

SWM



Manual - Operation - Manuten
GRAN MILANO

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PRESENTATION

Welcome to the SWM motorcycling Family!

Your new SWM motorcycle is designed and manufactured to be the best in its category. 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 SWM Dealer has the original spare parts, the experience and all equipment necessary to provide a valuable service.

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.

This motorcycle is fitted with components designed and constructed using cutting-edge systems and technologies.

To ensure proper operation of the motorcycle, it is necessary to follow the maintenance and inspection table available in Appendix A.

IMPORTANT NOTICES

The **GRAN MILANO** model is a motorcycle for ROAD use, guaranteed and free of defects and covered by legal warranty provided that the STANDARD CONFIGURATION IS MAINTAINED and the maintenance table in Appendix A is complied with.



IMPORTANT

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

The cost for changing parts and for the labour necessary in order to comply with the maintenance plan is charged to the Customer.

**NOTE**


The warranty is NULL AND VOID if the motorcycle is rented.

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**

It gives useful information.

IMPORTANT NOTICE

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.

SAFETY GUIDELINES

- 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.
- 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 overrev 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.

Anti-lock braking system - ABS

- The ABS is an electromechanical braking-aid system:
- It prevents the wheels from locking during braking and helps keep the vehicle stable whenever the road surface is slippery, wet or dirty.
- When road-holding conditions are bad, the system can operate to extend the braking distance (e.g., whenever there is gravel on the road or the road surface is slippery). In any case, it provides the minimum distance required for that particular road surface.
- Nor should the fact that an ABS system is fitted provoke careless riding. The rider should always take every care on the road.
- Always use the recommended pads and tyres to ensure the ABS system's proper functionality.

Accessories & modifications

- We strongly advise that you do not add any accessories that were not specifically designed or approved for your motorcycle by SWM or make modifications to your motorcycle from its original design. Doing so can make it unsafe.
- Modifying your motorcycle may also void your warranty and make your motorcycle illegal to operate on public roads and highways. Before deciding to install accessories on your motorcycle be certain the modification is safe and legal.



WARNING

Improper accessories or modifications can cause a crash in which you can be seriously hurt or killed.

Follow all instructions in this owner's manual regarding accessories and modifications.

Loading

Carrying extra weight affects your motorcycle's handling, braking and stability.

- Always ride at a safe speed for the load you are carrying.
- Avoid carrying an excessive load and keep within specified load limits.
- The maximum load carried (rider, passenger and luggage) may not exceed 336 kg.
- The luggage weight may never exceed 10 kg.
- Tie all luggage securely, evenly balanced and close to the center of the motorcycle.
- Do not use straps, cords, etc. to fasten luggage.
- Do not place objects near the lights or the muffler.



WARNING

Overloading or improper loading can cause a crash and you can be seriously hurt or killed.

Follow all load limits and other loading guidelines in this manual.

MOTORCYCLE IDENTIFICATION DATA

The VIN number is stamped on the right side of the steering head. The VIN number also appears on a label affixed to the right, front frame downtube.

The engine serial number is stamped on a pad at the left side surface of the crankcase between the cylinders. The engine serial number consists of digits used in the VIN number.

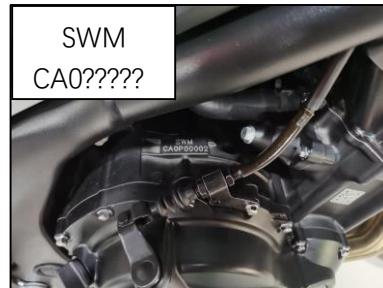
The full 17-digit serial or Vehicle Identification Number, is stamped on the steering tube (RH side)

Always quote **the number stamped on the frame** when ordering spare parts or requesting further details about your vehicle and note it on this booklet.

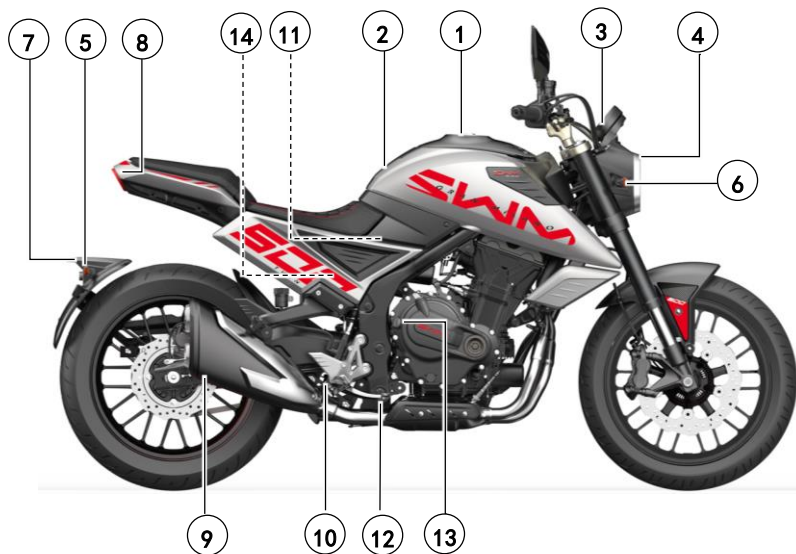
VIN



ENGINE NUMBER



CONTROL LOCATION



- 1) Fuel tank cap
- 2) Fuel tank
- 3) Instrument panel
- 4) Headlight
- 5) Plate lighting device
- 6) Front turning indicators
- 7) Rear turning indicators
- 8) Taillight
- 9) Exhaust muffler
- 10) Rear brake pump
- 11) Air filter assembly
- 12) Brake control pedal
- 13) Engine oil dipstick
- 14) ABS control unit.



- 1) Rider seat
- 2) Battery
- 3) Passenger seat
- 4) Front brake disc
- 5) Front brake caliper
- 6) Engine oil filter
- 7) Gear shift pedal
- 8) Throttle body
- 9) Side stand
- 10) Rear brake caliper



- 1) Left-hand rear-view mirror
- 2) Right-hand rear-view mirror
- 3) Instruments
- 4) Ignition/steering lock block
- 5) Clutch control lever

- 6) Left-hand switch
- 7) Right-hand switch
- 8) Throttle twist grip
- 9) Front brake control lever
- 10) Front brake fluid reservoir

TECHNICAL DATA

DIMENSION & WEIGHT

Overall length	2040mm
Overall width	790mm
Overall height	1130mm
Wheelbase	1410 mm
Saddle height	790 mm
Min. ground clearance	160 mm
Dry weight	176kg

VEHICLE BODY

Frame type	Tubular diamond
Front suspension device	spring & hydraulic composite central damping
Rear suspension device	adjustable spring & hydraulic composite central damping
Front Tire size	120/70 ZR17
Rear Tire size	160/60 ZR17
Front wheel pressure	250 kPa
Rear wheel pressure	290 kPa
Front brake	dual disc type, float disc Ø 296 mm. with hydraulic control and floating caliper
Rear brake	single disc type, fixed disc Ø 240mm with hydraulic control and floating caliper
Fuel grade	92#
Fuel tank capacity	15L

ENGINE

Mode	Inline twin cylinder, water-cooling 4 stroke
Bore	68mm
Stroke	68 mm
Displacement	246.83*2ml
Compression ratio	11.5:1
Max. power	35/8000kW/r/min
Max. torque	45/7000N·m/r/min
Valve clearance (cold)	IN: 0.10-0.15 ; EX: 0.20-0.25
Air filter	Oilpaper filter
Cooling method	Water-cooling
Lubrication method	Pressure / Splash
Engine, gearbox lubricating oil	MOTUL 10W/40
Oil replacement	2.3 l
Oil and oil filter replacement	2.5 l
Cooling circuit capacity	1.5 l
Engine oil filter element	Oilpaper filter

DRIVING SYSTEM

Clutch	Wet clutch multidisc
Clutch operating system	Manual mechanical
Variable speed gear	6-speed
constant mesh gear type	
Primary reduction ratio	1.500
1st gear	3.286
2nd gear	2.105
3rd gear	1,600
4th gear	1,300
5th gear	1,150
6th gear	1,043
Final reduction ratio	2.867

ELECTRICAL SYSTEM

Electric generator.....ermanent magnet DC magneto

Accumulator capacity.....12V/11.2Ah

Ignition type.....electronic, inductive discharge

Spark plug type....."NGK" CPR8EA-9

Spark plug gap.....0.6-0.8 mm

Ignition coil type.....electronic, inductive discharge

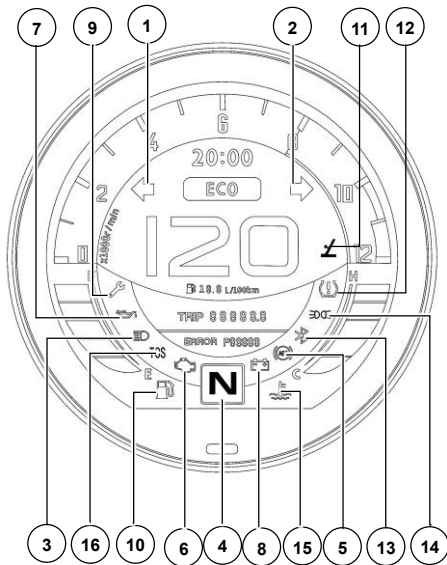
Fuel system.....Electronic injection feed

Front lamp.....12V/16W/16W

Turn lamp.....12V/1.7W


Stop / Rear-position lamp.....12V/3W

COMBINED INSTRUMENT



WARNING AND SIGNAL LIGHTS


- ① Left turn indicator light
- ② Right turn indicator light
- ③ High-beam light.
- ④ Gear indicator light
- ⑤ ABS warning light
- ⑥ Engine failure warning light.
- ⑦ Engine Oil-Pressure
- ⑧ Battery Charge indicator
- ⑨ Maintenance indicator
- ⑩ Fuel reserve warning light.
- ⑪ Side stand indicator light
- ⑫ Tire pressure warning light
- ⑬ Bluetooth Indicator Light
- ⑭ Parking light indicator
- ⑮ Temperature Indicator Light
- ⑯ TCS Indicator Light

Direction indicator light 

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

High-beam light 

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


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. MIL off after 3 healing driving cycles.

