PRESENTATION

The instructions in this manual have been prepared to provide a simple and understandable guide for your motorcycle's operation and care. Follow the instructions carefully to enjoy maximum performance. It contains instructions to carry out the required maintenance operations. More specific or major repair or maintenance operations require the attention of a skilled mechanic and the use of special tools and equipment. Your Dealer has the original spare parts, the experience and all equipment necessary to provide a valuable service. To ensure proper operation of the motorcycle, it is necessary to follow the maintenance and inspection table available.

Finally, please remember that the "Use and Maintenance Manual" is an integral part of the motorcycle, hence, it shall remain with the motorcycle even when sold to another user.

IMPORTANT

In order to maintain the vehicle's "Operation Guarantee", the Customer must follow the maintenance programmer indicated in the use and maintenance manual by having scheduled maintenance carried out at authorized workshops.

IMPORTANT NOTICE

Read this manual carefully and pay special attention to statements preceded by the following words:

WARNING

Indicates the possibility of severe personal injury or death if instructions are not followed.

CAUTION

Indicates the possibility of personal injury or vehicle damage if instructions are not followed.

Note*: *Gives helpful information.*

INDEX

SAFE RIDING AND MOTORCYCLE SAFETY

Here are some basic principles for riding your motorcycle safely.

- Remember that your safety and the safety of your passenger come first. Reaching your destination safely must be your main aim.
- The rider and the passenger must wear appropriate protective clothing, such as suit, gloves, shoes and helmet homologated for motorcycle use.
- The rider must be seated on the motorcycle in a position that gives the best possible visibility of the road ahead.
- Ride the motorcycle carefully and set the speed according to traffic and the type of road.

  Smooth riding helps you to assess danger and enter bends more precisely.
- Always observe road signs and adjust your speed accordingly.
- Always observe speed limits.
- Always assess the road conditions and adjust your speed accordingly.
- Reduce speed if it is raining and especially if there are puddles of water on the road.
- When riding on wet or low grip surfaces (snow, ice, mud, etc.) keep a moderate speed and avoid sudden braking and maneuvers.
- Keep a safe distance from the vehicles in front of you.
- Before overtaking, check there are no obstacles in front of the vehicle you want to overtake and always check in the rear-view mirrors that there are no vehicles coming up from behind.
- Brake using both the front and the rear brake at the same time: this helps to maintain the stability of the vehicle.
- Release the clutch gradually when downshifting.
- If you feel tired or sleepy, take a break.
- Downshift in the following instances:

  When going downhill and when braking to increase the braking action through engine compression; using only brakes when going downhill could cause the brake pads to overheat and reduce the braking action;

  When going uphill or on the flat when the gear does not match the speed of the motorcycle (high gear and low speed);

WARNING

Downshift one gear at a time; downshifting more than one gear at a time may cause the engine to overran and/or block the rear wheel.

- Do not switch off the engine when going downhill.
- When you ride with a passenger, increase the distance from the vehicles in front of you and bear in mind his/her weight when you brake and when you have to take a bend or overtake.
- The riding position of both the rider and the passenger is important for motorcycle control.
- While riding, the rider must keep both hands on the handlebar and both

feet on the footrests in order to keep the motorcycle under control.

- The passenger must always hold on to the rider or the passenger handle with both hands and keep both feet on the passenger footrests. Never carry a passenger that is unable to firmly place both feet on the passenger footrests.
- Never ride under the influence of alcohol or drugs.

Precautions for children

WARNING

• Park the vehicle where it cannot be easily bumped or damaged.

Even slight or involuntary bumps can cause the vehicle to tip over, with subsequent risk of serious harm to people or children.

• To prevent the vehicle from tipping over, never park it on soft or uneven ground, nor on asphalt strongly heated by the sun.

• Engine and exhaust system may become very hot. Park your motorcycle where pedestrians or children cannot easily reach these parts.

Risks related to carbon monoxide

Exhaust gas contains carbon monoxide, a colorless and odorless gas. Breathing in carbon monoxide may cause loss of consciousness and death. If you start the engine in a fully or partially closed environment, the air you breathe in may contain a hazardous amount of carbon monoxide. Never start the motorcycle in a garage or other closed places.

WARNING

Carbon monoxide is a toxic gas.

Breathing in carbon monoxide may cause loss of consciousness and death.

Avoid any areas or activities where you may be exposed to carbon monoxide.

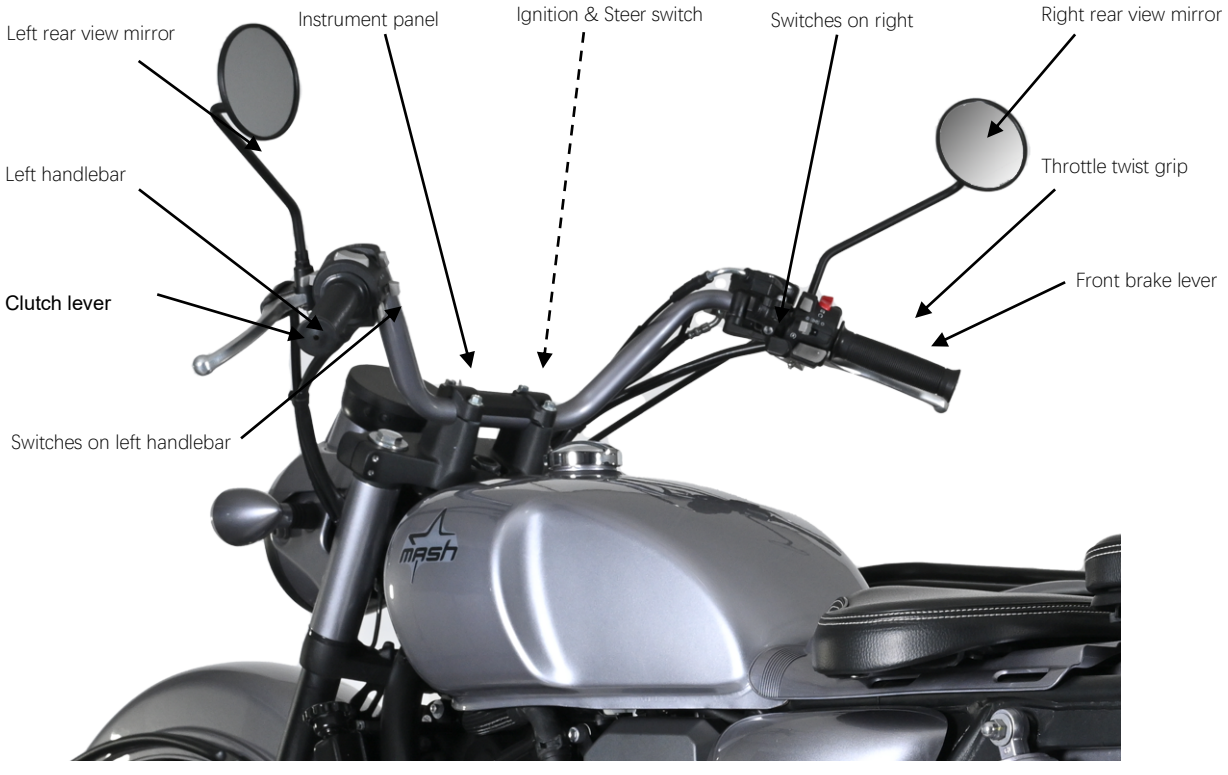
II TECHNICAL DATA

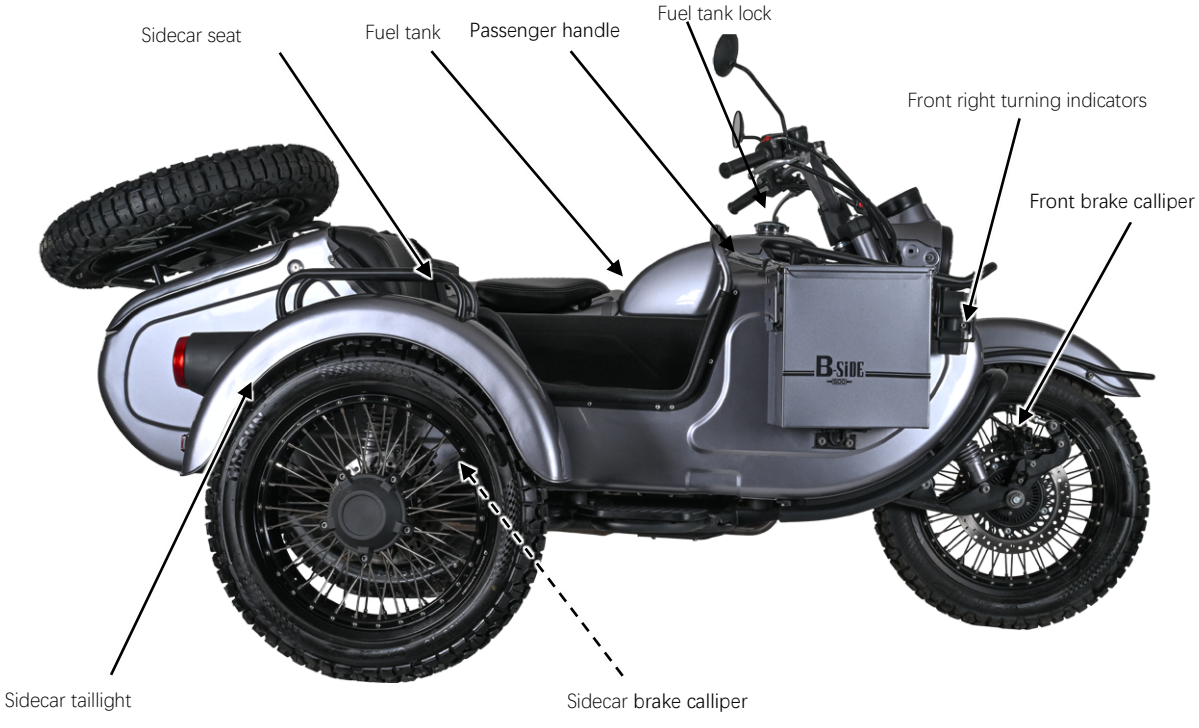
Item		Data
Dimension & Weight	Length	2300mm
	Width	1680mm
	Height	1180mm
	Wheelbase	1520mm
	Wheelbase sidecar	1130mm
	Min. ground clearance	180 mm
	Complete vehicle weight	Non-loaded weight: 345kg, Curb weight:375kg,
Vehicle body	Frame type	Cradle type
	Front suspension device	spring & hydraulic composite damping
	Rear suspension device	spring & hydraulic composite damping
	Front wheel type	4.60-18/ 225 kPa
	Rear wheel type	5.10-18/ 230 kPa
	Side wheel type	4.60-18/ 225 kPa
	Front brake	Single disc type ModelΦ276
	Rear brake	Single disc type ModelΦ260
	Side brake	Single disc type ModelΦ220
	Fuel tank volume	18L
	Fuel grade	92#

