

Superdual

Manual - Operation - Maintenance

PRESENTATION

Welcome to the SWM motorcycling Family!

Your new SWM motorcycle is designed and manufactured to be the best in its field.

The instructions in this book have been prepared to provide a simple and understandable guide for your motorcycle's operation and care.

Follow the instructions carefully to obtain maximum performance and your personal motorcycling pleasure. Your owner's manual contains instructions for owner care and maintenance.

The main repair or maintenance work requires the attention of a skilled mechanic and the use of special tools and equipment.

Your SWM Dealer has the facilities, experience and original parts necessary to properly render this valuable service.

This "Owner's Manual" is part and parcel of the motorcycle, hence, it shall remain with the motorcycle even when sold to another user.

This motorcycle uses components designed thanks to systems and state-of-the-art technologies which are thereafter tested in competitions.

In racing motorcycles, every detail is verified after each race in order to always guarantee better performance.

To ensure trouble-free operation of the vehicle, it is necessary to follow the maintenance and inspection table found under Appendix A.

IMPORTANT NOTICES

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

2) All the motorcycles and any of their parts used in competitions of any type are excluded from the warranty.



IMPORTANT

In order to maintain the vehicle's "Guarantee of Functionality", the client must follow the maintenance programme indicated in the user's manual by carrying out maintenance inspections at authorised SWM dealers.

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

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*: Gives helpful information.

Parts Replacement

When parts replacement is required, use only SWM ORIGINAL parts.

WARNING*: After a crash, inspect the motorcycle carefully. Make sure that the throttle, brake, clutch and all other systems are undamaged. Riding with a damaged motorcycle can lead to a serious accident.

WARNING*: Never attempt to start or operate your motorcycle unless you are wearing appropriate protective clothing. Always wear a motorcycle helmet, boots, gloves, goggles and other appropriate protective clothing.

PRECAUTIONS FOR CHILDREN

WARNING:

- Park the vehicle where it is unlikely to be bumped into 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 pipes become very hot during riding. Always park your motorcycle where people or children can not easily reach these parts, in order to avoid serious scalds.

SUMMARY

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Note

- References to the “left” or “right” of the motorcycle are considered from the point of view of a person facing forward.
 - Z: number of teeth
 - A: Austria
 - AUS: Australia
 - B: Belgium
 - BR: Brazil
 - CDN: Canada
 - CH: Switzerland
 - D: Germany
 - E: Spain
 - F: France
 - FIN: Finland
 - GB: Great Britain
 - I: Italy
 - J: Japan
 - USA: United States of America
-
- Unless otherwise specified, all the data and the instructions are referred to any and all Countries.

IDENTIFICATION DATA

The engine identification number is stamped at the top of the crankcase, while vehicle serial number or Vehicle Identification Number is stamped on the steering head tube.

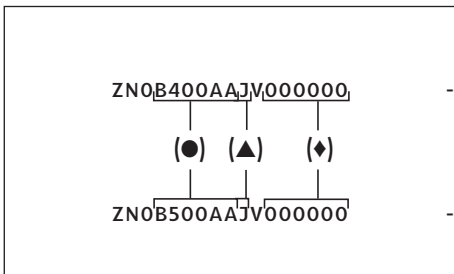
Always quote **the number stamped on the frame** when ordering spare parts or requesting further details about your vehicle and note it on this booklet.

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

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

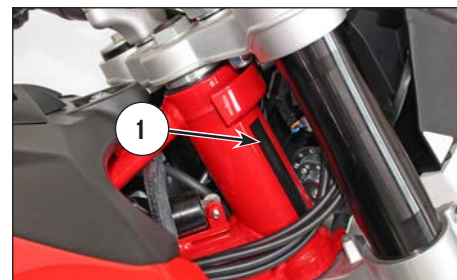
- = Model designation
- ▲ = Model Year (2017)
- ◆ = Progressive no.

CHASSIS NUMBER



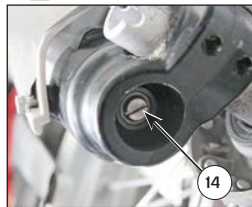
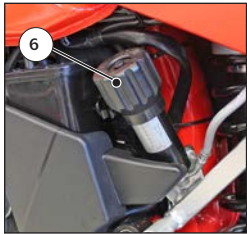
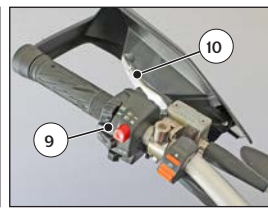
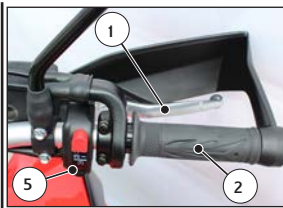
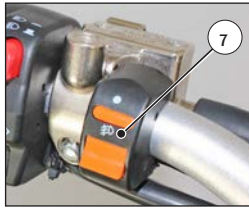
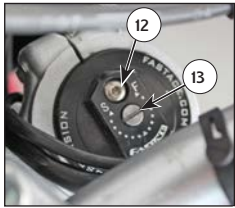
--> full-power model

--> lower-powered model (35 kw)



1. Chassis serial number
2. Engine serial number





CONTROLS LOCATION

1. Front brake control lever
2. Throttle twistgrip
3. Rear brake control pedal
4. Fuel tank filler cap
5. R.H. switch (engine electric starting)
6. Rear shock absorber spring preload adjuster
7. Depth spot light switch
8. Rear shock absorber rebound adjuster
9. L.H. switch
10. Clutch control lever
11. Gear shift control pedal
12. Air bleeding screw on front fork leg
13. Fork leg rebound adjuster
14. Compression damper adjustment (front fork leg bottom side).
15. Depth spot lights.

KEYS

- Two keys are supplied with the motorcycle (one of them is a spare key) to be used:
- a) on ignition switch-steering lock;
 - b) on fuel tank cap;
 - c) on saddle lock.

TECHNICAL DATA

ENGINE

Type	single cylinder, 4 stroke
Cooling	Liquid with double radiator and heater fan
Bore	3.94 in.
Stroke	3.01 in.
Displacement	36.6 cu.in.
Compression ratio	12.4:1
Starting	electric

TIMING SYSTEM

Type	double overhead camshaft chain operated; 4 valve
Valve clearance (with engine cold)	
Intake and exhaust	0.004 ÷ 0.006 in.

LUBRICATION

Type	with lobe pump and cartridge filter
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IGNITION

Type	Electronic, inductive with adjustable advance (digital control)
Spark plug type	NGK CR8EB
Spark plug gap	0.027 ÷ 0.031 in.

FUEL SYSTEM

Type	Electronic injection feed
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PRIMARY DRIVE

Drive pinion gear	Z 32
Clutch ring gear	Z 75
Transmission ratio	2.343

CLUTCH

Type	oil bath multiple disc clutch, hydraulic control
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TRANSMISSION

Type	constant mesh gear type
Transmission ratio	
1 st gear	2,615 (z 34/13)
2 nd gear	1,812 (z 29/16)
3 rd gear	1,350 (z 27/20)
4 th gear	1,091 (z 24/22)
5 th gear	0,957 (z 22/23)
6 th gear	0,880 (z 22/25)

SECONDARY DRIVE "T"

Transmission sprocket	Z 15
Rear wheel sprocket	Z 38
Transmission ratio	2,533
Transmission chain dimensions	.5/8"x1/4"

SECONDARY DRIVE "X"

Transmission sprocket	Z 15
Rear wheel sprocket	Z 40
Transmission ratio	2,
Transmission chain dimensions	.5/8"x1/4"

FINAL RATIOS "T"

1 st gear	15,529
2 nd gear	10,762
3 rd gear	8,016
4 th gear	6,477
5 th gear	5,679
6 th gear	5,225

FINAL RATIOS "X"

1 st gear	16,334
2 nd gear	11,318
3 rd gear	8,432
4 th gear	6,814
5 th gear	5,977
6 th gear	5,496

CHASSIS

Type	Single-beam, steel circular cross-section pipes; rear chassis in steel square cross-section pipes
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FRONT SUSPENSION

Type	"Upside-down" telescopic hydraulic front fork with advanced axle (adjustable in compression and extension); tubes ø 1.69 in.
Leg axis stroke	8.62 in.



REAR SUSPENSION

Type progressive with hydraulic single shock absorber (preload regulation of spring and hydraulic brake in extension)
Wheel stroke 8.66 in.

FRONT BRAKE

Type fixed disc Ø 11.81 in.
with hydraulic control and floating caliper

REAR BRAKE

Type fixed disc Ø 8.66 in.
with hydraulic control and floating caliper

RIMS "T"

Front in light alloy: 2,5"x19"
Rear in light alloy: 3,5"x17"

RIMS "X"

Front in light alloy: 2,15"x21"
Rear in light alloy: 3,5"x18"

TYRES

Front "T" 110/80 R19 - 59V
Rear "T" 140/80 R17 - 69H
Front "X" 90/90 R21 - 54S
Rear "X" 140/80 R18 - 70S

Cold tyre pressure

Front 35,56 psi
Rear 41,25 psi

DIMENSION, WEIGHT, CAPACITY

Wheelbase 59.45 in.
Overall length 88.19 in.
Overall width 35.63 in.
Overall height 54.53 in.
Saddle height 35.35 in.
Minimum ground clearance 7.09 in.

Kerb weight, without fuel 412.26 lb.

Fuel tank capacity
reserve included 4.76 Imp. Gall. / 4.09 U.S. Gall.

Reserve fuel
..... 1.06 Imp. Gall. / 0.91 U.S. Gall.

Coolant capacity 0.21 Imp. Gall. / 0.31 U.S. Gall.

Transmission oil

Oil and oil filter replacement
..... 0.37 Imp. Gall. / 0.44 U.S. Gall.

Oil replacement 0.33 Imp. Gall. / 0.39 U.S. Gall.

TABLE FOR LUBRICATION, SUPPLIES

Engine, gearbox and primary drive lubricating oil
MOTUL 7100 5W40

Engine coolant
MOTUL MOTOCOOL EXPERT

Brake system fluid
MOTUL DOT 3&4

Clutch fluid
SAE 10 MINERAL OIL FOR HYDRAULIC CIRCUITS

Grease lubrication
MOTUL GREASE 100

Final drive chain lubrication
MOTUL CHAIN LUBE

Front fork oil
MOTUL FORK OIL LIGHT 5W

Oil for rear shock absorber
MOTUL FORK OIL LIGHT 5W

Electric contact protection
MOTUL EZ LUBE

FUEL

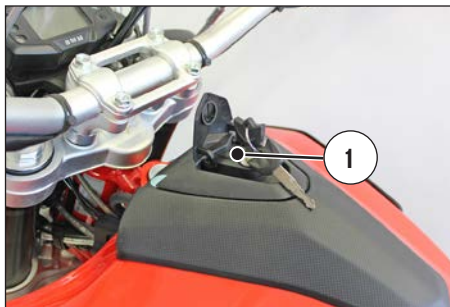
Recommended fuel: premium grade UNLEADED fuel (R.O.N. 95).

Note*: If the engine "knocks", change fuel brand or use a higher octane rating fuel.

WARNING*: Do not continue operation if the engine pings or knocks. The engine will be damaged and could seize.

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.

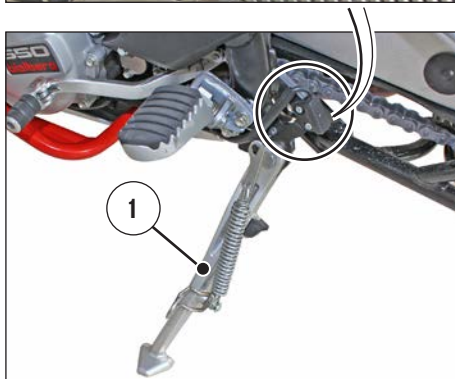
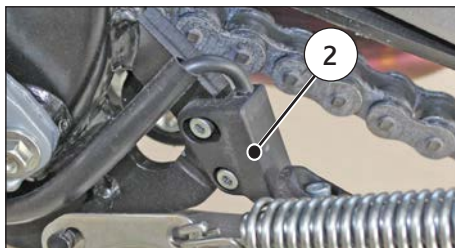
WARNING*: Do not overfill the tank. Refer to the lower mark on filler. After refuelling, make sure the tank cap (1) is closed securely.



SIDESTAND

A kickstand (1) is supplied with every motorcycle.

WARNING*: The stand is designed to support the weight of the MOTORCYCLE ONLY. Do not sit on the motorcycle using the stand for support as this could cause structural failure to the stand and could cause serious bodily injury.



WARNING*:

The motorcycle must **ONLY** be stood on its kickstand **AFTER** the rider has dismounted. Once the motorbike has been brought from its rest position on the ground into vertical position, the driver has to raise the stand from the lowered to the raised position with his left foot.

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.

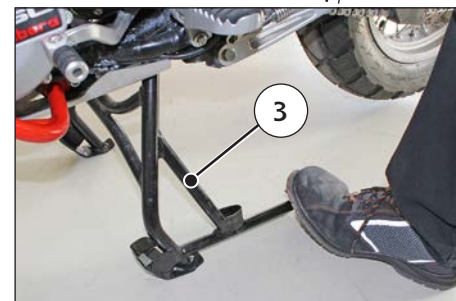
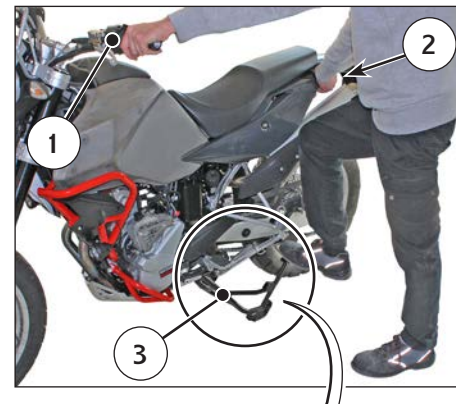
CENTRAL STAND

- Grab the left knob (1) of the handle and the rear left large handle (2).
- Press the tip of the central stand with the right foot and lift the motorcycle upward and backward at the same time, until it is fully lifted on the central stand (3).

WARNING*: When the vehicle is parked on the central stand, it is dangerous to sit on it, loading your weight on the parking stand.






To lower the motorcycle from the central stand, proceed as follows.

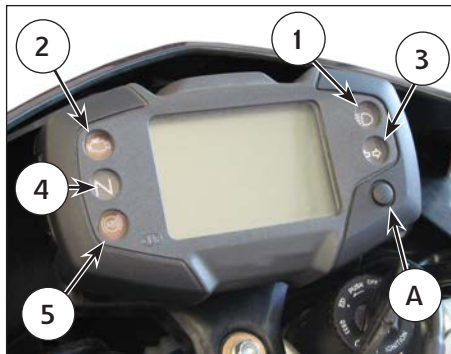
- Grab the left handlebar (1) grip and the rear (2) left large handle.
- Push the motorcycle toward the front, until it descends from the stand; the stand will automatically lift.



DIGITAL INSTRUMENT. WARNING LIGHTS

The motorcycle is equipped with a digital instrument with 5 indicator lights: high-beam headlight, engine malfunction, direction indicators, neutral, and ABS.

- 1) High-beam light  (BLUE).
Turns on when the low-beam headlights are activated.
- 2) Engine malfunction indicator light  (ORANGE).
Turns on when the engine is not functioning properly; in this case, it is recommended to visit an SWM service centre as soon as possible.
The indicator light turns off once the malfunction has been resolved.
- 3) Turning indicator light  (GREEN).
Starts flashing when the right or left direction indicator is activated.
- 4) Neutral warning light  (GREEN).
Turns on when the gear shift lever is in the neutral position.
- 5) ABS warning light  (ORANGE).
Starts flashing when the rear wheel's ABS function is deactivated.
Remains on if an ABS system malfunction is detected; in this case, it is recommended to visit an SWM service centre as soon as possible.
The indicator light turns off once the malfunction has been resolved.



NOTE:

- The display check will be carried out for the first few seconds after turning the key; once the check phase has been completed, the instrument will display the last function set.
- When the engine is turned off, the instrument does not show any functions.
- To select instrument functions and reset functions, use the SCROLL button (A)
- The functions, which can be selected in order are as follows:

- 1- SPEED / ODO / FUEL
- 2- SPEED / H / FUEL
- 3- SPEED / CLOCK / FUEL
- 4- SPEED / TRIP 1 / FUEL
- 5- SPEED / STP 1 / FUEL
- 6- SPEED / AVS 1 / FUEL
- 7- SPEED / SPEED MAX / FUEL
- 8- SPEED / TRIP 2 / FUEL
- 9- SPEED / TRP 2 / CLOCK / FUEL
- 10- SPEED / RPM (engine r.p.m. numerical value) / FUEL

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Fuel level indicator

- The graduated scale (1) indicates the fuel level inside the tank.