Gear indicator light

The gear position is displayed.


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.

Maintenance indicator light 

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

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 95 unleaded gasoline as early as possible.

Battery charge indicator 

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

Side stand indicator light 

Side stand lowered, this indicator will come on.

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.

Temperature Indicator Light: (red light) 


The symbol turns on when the engine is overheated.


- Stop the motorcycle, turn off the engine and check that the coolant level inside the tank is not below the MIN notch. In this case, wait for the engine to cool down, then slowly and carefully open the plug, top up with coolant, making sure that the level is between the MIN and MAX notches on the reservoir.
- Also visually check any coolant leaks.

- If the symbol lights up again upon the following start up.

Bluetooth Indicator Light 

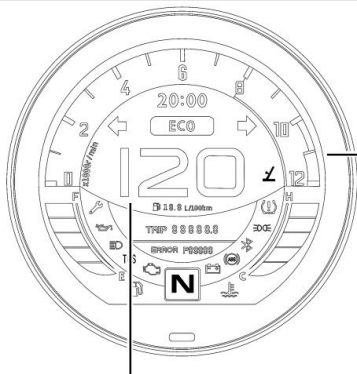
When this light comes on, activating the bluetooth.

Parking light indicator 

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

MULTIFUNCTION DISPLAY

Short press the start button on the right hand switch to power on the vehicle, and the instrument panel will begin to animated display.

**Evolution counter**

The rev. counter allows the driver to monitor the number of engine revs.

Maintain the engine speed within 10000 rpm.

▲ WARNING

If you exceed 10000 rpm (red area), the engine may be damaged.

Speed scale indication

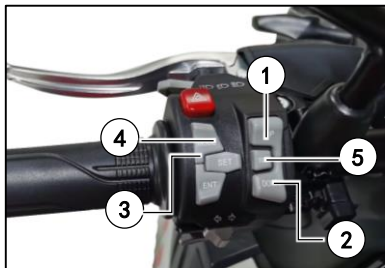
Speedometer digital display, display range (0-199 km/h). When the speed exceeds 199 km/h, the speed display value is 199 km/h; please do not drive the vehicle beyond the specified maximum speed of 165 km/h. shows riding speed in miles per hour(mph) and kilometer per hour(km/h).

MODE BUTTON

There're four buttons:

- ③ Key: KEY_UP; ②Key: KEY_DOWN;
③key: KEY_CONFIRM; ④key: KEY_BACK;

- Press ③ (vehicle speed < 5 km/h) for a long time to enter the menu. Press ① or ② to select the function. Press ③ to select the required function, and press ④ to return to the main screen.
- When there is an incoming call or phone call, press ③ -> for a short time to answer the phone, and press ④ -> for a short time to hang up.



TCS INDICATOR LIGHT

In the main interface: TCS key: press the TCS key for more than 3 seconds to switch TCS on or TCS off; When TCS is turned on.



MILEAGE DISPLAY

In the main interface, press ③ in a short time to switch the display of ODO and TRIP. In the display of TRIP, press the return key for a long time to clear the display of TRIP.



UNDER THE MENU INTERFACE

- Under the menu level 1 interface: press ① or ② to select vehicle settings -> vehicle information -> exit. Press ③ to select the vehicle settings or vehicle information option to enter the secondary menu interface, please check.
- Select Exit to return to the main interface from the secondary interface of the menu "chapter description". Select ④ to return to the main interface. Press and hold ④ to disarm the maintenance alarm light.



-Under the secondary interface of the menu: 1) the primary interface of the menu "vehicle settings", press ③ in a short time to enter the secondary interface of menu for "vehicle settings"; Press ③ in a short time to switch the secondary menu selection, which is language selection -> change between meter and Inch -> minor mileage reset -> Bluetooth connection -> clock setting -> brightness setting -> tire pressure setting ->ABS setting.

-Press ① in a short time to switch the secondary menu selection, which is language selection -> ABS setting -> tire pressure setting -> brightness setting -> clock setting -> Bluetooth connection -> minor mileage reset -> change between meter and Inch.

-Press ③ in a short time to enter the level 3 menu screen. Press ④ to return to the Level 1 menu screen.



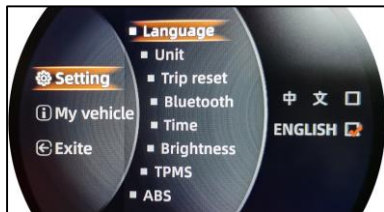
VEHICLE SETTINGS

LANGUAGE SELECTION

Menu level 3: menu level 3 options: language selection: press ① or ② to select Chinese or English; press ③ to select the language you need, and press ④ to return to the previous level;

UNIT SETTINGS

Change between meter and Inch: press ① or ② to select the metric system. Press ③ to select the metric system you need and press ④ to return to the previous level;

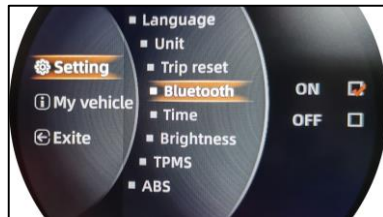
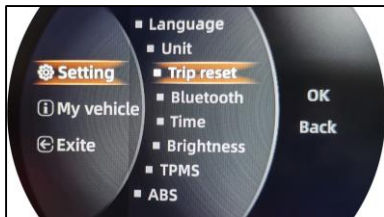


MILEAGE RESET SETTINGS

Minor mileage reset: press ① or ② to confirm and return.
Press ③ to select the mileage, and press ④ to return to the previous level;

BLUETOOTH SETTINGS

Bluetooth connection: press ① or ② to open or close.
Press ③ to select, and press ④ to return to the previous level;



TIME SETTINGS

Clock settings: press ① or ② to shift and press ③ to select. Press ① or ② to adjust the size of number, and then press ③ to confirm the number. Restore ① or ② to shift;



BRIGHTNESS SETTINGS

Brightness setting: press ① or ② to adjust brightness percentage and select automatic adjustment. Press ④ to return to the previous level;



TPMS SETTINGS

Tire pressure setting: press ① or ② to select front and rear wheels, and select corresponding studying states;

ABS SETTINGS

ABS setting: ① or ② to open or close. Press ③ to select, and press ④ to return to the previous level;



VEHICLE INFORMATION

Press ③ in a short time on the level 1 menu screen "vehicle settings" to enter the level 2 menu screen "vehicle settings";

Press ① or ② in a short time for page turning or return. Press ③ in a short time for page turning or return. Press ④ in a short time to return to the main screen.

- A. Then press ③ 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 KEY BACK to switch options (next page or return), and short press KEY BACK to confirm;
- B. Display instrument version information, display software version and hardware version, press the ① or ② to switch options (previous page or next page), short press ③ to confirm;



ERROR MESSAGES

In the event of a fault, the relevant "ABS" error code and relevant "ECU" error code is indicated on the display①;
Find the nearest SWM dealer to check the fault.



ECU FAULT CODE

Index	Fault Path	DTC	Description of DTC	Active MIL
1	CDCDK	P0122	Throttle/Pedal Pos.Sensor Circ. Low Input	√
2		P0123	Throttle/Pedal Pos.Sensor Circ. High Input	√
3	CDCEV1	P0201	Cylinder 1- Injector Circuit open	√
4		P0261	Cylinder 1- Injector Circuit Low	√
5		P0262	Cylinder 1- Injector Circuit High	√
6	CDCEV2	P0202	Cylinder 2- Injector Circuit open	√
7		P0264	Cylinder 2- Injector Circuit Low	√
8		P0265	Cylinder 2- Injector Circuit High	√
9	CDCFRAU	P2177	System Too Lean bank1	√
10		P2178	System Too Rich bank1	√
11	CDCFRAU2	P2179	System Too Lean bank2	√
12		P2180	System Too Rich bank2	√
13	CDCHSV	P0053	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
14	CDCHSV2	P0059	O2 Sensor Heater Resistance(Bank② Sensor 2)	√

15	CDCHSVE	P0030	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
16	CDCDK	P0031	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
17		P0032	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
18	CDCHSVE2	P0050	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
19		P0051	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
20		P0052	O2 Sensor Heater Resistance(Bank② Sensor 2)	√
21	CDCKPE	P0627	Fuel Pump "A" Control Circuit /Open	√
22		P0628	Fuel Pump "A" Control Circuit Low	√
23		P0629	Fuel Pump "A" Control Circuit High	√
24	CDCLATP	P0133	O2 Sensor Circ.,Bank1-Sensor1 Slow Response	√
25	CDCLATP2	P0153	O2 Sensor Circ.,Bank1-Sensor2Slow Response	√
26	CDCLM	P0105	Manifold Abs.Pressure or Bar.Pressure Circuit	√
27		P0106	Manifold Abs.Pressure or Bar.Pressure Range/Performance	√
28	CDCHSV	P0107	Manifold Abs.Pressure or Bar.Pressure Low Input	√
29		P0108	Manifold Abs.Pressure or Bar.Pressure High Input	√

30	CDCLSV	P0130	O2 Sensor Circ.,Bank1-Sensor1 Malfunction	√
31		P0131	O2 Sensor Circ.,Bank1-Sensor1 Low Voltage	√
32		P0132	O2 Sensor Circ.,Bank1-Sensor1 High Voltage	√
33		P0134	O2 Sensor Circ.,Bank1-Sensor1 No Activity Detected	√
34	CDCLSV2	P0150	O2 Sensor Circ.,Bank1-Sensor2 Malfunction	√
35		P0151	O2 Sensor Circ.,Bank1-Sensor2 Low Voltage	√
36		P0152	O2 Sensor Circ.,Bank1-Sensor2 High Voltage	√
37		P0154	O2 Sensor Circ.,Bank1-Sensor2 No Activity Detected	√
38	CDCMD_00	P0301	Cyl.1 Misfire Detected	√ or Blink
39	CDCMD_01	P0302	Cyl.2 Misfire Detected	√ or Blink
40	CDCSTPE	P0511	Idle Air Control Circuit	√
41	CDCSVSE	P0650	Malfunction Indicator Lamp Control Circ.	×
42	CDCTA	P0111	Intake Air Temp.Circ. struck/Performance	√
43		P0112	Intake Air Temp.Circ. Low Input/range	√
44		P0113	Intake Air Temp.Circ. High Input	√

