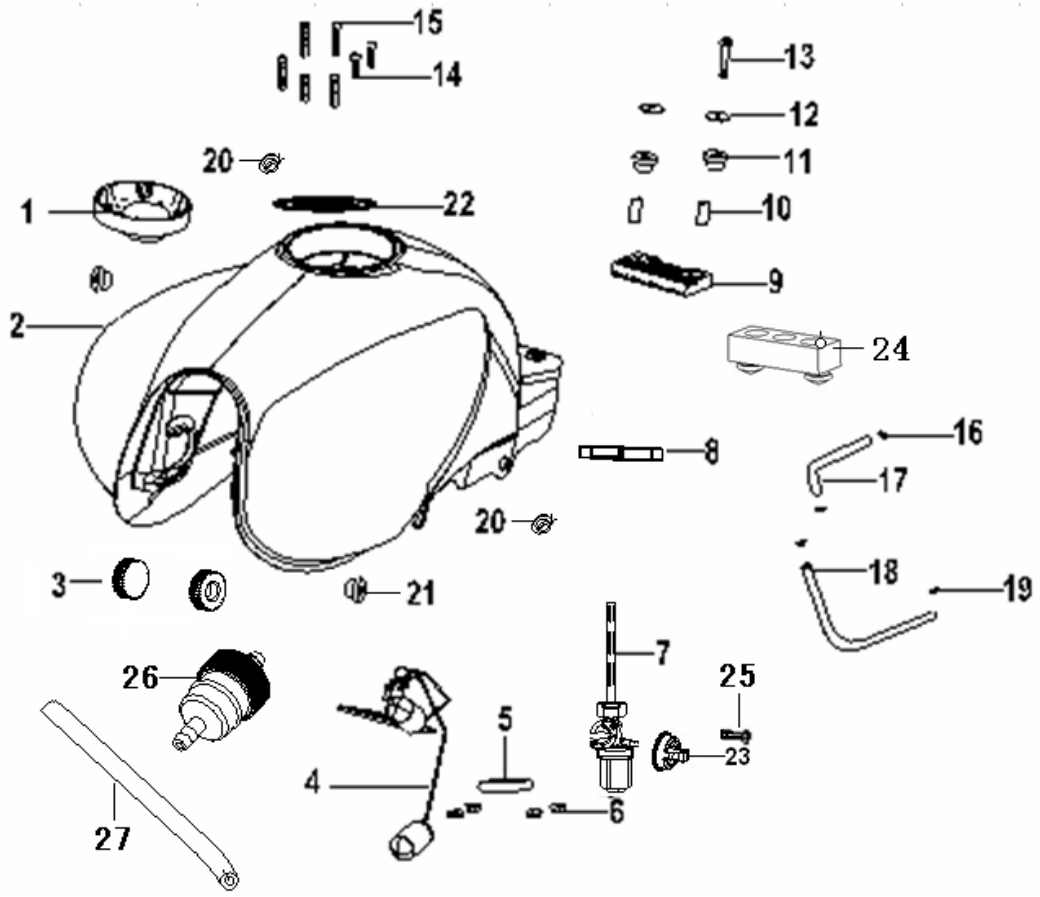
Seat Cushion



A	Note: Fuel switch shall be at “OFF” position while removing fuel tank.
B	Tightening torque for Bolt 10 in the diagram：5-9 N·m
C	Tightening torque for Bolt 12 in the diagram：5-9 N·m

1 Seat cushion assembly 2 Bolt M8×20 3 Rear luggage carrier screw I 4 Right rear rail
5 Rear luggage carrier screw II 6 Left rear rail

Fuel Tank Assembly



A	Max. capacity of fuel tank：17.5L
B	Tightening torque of Bolt 13 in the diagram：5-9 N·m
D	Tightening torque of Bolt 15 in the diagram：5-9 N·m
E	Note：Fuel switch shall be set at “OFF” position while removing fuel tank.

1 Fuel tank assembly 2 Sensor rubber gasket 3 Screw M5×22 4 Screw M5×10 5 Damper 6 Bolt M6×35 7 Washer 8 Fuel tank installation shaft sleeve 9 Fuel tank installation gasket 1 10 Fuel tank installation gasket 2 11 Oil hose 4.5×8.5 1 clip Φ8 13 Oil hose 5×9×600 14 Fuel tank switch assembly 15 Nut M6 16 Sensor assembly 17 Protecting plate installation gasket 18 Carbon canister

IX Fuel Tank/Seat Cushion

Preparatory data----------9.1

Fault diagnosis----------9.2

Fuel tank/seat cushion----------9.3

9.1 Preparatory Data

Precautions on Operation

Working site for removal shall be away from fire source.
Fuel switch shall be set at “OFF” position while removing fuel tank.
While installation, tighten bolt and nut to their specified torque.
After installation, check if all the components are correctly fixed and work normally.

Basic data

Item	Standard	Service limit
Fuel tank capacity	17	17.5

Tightening torque

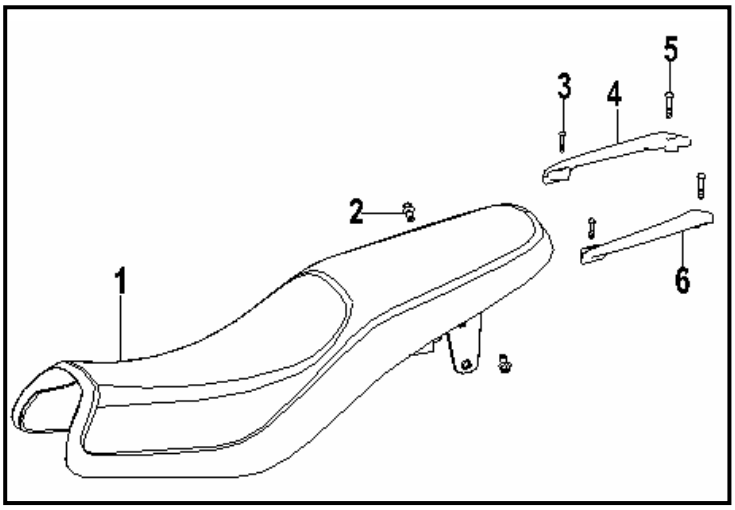
Cushion mounting bolt **22-29 N·m**
Fuel tank mounting bolt **5 - 9 N·m**

9.2 Fault Diagnosis

Reducing Fuel Level

Natural consumption
Oil leakage

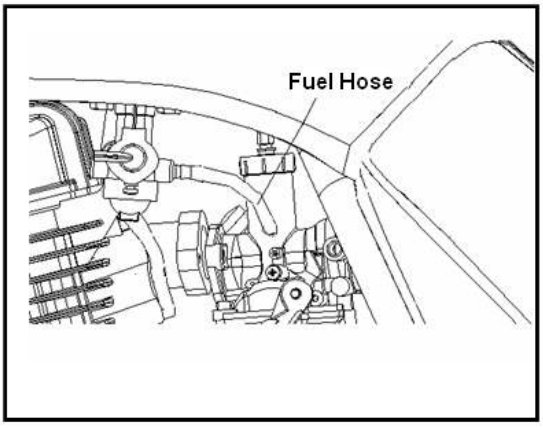
9.3 Fuel Tank/Seat Cushion



9.3.1 Removal

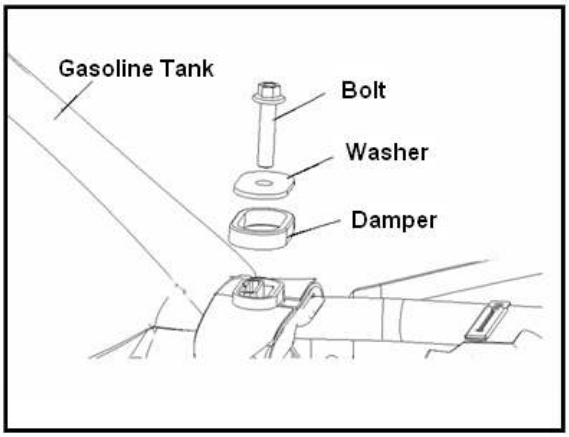
Remove left and right protecting plates (3) and (4).
Insert ignition key into the seat lock. Rotate clockwise the key and unlock it.
Pull downward and take out the helmet hook.
Release the pawl from frame and remove seat cushion (1) .
Remove connector from lead wire of oil level sensor.

Fuel switch shall be set at "OFF" position.
Disconnect fuel hose and carbon canister connecting hose.
Remove bolt, washer, damper and fuel tank.



Remove the fuel tank from the frame.

Note:
Refer to P115 and P116 for detailed disassembly and assembly diagram.



9.3.1 Installation

Install the tank in the reverse order of removal.

Installation torque:

Seat cushion mounting bolt	**22-29 N·m**
Fuel tank mounting bolt	**5 - 9 N·m**

Engine Inspection and Maintenance

Table of tightening torque for fastening parts used in Engine

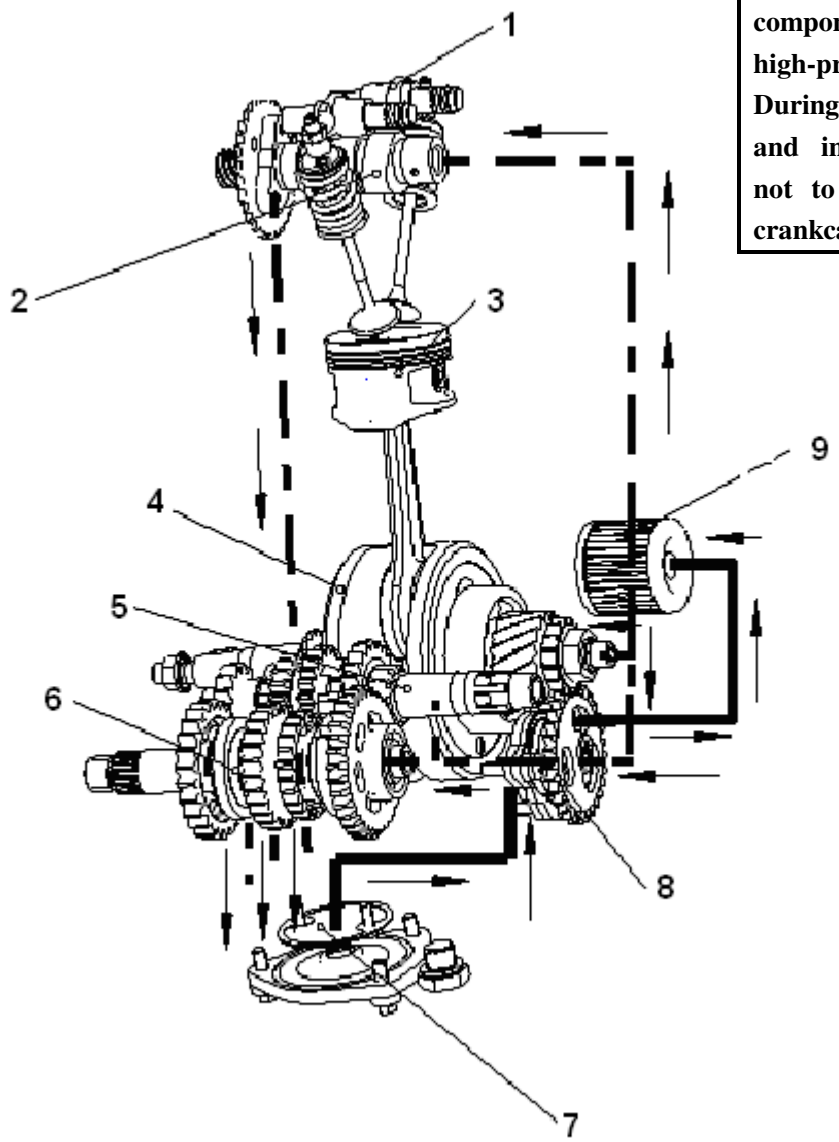
Fastening position and part name	Tightening torque（N·m）
Cylinder cap nut M8	25～28
Cylinder cap nut M6	8～12
Cylinder cap bolt	8～12
Cylinder block connecting bend bolt	8～12
Cylinder block connecting nut	8～12
Flywheel locknut	50～55
Valve clearance adjuster	10～15
Gearshift changeover contact screw	8～12
Closing bolt	8～12
Right side cover bolt	8～12
Front left cover bolt	8～12
Coil screw	8～12
Clutch separating disc bolt	6～8
Clutch locknut	45～50
Filter screen cover bolt	8～12
Tensioner pinch bolt	8～12
Drive gear locknut	50～60
Drive sprocket bolt	18～22
Engine oil pump screw	8～12
Ratchet upper and lower baffler screw	8～12
Spark plug	18～22

Components that cannot be reused:

Please be sure to use new paper pad, sealing ring, O ring, cotter pin, circlip, retainer and so on while installing or assembling components.

Lubricating System

Note: When the engine oil pump is removed, clean carefully all the components and purge them with high-pressure gas.
During engine oil pump removal and installation, pay attention not to drop anything into the crankcase.



1 Rocker arm 2 Cam mechanism 3 Piston 4 Crankshaft 5 Main shaft assembly 6 Countershaft assembly
7 Filter screen 8 Engine oil pump 9 Filter element assembly

X Lubricating System

Preparatory data--------10.1

Fault diagnosis---------10.2

Oil engine pump-------10.3

10.1 Preparatory Data

Precautions on Operation

When the engine oil pump is removed, clean carefully all the components and purge them with high-pressure gas.
During engine oil pump removal and installation, pay attention not to drop anything into the crankcase.

Function of lubricating system: Function of engine lubricating system is to supply lubricating oil to friction surfaces of engine parts so that dry surface friction will turn to liquid friction between plasmids of lubricating oil. It is used to reduce wear of component, cool components of higher heat, absorb impact from bearing and other parts, weaken noise, increase tightness between piston ring and cylinder wall, clean and take away impurities from surface of component, etc.

Basic data

Item		Standard	Service Limit
Engine oil capacity	Oil replacement	1.0±0.1L	__
	Engine overhaul	1.3±0.1L	__
Oil pump rotor	Radial clearance between inner and external rotors	Less than 0.15	0.2
	Clearance between external rotor and pump block	0.15-0.18	0.2
	Clearance of rotor end face	0.08-0.12	0.15

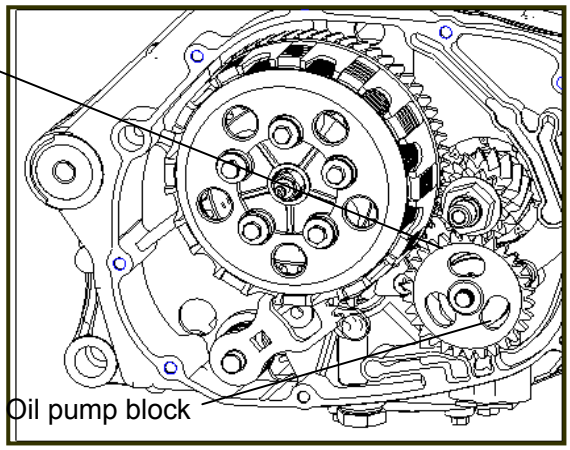
10.2 Fault Diagnosis

Reducing engine oil	Engine burnt
Natural consumption	No oil pressure or too low oil pressure
Oil leakage	Clogged oil way.

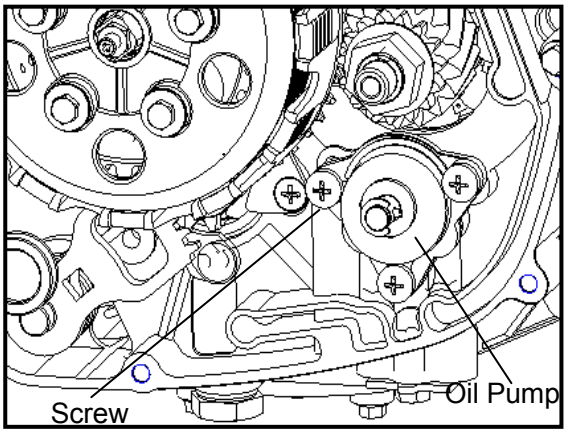
10.3 Oil Pump

10.3.1 Removal

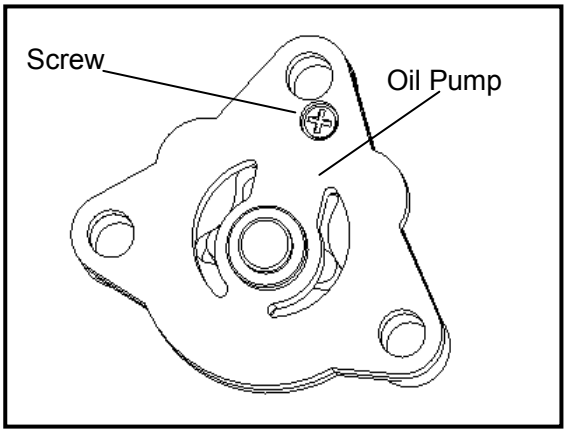
Remove right cover. Take down the engine oil filter and release oil pump mounting screw.
Take down oil pump block, drive gear and pump shaft.



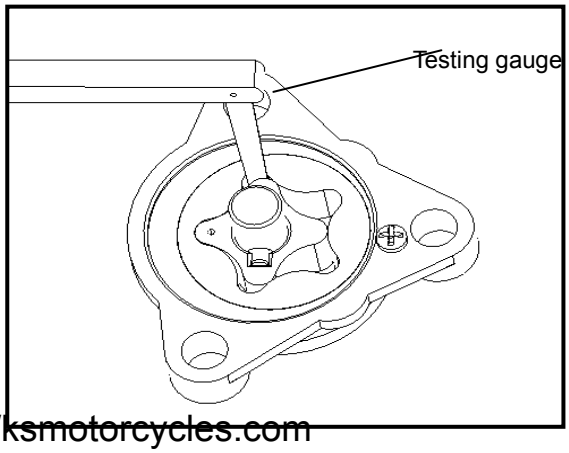
Screw off the screw
Take down pump seat.



Remove the screw and take down pump cover.
Disassemble oil pump.