When the tank is full of fuel, all the sectors are black.

When the fuel inside the tank reaches the reserve level, the only sector that will remain black is sector (2), which will begin flashing; in this case, it is recommended to refuel as soon as possible.

1- SPEED (kmh or mph) / ODO / FUEL (figure 1)

- SPEED: 299 kmh or 299 mph;
- ODO: odometer- maximum value: 99999 km;

To replace kilometers with miles or miles with kilometers proceed as follows:

- 1) set to figure 1, place the ignition key in the OFF position and push the knob SCROLL (A);
- 2) place the ignition key in the ON position while pressing the SCROLL wheel for 3 seconds (A)

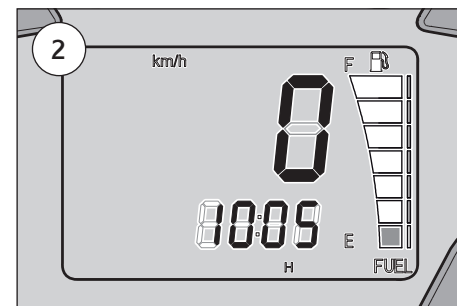
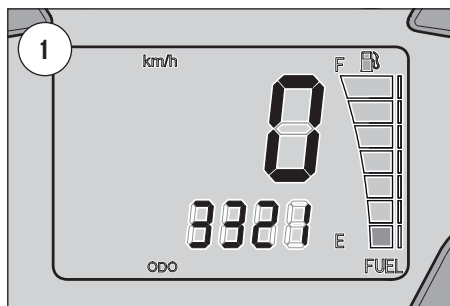
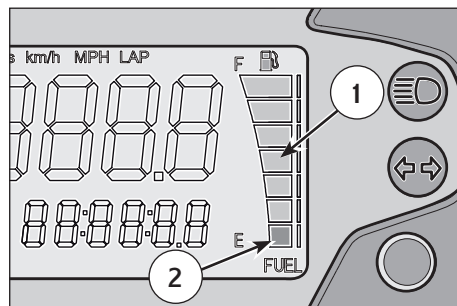
To confirm the conversion, the "SET" and the Miles and mph or km and kmh segment will activate for 3 seconds; afterwards the standard function in Fig.1 will reappear.

NOTE

After the previously described operation, the ODO setting will be converted and all other data reset (the H Counter is unchanged).

2- SPEED / H / FUEL (figure 2)

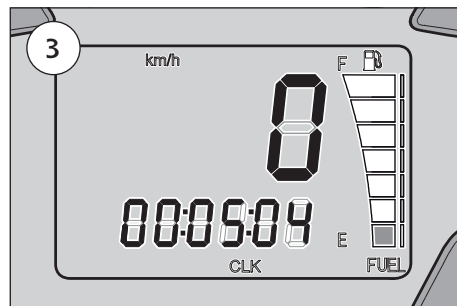
- SPEED: 299 kmh or 299 mph;
- H: shows the running hours of the engine (data are saved in permanent memory every 10 minutes). Maximum value: 9999:59.



3- SPEED / CLOCK / FUEL (figure 3)

- SPEED: 299 kmh or 299mph;
- CLOCK: Clock- reading from 0:00 to 23:59:59 (the data will be lost after detaching battery);

To set clock, press the SCROLL button (A) for 3 seconds or more to increase the hour; release button and after 3 seconds the minutes can be increased.



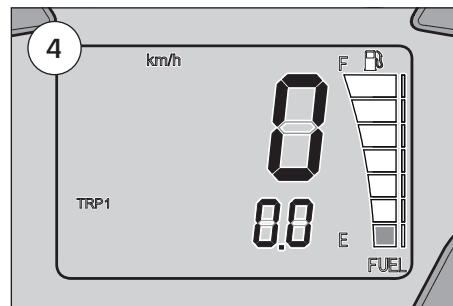
4- SPEED / TRIP 1 / FUEL (figure 4)

- SPEED: 299 kmh or 299mph;
- TRIP 1: distance- maximum value: 999.9 km (the data will be lost after detaching battery).

If the STP 1 is set to zero, the functions TRIP 1 and AVS1 will also be set to zero.

The function TRIP 1 is ON together with the function STP 1 (*).

(*): see figure 5



5- SPEED / STP 1 / FUEL (figure 5)

- SPEED: 299 kmh or 299mph;
- STP 1: miles/kilometers covered time
- Reading from 0:00 to 23:59:59 (the data will be lost after detaching battery).

To activate the function STP 1, push the knob SCROLL (A) for more than 3 seconds.

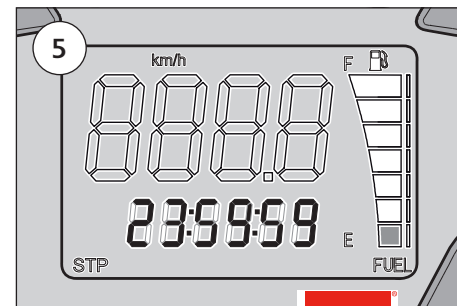
- 1st step: function ON;
- 2nd step: stop counters;
- 3rd step: reset STP 1, TRIP and AVS 1 data;
- 4th step: activate function;
- 5th step: stop counters

.....
and so on

NOTE

STP 1 data + TRIP 1 data = AVS 1 (*).

(*): see figure 6



6- SPEED / AVS 1 / FUEL (figure 6)

- SPEED: 299 kmh or 299 mph;
- AVS 1: shows the average speed for vehicle coverage, distance data (TRIP 1) and covered time (STP1) (the data will be lost after detaching battery).

NOTE

Resetting the STP 1 also resets the TRIP 1 and AVS 1 data.

7- SPEED / V MAX / FUEL (figure 7)

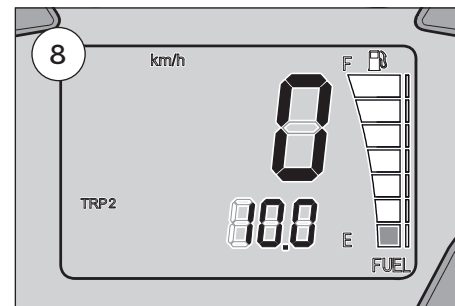
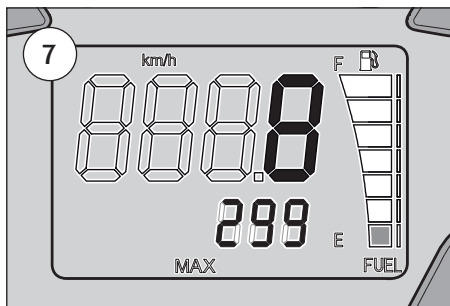
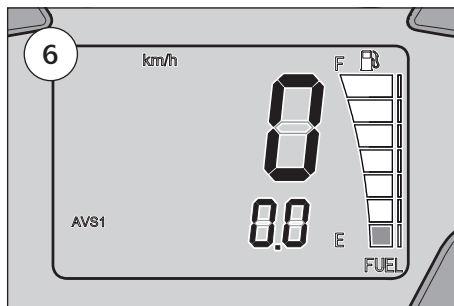
- SPEED: m 299 kmh or 299 mph;
- V MAX: Shows the maximum speed reached by the vehicle, in kmh or mph.

Maximum value: 299 kmh or 299 mph. To set to zero V MAX, push the knob SCROLL (A) for more than 3 seconds.

8- SPEED / TRIP 2 / FUEL (figure 8)

- SPEED: 299 kmh or 299 mph;
- TRIP 2: distance- maximum value: 999.9 km/miles (the data will be lost after detaching battery);

To set TRIP 2 to zero, push the knob SCROLL (A) for more than 3 seconds.



9- TRIP 2 / CLOCK / FUEL (figure 9)

- TRIP 2: distance- Max value: 999.9 km / miles (the data will be lost after detaching battery).

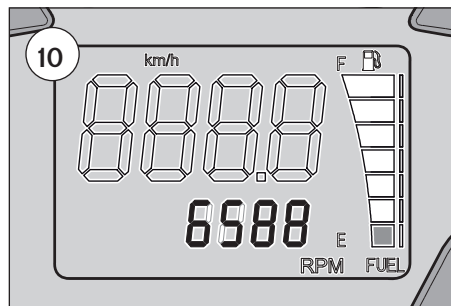
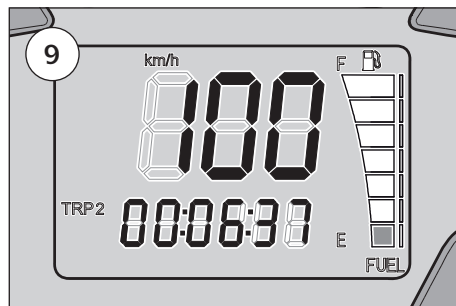
To set TRIP 2 to zero, push the knob SCROLL (A) for more than 3 seconds;

- CLOCK: Clock-reading from 0:00 to 23:59:59 (the data will be lost after detaching battery).

To reset the clock, push the knob SCROLL (A) for more than 3 seconds in order to increase the hours; release the knob then, after 3 seconds, it is possible to increase the minutes.

10- SPEED /RPM / FUEL (engine r.p.m. numerical value) (figure 10)

- SPEED: 299 kmh or 299 mph.



THROTTLE CONTROL

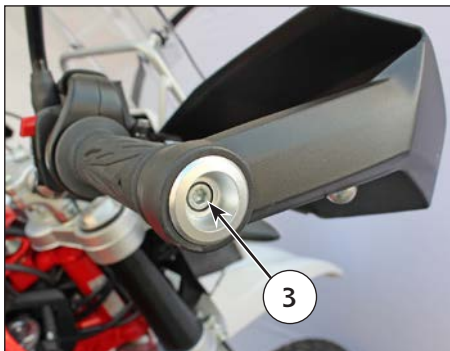
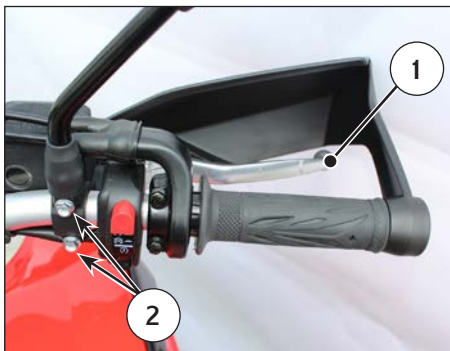
The throttle twistgrip (1) is located on the right-hand side of the handlebar. The position of the throttle control can be adjusted by loosening the two retaining screws (2).

CAUTION*:

Do not forget to tighten the screws (2) after the adjustment.

FRONT BRAKE CONTROL

The brake control lever (1) is located on the right-hand side of the handlebar. The position of the command on the handlebar can be adjusted by loosening the two retaining screws (2) and the Allen screw (3) on the hand-guard.




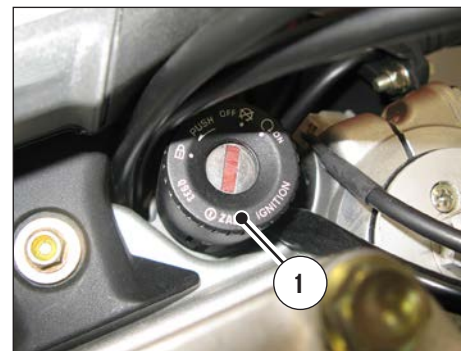
CAUTION*:

Do not forget to tighten the screws (2) and (3) after the adjustment.

IGNITION SWITCH

The ignition switch has three positions.

- From the OFF position, i.e. where you can remove the key, turn the key (1) clockwise to ON; ignition, parking lights and utilities are hence activated and the engine can be started;
- From the OFF position, i.e. where you can remove the key, press and turn the key (1) anticlockwise to ; steering lock position.



PROVISION FOR 12V POWER SUPPLY

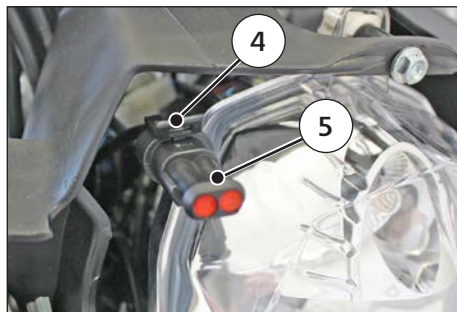
The motorcycle is equipped with a connector to power an external device with a voltage of 12V and maximum absorption of 4.5A.

Proceed as follows to access the connector:

- Unscrew the four screws (1) and remove the fairing (2).
- Remove the casing (3) by pulling it outward.
- Extract the connector (4) and remove the cap (5).

NOTE:


Connect the device using the relevant connector.



STEERING LOCK

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

Lock the steering as follows:

- Turn handlebar to the left
- Insert key (2) in the ignition switch (1) set to OFF.
- Press the key in (2) and turn it anticlockwise to position 
- Remove the key (2).

To unlock the steering lock, reverse the above procedure.



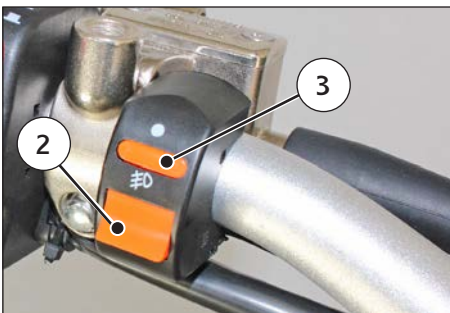
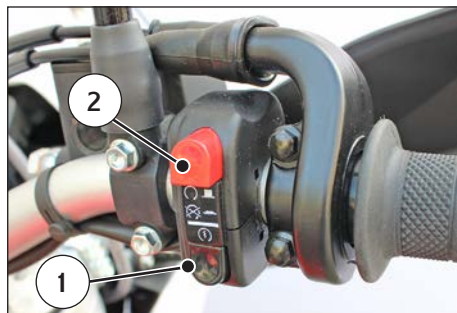
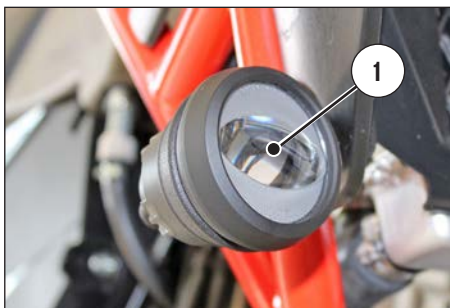
R.H. HANDLEBAR SWITCH

The right-hand switch features the following controls:

- 1) Engine start button
- 2) Engine KILL SWITCH.

DEPTH SPOT LIGHT SWITCH

- To turn on the spot lights (1), press button (2) on the switch.
- To turn off the spot lights (1), press button (3) on the switch.



LEFT HAND HANDLEBAR SWITCH

The left hand handlebar switch contains the following commands:

Headlamp (A)

- 1) High beam flasher (automatic turn-off)
- 2) High beam switch
- Low beam switch

Indicators (turning signals) (B), (C)

- 3) Left turn indicator (automatic return)
- Right turn indicator (automatic return)

To deactivate the indicators, press the control level after it has returned to centre.

4) Horn



5) Rear wheel ABS exclusion selector

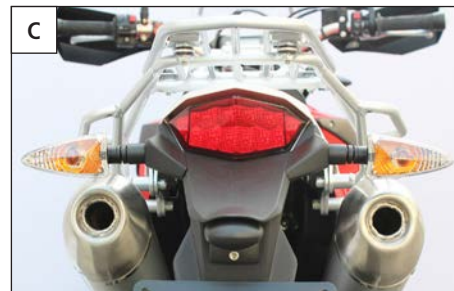
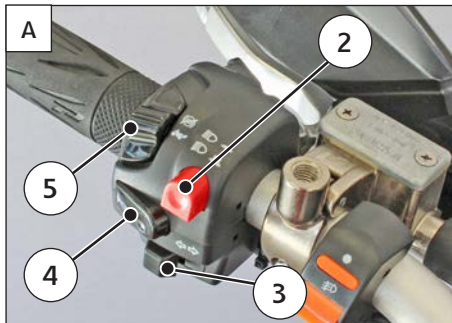
- The ABS function on the rear wheel can be deactivated for off-road riding.

NOTE



In order to activate or deactivate the ABS function on the rear wheel, the motorcycle must be stationary.

Rear wheel ABS deactivation

- To deactivate the ABS function on the rear wheel, move the selector (5) towards “” and hold it there for 3 seconds; the “” indicator light on the digital instrument will begin flashing.



