

PIAGGIO WOULD LIKE TO THANK YOU

for choosing one of its products. We have prepared this manual to help you to get the very best from your vehicle. Please read it carefully before riding the vehicle for the first time. It contains information, tips and precautions for using your vehicle. It also describes features, details and devices to assure you that you have made the right choice. We believe that if you follow our suggestions, you will soon get to know your new vehicle well and that it will continue to give you satisfactory service for many years to come. This booklet forms an integral part of the vehicle; should the vehicle be sold, it must be transferred to the new owner.

MP3 300 hpe



PIAGGIO®

The instructions given in this manual are intended to provide a clear, simple guide to using your vehicle; this booklet also details routine maintenance procedures and regular checks that should be carried out on the vehicle at an **authorised Dealer or Service Centre**. The booklet also contains instructions for simple repairs. Any operations not specifically described in this booklet require the use of special tools and/or particular technical knowledge: to carry out these operations, refer to any **authorised Dealer or Service Centres**.



Personal safety

Failure to completely observe these instructions will result in serious risk of personal injury.



Safeguarding the environment

Sections marked with this symbol indicate the correct use of the vehicle to prevent damaging the environment.



Vehicle intactness

The incomplete or non-observance of these regulations leads to the risk of serious damage to the vehicle and sometimes even the invalidity of the guarantee.

The signs that you see on this page are very important. They are used to highlight parts of the booklet that should be read with particular care. The different symbols are used to make each topic in the manual simple and quick to locate.

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MP3 300 hpe

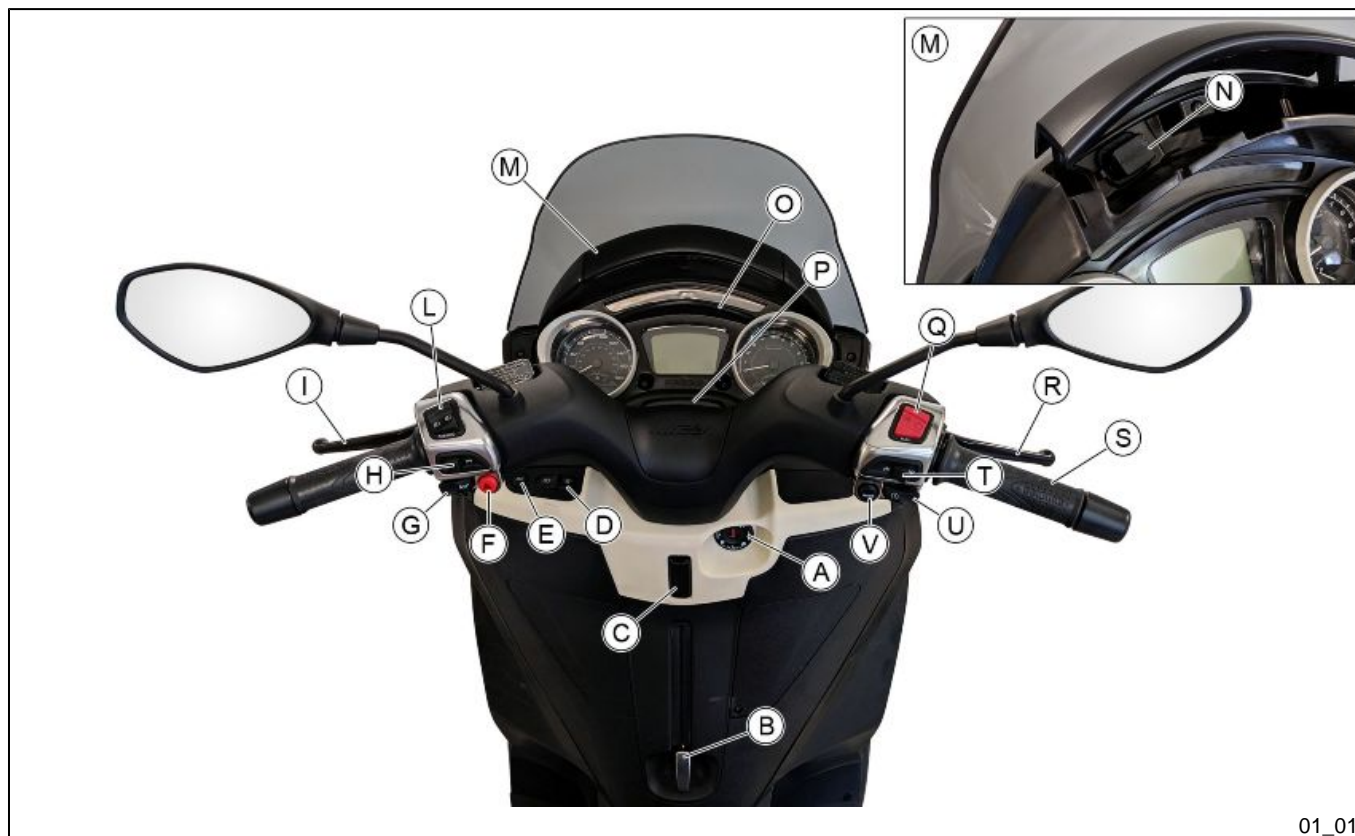


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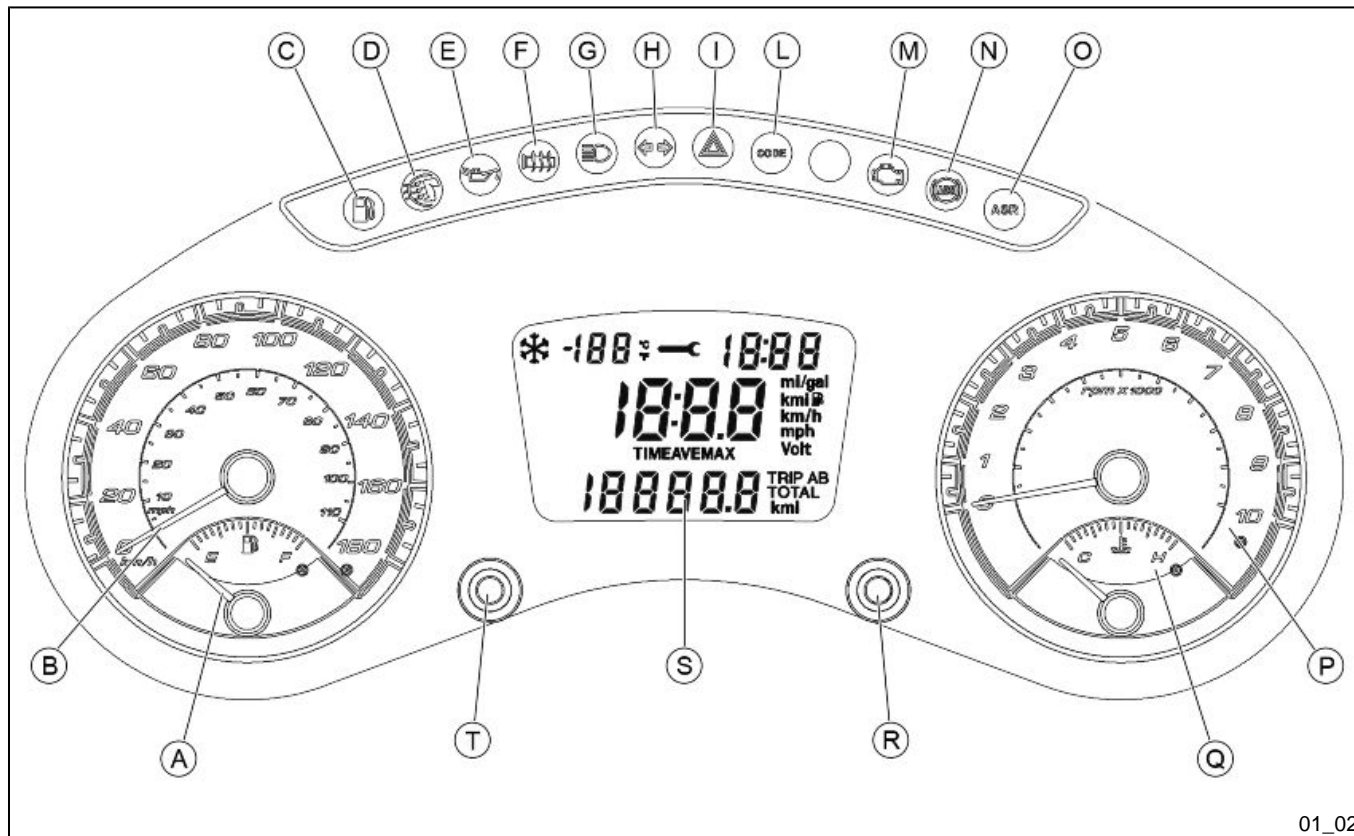
Chap. 01
Vehicle

Dashboard (01_01)



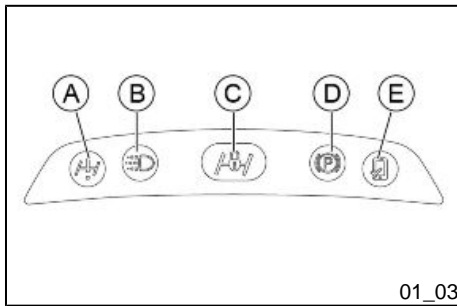
A = Ignition switch
B = Parking brake
C = Bag hook
D = Light switch
E = ASR button
F = Hazard warning lights button
G = Horn button
H = Turn signal switch
I = Rear brake lever
L = Light switch
M = Glove box
N = USB socket
O = Analogue instruments unit with digital display
P = Warning lights
Q = Emergency stop switch RUN/OFF
R = Front brake lever
S = Throttle grip
T = Front suspension lock/unlock switch
U = Starter button
V = MODE button

Analogue instrument panel (01_02)



01_02

- A** = Fuel level indicator
- B** = Speedometer
- C** = Low fuel warning light
- D** = Leg warmer warning light (where provided)
- E** = Oil pressure warning light
- F** = Heated handgrips indicator light (where provided)
- G** = High beam warning light
- H** = Turn indicator warning light
- I** = Hazard warning light
- L** = Immobilizer LED
- M** = Engine anomaly indication and management warning light
- N** = ABS warning light
- O** = ASR warning light
- P** = Engine rpm indicator
- Q** = Coolant liquid temperature indicator
- R** = SET button
- S** = Digital display
- T** = ODO/TRIP button



Indicator unit (01_03)

A = Front suspension lock system malfunction warning light

B = daylight running light (DRL) indicator

C = Front suspension lock system warning light

D = Parking brake indicator light

E = Warning light not active



Clock (01_04)

The clock shows, with the vehicle running or the key set to «KEY ON», actual hour and minutes, to be set manually, in format «hh:mm».

Set the correct time as described in the paragraph «Set functions hours/minutes».

WARNING

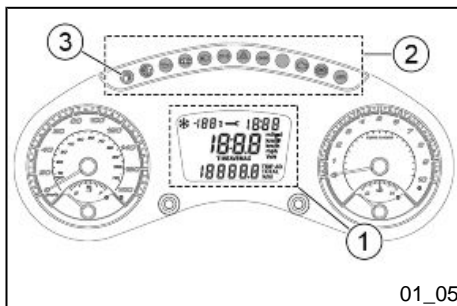


FOR SAFETY REASONS THE TIME SETTING IS ONLY POSSIBLE WITH THE VEHICLE AT A STANDSTILL.

WARNING



DISCONNECTING THE BATTERY CABLES WILL RESULT IN A RESET OF THE CLOCK



01_05

Digital lcd display (01_05, 01_06, 01_07, 01_08, 01_09, 01_10, 01_11, 01_12, 01_13, 01_14, 01_15, 01_16, 01_17, 01_18, 01_19, 01_20)

When the ignition switch is set to «ON»:

- All the functions on the digital display «1» light up;
- All the warning lights «2» on the instrument panel light up;
- The low fuel warning light «3» remains on for two seconds, then it has the normal function to indicate when the reserve in the tank is reached;
- The needles move to the full scale and back and then they are placed on the value to be displayed.



01_06

The digital display can be divided into five main zones, within which the functions and settings are developed:

- temperature indication and ice warning «4»;
- maintenance icon «5»;
- clock «6»;
- information on speed, travel and average travel, autonomy, battery voltage «7»;
- distance information «8» related to the functions «TOTAL», «TRIP A» and «TRIP B».



01_07

The vehicle has three main buttons for the navigation of the digital display:

- «MODE» button, placed on the right switch;
- «ODO/TRIP» and «SET» buttons, placed under the digital display.

N.B.

THE FOLLOWING ARE DEFINED WHEN NAVIGATING THE DISPLAY:

- «BRIEF PRESS»: PRESSING THE BUTTON INDICATED FOR LESS THAN HALF A SECOND;
- «PROLONGED PRESS»: PRESSING THE BUTTON INDICATED FOR MORE THAN THREE SECONDS.



01_08

DISPLAY NAVIGATION

MAIN MENU

The navigation of the display is mainly developed on three screen pages of the main menu:

- «TOTAL»: is the screen page of the totalizer and shows the total information saved from the beginning of the first vehicle start;
- «TRIP A»: is the screen page of the first partial that must be saved; it shows the information related to the given interval;

- «TRIP B»: is the screen page of the second partial that must be saved; it shows the information related to the given interval.

Within the main menu of «TOTAL», «TRIP A» and «TRIP B»(in this order) can be navigated by shortly pressing the «ODO/TRIP» button or with a short double click on the MODE button.

Each of these main menus can be navigated in different modes and with different functioning, depending on the command that applies:

- SHORT PRESS OF THE «MODE» BUTTON
- SHORT DOUBLE CLICK OF THE «MODE» BUTTON
- LONG PRESS OF THE «MODE» BUTTON
- SHORT PRESS OF THE «ODO/TRIP» BUTTON
- LONG PRESS OF THE «ODO/TRIP» BUTTON

SHORT PRESS OF THE «MODE» BUTTON

From the screen page «TOTAL» in the central zone of the display, consult in sequence:

- travel indicated in «km/l» or in «mi/gal»;
- estimated residual autonomy stated in «km» or «mi»;
- battery voltage stated in «V».

In the bottom zone of the display the total travel distance from the first vehicle start remains indicated, stated in «km» or «mi».