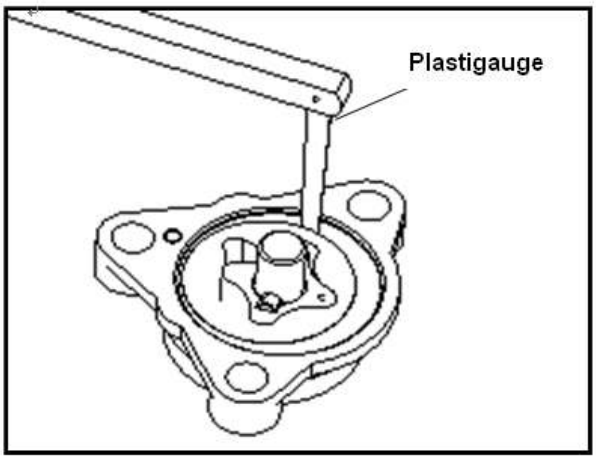


Check radial clearance between inner rotors
Allowable limit: 0.2mm.



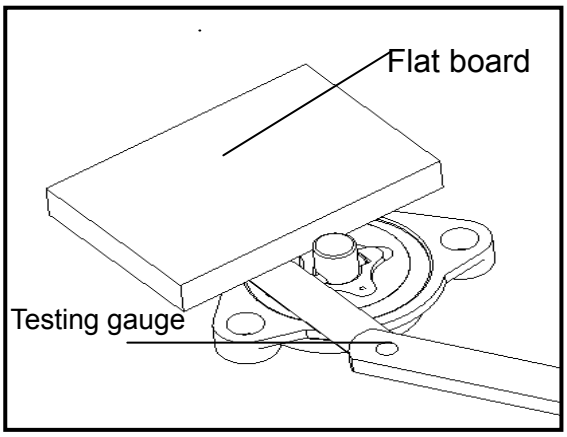
Check clearance between external rotor and oil pump seat.

Allowable limit: 0.2mm.



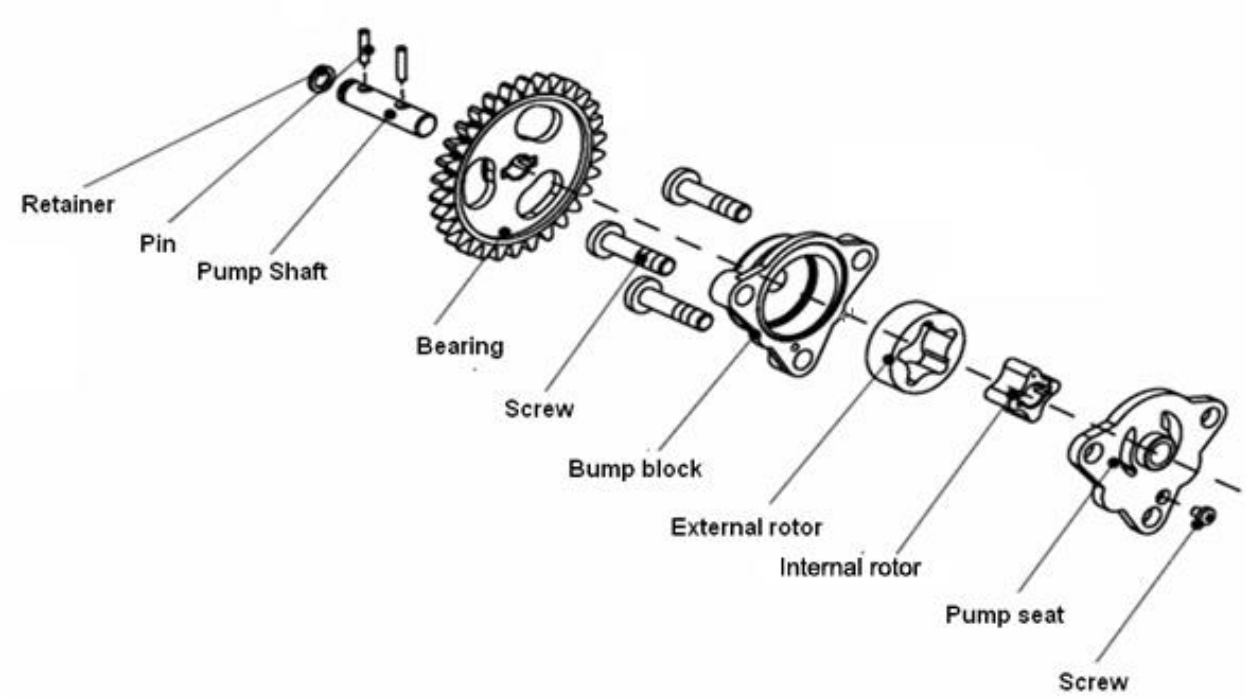
Check clearance between rotor end faces.

Allowable limit: 0.15mm.



10.3.2 Assemble Engine Oil Pump

As shown in the following figure:



*** Attention:**

After assembly, inner and external rotors shall rotate smoothly and be out of nimbleness.

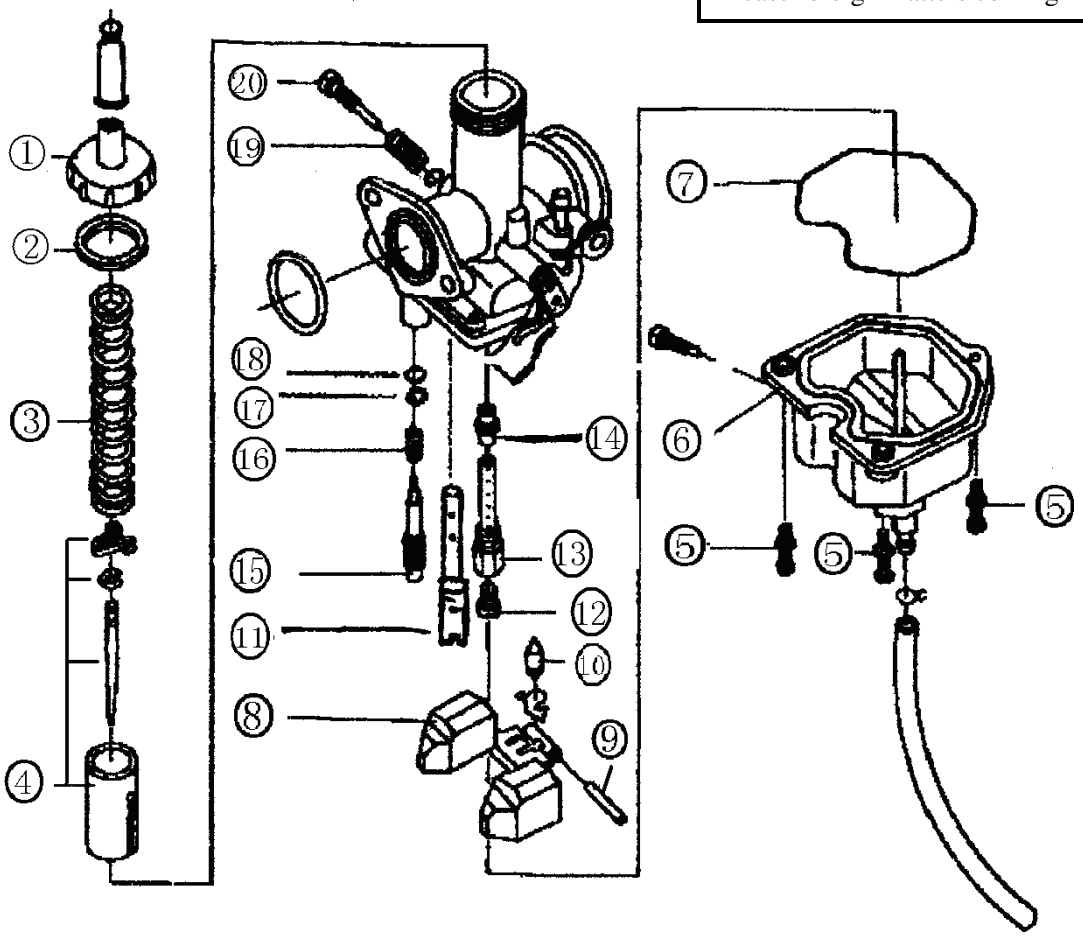
10.3.2 Installation

Install the oil pump in the reverse order of removal.

Carburetor

Attention: Gasoline is very dangerous. Fire and smoking are forbidden in working site.

When the carburetor is removed, plug the intake pipe side with a cloth in case foreign matters coming in.



1- Upper cover 2- Upper cover seal ring 3- Plunger spring 4- Plunger assembly 5- Lower housing connecting screw 6- Lower housing assembly 7- Seal ring 8- Float assembly 9- Float pin 10- Needle valve core 11- Idle jet 12- Main jet 13- Main nozzle 14- Main foam pipe 15-Mixture screw 16- Mixture screw spring 17-Fixture screw washer 18- Mixture screw seal ring 19-Plunger adjusting screw spring 20- Plunger adjusting screw

XI Carburetor

Preparatory data----------11.1

Fault diagnosis---------- 11.2

Carburetor removal---------- 11.3

Carburetor installation-------11.4

11.1 Preparatory Data

Precautions on Operation

·Gasoline is very dangerous. Fire and smoking are forbidden in working site.
·Pay specially attention to sparks.
·Please do not pull and bend wires and cables by force. Distortion and injury may affect operation of cables.
·When the carburetor is removed, plug the intake pipe side with a cloth in case foreign matters coming in.
·When the carburetor has not been used for more than one month, the gasoline inside the float must be drained. Since gasoline inside the float may deteriorate, which will clog idle nozzle and idle may become dangerous.

Function of carburetor：Carburetor is one of the key parts for oil supply system of the engine. Its working performance has direct effect on engine stability and power and economical indexes. Carburetor can atomize gasoline into tiny oil drops and then mix them with certain amount of air. Depending on different working conditions of engine, carburetor can form combustible mixed gas of various concentrations and supply to the engine so that normal and continuous rotation of engine is guaranteed.

Basic data

Unit: mm

Item	Standard Value
Main nozzle	A07
Main jet	173
Idle jet	42.5
Needle	A08-3

11.2 Fault Diagnosis

Poor starting	Difficult start, stalling after start, unstable idle
No fuel in carburetor	Clogged carburetor

Clogged oil filter
Clogged oil pipe
Sticky needle value
Improper oil level adjustment

Too high or too low mixed gas concentration
Secondary air sucked by the intake system
Improper idle adjustment
Improper oil level adjustment
Clogged idle system or enrich valve

Too much fuel in engine

Oil outflow
Secondary air sucked by fuel system
Degraded fuel
Improper work of enrich valve
Clogged idle system or choke system

Too low mixed gas concentration

Clogged oil nozzle
Clogged needle valve
Too low oil level
Clogged fuel system
Improper work of plunger
Secondary air sucked by the intake system

Too high mixed gas concentration

Improper work of enrich valve
Improper work of needle valve
Too high oil level
Oil outflow from carburetor
Clogged airway
Dirty air cleaner

Intermittent spark while acceleration

Too low mixed gas concentration

11.3 Removal of Carburetor

11.3.1 Removal

Remove the locknut between carburetor and bakelite washer.
Remove carburetor assembly.

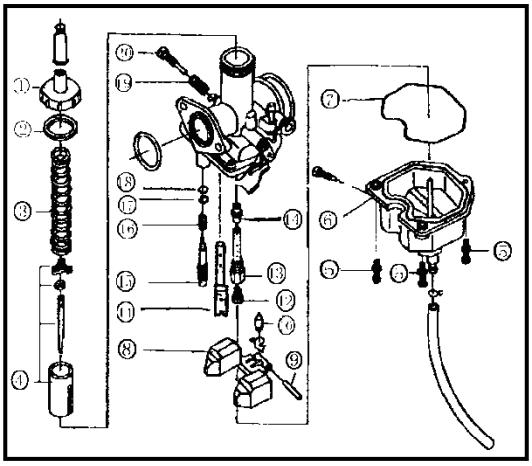
11.3.2 Disassemble Carburetor

Screw off upper cover and remove sealing ring, plunger spring and plunger assembly on it.
Screw off lower housing connecting screw and remove lower housing assembly and sealing ring.
Remove float assembly, float pin and needle valve core.
Remove idle jet, main jet, main nozzle and main foam pipe.
Remove mixture screw, mixture screw spring, mixture screw washer and mixture screw sealing ring.
Remove plunger adjusting screw and plunger adjusting screw spring.

For details, refer to breakdown diagram in P125.

11.3.3 Inspection

Check if needle valve assembly, needle valve seat and float assembly are worn or broken.



If needle valve core is worn or broken, replace it with a new one.
If needle valve seat is worn, the main carburetor body shall be replaced.
If the tongue plate of float is worn, replace it.
Check if oil needle of carburetor is worn or broken. If it is, replace it and main nozzle together.
Check if idle jet, main jet or main nozzle is worn, broken or contaminated. If it is, replace it.
Check if plunger is worn. Replace it if necessary.
Check carburetor itself and fuel pipe. If they are dirty, clean it according to the user's manual.

11.4 Installation

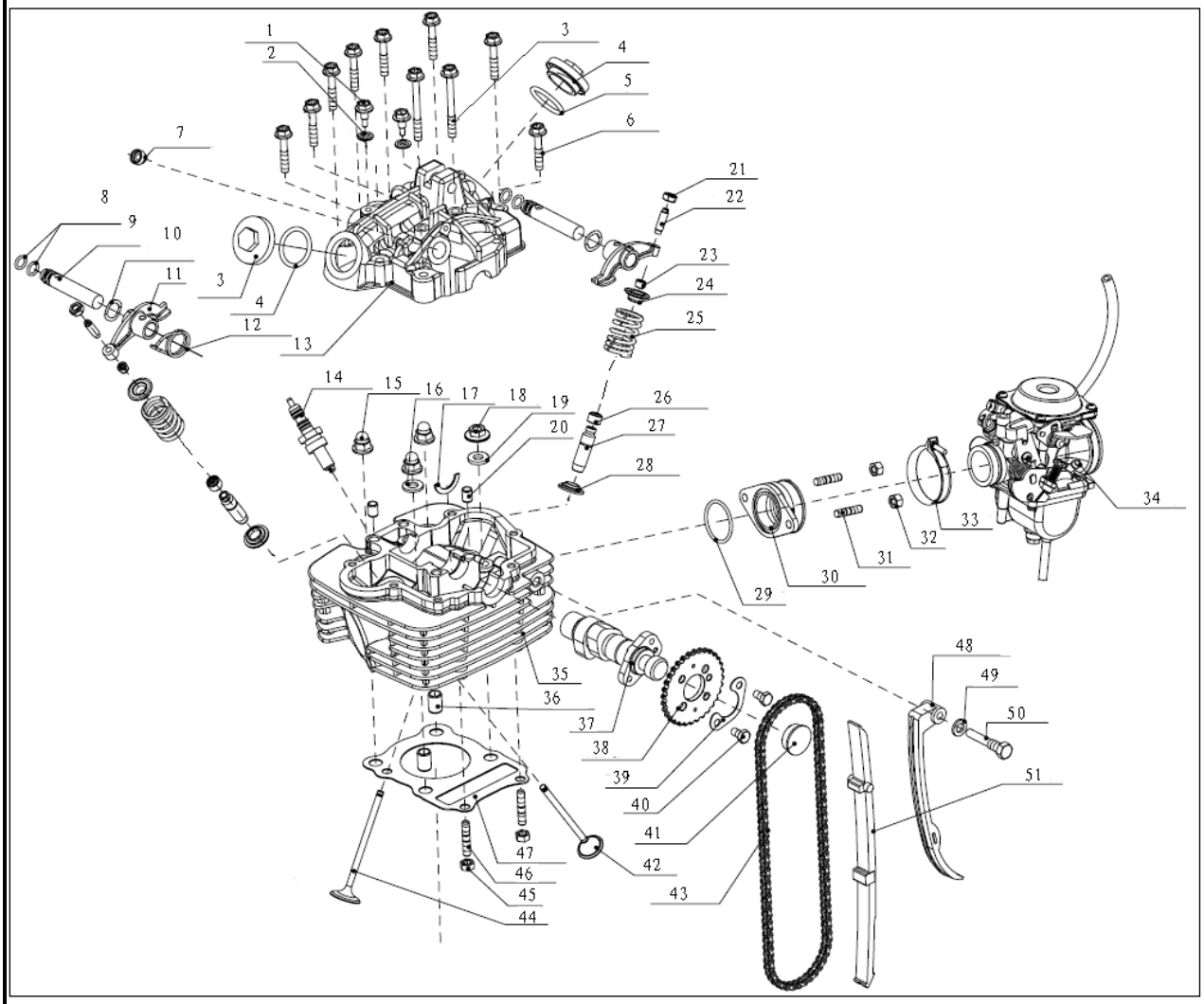
Assembly

Install idle jet, main jet, main nozzle and main foam pipe.
Install float, float pin and needle valve core.
Install upper and lower housing sealing rings, lower housing assembly and lower housing connecting screw.
Install mixture screw washer, mixture screw sealing ring, mixture screw spring and mixture screw. Put the mixture screw on to the housing body.
Install plunger adjusting screw spring and plunger adjusting screw.
Install plunger spring and plunger assembly.
Install top cover sealing ring and top cover.

Installation

Install the carburetor in the reverse order of removal.

Cylinder Head/Valve



1 Limit screw 2 Washer 3 Cylinder cover hood bolt 4 Valve cover 5 O ring 6 Cylinder cover hood bolt 7 Plug 8 O ring 9 Rocker arm shaft 10 Wave spring washer 11 Rocker arm 12 Rocker arm return spring 13 Cylinder cover hood 14 Spark plug assembly 15 Cover nut 16 Washer 17 C-type gasket 18 Cylinder cover nut 19 Copper washer 20 Round pin 21 Locknut 22 Adjusting screw 23 Valve collet 24 Valve spring upper retainer 25 Valve spring 26 Valve rod sealing assembly 27 Valve guide 28 Valve spring lower retainer 29 O ring 30 Rubber air intake assembly 31 Stud 32 Nut 33 Clamp assembly 34 Carburetor assembly 35 Cylinder cover 36 Elastic round pin 37 Cam shaft 38 Cam shaft sprocket 39 Lock washer 40 Bolt 41 Cylinder cover plug 42 Exhaust valve 43 Timing chain assembly 44 Inlet valve 45 Nut 46 Stud 47 Cylinder cover sealing washer 48 Right chain guide plate assembly 49 Sealing washer 50 Chain guide plate bolt 51 Left chain guide plate

XII Cylinder Head/Valve

Preparatory data----------12.1
Fault diagnosis----------12.2
Cylinder head----------12.3
Valve Inspection---------- 12.4
Valve guide replacement----------12.5
Valve race fixing and adjustment---12.6
Cylinder head installation----------12.7

12.1 Preparatory Data

Precautions on Operation

To ensure sealing between cylinder head and cylinder body, there is a great bolt pretension on the cylinder head. Pretension value: 50Nm.