Rear wheel ABS activation

- To reactivate the ABS function, move the selector to “” for at least one second; the “” indicator light on the digital instrument will turn off.

NOTE

Each time the ignition key is moved from the “OFF” position to the “ON” position, the ABS system will be automatically reactivated.

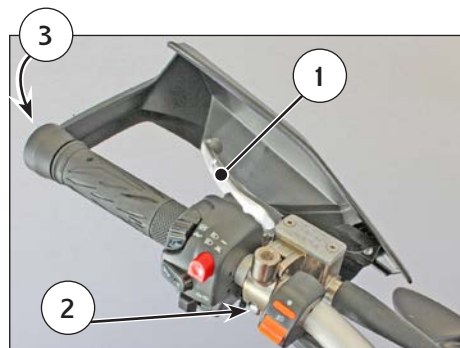
CLUTCH CONTROL

The hydraulic clutch control lever (1) is located on the left-hand side of the handlebar and is protected against dirt.

The position of the clutch command on the handlebar can be adjusted by loosening the lower retaining screw (2) and the Allen screw (3) on the handguard.

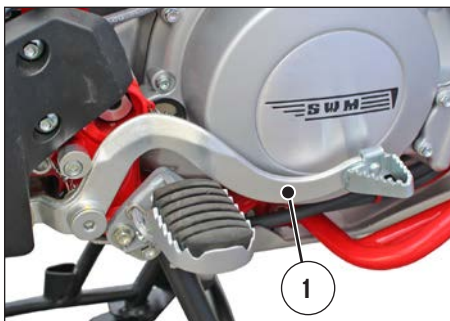
CAUTION*:

Do not forget to tighten the screw after the adjustment.



REAR BRAKE CONTROL

The rear brake control (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 operator 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.

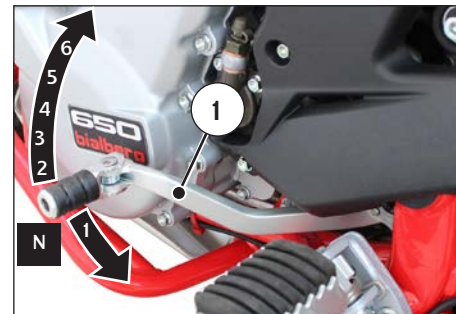
First gear is engaged by pushing the lever downwards; the other gears are engaged in a sequence by pushing the lever upwards.

The position of the gear shift lever on the shaft can be varied as follows: loosen the screw, pull the lever out, and place the lever in a new position on the shaft.

Tighten the screw once operation is completed.

CAUTION*: Do not shift gears without disengaging the clutch and closing the throttle. The engine could be damaged by overspeed.

WARNING*: Do not downshift when travelling at a speed that would force the engine to over-rev in the next lower gear, or cause the rear wheel to lose grip.





RIDING

NOTE*: If you are not familiar with the motorcycle operation, read paragraphs on “CONTROLS” before riding this motorcycle.

PRE-RIDE 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 and clutch fluids level;
- check the steering by turning the handlebar both ways, fully home;
- check the tyre pressure;
- check the chain tension;
- check the throttle twistgrip and adjust it, if necessary;
- turn the ignition switch to ON 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.

ANTI-LOCK BRAKING SYSTEM - ABS

This model is equipped with an anti-lock braking system (ABS), which is designed to prevent the brakes from locking during sudden braking.

- The ABS system does not reduce the braking distance.
- Under certain circumstances, the ABS system can increase the braking distances.
- The ABS system does not engage at speeds of less than 10 km/h.
- The brake lever and pedal may suffer a slight back-kick when the brakes are engaged. This is normal.
- Always use the recommended pads and tyres to ensure the ABS system's proper functionality.

INSTRUCTIONS FOR RUNNING-IN

The exclusivity of the design, coupled to the high quality of the materials used and the accuracy of the assembly, guarantee the higher comfort right from the start. However, when running for the first 1500 Km. (932,05 mi), SCRUPULOUSLY follow the rules mentioned herebelow. 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 revs 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 settle 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 drive downhill with GEARBOX IN NEUTRAL, but shift into gear to brake with the engine if necessary, thus preventing the fast wear of the brake pads.

TROUBLESHOOTING

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

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 overheats

- the air flow on the radiators is blocked: clean
- Faulty electric fan: replace thermal switch
- insufficient quantity of oil: top up

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

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

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 and dismounted from the left-hand side, with free hands, without obstructions and with the side stand lowered.

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.

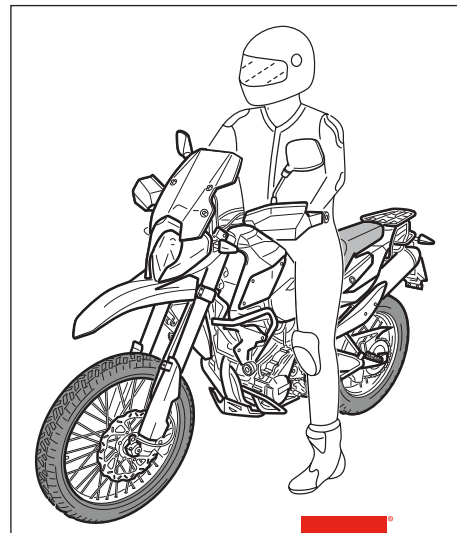
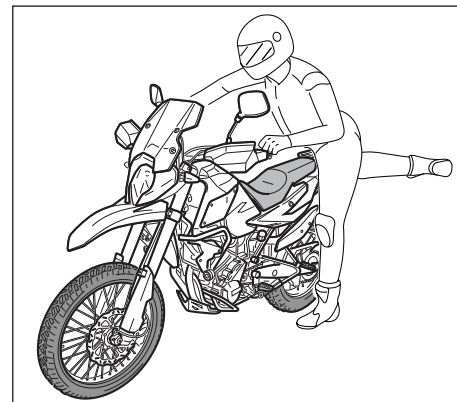
Mounting of rider

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.

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

- Start the motorcycle as described in the relevant section.
- Using your left leg, fully retract the stand.

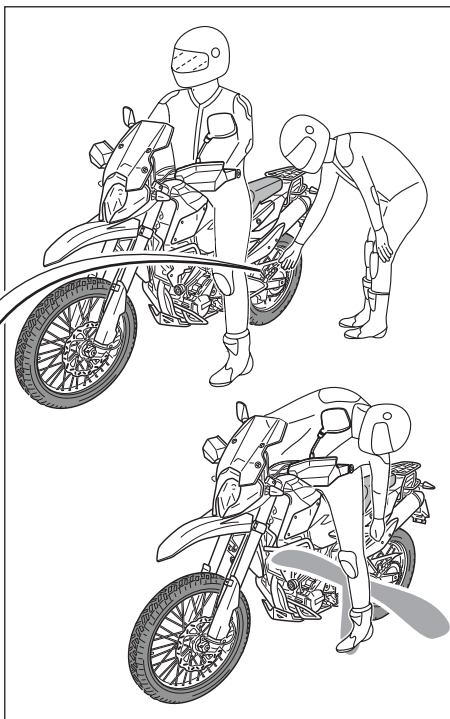
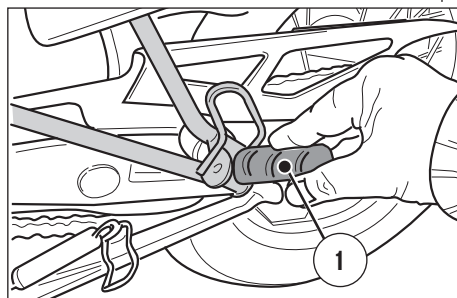


Mounting of passenger

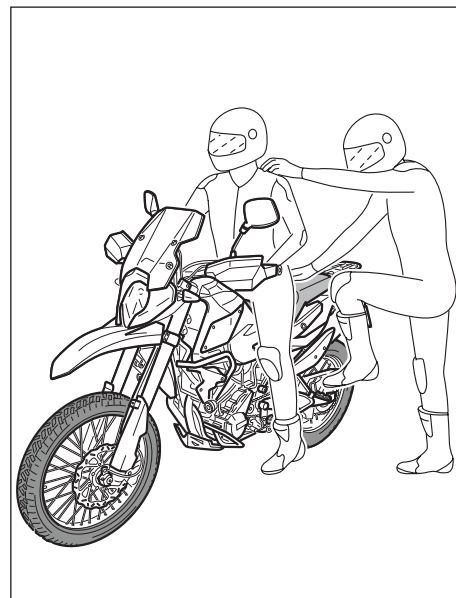
The rider must mount the motorcycle first, without starting the engine, as described in the relevant section.

- Get the passenger to put the passenger footrests (1) down.

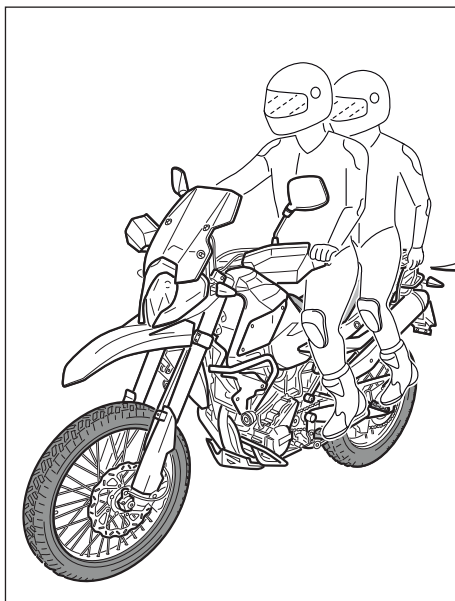
CAUTION*: When in a riding position, the rider must not pull out or attempt to pull out the rear passenger footrests since this may unbalance the vehicle.



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 (2).
- The rider must use his left foot to retract the side stand completely.
- Start the motorcycle as described in the relevant section.

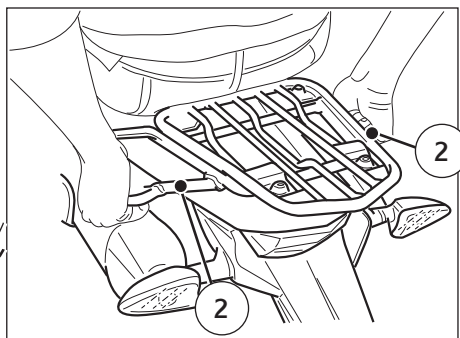


Dismounting the motorcycle

- 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.

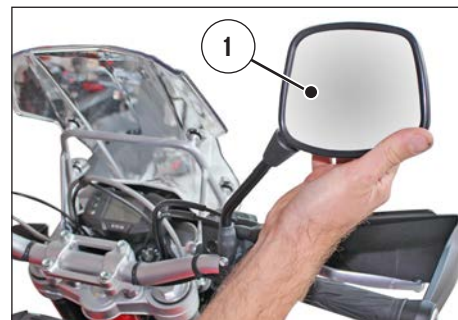


- Allow the passenger to dismount first from the left side of the vehicle. In order to dismount, the passenger must place his foot on the left footrest and raise the right leg.
- Tilt the motorcycle to the left until it rests on the stand.
- Firmly grasp the handlebar and dismount on the left-hand side by lifting your right leg.

ADJUSTING THE REAR-VIEW MIRRORS

Sit on the motorcycle as described in the relative paragraph.

Adjust both mirrors (1) so that you can clearly see the road behind you when seated.



STARTING THE ENGINE

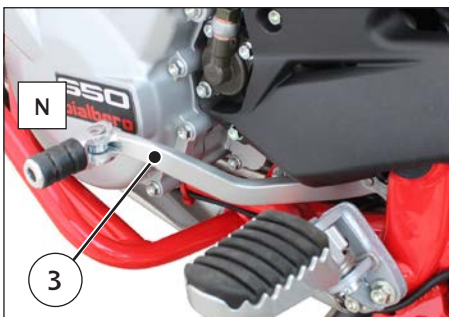
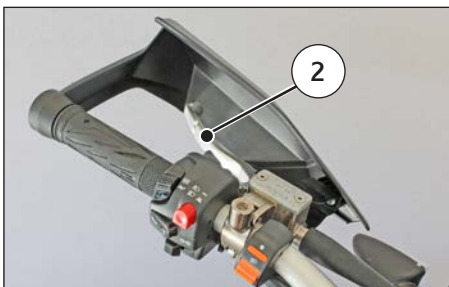
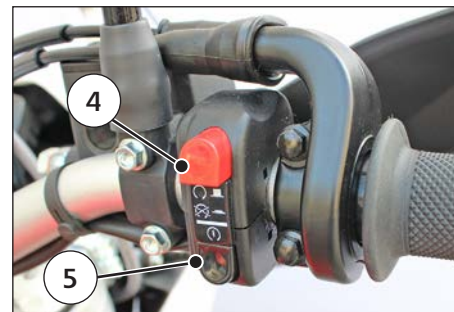
While the engine is cold, i.e., after the motorcycle has not been used for a while or in low ambient temperatures, operate in the following manner:

- 1) Place ignition key (1) to ON position (the buzz that you hear when you turn the key to ON is caused by the fuel pump which puts the feeding system under pressure);
- 2) pull the clutch lever (2);
- 3) position the gearbox pedal (3) in neutral;
- 4) Check that the button (4) is in the out position and press it, followed by the start button (5).
When a cold engine has just been started, do not increase revs, to ensure an adequate oil warm-up and circulation.

NOTE

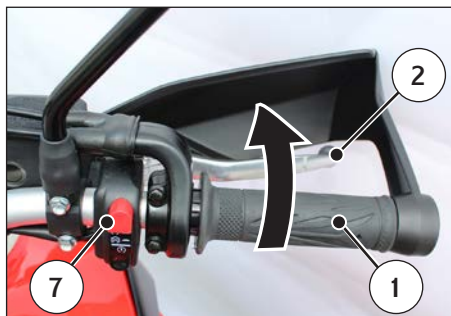
A safety switch is mounted on the clutch lever's support, which ONLY allows the engine to be started with the clutch lever pulled.

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



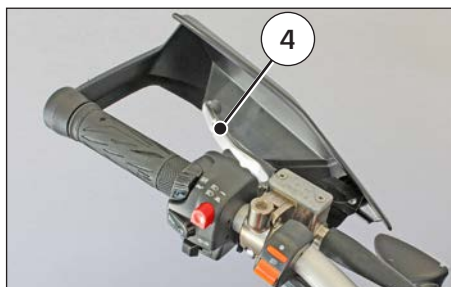
STOPPING THE MOTORCYCLE AND THE ENGINE

- Close the throttle (1) completely so that the engine will help slow down the motorcycle.
- Apply both front (2) and rear (3) brakes while downshifting (for fast deceleration, press firmly on both brake pedal and lever).
- When stopped, pull the clutch lever (4) and shift gear lever (5) into the neutral position
- Turn the ignition key (6) to the OFF position (position for removing key).



STOPPING THE MOTOR IN AN EMERGENCY

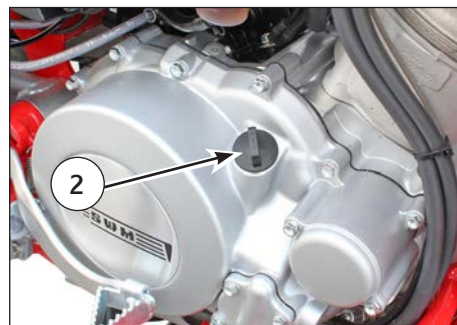
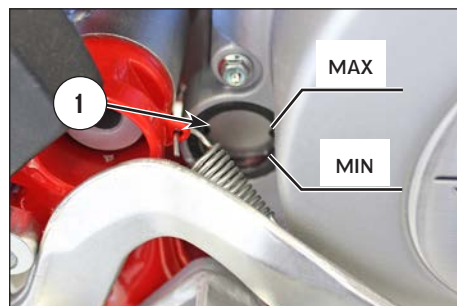
- Press the red button (7) to stop the motor; after use, bring it back to the "out" position. When the bike is off, place it on its side stand.



CHECKING THE OIL LEVEL

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*: Have this operation made with warm engine.