45	CDCTEVE	P0444	Canister purge valve Circuit open	√
46		P0458	Canister purge valve Circuit low	√
47		P0459	Canister purge valve Circuit high	√
48	CDCTM	P0116	Engine Coolant Temp.Circ. Range/Performance	√
49		P0117	Engine Coolant Temp.Circ. Low Input	√
50		P0118	Engine Coolant Temp.Circ. High Input	√
51		P0119	Engine Coolant Temperature Sensor 1 Circuit Intermittent	√
52	CDCTOX	U0198	Lost Communication With Telematic Control Module	×
53	CDCDASH	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	×
54	CDCCIF	U0073	Control Module Communication Bus Off	×

ABS FAULT CODE

DTC	Malfunction	Possible Causes	Recommended Measures
C1101	ECU Voltage supply: high voltage	Poor connect of battery terminal.	Clean the terminal.
C1102	ECU Voltage supply: low voltage	Poor connect of battery terminal.	Clean the terminal.
C1200	Wheel-speed sensor, front: signal cable is short or open circuit; power supply cable is open circuit	Poor connect of sensor cable.	Check the cable connection.
C1201	Wheel-speed sensor, front: (signal failure) out of range, lost, noise, Intermittent	Dirt on the sensor probe or tone wheel.	Clean the probe and tone wheel.
C1202	Wheel-speed sensor, front: general error	Too much gap between the sensor probe with tone wheel.	Check the distance between the sensor probe with tone wheel.
C1206	Wheel-speed sensor, rear: signal cable is short or open circuit; power supply cable is open circuit	Poor connect of sensor cable.	Check the cable connection.
C1207	Wheel-speed sensor, rear: (signal failure) out of range, lost, noise, Intermittent	Dirt on the sensor probe or tone wheel.	Clean the probe and tone wheel.

C1208	Wheel-speed sensor, rear: general error	Too much gap between the sensor probe with tone wheel.	Check the distance between the sensor probe with tone wheel.
C1604	ECU error (hardware, Micro-controller error)	ABS Internal damage	Replace ABS
C2308	Valve fault, inlet valve front	ABS Internal damage	Replace ABS
C2312	Valve fault, outlet valve front	ABS Internal damage	Replace ABS
C2324	Valve fault, inlet valve rear	ABS Internal damage	Replace ABS
C2328	Valve fault, outlet valve rear	ABS Internal damage	Replace ABS
C2112	Valve relay error	ABS Internal damage	Replace ABS
C2402	Reflux pump fault	ABS Internal damage	Replace ABS

CONTROLS

IGNITION SWITCH

The ignition switch ① 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 on and you can start the motorcycle.



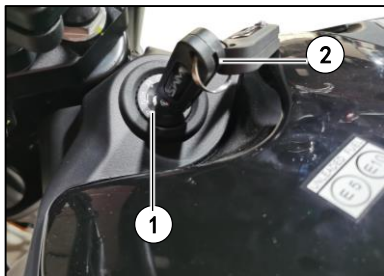
STEERING LOCK

The motorcycle comes with a steering lock located on the ignition switch ①.

Lock the steering as follows:

- Turn the handlebar to the left.
- Insert key ② in the ignition switch ① set to \times .
- Press the key ② in and turn it anticlockwise to position \uparrow .
- Remove the key ②.

To unlock the steering lock, reverse the above procedure.



RH HANDLEBAR SWITCH

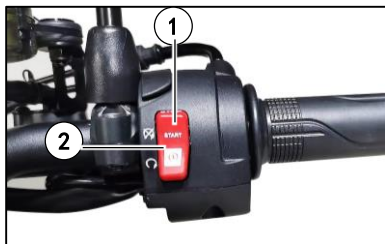
The right-hand switch features the following controls:

1) Engine start button

Pressing the button ① with the key in \odot position and the switch ② in \odot position, the engine starts.

2) Engine KILL SWITCH




Flicked to \times position, disables engine starting and running.
Flicked to \odot position, enables engine starting and running.



LH HANDLEBAR SWITCH

The left-hand switch features the following controls:



1) Headlight

-  High beam flasher (self-cancelling).
-  High beam.
-  Low beam.

2) Hazard Light: (red light)

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

3) Turning indicators

-  Left-hand turning indicators (self-cancelling).
-  Right-hand turning indicators (self-cancelling).

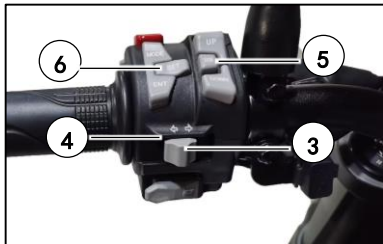
To deactivate the turning indicators, press the control lever after it is returned to the center.

4) Warning horn.

5) TCS Indicator Light

6) Mode button

There're buttons: upkey, downkey and set .



NOTE

IMPORTANT IN CASE OF COLD START AT LOW TEMPERATURES, it is recommended to perform a brief warm-up at idling speed until there is a normal engine response to the throttle opening.

In this way the oil can reach all the points that need lubrication and the coolant reaches the necessary temperature for correct engine operation.

Avoid heating the engine for too long.

THROTTLE CONTROL

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



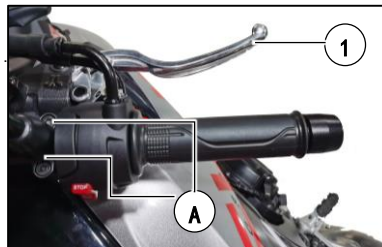
FRONT BRAKE CONTROL

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.



CLUTCH CONTROL

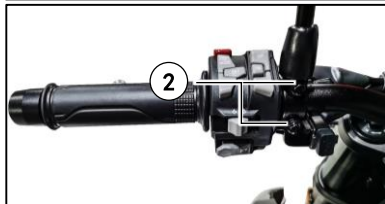
The clutch control lever ① is located on the left-hand side of the handlebar and is equipped with a protection.

- The clutch control position on the handlebar can be adjusted by loosening the retaining screws ②.



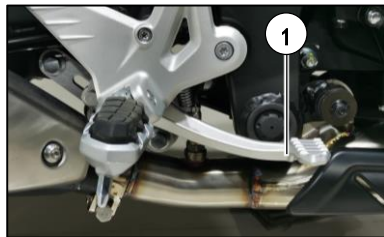
CAUTION

Do not forget to tighten the screws ② after adjustment.



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.

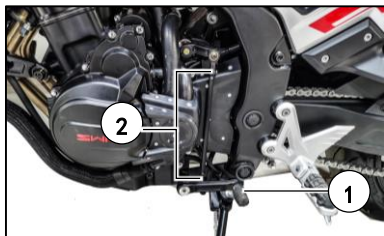


GEAR SHIFT CONTROL

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(A) 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”.

SIDE STAND

A side stand ① is supplied with every motorcycle.

Periodically check the side stand; make sure that the springs are not damaged and the side stand moves freely. If the side stand is noisy, lubricate the fastening pivot.

WARNING

The stand is designed to support the **WEIGHT** of the **MOTORCYCLE ONLY**. Do not sit astride the motorcycle using the stand for support as this could cause structural failure to the stand resulting in serious injury.

WARNING

The motorcycle must be placed on its side stand **ONLY AFTER** the rider has dismounted.

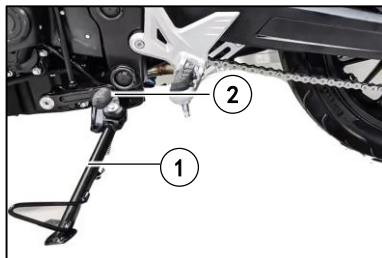
WARNING

A safety sensor ② is fitted on the motorbike, which allows starting it with the stand lowered and the gear in neutral. If a gear is engaged with the stand lowered, the engine turns off.



NOTE

Lower the stand with your right foot keeping the motorcycle balanced. When the stand has been lowered, make the bike rest on it. Once the motorbike has been brought from its rest position on the ground to vertical position, the rider has to raise the stand from the lowered to the raised position with his/her left foot.






INSTRUCTIONS FOR USING THE MOTORCYCLE

NOTE

If you are not familiar with the motorcycle operation, read paragraphs on "CONTROLS" before riding this motorcycle.

PRELIMINARY CHECKS

Any time you ride your motorcycle, make a general inspection first and proceed to check the following:

- Check fuel level and engine oil level;
- Check the brake fluid level;
- Check the steering by turning the handlebar both ways, fully home;
- Check the tyre pressure;
- Check the chain tension;
- 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;
- Turn on the high-beam light and check that the relative warning light comes on;
- Operate the turning indicators and check that the warning light comes on;
- Check if the rear stop light is functioning;
- Check that, after starting, the " "Engine fault" and the " "ABS fault" lights are not on.

INSTRUCTIONS FOR RUNNING-IN

The exclusivity of the design, with the high quality of the materials used and the accuracy of the assembly, guarantee the highest comfort right from the start.

However, when running for the first 1000 Km, SCRUPULOUSLY follow the rules mentioned below. Please note that FAILURE TO COMPLY WITH THESE RULES MAY COMPROMISE THE LIFE AND THE PERFORMANCE OF THE MOTORCYCLE:

- Warm up the engine by running at low rpm before using the motorcycle;
- Avoid quick starts and never rev up the engine when in low gear;
- Ride at low speed until the engine is warmed up;
- Apply both brakes several times to run-in the pads and the discs;
- Do not maintain the same speed for a long time;
- Do not ride for a long time without stopping;

- NEVER ride downhill with GEARBOX IN NEUTRAL, but shift into gear in order to use the engine braking, thus preventing the fast wear of the brake pads.

OPERATION PROBLEMS

The following list is used for troubleshooting and to find the necessary remedies

The engine does not start

- The starting procedures are not correctly followed: follow the instructions given on paragraph "Starting the engine".
- Dirty spark plug: clean;
- The spark plug does not spark: adjust the electrodes gap;
- Faulty starter motor: repair or replace;
- Faulty start button: replace the switch;
- Side stand lowered.