All the components shall be cleaned before inspection and test, and purged with high-pressure air.

Function of cylinder head: Cylinder head is used to seal cylinder and form a combustion chamber with piston to hold high-temperature and high-pressure fuel gas. It accomplishes air intake and exhausting operation with valve mechanism.

Basic Data

Unit: mm

Item			Standard	Service Limit
Cylinder cover flatness			0.03	0.05
Valve Valve guide	Valve clearance	Intake	0.03-0.05	—
		Exhaust	0.03-0.05	—
	Valve stem OD	Intake	4.97-4.98	4.9
		Exhaust	4.96-4.97	4.9
	Valve guide ID	Intake	5 -5.012	5.1
		Exhaust	5-5.012	5.1
	Clearance between valve stem and valve guide	Intake	0.02-0.042	0.08
		Exhaust	0.03-0.052	0.10
	Valve race width	Intake/Exhaust	0.7	1.5
Valve spring Rocker arm	Clearance		38.8	37.8
	Rocker arm shaft OD	Intake/Exhaust	11.980-11.988	11.95
Valve Valve guide	Rocker arm hole ID	Intake/Exhaust	12-12.012	12.05
	Clearance between rocker arm shaft and rocker arm hole	Intake/Exhaust	0.012-0.032	0.08

	Valve clearance	Intake	0.03-0.05	__

12.2 Fault Diagnosis

Low compression pressure

Improperly adjusted valve clearance
Valve burnt or bent

Noisy cylinder head

Improperly-adjusted valve clearance
Valve spring hurt

Poorly sealed valve race

Air leakage at cylinder head
Improperly installed spark plug

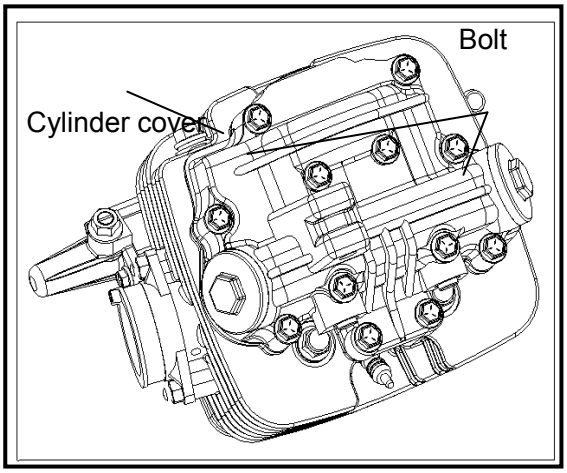
Too high compression pressure

Too much carbon deposited in the combustion chamber

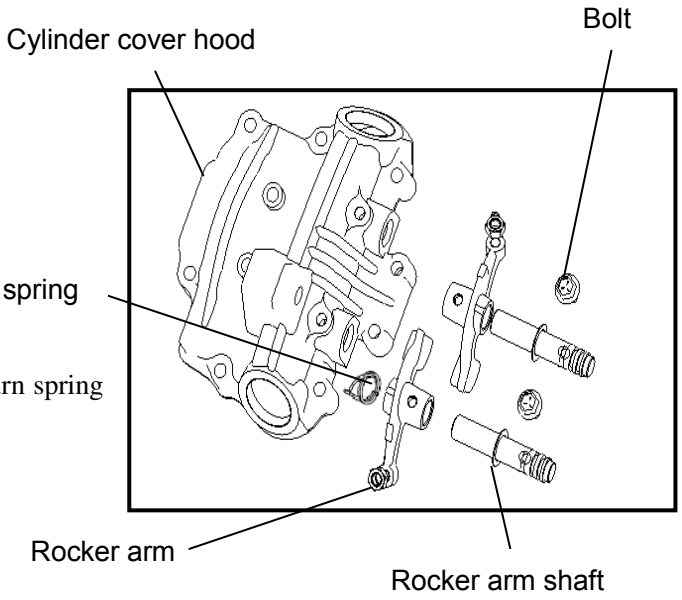
12.3 Cylinder Head

12.3.1 Removal

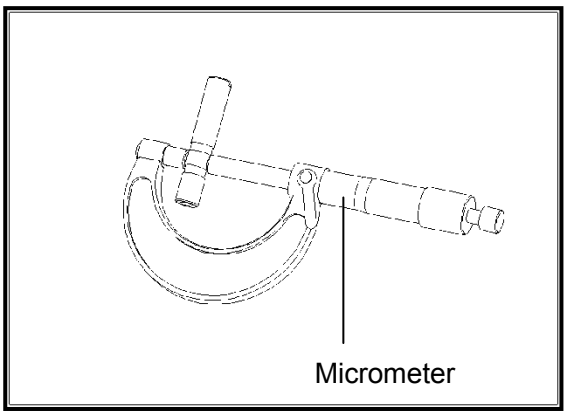
Screw off the ten locknuts and remove cylinder cover.



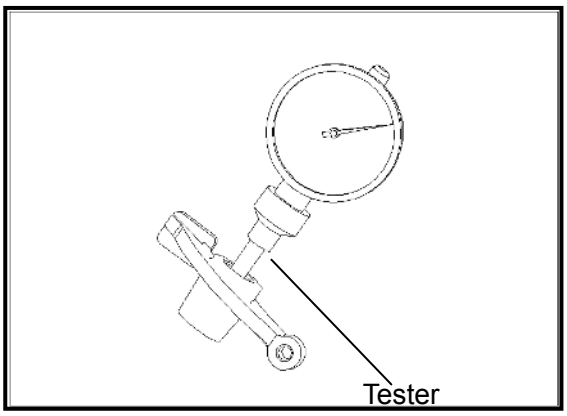
Remove cylinder cover hood.
Screw off two locknuts and remove the rocker arm, return spring and rocker arm shaft.



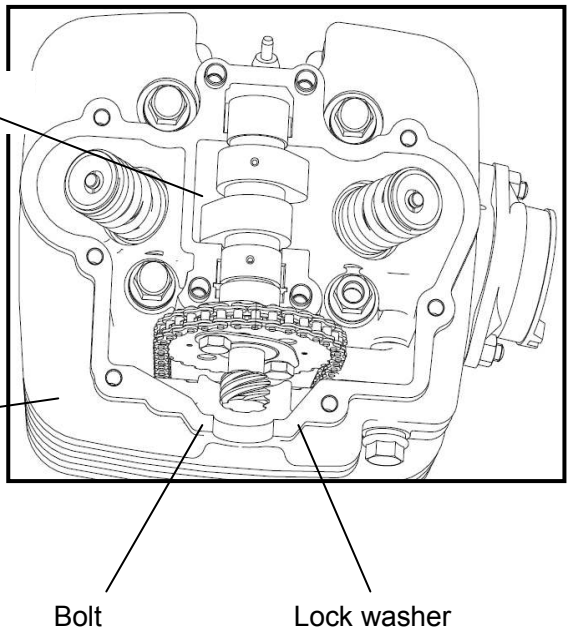
Measure rocker arm shaft OD.
Allowable limit: 11.95mm.



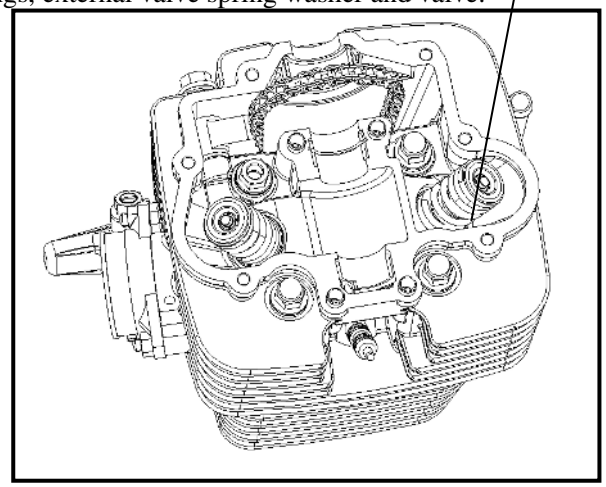
Measure rocker arm hole ID.
Allowable limit: 12.05mm.
Clearance between rocker arm and rocker arm shaft
Allowable limit: 0.08mm.



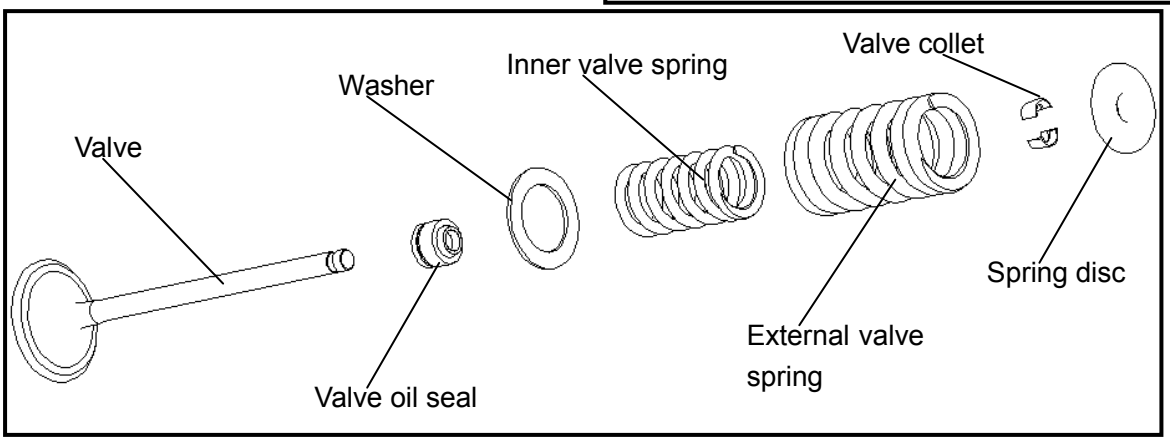
Screw off the two locknuts and remove the lock washer, cam shaft and C-type gasket. Screw off the three cap nuts and hexagon nuts, remove cylinder head.



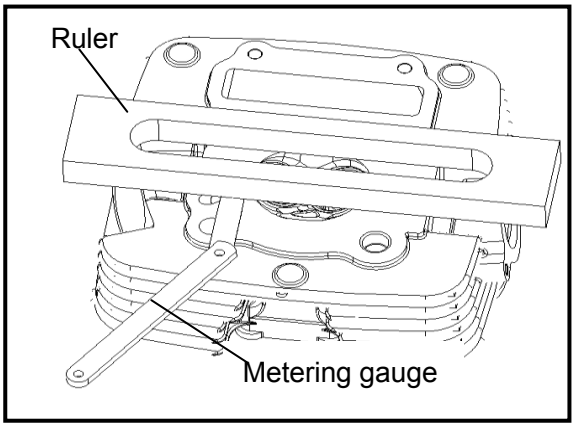
Compress valve spring with a valve spring compressor, and remove the valve collet,
Remove in sequence spring disc, external and inner valve springs, external valve spring washer and valve.



12.3.2 Disassemble Valve



12.4 Valve Inspection

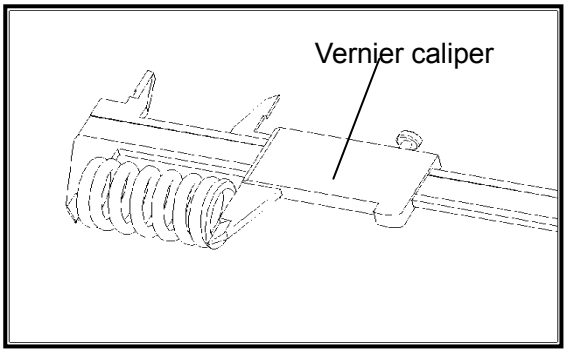


Clean carbon deposition on the cylinder cover.
Measure flatness of junction surface of cylinder cover
Allowable limit: 0.05mm.
If flatness of junction surface of cylinder cover exceeds the service limit, put a piece of fine sandpaper on the flat plate and fit the sandpaper with junction surface of cylinder cover; and then push the sandpaper to grind in figure of "8" way.

Measure the free length of valve inner /external spring.

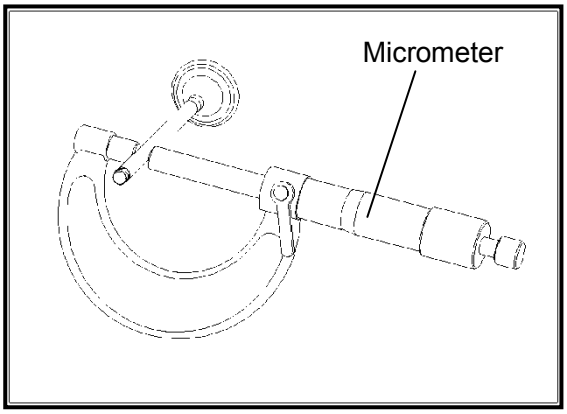
Allowable limit: Inner spring: 30mm.

External spring: 37.8mm.



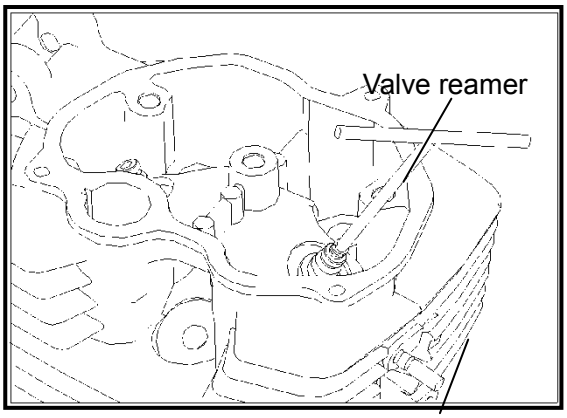
Measure OD of valve stem

Allowable limit: 4.9mm.



Check valve guide. Please eliminate the carbon deposition in the valve guide with a reamer before inspection.

Attention: Rotate the reamer in clockwise. Please do not rotate the reamer in counterclockwise.



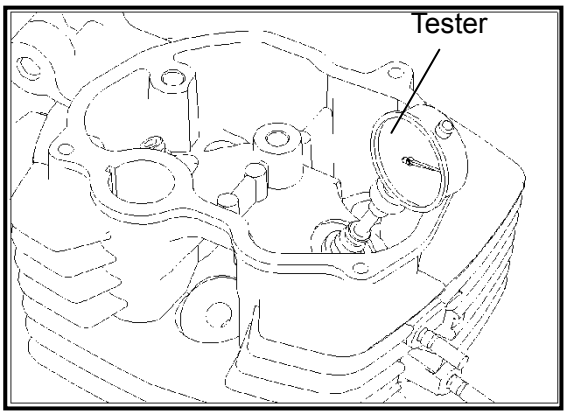
Measure valve guide ID.

Allowable limit: Intake/Exhaust: 5.5mm.

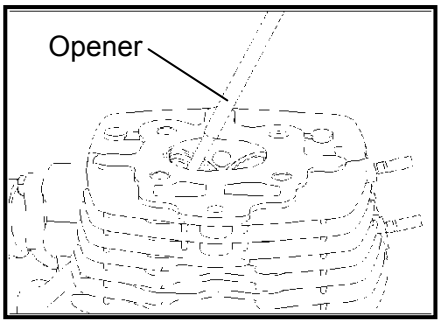
Clearance between valve and valve guide

Allowable limit: Intake Valve: 0.08m.

Exhaust valve: 1.0mm.



12.5 Valve Guide Replacement



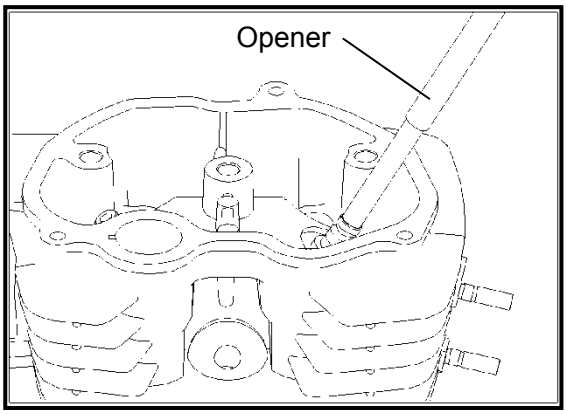
*** Attention:**

When the clearance between valve and valve guide exceeds service limit value, please replace the valve guide. When a valve guide is replaced, surface of valve seat retainer shall be fixed and adjusted.

Put the valve guide into the freezing chamber of refrigerator for one hour to freeze it.

Heat with electric furnace or oven the cylinder head to 100-150℃.

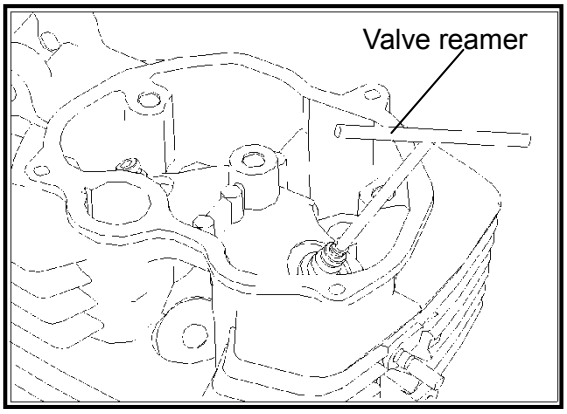
Fix the cylinder head and remove the valve guide from upper side of cylinder head with a special valve guide remover.



Install a new O ring onto the new valve guide.

Install the valve guide from the top of cylinder head.

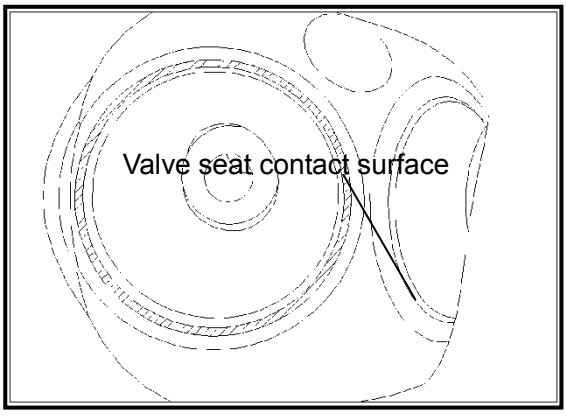
*** Attention: Please do not hurt cylinder head while installing valve guide.**



When the valve guide is inserted, fix and adjust it with a valve guide reamer.