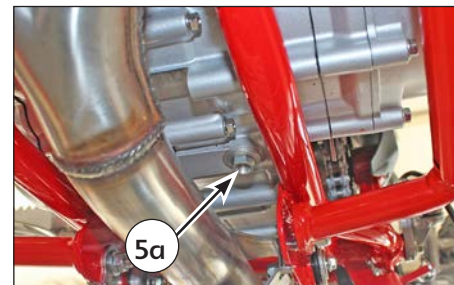
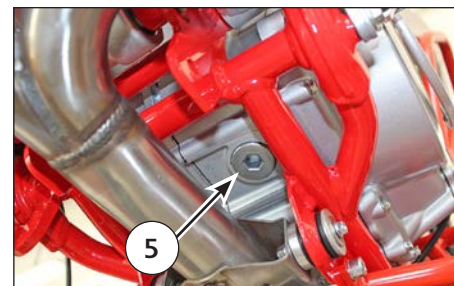
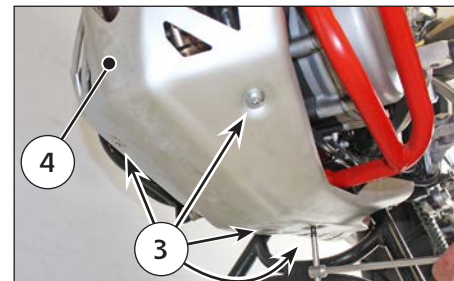
WARNING*: Be careful not to touch hot engine oil.

ENGINE OIL REPLACEMENT AND MESH FILTERS-FILTER CARTRIDGE CLEANING OR REPLACEMENT

WARNING*: Be careful not to touch hot engine oil.

Drain the oil with WARM ENGINE; proceed as follows:

- Position the motorcycle on the central stand;
- undo the four screws (3) and remove the engine guard (4);
- remove oil filler cap (2);
- place an oil drain pan under the engine block;
- remove the oil drain plugs (5) and (5a);
- drain the used oil completely then clean the magnet on the cap (5);



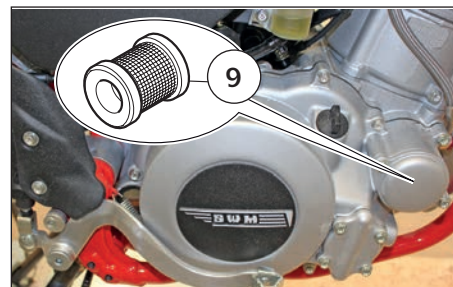
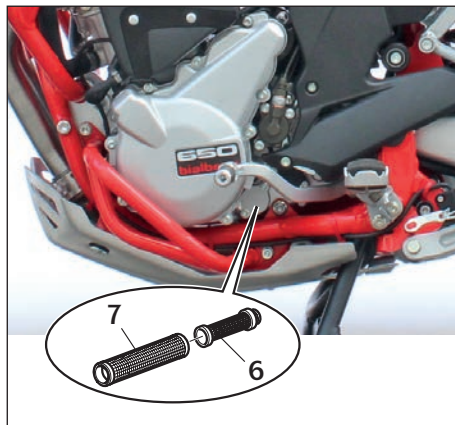
- remove the three metal filters (6), (7) on engine left-hand side, and filter (8) on the right-hand side (between cover and crankcase), check the O-rings for wear and wash the filters clean with fuel; reassembly procedure is the same as for disassembly, in the reverse order;
- to change filter cartridge (9) you need to loosen the retaining screws and remove the cover;
- once filters are replaced, reinstall the drain plugs (5) and (5a), and fill with the specified oil quantity;
- re-mount the engine guard (4).

CAUTION*:

Pay attention to the filter (8) reassembling direction.

- Respect the following coupling torques when re-mounting:
 - Drain plug (5).....30 Nm
 - Drain plug (5a).....24 Nm
 - Screws of the filter caps (6) and (7)8 Nm + Loctite 243
 - Filter cartridge screws (9)10 Nm
 - Clutch cover screws to reach the filter (8).....10 Nm
 - Engine guard screw (4)8 Nm + Loctite 243

Note*: Replace all gaskets and sealing washers.



COOLANT LEVEL CHECK

Check level (1) in right-hand radiator when engine is cold (place the motorbike fully upright). The coolant must be 10 mm above the elements.

The coolant must always be present in the expansion tank (2); its level must be between the MIN and MAX marks indicated in the figure.

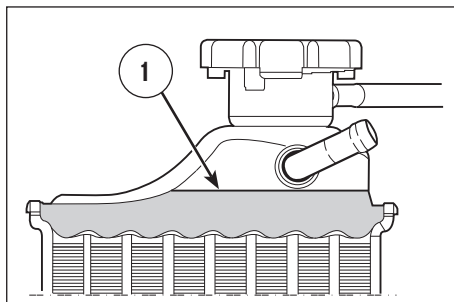
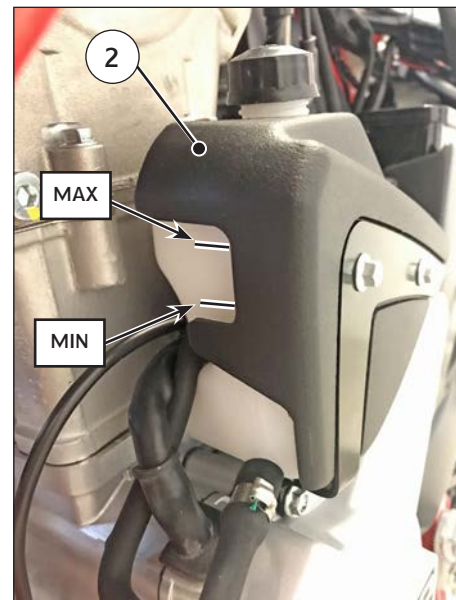
The radiator cap (3) is provided with two locking positions: the first one is for prior discharge of pressure in the cooling system.

CAUTION*:

Avoid removing radiator cap (3) when engine is hot, as coolant may spout out and cause scalding.

Note*:

Difficulties may arise in eliminating coolant from painted surfaces. If this occurs, wash off with water.



COOLANT REPLACEMENT

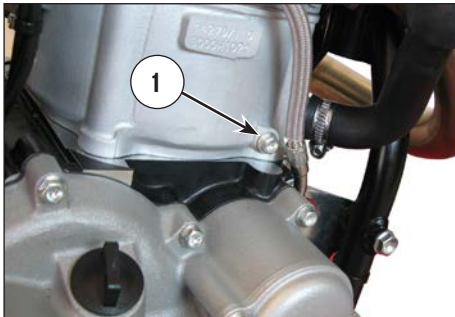
WARNING*: The coolant replacement operation must be performed with the engine cold.

Standard procedure

- Place a vessel on the R.H. side of the cylinder, under the coolant drain screw (1). FIRST remove the screw (1) then SLOWLY open the R.H. radiator cap (2); slope the motorcycle on the right side to drain the coolant easily in the vessel. Re-mount the screw (1), tightening it to a coupling torque of 8 Nm.

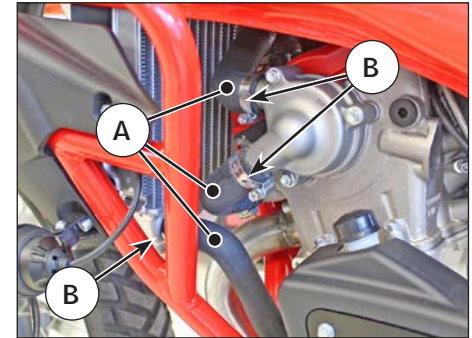
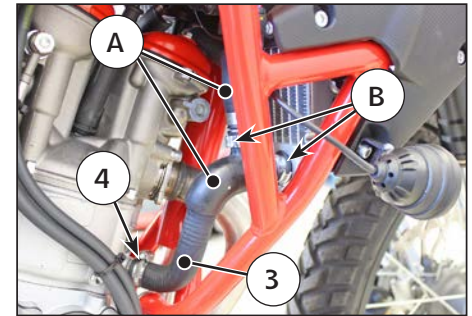
Fast procedure

- Place a vessel on the R.H. side of the cylinder, under the tube (3).
- Loosen clamp (4) and disconnect tube (3) from the engine.
- SLOWLY open the R.H. radiator cap (2); slope the motorcycle on the right side to drain the coolant easily in the vessel.
- Reassemble the tube (3) and tighten the clamp (4).



Filling procedure

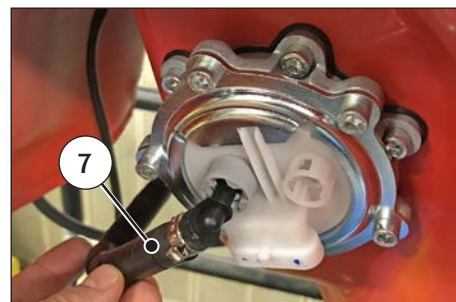
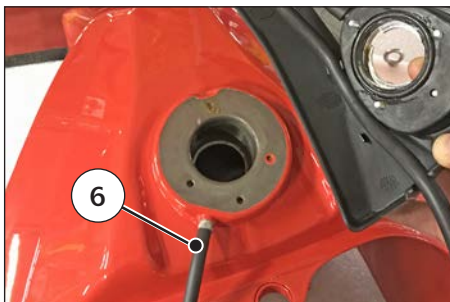
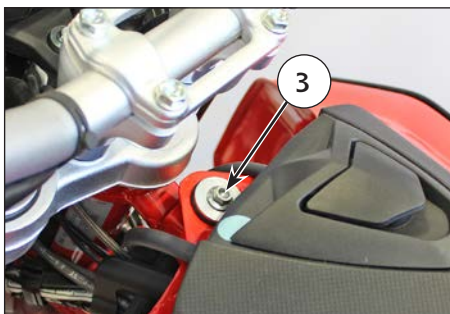
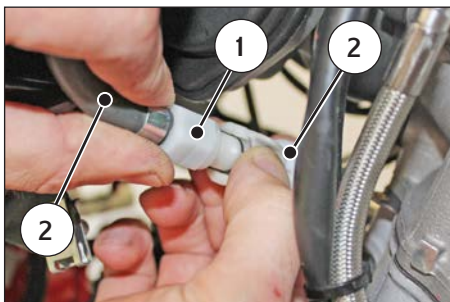
- Pour the necessary quantity of coolant in the radiator then warm up the engine in order to eliminate any possible air bubbles.
- Allow the coolant to cool down then remove cap (2) and check the level as explained under "Coolant level check".
- Periodically check the connecting hoses (see "Scheduled Maintenance Chart"): this will avoid coolant leakage and consequent engine seizure: If hoses (A) show cracks, swelling or hardening due to sheaths desiccation, their replacement shall be advisable.
- Check the correct tightening of the clamps (B).



THROTTLE CABLE ADJUSTMENT

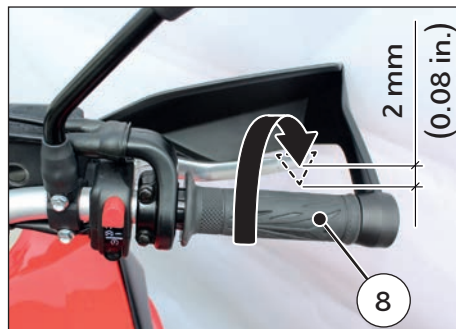
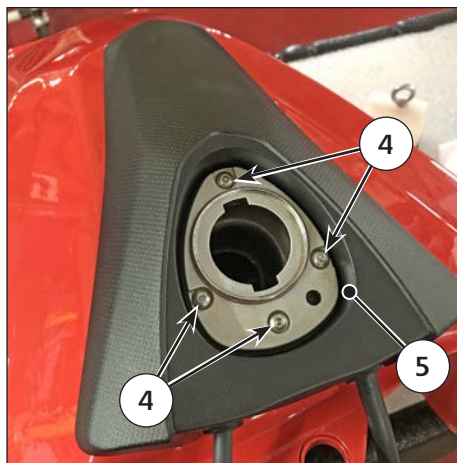
To check the correct adjustment of the throttle cable, operate as follows:

- Remove the saddle as indicated in the "Air filter check" section;
- press the quick coupling hub (1) and detach the connecting hoses (2) of the two sides of the tank;
- unscrew the tank retaining screw (3);
- unscrew the screws (4) and move the cover (5) without detaching it.
- detach the tank vent hose (6);
- lift the tank and detach the throttle body connecting hose (7);
- remove the tank;
- turn throttle twistgrip (8) and make sure it has



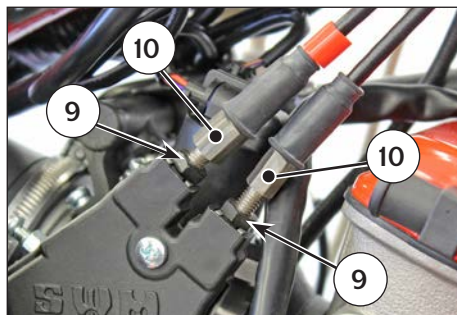
about 0.08 in. free play;

- if it is not so, loosen the lock nuts (9) and suitably turn the adjuster screws (10) (loosen to decrease play or tighten to increase it);
- tighten back the lock nuts (9);
- re-mount everything in the reverse order, paying attention to tightening screws (4) to 4 Nm and the screw (3) to 25 Nm.



WARNING*: Operation with damaged throttle cable could result in an unsafe riding condition.

WARNING*: Exhaust gas contains poisonous carbon monoxide. Never run the engine indoors.



SPARK PLUG CHECK

Spark plug (2) gap shall be $0.028 \div 0.031$ in.

A wider gap may cause difficulties in starting the engine and overload the coil.

A gap that is too narrow may cause difficulties when accelerating, when idling or poor performance at low speed.

Clean the scale away from the base of the spark plug before removing it from the cylinder, after removing the cap (1).

It is very useful to examine the state of the spark plug just after it has been removed from the engine since the scale deposits on the plug and the colour of the insulator provide useful indications.

Correct heat rating:

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

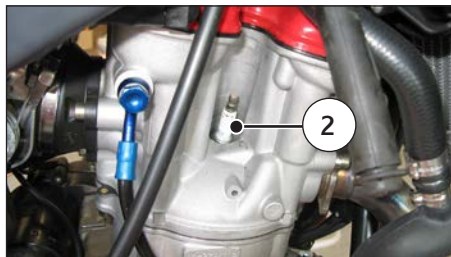
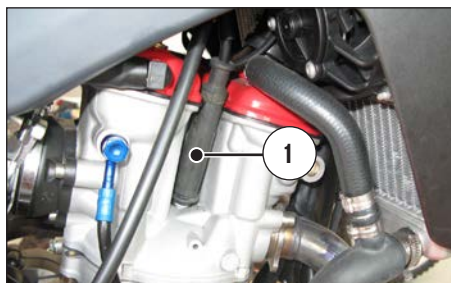
High heat rating:

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

Low heat rating:

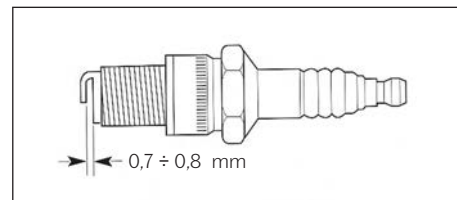
In this case, the spark plug has overheated and insulator tip is vitrified (glazed), white or grey in colour.

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



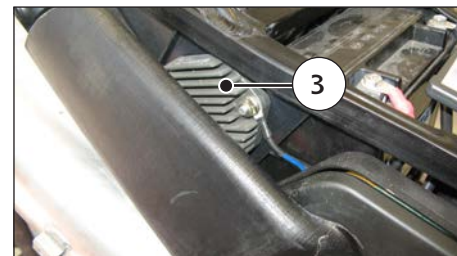
Before refitting the plug, thoroughly clean the electrodes and the insulator using a metal brush. Smear some graphite grease on spark plug thread, do it fully home finger tight then tighten it to $7.37 \div 8.85$ ft-lb. torque. Loosen the spark plug then tighten it again to $7.37 \div 8.85$ ft-lb.

Spark plugs which have cracked insulators or corroded electrodes should be replaced.



VOLTAGE REGULATOR

The voltage regulator (3) is fastened on the right-hand side of the rear chassis.



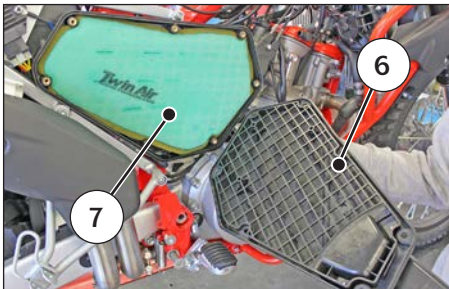
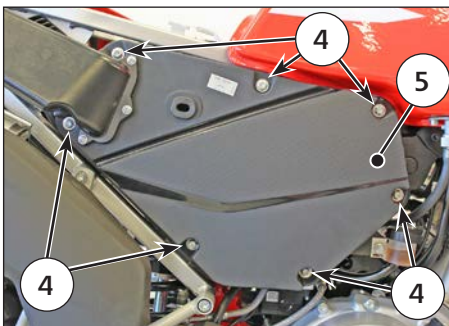
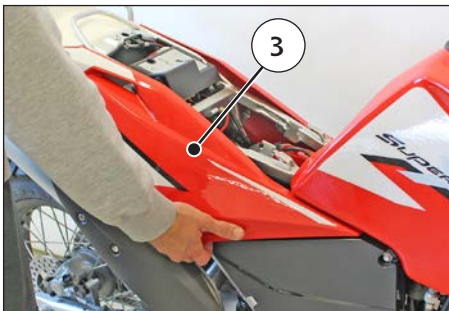
AIR FILTER CHECK

- Insert the key in latch (1) then turn clockwise to release the saddle lock; remove the saddle (2).
- Disengage rear right-hand side panel (3) from filter cover then slide it toward vehicle front.
- Loosen the seven screws (4) and remove the filter cover (5).