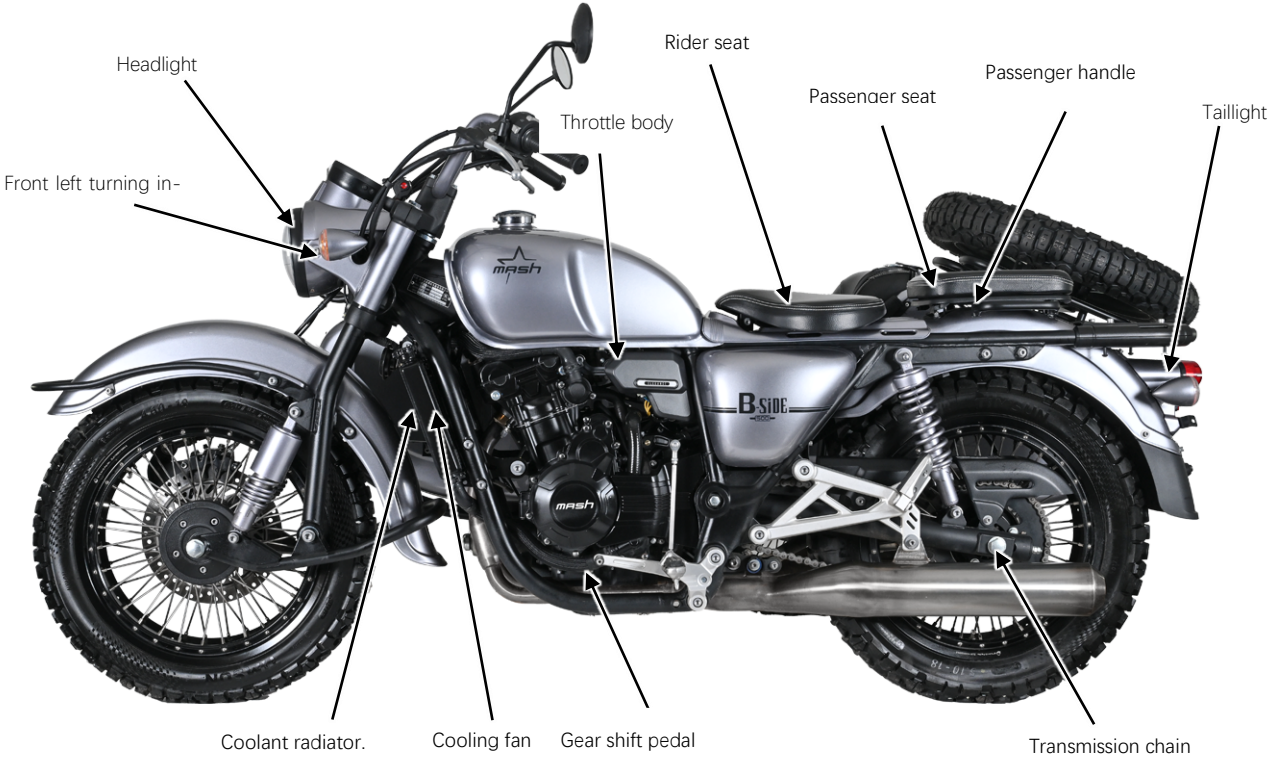
Engine	Mode	Double-cylinder; Oil –cooling 4-stroke engine
	Cylinder bore × Stroke	68.0mm×68.0mm
	Cylinder displacement	493.658ml
	Compression ratio	11.5:1
	Max. power	39.6kW/8500rpm
	Max. torque	50.5N·m/7000rpm
	Valve clearance (cold)	IN: 0.10-0.15；EX: 0.20-0.25
	Valve driving gear	Chain drive
	Air filter	Oilpaper filter
	Cooling method	Oil-cooling
	Lubrication method	SL 10W/40
	Engine oil charge volume	2.8L
	Engine oil filter element	Oilpaper filter
	Electric motor starting	Electric

Driving system	Clutch	Wet clutch, coil clutch, paper friction wafer
	Clutch operating system	Manual mechanical
	Variable speed gear	5-speed constant mesh +1- reverse
	Primary reduction ratio	2.029
	Transmission gear ratio	R2.500; I ;3.286 ； II 2.050 ; III 1.600 ; IV1.300 ; V 1.150
	Final reduction ratio	3.538
	Gear shifting mode	Left foot operated to and back type ； Sequence: R－I－N－II－III－IV-V
Electrical system	Electric generator	Permanent magnet DC magneto
	Accumulator capacity	12V11.2A.h
	Power supply system	DC power supply, and the electric generator is only used to recharge the accumulator
	Fusible cutout	20A/10A
	Spark plug	CPR8EA-9 NGK
	Spark plug gap	0.6-0.8mm
	Ignition coil type	Open magnetic circuit
	Fuel supply mode	Electronically injection, ECU control
	Front lamp	12V/9W/9W / LED
	Turn lamp	Front: 12V/3W Rear: 12V/3W
	Sidecar turn lamp	Front: 12V/1.8W Rear: 12V10W
	Brake signal light	12V/3.8W Sidecar:12V/2.5W
	Position indicator	Front: 12V/4W Rear: 12V0.7W Sidecar:12V/0.7W

III VIEWS OF MOTORCYCLES




Sidecar seat
Fuel tank
Passenger handle
Fuel tank lock
Front right turning indicators
Front brake calliper
Sidecar taillight
Sidecar brake calliper


Headlight
Front left turning in-
Throttle body
Rider seat
Passenger seat
Passenger handle
Taillight
Coolant radiator.
Cooling fan
Gear shift pedal
Transmission chain

INSTRUMENTS

① Left turn indicator light.

② Right turn indicator light

③ High-beam light.

④ Gear position display light. N

⑤ Position indicator

⑥ Engine failure warning light.

⑦ Engine Oil-Pressure

⑧ Excessive coolant temperature indicator

⑨ Maintenance indicator

⑩ Fuel reserve warning light

⑪ Battery Charge indicator

1) DIRECTION INDICATOR LIGHTS

The light flashes when activating the left or right hand turning indicator using the control lever on the left-hand switch.

2) HIGH-BEAM LIGHT

The light comes on when activating the high-beam light using the control on the left-hand switch.

3) NEUTRAL WARNING LIGHT

The light comes on when the gear shift lever is in neutral position (no gear engaged).

4) POSITION INDICATOR

When the light switch is in the parking light position " ', this indicator is lighted.

5) ENGINE FAILURE WARNING LIGHT

The Engine Failure Light comes on (amber light) when you turn on the ignition switch. Starting the engine, the engine failure light extinguishment. If the light comes on while the engine is running, it means that there is an engine or injection system failure.

-Stop and turn off the engine.

-Wait a few minutes and restart the engine; if the light comes on again, contact your nearest dealer to have the self-test system checked.

6) ENGINE OIL PRESSURE WARNING LIGHT

The Engine Failure Light comes on (amber light) when you turn on the ignition switch. Starting the engine, the engine failure light extinguishment. This light comes on when the engine oil level is insufficient. It also alarms when the oil viscosity is low or the oil circuit is clogged.

When the warning light comes on, shut down the engine immediately and check for faults before restarting

7) TEMPERATURE INDICATOR LIGHT

When this light comes on, it means the engine temperature is too high. Check the coolant level in the Aux Liquid Bottle.

Note*: *When the engine over-temperature indicator light comes on, you must stop the engine and let it cool down.*

8) MAINTENANCE INDICATOR LIGHT

When the mileage reaches the specified maintenance mileage, the indicator light will light up and turn off after resetting.

9) FUEL LEVEL INDICATOR

The fuel level display will indicate the fuel volume. When the pointer of the fuel level indicator rests near the last scale the fuel pump symbol will flash. Refuel with 92 unleaded gasoline as early as possible.

10) BATTERY CHARGE INDICATOR

When the battery voltage is insufficient, the indicator light flashes.

11) TIRE PRESSURE WARNING LIGHT

The tire pressure alarm light will turn on, indicating that the tire pressure is insufficient. Please stop the engine immediately in this case, checking whether the tire is damaged, and replenish the tire pressure to the specified value.

THE METER SHOWS

When the ignition switch is turned on, the instrument cluster starts. Each segment of the tachometer and gear display lights up in sequence and disappears again.

The speed display counts from 0 to 199 and back to 0.

The mileage display goes from 000000 to 999999 and returns to the last mileage position here.

Other information symbols light up on the display

1) SPEED

Speedometer digital display, display range (0 - 199 km/h). When the speed exceeds 199 km/h, the speed display value is 199 km/h; please do not drive the vehicle beyond the specified maximum speed of 110 km/h. Speed unit display, Km/h or Mph.

2) MILEAGE DISPLAY

ODO displays the total mileage, and TRIP displays the small mileage.

When the vehicle speed is less than 5km/h, in ODO state, long press SET to enter the setting interface; in TRIP A/B state, long press SET, the corresponding TRIP will be cleared; short press SET to switch the mileage display: ODO->TRIP A->TRIP B.

3) EVOLUTION COUNTER

This instrument allows you to control the number of engine revolutions and not go over the limit indicated in the red area. Keep the engine speed within the black scale and do not go over 8000 rpm.

WARNING

If you exceed 8000 rpm (red area), the engine may be damaged.

SET BUTTON DESCRIPTION

Button: In ODO mode, short press time: less than 1s; long press time: more than 2s.

Input through the two buttons on the instrument: MODE (front button) and SET (rear button); or input the ENT and SET switch buttons on the left hand.

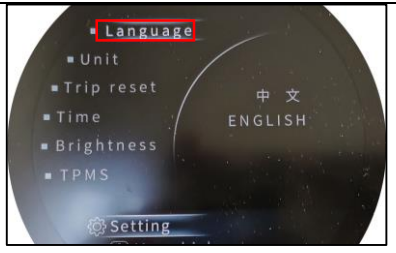
In the setting interface: short press the MODE key to move the cursor or modify parameters, short press the SET key to confirm, long press the MODE or SET key to return to the previous menu.

VEHICLE SETTINGS

LANGUAGE SELECTION

Short press the SET button to enter language settings, short press MODE to switch languages.

The languages are: Chinese and ENGLISH. Short press the SET button to confirm the selection and return to the secondary menu. The language settings will be saved when the power is turned off.



SWITCH BETWEEN METRIC AND IMPERIAL SYSTEMS

Short press the SET key to switch between metric and imperial systems. Short press the MODE key to switch between metric and imperial systems. Short press SET to confirm the selection and return to the secondary menu. The default metric unit is ；

SUBTOTAL MILEAGE RESET

Short press the SET key to enter the subtotal mileage reset, short press the MODE key to switch to select OK or return, short press the SET key to confirm the selection and return to the secondary menu. This reset is to clear both TRIP A/B.

CLOCK SETTINGS

Short press the SET button to enter the clock setting, the current time is displayed, and the tens digit of the hour is highlighted. At this time, short press the MODE button to modify the tens digit of the hour. Short press the SET button to set the position to move to the ones digit of the hour, and the ones digit of the hour is highlighted. display. At this time, short press the MODE key to modify the ones digit of the hour. By analogy, when the settings of the ones digit of the minute are completed, it will automatically return to the secondary menu. If the setting is not completed due to timeout or power outage and the clock setting is exited, the set digit will take effect；

BRIGHTNESS SETTINGS

Short press the SET key to enter the brightness setting, and the up and down arrows will appear on the right side. Then press the MODE key to switch the brightness. The brightness is divided into six options: automatic, 20%, 40%, 60%, 80%, and 100%. Short press SET key to return to the secondary menu;

TIRE PRESSURE SETTINGS

Short press the SET button to enter the tire pressure setting. Under the tire pressure setting, short press the MODE button to select; when the cursor selects the front wheel, short press the SET button to learn the front tire pressure sensor; when the cursor selects the rear wheel, short press the SET button to select the left tire pressure sensor. When learning the rear wheel and right rear tire pressure sensors, the corresponding learning status will be displayed; when the cursor is selected to exit, short press the SET key to return to the secondary menu;

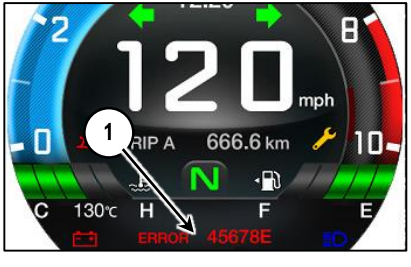
MAINTENANCE SETTINGS

1) When the mileage reaches 1,000 kilometers, the maintenance indicator light lights up for the first time. You can reset the maintenance mileage by pressing the button to turn off the light. After resetting the maintenance mileage, the indicator light lights up every 3,000 kilometers. After that, the maintenance indicator light is reset. It lights up every 3000 kilometers after mileage.

2) Only when the maintenance alarm indicator light is on, in the main interface and in the ODO display state, press and hold the MODE and SET buttons at the same time to turn off the light.

ERROR CODE

If there is a fault, the fault code will be displayed on the display screen. After the fault is eliminated, the instrument will display normally after 3 ignition cycles.



VEHICLE INFORMATION

A. Short press SET to enter the vehicle status information, which displays parameters such as average fuel consumption, driving time, remaining maintenance mileage, water temperature, voltage, etc. Short press MODE to switch options (next page or return), and short press SET to confirm;

B. Display instrument version information, display software version and hardware version, short press MODE to switch options (previous page or next page), short press SET to confirm;

C. Fault information, displays the current fault information, short press MODE to switch options (previous page or return), short press SET to confirm; detailed fault information will be displayed here.

QUIT

Short press the SET button to exit the setting interface; in the setting interface, except for entering Bluetooth connection and tire pressure settings, the 8S has no button operations and automatically exits the setting interface.

IV、 CONTROLS

Ignition Switch

The ignition switch has three positions:

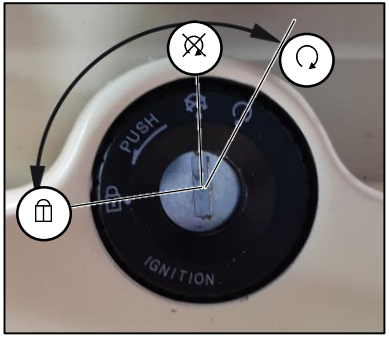
- Motorcycle start position (key not removable);
- Key removal position;
- Steering lock position (key removable).