*** Attention: When a reamer is used to cut, please apply some amount of cutting lubricant onto it.**

Rotate the reamer in clockwise direction.



Remove carbon deposited in combustion chamber and valve and clean thoroughly intake and exhaust valves.

Inspect width of contact surface of valve seat (width of valve race)

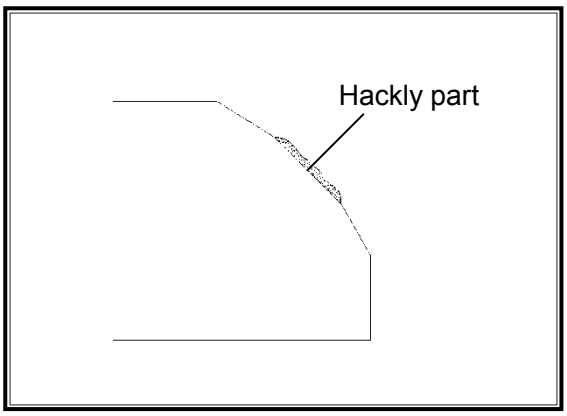
Allowable limit: intake/exhaust: 1.6mm.

12.6 Valve Race Fixing and Adjustment

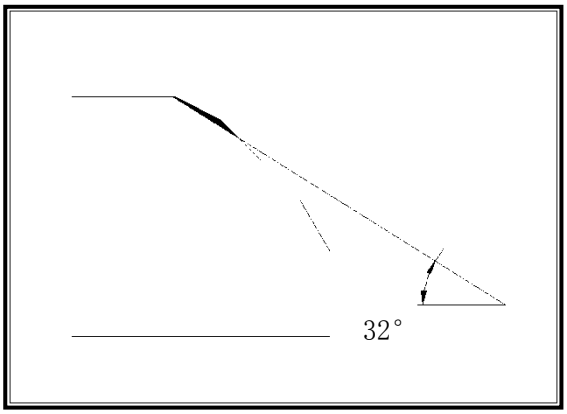
Remove hackly and ragged parts on the valve race with a 45° angled milling cutter.

Note：

Apply a layer of transparent or Prussian blue film onto the valve race so that it can be observed clearly.

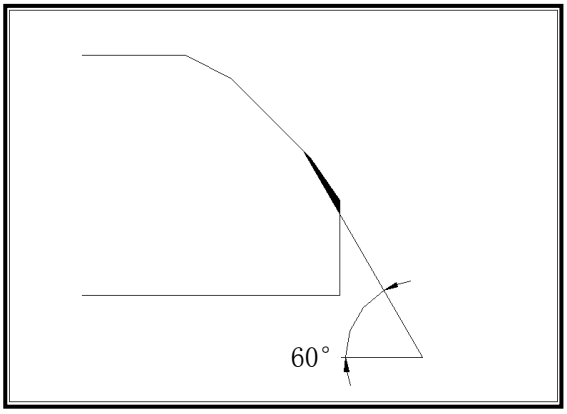


Remove 1/4 of external edge of valve race with a 32° angle milling cutter.



Remove 1/4 of bottom of valve race with a 60° angle milling cutter.

Remove the milling cutter and check the places processed.

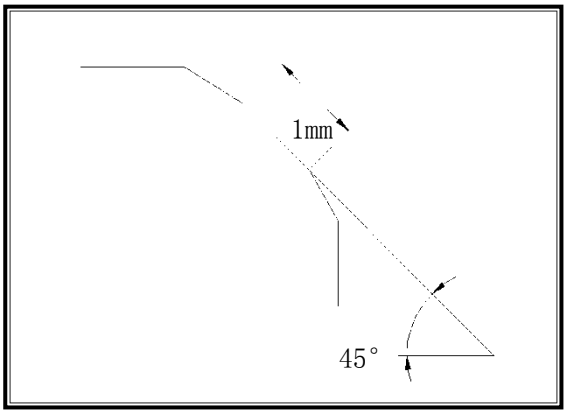


Grind and cut valve race with a 45°angle precise milling cutter till it gains a proper width.

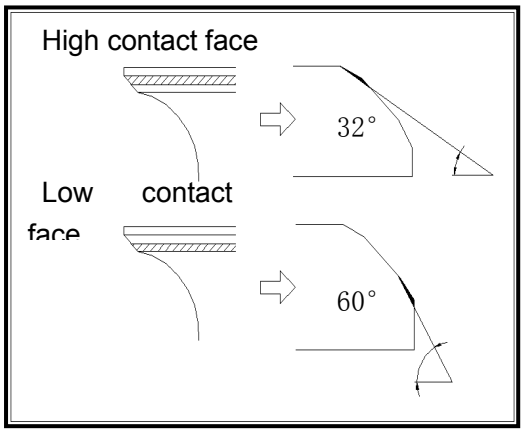
All the dents and ragged parts must be removed.

Standard valve race width: Intake: 1.0mm

Exhaust: 1.0mm



If contacted place is the higher part of valve, please use a 32°angle plain milling cutter to lower the valve race.
If contacted place is the lower part of valve, please use a 60°angle internal milling cutter to raise the valve race.
Grind and cut valve race with a 45°angle precise milling cutter till it meets the required specification.
After completion of valve race grinding and cutting, please apply some polishing agent on the surface of valve. Polish the valve gently.



12.7 Cylinder Head Installation

Install the cylinder head in the reverse order of removal.

*** Attention：**

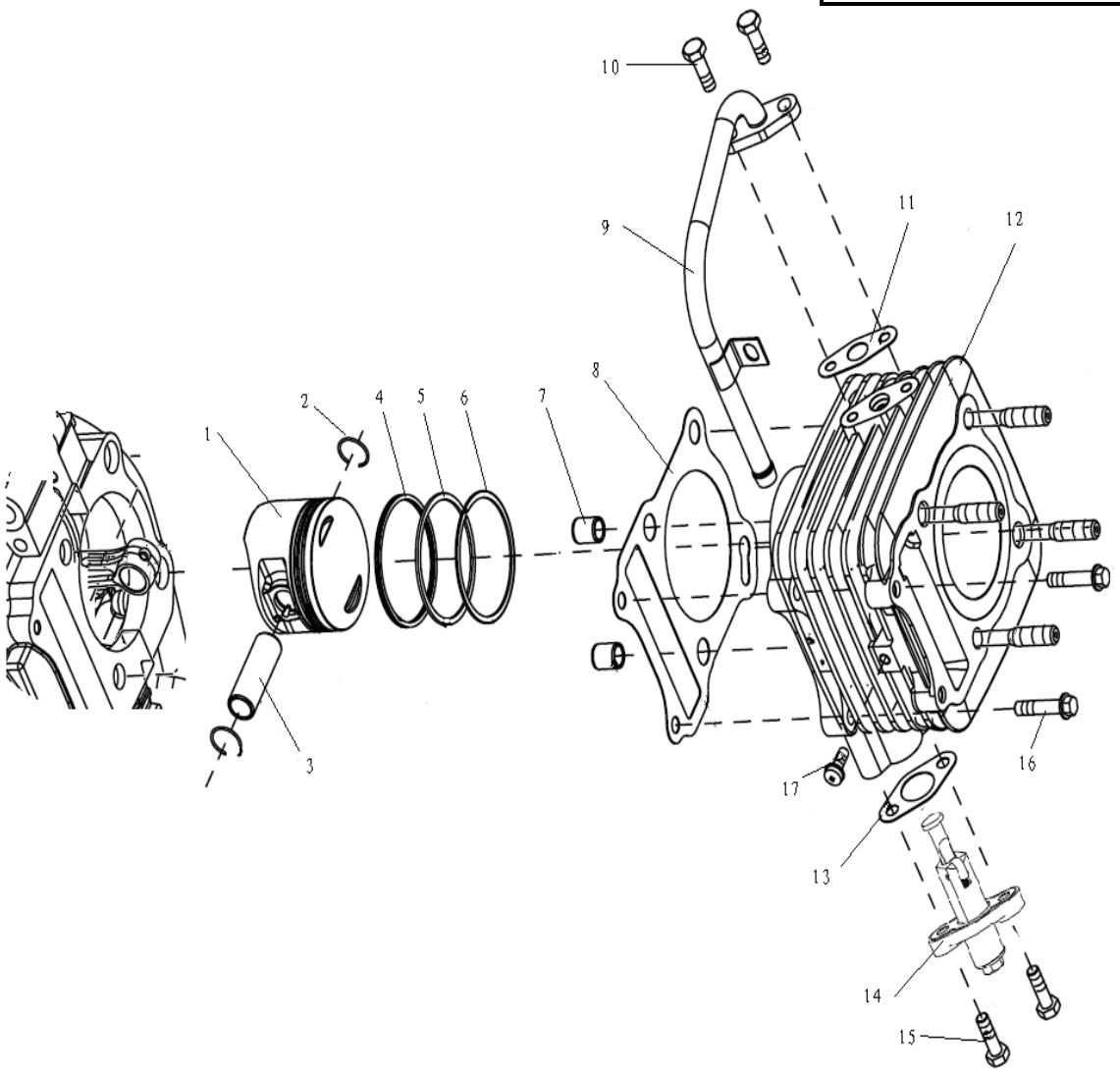
While installing valve spring, the end with short spring links heads combustion chamber.

While installing valve collet, please compress valve spring with a valve spring compressor and install the valve collet.

While installing valve, please apply appropriate amount of engine oil on the surface of valve stem, and then install it into valve guide.

Cylinder Block and Piston

Attention: All the components shall be cleaned before inspection and test, and purged with high-pressure air.



1 Piston 2 Retainer 3 Piston pin 4 Combined oil ring 5 Top ring 6 Second compressing ring 7 Location pin 8 Washer 9 Cylinder cover connecting bent pipe assembly 10 Bolt 11 Cylinder cover connecting bent pipe washer assembly 12 Cylinder block 13 Washer 14 Tensioner assembly 15 Bolt 16 Bolt 17 Screw

XIII Cylinder Block and Piston

Preparatory data---------- 13.1
Fault diagnosis----------13.2
Cylinder block---------- 13.3
Piston---------- 13.4
Cylinder installation----- 13.5

13.1 Service Data

Precautions on Operation

All the components shall be cleaned before inspection and test, and purged with high-pressure air.

Function of cylinder block: Cylinder block provides the space for gas compression, combustion and expansion and guides piston movement. It also transfers part of heat in the cylinder to surrounding coolant.

Function of piston:

Piston can bear the pressure generated by combustion of mixed combustible gas in the cylinder and transmit the pressure to connecting rod to drive crankshaft to rotate.

It forms a combustion chamber with cylinder head.

It works as a slide valve to compress regularly fresh mixed gas from crankcase into cylinder and exhaust combustion gas from the cylinder.

Basic data

Unit: mm

Item			Standard Value	Service Limit
Cylinder	ID		57-57.01	57.10
	Cylindricity		0.005	0.05
	Roundness		0.004	0.05
	Flatness		0.02	0.05
	Piston OD(measuring point)		56.987-56.977 (8mm at the bottom of piston skirt)	56.93
	Piston pin hole ID		14.002-14.008	14.04
	Piston pin OD		13.994-13.997	13.96
	Clearance between piston and piston pin		0.005-0.014	0.05
	Clearance between piston ring and ring groove	Top ring	0.020-0.060	
		Second ring	0.020-0.060	
	Joint clearance of piston rings	Top ring	0.25-0.35	
		Second ring	0.20-0.35	
		Oil ring	0.20-0.70	
	Connecting rod small end ID		14.010-14.018	14.06
	Clearance between linkage rod and piston pin		0.013-0.024	0.10

13.2 Fault Diagnosis

Low compression pressure

Worn, burnt or broken piston
Work or damaged cylinder and piston
Broken washer, air leakage between crankcase and gas

White smoke from exhaust pipe

Worn or damaged piston ring
Worn or damaged cylinder and piston

Higher compression pressure

Too much carbon deposited in the combustion chamber

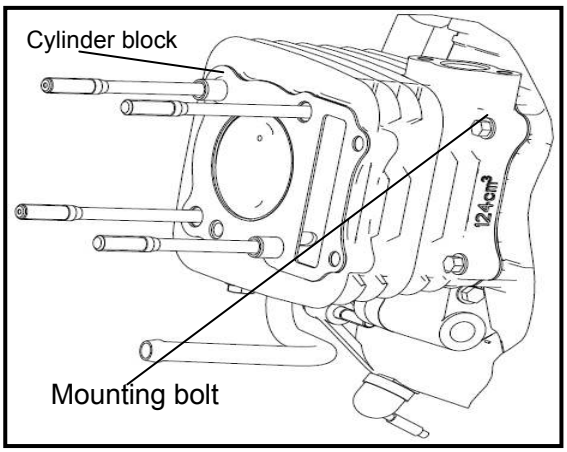
Noisy piston

Damaged cylinder, piston and piston ring
Worn piston pin hole and piston pin

13.3 Cylinder Block

13.3.1 Cylinder Block Removal

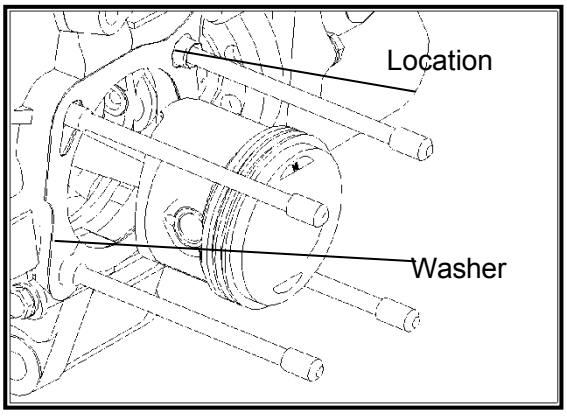
Screw off cylinder block mounting bolt.
Remove cylinder block (together with cam follower).



13.3.2 Cylinder Block Inspection

Inspect wear of cylinder inner wall. If it is seriously worn, replace it.

Remove washer and location pin.



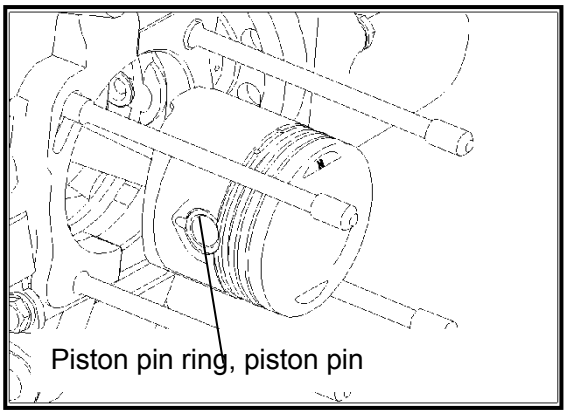
13.4 Piston

13.4.1 Removal

Remove piston pin retainer.

*** Attention: Please do not drop the retainer into crankcase during removal.**

Take out piston pin and remove piston.

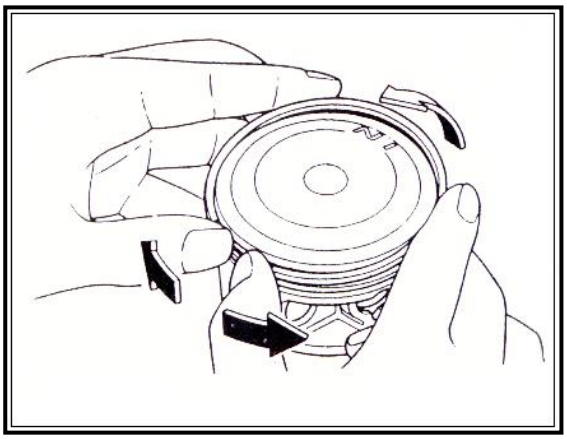


Remove piston ring.

Inspect piston, piston pin and piston ring.

*** Attention: Please do not break or hurt piston ring.**

Remove deposited carbon inside the piston ring.

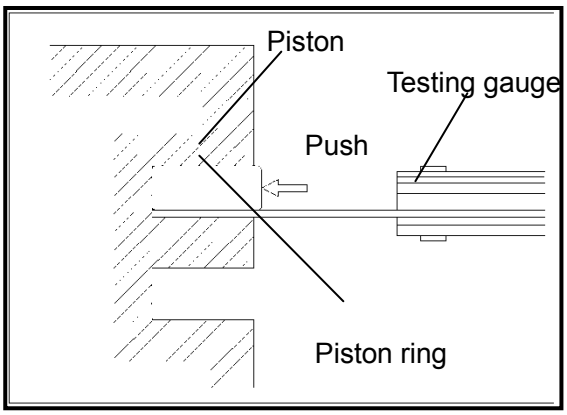


Install the piston ring.

Measure the clearance between piston ring and piston ring groove.

Allowable limit: Top ring: 0.09mm.

Second ring: 0.09mm.

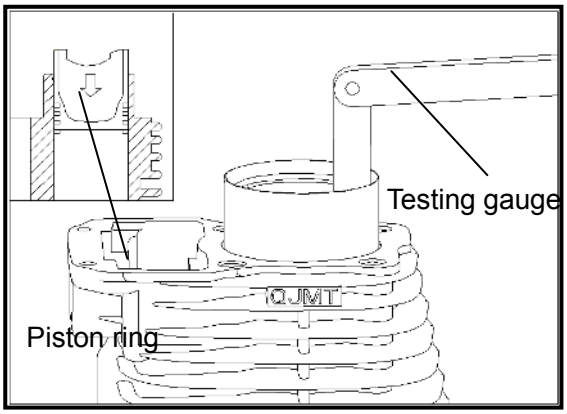


Remove piston ring and install all the piston rings onto bottom of cylinder.