Note*:

The screws have a different length, it is recommended to mark them in order to favour correct reassembly.

- Remove the filter (6) together with support frame.
- Slide out the filtering element (7) from the support frame (8).



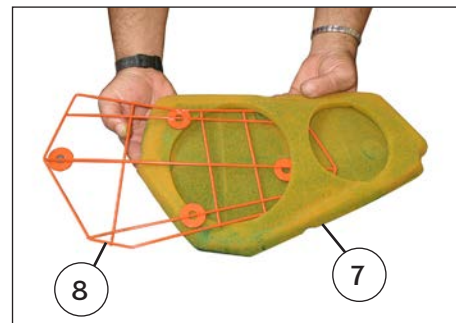
AIR FILTER CLEANING

Wash the filter with a specific detergent (MOTUL AIR FILTER CLEAN or similar) then dry it fully (wash filter with gasoline only in case of need). Plunge the filter in special oil for filters (MOTUL AIR FILTER OIL or similar), then wring it to drain superfluous oil.

- Clean the inside of the filter cover (5).

WARNING*: Do not use fuel or a low flash-point solvent to clean the filtering element. A fire or explosion could result.

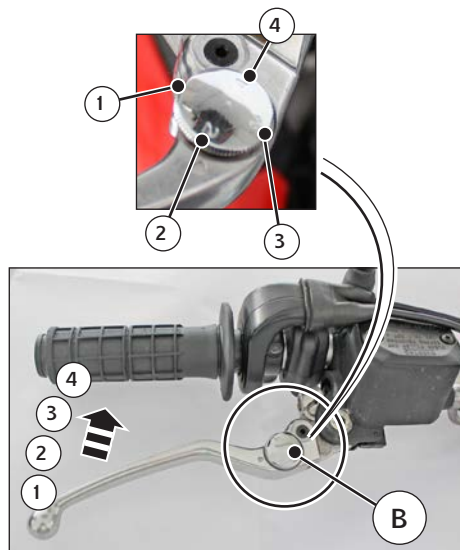
WARNING*: Clean the filtering element in a well ventilated area and do not allow sparks or flames anywhere near the working area.



ADJUSTMENT OF THE CONTROL LEVER AND FRONT BRAKE FLUID LEVEL CHECK

The lever position can be adjusted (4 settings available) to suit the rider hand size. To decrease the lever distance from the handgrip, turn the adjuster (B) CLOCKWISE. To increase the lever distance from the handgrip, turn the adjuster (B) COUNTER CLOCKWISE.

The fluid level in the pump reservoir may never drop below the notch visible on the sightglass (1) on the rear of the pump body.



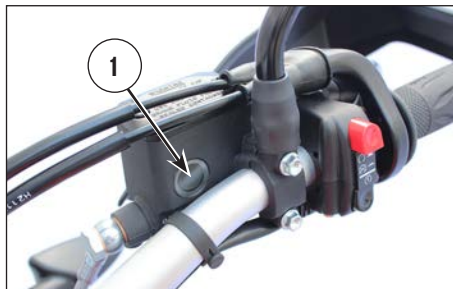
A decrease of the fluid level will let air into the system, hence an extension of the lever stroke.

WARNING*: If the brake lever feels mushy when pulled, there may be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake system immediately checked by the SWM 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 irritation. Avoid contact with skin or eyes. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed.

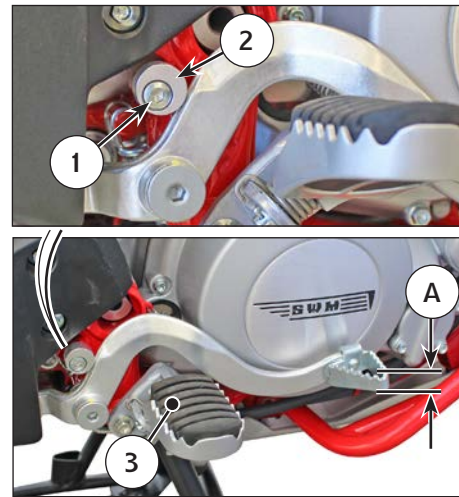


REAR BRAKE PEDAL POSITION ADJUSTMENT

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

For adjusting, proceed as follows.

- loosen the screw (1);
- turn the cam (2) in order to raise or lower the brake pedal (3) within the range available (A);
- the operation done, tighten the screw (1). Once this adjustment is completed, adjust the free play of the pedal as follows.



REAR BRAKE PEDAL FREE PLAY ADJUSTMENT

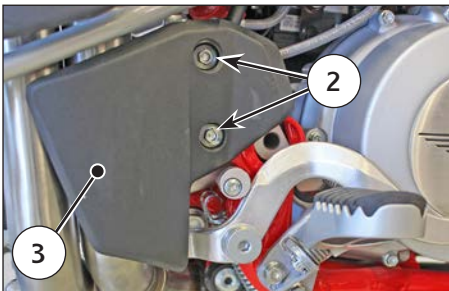
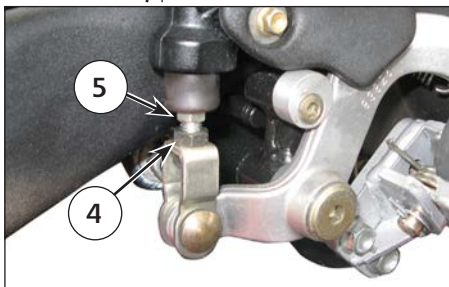
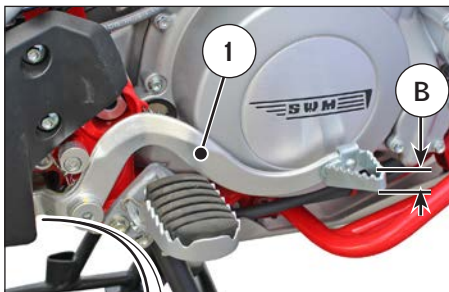
The rear brake pedal (1) should have a free play (B) (0.2 in.) before the brakes begin to bite.

Should this not happen, operate as follows:

- unscrew the two screws (2) and remove the small guard (3).
- loosen nut (4);
- operate the pump rod (5) to increase or decrease the free play;
- tighten nut (4) at the end of the operation.

WARNING*:

When the free play requirement is not met, the brake pads will be subjected to an early wear that may lead to TOTAL BRAKE INEFFECTIVENESS.



REAR BRAKE FLUID LEVEL CHECK

Master cylinder fluid level shall never drop below the minimum notch shown on the clear 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 pedal feels mushy when pulled, there may be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake system immediately checked by the SWM 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 irritation. Avoid contact with skin or eyes. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed.

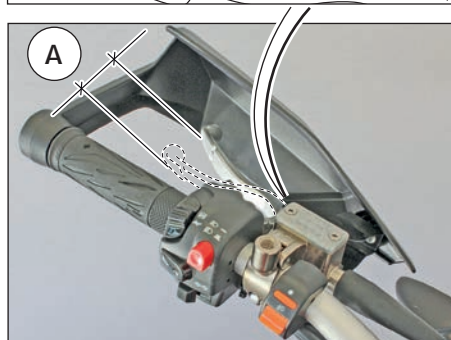
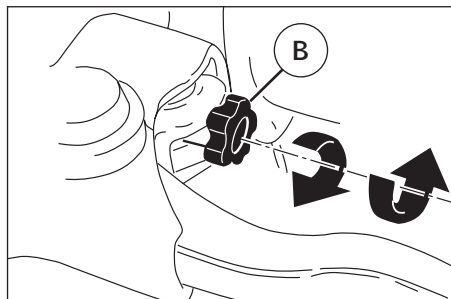
ADJUSTMENT OF THE HYDRAULIC CLUTCH CONTROL LEVER

Free play (A) must be at least 0.1 in.

The lever position can be adjusted to suit the rider hand size.

To decrease the lever distance from the handgrip, rotate the adjuster (B) CLOCKWISE.

To increase the lever distance from the handgrip, rotate the adjuster (B) COUNTER CLOCKWISE.



SUSPENSIONS

Standard suspensions setting derives from several extensive demanding tests in various usage conditions of the vehicles. If you intend to use them on more specific ground, following are a few guidelines for setup. Always start from the suspensions standard setting before making any change. Afterwards, increase or decrease the adjusting clicks, one at a time.

HARD GROUND

Front fork: softer compression setting.
Shock absorber: softer compression setting.

SANDY GROUND

Front fork: harder compression setting.
Shock absorber: harder compression, and especially harder rebound settings. Work on the spring preload to lower the motorcycle riding height (rear end).

MUDDY GROUND

Front fork: harder compression setting.
Shock absorber: harder compression and rebound settings; Work on the spring preload to lift the motorcycle riding height (rear end).

WARNING*:

ALWAYS remember that all the motorcycles and their parts used in competitions of any type are excluded from the warranty and that all modifications to standard configuration cause **THE VEHICLE NON COMPLIANCE WITH TYPE-APPROVAL REQUIREMENTS** and it is hence unsuitable for circulating on public roads: consequently it may be used only in “CLOSED CIRCUITS” by authorised subjects holding the relevant driving licence or authorisation.



ADJUSTING THE FRONT FORK

a) REBOUND (TOP ADJUSTER)

Standard setting: - 12 clicks.

To reset standard calibration, turn adjuster (C) clockwise to reach the fully closed position; then, turn it back by the mentioned clicks. In order to obtain a smooth braking action, turn the adjuster counter clockwise. Vice versa to obtain a harder braking action.

b) COMPRESSION (UPPER REGISTER)

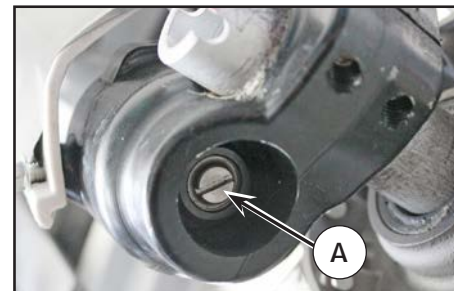
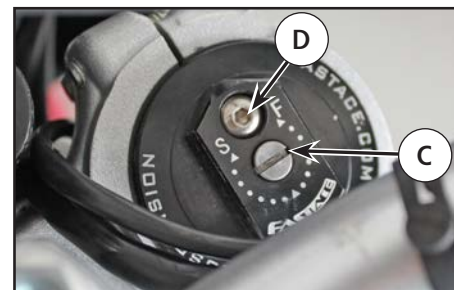
Standard calibration : 6 clicks.

To reset to the standard calibration turn register (A) clockwise until the position of fully closed is reached then, turn back by the mentioned clicks. To obtain a smoother braking action, turn the register anti-clockwise. Reverse the operation in order to obtain a harder action.

c) AIR VENT (to carry out after each competition, or monthly).

Set the motorcycle on a central stand, release the fork fully extended and loosen the air vent valve (D). Once this operation is over, tighten the valve.

Note*: Never force the adjusting screws beyond the maximum open and closed positions.



FORK OIL LEVEL

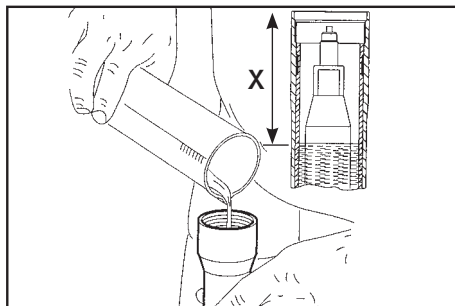
For regular fork operation, both legs must be provided with the necessary oil quantity. Remove the fork legs from the fork to check the oil level. Work as follows:

- remove the damper rod caps;
- remove springs from the legs letting the oil drain into the legs;
- bring fork to stroke end;
- check that the level is at distance "X" below the upper limit of damper rod.

OIL QUANTITY IN EACH FORK LEG

- 29,29 in³.

X= 110 mm (4,33 in.)



Note*:

Flexibility index of the standard springs:
K = 7 N/mm

Note*:

Always replace both the spring and the spacers to keep the preload value unchanged.

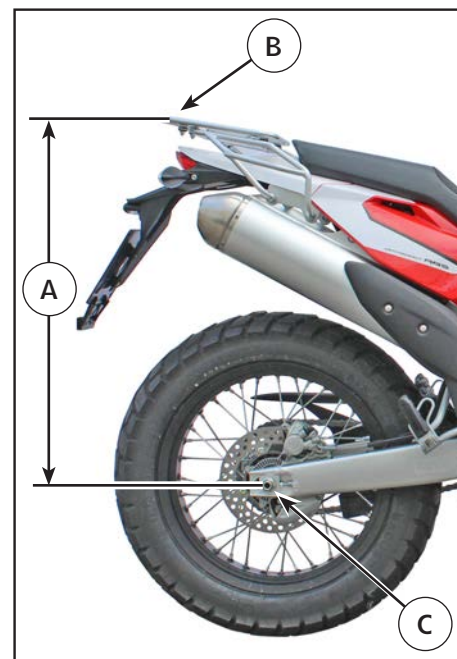
ADJUSTING THE SHOCK ABSORBER

The rear shock absorber is calibrated for running with the rider plus a small bag only. It is thus recommended to adjust the shock absorber setting (spring preload) when riding with a passenger.

WARNING*: The shock absorber adjustment affects both the stability and the handling of the motorcycle. After changing the standard suspension setting, ride with care. We advise measuring the reference distance "A" before making any change.

WARNING*: Never disassemble the shock absorber, which contains compressed gas. Contact your SWM Dealer for any major service.

B: rear mudguard top height
C: rear wheel axle height



ADJUSTING THE SHOCK ABSORBER SPRING PRELOAD

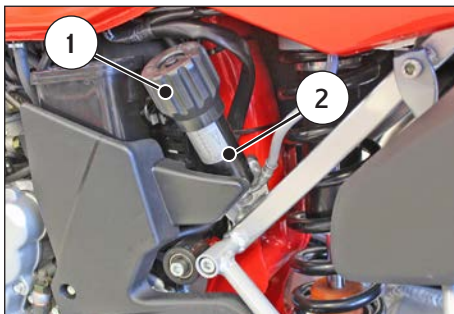
Proceed as follows:

- Operate on the adjustment knob (1); screw it to increase the pre-load, unscrew it to decrease the pre-load.
- If necessary, refer to the notches (2), marking the adjustment according to use: pilot only, pilot + passenger, pilot + passenger + luggage.

Pre-load must be adjusted according to the load, leaving it at the minimum value if only the pilot is present, or bringing it to the maximum value at full load.

If bags are assembled, refer to the manual for "Operating limits".

WARNING*: Be careful not to touch hot exhaust pipe while adjusting the shock absorber.



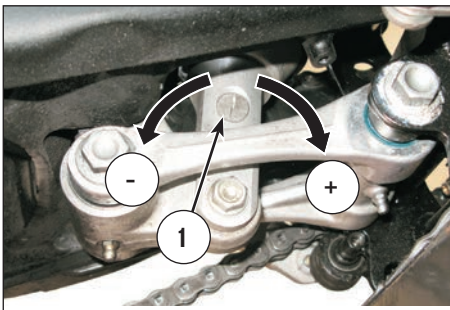
ADJUSTING THE SHOCK ABSORBER EXTENSION

REBOUND - Standard setting:

- 20 clicks (± 2 clicks)

To reset the standard setting, turn lower adjuster (1) clockwise until reaching fully closed position. Then turn it back by the mentioned clicks.

In order to obtain a smooth braking action, turn the adjuster counter clockwise. Vice versa to obtain a harder braking action.



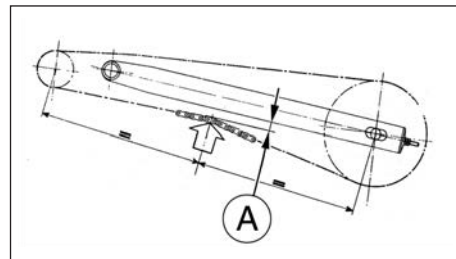
CHAIN ADJUSTMENT

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 0.47 in., as shown in the nameplate (1) on swingarm.