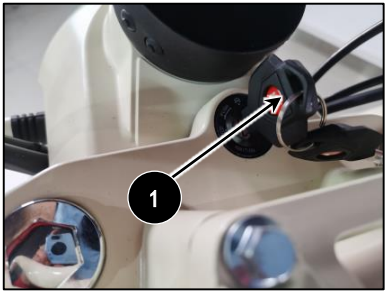
-Key removal position " "

Turning the key to position , the engine and the lights go off and you can remove the key from the ignition block.

-Start position" "

From the key removal position , turn the key (1) clockwise to the start position ; the lights and the display will come and you can start the motorcycle.





CAUTION

Do not change the ignition key position when riding.

If the key is moved to the position during riding, all electrical systems will be off. While riding, do not remove the main switch key in order to avoid an accident. If necessary, stop the motorcycle prior to removing the key.

Before removing the key, make sure the handle bar is locked.

If the engine is not started after turning the key to the position, the battery will discharge over time.

Do not use sharp metal keys or key fobs to avoid scratching the upper triple clamp. Use a cloth or leather key fob.

RH HANDLEBAR SWITCH

The right-hand switch features the following controls:

1) Engine start button

Pressing the button (1) with the key in position and the switch (2) in position, the engine starts.

2) Engine KILL SWITCH.

Flicked to position, disables engine starting and running.

Flicked to position, enables engine starting and running.

CAUTION

·Emergency cut-off switch only used under urgent situation.

·During riding, turn the switch from to will cause dangers, and damage the engine.

·Use Emergency cut-off switch to stop the engine should make sure that the Main Switch on position; if on position and engine powered off, the battery discharged.

·If put the Switch on position, the engine cannot be started.

3) Light switch

Turn the main switch key to "" position, switch on the headlight.

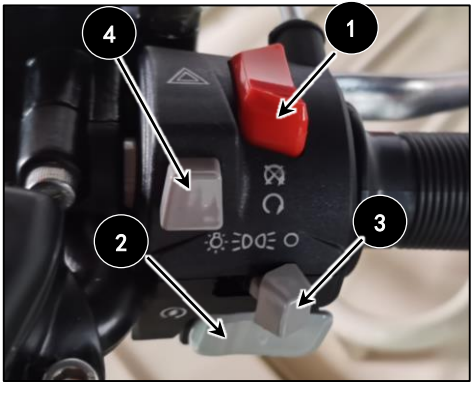
Set the switch to " " to turn on the tail the headlight and meter lights are all lit up.

Set the switch to " ● " to turn off all the lights.

Set the switch to"" to turn on the parking lights and the taillights.

4) Hazard Light

The Hazard Light and the Left/right turn signal light comes on when you push on the warning light switch.



LH HANDLEBAR SWITCH

The left-hand switch features the following controls:

1) Overtaking lamp switch

According to Ultra Lights, headlights flashing, to indicate the vehicle in front to overtake.

2) Hi and Low beam operation

At this position, the headlight comes on and the light is beaming at a short distance. (The headlight will not come on if the ignition switch is not turned on.)

At this position, the headlight comes on and the light is beaming at a far distance. (The headlight will not come on if the ignition switch is not turned on.)

3) Directional Indicator

Left-hand turning indicators.

Right-hand turning indicators.

To deactivate the turning indicators, press the control lever after it is returned to the center.

CAUTION

When finished turning, the direction indicator switch will not be back to original position automatically, please switch it manually.

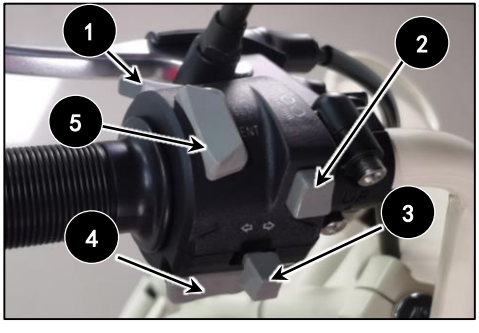
Driving with light on will obstruct traffic.

4) Horn button

When the main switch is in the "on" position, if you press the horn button, it will emit a loud sound.

5) Instrument function setting button

There are two positions ENT and SET by pressing this, which are used to switch the instrument function. They have the same function as the instrument MODE (front button) and SET (rear button).



FUELLING

Recommended fuel: premium grade UNLEADED fuel (R.O.N 92).

WARNING

Fuel is extremely flammable and can be explosive under certain conditions. Always stop the engine and do not smoke or allow flames or sparks in the area where the motorcycle is refueled or fuel is stored.

Proceed as follows:

-Turn off the engine.

-Lift the lock protection tab (1).

-Insert the key (2) and turn it clockwise to release the plug.

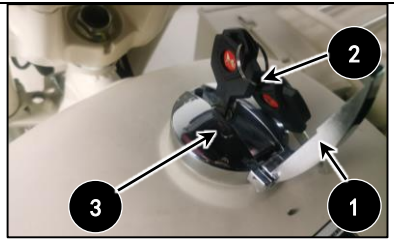
-Lift the plug (3).

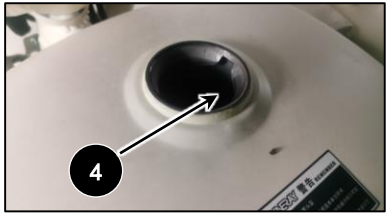
-Refuel through the filler neck (4).

-Close the plug (3) again, following the removal procedure in reverse order, then remove the key (2) and lower the protection tab (1).

CAUTION

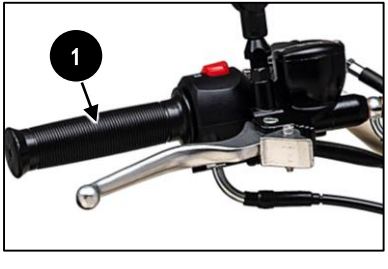
Do not overfill the tank. Refer to the lower mark on filler.





THROTTLE CONTROL

The throttle twistgrip (1) is located on the right-hand side of the handlebar.



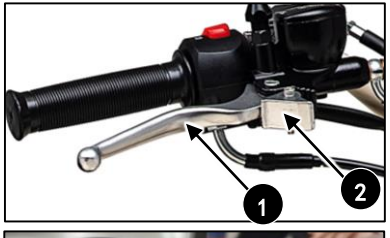
FRONT BRAKE CONTROL

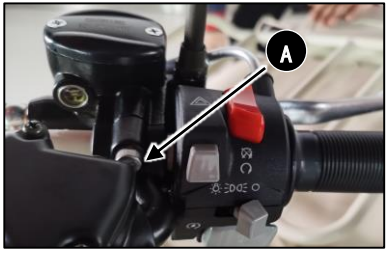
The brake control lever (1) is located on the right-hand side of the handlebar. A stop switch, during the braking action, causes the stop light on the tail light to come on. The control position can be adjusted by loosening the two retaining screws (A).

CAUTION

Do not forget to tighten the screws (A) after the adjustment.

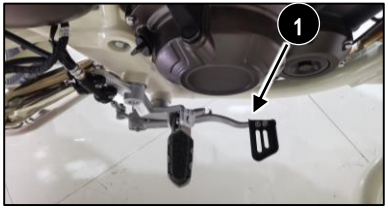
The brake parking switch (2) is used for parking. When parking, the parking switch must be turned on to prevent the vehicle from moving.





REAR BRAKE CONTROL

The rear brake control pedal (1) is placed on the right-hand side of the motorcycle. A stop switch, during the braking action, causes the stop light on the tail light to come on.



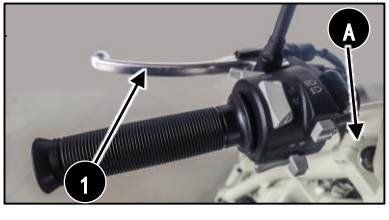
CLUTCH CONTROL

The clutch control lever (1) is located on the left-hand side of the handlebar and is equipped with a protection.

The clutch control position on the handlebar can be adjusted by loosening the retaining screws (A).

CAUTION

Do not forget to tighten the screws (A) after adjustment.



GEAR SHIFT CONTROL

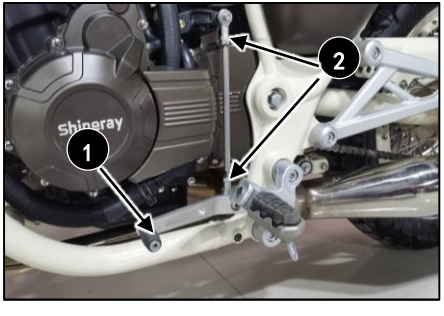
The lever (1) is placed on the left-hand side of the engine.
The rider must release the lever after each gear change to allow it to return to its central position. Neutral position (N) is between the first and second gears.
First gear is engaged by pushing the lever downwards; the other gears are engaged in a sequence by pushing the lever upwards.
The lever position on the shaft can be changed. To carry out this operation, loosen the screw(2)), Tighten the screw(2) once operation is completed.

CAUTION

Do not downshift when travelling at a speed that would force the engine to "overrev" or cause the rear wheel to lose grip, if the immediately lower gear is selected.

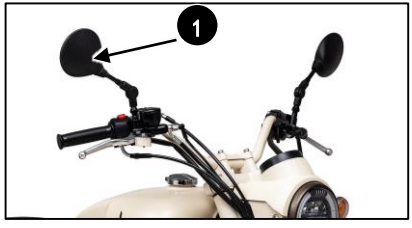
WARNING

Do not shift gears without disengaging the clutch and closing the throttle. The engine could be damaged by "over-revving".



ADJUSTING THE REAR-VIEW MIRRORS

Sit on the motorcycle as described in the relative paragraph.
Adjust both mirrors (1) so that you can clearly see the road behind you when seated.



REVERSE CABLE HANDLE

The reverse cable handle (1) is located on the left side. It is used to control the motorcycle's reverse gear shift.
When you need to reverse the car, move the handle to the right, pull the clutch handle, and depress the foot shift pedal downward to change to reverse gear. Slowly release the clutch handle and open the accelerator.

SEAT BELT

Deuce safety belt is equipped on the passenger seat.
To wear the seat belt properly, do the following:

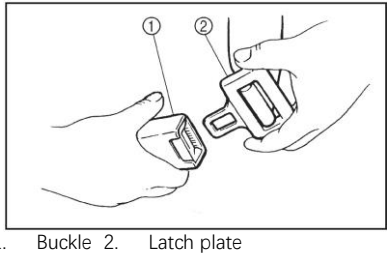
1) Hold the latch plate as you pull the belt across your lap and chest. Make sure the belt is not twisted and is not caught on any portion of the vehicle, your clothing, or any equipment you are carrying.

2) Push the latch plate into the buckle until it clicks. Pull up on the latch plate to make sure it is secure.

3) Put the lap portion of the belt low on your hips. Push down on the buckle end of the belt as you pull up on the shoulder part so the belt is snug across your hips.

4) Position the shoulder belt over your shoulder and across your chest. The shoulder belt should fit against your chest. If it is loose, pull the belt out all the way and then let it retract.

5) To release the buckle, firmly press the release button.

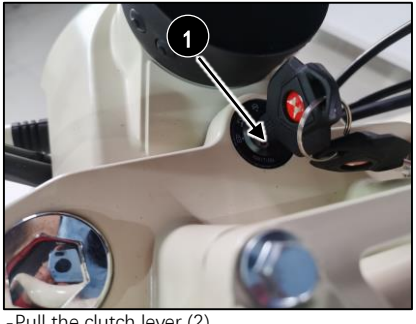


1. Buckle 2. Latch plate

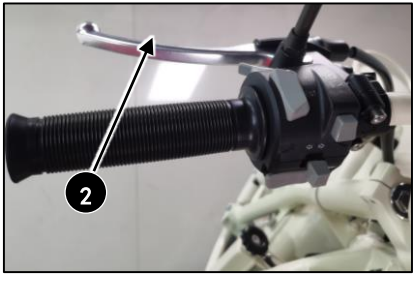
STARTING THE ENGINE

After getting on the motorcycle as described in the relative paragraph, operate as follows to start the engine:

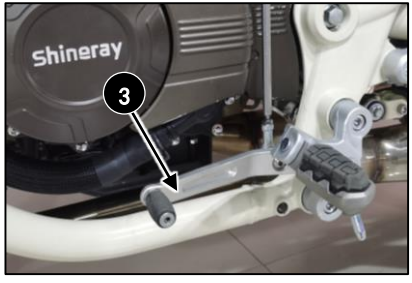
-Place ignition key (1) to ⟳ position (the buzz that you hear when you turn the key to ⟳ is caused by the fuel pump which puts the feeding system under pressure);



-Pull the clutch lever (2),



-Shift gear pedal (3) to neutral,



-Check that the button (4) is in position and then press the start button (5).

When a cold engine has just been started, do not increase revs, to ensure an adequate oil warmup and circulation.