From the screen page «TRIP A» in the central zone of the display, consult in sequence:

- travel indicated in «km/l» or in «mi/gal»;
- average travel calculated since the statistic start «TRIP A», stated in «km/l» or in «mi/gal»;
- estimated residual autonomy stated in «km» or «mi»;
- time shown in «hh:mm» calculated from the statistic start «TRIP A»;
- average speed calculated since the statistic start «TRIP A», stated in «km/h» or «mph»;

- maximum speed reached taken since the statistic start «TRIP A», stated in «km/h» or «mph»;
- battery voltage stated in «V».

In the bottom zone of the display the travel distance measured since the statistic start «TRIP A» remains indicated, stated in «km» or «mi».

From the screen page «TRIP B» in the central zone of the display, consult in sequence:

- travel indicated in «km/l» or in «mi/gal»;
- average travel calculated since the statistic start «TRIP B», stated in «km/l» or in «mi/gal»;
- estimated residual autonomy stated in «km» or «mi»;
- time shown in «hh:mm» calculated from the statistic start «TRIP B»;
- average speed calculated since the statistic start «TRIP B», stated in «km/h» or «mph»;
- maximum speed reached taken since the statistic start «TRIP B», stated in «km/h» or «mph»;
- battery voltage stated in «V».

In the bottom zone of the display the travel distance measured since the statistic start «TRIP B» remains indicated, stated in «km» or «mi».

SHORT DOUBLE CLICK OF THE «MODE» BUTTON

Same functioning of the short press of the «ODO/TRIP» button.

LONG PRESS OF THE «MODE» BUTTON

From any function of any screen page, by pressing and holding the «MODE» key will be passed to the display of the «travel» of the related screen page of the main menu.

SHORT PRESS OF THE «ODO/TRIP» BUTTON

The screen pages scroll cyclically: «TOTAL», «TRIP A», «TRIP B».

LONG PRESS OF THE «ODO/TRIP» BUTTON

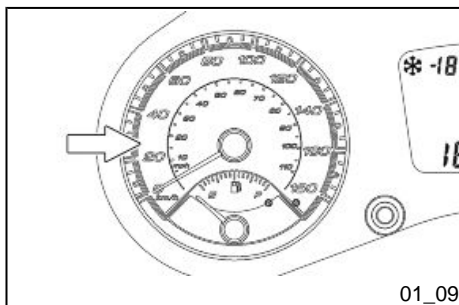
- If being in the screen page «TOTAL», there are no effects;
- in any of the screen pages inside «TRIP A» the information stored from the statistic start «TRIP A» is reset;

- in any of the screen pages inside «TRIP B» the information stored from the statistic start «TRIP B» is reset;-.

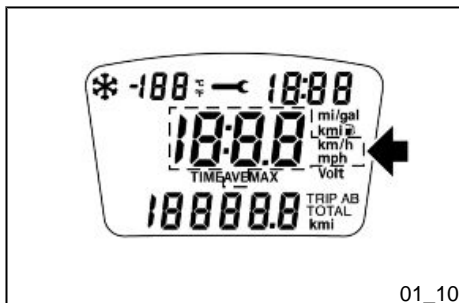
SCREEN PAGES AND OPERATIONS ON THE SUB-MENUS

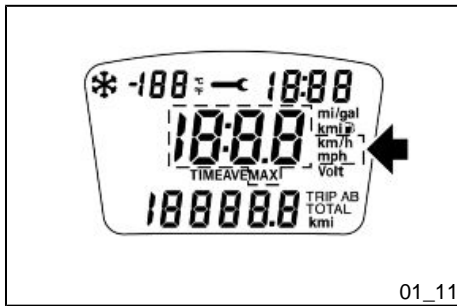
INSTANTANEOUS, AVERAGE AND MAXIMUM SPEED

- The indication of the instantaneous speed can be detected on the speedometer.

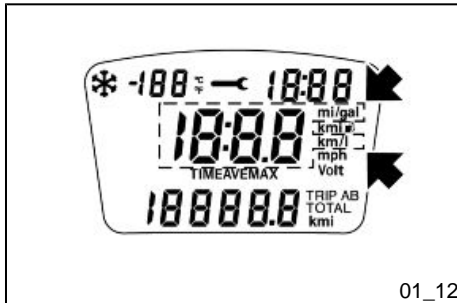


- When navigating on the display as described, it is possible to display the average speed «AVG» of TRIP A or of TRIP B, according to the menu looking at.





01_11



01_12



01_13

- When navigating on the display as described, it is possible to display also the maximum speed «MAX» of TRIP A or of TRIP B, according to the menu looking at.

TRAVEL AND AVERAGE TRAVEL

They are indicated in «km/l» or in «mi/gal», based on the measuring unit set on the display.

- The travel is the first screen page displayed on the display and it is also the one to return to, when by pressing and holding the «MODE» button, the sub-menu related to «TOTAL», «TRIP A» or «TRIP B» is being exit.

- The average travel, in each of the sub-menus is the following screen page and differs by the indication «AVG».

Both consumptions are calculated values.

The travel is only displayed, if the vehicle speed exceeds 5 km/h (3 mph), otherwise the symbol «-.-» appears.

The average travel is also calculated with the vehicle stopped, but the engine running. If resetting the data with the «ODO/TRIP» button, the average travel will be indicated after driving at least 0.1 km (0.1mi).



01_14

RESIDUAL AUTONOMY

The residual autonomy, indicated in «km» or «mi» based on the display settings, is a calculated and estimated value.

The residual autonomy is estimated based on the average travel of the last three minutes, therefore a better estimation of the autonomy is obtained, when driving at constant speed.

From the ignition of the reserve warning light, the indicated residual autonomy value will be «---». Perform the refuelling as soon as possible.

SETTING THE UNITS OF MEASUREMENT

Press and hold down for at least 3 seconds the **"MODE"** button and at the same time turn the starter key to **"ON"**.

The icons **"kmi"** and **"°C-°F"** will begin to flash.

"Kmi" represents the combination of **"km"** (kilometers) and **"mi"** (miles).

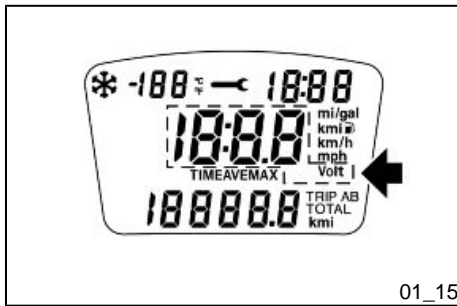
By pressing the **"MODE"** button for less than a second the icons **"km"** e **"mi"** are selected in sequence.

Press and hold down for at least 3 seconds the **SET"** button to confirm your choice.

Now the icon indicating the outside temperature **"°C-°F"** will flash.

By pressing the **"MODE"** button for less than a second the icons **"°C"** and **"°F"** are selected in sequence.

Press and hold down for at least 3 seconds the **SET"** button to confirm your choice.



01_15

BATTERY

Indicates the battery voltage (Volt).

A value around 14-14.5V when riding indicates a correct operating condition of the battery recharge system.

In these conditions, a working battery is charged correctly up to its maximum.

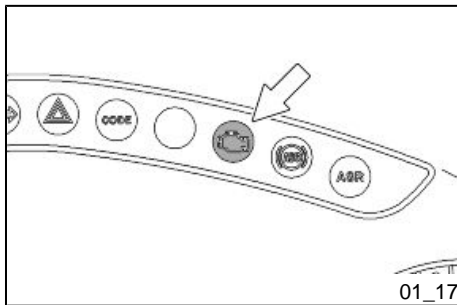
If the battery voltage in driving conditions remains under 12.0V this can mean a malfunctioning of the battery recharge system or of the battery itself. In the event of turning off the engine, it might not be possible to start the engine again.



01_16

CHRONOMETER

The sub-menu «TIME» indicates the time, stated in «hh:mm», elapsed since the resetting of the running TRIP (A or B).



01_17

ENGINE ANOMALY INDICATION AND MANAGEMENT WARNING LIGHT

The warning light indicates possible anomalies detected by the engine control unit. After the check before switching to «ON», the warning light, in case of anomaly, has two different indication modes:

- WARNING LIGHT ON STEADY
- LIGHT FLASHING

A defect is detected that could affect/degrade the engine performance.

A defect is detected that could affect the safety of the driver, therefore the engine performance is intentionally degraded.

In both cases it is necessary to contact an **Authorised Service Centre**.

INFOTAINMENT SYSTEM «Piaggio Multimedia Platform» - «Piaggio MIA»

The «**SPORT**» version vehicle is equipped with the "Piaggio MIA" ECU (accessory equipment on the other versions), which communicates with the smartphone via Bluetooth.

Using the specific PMP «Piaggio Multimedia Platform» application it will be possible to connect the vehicle to a smartphone to record travel statistics and display an additional virtual instrument cluster.



01_18

SMARTPHONE BLUETOOTH PAIRING PROCEDURE - BLUETOOTH DEVICE (BT-Router)

To enable the functions of the system, the Bluetooth pairing between the «**Piaggio MIA**» ECU and the smartphone must be performed, according to the following procedure:

- **Download the App.** PMP «Piaggio Multimedia Platform»,
- Turn the ignition key to the «**ON**» position
- **Enable the bluetooth search** on your smartphone, select the «**BT-ROUTER**» device, if required, enter the password "0000" and press on pair.

The device will remain in pairing mode for a maximum of 60 seconds with the key ON. If pairing is not successful, repeat the operation respecting the maximum time available for pairing.

The smartphone will display the «**BT-ROUTER**» device in the associated devices list. It is normal that the BT-Router device appears NOT CONNECTED: the connection will be established via the App. **Do NOT force the connection from the telephone.**

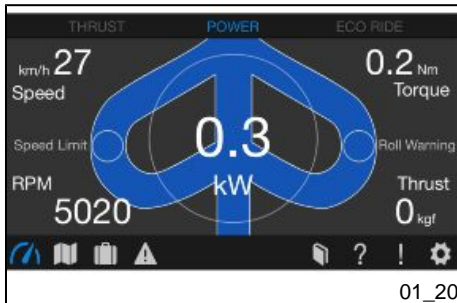


CONNECTION BETWEEN THE APPLICATION AND THE DIGITAL DISPLAY

Search for the «**Piaggio Multimedia Platform**» application in Play Store or App Store and install it. Select your vehicle «**MP3 300 hpe**» from the list of available vehicles and wait for the connection to be established.

If requested, on the first connection only, select the BT-Router device from the list of associated devices.

If a problem occurs, it is suggested to uninstall and re-install the App. on iOS and simply delete the application data on Android from the specific App management menu.



Open the "**Piaggio**" application on the smartphone, sign up, confirm the registration using the link sent via e-mail (making sure to also check the spam folder) and log in with your account. On the application's main page select "Connect".

Select your vehicle model; the digital display will show the icon of the "Piaggio" app, confirming the successful activation of the communication between the app and the vehicle.



MODE button (01_21, 01_22)

Press the **ODO/TRIP** button for less than one second to obtain the following functions in sequence:

- Total Odometer «**TOTAL**»
- Partial Odometer «**TRIP A**»
- Partial Odometer «**TRIP B**»

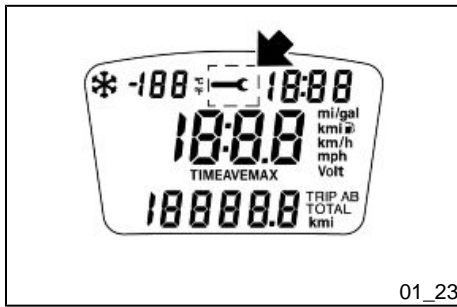
Pressing the «**MODE**» button, within each function, allows to consecutively access additional functions.

- **TOTAL**



- Current fuel consumption (km/l)
- Estimated residual autonomy (km)
- Battery voltage (V)
- **TRIP A**
 - Current fuel consumption (km/l)
 - AVG Fuel consumption (km/l)
 - Estimated residual autonomy (km)
 - Trip Time: chronometer (hh:mm)
 - AVG average speed (km/h)
 - MAX maximum speed reached (km/h)
 - Battery voltage (V)
- **TRIP B**
 - Current fuel consumption (km/l)
 - AVG Fuel consumption (km/l)
 - Estimated residual autonomy (km)
 - Trip Time: chronometer (hh:mm)
 - AVG average speed (km/h)
 - MAX maximum speed reached (km/h)
 - Battery voltage (V)

Pressing and holding the «ODO/TRIP» button in the «TRIP A» and «TRIP B» screen pages, allows to reset all counters for that TRIP.



01_23

Maintenance icons (01_23)

The maintenance icon flashes for five seconds each time the vehicle is turned on after the check of the dashboard, starting from 300 km before the expiry of each service period.

When the mileage established by the scheduled maintenance intervals is reached, the icon remains on until the scheduled maintenance operations are performed.

For the scheduled maintenance operations and icon reset, contact an **Authorised Service Centre**.



IN ANY EVENT, CARRY OUT THE FIRST CHECK, AS DEFINED AND DETERMINED BY THE PERIODIC MAINTENANCE TABLE, AT A DISTANCE OF 1000 km.



01_24

Setting the outside temperature display (01_24)

The indication of the external temperature is found on the left of the display, in «°C» or «°F» based on the set unit of measurement.

If the temperature drops below 3°C, further caution is recommended when using the vehicle; the asterisk indicates that there might be ice on the road surface.

Setting the hour/minutes function (01_25, 01_26)

To set or adjust the time, with vehicle running or with key inserted in «KEY ON» position, proceed as follows:

- by pressing and holding the «SET» button, the hour indication in "hh" flashes;
- adjust the hour value with a short press of the same «SET» button;
- with a long press, the set value is confirmed (or present value if not modified) and the minutes value, in format «mm» starts flashing.
- adjust the minute value with a short press of the same «SET» button;
- with a long press, the set value is confirmed (or present value if not modified) and the clock adjustment is exited;.

If, during the adjustment, the «SET» button is not pressed for more than ten seconds, the procedure is cancelled and the time value remains the one before the adjustment; repeat the adjustment operations.

WARNING

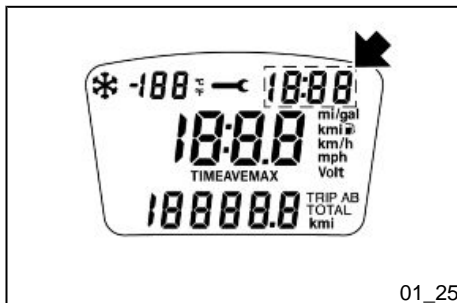


FOR SAFETY REASONS THE TIME SETTING IS ONLY POSSIBLE WITH THE VEHICLE AT A STANDSTILL.