The engine has starting troubles

- Dirty or worn out spark plug: clean or replace;

The engine starts, but it is erratic

- Dirty or worn out spark plug: clean or replace;
- Faulty spark plug electrode gap: adjust;

The spark plug gets easily dirt:

- Unfit spark plug: replace;

The engine lacks power

- Dirty air filter: clean
- The spark plug electrode gap is too large: adjust;
- Incorrect valve clearance: adjust;
- Insufficient compression: check for the cause;
- Fuel pump protection filter or injector protection filter dirty; clean or replace the filters;

The engine knocks

- Excessive carbon deposit on the piston crown, or in the combustion chamber: clean;
- Faulty spark plug or wrong heat rating: replace;

The alternator fails to charge, or its charge is insufficient

- The cables on the voltage regulator are badly connected, or in short-circuit: correctly connect, or replace;
- Faulty alternator coil: replace;
- De-magnetised alternator rotor: replace;
- Faulty voltage regulator: replace;

The battery overheats

- Faulty voltage regulator: replace;

Difficulty in shifting gears

- Engine oil with too high viscosity rating: replace with the recommended oil;

The clutch slips

- Insufficient spring load: replace;
- Worn-out clutch plates: replace;

Faulty brakes

- Worn-out pads: replace;

FUELLING

The recommended fuel is premium grade UNLEADED petrol (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 refuelled 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.

NOTE

The fuel plug ③ cannot be closed if the key is not inserted into the lock.



STORAGE COMPARTMENT

A storage compartment is present under the passenger side seat.

To access the compartment, turn the key ①, lift the passenger seat and remove it.



MOUNTING/DISMOUNTING OF RIDER AND PASSENGER

General

Carefully read the instructions below as they provide important information for rider and passenger safety and to prevent harm to persons or damage to the motorcycle.

The motorcycle must always be mounted or dismounted from the left-hand side with your hands free, no obstacles in the way and with the stand down.

The rider must be the first to get on and the last to get off the motorcycle and must control the stability of the motorcycle while the passengers mounts and dismounts.

Do not get off the vehicle by jumping or extending your legs and always dismount by following the instructions given in the relevant section.



Mounting of rider

With the motorcycle on the side stand, do the following:

From the left side, hold the handlebar correctly with both hands and extend your right leg over the saddle.

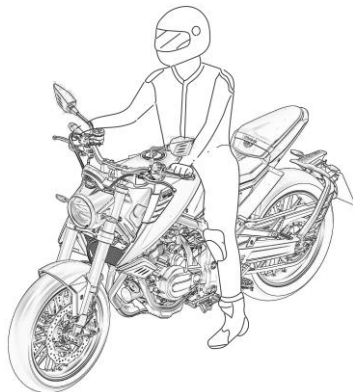
Sit on the motorcycle and place both feet on the ground. Balance the vehicle without putting all your weight on the side stand.

Start the motorcycle as described in the relevant section.

Using your left leg, fully retract the stand.

**CAUTION**

If you are unable to place both feet on the ground, put your right leg down with your left leg poised.



Mounting of passenger

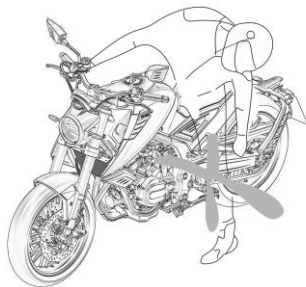
The rider must mount first as described in the relevant section, without starting the bike.

- Get the passenger to extract the footrests.



CAUTION

When in a riding position, the rider must not pull out or attempt to pull out the rear passenger footrests since.



**CAUTION**

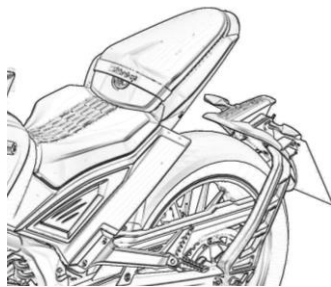
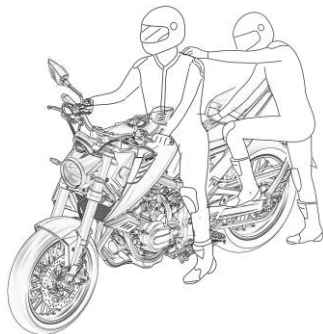
When in riding position, the rider must not pull out or attempt to pull out the rear passenger footrests since this may unbalance the vehicle.

Place your left hand on the rider's shoulder, your left foot on the footrest and then mount the motorcycle by lifting your right leg and moving carefully to avoid unbalancing the vehicle and the rider.

Hold onto the special handles.

Using your left leg, fully retract the stand.

Start the motorcycle as described in the relevant section.



Dismounting the motorcycle

Stop the vehicle and switch off the engine.



CAUTION

Make sure that the area where you want to park the vehicle is stable and level.

Place both feet on the ground.

Switch off the motorcycle as described in the relevant section.

Using your left leg, fully extend the stand.

Get the passenger to dismount first from the left-hand side of the vehicle by placing their foot on the left-hand footrest and raising their right leg.

Tilt the motorcycle to the left until it rests on the stand.

Firmly grasp the handlebar and dismount on the left-hand side by lifting your right leg.



ADJUSTING THE REAR-VIEW MIRRORS

- Sit on the motorcycle as described in the relative paragraph.
- Adjust both mirrors①so that you can clearly see the road behind you when seated.



STARTING THE ENGINE

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

- Place ignition key①to \mathcal{O} position (the buzz that you hear when you turn the key to \mathcal{O} is caused by the fuel pump which puts the feeding system under pressure);
- Pull the clutch lever②, lift the side stand, or shift gear pedal③to neutral, check that the button④is in position and \mathcal{O} en press the start button⑤.

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



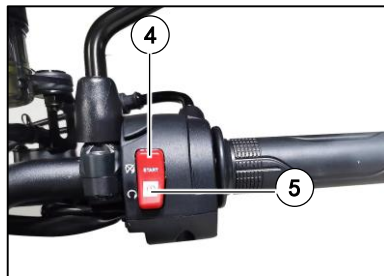
⚠ WARNING

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

⚠ NOTE

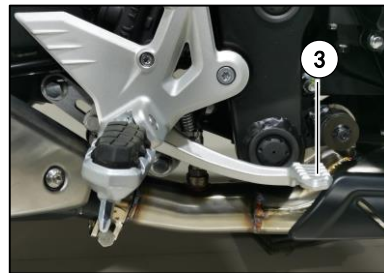
A safety switch is set on the clutch lever support. This switch allows you to **ONLY** start the engine with the gear-box idle, or with the gear engaged and the clutch lever pulled.

With the stand lowered, the bike can only be started with the gear in neutral.



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 lever④and shift gear lever⑤into the neutral position.
- Turn the ignition key⑥to the \times 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.

PERIODIC MAINTENANCE AND ADJUSTMENTS

Carry out proper maintenance according to the table given in Appendix A in this manual, which indicates the periodic maintenance intervals. The intervals indicated in the maintenance table refer to normal use. Nevertheless, it may be necessary to reduce these intervals in relation to the climatic conditions and individual use.



CAUTION

Before carrying out any maintenance operation, check that you have the necessary tools, components and technical skills.

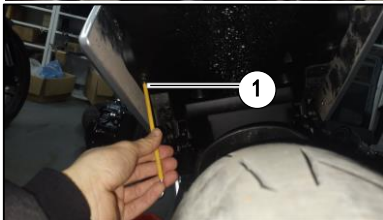
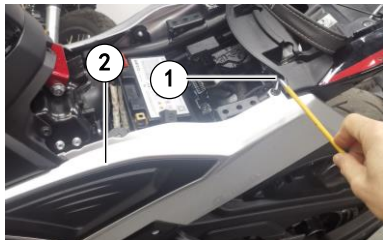
- Turn off the engine and park the motorcycle on a flat and solid surface.
- Wait for the engine, the silencers and the brake discs to cool down.

REMOVING THE SIDE PANELS

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

To remove the hand side panels, operate as follows:

- Unscrew the screw ①.
- Lift the panel ② releasing it from the hooks.



REMOVE THE TANK GUARD BOARD

For some maintenance operations, the tank guard board to be removed.

To remove the hand side panels, operate as follows:

- Unscrew the screw.
- Lift the tank guard board ① .



OIL LEVEL CHECK**⚠ NOTE**

Check the oil level when the engine has just been turned off and is still hot.

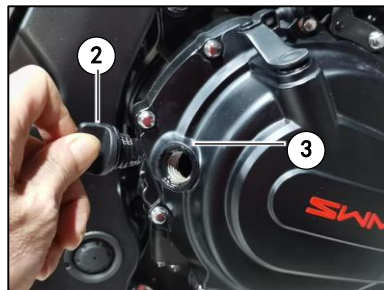
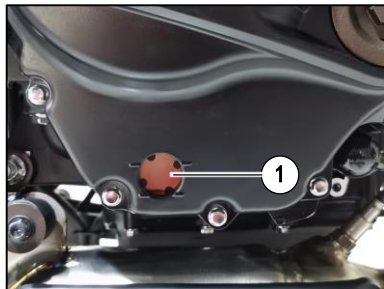
- Position the motorcycle on a flat surface in vertical position.
- Check the oil level through the inspection glass ①.
- If the oil needs to be topped up, unscrew the plug ② and pour the oil through the hole ③ until reaching the proper level.

⚠ WARNING

Be careful not to touch hot engine oil.

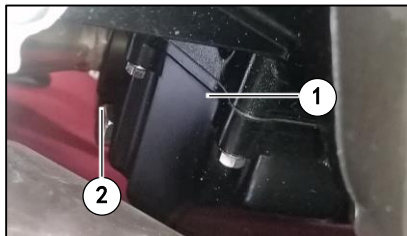
⚠ CAUTION

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

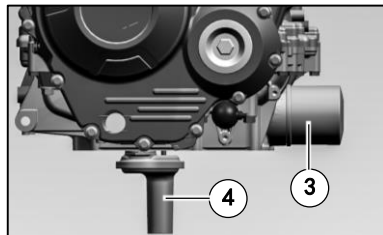


SUBSTITUTION OF THE ENGINE OIL

- Start the engine. Warm it up for several minutes, and then turn it off.
- Place an oil pan ① under the engine to collect the used oil.
- Remove the engine oil drain bolt ② to drain the oil from the crankcase.
- Remove the oil filter cap with an oil filter wrench.
- Clean the filter and then install. Fill with 2.3L new engine oil. Start the engine for idle running with 2-3 minutes.
- 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 ③ with an oil filter wrench. Clean the installation surface, Pour about 0.12 L of oil into the oil filter, 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 ① and the primary filter ④, Cleaning the primary filter ④, Install the oil primary filter ④ and the oil pan .