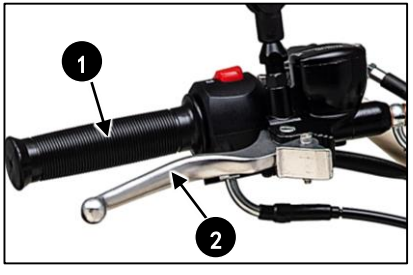
WARNING

Do not run the cold motor with a high number of revs.

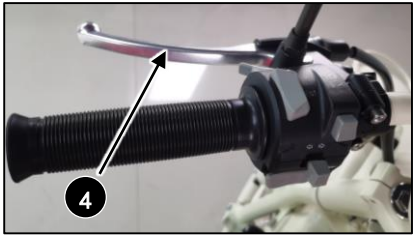
STOPPING THE MOTORCYCLE AND THE ENGINE

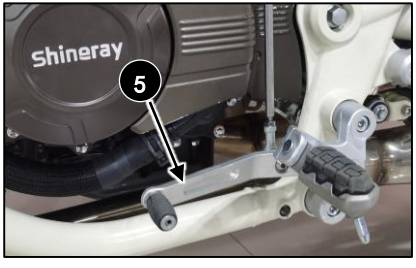
-Fully close the throttle twist grip (1) to decelerate the motorcycle.

-Apply both front (2) and rear (3) brakes while downshifting (for sharp deceleration, operate in a decided manner on the brake lever and pedal).



-When stopped, pull the clutch lever (4) and shift gear lever (5) into the neutral position





-Turn the ignition key (6) to the ⊠ position (position for removing key).

ENGINE EMERGENCY STOP

-Flick the red switch (7) to ⊠ stop the engine and then flick it back to

position.

When the bike is off, place it on its side stand.

WARNING

It can be useful to use the front brake independently or to use the combined braking depending on the situation. Be careful when using the front brake, especially on slippery surfaces. Improper use of the brakes can lead to a serious crash.

WARNING

If the throttle locks in open position or another malfunction occurs that causes the engine to run uncontrolled, IMMEDIATELY press the engine stop button (7). While pressing the stop button, keep the motorcycle under control using the brakes and steering.

ENGINE MAINTENANCE

When the engine has been run-in for 500 miles, a mandatory first service and inspection is required to be performed by an authorized Genuine Service Center to maintain the limited warranty that may apply.

1) Replace the engine oil.
2) Valve gap inspection and adjustment.
3) Inspect the spark plug, adjust the gap and clean any carbon deposits.
4) Tighten all fasteners.
5) Clean the air filter or replace if necessary.
6) Adjust chain tension.
7) Check tire pressure. Add air if necessary.
8) Check free-play on vehicle controls. Adjust and lubricate levers / cables as necessary.
9) Complete any other routine maintenance or repair any observed trouble condition that may exist.

PRE-RIDE INSPECTION

In order to ensure safety, the motorcycle must be checked before each ride and properly maintained.

Please make sure a thorough inspection of your motorcycle is completed each time before you ride.

1) Engine oil level check: Insufficient engine oil will cause premature engine wear and damage.

2) Fuel level check: secure the fuel tank cap and inspect the fuel hoses for cracks / leaks.

3) Drive chain inspection: a loose chain can fall off of the sprocket. A severely worn chain may break, insufficient lubrication can cause chain and sprocket wear, and if the chain is too tight, then the transmission system will incur extra burden, which can in turn wear or break the chain.

4) Tire check: Tires with abnormal cuts or deep grooves should be replaced. The tire tread's depth should be above the wear indicator marks. Tire pressure inspection is also crucial. Improper pressures can lead to tire wear / blow out.

5) Brake system check: Check the brake system for normal function. Check the condition of the brake fluid level, pad/shoe wear and brake lines/cables prior to operating the vehicle. If the level of the brake fluid is lower than the minimum level line, inspect brake lines for leaks or cracks. If a fluid leak is found, please do not ride the vehicle and contact your authorized genuine dealer for inspection and repair.

6) Cable check: Check if the cable for control is correctly installed and moves smoothly.

7) Throttle check: Check the throttle grip and throttle cable to see if there is proper free-play. Determine if the throttle turns smoothly both opening and closing the throttle.

8) Clutch check: Check the clutch cable free-play and ease of movement.

9) Check and if necessary adjust the throttle control; turn the ignition switch to ⟳ position: check the lighting of instrument display and, with gearbox in neutral, make sure that the neutral warning light comes on;

10) Turn on the high-beam light and check that the relative warning light comes on;

11) Operate the turning indicators and check that the warning light comes on;

12) Check if the rear stop light is functioning;

13) Check that, after starting, the '  ' "Engine fault" lights are not on.

14) Rear view mirror check: Sit on the motorcycle and keep your body vertical to the ground, see if you get a clear view behind you from the rear view mirrors.

15) Handle bar adjust: Sit vertically on the seat, determine if the handle bar is at the best position for safe and comfortable operation. Make sure no cables are tangled.

CAUTION

Make sure you are familiar with and follow the safety rules and comply with all laws.

- *The exhaust contains harmful gas, like CO, so please make sure when you are performing checks with the engine running, you are in a well-ventilated location.*
- *The pre-ride checklist should be performed on a flat, hard surface with stable support.*
- *Watch for fire when you switch the engine off, because the engine and muffler are still hot.*
- *Before you perform any repairs, the engine should be switched off and the key should be removed.*
- *If problems still exist after adjustment, please immediately contact your authorized genuine dealer.*

VEHICLE OPERATION

Before you prepare to embark on your ride, please make sure the side stand is in the up position. If you try to shift from neutral into first gear with the side-stand down, the engine will turn off for your safety. Do not bypass or disable the side stand safety switch.

Shift gears in accordance with the engine speed

In order to maximize fuel consumption and to ensure engine longevity, please do not accelerate or decelerate drastically.

LAUNCH AND SHIFTING GEARS

1) While sitting on the motorcycle with the engine running at idle in neutral, raise the side-stand and place both feet firmly on the ground. Pull the clutch lever to the handlebar and push the gear shift pedal down with your left foot to change the gear from neutral to 1st gear.

2) Gradually turn the throttle twist grip to increase the speed of the engine to about 3000 r/min, and SLOWLY release the clutch lever until the motorcycle starts to move. DO NOT release the clutch lever suddenly once movement begins. CAREFULLY modulate both throttle and clutch to ensure a smooth start as your vehicle accelerates.

3) When the motorcycle reaches a balanced state of operation and the engine rpm rises, close the throttle, pull in the clutch lever, and then lift up the shifting pedal to shift from 1st to 2nd gear.

4) Use the same up-shift procedure for 3rd-5th gear.

5) Engage the clutch and the shift pedal downward to down-shift the motorcycle. Release clutch slowly.

Down shifting for more power if you want to accelerate quickly, for example, when passing another vehicle, down-shifting can often provide more power and faster acceleration.

CAUTION

Always start the vehicle from 1st gear, and make the starting process as slow and smooth as possible.

Shift gears prior to reaching the engine redline RPM.

Do not downshift gears too quickly into the redline RPM range as this may cause damage to the engine by over- revving the engine.
Operate at speeds under the legal limit.

BRAKE USAGE

Use the front and rear brake simultaneously for maximum braking power. Avoid unnecessary sudden braking.

CAUTION

If you only use the front or rear brake, the motorcycle may become upset and a crash could result.
When riding in rain or on wet road avoid sudden braking. Accidents can occur, slow down and brake cautiously.
Avoid repeated braking / dragging the brake as this can overheat the brake system causing the brake to fade and lose braking power.

ENGINE BRAKE

The engine can work as a brake as you decelerate using the throttle. Additionally, downshifting can further slow the motorcycle. Be careful not to over- rev the engine during downshifts. Engine braking in conjunction with conventional braking will deliver the maximum braking force possible.

CAUTION

When the motorcycle is running near the redline RPM, do not downshift to a lower gear, this will cause damage to the engine and transmission system; and even cause shaking of the rear section of the motorcycle.

PARK

Shift the motorcycle to neutral and switch off the motorcycle.
Close the throttle.
Please use the main stand to keep the motorcycle steady, and park the motorcycle on horizontal ground or the motorcycle may fall over.

CAUTION

Park the motorcycle in a safe / traffic free location.
After driving, the muffler will be very hot. Park the motorcycle away from pedestrians, children, animals, flammable materials etc.

PARK WITH SIDE STAND

Place the motorcycle on horizontal ground, lower the side stand, and move the handle bar to the left. If the motorcycle is placed on uneven terrain, the motorcycle may possibly fall down.
If the handle bar is moved to the right side, or the motorcycle's side-stand is on a slope, sandy, rough or soft ground, the motorcycle is prone to fall down.
In unavoidable situations, necessary steps must be taken to ensure vehicle stability.

V INSPECTION AND ADJUSTMENT

The following table shows the interval of regular maintenance in travel distance or number of months. At the end of an interval, be sure to carry out the specified inspection, lubrication and maintenance. If your motorcycle is used with heavy loads, such as high power driving in a dusty environment, the maintenance shall be carried out more frequently. Your distributor can give your further guide. The parts of steering gear, shock absorber, bearings and wheels are critical components, and require professional skills to repair. In the light of safety, it is advisable to the inspection and maintenance done by your distributor or qualified maintenance staff.

PRECAUTION

In regular maintenance, it may be necessary to replace one or more parts. For part replacement, it is advisable to use genuine parts or equivalent products. No matter if you are experienced in vehicle maintenance or not, the items with * mark shall be handled by your distributor or qualified maintenance staff. For the items without such mark, you can do it by yourself according to the instructions.

WARNING

After correct running-in of 1000 km, maintenance is mandatory to ensure the safety of your motorcycle and give it a full play of its performance.

Be sure to make regular maintenance thoroughly according to the instructions in the manual.

Maintenance Period Table Continued on next page

TABLE OF MAINTENANCE INTERVAL

Interval: based on odometer reading or number of months	km	1000	4000	7000	10 000
	mile	500	2500	45	6500
	Number of months	6	12	24	36
Battery		I	I	I	I
*Butterfly throttle, throttle cable		I	I	I	I
*Spark plug		I	R	I	R
*Clutch		I	I	I	I
*Air Filter		C	R	I	R
*Fuel filter		I	I	I	I
*Fuel hoses		I	I	I	I
		Replace every 4 years			
*Engine oil and oil filter		R	R	R	R
*Oil filter strainer		C	C	C	C
*Valve clearance		I	I	I	I
*Timing chain		I	I	I	I
*Chassis bolt and nut		T	T	T	T
*Brake pads front and rear, linings		I	I	I	I
*Brake fluid		I	I	I	I
		Replace every 2 years			
* Front fork		-	I	I	I
* Rear shock absorbers		-	I	I	I
*Wheesl and tyres		I	I	I	I

Driving chain	I	I	I	I
	Clean and lubricate every 1 000 kms			
*Steering	I	I	I	I
*Cylinder head nut and exhaust pipe bolt	T	T	T	T

Caption: Inspection: I Tightening: T Cleaning: C Replace: R

Note*: *That the maintenance interval is 3000 km.*

Do not forget to certify them in the manual provided by your dealer

LUBRICATION TABLE

Interval	Every 6000 km or 6 months	Every 12000 km or 12 months
Accelerator wire	Engine oil or (1)	Engine oil or (1)
Clutch wire	Engine oil or (1)	Engine oil or (1)
Speedometer wire	-	Grease (2)
Driving chain	Lubricate every 1 000 km (3)	
Brake cam shaft	-	Grease (2)
Accelerator grip	-	Grease (2)
Brake wire	Engine oil or (1)	Engine oil or (1)
Speedometer gear case and wheel bearing	-	Grease (2)
Brake pedal	Grease or Engine oil (1) (2)	Grease or Engine oil (1) (2)
Steering gear	Lubricate every two years or every 7 000 km	

Reference IPONE: (1) Spray Cables / (2) Multifunction grease / (3) Spray chain

REMOVING THE SIDE PANELS

For some maintenance operations, one or both the side panels need to be removed.

To remove the left- and right-hand side panels, operate as follows:

- Detach the panel (1) from the bottom attachment by pulling it outwards.

SPARK PLUG CHECK

Spark plug gap must be 0.6 ~ 0.8 mm.

A greater gap may cause starting difficulties and coil overload, a shorter gap may cause problems with acceleration, idling and low speed performance.

To reach the spark plug, carry out the following removal operations:

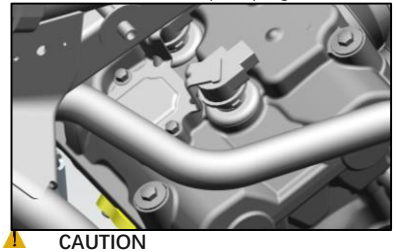
-Remove the rider seat;

-Overturn the tank;

-Remove the ignition coil bracket;

-Lift the ignition coil.