WARNING



DISCONNECTING THE BATTERY CABLES WILL RESULT IN A RESET OF THE CLOCK



01_25

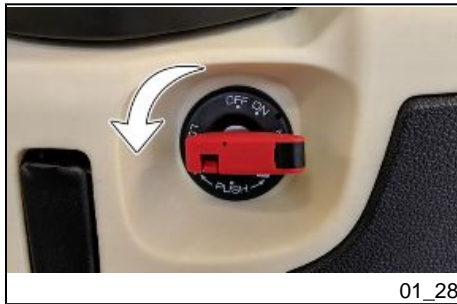


01_26



Keyswitch (01_27)

1. «**LOCK** » = Inhibited engine, key can be removed, mechanical block on. Parking brake cannot be removed if on, and cannot be activated if not already in use.
2. «**OFF** » = Inhibited engine, key is removable, mechanical anti-theft not activated, and parking brake can be activated or deactivated.
3. «**ON** » = Engine enabled for operation, key not removable, mechanical anti-theft not activated.
4. «**HELMET COMPARTMENT OPENING** » = Opening of helmet compartment position, this is obtained by pushing in the key in the «**OFF** » or «**ON** » position and turning the key counter-clockwise.
5. «**OPENING THE GAS TANK** » = Opening of gas tank position, this is obtained by pushing in the key in the «**OFF** » or «**ON** » position and turning it clockwise.



Locking the steering wheel (01_28)

Turn the handlebar to the left (as far as it will go), turn the key to «**LOCK**» and remove the key.



01_29

Releasing the steering wheel (01_29)

Reinsert the key and turn it to «OFF».

CAUTION



NEVER TURN THE KEY TO «LOCK» OR «OFF» WHILE RIDING.

WARNING



ACT ON THE HANDLEBAR UNTIL OBTAINING THE EASY ROTATION OF THE SWITCH AVOIDING UNNECESSARY STRESSES.



01_30

Switch direction indicators (01_30)

Move the switch «H» to the left to position «1», to indicate a left turn; Move the switch «H» to the right to position «2», to indicate a right turn. Press the switch «H» in the centre to position «0» to deactivate the turn indicators.



Horn button (01_31)

Press the button «G» to operate the horn.



Light on/of switch (01_32)

With the light switch "D" in the "0" position, the front position light and the and high / low beam lights are active.

In position "1" only the daytime running light (DRL) is active, **to be used exclusively during the day, except for tunnels or wherever there is fog, snow, rain or poor visibility.**

N.B.

WHEN ALLOWED BY THE ABOVE CONDITIONS, USING THE DAYLIGHT RUNNING LIGHT ALLOWS EXTENDING THE LIFE OF THE LOW BEAM LIGHT AND REDUCING THE CURRENT CONSUMPTION, THUS PRESERVING THE BATTERY BETTER AND CONSEQUENTLY REDUCING FUEL CONSUMPTION.



01_33

Light switch (01_33)

The position «0» of switch «L» corresponds to the selection of the low beam light.

The position «1» corresponds to the high beam light.

The position «2» activates the high beam light flashing; The switch returns automatically to «0». The flashing control also releases the safety light function, can be activated in case of failure of high beam light fuse.



01_34

Emergency flashing light button (01_34)

Causes all four turn signals to flash simultaneously. The button «F» can only be activated with the key set to «ON» position, but once it has been activated it will continue to function even with the key set to «OFF» and «LOCK» positions. Deactivation of this function can only be performed with the key in the «ON» position.



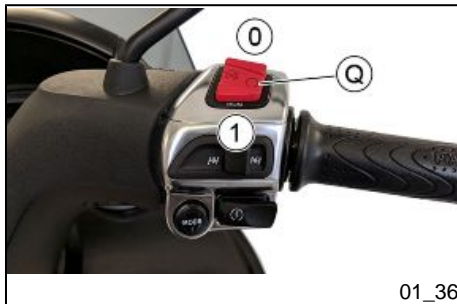
Start-up button (01_35)

With the engine stop switch «**Q**» in «**1**» **RUN** position, press the button «**U**» to start the engine after engaging either one of the two brake levers.

WARNING



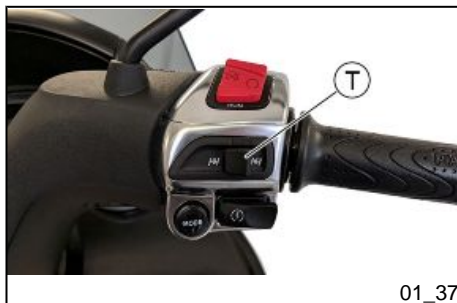
WITH THE FRONT SUSPENSION LOCKED, THE ENGINE WILL NOT GO UP IF THE DRIVER IS NOT SEATED PROPERLY ON THE SADDLE IN DRIVING POSITION.



Engine stop button (01_36)

With the emergency stop switch «**Q**» in position «**1**» **RUN** the engine functioning is enabled;

The position «**0**» **OFF** allows to turn off the engine in case of emergency and also inhibits the restart.



01_37

Front suspension unlock-lock switch (01_37)

The switch «T» activates and deactivates the lock of the front suspension.

Given the complexity of this subject, the description of its use can be found in the **Use** chapter.



01_38

System ABS (01_38, 01_39)

The vehicle is equipped with a locking ABS system on the wheels.

A: Tone wheel

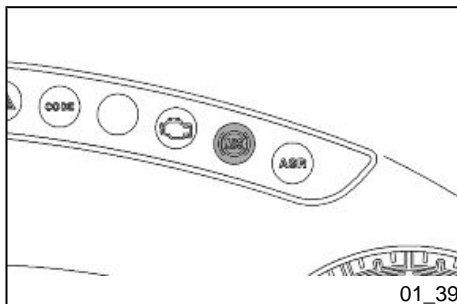
B: Speed sensor

- **ABS:** It is a hydraulic - electronic device that limits the pressure within the braking circuit when a sensor, located on the wheel, detects its tendency to lock. This system prevents the wheels from locking to avoid the risk of falling.

In case of failure of the ABS system, immediately reported to the rider with ABS warning light on the instrument cluster, the vehicle retains the characteristics of a conventional braking system. In case of ABS warning light, reduce speed and go to an Authorised Service Centre for the appropriate checks. The safety provided by the ABS does not, in any case, justify risky manoeuvres. The stopping distance may be greater, compared to a conventional vehicle equipped with traditional braking in the following conditions:

- Riding on rough roads, with gravel or snow
- Riding on roads with holes or bumps

It is therefore recommended to reduce speed in these conditions.



01_39



AT VERY LOW SPEEDS (LESS THAN 5 KM/H) THE ABS SYSTEM IS DISABLED.

IT IS RECOMMENDED TO PAY ATTENTION THEREFORE IN CASES OF BRAKING IN LOW GRIP CONDITIONS AT LOW SPEED (FOR EXAMPLE BRAKING ON GARAGE FLOOR TILES AFTER HAVING RIDDEN ON WET ROADS OR SIMILAR SITUATIONS)

N.B.

THE ABS WARNING LIGHT TURNS ON AND REMAINS ON UNTIL A SPEED OF 5 Km/h IS REACHED.

CAUTION



IN THE EVENT OF MALFUNCTION OF THE BATTERY, THE ABS - ASR SYSTEM TURNS OFF.

System ASR (01_40, 01_41)

ASR SYSTEM

The ASR system is a driving aid that assists the driver in acceleration manoeuvres, particularly on low-grip surfaces or under conditions that can cause sudden back-wheel slippage. The ASR in these situations automatically intervenes by reducing engine output within the limit imposed by the grip conditions, contributing significantly to the maintenance of stability the vehicle.

WARNING

THE ASR SYSTEM IS BASED ON THE RECOGNITION OF SPEED DIFFERENCES BETWEEN FRONT AND REAR WHEEL. IN ORDER FOR THE SYSTEM TO MAINTAIN MAXIMUM EFFICIENCY IN ALL CONDITIONS, THE CALIBRATION PROCEDURE **MUST BE PERFORMED EVERY TIME, EVEN IN CASE OF REPLACEMENT OF JUST ONE TIRE.**

FOR THE CALIBRATION OF THE CONTROL UNIT PERFORM THE PROCEDURE BELOW.



01_40

- **SWITCH "1"**: activation / deactivation.
- **WARNING LIGHT "2"**:operating indication warning light.

ASR INDICATOR LIGHT FLASHING MODE

The ASR indicator light can be off, on steady or flashing with 3 different frequencies.

ASR indicator off

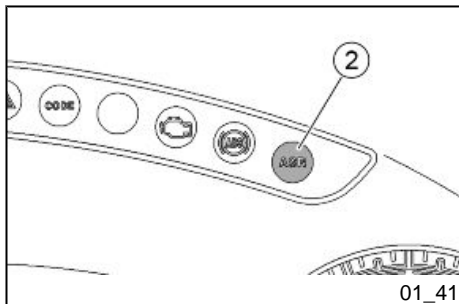
Condition: vehicle in motion

- When the vehicle is running, the ASR indicator light off indicates that the system is operational but not active (normal condition of use).

ASR indicator light steady on

Condition: key "ON", engine running and ASR system voluntarily deactivated by the user

- If the deactivation was voluntary (by pressing the ASR button "1" for 1 second with the engine running) it is recommended to reactivate the ASR system as soon as possible, to guarantee the maximum safety of the vehicle. Deactivation may be necessary only in case of starting with very low grip surfaces (mud, snow) on which the operation of the ASR could actually prevent the movement of the vehicle.



01_41

Condition: key "ON" (regardless of whether the engine is running or not) and ASR system NOT voluntarily deactivated by the user

- The steady on ASR indicator light indicates that wheel radius learning has never been performed. Calibrate; if the ASR light remains steady on, there is an ASR system failure: in this case you must contact an **Authorised Service Centre** for the diagnosis and the reactivation of the system.
- The steady on ASR indicator light and the steady on engine fault indicator light indicate that the wheel radius learning procedure has been performed but with a negative result. Perform a new calibration; if the ASR light remains steady on, there is an ASR system failure: in this case you must contact an **Authorised Service Centre** for the diagnosis and the reactivation of the system.

ASR indicator light flashing

Condition: vehicle stationary and engine running

- A frequency of 0.5 flashes per second (0.5 Hz), indicates that learning is in progress. The indicator light starts flashing at 0.5 Hz when the button sequence required to start the learning procedure is pressed.

Condition: vehicle stationary, key to "ON" and engine switched off

- A frequency of 1 flash per second (1 Hz) occurs when, with the key to "ON" and the engine switched off, the ABS control unit reads that the learning has already been carried out successfully; the ASR indicator light will switch off as soon as the engine is started and the ABS has ascertained the congruence between the speeds of the two wheels (it is necessary to exceed a minimum speed so that the ABS can carry out this task, in order to switch off the ASR indicator light).

Condition: vehicle in motion

- A frequency of 5 flashes per second (5 Hz) when the vehicle is in motion, indicates that the ASR system is operational and activated by a low grip condition, with a reduction in engine power; ride with extreme care, as the grip limit has been exceeded; restore the vehicle to safe conditions by gently reducing the speed.

N.B.

AT VEHICLE START-UP THE ASR WARNING LIGHT FLASHES AT THE SAME FREQUENCY AS THE ABS WARNING LIGHT, INDICATING A DIAGNOSTIC PHASE OF THE SYSTEM. IN THE ABSENCE OF ERRORS, BOTH WARNING LIGHTS TURN OFF AT THE SAME TIME WHEN EXCEEDING 5 km/h.

IN CASE OF ABSENCE OF FLASHING AT START-UP, THE SYSTEM MAY NOT WORKING, PLEASE CONTACT AN AUTHORISED SERVICE CENTRE.

WARNING

THE ASR SYSTEM IS ACTIVATED AT EVERY "ON" POSITIONING OF THE IGNITION SWITCH.

IF DISABLED BY THE USER, THE ASR SYSTEM KEEPS THE STATE OF INACTIVITY ONLY IF THE VEHICLE IS OFF, BY USING THE ENGINE STOP SWITCH; AT THE NEXT KEY ON THE ASR SYSTEM IS ENABLED AUTOMATICALLY.

CAUTION

IT IS EMPHASISED THAT THE RIDING AUXILIARY SYSTEM CANNOT CHANGE THE PHYSICAL LIMITS OF GRIP AND IS NOT A SUBSTITUTE FOR PROPER MANAGEMENT OF POWER, BOTH ON STRAIGHT STRETCHES AND IN TURNS. THEREFORE, IT IS RECOMMENDED TO ALWAYS USE THE VEHICLE WITH THE UTMOST CARE AND IN ACCORDANCE WITH THE REGULATIONS IN FORCE.

CAUTION

AT LOW SPEED (LESS THAN 5 km/h), THE ASR SYSTEM DOES NOT WORK.

IT IS RECOMMENDED TO PAY PARTICULAR ATTENTION IN THE EVENT OF ACCELERATION FROM STANDSTILL IN CONDITIONS OF LOW GRIP, ESPECIALLY IN THE FIRST METRES.

N.B.

IN CASE OF ROAD DISCONNECTIONS THERE COULD BE SHORT ACTIVATIONS OF THE ASR SYSTEM. SUCH EVENT APPEARS UNDER NORMAL OPERATION CONDITIONS OF THE VEHICLE.

N.B.

THE DEVICE PREVENTS IMPRESSING ON THE REAR HIGH SPEED ROTATION WHEEL WITH THE VEHICLE ON THE CENTRE STAND. IT IS RECOMMENDED NOT TO INSIST WITH THE THROTTLE GRIP IN THIS PARTICULAR CONDITION.

CAUTION



A POOR STATE OF MAINTENANCE OF THE TYRES CAN RESULT IN ABNORMAL OPERATION OF THE ASR SYSTEM.

IN CASE OF REPEATED INTERVENTIONS OF THE ASR, EVEN ON ROAD SURFACES WITH GOOD GRIP OR SMALL THROTTLE OPENINGS, IT IS NECESSARY TO CHECK FOR WEAR AND/OR THE STATE OF INFLATION OF TYRES FIRST. IF THE PROBLEM PERSISTS, CONTACT AN AUTHORISED SERVICE CENTRE.

CAUTION



IN THE EVENT OF MALFUNCTION OF THE BATTERY, THE ABS - ASR SYSTEM TURNS OFF.