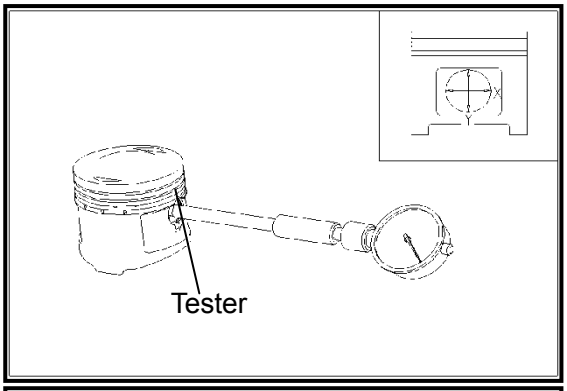
*** Attention:** Compress piston rings into the cylinder with piston head.

Measure the joint clearance between piston rings.

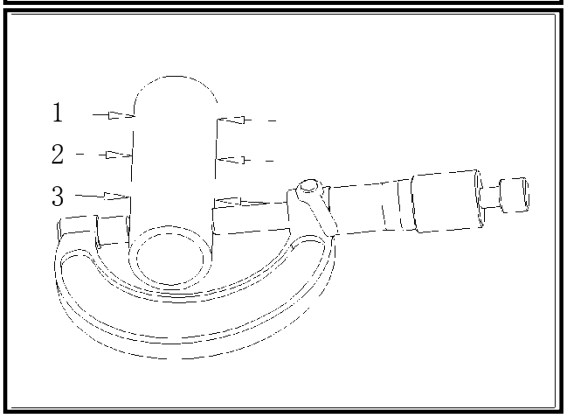
Allowable limit: 0.5mm.



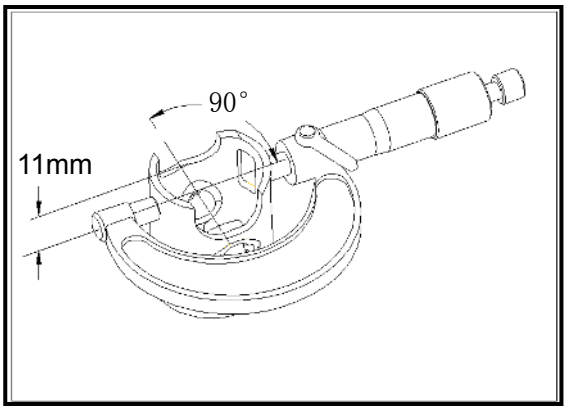
Measure piston pin hole ID.
Allowable limit: 14.04mm.



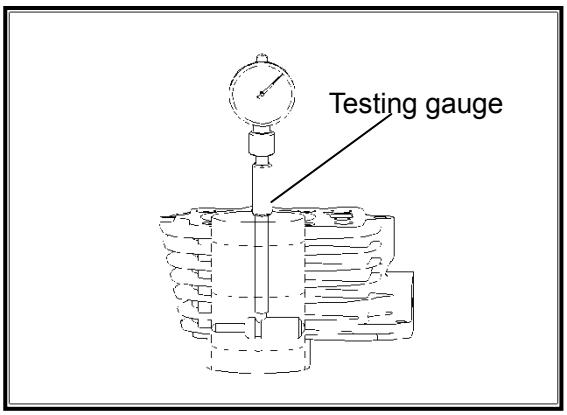
Measure piston pin OD.
Allowable limit: 13.96mm.
Measure the clearance between piston pin hole and piston pin.
Allowable limit: 0.05mm.



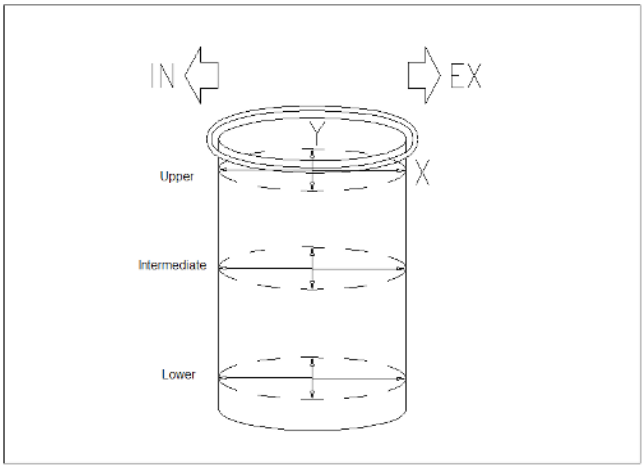
Measure piston OD
*** Attention: Measuring position forms a 90° angle with piston pin, about 11mm below piston skirt.**
Allowable limit: 56.93mm.



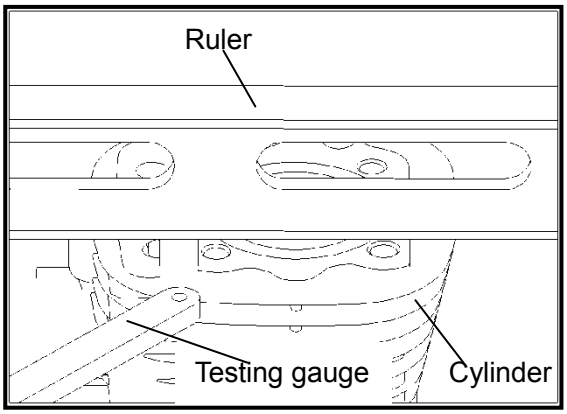
Inspect wear and scratch on inner wall of cylinder.
*** Attention: Measure cylinder ID at three positions, i.e. upper, intermediate and lower positions. The position forms a 90°angle with piston pin.**
Allowable limit: 57.1mm.
Measure the clearance between cylinder and piston. Take the maximum clearance as standard.
Allowable limit: 0.17mm.



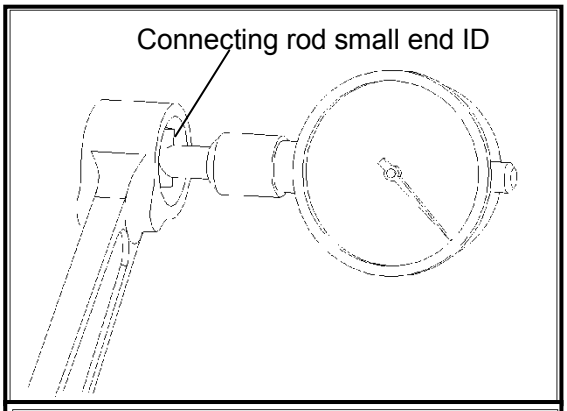
Measure the roundness of cylinder inner wall.
（internal diameter difference between X direction and Y direction）.
Allowable limit: 0.05mm.
Measure the cylindricity of inner wall of cylinder.
(internal diameter difference of three positions (upper, intermediate and lower) along X direction or Y direction).
Allowable limit: 0.05mm.



Check flatness of cylinder surface.
Allowable limit: 0.05mm.

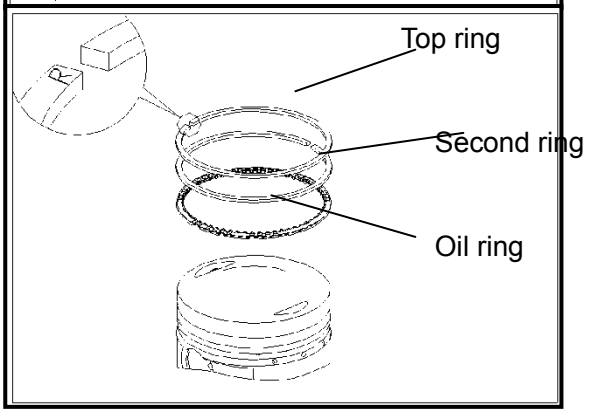


Measure Connecting rod small end ID.
Allowable limit: 14.06mm.



13.4.2 Installation of piston

Install location pin.
Apply engine oil evenly on each piston ring and piston. Install piston to its place with bevel upward.
*** Attention:**
Piston shall not be scratched and piston ring shall not be broken.
When the piston ring is installed, it can rotate freely in the piston ring groove.



Scrape the washer attached to the crankcase.

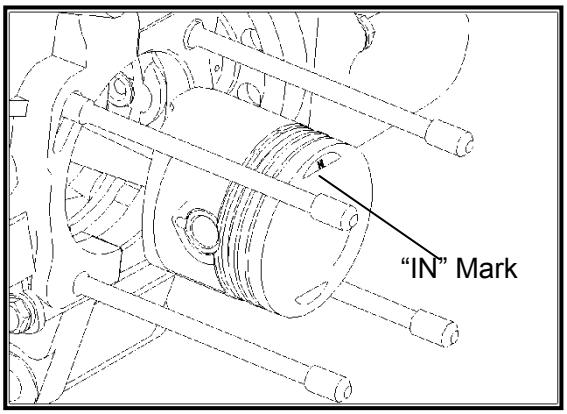
*** Attention:**

No foreign matters can be dropped into the crankcase.

Install piston, piston pin and piston pin retainer.

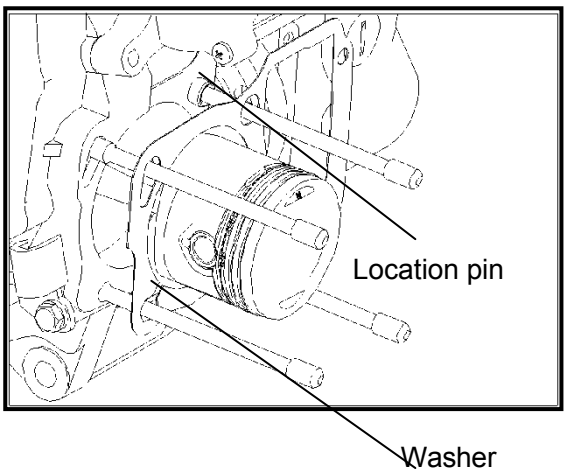
*** Attention:**

Install with the “IN” mark at the top of piston facing the intake valve.



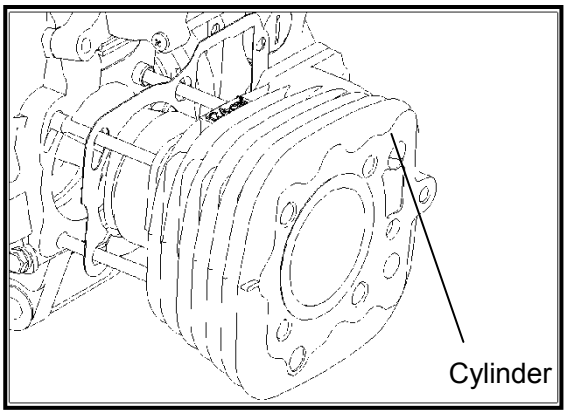
13.5 Install Cylinder

Install washer and location pin onto the crankcase.



Apply evenly engine oil on inner wall of cylinder, piston and piston ring.

Install carefully the piston ring into the cylinder.



*** Attention: Do not hurt piston ring.**

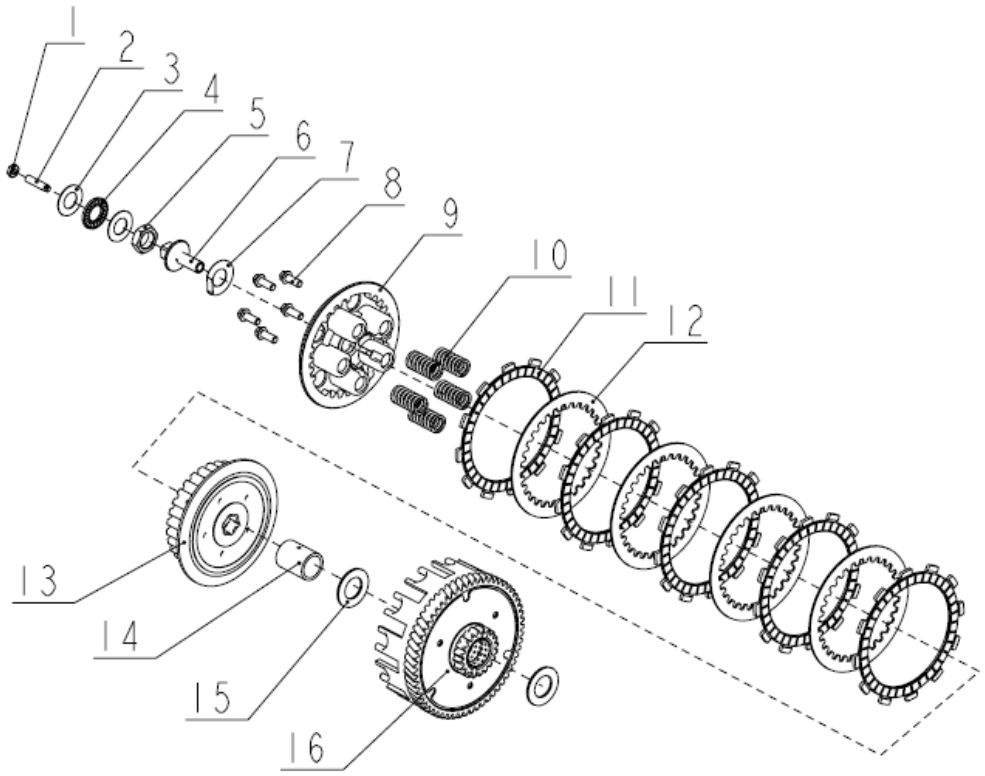
Clutch

Attention: You don't have to remove the engine from frame while overhauling clutch.

Viscosity and level of engine oil will affect operation of clutch. Please check first engine oil and oil level before inspect clutch.

If one of the clutch springs, discs or plates does not work, you shall replace them in pairs.

1 Nut 2 Cross recessed adjusting screw 3 Thrust washer 4 Plane needle bearing 5 Locknut 6 Bearing seat 7 Lock washer 8 Bolt combination assembly 9 Pressure plate 10 Clutch spring 11 Friction disc assembly 12 Driven friction plate 13 Center bracket 14 Sleeve 15 Thrust washer 16 Housing assembly



XIV Clutch

Preparatory data----------14.1

Fault diagnosis---------- 14.2

Clutch----------14.3

Kick start mechanism---------- 14.4

Disassembly of main shaft and countershaft---------- 14.5

14.1 Preparatory Data

Precautions on Operation

You don't have to remove the engine from frame while overhauling clutch.
Viscosity and level of engine oil will affect operation of clutch. Please check first engine oil and oil level before clutch inspection.

Function：Clutch and driven wheel constitutes a continuously variable transmission

Basic data

Unit: mm

Clutch	Braking shoe thickness	2.9-3	2.6

14.2 Fault Diagnosis

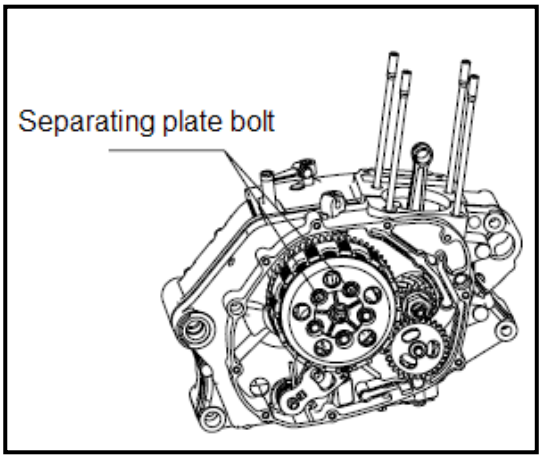
Tight clutch release lever	Clutch slips at acceleration	Transmission jumps gear
Clutch cable injured, twisted or contaminated	No clearance on clutch release lever	Weak or broken brake pad arm return spring
Injured clutch lifter	Worn clutch disc	Injured brake pad arm
Faulty clutch lifter bearing	Weak clutch spring	Worn or injured gearshift cam
	Sticky clutch lifter	

Gearshift difficult	Clutch not released or motorcycle drags when clutch released
Incorrect clutch adjustment	Too big clutch release lever clearance
Bent gearshift spindle	Warped clutch plate
Injured gearshift cam	Faulty clutch push rod

Bent or injured gearshift plate Abnormal engine oil and oil level

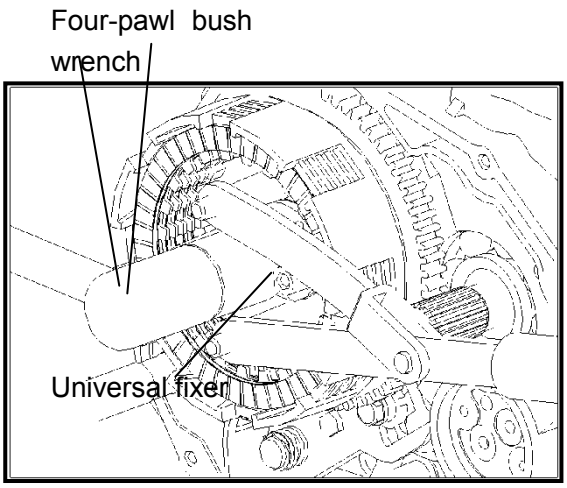
14.3 Clutch

14.3.1 Removal

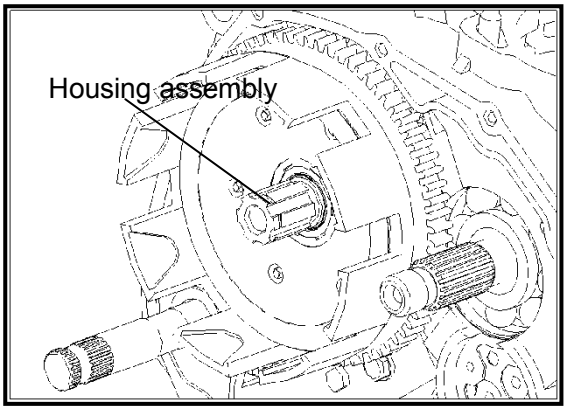


Screw off the four bolts for separating plate in criss-cross mode.
Remove release lever, sleeve, bearing, separating plate and clutch spring.
Removed components refer to exploded view.

Use a special tool to screw off clutch locknut.
Remove locknut and washer.
Remove clutch center bracket.
Remove clutch drive and driven friction plates.
Remove clutch pressure plate.
Removed components refer to exploded view.