-Clean the base of the spark plug and then remove it.



CAUTION

As this procedure is quite complex, it is advised to contact your dealer *for spark plug check/replacement.*

IT is very useful to examine the status of the spark plug just after it has been removed from its seat, since the deposits and the colour of the insulator provide useful information.

Correct heat rating:

The tip of the insulator should be dry and the colour should be light brown or grey.

High heat rating:

In this case, the insulator tip is dry and covered with dark deposits.

Low heat rating:

In this case, the spark plug has overheated and insulator tip is vitrified (glazed), white or grey in colour.

WARNING

If the spark plug is replaced, use one with the same rating.

WARNING

A spark plug with heat rating too high can cause pre-ignition and possible engine damage A spark plug with heat rating too low can cause a significant increase in carbon deposits.

CAUTION

Carefully change the spark plug, if necessary, using one having the same rating.

Before refitting the plug, thoroughly clean the electrodes and the insulator using a metal brush. Smear graphite grease on spark plug thread, manually screw it fully home, then tighten it to a torque of 10~12 Nm. Loosen the spark plug then tighten it again to 10~12 Nm.

Spark plugs with cracked insulators or corroded electrodes should be replaced.

OIL LEVEL CHECK

The engine oil level should be checked before each use. In addition, the oil and the oil filter must be changed and replaced at the intervals specified in the periodic maintenance and lubrication chart.

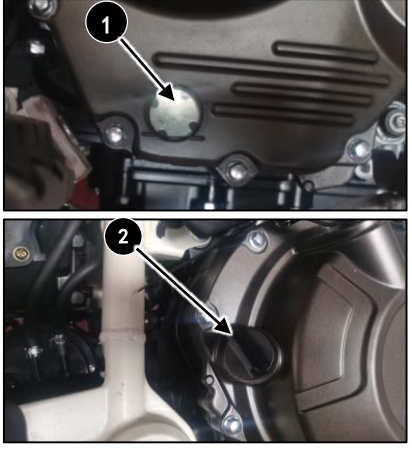
Keeping the motorbike level and in a vertical position, check the oil level through the inspection (1) window on the right crankcase. Make sure the level is in between the MIN and MAX notches.

To top up, remove the filler cap (2).

Note*: *Carry out this operation with the engine hot.*

WARNING

Be careful not to touch hot engine oil.

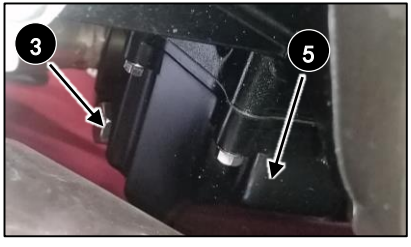


⚠ CAUTION

The insufficiency or poor quality of the engine oil will lead to the premature wear-out of the engine.

Substitution of the engine oil

1) Start the engine. Warm it up for several minutes, and then turn it off.
2) Place an oil pan (5) under the engine to collect the used oil.
3) Remove the engine oil drain bolt (3) to drain the oil from the crank-case.
4) Remove the oil filter cap with an oil filter wrench.

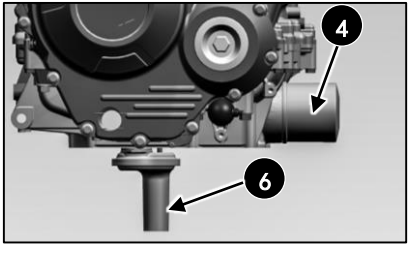


5) Clean the filter and then install. Fill with 2.3L new engine oil. Start the engine for idle running with 2-3 minutes.
6) Check whether or not the engine oil level is among the lowest and highest level of the oil ruler.

Cleaning the oil pan and the primary filter

Remove the oil filter cap with an oil filter (4) wrench. Cleaning the installation surface, Install the new oil filter with an oil filter wrench, and then tighten it to the specified torque with a torque wrench.

Remove the oil pan (5) and the primary filter (6), Cleaning the primary filter (6), Install the oil primary filter (6) and the oil pan (5).



⚠ CAUTION

Contact your genuine motorcycles dealer for service.

Check the primary filter and the oil seal for damage, replace it with a new one as required.

Replace it with a new one seal washer.

VALVE CLEARANCE

Do not adjust valve clearance without consulting your genuine dealer.

valve clearance: Intake: 0.10-0.15mm Exhaust: 0.20-0.25mm

If you need to adjust, please follow the steps below:

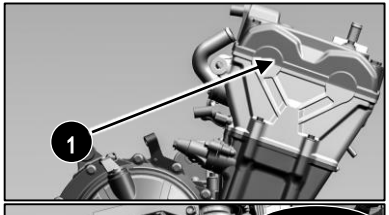
1) Remove the cylinder head cover (1).

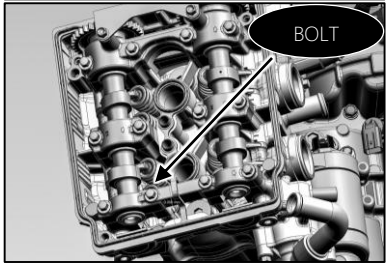
2) Check the valve clearance. If the valve clearance is not within our company's standard range, adjust the valve clearance.

3) The valve clearance can be adjusted by removing the rocker arm shaft.

CAUTION

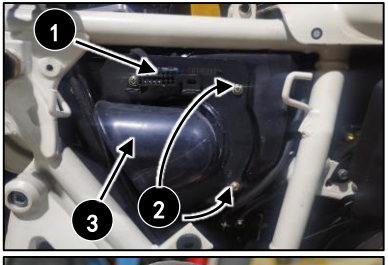
Contact your Genuine Motorcycles dealer for service.

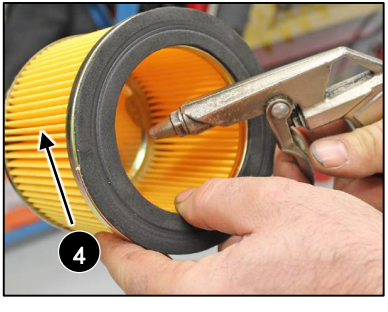




AIR FILTER CHECK AND/OR REPLACEMENT

- Remove the right panel as described in the relevant paragraph.
- Release the OBD (1).
- Unscrew the screws (2) and remove the filter cover (3).
- Remove the filter (4) and check its condition; to clean it, blow it with compressed air from outside to inside; if it is very dirty, replace it.
- Reassemble all parts, proceeding in reverse order.





IDLE SPEED

CAUTION

Do not adjust idle speed without consulting your genuine dealer.

The idle speed is controlled by the ECU. The idle speed has been properly adjusted upon delivery. Do not adjust the idle speed. In the event the idle speed is unsteady, zero or too high, bring the vehicle to a qualified genuine dealer to determine the possible causes via troubleshooting the EMS system.

THROTTLE CONTROL CABLE ADJUSTMENT

To check proper adjustment of the throttle control transmission, operate as follows:

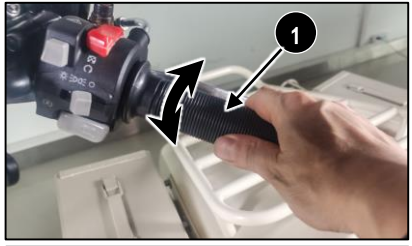
-Turn throttle twistgrip (1) and make sure it has a clearance of approx. 2 - 6mm;

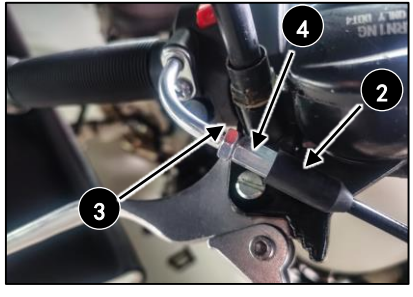
-Should this not be the case, move the two protective rubber elements (2);

-Loosen the lock nuts (3) and act on the adjuster (4) to adjust the clearance;

-Tighten back the lock nuts (3);

-Reassemble all parts, proceeding in reverse order.





WARNING

Using the motorcycle with a damaged throttle control cable considerably compromises safe riding.

WARNING

Exhaust gas contains poisonous carbon monoxide never run the engine in-doors.

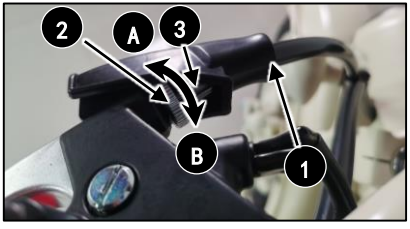
CLUTCH ADJUSTMENT

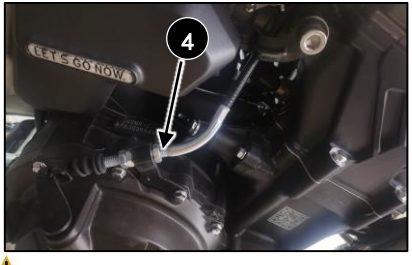
Normally, the clutch is adjusted by only stretching the cable using the adjusting unit positioned on the handlebar. As a rule, it is sufficient to operate on the handlebar adjuster to restore the clearance due to the flexible transmission stretch.

The control lever must always have a free play (about 1-3 mm) before starting to disengage the clutch.

To adjust this play, loosen the lock nut (2) and operate on the adjuster (3) after removing the rubber cap (1); turn the adjuster in the direction indicated by arrow A to reduce play (C), turn it in the direction indicated by arrow B to increase play.

The adjustment can also be carried out through the tensioner (4) on the right side of the frame. If the clutch slips under load or drags in disengaged position after play has been adjusted, it must be taken apart for inspection. For this operation, please contact a Dealer.





CAUTION

Always ensure the clutch operating handle has the proper free- play! A loose clutch cable will prevent the clutch from disengaging. A tight clutch cable will cause poor clutch engagement and damage the clutch

BRAKE SYSTEM

The front brake and the rear brake is hydraulic disk type, Inspect the brake system prior to each ride. Properly functioning brake systems are vitally important to your personal safety. Check for fluid leaks, fluid level, brake shoe wear, and rotor and drum condition. Also check lever free play frequently.

1) BRAKE HANDLE IDLING

Pull brake handle lightly till to when you feel the tension, then check the free stroke, if brake handle has no free stroke or too loose, that is the sign of brake system fault.

free stroke of brake handle ：10 – 20mm

2) COMBINED BRAKING PEDAL POSITION ADJUSTMENT

The position of the rear brake pedal with respect to the footrest may be adjusted according to the individual needs.

To adjust, proceed as follows.

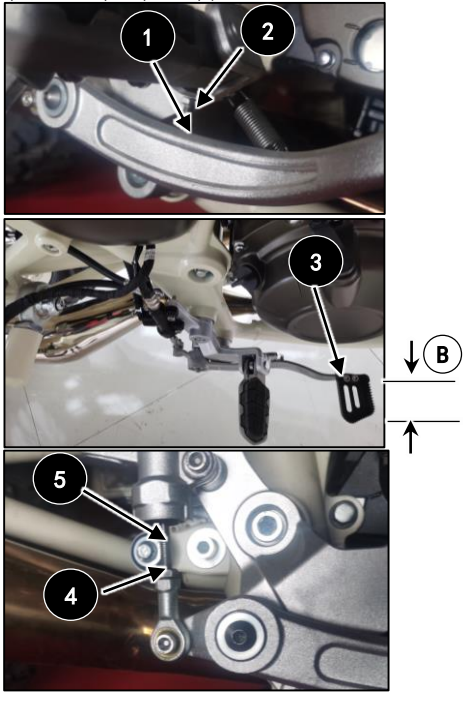
- Loosen the nut (1);
- Act on the screw (2) to adjust the pedal position (3).

Once this adjustment is completed, adjust the free play of the pedal as follows.

The combined braking pedal (3) must have a free play (B) of 3 mm before the braking action starts.

Should this not happen, adjust as follows:

- Loosen nut (4);
- Operate the pump rod (5) to increase or decrease the free play;



WARNING

In the absence of the required free play, the brake pads will rapidly wear, resulting in the risk of TOTAL BRAKE INEFFICIENCY or rear brake lock.

FRONT BRAKE FLUID LEVEL CHECK

The fluid level in the pump reservoir may never drop below the "LOWER" notch visible on the sight glass (1) on the of the pump body.

A decrease of the fluid level will let air into the system, hence an extension of the lever stroke.