ASR SYSTEM CALIBRATION PROCEDURE

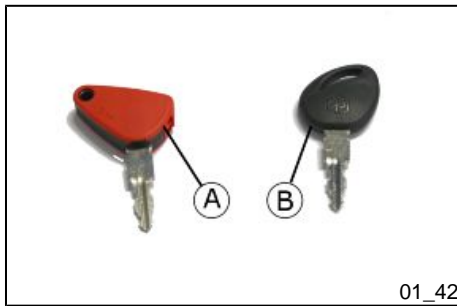
In order to maintain the efficiency of the ASR system when one or both tires are replaced, a calibration procedure of the system must be performed as follows on a straight flat stretch of road.

After turning the key to 'ON', the ABS indicator light and the ASR icon '2' flash at the same frequency (fast flashing).

1. Start the vehicle and ride a short distance of more than 5 km/h (3 mph) and wait for the flashing of the ASR warning light and of the ABS icon to stop.
2. Stop the vehicle and leave the engine running at idle speed for at least 3 seconds.
3. Turn the ASR system off by pressing the specific button "1" on the handlebar and check that the ASR disabling icon "2" stays on steady.
4. Press at the same time the engine starter button and the ASR on/off button "1" for at least 4 seconds (**pulling the LH brake lever has no effect**).
5. The activation of the procedure will be confirmed by the ASR icon "2" switching on with slow flashing (1 flash every 2 seconds).
6. Accelerate to a constant speed of 30 km/h (18.7 mph) and maintain it for at least 10 seconds.
7. The end of the procedure will be indicated by the switched off ASR icon "2".
8. Once the procedure is complete, it is necessary to turn the ignition switch to "OFF" and wait at least 30 seconds for the next key "ON".
9. In case of failure to complete the procedure within 2 minutes the ASR symbol «2» will stay on steady and the ASR will remain off until the next key «OFF».
10. To restart the ASR, it is necessary to turn the key to "ON" and repeat the procedure until achieving positive result.

The immobilizer system

To increase protection against theft, the vehicle has an electronic lock system called the «PIAGGIO IMMOBILIZER», this enables the engine functioning only after checking the presence of a coded key.



Keys (01_42)

The vehicle is supplied with two types of keys.

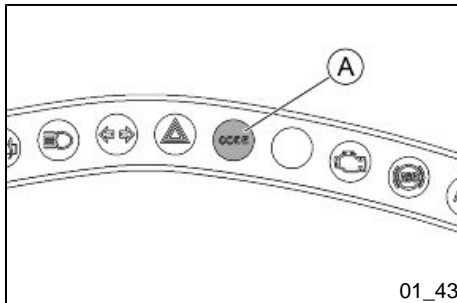
The key «A» and the «MASTER» key. Only a single copy of this key is supplied, which is necessary to program the codes for all your other keys and for your dealer to perform maintenance operations. We therefore recommend that it be used only under exceptional circumstances.

The starter key «B» (provided in just one copy) is the key you normally use.

WARNING



LOSING THE MASTER KEY WILL MEAN THAT LATER REPAIRS TO THE "PIAGGIO IMMOBILIZER" SYSTEM AND ENGINE CONTROL UNIT CANNOT BE PERFORMED.



Immobilizer device enabled indicator led (01_43)

Activation of the «PIAGGIO IMMOBILIZER» system is signalled by a flashing of the warning light «A». The flashing remains on for the first 48 hours after the switching to «OFF», then it turns off automatically to keep the battery charged.

If there is a fault in the system, the warning light «A», tells the **Authorised Service Centre** what the type of fault is through the type of flashing emitted. After the indication of the diagnostic code, the warning light remains on to indicate the inhibition of the start.

Operation

Every time the ignition key «B» is removed from the «OFF» position, or from the «LOCK» position, the immobilizer system turns on and activates the engine lock.

When the key is turned to «**ON**», the block is only deactivated if the system recognizes the code transmitted by the key.

If the start is inhibited by the system, the intervention will be confirmed by the presence of the immobilizer warning light on steady. Under conditions like these, repeat the switching to «**ON**» paying attention to ensure the best operating conditions of the key.

WARNING



TO ENSURE THE BEST OPERATING CONDITIONS OF THE KEY, AVOID THE PRESENCE OF STRONG MAGNETIC FIELDS AND/OR ADDITIONAL KEYS WITH TRANSPONDERS OTHER THAN THE SERVICE ONE PLACED NEAR THE IMMOBILIZER SYSTEM ANTENNA.

ALTERNATIVELY THE ADDITIONAL KEYS WITH TRANSPONDER MUST HAVE A STABLE HOUSING INSIDE THE KEY HOLDER OR ENSURE AN ADEQUATE SEPARATION FROM THE SERVICE KEY OPERATING IN THE ANTENNA FIELD.

CAUTION



TO OBTAIN BEST RESULTS, IT IS RECOMMENDED TO USE A NON-METALLIC KEY HOLDER CONTAINING ONLY ONE SERVICE KEY.

THE NON-METALLIC KEY HOLDER HAS THE ADDITIONAL ADVANTAGE OF BEING LESS AGGRESSIVE AGAINST THE BODYWORK OF THE IGNITION KEY COMPARTMENT.

If the inhibition of the start persists, try again with the **MASTER** key «**A**». If you still cannot start the engine, you must contact an **Authorised Service Centre**, which has the electronic equipment required to identify and repair the system.

When ordering additional keys, it must be repeated the codifying procedure and enabling the codes of all keys, including the ones already in use.

Go directly to an **Authorised Service Centre**, bringing the **MASTER** key «**A**» and all of the service keys «**B**» in your possession.

Service key codes not presented during the new storage procedure are cancelled from the memory. Any service key that is lost will therefore be unable to start the engine.

WARNING



EACH KEY HAS ITS OWN AND UNIQUE CODE, WHICH MUST BE STORED IN THE SYSTEM CONTROL UNIT MEMORY.

VIOLENT SHOCKS MAY AFFECT THE ELECTRONIC COMPONENTS OF THE KEY.

WHEN OWNERSHIP OF THE VEHICLE PASSES FROM ONE PERSON TO ANOTHER, THE NEW OWNER MUST TAKE POSSESSION OF THE MASTER KEY (AS WELL AS ALL THE OTHER KEYS) AND THE «CODE CARD».

Programming the immobilizer system (01_44)

Below is described the procedure to follow for programming the **PIAGGIO IMMOBILIZER** system and/or for storing other key codes. The programming procedure should be carried out with the engine stop switch set to "**RUN**".

PROCEDURE START

Insert the «**MASTER**» key «**A**» into the ignition switch (in «**OFF**») and turn it to «**ON**». After 1 - 3 seconds, turn the key to «**OFF** » again and pull it out.

INTERMEDIATE PHASE

After removing the «**MASTER**» key «**A**», insert the key «**B**» to be programmed within 10 seconds and turn it to the «**ON**» position immediately. After 1 - 3 seconds, turn the

key to «OFF» again and pull it out. In this way you can program up to 3 keys, by repeating the above operation and respecting the indicated times.

FINAL PHASE

After removing the key «B» to be programmed, insert the MASTER key «A» again and turn it to the «ON» position. (Do this within ten seconds of removing the previous key). Leave it in this position for 1 to 3 seconds and return it to «OFF».

CORRECT PROGRAMMING CHECK PHASE

Insert the «MASTER» key «A», deactivating the transponder «C» (that is to say by tipping the key cap by 90°) and turn the key to «ON». Perform the engine starter operation. Ensure that the engine does not start. Insert the programmed key «B» and repeat the starter operation. Check that motor starts.

WARNING



SHOULD YOU START THE ENGINE WITH THE MASTER KEY (WITH TRANSPONDER OFF) OR IN THE EVENT OF WRONG OPERATION DURING PROGRAMMING, REPEAT THE PROCEDURE FROM THE BEGINNING.





USB socket (01_45)

Above the dashboard, inside the glove-box is a USB socket.

To use it, remove the protective cap. Cover the socket again with the cap to avoid that water and/or humidity could damage it.

CAUTION



THE GLOVE BOX IS NOT WATERTIGHT.

DO NOT STORE OBJECTS THAT COULD BE AFFECTED BY HUMIDITY OR ANY SUBSTANCES Poured ON THE BOX DOOR, EVEN WHEN CLOSED.

CAUTION



THE SUPPLIED USB PORT IS SUITABLE FOR RECHARGING AND/OR POWERING MOST DEVICES CURRENTLY AVAILABLE ON THE MARKET.

The USB port is active once the key is turned to «ON».

CAUTION



PROLONGED USE OF THE PLUG SOCKET MAY RESULT IN PARTIAL DISCHARGE OF THE BATTERY

USB PORT

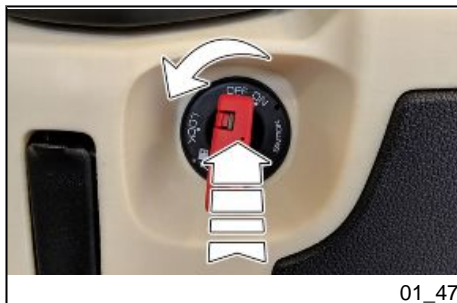
Output voltage	(5.00±0.25) Vdc
Charging current	500mA max



01_46

OBD port (01_46)

The vehicle is equipped with an OBD (On-Board Diagnostics) port to monitor its correct operation at an **Authorised Service Centre**.



01_47

Opening the saddle (01_47)

To open the seat to the positions with the ignition switch in OFF and ON, press the key and rotate counter clockwise.



01_48

Bag clip (01_48)

To use the bag hook «C» which is mounted on the fairing, it is necessary to lightly pull on it, towards the rear part of the vehicle.

CAUTION



Maximum applicable load: 1.5 kg

WARNING



FOR USER SAFETY, THE DIMENSIONS OF THE LOAD SHOULD NOT EXTEND BEYOND THE VEHICLE PERIMETER OR HAMPER RIDING IN ANY WAY.

Identification (01_49, 01_50)

Identification registration numbers are made up of a prefix and a number, stamped on the frame and on the engine. The serial number must always be indicated when ordering spare parts. We recommend checking that the frame registration number stamped on the vehicle corresponds with that on the vehicle documentation.

CAUTION



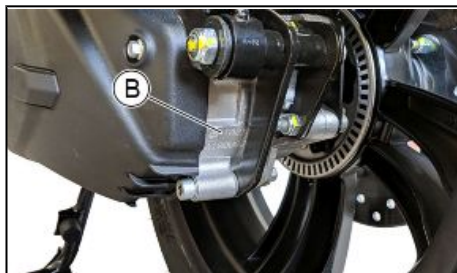
PLEASE REMIND THAT ALTERING IDENTIFICATION REGISTRATION NUMBERS CAN LEAD TO SERIOUS PENAL SANCTIONS (IMPOUNDING OF THE VEHICLE, ETC.).



01_49

Frame number

To read the chassis number "A", open the door for access to the fuel tank and lift the rubber collection tray.



01_50

Engine number

The engine number «B» is stamped near the rear left shock absorber lower support.

VEHICLE IDENTIFICATION

Chassis prefix	ZAPTA2100
Engine prefix	TA21M

Predisposed for installation of accessories

This vehicle is equipped with a pre-installation for the installation of the following accessories:

- Piaggio Multimedia Platform
- Heated handgrips
- Heated leg warmer
- Cobra anti-theft satellite

For further information and for installation, contact an **Authorised Service Centre**.

WARNING



ONLY USE ORIGINAL PIAGGIO ACCESSORIES AND DEVICES, THE ONLY TESTED AND GUARANTEED ONES THAT DO NOT CHANGE THE ENERGY ABSORPTION OF THE VEHICLE.

NON-ORIGINAL DEVICES THAT REQUEST THE ELECTRICAL CONNECTION TO THE VEHICLE SYSTEM CAN CAUSE IRREPARABLE DAMAGES.

THE USE OF NON-ORIGINAL ACCESSORIES WILL VOID THE GUARANTEE.

MP3 300 hpe



PIAGGIO®



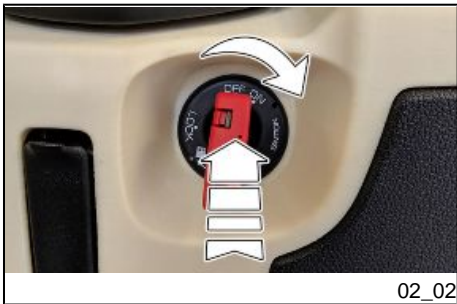
Chap. 02
Use



Checks (02_01)

To preserve the safety of the people and the vehicle's efficiency, the Client has the responsibility to perform the following checks each time before using the vehicle:

1. The operation of the front and rear brakes;
2. The correct sliding of the accelerator lever during opening and release;
3. The fuel level in the tank; if necessary, refuel;
4. The brake fluid level;
5. The transmission oil level;
6. The engine oil level;
7. The coolant level (if available);
8. The pressure and wear of the tyres;
9. The operation of the electrical system (horn, position lights, headlamp light, turn indicators, brake light, licence plate lighting);
10. The operation of the central and side stand (if available).



Refuelling (02_02, 02_03, 02_04, 02_05)

To open the fuel tank door, position the ignition key to "OFF" or "ON", then press in the key and turn it clockwise.



02_03

Remove the "T" cap and fill fuel tank with unleaded petrol with minimum octane rating = 95. The gasoline level is indicated on the gage «A» while the reserve is indicated by the warning light «C».

CAUTION



PETROL DAMAGES THE PLASTIC PARTS OF THE BODYWORK.

WARNING



DO NOT RIDE WITH THE FUEL TANK ALMOST EMPTY, LACK OF FUEL CAN DAMAGE THE CATALYTIC CONVERTER.

CAUTION

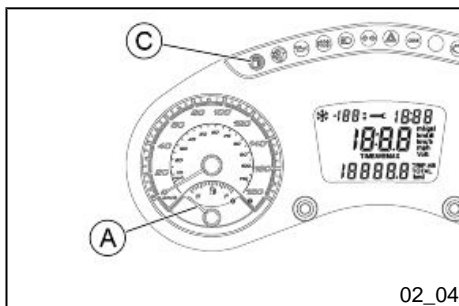


USING NON-RECOMMENDED PETROL REDUCES THE EFFICIENCY OF THE EXHAUST AND FUEL SUPPLY SYSTEMS.

CAUTION



DO NOT USE THE MOTORCYCLE TO THE COMPLETE EXHAUSTION OF THE FUEL; IF THIS SHOULD HAPPEN, DO NOT CONTINUALLY TRY TO START THE MACHINE, MOVE THE IGNITION SWITCH TO «OFF» AND REFILL THE TANK WITH GASOLINE AS SOON AS POSSIBLE. IF YOU DO NOT DO THIS, YOU COULD DAMAGE THE FUEL PUMP AND/OR THE CATALYTIC CONVERTER.