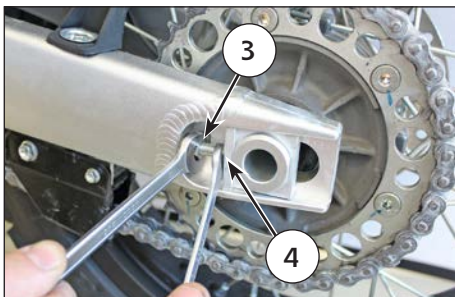
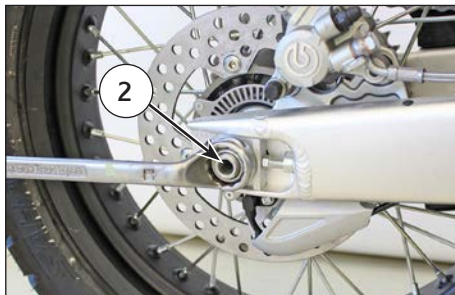
If it is not, proceed as follows:

- on the right side, with a 1.06 in. Allen wrench, loosen the locking nut (2) of the wheel axle;



- loosen the check nuts (3) on both chain tensioners and work on the screws (4) with a 0.39 in. wrench to achieve the right tension;
- adjust the check nuts (3) to a coupling torque of 22 Nm and the wheel axle nut (2), to a coupling torque of 142 Nm.

After adjustment, always make sure that chain has a slack of 0.47 in.



CHECKING THE WEAR OF CHAIN, PINION AND SPROCKET

Proceed as follows:

- fully stretch the chain with the adjusting screws.
- mark 20 chain links.
- measure the distance "L" between 1st pin center and 21st pin center.

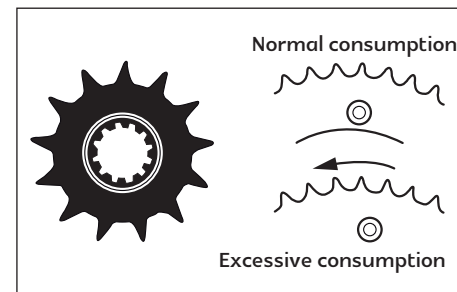
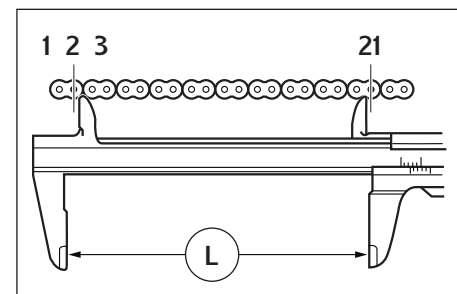
STANDARD	WEAR LIMIT
12,5 in.	12,72 in.

Check the pinion damages or wear and replace it should the wear degree be as the one shown in figure.

Remove the wheel and check the wear of the rear sprocket teeth. The below figure shows the outline of teeth in normal and excessive wear. Should the sprocket be badly worn out, replace it by loosening the six fastening screws to the hub.

WARNING*: Misalignment of the wheel will result in abnormal wear and may result in an unsafe riding condition.

Note*: In muddy and wet conditions, mud sticks to the chain and sprockets resulting in an overtight chain. The pinion, the chain, and the rear sprocket wheel wear increases when running on muddy ground.



LUBRICATING THE CHAIN

Lubricate the chain (4) following these instructions.

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.

Washing the chain with O-rings

Was using specific sprays for chains with OR rings; do not use fuel, trichlorethylene or solvents so as not to damage the OR rings.

Alternatively, was using petroleum, naphta or liquid paraffin.

Lubricating the chain with O-rings

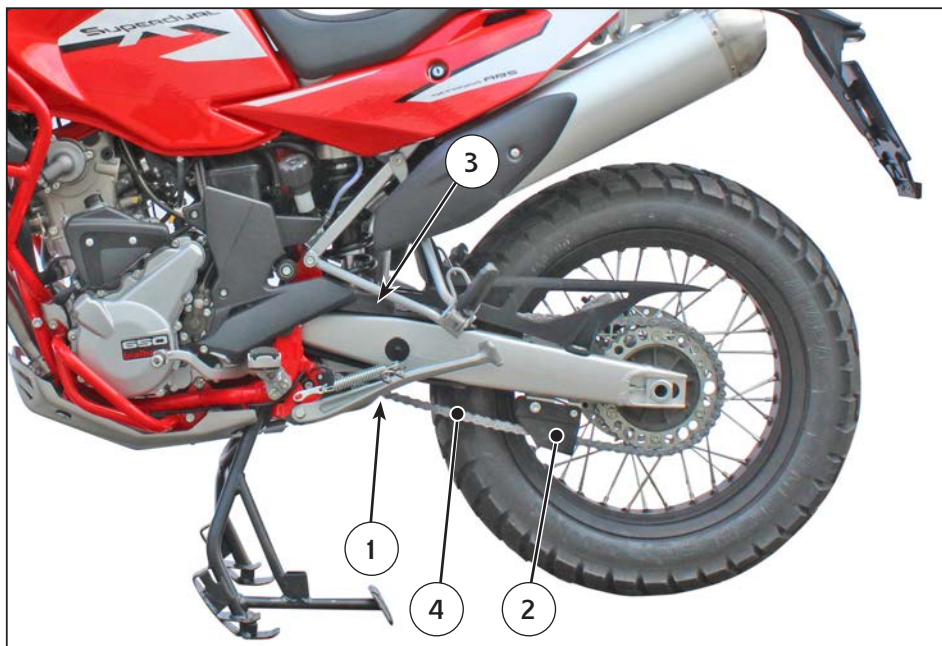
Using specific sprays with the aid of a brush, lubricate the metal and rubber parts (OR) both internally and externally; alternatively use engine oil with SAE 80-90 viscosity.

CAUTION*: The chain lubricant shall NEVER get in contact with the tyres or the rear brake disc.

Chain guide roller, chain guide eye, chain slider

Check the wear of the above-mentioned elements and replace them when necessary.

CAUTION*: Check the chain guide alignment, and remember that a bent element can cause chain early wear. In this case, chain might unwrap from the sprocket.



- 1 - Chain guide roller
- 2 - Chain guide eye
- 3 - Chain slider

REMOVING THE FRONT WHEEL

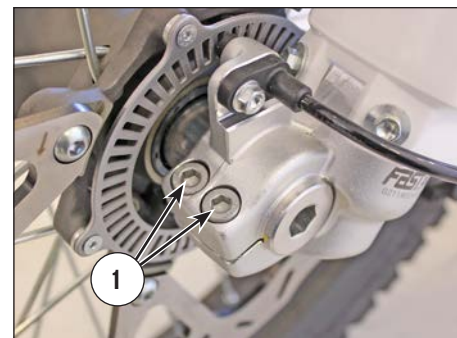
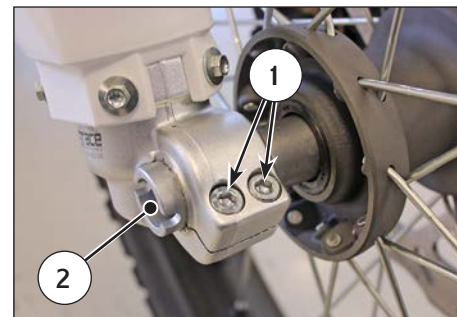
Set a stand under the engine and see that the front wheel is lifted from the ground.

Loosen the bolts (1) holding the wheel axle (2) to the front fork mounts. Hold the head of the wheel axle in place, and unscrew the bolt (3) on the opposite side; draw the wheel axle out.



Note*:

Do not operate the front 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 on top.



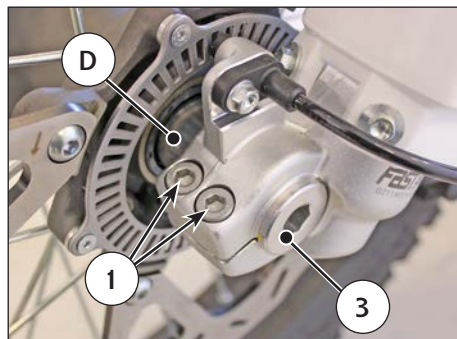
REASSEMBLING THE FRONT WHEEL

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

Fit the wheel between the fork legs so as to set the brake disc into the calliper.

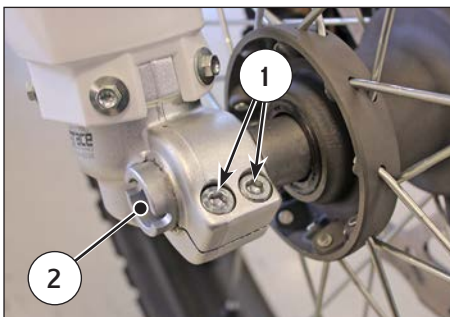
Fit the wheel axle (2) from the R.H. side, after greasing it and push it fully home against the L.H. fork leg; during this operation, the wheel should be turned. Tighten the screw (3) on the fork L.H. side but DO NOT lock it.

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 (7.67 ft-lb), the screw (3) on the L.H. side (37.95 ft-lb), the screws (1) on the L.H. leg (7.67 ft-lb).



Note*:

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

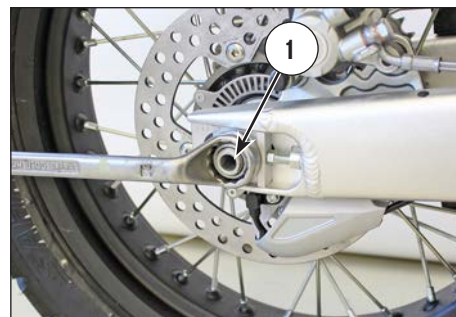


Note*:

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

After removal, lay down the wheel with brake disc on top.

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

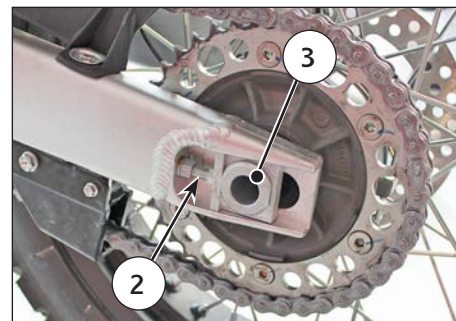


REMOVING THE REAR WHEEL

Unscrew the nut (1) of the wheel axle (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 rear wheel, keeping the spacers located at the hub sides.

When the adjustment has been performed, tighten the chain tensioner (2) to a coupling torque of 22 Nm and the wheel axle nut (1), to a coupling torque of 142 Nm.

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



TYRES

Care should be taken to keep the tyres properly inflated. See "Technical data" chart at the beginning of the manual for correct tyre inflation pressure.

Replace the tyre if its wear exceeds reference values on the table below.

MINIMUM HEIGHT OF THE TREAD

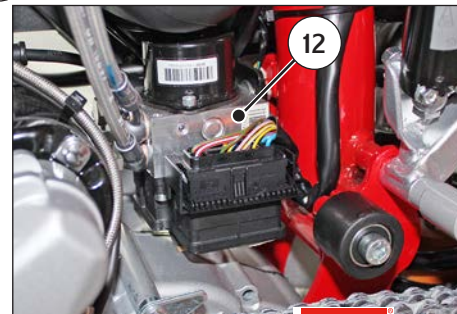
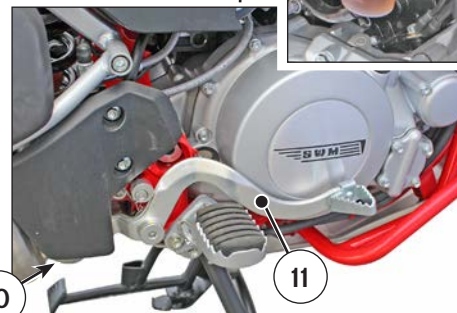
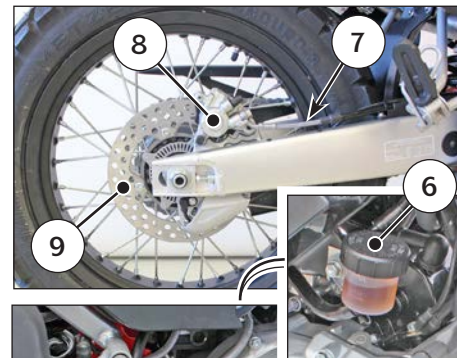
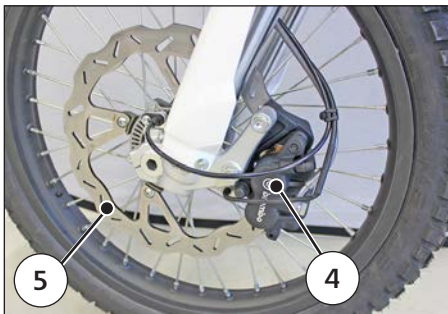
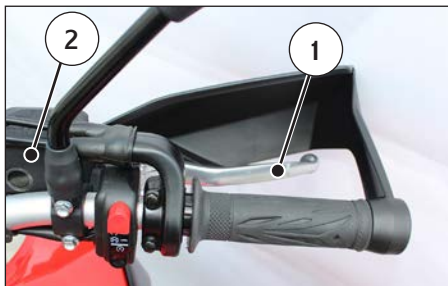
FRONT	0,08 in.
REAR	0,08 in.

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.

LEGEND

1. Front brake control lever
2. Front brake master cylinder with fluid reservoir
3. Front brake line
4. Front brake calliper
5. Front brake disc
6. Rear brake fluid reservoir
7. Rear brake line
8. Rear brake calliper
9. Rear brake disc
10. Rear brake master cylinder
11. Rear brake control pedal
12. ABS control unit

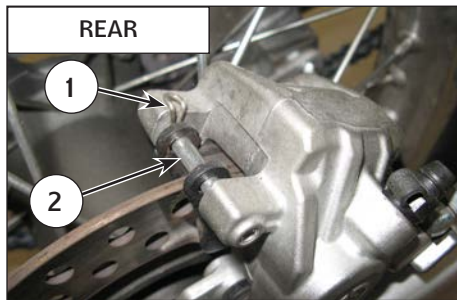
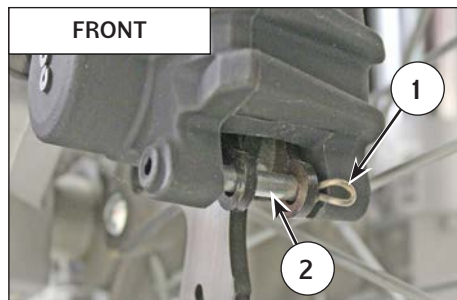


BRAKE PADS REMOVAL

- Remove clips (1).
- Slide out pin (2).
- Remove pads.

WARNING*:

Do not work the brake lever or pedal while removing the pads.

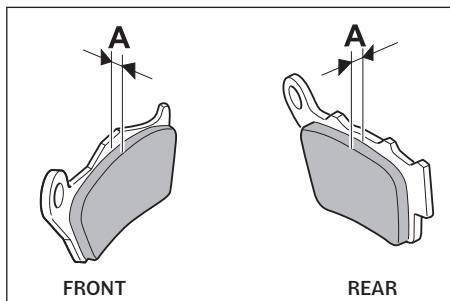


PADS WEAR

Check brake pad wear.

Service limit "A" is: 0.15 in.

If service limit is exceeded, always replace the pads in pairs.



PADS CLEANING

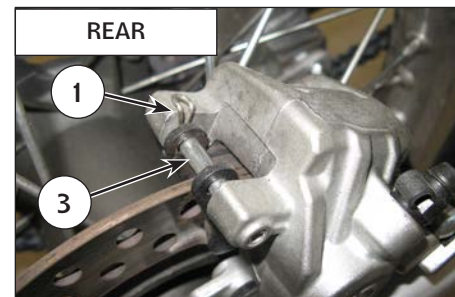
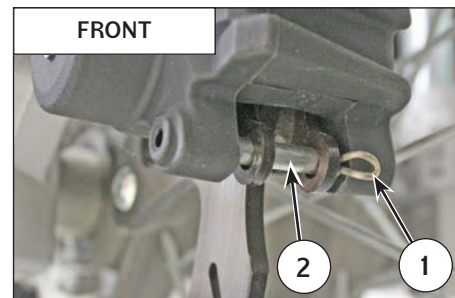
Be careful that no brake fluid or any oil gets on brake pads or discs. Clean off with alcohol any fluid or oil that inadvertently gets on the pads or disc. Replace the pads with new ones if they cannot be cleaned satisfactorily.