**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.



ENGINE COOLANT LEVEL CHECK

Check the level ① in the right radiator with engine cold and motorcycle in vertical position. The coolant must be 10 mm above the elements.

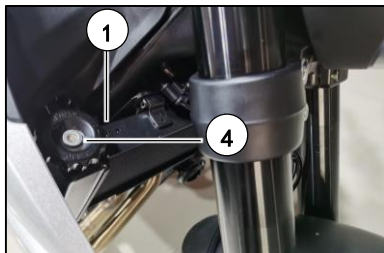
If the coolant needs to be topped up, unscrew the plug ② and pour the coolant through the hole ③ until reaching the proper level.

The radiator cap ④ features two locking positions: the first is used for preventive pressure relief in the cooling system.



WARNING

Avoid removing radiator cap ④ when engine is hot, as coolant may spout out and cause scalding.

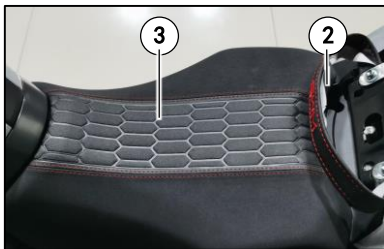


CAUTION

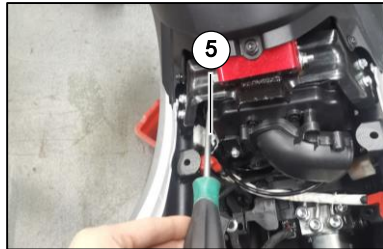
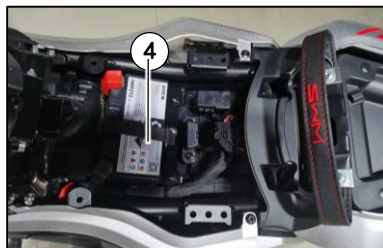
With engine hot, do not remove the reservoir plug, risk of burns!

AIR FILTER CHECK AND/OR REPLACEMENT

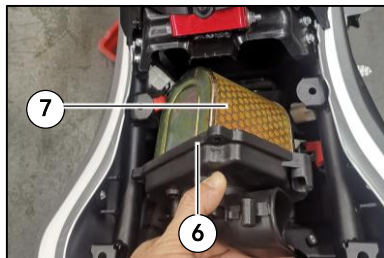
- To access the compartment, turn the key lift the passenger seat ① and remove it.
- Unscrew the screw ② and remove the seat ③.



- Remove the butter ④
- Unscrew the screw ⑤ and remove the filter cover ⑥.



- Remove the filter ⑦ and check its condition; to clean it, blow it with compressed air; if it is very dirty, replace it.
- Refit all components following removal operations in reverse order.



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.

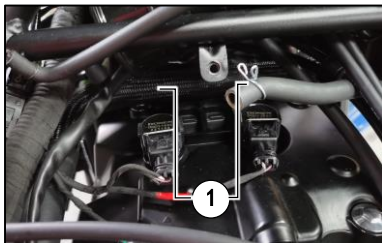
To reach the spark plug, carry out the following removal operations:

- Remove the rider seat;
- Remove the fuel tank cover ;
- Remove the tank fender liner ;
- Overturn the tank;
- Remove the tank lower fender liner ;
- Lift the ignition coil①.
- 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 Gray.

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 Gray in colour.

**WARNING**

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

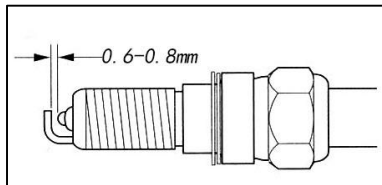
**WARNING**

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.



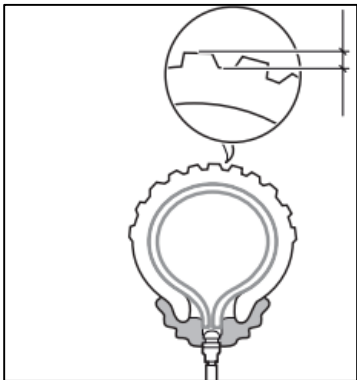
TYRES

This motorcycle is equipped with tyres with inner tube.

WARNING

The wheels have been designed to mount tyres with inner tube It is prohibited to mount tubeless 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.



MINIMUM HEIGHT OF THE TREAD

FRONT	3 mm
REAR	3 mm

-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.

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.



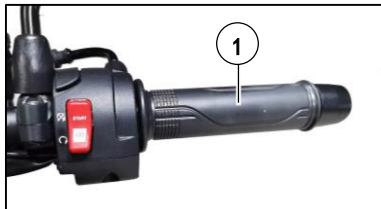
WARNING

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



WARNING

Exhaust gas contains poisonous carbon monoxide never run the engine indoors.



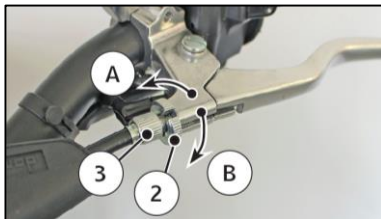
CLUTCH ADJUSTMENT

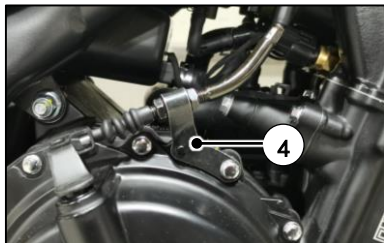
Normally, the clutch is adjusted by only stretching the cable using the adjusting unit positioned on the handlebar. As a rule, it is sufficient to operate on the handlebar adjuster to restore the clearance due to the flexible transmission stretch.

The control lever must always have a free play (C) (about 3 mm -0.12 in.) before starting to disengage the clutch. To adjust this play, loosen the lock nut (2), operate the adjuster (3) after removing the rubber cap (1).

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 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.

CLUTCH CONTROL LEVER ADJUSTMENT

The lever on the handlebar can be adjusted to positions according to the size of the rider's hand. To move the lever towards the left handle, turn the adjuster ①CLOCKWISE and to move it away from the left handle, turn the adjuster ANTICLOCKWISE.



BRAKES

The key components of the braking systems are:

Brake master cylinder with its lever (front) or pedal (rear),
brake lines, calliper assembly, disc and the ABS control unit.

Brake fluid level

The fluid level in the pump reservoir may never drop below the LOWER notch visible on the clear reservoir ① or ②.

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 motorcycle 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.

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.

Brake fluid may cause pungency.

**CAUTION**

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

If the brake fluid inside the cylinder is found cloudy, impure or smelt, Drain and refill the brake fluid.

If the brake fluid in both the front and the rear cylinders is drained, bleed air from the deflating valve of the brake caliper with a vacuum pump, and then refill brake fluid into the cylinder.

Brake hydraulic system bleeding

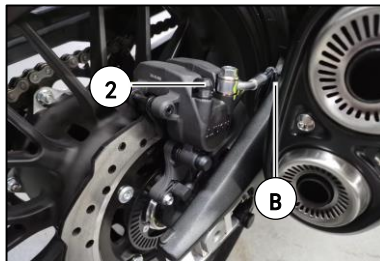
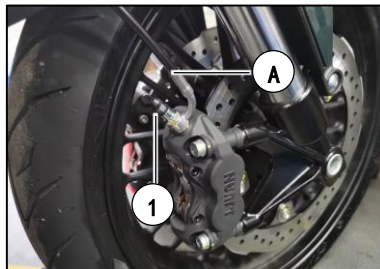
It is very important to do this at the intervals stated on the "Scheduled Maintenance Chart". Carry out the operation even if the lever or the control pedal free play increases.

NOTE

The braking system bleeding operation must be performed at a SWM service centre, using the relevant bleeding fittings ① and ②.

WARNING

Periodically check the connecting hoses, if the hoses (A) and (B) are worn or cracked, their replacement is advised.



Refilling the brake fluid reservoir

Loosen the upper cover and membrane. Place the hand brake pump in a horizontal position and fill the brake fluid reservoir to the UPPER notch visible on the reservoir tighten the bolts, and rinse off spilled or overflowing brake fluid with water.



Brake pad wear check

Check the wear status of front brake pads^① and rear brake pads^②.

The pads have a groove^③ that indicates wear; when the groove has almost disappeared, the pair of brake pads has to be replaced.



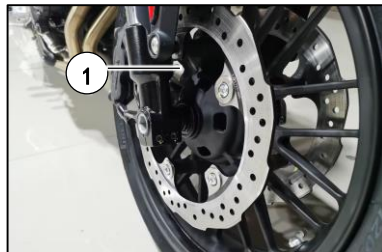
CAUTION

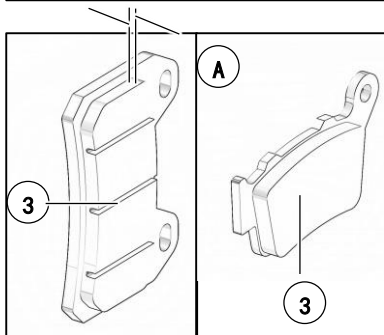
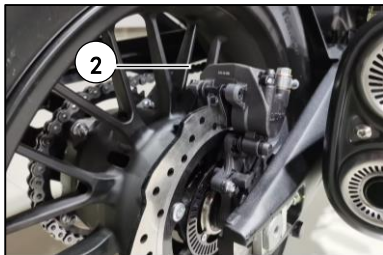
Contact an SWM dealer to have the brake pads replaced.



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.





Brake disc wear

It is not necessary to remove the disc from the wheel to inspect it. Small marks on the disc are not important, but radial scratches deep enough to snag a fingernail reduce braking effectiveness and increase brake pad wear. If these grooves are found, the disc should be resurfaced or replaced.