02_04

WARNING

IT IS VERY STRONGLY RECOMMENDED THAT YOU DO NOT REFUEL YOUR VEHICLE USING MEANS OTHER THAN A NORMAL GAS STATION PUMP. IF PETROL IS NOT COMPLETELY CLEAN, IT CAN DAMAGE THE FUEL SUPPLY SYSTEM FILTERS.

CAUTION**WARNING**

WHILE REFUELLING, FULLY INSERT THE FUEL GUN IN THE TANK, AFTER THE FIRST CLICK STOP THE SUPPLY AND DO NOT FORCE REFILLING, IN ORDER TO AVOID FUEL LEAKAGES, EVEN IF SUBSEQUENT TO REFUELLING.

CAUTION

WHILE REFUELLING, DO NOT USE ELECTRONIC DEVICES AND/OR CELLULAR PHONES THAT COULD CAUSE DAMAGE TO THINGS AND/OR PEOPLE DUE TO GASOLINE VAPOURS.

CAUTION

DURING REFUELLING AVOID FUEL LEAKAGES, WHICH MAY CAUSE DAMAGE TO THINGS OR PERSONS AND FIRE HAZARD.

CAUTION

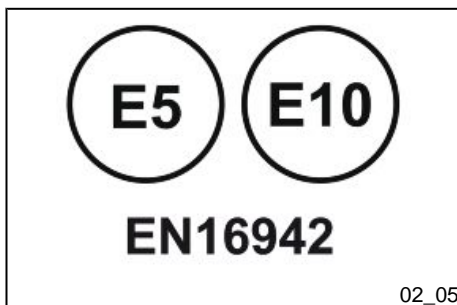


KEEP NAKED FLAMES OR LIT CIGARETTES AWAY FROM THE TANK FILLER NECK: FIRE HAZARD. ALSO AVOID INHALING HARMFUL VAPOURS.

CAUTION



SHUT OFF THE ENGINE BEFORE REFUELLING WITH PETROL. PETROL IS HIGHLY INFLAMMABLE. DO NOT LET PETROL SPILL FROM THE TANK OR WHILE REFUELLING.



The European standard **EN 16942** prescribes the identification of the vehicle compatibility with the fuel type, by means of a graphic symbol for consumer information. The symbols shown on the side make facilitate the recognition of the correct fuel type to be used on your vehicle. Before refuelling, check the symbols located near the filler neck and compare them with the symbol shown on the filling pump.

E5: unleaded petrol with maximum 5% ethanol.

E10: unleaded gasoline with 10% maximum Ethanol percent.

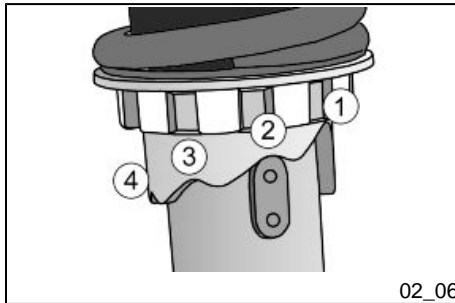
The label on each pump dispenser shows only one value; if for example it shows E5 it means that the petrol supplied is unleaded, with 5% ethanol.

The label on the vehicle can instead show several values . If, for example, it shows both E5 and E10 values, it means that the vehicle is compatible with petrol containing up to a maximum 10% ethanol, and thus it is possible to refuel the vehicle either from a E5 dispenser or from a E10 dispenser (but not from one showing E85).

CAUTION

ALWAYS USE PETROL WITH A MAXIMUM OF 10% BIOETHANOL CONTENT (E10).

DO NOT USE PETROL WITH AN ETHANOL CONTENT HIGHER THAN 10%; THIS USE COULD DAMAGE THE FUEL SYSTEM COMPONENTS AND/OR COMPROMISE ENGINE PERFORMANCE.



02_06

Shock absorbers adjustment (02_06, 02_07)

Spring pre-loading can be regulated on four positions using a special shock absorber wrench, turning the ring nut at the bottom of the shock absorbers.

Position 1: minimum pre-load: rider only

Position 2: medium pre-loading: rider only

Position 3: medium pre-loading: rider and passenger

Position 4: maximum pre-loading: rider, passenger and luggage.

CAUTION

RIDING THE VEHICLE WITH THE SPRING PRE-LOADING NOT CORRECTLY SET FOR THE RIDER AND POSSIBLE PASSENGER, COULD REDUCE THE COMFORT OF THE RIDE AND THE PRECISION OF THE STEERING.



02_07

WARNING

WE RECOMMEND WEARING GLOVES WHILE CARRYING OUT THIS OPERATION IN ORDER TO AVOID INJURIES.

WARNING

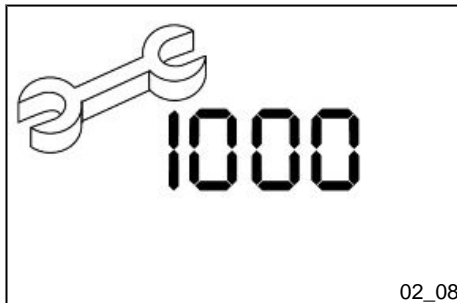
IT IS ABSOLUTELY FORBIDDEN TO ADJUST THE PRE-LOAD DIFFERENTLY ON THE TWO SHOCK ABSORBERS

Running in (02_08)

DURING THE FIRST 1000 KM. DO NOT USE THE VEHICLE AT OVER 80% OF ITS MAXIMUM SPEED. AVOID COMPLETELY ENGAGING THE ACCELERATOR AND KEEPING THE VEHICLE AT A CONSTANT SPEED FOR LONG PERIODS OF TIME. AFTER THE FIRST 1000 KM. PROGRESSIVELY INCREASE THE SPEED, WHERE ALLOWED, UNTIL YOU REACH THE MAXIMUM VEHICLE SPEED PERFORMANCE.

CAUTION

TO AVOID DAMAGING THE VEHICLE, PAY ATTENTION TO THE RECOMMENDATIONS ABOVE





02_09

Starting up the engine (02_09, 02_10, 02_11)

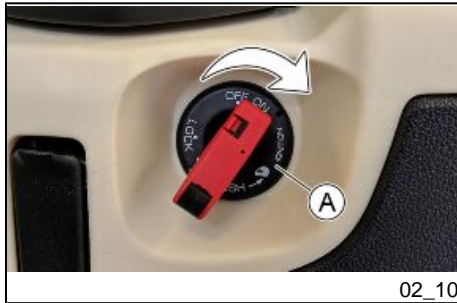
The vehicle is equipped with a system that inhibits start up, controlled by an emergency engine stop switch «Q». The engine can not be turned on when the engine stop switch is turned to «OFF».

If the engine is turned on, it is turned off when the emergency stop switch is turned to «OFF».

The vehicle is fitted with direct drive automatic transmission. Therefore, always start the engine with the throttle at a minimum; to start-off from stationary position, progressively twist the throttle grip. The vehicle is equipped with an electrical fuel pump that switches on automatically as soon as the engine is started. The vehicle is provided with a front suspension lock system. When the front suspension lock system is activated, a sensor under the saddle, which will prevent the vehicle from moving but not starting up the engine, if the driver is not seated properly in driving position.

In order to start the engine:

1. Put the vehicle on its stand and make sure the rear wheel is off the ground.
2. Keep the throttle twist grip «S» at idling.
3. Insert the key into the switch «A» and turn it to «ON» position;.
4. Make sure that switch «Q» is set to «ON».
5. Pull lever of the front brake «R» or of the rear brake «I», then press starter button «U».



02_10



02_11

WARNING



THE AUTOMATIC TRANSMISSION MAKES THE REAR WHEEL TURN EVEN WHEN THE THROTTLE IS SLIGHTLY TWISTED. RELEASE THE BRAKE CAREFULLY AFTER STARTING, AND THEN ACCELERATE GRADUALLY.

CAUTION

WITH ENGINE ON AND FRONT SUSPENSION LOCKED, WHEN THE RIDER GOES IN DRIVING POSITION ON THE SADDLE, THE INJECTION SYSTEM PROVIDES A TIME OF ABOUT HALF A SECOND BEFORE RESPONDING TO THE OPENING OF THE THROTTLE GRIP.

TO ENSURE THE MAXIMUM RIDING SAFETY AND TO AVOID ABRUPT AND DANGEROUS STARTS, DO NOT OPEN THE THROTTLE GRIP DURING THIS SHORT PERIOD OF TIME.

CAUTION

DO NOT START-UP THE ENGINE IN CLOSED AREAS BECAUSE EXHAUST GASES ARE TOXIC.

CAUTION

DUE TO THE HIGH TEMPERATURES THE CATALYTIC CONVERTER CAN REACH, ALWAYS TAKE CARE, WHEN PARKING THE VEHICLE, THAT THE SILENCER DOES NOT COME INTO CONTACT WITH FLAMMABLE MATERIALS, TO AVOID SERIOUS BURNS.

CAUTION

TO ENSURE THE MAXIMUM RIDING SAFETY, DO NOT TURN OFF THE ENGINE WHILE THE VEHICLE IS MOVING.

CAUTION

WITH EMPTY FUEL TANK AVOID SWITCHING TO «ON» AND DO NOT TRY STARTING. IF YOU DO NOT DO THIS, YOU COULD DAMAGE THE FUEL PUMP.

WARNING

DO NOT ATTEMPT TO START THE ENGINE WITH THE THROTTLE TWIST GRIP IN THE OPEN POSITION. THIS CAN LEAD TO RUNAWAY, WITH UPSET, AND SUBSEQUENT SERIOUS INJURY, OR EVEN DEATH.

Precautions**CAUTION**

NEVER STRESS THE ENGINE AT LOW TEMPERATURES IN ORDER TO AVOID POSSIBLE DAMAGE. BE CAREFUL NEVER TO EXCEED THE MAXIMUM SPEED WHILE RUNNING DOWNHILL, IN ORDER TO AVOID DAMAGING THE ENGINE. IN ANY CASE, IN ORDER TO PRESERVE THE ENGINE FROM PROLONGED OVER-REVVING, THE REVOLUTION LIMITER WILL BE ACTIVATED IF THE ENGINE SPEED EXCEEDS THE ESTABLISHED THRESHOLD.

WARNING

AFTER A LONG DISTANCE COVERED AT THE MAXIMUM SPEED, DO NOT STOP THE ENGINE IMMEDIATELY, BUT LET IT RUN AT IDLE FOR A FEW SECONDS.

Difficult start up

Strictly observe the procedure described in section «**Engine starter**».

WARNING



THE THROTTLE GRIP MUST REMAIN IN THE MINIMUM POSITION BECAUSE ANY OTHER POSITION INHIBITS THE VEHICLE STARTER.

CAUTION



IF NECESSARY, CONTACT AN AUTHORISED SERVICE CENTRE.



Stopping the engine (02_12)

Fully untwist the throttle grip, then rotate the key in the switch «**A** » to «**KEY OFF**» (extractable key).

CAUTION



DUE TO THE HIGH TEMPERATURES THE CATALYTIC CONVERTER CAN REACH, ALWAYS TAKE CARE, WHEN PARKING THE VEHICLE, THAT THE SILENCER DOES NOT COME INTO CONTACT WITH FLAMMABLE MATERIALS, TO AVOID SERIOUS BURNS.

CAUTION



TO ENSURE THE MAXIMUM RIDING SAFETY, DO NOT TURN OFF THE ENGINE WHILE THE VEHICLE IS MOVING.



Stand (02_13, 02_14)

Push with your foot on the centre stand's fork "F" while lifting the vehicle backward, holding onto the handlebar.



Automatic transmission (02_15)

To make driving as simple and pleasant as possible, the vehicle has an automatic transmission with speed adjuster and centrifugal clutch. The system has been designed to provide the best performance possible (acceleration and fuel consumption) whether on the flat or travelling uphill.

If you stop on while travelling uphill (traffic lights, traffic tailback etc.), **only use the brake to keep the vehicle still and let the engine idle. Using the engine to keep the vehicle still could in fact cause the clutch to overheat because of the rubbing of the clutch masses on the transmission bell housing. Additionally, avoid accelerating with the parking brake engaged.** It is therefore advisable to avoid prolonged sliding of the clutch, (beyond that which is previously indicated) such as uphill travel fully laden on steep slopes or starts with the pilot and passenger on slopes of more than 25%.

Take the following precautions if the clutch overheats:

1. Stop using this way.
2. If necessary, let the clutch cool down with the motor at idling speed for a few minutes.

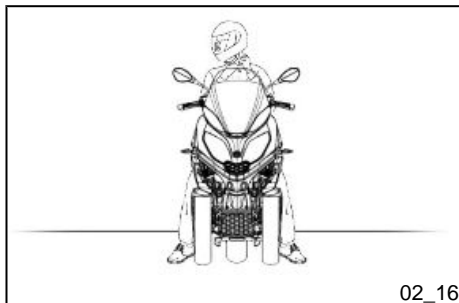
Safe driving (02_16, 02_17, 02_18, 02_19)

Some simple tips are provided below that will enable you to use your vehicle on a daily basis in greater safety and peace of mind. Your mechanical knowledge and ability are the foundation for safe driving. For this reason, try out the vehicle somewhere without traffic until you have gained a good familiarity of the vehicle itself.

1. Before riding off, remember to put the helmet on and fasten it correctly.
2. Slow down and drive carefully over bumpy roads.
3. After driving over a long stretch of wet road without using the brakes, braking will not be as efficient the first time/s you use them again. When driving under conditions like this, you should brake periodically.
4. Do not brake hard on wet, unmade or otherwise slippery road surfaces.



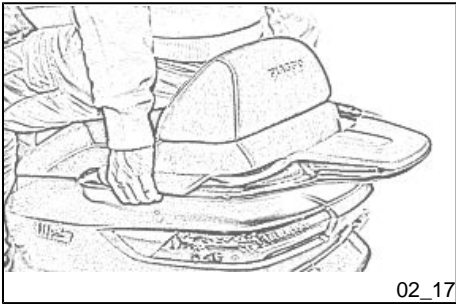
02_15



02_16

5. Do not start off by getting on the vehicle while it is standing on its stand. In any case, the rear wheel should not be turning when it comes into contact with the ground, in order to avoid abrupt departures.