PADS INSTALLATION

- Install new brake pads.
- Reassemble the two pins (2) and the clips (1).

WARNING*:

Do not attempt to ride the motorcycle until the brake lever or pedal are fully effective. "Pump" with the brake lever or pedal until the pads are against the discs. The brake will not function on the first application of the lever or pedal.



BRAKE HYDRAULIC SYSTEM BLEEDING

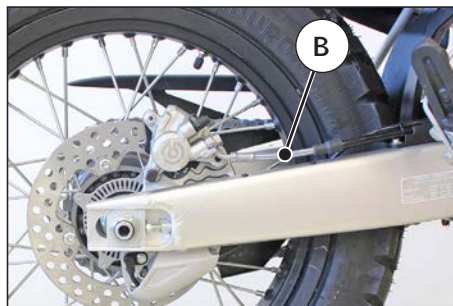
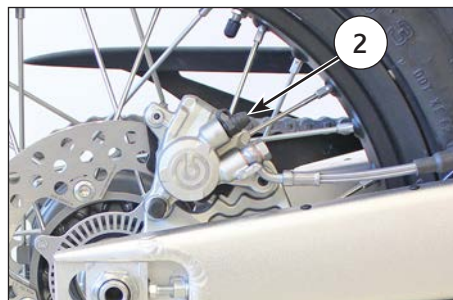
It is very important to do this at the intervals stated on the "Scheduled Maintenance Chart". Carry out the operation even if the lever or the control pedal free play increases.

Note*:

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

WARNING*:

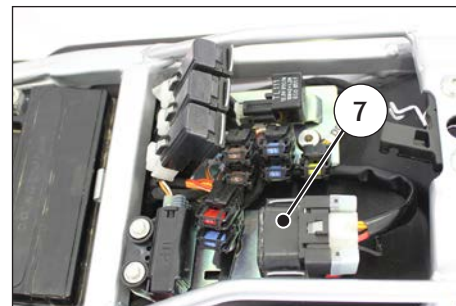
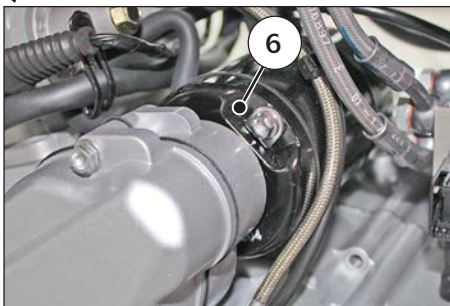
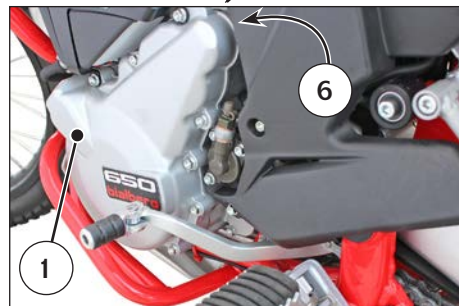
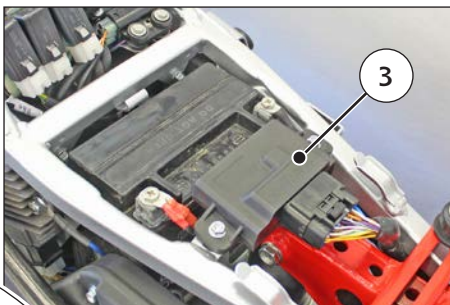
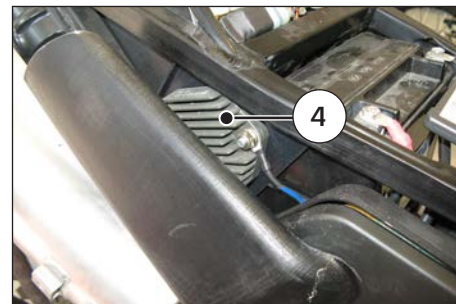
Periodically check the connecting hoses (see "Scheduled Maintenance Chart"): if the hoses (A) and (B) are worn or cracked, their replacement is advised.



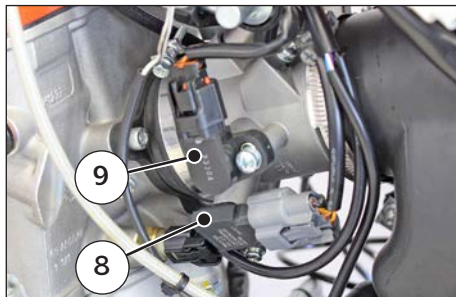
ELECTRICAL COMPONENTS LOCATION

The ignition system includes the following elements:

- Generator (1), on the inner side of L.H. crankcase cover;
- Electronic ignition coil (2) under the fuel tank;
- Electronic control unit (3) under the saddle;
- Voltage regulator (4) on the R.H. side of the rear chassis;
- Spark plug (5) on the R.H. side of the cylinder head;
- 12V-700W Starter motor (6) behind the cylinder;
- Solenoid starter (7) located on the fuse holder plate, under the saddle;

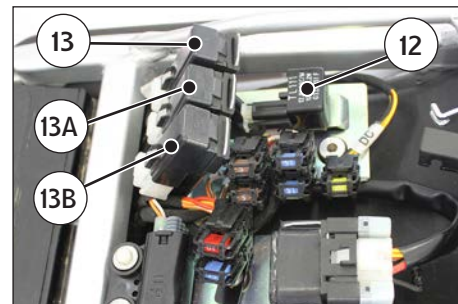
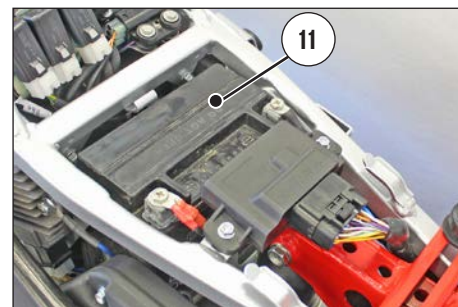


- Pressure and air temperature sensor (8) on the throttle body.
- TPS sensor (9) on the throttle body;
- Stepper motor (10) on the throttle body.



The electrical system includes the following elements:

- 12V-14Ah Battery (11) under the saddle;
- Turning indicators flasher (12) located on the utilities holder plate, under the saddle;
- Relays located on the utilities holder plate, under the saddle;
 - Electric fan relay (13);
 - Injector, lambda sensor, fuel pump, coil relay (13A);
 - Turning indicators, stop lights, low and high beam lights relay (13B);
- Electric fan (14);



- Fuses located on the utilities holder plate, under the saddle;

- Fuse (15) - 15A (cable sheath marked "FP"): fuel pump, HT coil, lambda sensor heater, injector;

- Fuses (15A) - 15A (cable sheath marked "FM"): 12V depending on ignition switch (system voltage), parking lights;

- Fuse (15B) - 20A (cable sheath marked "FDC"): electric fan, rear stop light, high beam, low beam, turning indicators, horn, instrument panel power supply (instrument functions display).

- Fuse (15C) - 5A (cable sleeve marked with "FSW"): fog lights.

- ABS1- 15A (16) - (cable sleeve marked with "ABS1"): Control unit protection.

- ABS2- 10A (17) - (cable sleeve marked with "ABS2"): Control unit protection.

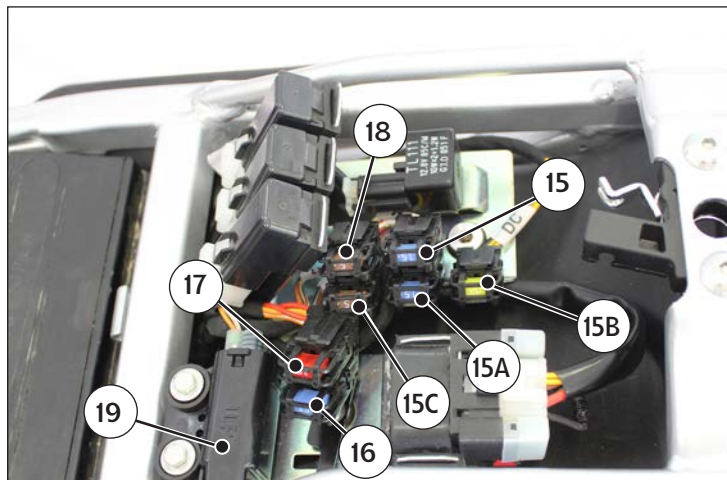
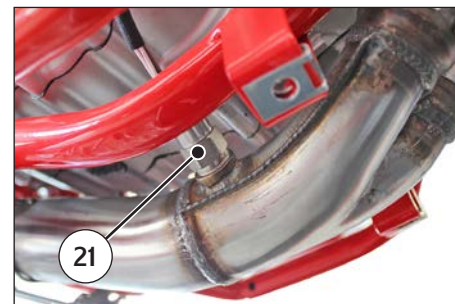
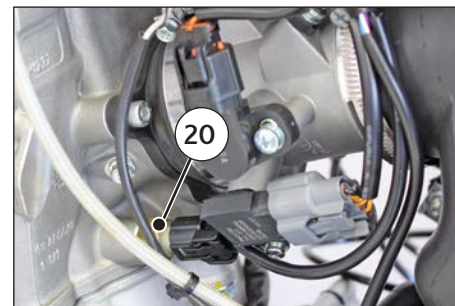
- ABS3- 5A (18) - (cable sleeve marked with "ABS3"): 12V key-on control unit.

- Rollover sensor (19) (TS) located on the utilities holder plate, under the saddle;

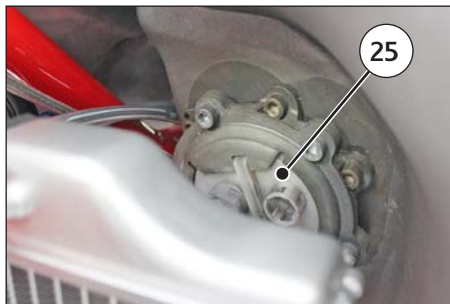
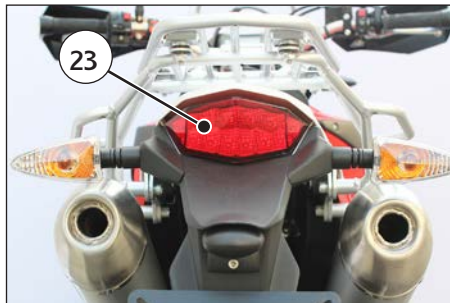
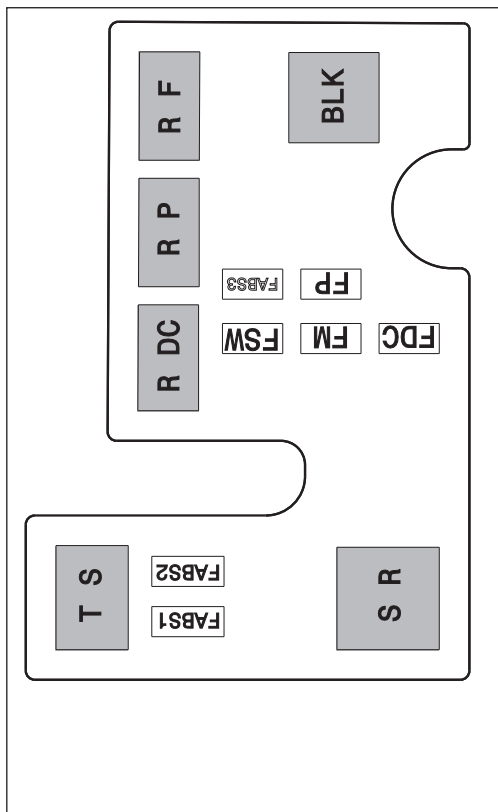
- Coolant temperature sensor (20);

- Lambda sensor (21);

- Headlamp (22) with twin halogen bulb of 12V-60/55W and parking light bulb of 12V-5W;



- The tail light (23) is a LED light;
- Turning indicators (24) 12V-10W bulb;
- Fuel pump (25) inside the fuel tank.



Cable Colour Coding

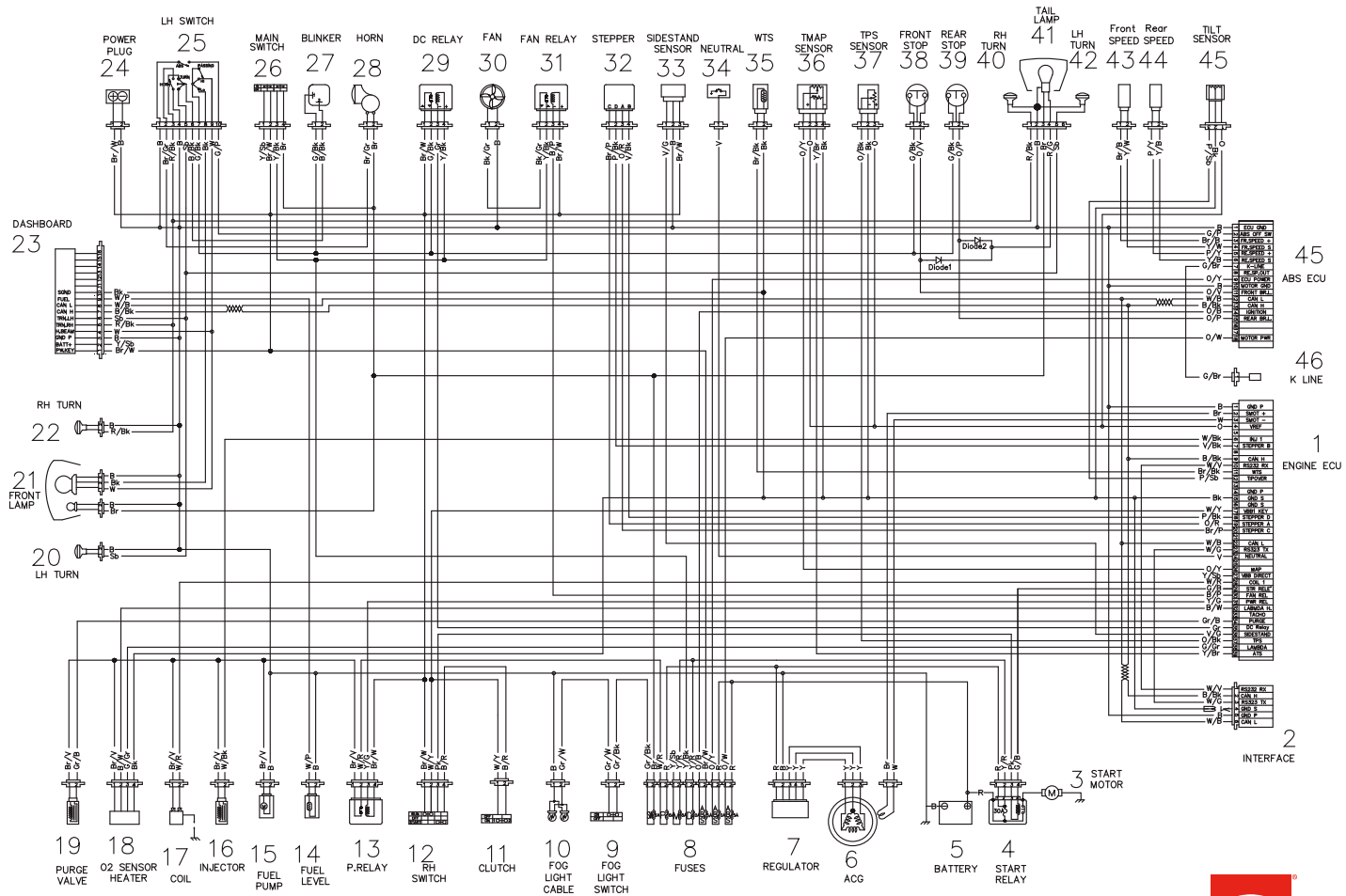
B	Blue
B/Bk	Blue/Black
B/W	Blue/White
Bk	Black
Bk/Gr	Black/Grey
Br	Brown
Br/B	Brown/Blue
Br/Bk	Brown/Black
Br/Gr	Brown/Grey
Br/R	Brown/Red
Br/V	Brown/Violet
Br/W	Brown/White
G	Green
G/B	Green/ Blue
G/Bk	Green/Black
G/Br	Green/Brown
G/Gr	Green/Grey
G/R	Green/Red
Gr	Grey
Gr/B	Grey/Blue
Gr/Bk	Grey/Black
Gr/W	Grey/White
O	Orange
O/B	Orange/ Blue
O/Bk	Orange/Black
O/G	Orange/Green
O/R	Orange/Red
O/V	Orange/Violet
O/W	Orange/White
O/Y	Orange/Yellow
Pk	Pink
R	Red
R/G	Red/ Green
R/Bk	Red/Black

Sb	Sky blue
V	Violet
V/Bk	Violet/ Black
V/G	Violet/ Green
W	White
W/B	White/Blue
W/Bk	White/Black
W/G	White/Green
W/R	White/Red
W/V	White/Violet
W/Y	White/Yellow
Y/B	Yellow/ Blue
Y/Bk	Yellow/Black
Y/Br	Yellow/Brown
Y/G	Yellow/Green
Y/O	Yellow/Orange
Y/Sb	Yellow/Sky blue
Y/R	Yellow/Red
Y/W	Yellow/White

KEY TO WIRING DIAGRAM

- Electronic control unit
- Control unit interface
- Starter motor
- Electric start remote control switch
- Battery
- Alternator
- Voltage regulator
- Fuses
- Fog light switch
- Fog light connection
- Clutch microswitch
- R.H. switch
- Power relay

- Fuel Level
- Fuel pump
- Injector
- HT coil
- Lambda sensor
- Purge Valve
- Front L.H. turning indicator
- Headlamp
- Front R.H. turning indicator
- Instrument
- Additional power supply
- L.H. switch
- Ignition switch
- Turning indicators flasher
- Warning horn
- DC relay
- Cooling fan
- Electric fan relay
- Stepper
- Sidestand Sensor
- Neutral
- Coolant temperature sensor
- IMAP Sensor
- TPS Sensor
- Front stop switch
- Rear stop switch
- Rear R.H. turning indicator
- Tail light
- Rear L.H. turning indicator
- Front Speed
- Rear Speed
- Rollover sensor
- ABS ECU
- K Line



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 (12V-14Ah battery: 1.4A for 10 hours).
- Quick charging is advised only in situations of extreme necessity since the life of lead elements is drastically reduced by such cycle (12V-14Ah battery: 2.5A for 2 hours).