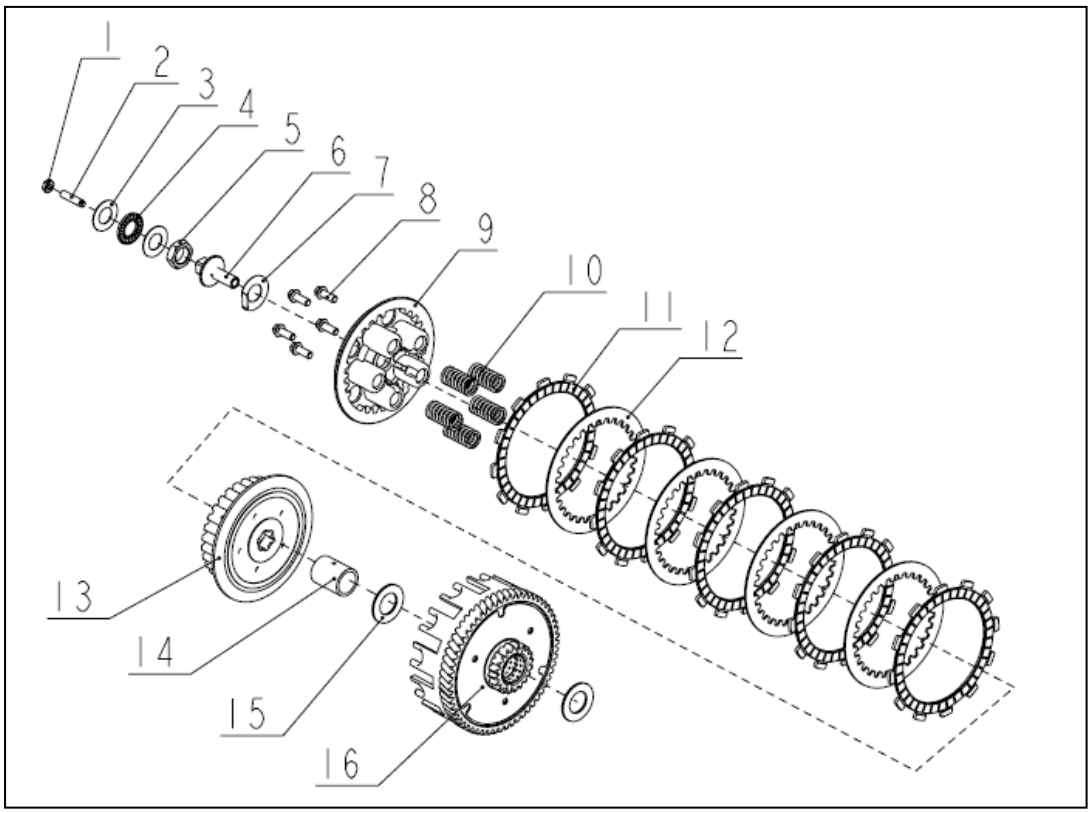


Remove spline washer.
Remove housing assembly.



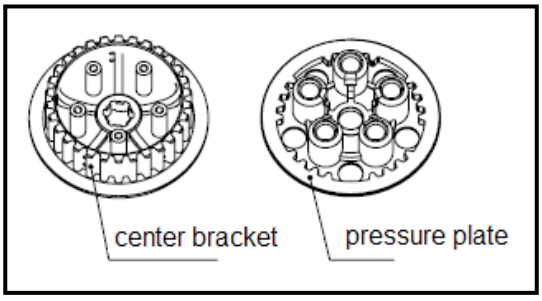
Install clutch in the reverse order of removal.

14.3.2 Disassemble Clutch

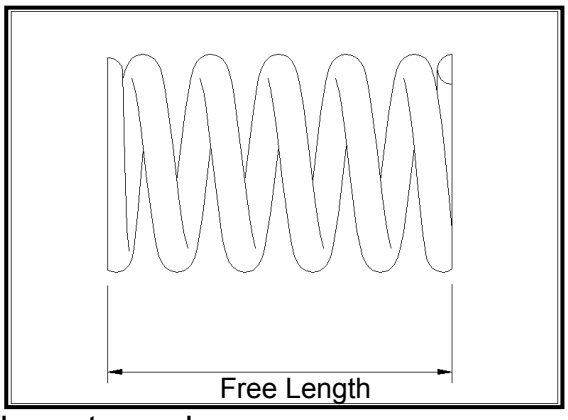


14.3.3 Inspection

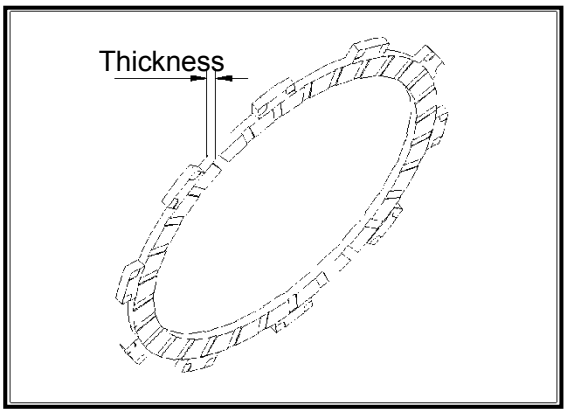
Check if there are burs or broken parts on the housing groove of clutch. If there are, fix and adjust with a file.
If there is a lot for fix and adjustment, replace it.
Check if teeth of pressure plate and center bracket are injured. If they are, replace them.



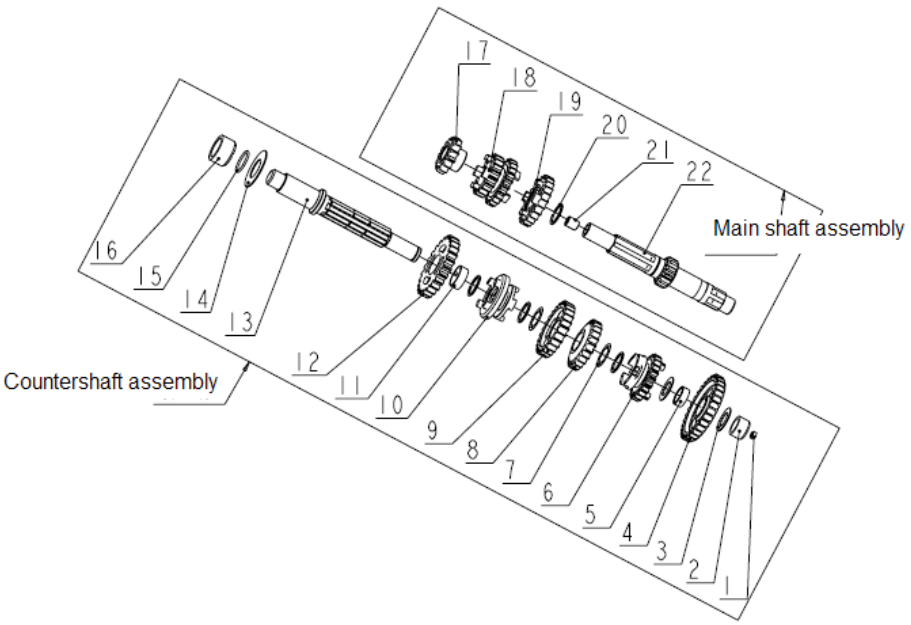
Measure the free length of pressure spring.
Allowable limit: replace it if it is below 29.7mm.



Measure the thickness of friction plate with a vernier caliper.
Allowable limit: Replace it when it is below 2.6mm.

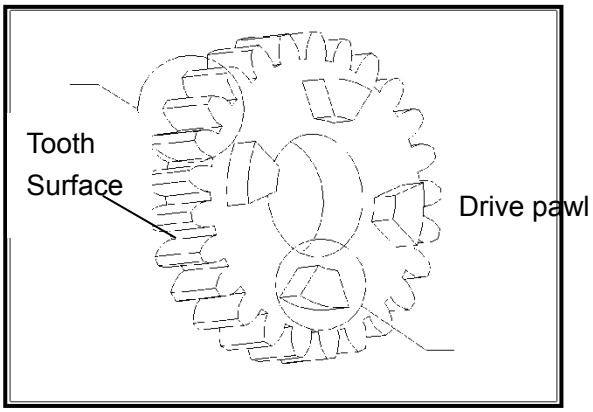


14.4 Disassemble Main Shaft and Countershaft



Inspection
Check respectively wear of tooth surface and drive pawls. If they are seriously worn or damaged, replace them.

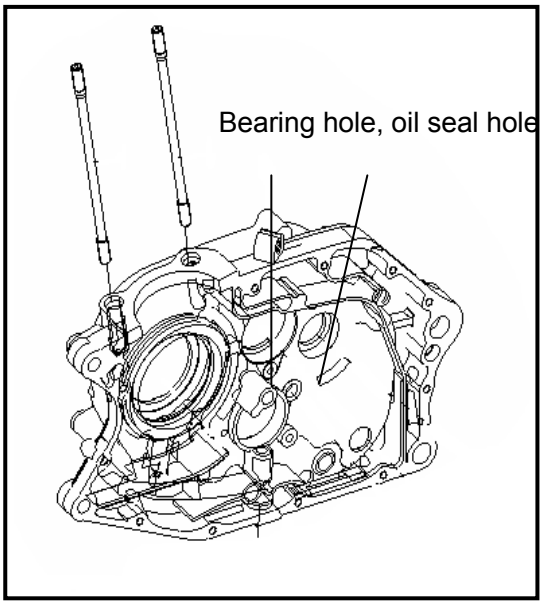
Remove bearing and oil seal on left crankcase.
Check if bearing and oil seal are injured. Replace if necessary.



*** Attention:**

Hammered-out bearing cannot be reused. Replace it with a new one.

Remove bearing and oil seal with special tools.



Remove bearing on right crankcase.

Check if bearing is injured. Replace if necessary.

*** Attention:**

Hammered-out bearing cannot be reused. Replace it with a new one.

Remove bearing and oil seal with special tools.

Main shaft and countershaft combination

*** Attention: Apply each gear and shaft with lubricating grease evenly at combination.**

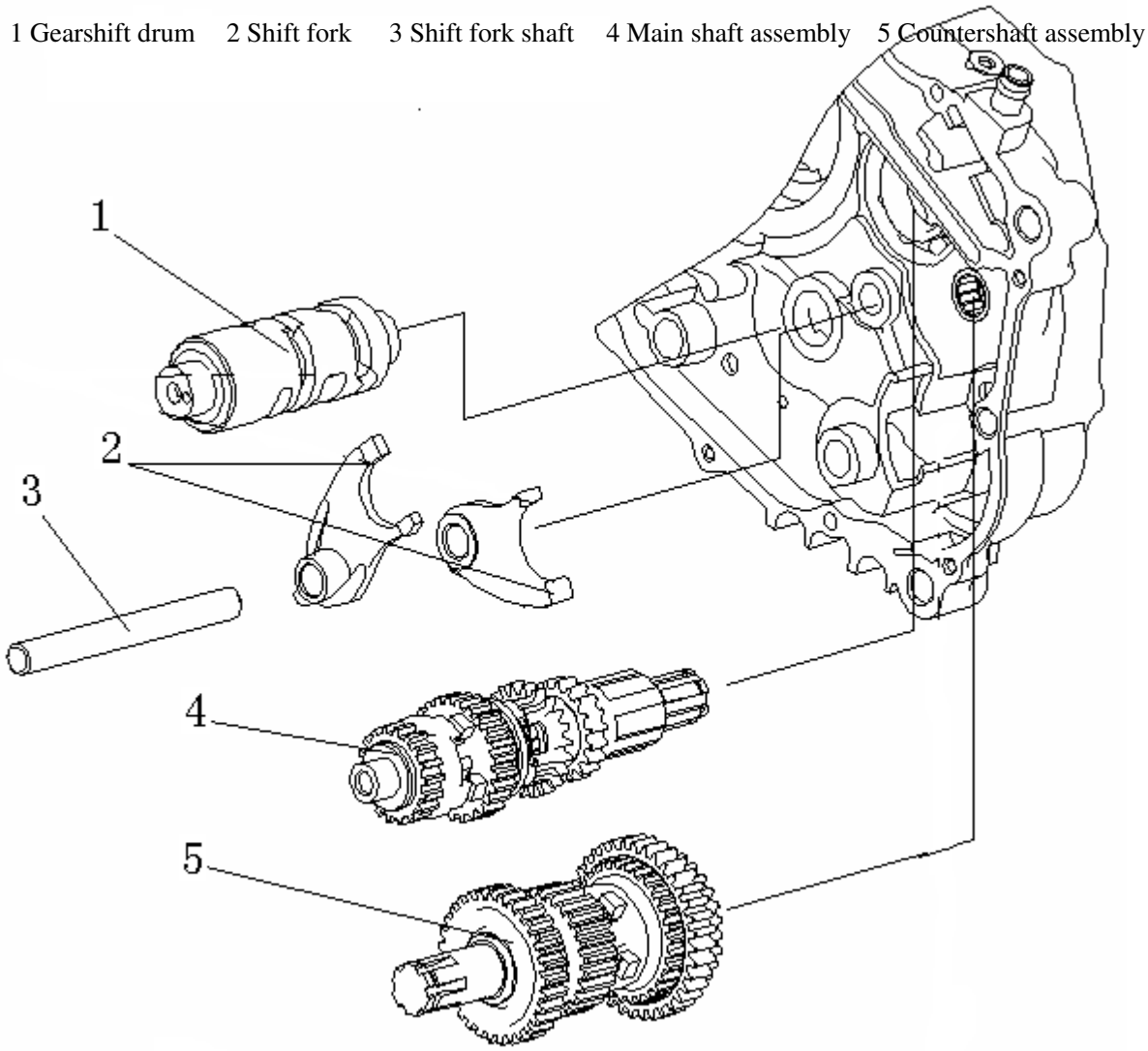
Make sure there is no stuck after combination.

Note:

Install the crankcase in the reverse order of removal.

Reduction Gear

1 Gearshift drum 2 Shift fork 3 Shift fork shaft 4 Main shaft assembly 5 Countershaft assembly



XV Reduction Gear

Function: Transfer torque and determinate the final output torque and rotary speed.

Preparatory data----------15.1

Fault diagnosis----------15.2

Gearshift mechanism----------15.3

Installation----------15.4

15.1 Service Data

Function: Transfer torque and determinate the final output torque and rotary speed.

Basic data

Unit: mm

Gearshift mechanism	Shift fork shaft OD	9.98-9.995	9.96

15.2 Fault Diagnosis

Hard to engage gear

Worn or distorted gearshift fork
Broken shift fork guide pin
Worn gear pawl

Difficult gearshift

Clutch is not completely separated.
Defective transmission pull spring
Worn gearshift drum lock groove

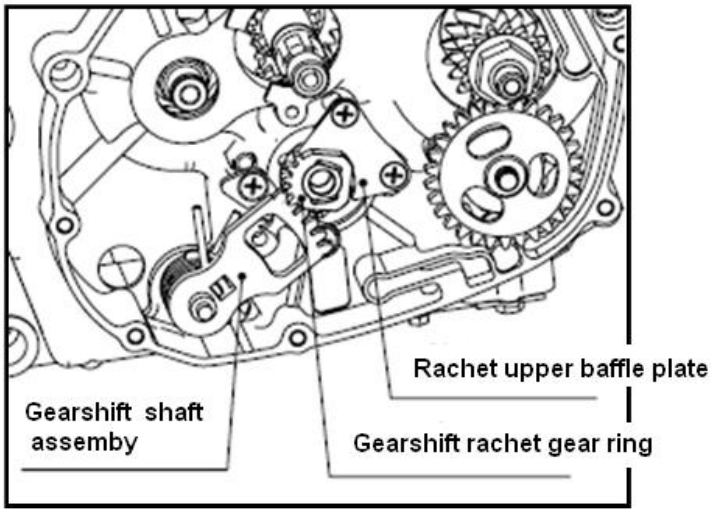
Automatic gearshift

Connecting pawl is worn and its edge turns round.
Weak transmission unit return spring.
Spline gear of spline shaft and spline groove of sliding gear are worn, which result in a greater axial force during operation of gears.
Worm gearshift drum and shift fork.

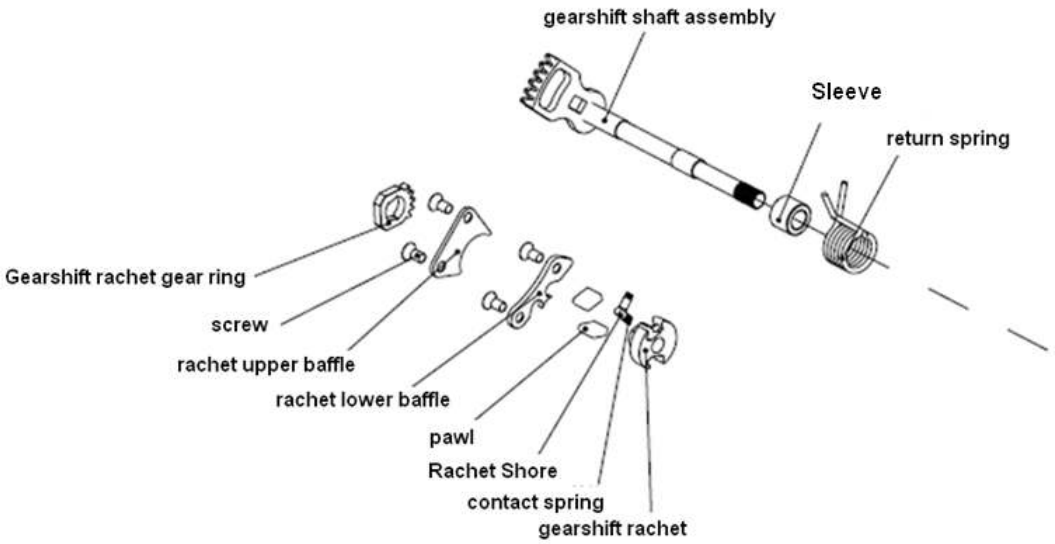
15.3 Gearshift Mechanism

15.3.1 Removal

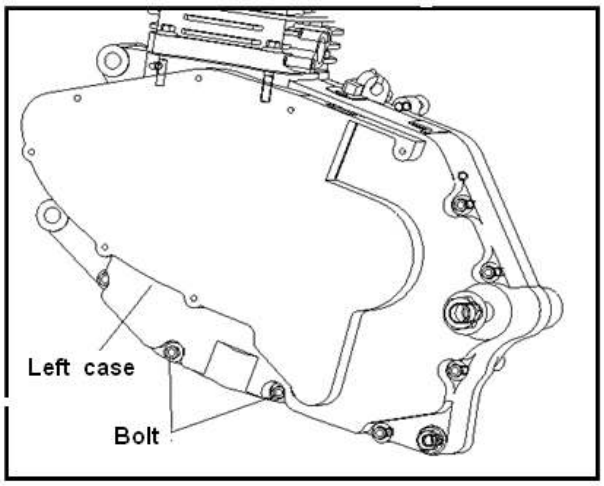
Remove gearshift shaft assembly.
Remove the bolt on the upper baffle plate of ratchet, the ratchet upper baffle plate and gearshift ratchet gear ring.
Remove the bolt on lower baffle plate of ratchet, the ratchet lower baffle and the ratchet, etc.
Removed parts refer to exploded view. .