6. If the vehicle is used on roads covered with sand, mud, snow mixed with salt, etc., clean the brake disc frequently with a mild detergent in order to prevent abrasive particles from building up inside the holes, which can result in early brake pads wear.



7. If there is a passenger, to guarantee the safety and comfort for the rider as well, it is recommended for the passenger to hold the specific rear handlebar with his/her hands during the ride.



8. Move the vehicle with the engine not started, supporting it with one hand on the handlebar and the other on the rear handlebar.



02_19

9. To place the vehicle on the central stand, press the stand's protrusion with your foot and lift the vehicle backward at the same time, operating the rear handlebar.

CAUTION



ALWAYS RIDE WITHIN YOUR LIMITS. RIDING UNDER THE INFLUENCE OF ALCOHOL OR OTHER DRUGS AND CERTAIN MEDICINES IS EXTREMELY DANGEROUS.

CAUTION



WITH ENGINE ON AND FRONT SUSPENSION LOCKED, WHEN THE RIDER GOES IN DRIVING POSITION ON THE SADDLE, THE INJECTION SYSTEM PROVIDES A TIME OF ABOUT HALF A SECOND BEFORE RESPONDING TO THE OPENING OF THE THROTTLE GRIP.

TO ENSURE THE MAXIMUM RIDING SAFETY AND TO AVOID ABRUPT AND DANGEROUS STARTS, DO NOT OPEN THE THROTTLE GRIP DURING THIS SHORT PERIOD OF TIME.

WARNING



IN ORDER TO PREVENT ANY ACCIDENTS RIDE VERY CAREFULLY AFTER ADDING ACCESSORIES AND WHILE CARRYING LUGGAGE. ADDING ACCESSORIES AND LUGGAGE CAN REDUCE THE VEHICLE'S STABILITY, PERFORMANCE AND SAFETY DURING USE. (SEE THE "SPARE PARTS AND ACCESSORIES" SECTION)

WARNING



WHEN RIDING THE SCOOTER EQUIPPED WITH ACCESSORIES (CASE AND/OR WINDSHIELD), REDUCE THE SPEED. THE VEHICLE CAN BE RIDDEN AT A HIGHER SPEED WITHOUT THE ACCESSORIES MENTIONED BEFORE WITHIN THE LIMITS ESTABLISHED BY LAW. IF THERE ARE ANY NON-PIAGGIO ACCESSORIES INSTALLED, OR AN ABNORMAL LOAD, OR IF THE SCOOTER IS NOT IN A GENERALLY GOOD CONDITION, OR WHENEVER WEATHER CONDITIONS DEMAND IT, SPEED SHOULD BE FURTHER REDUCED.

CAUTION



DO NOT ADJUST THE MIRRORS WHILE DRIVING. THIS COULD CAUSE YOU TO LOSE CONTROL OF THE VEHICLE.

CAUTION



ANY ELABORATION THAT MODIFIES THE VEHICLE'S PERFORMANCES, SUCH AS TAMPERING WITH ORIGINAL STRUCTURAL PARTS IS STRICTLY FORBIDDEN BY LAW, AND RENDERS THE VEHICLE NO LONGER CONFORMING TO THE APPROVED TYPE AND DANGEROUS FOR RIDING.

Front suspension locking system (02_20, 02_21)

The front suspension block system allows the simple blockage of rolling of the vehicle by pressing the switch «T». The vehicle can be stopped without your feet touching the ground.

The warning light «C» starts flashing when the ignition switch is set to «ON» and the lock is deactivated. This means that the system is enabled for activation.

Pushing the switch "T" in position "1" a continuous noise will indicate that the block system is engaged and at the same time the light «C» will stop flashing and remain lit.

Pushing the switch «T» in position «"2" » a continuous noise will indicate that the block system is disengaged and at the same time the light «"C"» will begin flashing again. The light «C» will turn off when you go into gear. This means that the lock is not enabled.

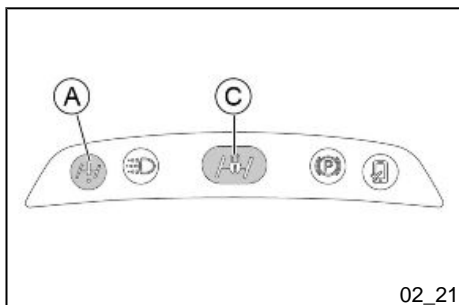
Engaging roll lock is possible only if the following conditions occur at the same time:

- Accelerator completely disengaged.
- RPM of the engine at less than 2,500 rpm.
- Vehicle speed below 10 km/h.
- Block system WARNING light «A» off (the system is correctly functioning)

If any of these conditions are not met the light «C» will remain off and it will not be possible to engage the lock (under normal conditions the light «C» is off).

With engine on, system locked (warning light «C» on) and if the rider is properly seated in riding position, the suspension locking system is disengaged automatically and the warning light «C» turns off when the throttle is twisted to start the ride.

For increased rider safety, the vehicle is provided with a **driver presence sensor** placed inside the saddle which allows the system to inhibit vehicle movement and suspension block (when engaged), when the rider is not seated in the correct riding position: in this case the WARNING light «A» will light up.



CAUTION



WITH ENGINE ON AND FRONT SUSPENSION LOCKED, WHEN THE RIDER GOES IN DRIVING POSITION ON THE SADDLE, THE INJECTION SYSTEM PROVIDES A TIME OF ABOUT HALF A SECOND BEFORE RESPONDING TO THE OPENING OF THE THROTTLE GRIP.

TO ENSURE THE MAXIMUM RIDING SAFETY AND TO AVOID ABRUPT AND DANGEROUS STARTS, DO NOT OPEN THE THROTTLE GRIP DURING THIS SHORT PERIOD OF TIME.

CAUTION



THE DRIVER PRESENCE SENSOR IS LOCATED IN THE FRONT PART OF THE SEAT. FOR THIS REASONS AVOID INADVERTENTLY PLACING BAGS OR OTHER HEAVY OBJECTS ON THE SEAT.

NOT OBSERVING THIS RULE MAY MOVE THE VEHICLE FORWARD AND RELEASE THE SUSPENSION LOCKING SYSTEM EVEN IF THE RIDER IS NOT SEATED, BY SIMPLY TWISTING THE THROTTLE GRIP. THE VEHICLE COULD FALL ACCIDENTALLY AS A CONSEQUENCE.

WARNING



DURING THE STOP, IF THE FEET ARE NOT TOUCHING THE GROUND TO KEEP THE VEHICLE IN BALANCE, MAKE SURE THAT THE FRONT SUSPENSION LOCKING SYSTEM IS ENGAGED.

WARNING

WHEN THE FRONT SUSPENSION IS LOCKED AND ESPECIALLY ON ROUGH ROADS AND/OR IF THERE ARE OBSTACLES (E.G. BOLLARDS, PLATFORMS, ETC.), AVOID MOVING THE VEHICLE. WHEN THE LOCK IS ACTIVE THE VEHICLE MOVEMENT IS STILL INHIBITED BY THE SYSTEM.

IN CASE OF ENGINE FAILURE (DISCHARGED BATTERY) AVOID PULLING THE VEHICLE WITH THE LOCKING SYSTEM ENGAGED.

WITH THE LOCKING SYSTEM ENGAGED AND THE ENGINE OFF, AVOID MOVING THE VEHICLE AT SPEEDS ABOVE 5 km/h.

CAUTION

DO NOT GO DOWNHILL WHEN THE LOCK SYSTEM IS ENGAGED AND THE IGNITION SWITCH IS TURNED TO THE OFF POSITION.

In the case that the WARNING light «**A**» lights up (flashing), it means that there is a problem with the front suspension block system, and it is necessary to contact an **Authorised Service Centre**. If the front suspension is blocked it is still possible to unblock the system pressing the switch «**T**» to the unblock position «**2**» two times rapidly. Once the suspension is unblocked, the vehicle can be used normally, with the exception of the block system, which will remain deactivated.

For some cases of failure, the vehicle speed is auto-limited to 30 Km/h. This automatic procedure is activated to enhance safety until the failure is eliminated.

In any case you should contact an **Authorised Service Centre**.

In the case that both the WARNING light «**A**» lights up and the acoustic alarm activate simultaneously, attempt to unblock the system using the switch «**T**» in the unblock

position «2» two times rapidly. If it does not unblock, immediately contact an **Authorised Service Centre**.



Parking brake (02_22, 02_23, 02_24)

With the vehicle at a standstill and the suspension locking system engaged, it is possible to get off the vehicle without using the stand. **For safety reasons, it is compulsory to press the hand brake lever**, indicated in the picture, bringing it from position «A» to position «B».

With the parking brake «B» engaged, the «D» warning light, on the instrument panel, lights up.

When the parking brake is engaged in position **B** and the ignition switch is turned to **LOCK** the security system is activated, which disallows the disengagement of the parking brake. To disengage it, turn the ignition switch to position «OFF» or «ON». If the switch is set to position «**LOCK**» it is still possible to engage the parking brake.

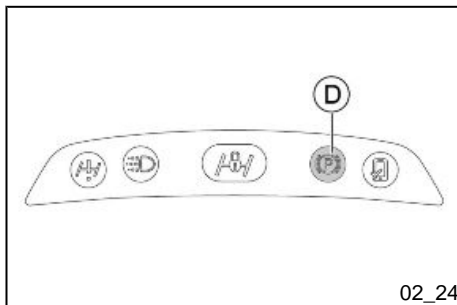
WARNING



WHEN THE VEHICLE STOPS UPHILL ON A STEEP ROAD, IT IS ADVISABLE TO USE THE STAND.

IF THE STEEP ROAD IS INSTEAD A SIDE SLOPE, THE STAND CANNOT BE USED AND THE SUSPENSION LOCK RESOLVES THE PROBLEM.

IT IS IMPORTANT TO USE NORMAL PRECAUTIONS WHEN ONE STOPS ON A STEEP ROAD: TURN THE WHEELS SO THAT IF THE VEHICLE SHOULD MOVE, THE WHEELS WILL TOUCH THE SIDEWALK. WITH THE STEERING LOCK ON, THE SIDEWALK SHOULD BE TO THE RIGHT OF THE VEHICLE WHEN UPHILL AND TO THE LEFT WHEN PARKED DOWNHILL.



02_24

Integral pedal braking system (02_25)



02_25

The vehicle is equipped with an integral, pedal-operated braking system «A» mounted on the right-hand foot rest platform. When the rider presses this pedal it produces an integral type braking effect that acts on both the front and rear brake discs.

Vehicle deceleration may be governed either by the pedal-operated braking system or the combined action of the two manual controls. Maximum braking performance is obtained by using the manual controls.

CAUTION



SINCE THE INTEGRAL BRAKING SYSTEM IS IN COMMUNICATION WITH THE TRADITIONAL BRAKE PUMPS, THE RIDER MAY NOTICE A SLIGHT MOVEMENT OF THE LEVERS ON THE HANDLEBARS WHEN OPERATING THE BRAKE PEDAL, AND VICE VERSA.

THIS EFFECT IS ENTIRELY NORMAL.

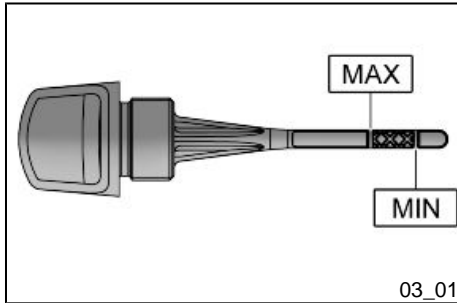
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Chap. 03
Maintenance



Engine oil level (03_01)

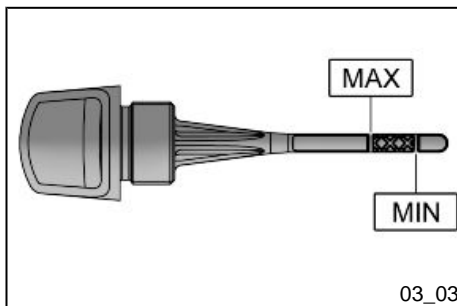
Four stroke engine oil is used in the engines in order to lubricate the timing bodies, the bench bearings and the head-engine block-piston assembly. **An insufficient quantity of oil can seriously damage the engine.** In all four-stroke engines, a loss of efficiency in oil performance and certain consumption should be considered normal. Consumption can particularly reflect the conditions of use (i.e: when driving at 'full acceleration' all the time, oil consumption increases). The replacement intervals provided for by the maintenance programme are defined depending on the total content of oil in the engine and the average consumption measured following standardised methods. **In order to prevent any problems, we recommend checking oil level more frequently than indicated in the Scheduled Maintenance table or before setting off on long journeys. In any case, the vehicle is fitted with a minimum oil pressure warning light in the instruments.**



Engine oil level check (03_02)

Every time the vehicle is used, visually inspect the level of the engine oil when the engine is cold (after **completely unscrewing** the oil cap/dipstick). The oil level should be somewhere between the MAX and MIN index marks on the level rod; «A»; while the oil is being checked, the vehicle must be resting on its centre stand on an even, horizontal surface.

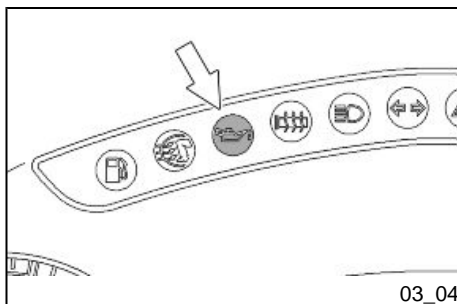
If the check is carried out after the vehicle has been used, and therefore with a hot engine, the level will be lower; in order to carry out a correct check, wait at least 10 minutes after the engine has been stopped so as to get the correct level.



03_03

Engine oil top-up (03_03)

The oil should be topped up after having checked the level and in any case by adding oil **without ever exceeding the MAX. level**. Take your vehicle to an **Authorised Service Centre** to have the engine oil checked and if necessary, topped-up as indicated in the scheduled maintenance table.



03_04

Warning light (insufficient oil pressure) (03_04)

The vehicle is equipped with a warning light that comes on when the key is turned to «ON». However, this light should come off once the engine has been started. **If the light comes on while braking, at idle speed or while turning a corner, it is necessary to check the oil level and top it up if required. If after having topped-up the oil, the warning light still comes on while braking, at idle speed or while turning a corner, it will be necessary to take your vehicle to an Authorised Service Centre.**

Engine oil change

To have the engine and filter oil replaced in accordance with the scheduled maintenance table, contact an **Authorised Service Centre**.