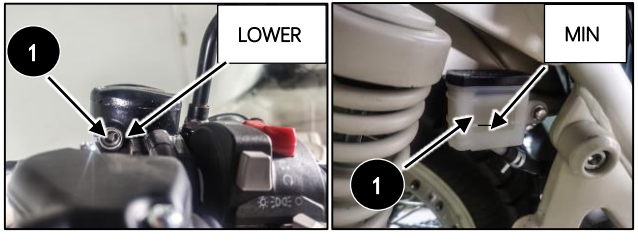
REAR BRAKE FLUID LEVEL CHECK

The level of fluid in the pump reservoir must never be below the minimum value (1) indicated on the see-through reservoir. (1).

A decrease of the fluid level will let air into the system, hence an extension of the lever stroke.

WARNING

If the brake lever feels too "soft" when pulled, there may be air in the brake lines or the brake may be defective. Since it is dangerous to ride the motor-cycle under such conditions, have the brake system immediately checked by the Dealer.



CAUTION

Do not spill brake fluid onto any painted surface or light lens.

CAUTION

Do not mix two brands of fluid.

Completely change the brake fluid in the brake system if you wish to switch to another fluid brand.

CAUTION

Brake fluid may cause pungency.

Avoid contact with skin or eyes. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed.

BRAKE PAD WEAR CHECK

Check the wear status of front brake pads (1) and rear brake pads (2)、sidecar brake pads (3).

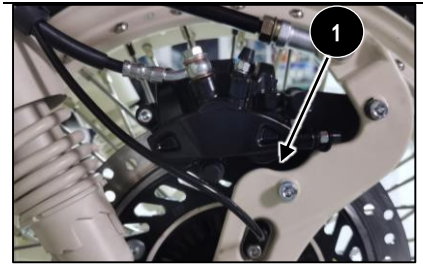
-The pads have a groove that indicates wear; when the groove has almost disappeared, the pair of brake pads has to be replaced.

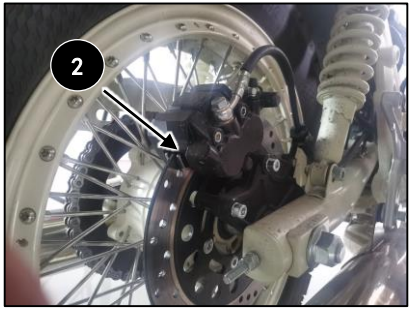
CAUTION

Contact your dealer to have the brake pads replaced.

WARNING

After the brake pads have been replaced, ride carefully and brake gradually in order to allow the brake pads to properly run in/couple to the relative discs.





PAD CLEANING

Make sure that there are no traces of brake fluid or oil on the pads or discs

Use alcohol to clean the pads or discs from any traces of fluid or oil.

If the pads cannot be cleaned properly, replace them.

PAD INSTALLATION

Refit the pads following the removal procedure in reverse order.

WARNING

Do not ride the motorcycle until the brake lever or pedal is fully effective. "Pump" the brake lever or pedal until the pads are against the discs. The brake will not operate when the lever or pedal is activated for the first time.

DISC CLEANING

A poor braking efficiency can also be caused by the presence of oil on the disc. Oil or grease on the disc can be removed using a high flammability index solvent such as acetone or similar products

BRAKE DISC WEAR

Measure the thickness of each disc in the point of maximum wear. Replace the disc if it wears exceeds the limit provided.

DISC	STANDARD	SERVICE LIMIT
FRONT	4 mm	3.5 mm
REAR	5 mm	4.5 mm
SIDECAR	4 mm	3.5 mm

TYRES

Check the condition of the tyres, they should not have any cracks, abrasions, etc; also check the state of wear of the tread by means of the indicators on the tyre.

Check the tyre pressure which should be as indicated under TECHNICAL DATA.

WARNING

The front and rear tyre must be of the same brand and model. Using different types of tyre for the front and rear will compromise motorcycle stability and handling.

Note*: *Tyres age even if they do not visibly appear worn; cracks in the sides or deformation of the tyre body are a sign of ageing. Have the tyres checked by a tyre dealer before using the motorcycle.*

WARNING

Using the motorcycle with the tyres inflated to an incorrect pressure or with worn or deteriorated tyres may cause serious injury or death if losing control of the motorcycle.

CHAIN ADJUSTMENT

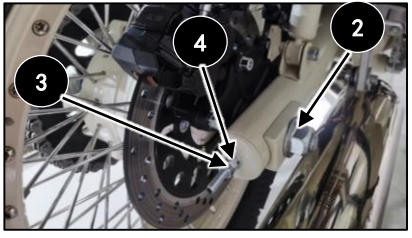
Chain should be checked, adjusted and lubricated as per the Maintenance Chart to ensure safety and prevent excessive wear. If the chain becomes badly worn or is poorly adjusted (i.e., if it is too loose or too taut), it could escape from sprocket or break.

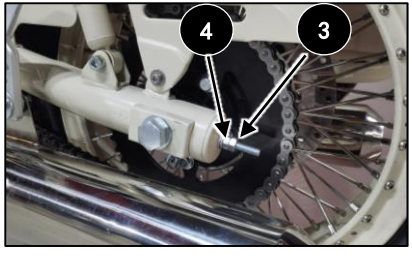
Make sure that the chain features a slack (A) measuring approximately 15-20 mm, as shown in the nameplate (1) on swing arm.

If this is not the case, proceed as follows:

- On the right side, loosen the nut (2) securing the wheel shaft using a socket wrench;
- Loosen the lock nuts (3) on both the chain tensioners and operate on the nut (4) to obtain the correct tension value.
- Lock the nuts (3)

Note*: *Adjust both chain tensioners in the same way.*





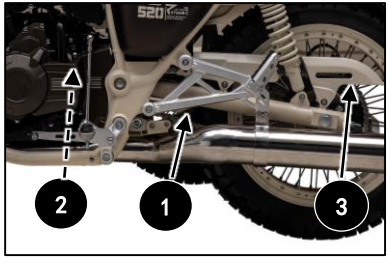
- Adjust the lock nuts (3) to a tightening torque of 22Nm and the wheel shaft nut (2), to a tightening torque of 90-110 Nm.

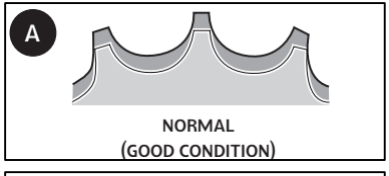
After adjustment, always check wheel alignment and that the arrow is 20 mm.

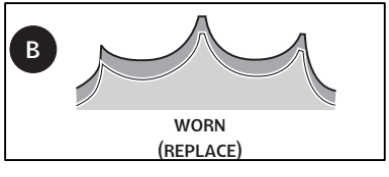
CHAIN/FRONT SPROCKET/REAR SPROCKET WEAR CHECK

- Check the condition of the chain (1); there may not be any damaged rollers, loosened pins or missing O-rings.

- Check the condition of the front (2) and rear (3) sprocket teeth; if the teeth are as shown in Figure A, they are in good condition, while if they are as shown in Figure B, they are to be replaced.







DISASSEMBLING AND INSTALLATION OF FRONT WHEEL

To remove the front wheel

Position the motorcycle in such a way that the front wheel is lifted from the ground.

Remove the nut (1);

Unscrew the front wheel spindle (3) and take it out.

Take out the brake caliper and the bracket (2).

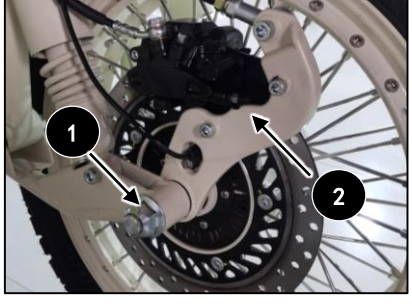
Take out the front wheel. Lift the front fork as high as possible while taking out the front wheel, to avoid damaging the front mudguard.

To installation of the front wheel

The installation of the front wheel is in the reverse order of removal.

While installing, fasten the front wheel spindle to the required torque of 100-120N.m

Note*: *After reassembly, pull the brake control lever until the pads are against the brake disc.*



DISASSEMBLING AND INSTALLATION OF REAR WHEEL

Unscrew the nut (1) of the wheel shaft (3) and extract it. It is not necessary to loosen the chain tensioners (2); in this way, the chain tension will remain unchanged after reassembly.

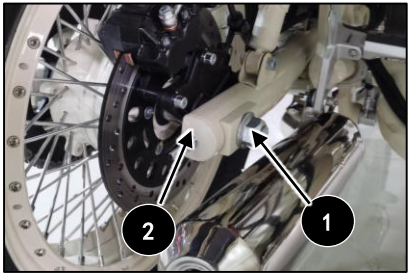
Extract the complete wheel, paying attention to the bush at the hub sides.

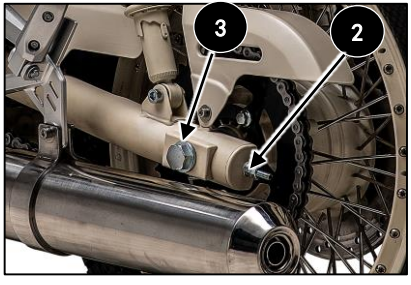
To reassemble, reverse the above procedure remembering to insert the brake disc into the caliper. (Adjust the chain tensioners lock nuts to a tightening torque of 22Nm and the wheel shaft nut (1) to a tightening torque of 100-120 N.m.).

Note*: *Do not operate the rear brake pedal when he wheel has been removed; this causes the caliper pistons to move forwards.*

After removal, lay down the wheel with brake disc acing up.

After reassembling the wheel, depress the brake pedal until the pads are against the disc.





DISASSEMBLING AND INSTALLATION OF SIDE CAR WHEEL

Position the motorcycle in such a way that the sidecar wheel is lifted from the ground.

Remove the side wheel rim decorative cover;

Remove the nut;

Take out the sidecar wheel. Lift the side car frame as high as possible while taking out the sidecar wheel, to avoid damaging the front mudguard.

To reassemble, reverse the above procedure remembering to insert the brake disc into the caliper. (Tightening torque of nut 100-120 N.m.).

SPOKE

Check the wheel for loosened or broken spokes.

Screw the loosened spokes to the specified torque with a spoke nut fastening tool. The spoke nut torque: 2.5-3.5N.m.

If any spoke is broken or cracked, replace it as soon as possible.

Note*: *Please check the spoke tension after driving 1000Km. If there is any problem, adjust it immediately. Check the spoke tension every 3000Km thereafter.*

SHOCK ABSORBER ADJUSTMENT

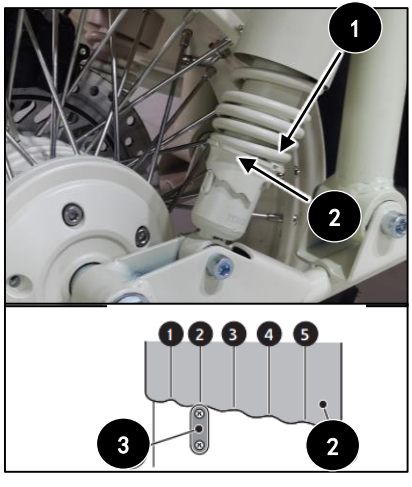
The shock absorber spring and pressure can be adjusted. The adjustment steps are as follows:

Use a suitable wrench to loosen the ring nut (1) and adjust the adjuster with (2).

——Soft, adjust the adjuster toward "1".

——If it is harder, adjust the adjuster toward "5".

The standard adjustment is in the "2" position.



COOLING SYSTEM MAINTENANCE

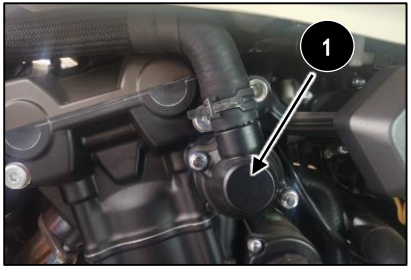
The water pump (1) in the engine forces the coolant to circulate.

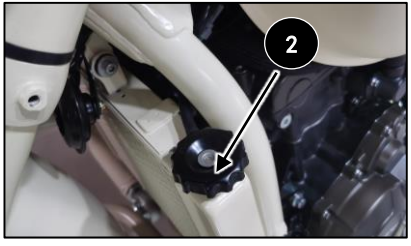
The pressure in the cooling system due to temperature rise is regulated by the valve in the radiator cap (2). Through thermal expansion, excess coolant will flow into the kettle (3). When the temperature decreases, some of the coolant will be sucked back into the cooling system, thus cooling. fluid reaches the specified temperature without causing functional failure.

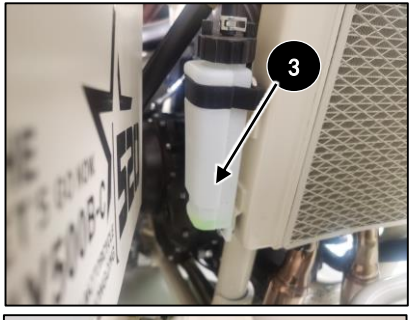
Cooling is achieved by the wind generated during driving and the radiator fan (4) controlled by the water temperature switch.