15.3.2 Exploded View



15.3.3 Inspection



Before disassembly, gearshift plate shall work flexibly and smoothly.

Check if gearshift plate and gearshift shaft assembly are worn.

If they are seriously worn, replace them.

Check if gearshift locking plate is worn.

If it is seriously worn, replace it.

Check if gearshift shaft is bent. If it is over bent, replace it.

Check if return spring is weakened. If necessary, replace it.

Screw off closing bolt.

Disassemble crankcase.

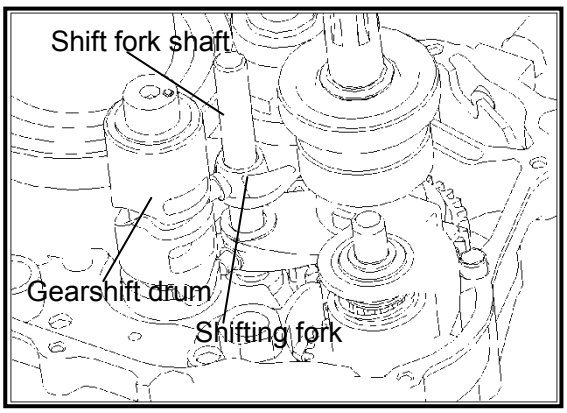
***Attention: Please do not hurt washer and closing surface.**

Remove left case block.

Pull out shift fork shaft.

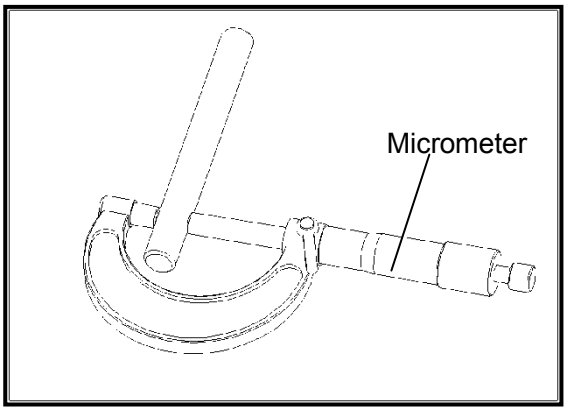
Remove gearshift drum.

Remove gearshift fork.

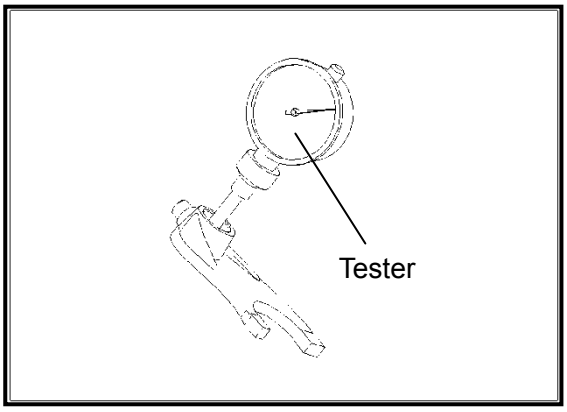


Measure shift fork OD.

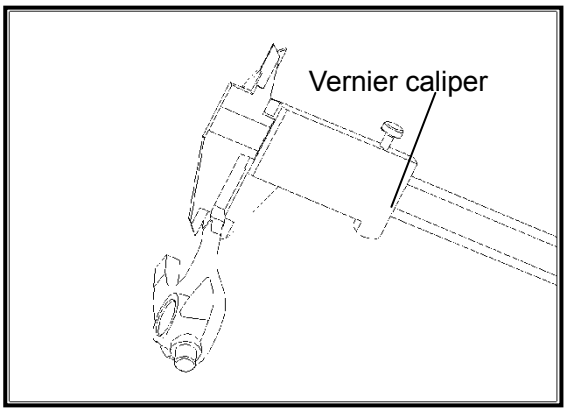
Allowable limit: 9.96mm.



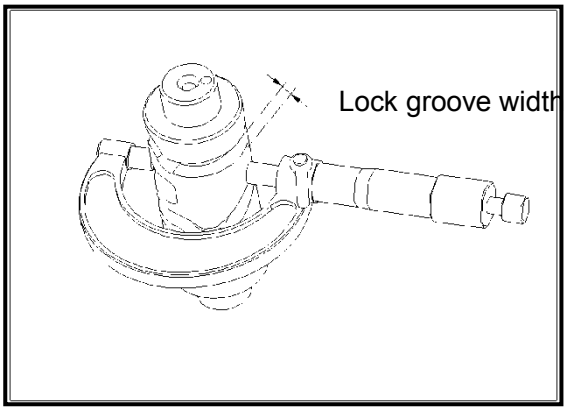
Measure shift fork hole ID.
Allowable limit: 10.05mm.



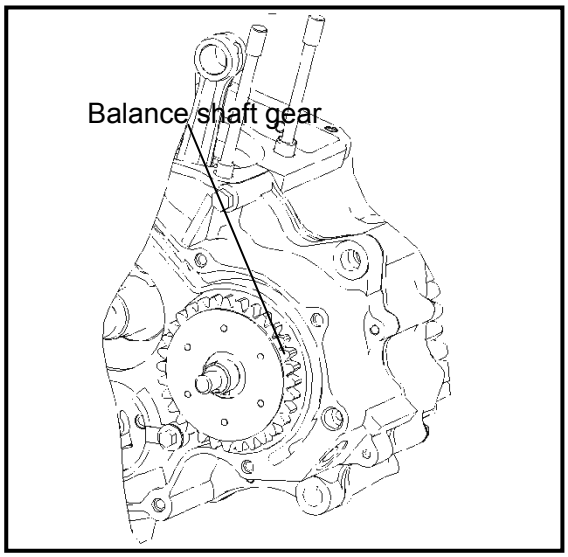
Measure shift fork thickness.
Allowable limit: 4.6mm.



Measure OD of gearshift drum
Allowable limit: 39.75mm.
Measure the width of gearshift drum lock groove.
Allowable limit: 6.35mm.



Remove balance shaft gear

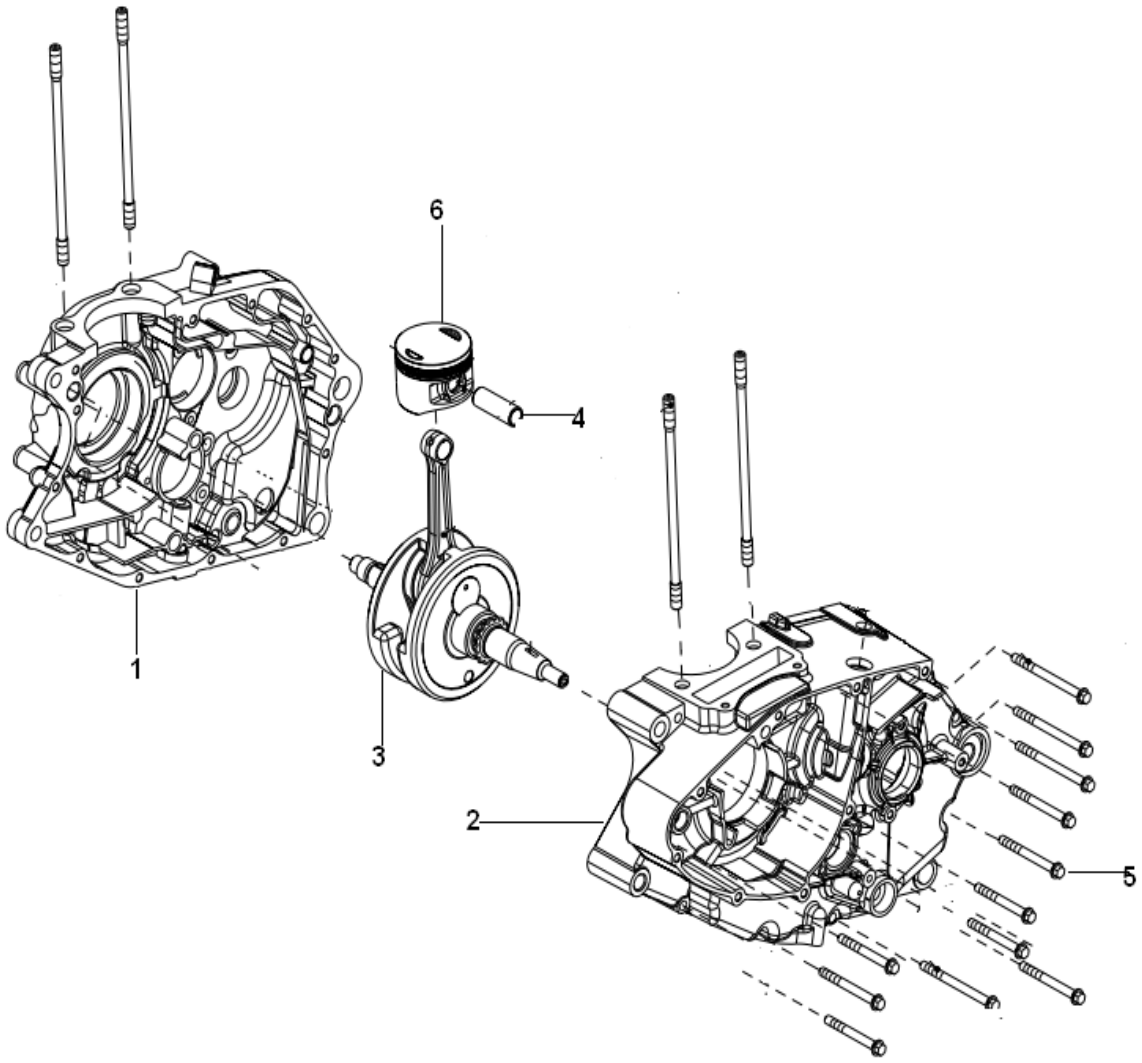


15.4 Installation

Install it in the reverse order of removal.

Crankcase

1 Right crankcase 2 Left crankcase 3 Crankshaft connecting rod assembly 4 Piston pin 5 Bolt 6 Piston



XVI Crankcase

Preparatory data---------- 16.1

Fault diagnosis----------16.2

Crankcase----------16.3

Attention: Crankcase is a thin-wall casting part. Avoid impact on it during operation in case it may be distorted or broken.

Clean carefully all the components before inspection and test and purge them with high-pressure gas.

Drain the lubricating oil from crankcase before working on it.

16.1 Preparatory Data

Precautions on Operation

Attention: Crankcase is a thin-wall casting part. Avoid impact on it during operation in case it may be distorted or broken.

Clean carefully all the components before inspection and test and purge them with high-pressure gas.

Drain the lubricating oil from crankcase before working on it.

Function of crankcase: Crankcase is the force bearing part of engine. It is mainly used to support crankshaft, clutch, transmission, cylinder block and cylinder head. It bears impact from combustion and inertia force from movement of crankshaft connecting rod; and forms a partial enclosed space (for air and oil).

Suspension hole is set on the crankcase, which can be connected with the suspension hole in the vehicle block so that the engine can be linked together with frame and other parts.

Basic data

Unit: mm

Item	Standard	Allowable limit	0.55

Tools

Universal fixer	**Clutch spring compressor**
Screwdriver rod	**Socket wrench**
uide rod	**Bearing screwdriver**

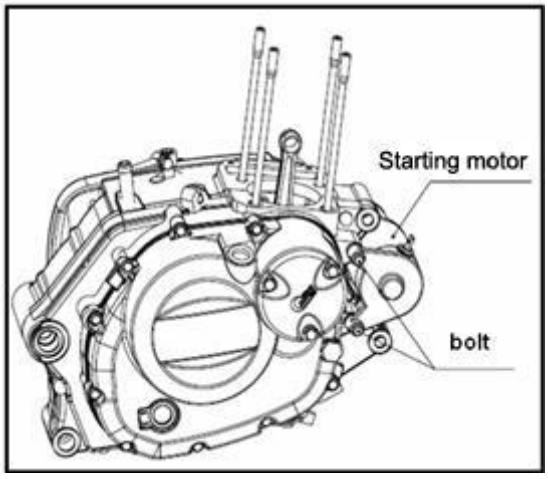
16.2 Fault Diagnosis

Noise in the Crankcase

Engine stops automatically

Spare pars falling off or broken in the crankcase

Stuck clutch



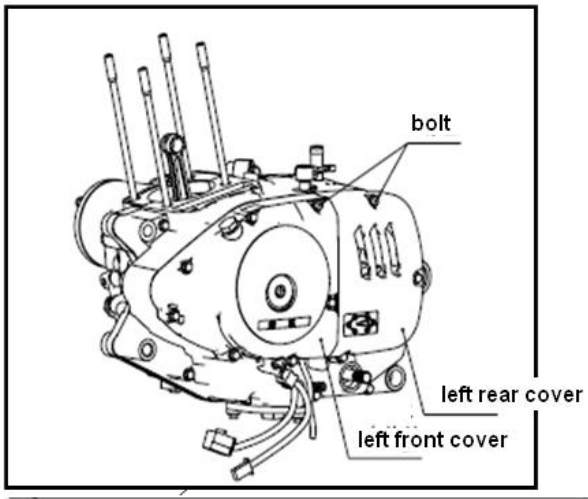
16.3 Crankcase

16.3.1 Crankcase Removal

Screw off starting motor mounting bolts，and remove starting motor.

Release starting motor gear chamber cover mounting bolt and remove gear chamber cover.

Remove starting motor gear, needle bearing and washer.

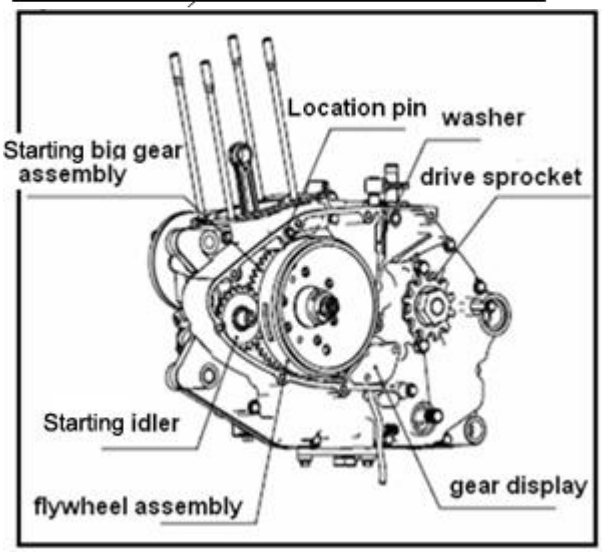


Screw off bolts on left front cover and left rear cover of crankcase.

Remove left front cover and left rear cover.

Remove starting motor idle gear.

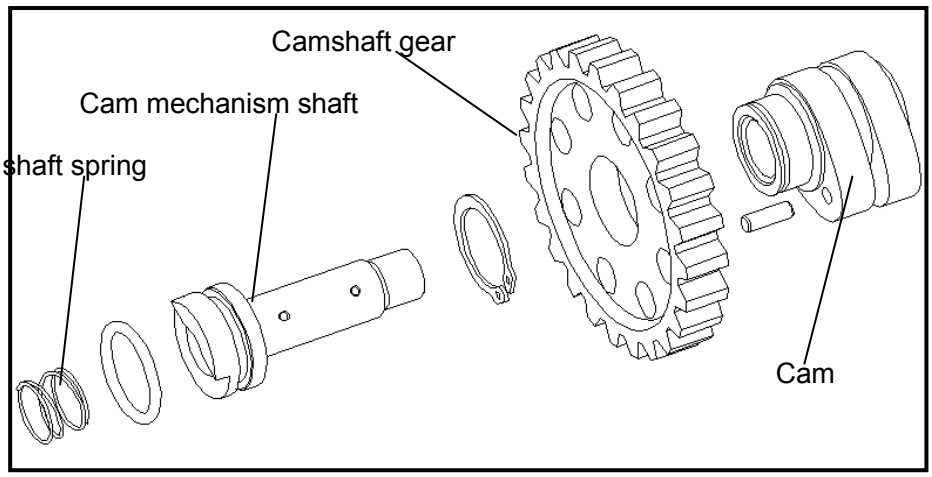
Remove washer and location pin.



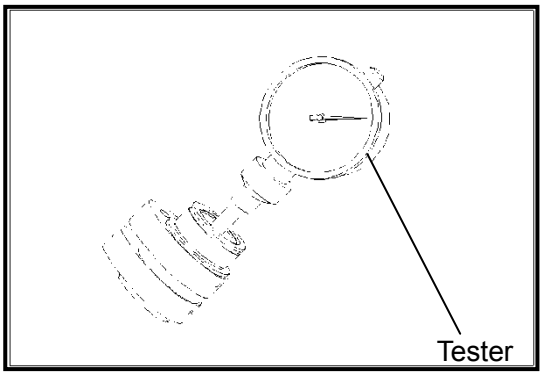
Use an electric or pneumatic tool to screw off flywheel locknut.
Pull out flywheel assembly (including the star wheel).

Remove gear display.
Remove cam shaft limit plate and take down cam assembly.
Remove bearing locating device.

16.3.2 Exploded View of Cam Assembly

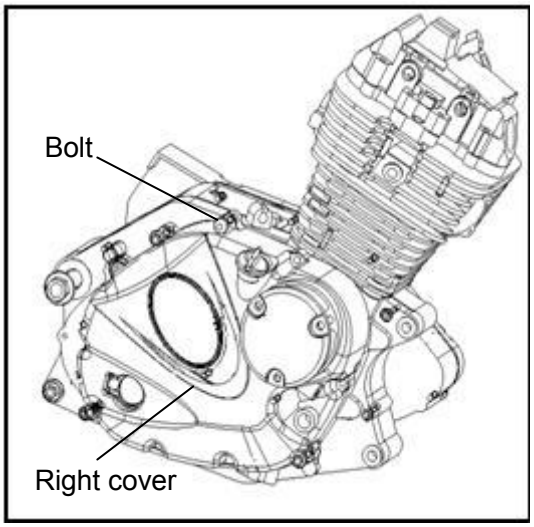


Measure cam bush ID.
Allowable limit: 14.10mm.
Measure cam height
Allowable limit: 32.5mm.