CAUTION

RUNNING THE ENGINE WITH INSUFFICIENT LUBRICATION OR WITH INADEQUATE LUBRICANTS ACCELERATES THE WEAR AND TEAR OF THE MOVING PARTS AND CAN CAUSE IRREPARABLE DAMAGE.

TOPPING UP THE ENGINE WITH AN EXCESSIVE AMOUNT OF OIL MAY CAUSE MALFUNCTION AND/OR A DROP IN PERFORMANCE OF THE VEHICLE.

USING OILS OTHER THAN THOSE RECOMMENDED CAN SHORTEN THE LIFE OF THE ENGINE.

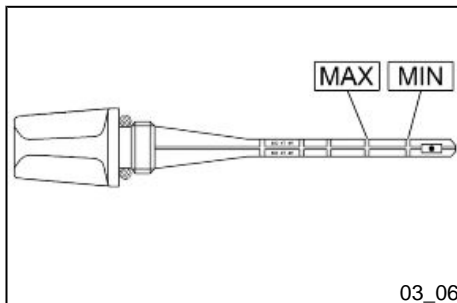
CAUTION

USED OILS CONTAIN SUBSTANCES HARMFUL TO THE ENVIRONMENT. FOR OIL REPLACEMENT, CONTACT ANY AUTHORISED SERVICE CENTRE AS THEY ARE EQUIPPED TO DISPOSE OF USED OILS IN AN ENVIRONMENTALLY FRIENDLY AND LEGAL WAY.

**Hub oil level (03_05, 03_06)**

Check that there is oil in the rear hub. (correct quantity of oil ~ 250 cc). Do the following in order to check the hub oil level:

- 1) Stand the vehicle on its stand on flat ground.
- 2) Unscrew the hub oil dipstick «A», dry it with a clean cloth and then reinsert it, **and screw it right down.**
- 3) Extract the dipstick and check that the oil level is between the MIN and MAX marks, as indicated in the figure; This level is the proper level, and should remain constant.
- 4) Screw back the dipstick, and make sure it is locked in place.

**CAUTION**

RIDING THE VEHICLE WITH INSUFFICIENT HUB LUBRICATION OR WITH CONTAMINATED OR IMPROPER LUBRICANTS ACCELERATES THE WEAR AND TEAR OF THE MOVING PARTS AND CAN CAUSE SERIOUS DAMAGE.

CAUTION

USED OIL IS HARMFUL TO THE ENVIRONMENT. COLLECTION AND DISPOSAL SHOULD BE CARRIED OUT IN COMPLIANCE WITH REGULATIONS IN FORCE.

CAUTION

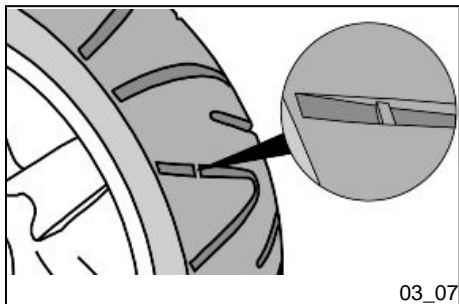
AN EXCESSIVE QUANTITY OF OIL CAN LEAD TO SPILL OVER, WHICH MAY CAUSE THE ENGINE AND THE WHEEL TO GET DIRTY.

CAUTION

WHEN REPLACING THE HUB OIL DO NOT LET THE OIL COME INTO CONTACT WITH THE REAR BRAKE DISC.

CAUTION

FOR OIL REPLACEMENT, CONTACT ANY AUTHORISED SERVICE CENTRE AS THEY ARE EQUIPPED TO DISPOSE OF USED OILS IN AN ENVIRONMENTALLY FRIENDLY AND LEGAL WAY.



Tyres (03_07)

Regularly check (about every 500 km) the pressure and wear of the tyres. Tyres feature wear indicators; replace tyres as soon as these indicators become visible on the tyre tread. Also check that the tyres do not show signs of splitting at the sides or irregular tread wear; if this occurs contact an **Authorised Service Centre**.

CAUTION



FOR THE REPLACEMENT OF THE TYRES CONTACT AN AUTHORISED SERVICE CENTRE.

CAUTION



TYRE PRESSURE SHOULD BE CHECKED WHEN TYRES ARE COLD. INCORRECT TYRE PRESSURE CAUSES ABNORMAL TYRE WEAR AND MAKES RIDING DANGEROUS.

TYRES MUST BE REPLACED WHEN THE TREAD REACHES THE WEAR LIMITS SET FORTH BY LAW.

WARNING



THE WHEELS, COMPLETE WITH TYRES MUST ALWAYS BE BALANCED. RIDING THE VEHICLE WITH VERY LOW TYRE PRESSURE OR WITH INCORRECTLY BALANCED TYRES CAN LEAD TO DANGEROUS STEERING VIBRATIONS.

TYRES

Front tire	Tubeless 110/70-13" 48P
Rear tire	Tubeless 140/60-14" 64P

TYRE INFLATION PRESSURE

Front tire pressure	1.7 bar
Rear tyre pressure	2.2 bar (2.6 bar with passenger)

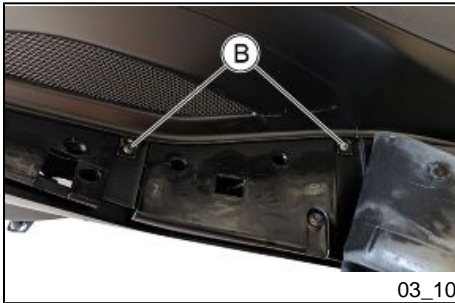


Spark plug dismantlement (03_08, 03_09, 03_10, 03_11, 03_12)

- Remove the screw "A"



- Remove the platform mat by removing the pressure pads.



- Remove the 2 screws "B"



- Remove the flap "C"



03_12

- Remove the spark plug cover and insert a suitable wrench for spark plugs with the appropriate leverage for the removal.

- Remove the spark plug.
- When refitting, place the spark plug into the hole at the required angle and finger tighten it as far as it will go. Use the wrench only to tighten it.
- Cover the spark plug completely with its cap, making sure it is back in the retainer.

N.B.

USING SPARK PLUGS OTHER THAN THE INDICATED TYPE OR SHIELD-LESS SPARK PLUG CAPS CAN CAUSE ELECTRICAL SYSTEM FAILURES.

WARNING

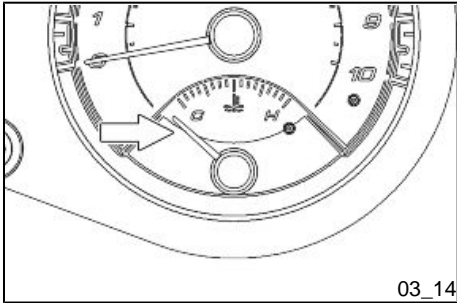
SPARK PLUG MUST BE REMOVED WHEN THE ENGINE IS COLD. REPLACE THE SPARK PLUG AS INDICATED IN THE SCHEDULED MAINTENANCE TABLE. THE USE OF ELECTRONIC CENTRAL UNITS AND OF NON-COMPLIANT ELECTRONIC IGNITIONS OR SPARK PLUGS OTHER THAN THOSE PRESCRIBED MAY SERIOUSLY DAMAGE THE ENGINE.



03_13

Removing the air filter (03_13)

To remove and clean the air filter as instructed in the scheduled maintenance table, contact an **Authorised Service Centre**.



03_14

Cooling fluid level (03_14, 03_15, 03_16, 03_17)

The cooling of the engine operates by forced circulation of liquid. The cooling circuit contains a coolant, made up of a mixture of 50% purified water and 50% glycoethylene antifreeze with corrosion inhibitors. The liquid that is found in the container is already mixed and ready to use.

For the proper functioning of the engine it is necessary for the coolant temperature to be maintained at about 90°C (indicator at mid-scale of instrument, approximately). If the instrument indicator enters the red zone stop the engine, allow it to cool down and check the level of the liquid; If it is as it should be contact an **Authorised Service Centre**.

check the fluid when the engine is cold, according to the scheduled maintenance table, in the way shown below:

1. Place the vehicle on the stand, and remove the screw from the expansion tank cover, as indicated in the photo.
2. Remove the expansion tank cap «A» rotating it anticlockwise.
3. Look inside the expansion tank: the level of the fluid must always be between the MIN. and MAX. levels.
4. If necessary, perform the top up, with the engine cold, in the case that you find the liquid is too close to the minimum level.



03_15



03_16

If the coolant needs to be topped up frequently or the expansion chamber is completely dry, check the cooling system to find the cause of the problem. It is essential to have the cooling system checked at an **Authorized Service Centre**. Replace coolant as indicated in the scheduled maintenance table. This operation must be carried out at an **Authorized Service Centre**.

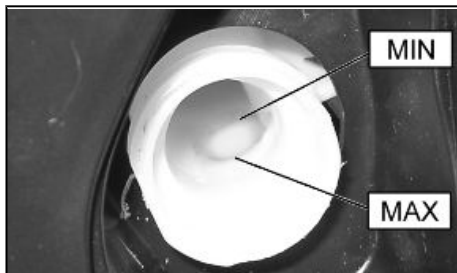
WARNING

TO AVOID THE RISK OF SCALDING, DO NOT UNSCREW THE EXPANSION TANK COVER WHILE THE ENGINE IS STILL HOT.

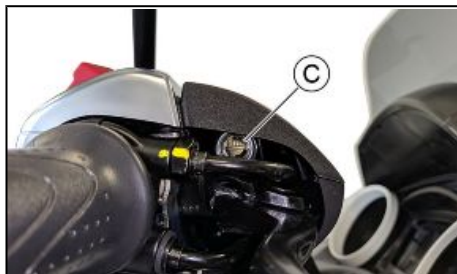
WARNING

TO PREVENT AVOID HARMFUL FLUID LEAKAGE WHILE RIDING, ENSURE THAT THE LEVEL NEVER EXCEEDS THE MAXIMUM VALUE.

TO ENSURE CORRECT ENGINE OPERATION, KEEP THE RADIATOR GRILLE CLEAN.



03_17



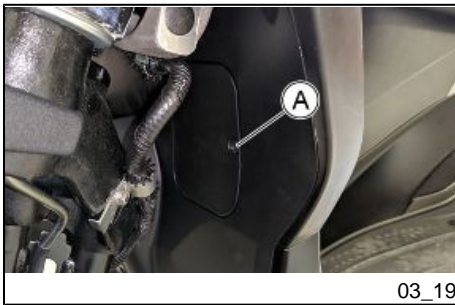
03_18

Checking the brake oil level (03_18, 03_19, 03_20)

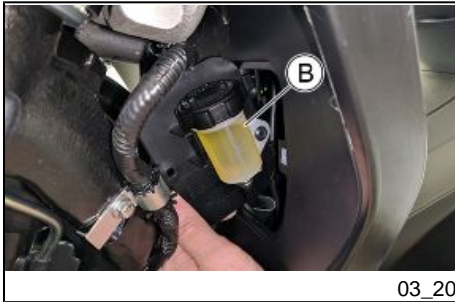
The front and rear brake fluid reservoirs are both positioned on the handlebar. Proceed as follows:

1. Place the vehicle on the centre stand with the handlebar pointing straight;
2. Check the fluid level via the inspection window «C».

To check the integral braking system fluid level, remove the cover on the left hand side of the front wheels compartment, undoing the screw «A». Check the brake fluid level in the reservoir «B».



03_19



03_20



03_21

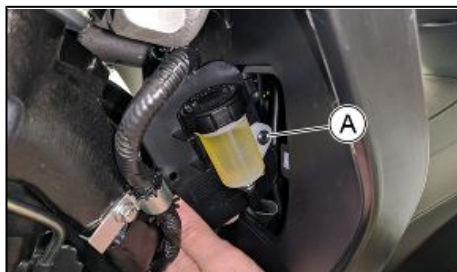
A certain lowering of the level is caused by wear on the brake pads. Should the level be below the minimum level, please contact an **Authorised Service Centre or Dealer** for a thorough inspection of the braking system.

Braking system fluid top up (03_21, 03_22)

Proceed as follows:

Carefully remove the two fixing screws shown in the figure and remove the cap to top up the level using only a recommended liquid.

The following procedure is for topping up the rear brake master cylinder; the procedure for the front brake master cylinder is the same.



03_22

To top up the brake liquid of the braking system, partly remove the fluid reservoir from its housing, being careful not to take out the tube. After removing the hatch from its seat, remove the screw «A» to free the reservoir from the flap itself. Unscrew the cap and top up the level being careful not to spill any fluid.

Under normal climatic conditions, the brake fluid should be changed every 2 years.

This operation must be carried out by trained technicians only. Please contact your nearest **Authorised Service Centre**.

WARNING

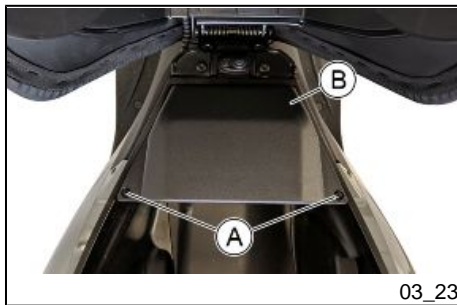


ONLY USE DOT 4-CLASSIFIED BRAKE FLUID. BRAKE CIRCUIT FLUID IS HIGHLY CORROSIVE: DO NOT LET IT COME INTO CONTACT WITH PAINTED PARTS.

CAUTION



AVOID CONTACT OF BRAKE FLUID WITH EYES, SKIN, AND CLOTHING. IN CASE OF ACCIDENTAL CONTACT, RINSE WITH WATER. THE BRAKING CIRCUIT FLUID IS HYGROSCOPIC, THAT IS, IT ABSORBS HUMIDITY FROM THE SURROUNDING AIR. IF MOISTURE CONTAINED IN THE BRAKE FLUID EXCEEDS A CERTAIN VALUE, THIS WILL RESULT IN INEFFICIENT BRAKING. NEVER USE BRAKE LIQUID FROM OPEN OR PARTIALLY USED CONTAINERS.



03_23

Battery (03_23)

To access the battery, proceed as follows:

1. Set the vehicle on its centre stand;
2. Open the saddle compartment as indicated above;
3. Remove the two fasteners «A » and the cover «B».

WARNING



IN ORDER TO AVOID DAMAGING THE ELECTRIC SYSTEM, NEVER DISCONNECT THE WIRING WHILE THE ENGINE IS RUNNING.



03_24

Use of a new battery (03_24)

Make sure the leads are connected correctly.