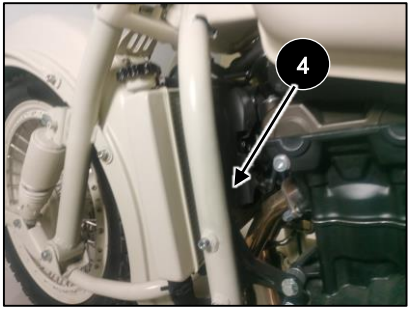
The lower the speed, the lower the cooling effect. Dirty and dirty heat sinks also reduce the cooling effect.

When the temperature is greater than 108 degrees, the instrument water temperature warning light will alarm, and when the temperature is below 103 degrees, the alarm will be released.



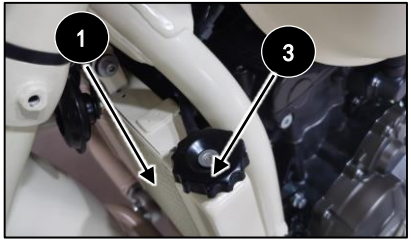


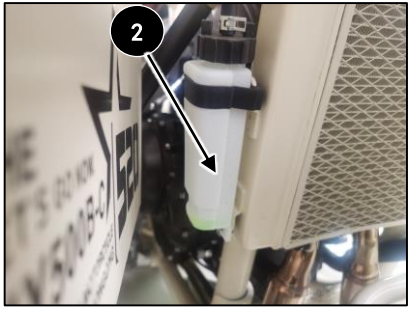




COOLANT CHECK

When the engine is cooling (the motorcycle is upright), check the fluid level in the radiator (1) on the right side. The coolant level should be within the upper and lower scale lines of the kettle (2), by adding to the scale. The radiator cover (3) is in the locked position, the first Is used to relieve the previous pressure in the cooling system.





CAUTION

When the engine is hot and the water temperature reaches above 40 degrees, do not open the radiator cap to prevent the coolant from spraying out and causing burns.

Coolant is toxic and harmful to health. Do not contact with skin, eyes and clothing; if it comes into contact with eyes or skin, rinse immediately with plenty of water and consult a doctor.

Keep coolant out of the reach of children.

BATTERY

The sealed battery does not require any maintenance. If electrolyte leaks, or other failure of the electrical system is detected, contact the your Dealer.

If the vehicle remains unused for long periods, it is recommended to disconnect the battery from the electrical system and store it in a dry place.

-After an intensive use of the battery, it is advisable to carry out a standard slow charging cycle.

-Quick charging is advised only in situations of extreme necessity since the life of lead elements is drastically reduced by such cycle.

BATTERY CHARGER

To gain access to the battery:

-Remove the left-hand side panel.

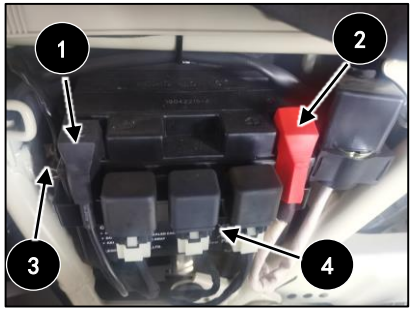
-First remove the BLACK negative cable (1) and then the RED positive cable (2) (when refitting, first connect the RED positive cable and then the BLACK negative cable).

-Undo the two screws (3) that fasten the battery support bracket (4).

-Remove the battery from its housing.

Check, using a voltmeter, that battery voltage is not less than 12.5 V.

If it is not so, the battery needs to be charged



Using a battery charger with a constant voltage, first connect the RED positive cable to the battery positive terminal then the BLACK negative cable to the battery negative terminal.

The voltage reaches a constant value only after a few hours, therefore it is recommended NOT to measure it immediately after having charged or discharged the battery.

Always check the battery charge before reinstalling it on the motorcycle.

The battery should be kept clean and the terminals coated with grease

WARNING

The battery contains sulphuric acid Avoid contact with skin, eyes or clothing.

Antidote:

In case of contact with the acid: Flush with water.

In case of acid ingestion: Drink large quantities of water or milk. After milk,

take magnesia, beaten eggs or vegetable oil. Seek medical advice immediately.

In case of contact with the eyes: Flush with water for no less than 15 minutes and seek medical attention

WARNING

If the battery is unused, it has to be in any case recharged with slow cycle at least every 3 weeks.

WARNING

Batteries produce explosive gas, ventilate when charging or using the battery indoors. When using a battery charger, always connect the battery to the charger before turning it on. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

FUSES

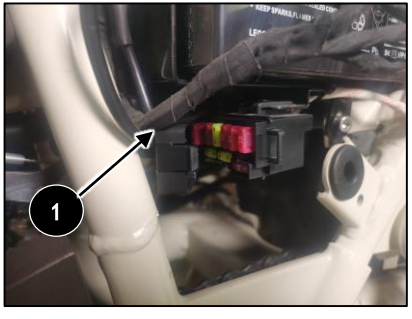
Fuse malfunction could cause problems for the motorcycle.

To access the fuse box, remove the left-hand side panel. and open the protective door (1).

To prevent short circuits, turn the On/Off switch to OFF, BEFORE working on the fuses.

CAUTION

Do not use fuses with a different capacity from the original one.



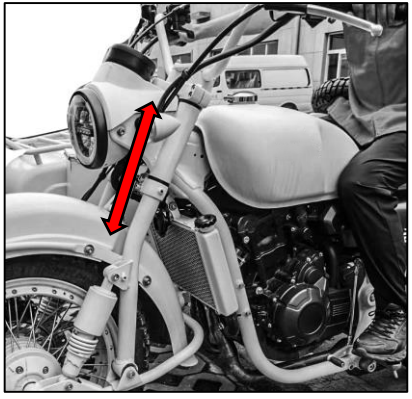
FORK FUNCTIONALITY CHECK

To check proper operation of front fork, operate as follows:

-Get on the motorcycle;

-Pull the front brake lever and forcefully push the handlebar downwards a few times to check that the fork extends and compresses correctly;

-If you notice oil leaks and jamming, have it checked by your dealer;



STEERING BEARING CHECK

Position the motorcycle in such a way that the front wheel is lifted from the ground.

-Stand in front of the motorcycle;

-Firmly hold the lower part of both fork legs and move the fork forward and backward checking that there is no play.

WARNING

If you feel any play during the movement, have proper tightening of the steering beatings checked by your *dealer.*

BOLTS, NUTS AND FASTENERS

Bolts, nuts and fasteners should be checked periodically and tightened to torque specifications outlined later in this manual. Check all cotter pins, straps, ties, locks, etc

CLEANING THE MOTORCYCLE

To keep the body and paint in good condition, wash your motorcycle often. The best way to clean your motorcycle is to use warm water combined with detergent to remove the dirt.

Attention: Do not use high-pressure water to wash the motorcycle. Do not point water spray directly at electrical parts, plugs, cables, bearings, ECU, etc. High pressure water sources will cause water to enter into secure parts leading to functional failure and premature aging.

-Use ordinary detergent brands to clean your motorcycle. For the most difficult areas use a brush to clean.

-Plug the muffler before cleaning, to prevent water from getting inside the muffler.

-After washing, dry off the motorcycle. Ride for a distance until the engine has reached a working temperature; meanwhile apply the brake to evaporate the water left inside.

-Since the motorcycle cools down, please grease all the sliding parts, bearings and oil plug with lubricating oil.

-Protect your electric system to avoid any foreign materials entering.

When washing the motorcycle, please remove the air cleaner cover and filter and use foam or cotton to protect the intake channel.

When washing, block the muffler to avoid water getting into the muffler and engine.

MAINTENANCE PRIOR TO STORAGE

If the motorcycle will be stored for a long period of time, pay attention to the prevention of moisture, sunshine and rain in order to protect it from unnecessary damage. Special check- ups should be carried out on those important parts and sub- assemblies before storage.

1) Change the oil

2) Grease the chain.

3) Remove the battery and place in a cool and well- ventilated area. The battery should be charged at least once a month to prevent it from becoming discharged and malfunction.

4) Clean the motorcycle and apply anti-corrosion to parts vulnerable to rust.

5) Drain the fuel if possible, use fuel stabilizer if draining fuel tank is not possible.

6) Remove the ignition key.

7) Cover the motorcycle.

RETURN TO SERVICE

1) Remove the cover and clean the motorcycle. Change the oil if the vehicle has not been used for over 4 months.

2) Charge the battery and re-install.

3) Fill the tank with fresh fuel.

4) Prior to driving, test the motorcycle at a low speed and in a safe place.

SPECIAL TORQUE VALUES

Item	Thread diameter (mm)	Torque value (ft-lb)
Brake caliper bolt	M8	25 ~ 35
Engine hanging bolt	M8	25 ~ 35
	M10	40 ~ 50
Front fork nut	M22	60 ~ 70
	M25	90 ~ 110
Front shock absorber	M10	40 ~ 50
Rear shock absorber	M10	40 ~ 50
Side car frame to adjust tube	M10	40 ~ 50
Joint frame tube	M10	40 ~ 50
Basket assembly	M10	40 ~ 50
Side car shock absorber	M12	60 ~ 70
Cradle front fork、	M12	60 ~ 70
After adjusting rod	M12	60 ~ 70
Rear fork shaft nut	M14	100~120
Wheel axle nut；Side car turning arm nut	M20	100~120
Regulating rod connections pedestal	M12	60 ~ 70
	M16	70 ~ 90

Standard Torque Values

Name and dimensions	Torque value (ft-lb)
6mm bolt & nut	8-15
8mm bolt & nut	20-30
10mm bolt & nut	30-40
12mm bolt & nut	40-50
14mm bolt & nut	60-70
16mm bolt & nut	60-70
20mm bolt & nut	60-80
22-26mm bolt & nut	60-90

VI ENGINE MANAGEMENT SYSTEM

EFI System Composition

The Engine Management System (EMS) is comprised of the following components: Electronic control unit (ECU), throttle body, Idle speed control valve, fuel pump, fuel injector, ignition coil, O2 sensor, throttle position sensor, T-MAP sensor, cylinder head temperature sensor, etc.

The EMS uses sensors to collect parameters such as air flow, temperature of inlet air, cylinder head temperature, atmospheric pressure and the operational state of engine (rpm, load, acceleration and deceleration). All parameters are transferred to the ECU via electronic signal. The ECU outputs control signals after the input signals have been processed. Based on the air flow and engine speed, the fuel injector and ignition coil are controlled by ECU to get the optimal combustible mixture of fuel and air and Ignition timing which meet all engine operating conditions.

Through the engine and actuator components on the vehicle (ignition coil, fuel injector, idle speed control valve and so on), the fuel and spark are precisely controlled and corrected with closed loop.