Measure the thickness of each disc in the point of maximum wear an outside micrometer; Measure the runout of the brake disc with a dial gauge; if the runout is no less than 0.2mm, replace the brake disc.

Disc cleaning

Be careful that no brake fluid or any oil gets on brake pads or discs. Clean off with alcohol any fluid or oil that inadvertently gets on the pads or disc.

Replace the pads with new ones if they cannot be cleaned satisfactorily.

FRONT BRAKE CONTROL LEVER

The lever on the handlebar can be adjusted to positions according to the size of the rider's hand. To move the lever towards the twistgrip, turn the adjuster ①CLOCKWISE and to move it away from the twistgrip, turn the adjuster AN-TICLOCKWISE.



Brake handle idling

Pull brake handle lightly till to when you feel the tension, then check the free stroke (A), if brake handle has no free stroke or too loose, that is the sign of brake system fault.
free stroke of brake handle : 0 – 3mm



REAR BRAKE PEDAL FREE PLAY ADJUSTMENT

The position of the rear brake pedal with respect to the The combined braking pedal must have a free play of 3 mm before the braking action starts.

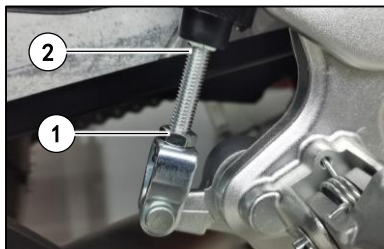
Should this not happen, adjust as follows:

- Loosen nut ① ;
- Operate the pump rod ② 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.



CHAIN CLEANING AND LUBRICATION

The motorcycle is equipped with a chain ① with O-rings; to clean it, operate as follows;

- Position the motorcycle in such a way that the rear wheel is lifted from the ground and can turn.
- Clean the chain using detergents specifically for chains with O-rings, then dry it with a clean cloth.
- Lubricate the chain ① with a suitable spray lubricant for chains with O-ring.



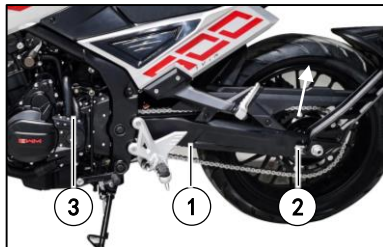
CAUTION

Never use grease to lubricate the chain. Grease helps to accumulate dust and mud, which act as abrasive and help to rapidly wear out the chain, the front and rear sprockets.



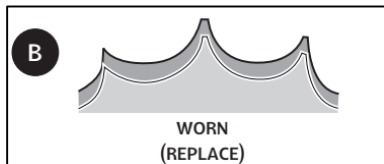
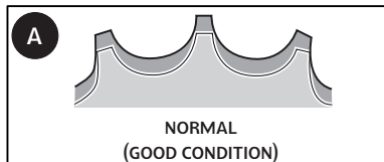
CHAIN/FRONT SPROCKET/REAR SPROCKET WEAR CHECK

- 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 pinion ② and crown ③ 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.



⚠ NOTE

If worn, the pinion, crown and chain have to be replaced; using a new chain with a worn pinion or crown, the chain will rapidly wear out.

**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 (ie, if it is too loose or too taut), it could escape from sprocket or break.

Make sure that the chain features a slack measuring approximately 30mm, as shown in the nameplate ① on swingarm.

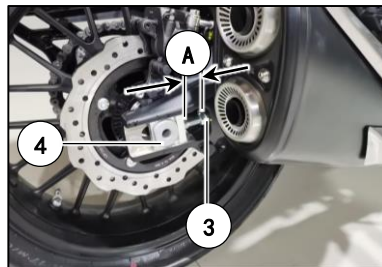


Preliminary Operations:

- Place the bike on a stand so as to have an adequate working space in the area of the rear wheel shaft.
- The bike must be firmly fixed and the rear wheel must be raised and free to rotate.

Procedure:

- Loosen the lock nuts ③
- Loosen the wheel shaft by unscrewing the nut ② so that the rear wheel is free to slide in the slot but without excessive clearance.
- Operate the adjusters ④ alternately to the right and to the left and keep visually equal the distances indicated, until achieving the correct tensioning.
- Measure the indicated distance (A) with a gauge and make it identical on both sides, using the adjusters ④.
- Check that tensioning is correct in several positions and that the wheel is free to rotate without hard spots. If this is not the case, repeat points 3 and 4.
- Tighten the wheel shaft using the nut ② (tightening torque 95-105Nm).
- Make the adjusters rest on the sliding blocks using the nut ④ (anticlockwise rotation), slightly tighten.
- Tighten the lock nuts ③.



REMOVING THE FRONT WHEEL

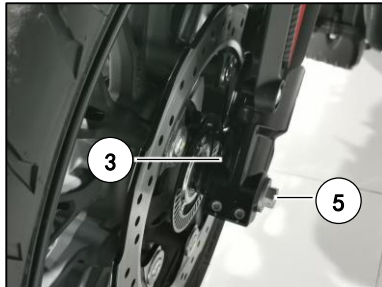
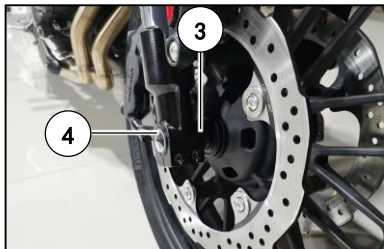
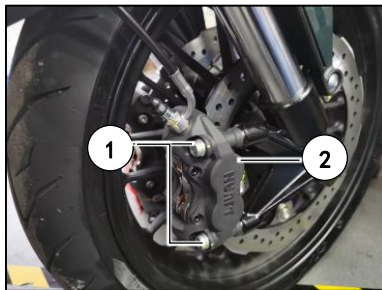
Position the motorcycle in such a way that the front wheel is lifted from the ground.

Remove the two screws ① and the brake calliper ②.

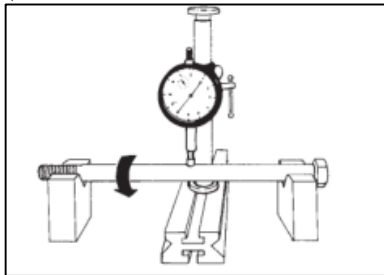
Loosen the bolts ③ holding the wheel axle ④ to the front fork mounts. Hold the head of the wheel axle in place, and unscrew the bolt ① on the opposite side; draw the wheel axle out.

⚠ NOTE

Do not operate the brake lever when the wheel has been removed; this causes the calliper pistons to move outwards. After removal, lay down the wheel with brake disc facing up.



Place the front wheel spindle on the V-holder, and measure the deflection of the wheel spindle with a dial gauge; if the reading is no less than 0.3mm, replace the front wheel spindle.



Front wheel bearing inspection

Place the front wheel on the calibration table, inspect the rim's deflection, and then manually rotate the wheel and measure its deflection value with a dial gauge; if the reading is no less than 2mm, replace the wheel bearing.

REASSEMBLING THE FRONT WHEEL

Fit the L.H. spacer (D) on the wheel hub.

Fit the wheel between the fork legs.

Fit the previously greased wheel pin ② from the right-hand side until it is up against the left-hand leg; it is advisable to turn the wheel while carrying out this operation. Tighten the screw ③ on the fork L.H. side but DO NOT lock it.

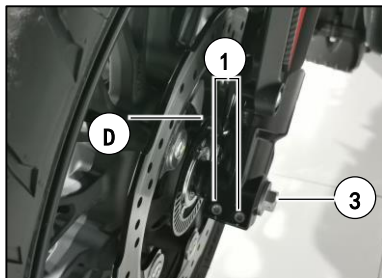
Now, pump for a while, pushing the handlebar downwards until you are sure that the fork legs are perfectly aligned. Lock: the screws ① on the R.H. leg (10,5Nm), the screw ③ on the L.H. side (46-56 Nm), the screws ① on the L.H. leg (10,5Nm).

Fit the brake calliper on the disc; assemble the calliper on its mounting plate and tighten the two screws ④ at 32-38 Nm. Ensure that the brake disc slides between the calliper pads without any friction or hard spots.

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

NOTE

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



REMOVING THE REAR WHEEL

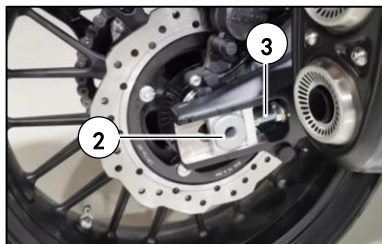
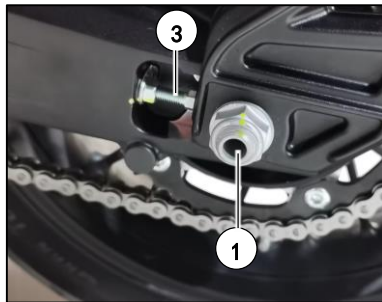
Sunscrew the nut ① of the wheel axle ② and extract it. It is not necessary to loosen the chain tensioners (3); in this way, the chain tension will remain unchanged after reassembly. Extract the complete rear wheel, keeping the spacers located at the hub sides.

To reassemble, reverse the above procedure remembering to insert the brake disc into the calliper.

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

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

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

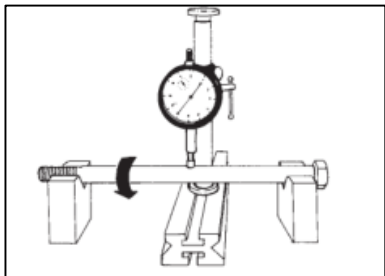


NOTE

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

Rear wheel spindle inspection

Place the rear wheel spindle on the V-holder, and measure the deflection of the wheel spindle with a dial gauge; if the reading is no less than 0.3mm, replace the rear wheel spindle.



Rear wheel bearing inspection

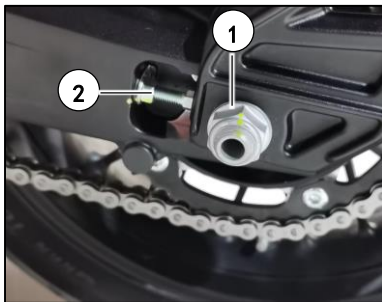
Place the front wheel on the calibration table, inspect the rim's deflection, and then manually rotate the wheel and measure its deflection value with a dial gauge; if the reading is no less than 2mm, replace the wheel bearing.