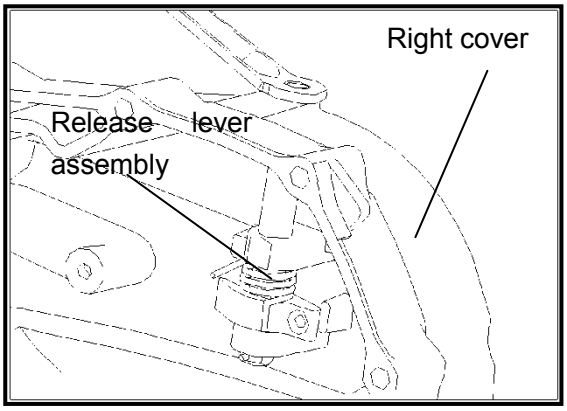


16.3.3 Crankcase Right Cover Removal

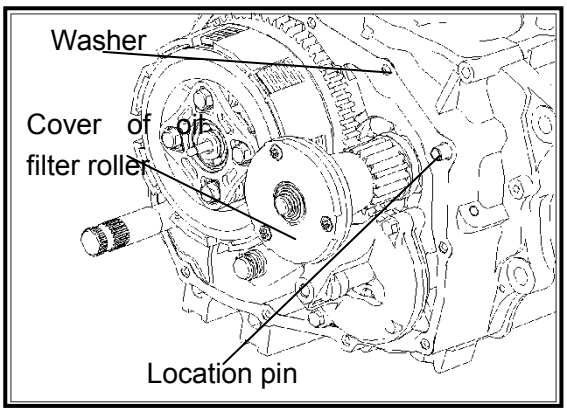
Screw off mounting bolt and take down the crankcase right cover.



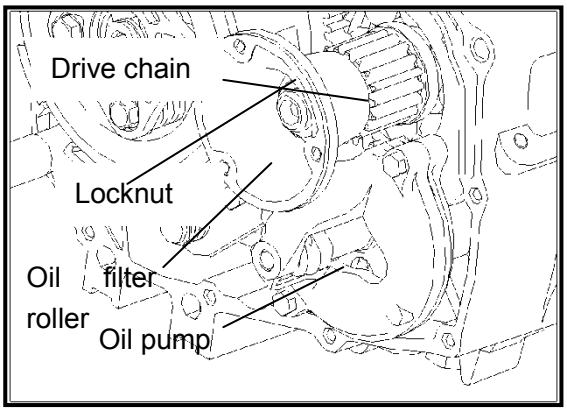
Remove clutch release lever assembly from the right cover.



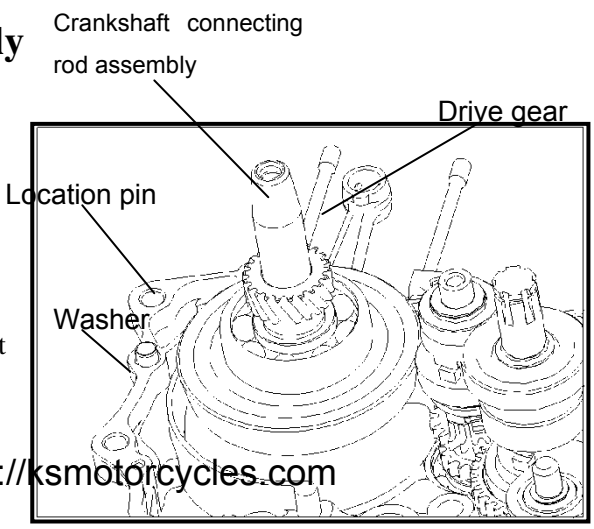
Remove screws, engine oil filter roller cover and its cover washer.
Remove washer and location pin.



Use an electric or pneumatic tool to screw off locknut.
Remove oil filter roller and take down the drive gear.
Screw off engine oil pump screws and remove oil pump assembly.



16.4 Crankshaft Connecting Rod Assembly

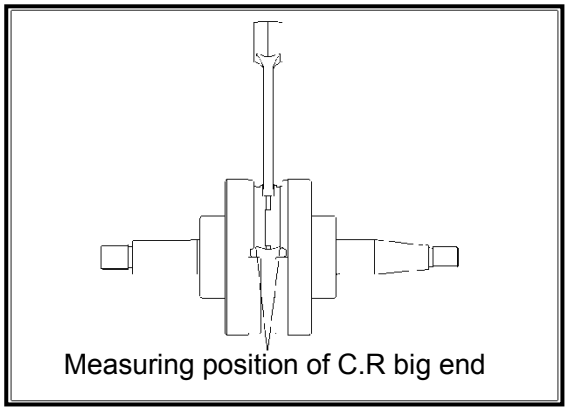


Removal

Remove left crankcase.
Remove washer and location pin.
Remove drive gear.
Remove the crankshaft connecting rod assembly from the right crankcase.
*** Attention: Please do not hurt washer and closing surface**.

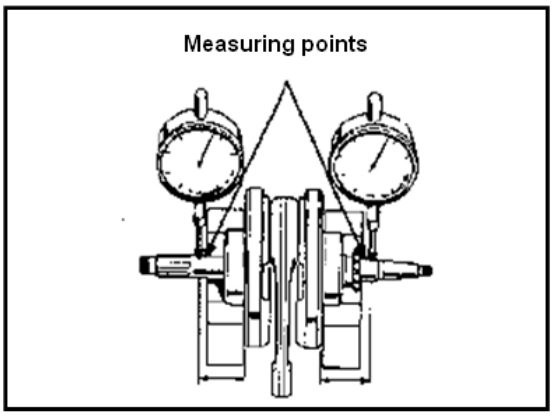
Inspection

Measure the connecting rod big end left-to-right clearance.
Allowable limit: 0.55mm.



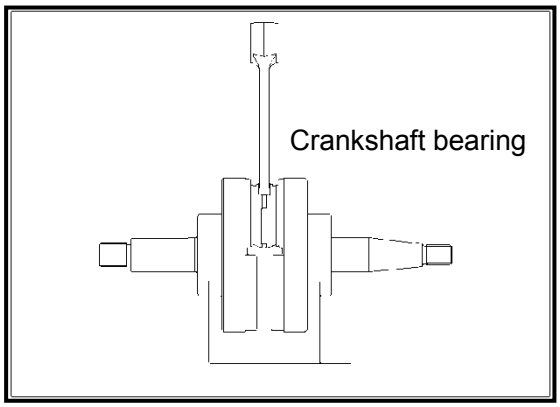
Measure the connecting rod big end clearance along X-Y direction.
Allowable limit: 0.05mm.

Crankshaft shimmy measurement
Allowable limit: 0.01mm.



Check if there is abnormal noise and looseness when the crankshaft is rotating.
If there is, replace the crankshaft.

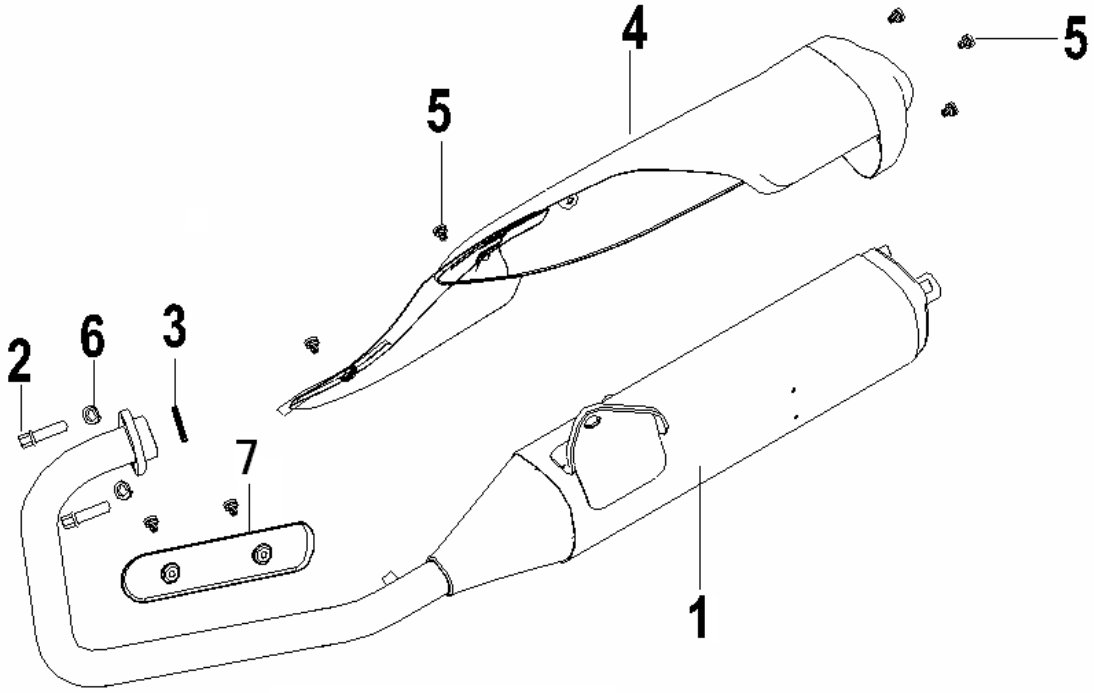
*** Attention:**
Install together crankshaft connecting rod assembly and gearshift mechanism on the crankcase.



Exhaust System Inspection and Maintenance

Muffler Assembly

A	Tightening torque of mounting bolt 5 for muffler connector in the diagram：5-9 N·m
B	Dual catalysts are added into the muffler welding assembly in the diagram.
C	Tightening torque of combined screw 6 for muffler protecting plate in the diagram：5-9 N·m



1 Muffler welding assembly 2 Hexagon socket screw 3 Exhaust pipe gasket assembly 4 Muffler tail hood welding assembly 5 Combined screw M6×10 6 Spring washer 8 7 Exhaust pipe protecting plate

XVII Emission Control System

Emission control system guarantee----------17.1

Periodical maintenance instructions/ensure emission standard----------17.2

Emission control system mechanical function----------17.3

Solutions to Idle exhaust exceeding specified value ---------- 17.4

17.1 Emission Control System Guarantee

1. The emission control system of the motorcycle is up to the Standard of China Stage III. The company will guarantee it in its effective service life, under normal use and specified maintenance.

2. Scope of Guarantee

1> Emission control system function guarantee

The company guarantees that the system meets regular or irregular exhaust emission inspection carried out by relevant government authorities within 15,000km drive.

3. The guarantee article is not applicable to the following situations, but local dealers or service departments of the company are still willing to provide maintenance service for the customers at a reasonable price.

1> Not performing regular maintenance according to the time and traveled distance specified by the company

2> Users not performing regular inspection, adjustment or maintenance at local dealer or service center of the company, or unable to provide evidence of maintenance record

3> Overloading or improper use

4> Remounting the motorcycle, removing original spare parts or install extra devices on to the vehicle at will

5> Using the motorcycle as a racing vehicle or driving on the roads not suitable for it

6> Damages because of typhoon, flood or other natural disasters; or injuries or trouble caused by gross negligence, traffic accident or subject to impact by external objects

7> Stopping use for a long time without regular maintenance

8> Odometer is damaged and no prompt repair; or the odometer is artificially altered, stopped or replaced

9> Please come to the inspection station every three months for regular exhaust gas inspection

· The new motorcycle delivered by the company has passed noise inspection and is up to EPA Standard.

17.2 Periodical Maintenance Instructions

·To reduce environment pollution, it is required by the country that all the motor vehicles manufactured by each company shall meet the regulations of emission standard of air pollutants. Besides the production process is up to the regulations of emission standard of air pollutants, the company is also devoted to purifying air and reducing air pollution.

·Strict inspection is performed on the motorcycle delivered from the company; all the specifications can meet the regulations of emission standard of air pollutants. Due to different situations the users are in, we make the following regular inspection table relating to exhaust emission. To ensure normal gas exhaust, please inspect, adjust or repair

your motorcycle in the specified time intervals.

·If you have any other individual problem, please contact or call your local dealer or service center of KEEWAY Motorcycle Co., Ltd.

· Relevant emission specifications:

Emission Specifications	CO	HC	NO_X
Emission standard	≤ 2.0g/km	≤ 0.3g/km	0.5 g/km

※ The latest version shall prevail when emission standard is updated.

· The motorcycle that does not perform regular inspection in local dealer or service center of the company may be prohibited to use. The company will not be responsible for that. Please have your motorcycle inspected whenever necessary to keep it in best condition.

Note: ① You shall clean more frequently the air cleaner to extend service life of the engine when your motorcycle is often used on sand-gravel roads or in severely polluted environment.

② More frequent servicing may be required when the motorcycle is often driven at high speed or travels a long distance.

Pay attention to the followings to ensure standard emission

1> Please use only 92 or 95 unleaded gasoline.

2> Please use only specified type of engine oil.

3> Please service your motorcycle according to your periodical maintenance table.

4> Emission control system is forbidden to be adjusted or replaced (including spark plug use, idle speed adjustment, ignition timing, carburetor adjustment, etc.).

5> Attentions:

·Improper ignition system, charging system or fuel system will have great effect on muffler, so please go to your local dealers or service center of the company for inspection, adjustment or maintenance when you encounter it.

·Please use only 92 or 95 unleaded gasoline, or the muffler device (four-stroke system) may be injured.

6> Emission control system of the motorcycle meets national standard. If you have to replace any component of the system, please use the spare parts made by KEEWAY Motorcycle Co., Ltd. and ask your local dealer or service center to replace it for you.

17.3 Emission Control System Mechanical Functions

General introduction

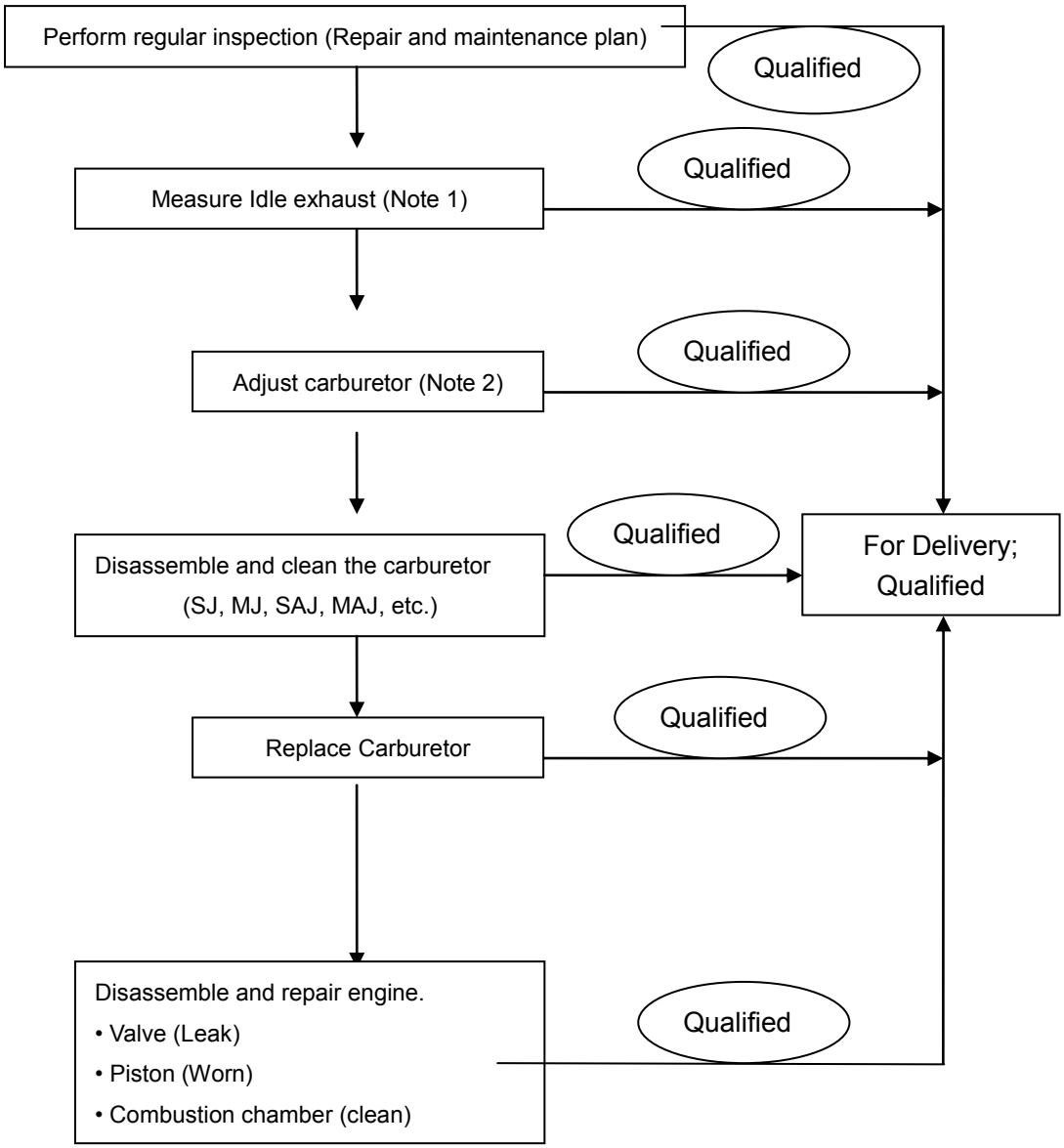
The emission control system is based on four-stroke single cylinder engine and carburetor. It uses air intake device and keep excellent exhaust gas level; Activated carbon canister is used for vaporized waste gas process.

※ Air intake device

Guide air into exhaust pipe and CO and HC of incomplete combustion will be reacted into harmless gas.

Classification	Equipment	Constituted Part	Desired Function
Emission control system	Catalytic device	Catalytic converter	Oxidize CO, HC and NO_X.

17.4 Solutions to Idle Exhaust Exceeding Specified Value (4-stroke)



Note 1: Measure according to the idle speed measuring procedures.

Note 2: Adjust with lock screw engine rpm to the specified and measure idle CO/HC.

RKV125 Schematic Circuit Diagram