1. Sensors:

- Intake air pressure sensor (load information) intake air temperature and pressure sensors
- Throttle position sensor (load information, load range information, acceleration / deceleration information)
- Engine speed sensor (speed information, crankshaft position)
- Intake air temperature sensor (air density information)
- Oxygen sensor (information of the excess air coefficient is more than 1 or less than 1)

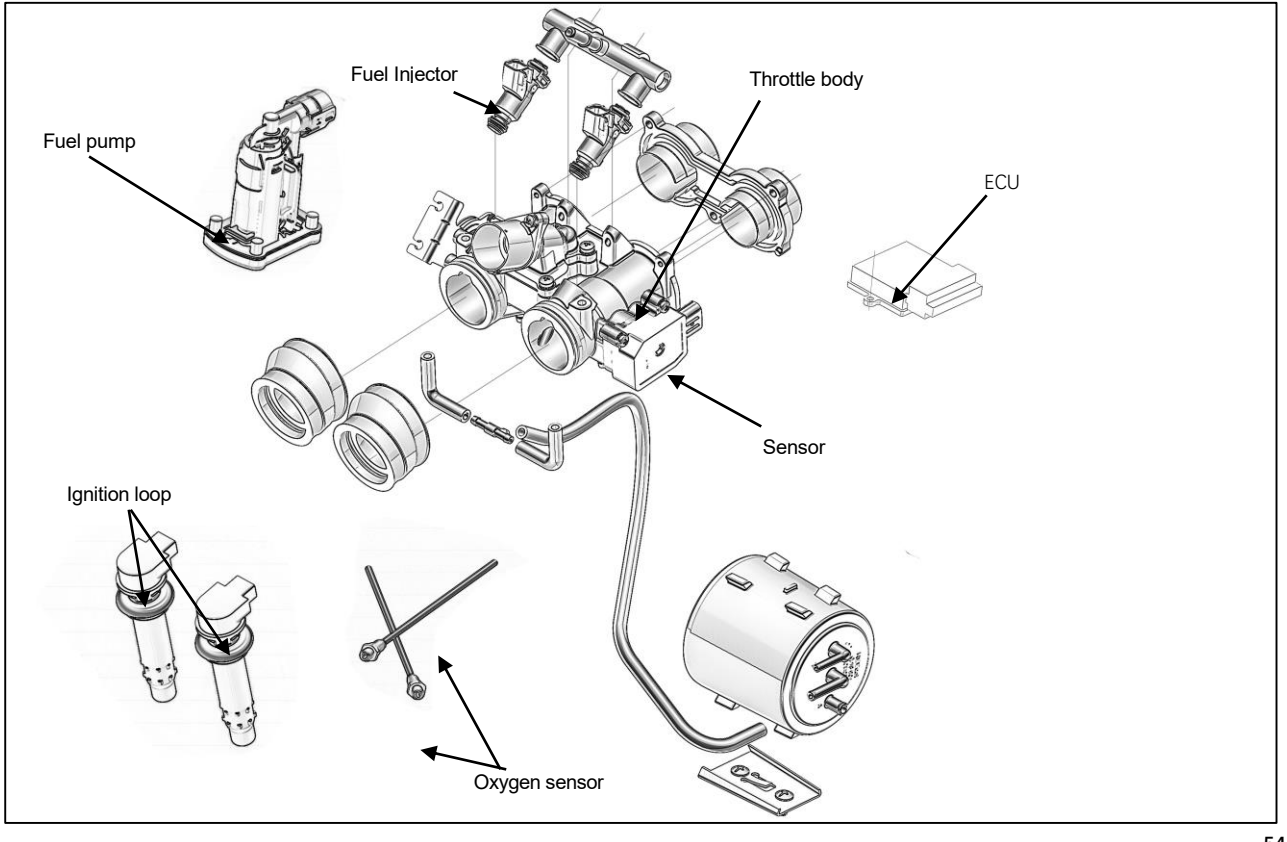
2. Actuators:

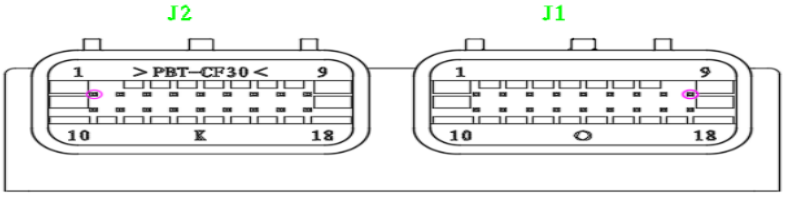
- Fuel pump relay,
- Fuel pump
- Fuel injector (fuel supply)
- Ignition coil
- High-tension cord
- Spark plug (ignition)
- Throttle, Idle speed control valve (air intake)

3. Electronic control unit

- ECU

Major Components of EFI system





Item	Def.Function
J1-01	**ISM A+** (Stepper Motor A High)
J1-02	**CCP** (charcoal canister purge)
J1-03	**MIL** (Malfunction Indicator Lamp)
J1-04	**O2BHTR** (O2B Heater)
J1-05	**O2B** (O2B Sensor)
J1-06	**TACHOMETER** (Tachometer)
J1-07	**CANLO** (CAN Low)
J1-08	**CANHI** (CAN High)
J1-09	**GND** (Power Ground)
J1-10	**IGNCOILB** (IGN Coil B)
J1-11	**ISM A-** (Stepper Motor A Low)
J1-12	**ISM B+** (Stepper Motor B High)
J1-13	**ISM B-** (Stepper Motor B Low)
J1-14	**RollOver** (Rollover Sensor)
J1-15	**VSSS** (Vehicle Speed Sensor)
J1-16	**RGSW** (Reverse Gear Switch)
J1-17	**Lamda** (Lamda signal Input)
J1-18	**PNSW** (Park Neutral Switch)

Item	Def.Function
J2-01	**IGNCOILA** (IGN Coil A)
J2-02	**GND** (POWER GND)
J2-03	**Kline** (K Line)
J2-04	**CRANKHIFI** (23X Crank Sensor High)
J2-05	**INJA** (Injector A)
J2-06	**INJB** (Injector B)
J2-07	**O2AHTR** (O2A Heater)
J2-08	**IAT** (Intake Air Temperature Sensor)
J2-09	**Fuel Pump** (Fuel Pump Relay /Output)
J2-10	**SGND** (Sensor GND/5V Reference GND)
J2-11	**MAP** (Manifold Air Pressure Sensor)
J2-12	**TPS** (Throttle Position Sensor)
J2-13	**CRANKLOFI** (23X Crank Sensor Low)
J2-14	**CLT** (Engine Temperature Sensor)
J2-15	**IGN** (Switched Ignition)
J2-16	**+5VCCP** (5V Sensor Supply)
J2-17	**O2A** (O2A Sensor)
J2-18	**VBATT** (Battery Positive Pole)

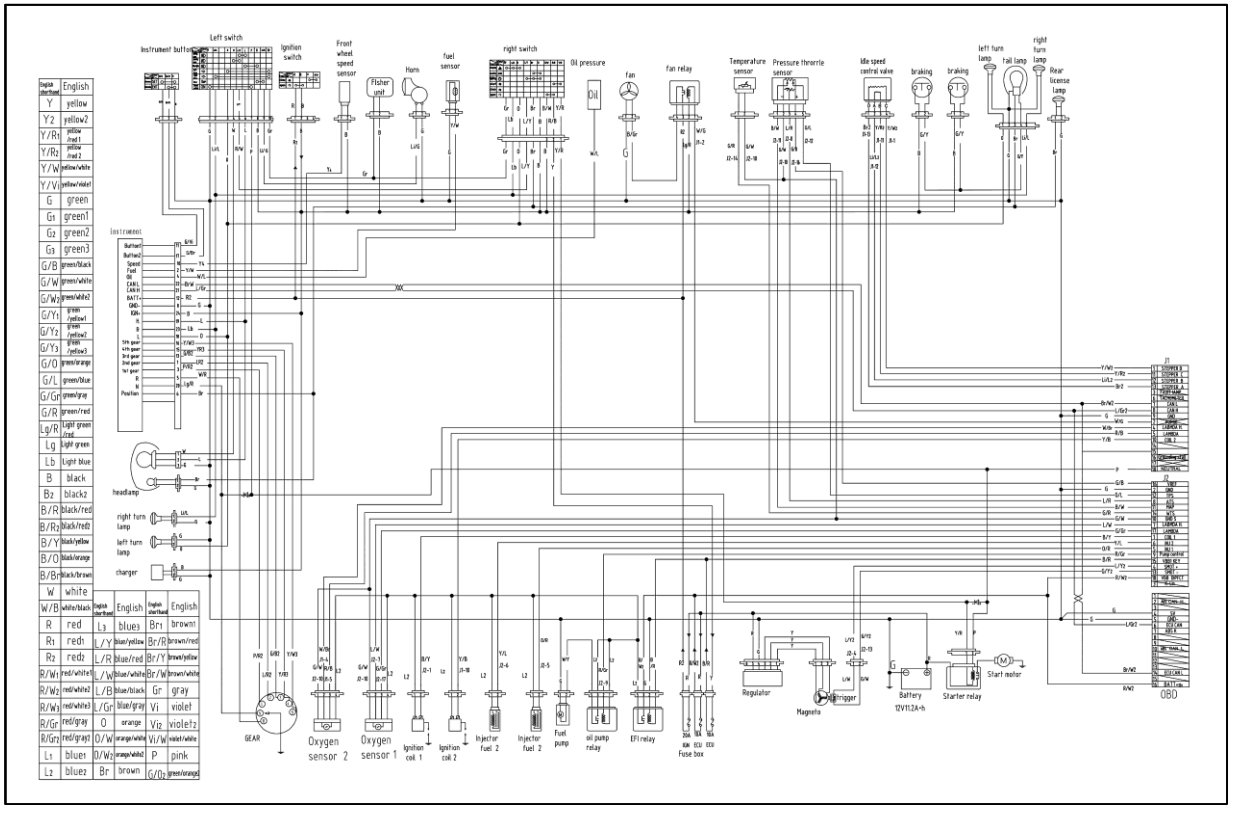
EMS failure diagnosis code list

S. No	Component/System	Fault Type	Fault Code	Monitor Strategy Description
1	Engine coolant temperature sensor	circuit Hi/Open circuit	P 0118	Circuit check
		circuit Lo	P 0117	Circuit check
		Performance	P 0116	Circuit check
		Out of Range	P 1116	Circuit check
2	Crankshaft position sensor	Device not present	P 0335	Circuit check
3	Ignition Coil "A" Primary Control Circuit	circuit Hi	P 2301	Circuit check
		circuit Lo/Open circuit	P 2300	Circuit check
4	Ignition Coil "B" Primary Control Circuit	circuit Hi	P 2304	Circuit check
		circuit Lo/Open circuit	P 2303	Circuit check
5	Throttle position sensor	Short Hi	P 0123	Circuit check
		Short Lo/Open	P 0122	Circuit check
6	Fuel Pump	circuit Hi	P 0232	Circuit check
		circuit Lo/Open circuit	P 0231	Circuit check
7	ECM	Memory Checksum	P 0601	FileRom Checksum
8	Cylinder 1 Fuel Injector	circuit Hi	P 0262	Circuit check
		circuit Lo/Open circuit	P 0261	Circuit check
9	Cylinder 2 Fuel Injector	circuit Hi	P 0265	Circuit check
		circuit Lo/Open circuit	P 0264	Circuit check
10	Manifold Absolute Pressure Sensor	circuit Hi	P 0108	Circuit check

		circuit Lo/Open circuit	P 0107	Circuit check
		Performance	P 3106	Circuit check
		Signal Stuck	P 0105	Circuit check
11	Intake Air Temperature Sensor	circuit Hi/Open circuit	P 0113	Circuit check
		circuit Lo	P 0112	Circuit check
		Signal Stuck	P 0111	Circuit check
		Performance	P 0114	Circuit check
12	O2 sensor 1 cylinder	circuit Hi	P 0132	Circuit check
		circuit Lo/Open circuit	P 0131	Circuit check
		Out of Range	P 2195	Circuit check
		Performance	P 014D	Circuit check
		Performance	P 014C	Circuit check
	O2 sensor heater 1 cylinder	circuit Hi	P 0031	Circuit check
		circuit Lo/Open circuit	P 0032	Circuit check
		performance	P 00D1	Circuit check
13	O2 sensor 2 cylinder	circuit Hi	P 0138	Circuit check
		circuit Lo/Open circuit	P 0137	Circuit check
		Out of Range	P 2197	Circuit check
		Performance	P 014F	Circuit check
		Performance	P 014E	Circuit check

	O2 sensor Heater 2 cylinder	circuit Hi	P 0037	Circuit check
		circuit Lo/Open circuit	P 0038	Circuit check
		performance	P 00D3	Circuit check
14	Misfire detection	performance	P 0300	Circuit check
		performance	P 0301	Circuit check
		performance	P 0302	Circuit check
15	Idle air control system	performance	P 0505	Circuit check

VII、 ELECTRICAL SYSTEM DIAGRAM



English shortland	English
Y	yellow
Y2	yellow2
Y/R1	yellow /red1
Y/R2	yellow /red 2
Y/W	yellow/white
Y/V	yellow/violet
G	green
G1	green1
G2	green2
G3	green3
G/B	green/black
G/W	green/white
G/W2	green/white2
G/Y1	green /yellow1
G/Y2	green /yellow2
G/Y3	green /yellow3
G/O	green/orange
G/L	green/blue
G/Gr	green/gray
G/R	green/red
Lg/R	Light green /red
Lg	Light green
Lb	Light blue
B	black
B2	black2
B/R	black/red
B/R2	black/red2
B/Y	black/yellow
B/O	black/orange
B/Br	black/brown
W	white
W/B	white/black
R	red
R1	red1
R2	red2
R/W1	red/white1
R/W2	red/white2
R/W3	red/white3
R/Gr	red/gray
R/Gr2	red/gray2
L1	blue1
L2	blue2

English shortland	English
L3	blue3
L/Y	blue/yellow
L/R	blue/red
L/W	blue/white
L/B	blue/black
L/Gr	blue/gray
O	orange
O/W	orange/white
O/W2	orange/white2
Br	brown

English shortland	English
Br1	brown1
Br/R	brown/red
Br/Y	brown/yellow
Br/W	brown/white
Gr	gray
Vi	violet
Vi2	violet2
Vi/W	violet/white
P	pink
G/O2	green/orange