Refitting the rear wheel

To reassemble, reverse the above procedure remembering to insert the brake disc into the caliper. (Adjust the chain tensioners lock nuts ② to a tightening torque of 24-30 Nm and the wheel shaft nut ① to a tightening torque of 95-105N.m.).

! NOTE

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



FRONT SUSPENSION

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 an SWM dealer;

REBOUND DAMPING, FR. SHOCK ABSORBER

Standard setting: - 15 clicks

Hydraulic rebound damping determines the counterforce of dampers when shock absorber rebound. By screwing the adjusting screws, degree of rebound damping can be adjusted. Screw the knob(S-H) clockwise, damping value increases. While, screw(H-S) anti-clockwise, damping value decreases in rebounding scale.



NOTE

Do not force the adjusting screws beyond the maximum open and closed positions.

REAR SUSPENSION

The single rear shock absorber spring preload can be adjusted; to make the adjustment, operate as follows:

- Clean lock ring nut and adjusting ring nut of the spring;
- Either with a hook wrench or an aluminium punch, loosen the lock ring nut;
- Turn the adjuster ring nut as required;
- When the adjusting operation is over - according to your weight and riding style-tighten the lock ring nut (tightening torque: 40-48 Nm).

STEERING BEARING CHECK

Place the motorcycle on a stand in vertical position and secure it so that it cannot overturn.

- 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

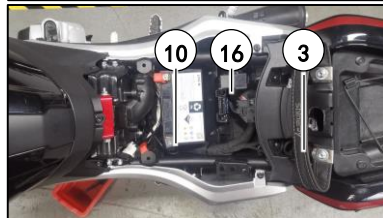
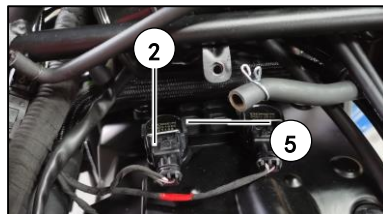
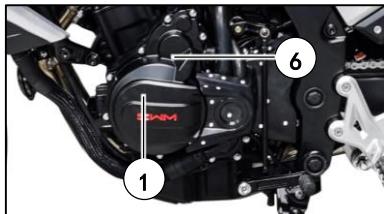
If you feel any play during the movement, have proper tightening of the steering bearings checked by a dealer.



ELECTRICAL COMPONENTS LOCATION

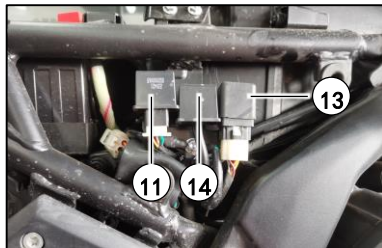
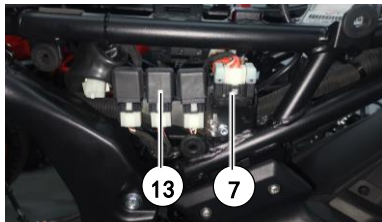
The ignition system includes the following elements:

- Generator ①, on the inner side of left crankcase cover;
- Electronic ignition coil ② under the fuel tank;
- Electronic control unit ③ under the seat;
- Voltage regulator ④ located on the front right hand side under the fuel tank;
- Ignition spark plug (5) in the centre of the cylinder head;
- Starter motor (6) behind the engine cylinder;
- Solenoid starter (7) located on the left panel of the motorcycle;
- TPS sensor (throttle position sensor) (8) on the throttle body.
- TMAP sensor (9) on the throttle body.



The electrical system includes the following elements :

- 12V-11.2Ah battery (10) under the seat.
- Direction indicators blinker device (11) positioned located on the right panel of the motorcycle;
- Relays located on the utilities holder plate, under the saddle;
- Electric fan relay (13);
- Mode relay (14);
- Fuel pump (15) inside the fuel tank.
- Fuses (16) located under the saddle;



- Injection system relay (17) located under the fuel tank.
- Lambda sensor (18);



BATTERY

The sealed battery does not require any maintenance. When electrolyte leaks, or other failure of the electrical system is detected, apply to the SWM 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.

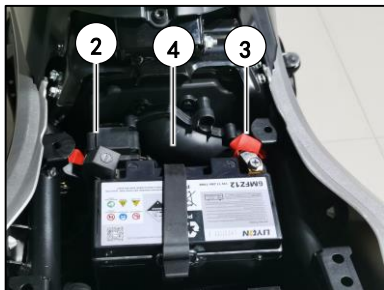
BATTERY CHARGER

To gain access to the battery, proceed as follows:

- Remove the seat by loosening the retaining screw ① to access the battery compartment;



- First remove the BLACK negative cable ② and then the RED positive cable ③ (when refitting, first connect the RED positive cable and then the BLACK negative cable) by unscrewing the relevant retaining nuts;
- Pull the tab ④, remove the battery retaining elastic band and remove the battery from its seat.



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 or BLUE negative cable to the battery negative terminal.

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

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

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.

In the event of contact with the eyes or skin, rinse with running water and seek medical aid immediately.



WARNING

If the battery is unused, it has to be in any case recharged with slow cycle.



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 to the motorcycle. To access the fuses, proceed as follows:

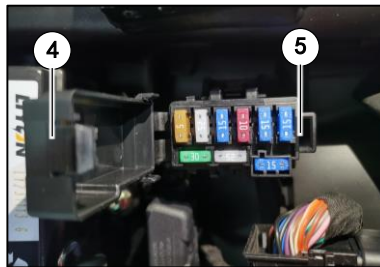
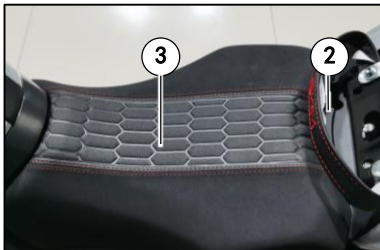
- To access the fuse box, turn the key lift the passenger seat ① and remove it.
- Unscrew the screw ② and remove the seat ③.
- Release and raise the cover ④ of fuse box ⑤.

! NOTE

Before operating on the fuses, set the ignition switch to OFF position in order to prevent short circuits.

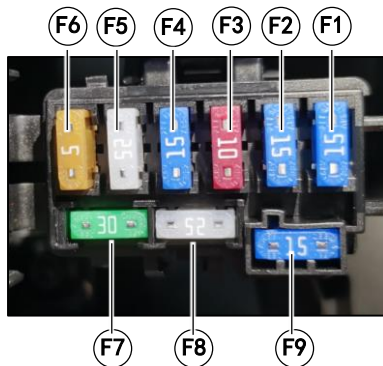
**! CAUTION**

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



FUSE TABLE

FUSE	AMPERE	PROTECTION
F1	15A	ECU
F2	15A	Main fuse
F3	10A	Headlight 、 Fan
F4	15A	ABS power supply
F5	25A	ABS motor
F6	5A	ABS control
F7	30A	Spare fuse.
F8	25A	Spare fuse.
F9	15A	Spare fuse.



HEADLIGHT BULB REPLACEMENT

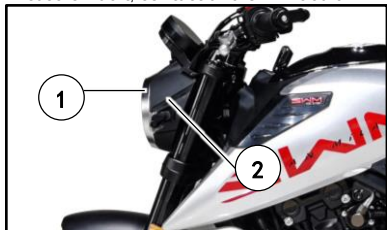
The headlight ① is of LED type.

In case of fault, contact and SWM dealer.

TURNING INDICATOR BULB REPLACEMENT

The turning indicators light ② is of LED type.

In case of fault, contact and SWM dealer.



TAIL LIGHT BULB REPLACEMENT

The tail light ③ is of LED type.

In case of fault, contact and SWM dealer.

PLATE LIGHT BULB REPLACEMENT

The plate light ④ is of LED type.

In case of fault, contact and SWM dealer.



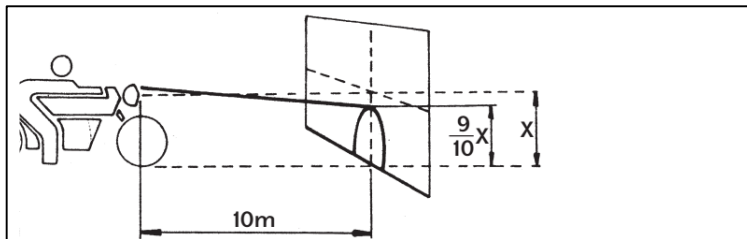
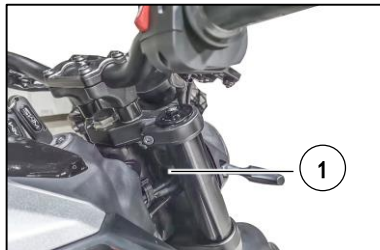
HEADLIGHT ADJUSTMENT

When checking the proper aiming of the headlight beam: inflate tyres at the right pressure, have a person sit astride the motorcycle and set the motorcycle perpendicular to its longitudinal axis at 10 metres from a wall or screen. Then trace a horizontal line at the height of headlight centre and a vertical one, in line with vehicle longitudinal axis.