BATTERY CHARGER

To gain access to the battery (2):

- Insert the key in latch (1) then turn clockwise to release the saddle lock; remove the saddle.
- Release the elastic strap (3) holding the battery;
- first remove the BLACK or BLUE negative cable,



then the RED positive cable (when reassembling, first connect the RED positive cable, then the BLACK or BLUE negative cable);

- remove the battery (2) from its housing.

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

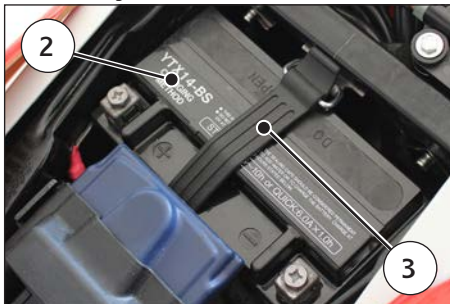
If it is not so, the battery needs to be charged.

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

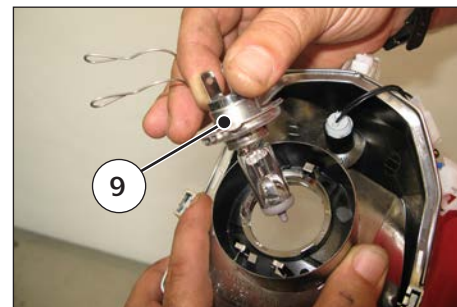
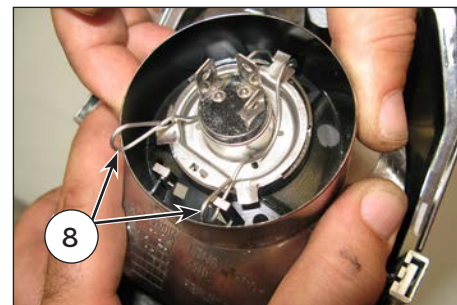
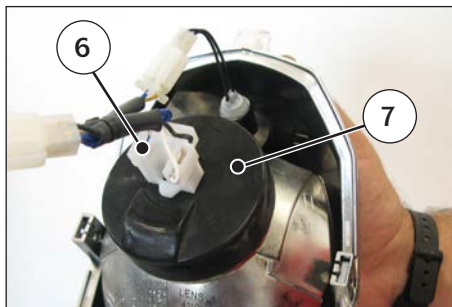
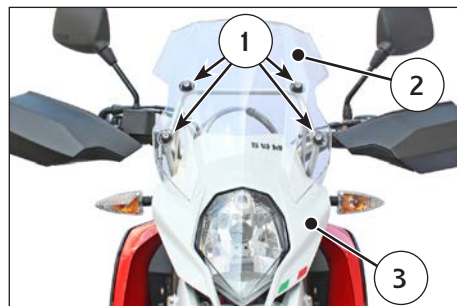
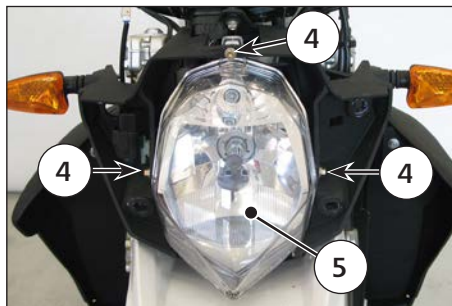
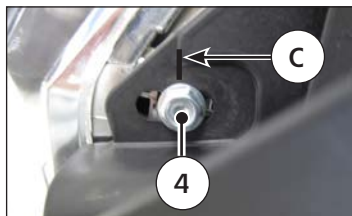
WARNING*: If the battery is left unused, it has to be in any case recharged with slow cycle (12V-14Ah battery: 1.4A for 10 hours) at least every 3 weeks.

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

HEADLAMP BULBS REPLACEMENT

Proceed as follows to reach the headlamp bulbs:

- Unscrew the screws (1) and remove the fairing (2),
- remove the casing (3) by pulling it outward;
- loosen the three screws (4) and remove the headlamp (5);
- detach connector (6) from the bulb;
- slide off the rubber gaiter (7);
- release the bulb holder clips (8) and take out bulb (9);



Note*:

Headlamp bulb (9) is of the halogen type; be careful when replacing it since the glass part shall not be touched with bare hands.

To replace the parking light bulb (10) extract it from the inside cover.

After replacement, reassemble any removed parts making sure to set the centre of side screws (4) at the notch (C) on the support.

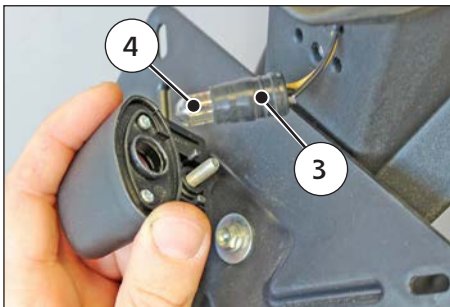
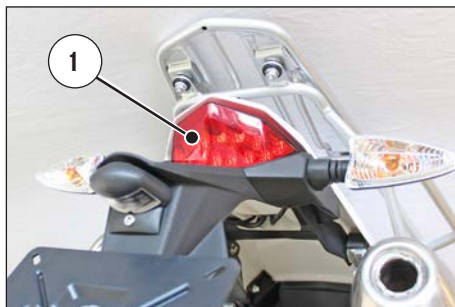
TAIL LIGHT

The tail light (1) is a LED light; Replace it when it does not function.

REPLACING THE NUMBER PLATE BULB

- loosen screw (1) and remove the number plate bulb (2) from the mudguard;
- take bulb holder (3) and bulb (4) out of the support;
- pull the bulb (4) to detach it from bulb holder.

Once the bulb has been replaced, reverse the above procedure to reassemble.



HEADLIGHT ADJUSTMENT

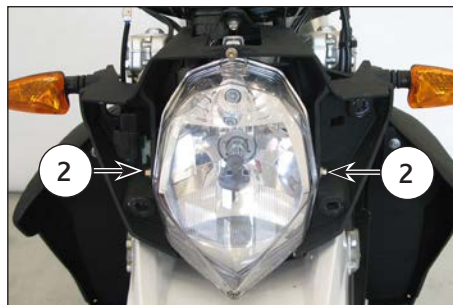
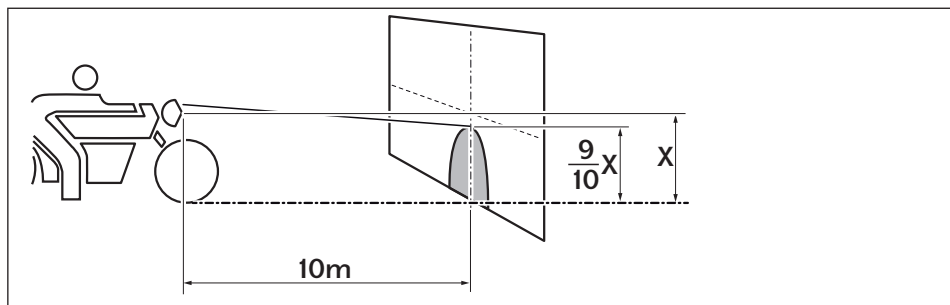
When checking the proper aiming of the headlight beam: inflate tyres at the right pressure, have a person sit astride the motorcycle and set the motorcycle perpendicular to its longitudinal axis at 33 ft from a wall or screen. Then trace a horizontal line at the height of headlight centre and a vertical 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:

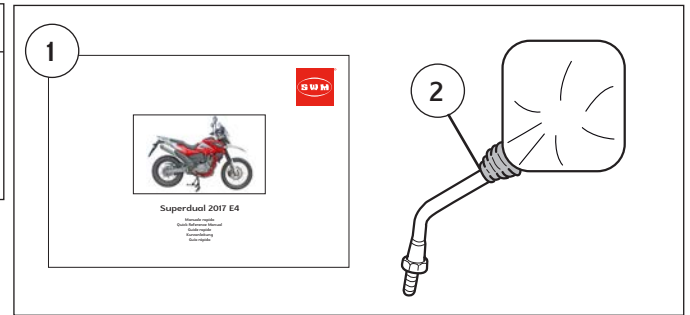
- pull out the front fairing (1) to remove it;
- loosen the two screws (2);
- work adjuster screw (3);
tighten to lower the beam,
loosen to raise the beam.

Once set, reverse the above procedure to reassemble.



EQUIPMENT

Pos.	No. Part no.	DESCRIPTION
1	A000P02253	MULTILANGUAGE QUICK MANUAL (1)
2	F000P01471	R.H. REAR-VIEW MIRROR (1)
	FA00P01471	L.H. REAR-VIEW MIRROR (1)



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

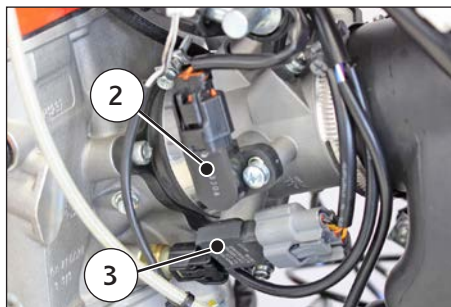
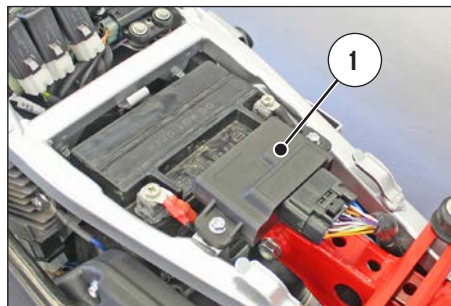
WARNING*:

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

- Lubricate the final drive chain and all the cables.
- 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 set the motorcycle back ready for use after storage:

- Make sure the spark plug is tight.
- 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 inspection and Adjustment Section (Appendix A).
- Lubricate all the points listed under the "Lubrication" Section (Appendix A).



CLEANING

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

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

DO NOT INSIST WITH HIGH PRESSURE JETS OF WATER OR AIR on the ELECTRIC PARTS and on the INJECTION SUPPLY SYSTEM, especially the electronic control unit (1), the TPS sensor (2) and the pressure temperature sensor (3).

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.

PRE - DELIVERY INSPECTION

Description	Operation	Pre-delivery
Engine oil	Check level	<input type="checkbox"/>
Coolant	Check / Restore level	<input type="checkbox"/>
Cooling system	Check for leakage	<input type="checkbox"/>
Electric fans	Check operation	<input type="checkbox"/> *
Spark plugs	Check / Replace	<input type="checkbox"/>
Throttle body / Carburettor	Check and adjust	<input type="checkbox"/>
Brakes / Clutch fluid	Check level	<input type="checkbox"/>
Brakes / Clutch	Check operation	<input type="checkbox"/>
Brakes / Clutch	Check lines for leakage	<input type="checkbox"/>
Throttle control	Check operation	<input type="checkbox"/>
Throttle control	Check / Adjust play	<input type="checkbox"/>
Choke control	Check operation	<input type="checkbox"/>
Flexible controls and transm.	Check / Adjust	<input type="checkbox"/>
Drive chain	Check / Adjust	<input type="checkbox"/>

Description	Operation	Pre-delivery
Tyres	Check pressure	<input type="checkbox"/>
Side stand	Check operation	<input type="checkbox"/>
Side stand switch	Check operation	<input type="checkbox"/>
Electrical equipment	Check operation	<input type="checkbox"/>
Instrument panel	Check operation	<input type="checkbox"/>
Lights / Visula signals	Check operation	<input type="checkbox"/>
Horn	Check operation	<input type="checkbox"/>
Headlight	Check operation	<input type="checkbox"/>
Ignition switch	Check operation	<input type="checkbox"/>
Locks	Check operation	<input type="checkbox"/>
Screws and nuts	Check / Tighten	<input type="checkbox"/>
Hose clamps	Check / Tighten	<input type="checkbox"/>
General lubrication		<input type="checkbox"/>
General test		<input type="checkbox"/>

* only for some models

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APPENDIX A



SUPERDUAL

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

ENGINE					
	1000 Km	5000 Km	10000 Km	15000 Km	20000 Km
VALVES	C (*)	C (*)	C (*)	C (*)	C (*)
INTAKE/EXHAUST ROCKER ARMS			C		C
TIMING CHAIN					S
TIMING CHAIN SLIDER					S
TIMING DRIVEN GEAR					S
SPARK PLUG		C	S	C	S
SPARK PLUG CAP		C	C	C	C
ENGINE OIL	S	S	S	S	S
ENGINE OIL INTAKE FILTER	P		P		P
ENGINE OIL FILTER CARTRIDGE	S		S		S

SUPERDUAL

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

ENGINE

	1000 Km	5000 Km	10000 Km	15000 Km	20000 Km
CLUTCH CUSH DRIVE DAMPER			C		C
AIR FILTER	P	P/S (**)	S	P/S (**)	S

A

C: CHECK

C (*): CHECK CLEARANCE

P: CLEAN

P/S (**): CLEAN OR CHANGE (depending on the conditions of use of the motorcycle)

S: CHANGE



SUPERDUAL

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

CHASSIS					
	1000 Km	5000 Km	10000 Km	15000 Km	20000 Km
CLUTCH AND BRAKE FLUIDS	C	C	S	C	S
BRAKE HYDRAULIC CONTROLS	C	C	C	C	C
BRAKE PADS WEAR	C		C		S
CABLES	C	P	P	P	P
THROTTLE	C	C	C	C	C
TYRE PRESSURE AND WEAR	C	C	C	C	C
ELECTRIC FAN	C		C		C
HEADLAMP BEAM HEIGHT ORIENTATION	C				
IMPIANTO LULIGHTS/INDICATIONS/HORN	C	C	C	C	C
BATTERY		C	C	C	C
WHEEL SPOKES TENSION	C	C	C	C	C
STEERING BEARING PLAY	C		C		C

SUPERDUAL	SCHEDULED MAINTENANCE CHART (TO BE CARRIED OUT AT THE SWM DEALER)				
	CHASSIS				
	1000 Km	5000 Km	10000 Km	15000 Km	20000 Km
DRIVE CHAIN	CL	CL	S	CL	S
CHAIN	CL	CL	S	CL	S
OUTPUT SPROCKET		C	S	C	S
SIDE STAND SCREWS	C	C	C	C	C
WHEEL BEARINGS			C		C
FRONT FORK FLUID			S/R		S/R
OVERALL TIGHTENING OF NUTS AND BOLTS	C	C	C	C	C
LUBRICATION/GREASING	L	L	L	L	L

C: CHECK
C (*): CHECK CLEARANCE
L: LUBRICATE
P: CLEAN

P/S ():** CLEAN OR CHANGE (depending on the conditions of use of the motorcycle)
R: FRONT FORK OVERHAUL
S: CHANGE





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