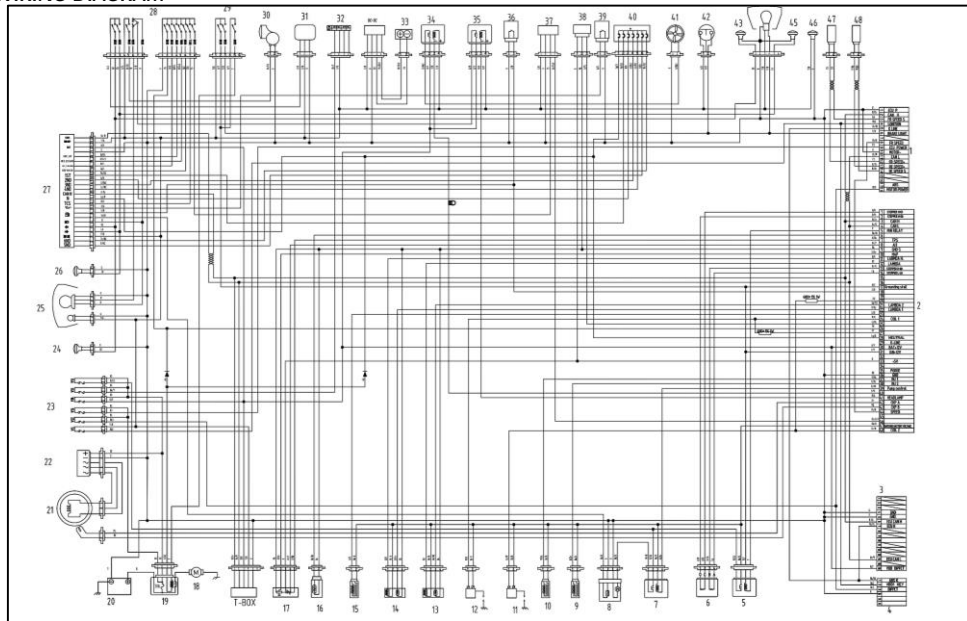
If possible, execute this operation in a shaded place. When the low beam is on, the upper edge between dark and lit zone should be at $\frac{9}{10}$ th of headlight centre from ground.

Beam height can be adjusted as follows:

- Rotate the knob ①.
- Adjust the position of the headlight and then tighten the knob ①.



WIRING DIAGRAM



CABLE COLOUR CODING

B	Blue	G/W	Green/White
B/Y	Blue/Yellow	Gr/W	Gray/ White
B/Gr	Blue /Gray	Lb	Light Blue
B/R	Blue / Red	Lg	Light Green
B/W	Blue / White	Lg/R	Light Green/ Red
Bk	Black	O	Orange
Bk/R	Black /Red	O/Bk	Orange/Black
Bk/O	Black / Orange	O/Br	Orange/ Brown
Bk/Br	Black / Brown	O/Gr	Orange/ Gray
Bk /Y	Black /Yellow	O/R	Orange/ Red
Bk/W	Black /White	O/W	Orange/ White
Br	Brown	R	Red
Br/R	Brown/Red	R/G	Red / Green
Br/W	Brown/White	R/ Br	Red / Brown
Br/Y	Brown/Yellow	R/ W	Red / Brown
Br/Gr	Brown/ Gray	R/ Bk	Red / White
B/W	Blue / White	W	White
G	Green	W/Bk	White/Black
G/Bk	Green/Black	W/Br	White/ Brown
G/Bk	Green/Black	W/G	White/ Green
G/ Gr	Green/ Green	W/R	White/Red
G/O	Green/ Orange	Y	Yellow
Gr	Gray	Y/W	Yellow /White

Y/R	Yellow/Red
Y/B	Yellow/ Blue
Pk	Pink
Pk/B	Pink/ Blue
Pk/Bk	Pink/Black
Pk/R	Pink/ Red
P	Purple
P/Y	Purple/Yellow

KEY TO WIRING DIAGRAM

- 1) ABS
- 2) Electronic power unit
- 3) OBD unit interface
- 4) Brake fluid filler
- 5) ECU relay
- 6) STEPPER
- 7) Relay fuel pump
- 8) Fuel pump
- 9) Injector 2
- 10) Injector 1
- 11) Coil 2
- 12) Coil 1
- 13) Lambda sensor 2
- 14) Lambda sensor 1
- 15) Secondary gulp valve
- 16) WTS
- 17) P&P
- 18) Starting motor
- 19) Starting relay
- 20) Battery
- 21) Magneto
- 22) Voltage regulator
- 23) Fuses

- 24) Front LH turning indicator
- 25) Headlight
- 26) Front RH turning indicator
- 27) Instrument
- 28) RH Switch
- 29) LH Switch
- 30) Horn
- 31) Flash relay
- 32) Ignition switch
- 33) Power supply
- 34) Fan relay
- 35) Front headlamp relay
- 36) Side stand
- 37) ECU
- 38) Tilt switch
- 39) Oil pressure
- 40) Gear display
- 41) Fan
- 42) Rear stop switch
- 43) Rear rh turning indicato
- 44) Tail light
- 45) Rear lh turning indicato
- 46) License plate lamp
- 47) Front vehicle Speed Sensor
- 48) Rear vehicle Speed Sensor

APPENDIX

LONG PERIOD OF INACTIVITY

When the motorcycle is to be stored for a certain period, it should be prepared for storage as follows.

- Clean the entire motorcycle thoroughly.
- Drain all fuel from the tank.
- Fill the tank with fuel added with a stabiliser.
- Lubricate the final drive chain and all the wirings and hoses.
- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or brakes.
- Set the motorcycle on a support or stand so that both wheels are raised off the ground (if this cannot be done, put boards under the wheels to keep moisture away from the tyres).
- Tie a plastic bag over the exhaust pipe to prevent moisture from entering.

- Put a cover over the motorcycle to keep dust and dirt from collecting on it.

To reactivate the motorcycle after storage, proceed as follows:

- Make sure the spark plug is tightened;
- Fill the fuel tank;
- Run the engine to warm the oil up then drain the oil;
- Refill with fresh oil;
- Check all the points listed under the section "Checks and Adjustments" (Appendix A);
- Lubricate all the points listed under the section "Lubrication" (Appendix A).



WARNING

Never release fuel into the environment or let the engine run indoors

CLEANING

Before washing the motorcycle, it is necessary to duly protect the following parts:

- a) Rear opening of the muffler;
- b) Air filter intake;



CAUTION

Do not clean the motorcycle with highpressure jets!

After washing:

- Lubricate the points listed in the "Maintenance Chart" (Appendix A) ;
- Briefly warm up the engine ;
- Test the brakes before riding the motorcycle.



WARNING

Never wax or lubricate the brake discs.

Loss of braking efficiency and an accident could result.

Clean the disc with a solvent such as acetone.

Description	Operation	Pre-delivery
Engine oil	Check level	■
Spark plugs	Check / Replace	<input type="checkbox"/> ■
Throttle body	Check / Adjustment	<input type="checkbox"/> ■
Brake and clutch fluid	Level check	■
Brakes / Clutch	Operation check	■
Brakes/ Clutch	Circuit check	■
Throttle control	Check operation	■
Throttle control	Play check/adjustment	■
Flexible controls and transm.	Check / Adjustment	■
Drive chain	Check / Adjustment	■
Tyres	Pressure check	■
Side stand	Operation check	■
Side stand switch	Operation check	■

Description	Operation	Pre-delivery
Electrical equipment	Operation check	■
Instrument panel	Operation check	■
Lights / Visula signals	Operation check	■
Horn	Operation check	■
Headlight	Operation check	■
Keyless start function	Operation check	■
Locks	Operation check	■
Screws and nuts	Check / Tightening	■
Hose clamps Check	Check / Tightening	■
General lubricatio	//	■
General test	//	■

SCHEDULED MAINTENANCE CHART (TO BE CARRIED OUT AT THE SWM DEALER)

GRAN MILANO	FIRST 1000	5000 km	10000	15000 km	20000 km	25000 km	30000 km
ENGINE OIL	R	R	R	R	R	R	R
OIL FILTER CARTRIDGE	R	R	R	R	R	R	R
OIL LEVEL CHECK	I	I	I	I	I	I	I
FUEL HOSES	-	-	I	I	I	I	R
FUEL FILTER	-	-	-	-	-	-	R
FUEL PUMP	-	-	-	C	-	C	-
THROTTLE CONTROL ASSY	-	C	C	C	C	C	C
COOLANT LEVEL CHECK	-	I	I	I	I	I	I
AIR FILTER ELEMENT	I	C	R	C	R	C	R
AIR/OIL SEPARATOR	-	-	-	R	-	R	-
THROTTLE CONTROL ASSY	T	T	T	T	T	T	R
CLUTCH CONTROL ASSY	T	T	T	T	T	R	T
BOTH INTAKE AND EXHAUST	-	C	C	C	C	C	C
SPARK PLUG	-	I	I	I	Replace every 20000km driving		
DRIVING CHAIN	Proceed with I and L for every1000km driving						

GRAN MILANO	FIRST 1000	5000 km	10000	15000 km	20000 km	25000 km	30000 km
BOWDEN CABLES	C	C	C	C	C	C	C
TYRE PRESSURE AND WEAR	C	C	C	C	C	C	C
HEADLAMP BEAM HEIGHT	C	C	C	C	C	C	C
LIGHTS/INDICATIONS/ HORN	C	C	C	C	C	C	C
BOLTS AND NUTS TIGHTNESS	C	-	C	-	C	-	C
EXHAUST SYSTEM	C	C	C	C	C	C	C
WHEEL HUB BEARINGS	-	-	-	-	R	-	-
REAR DRIVEN SPROCKET	C	C	C	C	R	C	C
REAR TRANSMISSION CHAIN	L/C	L/C	L/C	L/C	R	L/C	L/C
FOOTRESTS	-	L/C	L/C	L/C	L/C	L/C	L/C
SIDE STAND	-	L	L	L	L	L	L
STEERING BEARINGS PLAY	I	-	L	I	L	I	L
FRONT FORK	-	L	L	L	L	L	L
REAR SHOCK ABSORBER	-	L	L	L	L	L	L
REAR SUSPENSION LINKS NEE-	-	L	L	L	L	L	L
BATTERY	C	C	C	C	C	C	C

GRAN MILANO	FIRST 1000	5000 km	10000	15000 km	20000 km	25000 km	30000 km
BRAKE HOSES	I	I	I	I	I	I	I
BRAKE FLUID	I	I	R	I	R	I	R
BRAKE PADS	Replace the brake pads if they are worn to minimum limit or less						

For optimum performance, the motorcycle should be checked and maintained at periodic intervals. The meanings of capitalized letters in the table below are as follows:

I: Inspection - inspect, then clean, lubricate, adjust, refill, repair or replace if necessary.

C: Clean

R: Mandatory Replacement

L: Lubricate



CAUTION

It is mandatory to replace parts and lubricants according to the maintenance table.



NOTE

Upon every removal replace the gaskets ;

Replace screws and nuts if worn ;

General check after riding on mud or sand.