CAUTION

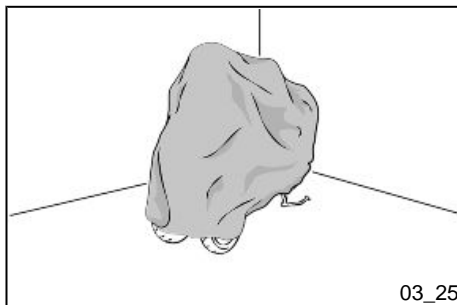


DO NOT REVERSE THE POLARITY: RISK OF SHORT CIRCUIT AND DAMAGE TO THE ELECTRICAL SYSTEM.

WARNING



USED BATTERIES ARE HARMFUL FOR THE ENVIRONMENT. COLLECTION AND DISPOSAL SHOULD BE CARRIED OUT IN COMPLIANCE WITH REGULATIONS IN FORCE.



03_25

Long periods of inactivity (03_25)

In the case of an extended inactivity of the vehicle, it is necessary to periodically recharge the battery, remembering that in circa three months, the battery will drain completely. Battery charging must be done with a current equal to 1/10 of the rated battery capacity (1A) for no more than 8 continuous hours. In any case, it is preferable to perform this service at an **Authorised Service Centre**. If you dismount the battery, make sure you connect the terminals to the correct poles.



03_26

Fuses (03_26, 03_27, 03_28, 03_29, 03_30)

The electric system has 13 fuses for the protection of various system circuits, located in the battery compartment and divided in three fuse holder boxes and a separate fuse.

The box "A" is located on the left side.



03_27

FUSE BOX "A" TABLE

Fuse no. 1	Capacity: 5 A Protected circuits (live): stop light, start-up circuit.
Fuse no. 2	Capacity: 7.5 A Protected circuits (live): DRL, front position light, headlamp relay, horn relay, parking control unit, instrument cluster.
Fuse no. 3	Capacity: 7.5 A Protected circuits (live): horn, high beam flashing switch.
Fuse no. 4	Capacity: 7.5 A Protected circuits (live): ABS control unit, immobilizer antenna, injection control unit, inclination sensor, injection loads.
Fuse no. 5	Capacity: 10 A Protected circuits: accessories set-up, diagnostic socket, heated saddle set-up, heated handles and cover set-up, turn indicator control device, helmet compartment lighting.
Fuse no. 6	Capacity: 7.5 A

Protected circuits: electric fan.

Fuse no. 7

Capacity: 7.5 A

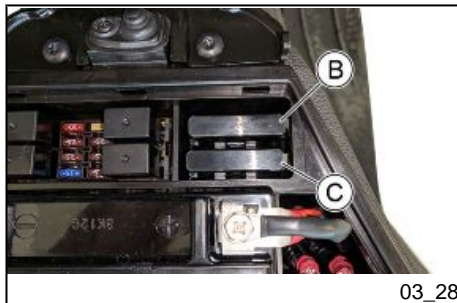
Protected circuits: injection load relay, injection control unit.

Fuse no. 8

Capacity: 15 A

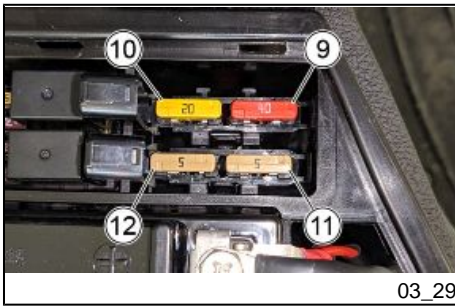
Protected circuits: high/low beam light.

Protected circuits (live): Fuse No. 12.



The boxes "B" and "C" are located on the right side.

To gain access to the fuses, open the boxes as illustrated in the figure.



FUSE BOXES "B" AND "C" TABLE

Fuse no. 9	Capacity: 40 A Protected circuits: ABS ECU.
Fuse no. 10	Capacity: 20 A Protected circuits: parking control ECU.
Fuse no. 11	Capacity: 5 A Protected circuits: instrument panel.
Fuse no. 12	Capacity: 5 A Protected circuits (live): indicator lights unit, accessories set-up, heated handles and cover set-up, instrument cluster lighting , turn indicator and emergency flashing

control, USB socket, diagnostic socket, rear position lights, licence plate light.



The main fuse "13" is located on the starter relay, protected by the connector indicated in the image.

MAIN FUSE TABLE

Fuse no. 13

Capacity: 30 A

Protected circuits: Battery charge.

Protected circuits (live): fuses No. 1, 2, 3 and 4.

CAUTION



DO NOT USE FUSES WITH DIFFERENT CAPACITIES FROM THOSE INDICATED IN THIS DOCUMENT.

CAUTION



ELIMINATE THE CAUSE OF THE FAULT BEFORE REPLACING THE FUSE.

WE STRONGLY RECOMMEND THAT YOU CONTACT AN AUTHORISED SERVICE CENTRE.

CAUTION



IN ORDER TO AVOID DAMAGING THE ELECTRICAL SYSTEM, NEVER DISCONNECT THE WIRING WHILE THE ENGINE IS RUNNING. DO NOT TIP THE VEHICLE TOO MUCH IN ORDER TO AVOID DANGEROUS LEAKAGE OF THE BATTERY ELECTROLYTE.

CAUTION



MODIFICATIONS OR REPAIRS TO THE ELECTRICAL SYSTEM, PERFORMED INCORRECTLY OR WITHOUT STRICT ATTENTION TO THE TECHNICAL SPECIFICATIONS OF THE SYSTEM CAN CAUSE MALFUNCTIONING AND RISK OF FIRE.

CAUTION

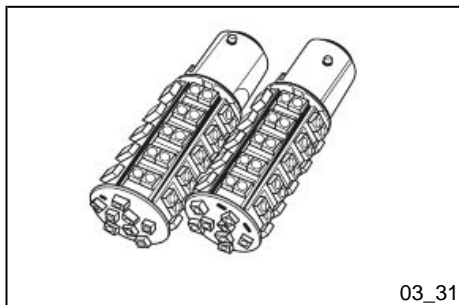


PROCEED WITH CAUTION.

DO NOT DAMAGE THE TABS AND/OR THEIR CORRESPONDING SLOTS. HANDLE THE PLASTIC AND PAINTED COMPONENTS WITH CARE, DO NOT SCRATCH OR IMPAIR THEM.

Lamps (03_31)

This section lists the bulb types required for the vehicle's equipment.

**BULB TABLE**

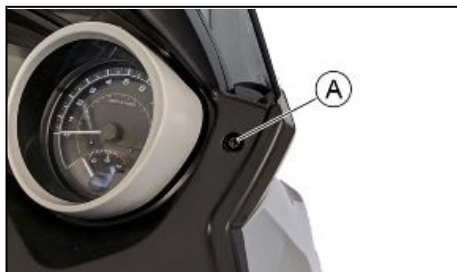
Low beam light bulb	Type: HALOGEN (H7) Power: 12V - 55W Quantity: 1
High beam light bulb	Type: HALOGEN (H7) Power: 12V - 55W Quantity: 1
Front side light bulb	Type: LED Quantity: - Power: -
Daylight running light bulb (DRL)	Type: LED Quantity: - Power: -

Stop light/rear daylight running light bulb	Type: LED Quantity: 1 RH - 1 LH Power: -
Front indicator light bulb	Type: LED Power: - Quantity: 2
Rear indicator light bulb	Type: LED Power: - Quantity: 2
Courtesy light bulb, saddle compartment	Type: TORPEDO TYPE Power: 12V - 5W Quantity: 1
Licence plate light bulb	Type: incandescent Power: 12V - 5W Quantity: 1

Front light group (03_32, 03_33, 03_34, 03_35, 03_36, 03_37, 03_38, 03_39, 03_40, 03_41, 03_42, 03_43)

To remove the front light assembly, proceed as follows:

- Unscrew the screw "A" on both sides of the vehicle;

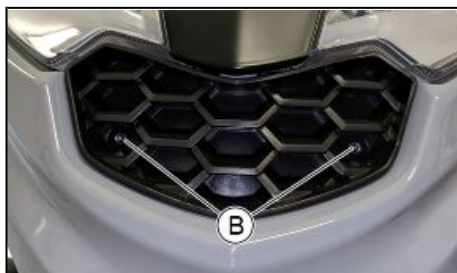


03_32



03_33

- Remove the cover shown in the image from both sides, pulling it downward, paying attention to the plastic couplings;



03_34

- Unscrew the two screws "B" and remove the grid;

- Unscrew the screw underneath;



- Unscrew the two screws "C";



- Remove the light assembly central cover, disconnecting the couplings;



03_37

- Unscrew the two screws "D" fastening the upper part of the light assembly;



03_38

- Unscrew the two lower fixing screws "E";



03_39

- Disconnect the connector;



- Remove the light assembly;



- Remove the rubber cover to reach the bulbs;



- For the low beam light bulb, operate on the indicated clamps to take out the bulb holder, then detach the bulb;



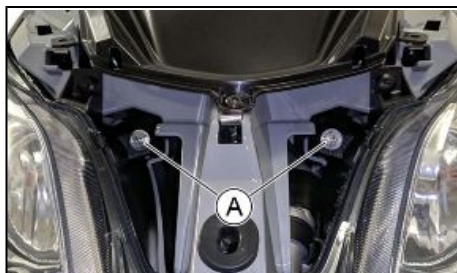
03_43

- For the high beam light bulb, turn the bulb holder anticlockwise and take it off, then detach the bulb.

WARNING



HIGH- AND LOW-BEAM BULBS ARE HALOGEN TYPE: DO NOT TOUCH THEM WITH YOUR FINGERS TO AVOID DAMAGING THEIR FUNCTION.



03_44

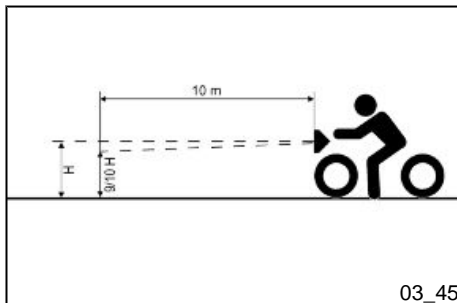
Head light adjustment (03_44, 03_45)

Proceed as follows:

1. Position the unloaded vehicle, in running order and with the tyres inflated to the prescribed pressure, onto a flat surface, 10 m away from a half-lit white screen; make sure the vehicle axis is perpendicular to the screen;
2. Remove the central cover from the light assembly
3. Turn on the headlight and make sure that the upper edge of the beam projected on the screen is not more than 9/10 of the height from the ground of the centre of the light and is not less than 7/10;
4. If the aforementioned condition is not met, adjust the headlight with the screws «A» indicated in the figure

N.B.

THE PROCEDURE DESCRIBED IS THAT ESTABLISHED BY EUROPEAN STANDARDS FOR THE MAXIMUM AND MINIMUM HEIGHT OF THE LIGHT BEAM. REFER TO THE STATUTORY REGULATIONS IN FORCE IN EVERY COUNTRY WHERE THE VEHICLE IS USED.



03_45



03_46

Front direction indicators (03_46)

WARNING



INDICATOR BULBS ARE "LED". IN CASE OF MALFUNCTION, BECAUSE DISASSEMBLY IS PARTICULARLY DIFFICULT, WE RECOMMEND SEEING AN AUTHORISED SERVICE CENTRE FOR REPLACEMENT.



03_47

Rear optical unit (03_47)

WARNING



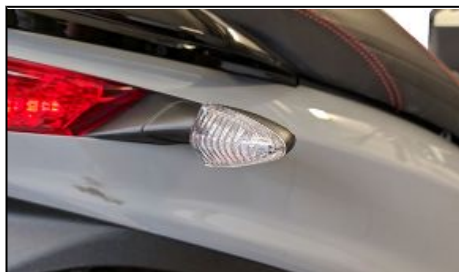
THE STOP AND PARKING LIGHTS IN THE REAR LIGHT ASSEMBLY ARE «LED» TYPE. IN CASE OF MALFUNCTION, BECAUSE DISASSEMBLY IS PARTICULARLY DIFFICULT, WE RECOMMEND SEEING AN AUTHORISED SERVICE CENTRE FOR REPLACEMENT.

Rear turn indicators (03_48)

WARNING



INDICATOR BULBS ARE "LED". IN CASE OF MALFUNCTION, BECAUSE DISASSEMBLY IS PARTICULARLY DIFFICULT, WE RECOMMEND SEEING AN AUTHORISED SERVICE CENTRE FOR REPLACEMENT.



03_48

Number plate light (03_49, 03_50, 03_51)

Remove the screw shown in the figure.

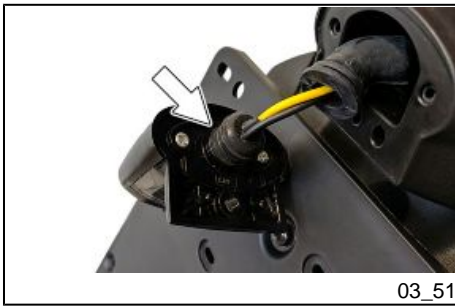


03_49

Gently move the plastic support of the license plate light, being careful not to pull the cables.

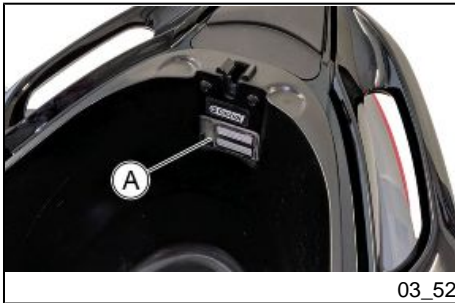


03_50



Remove the lamp holder from the plastic support and take out the lamp to replace it with a new one.

Insert the new lamp holder in the plastic support and refit it, tightening the screw previously shown.



Helmet compartment lighting bulb (03_52)

Open the seat compartment and insert a small plain slot screwdriver in the lateral notch to detach the snap-on glass «A», then replace the bulb.



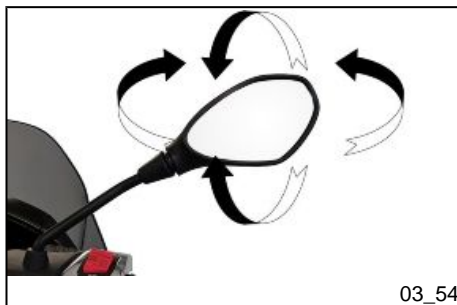
03_53

Brake light (03_53)

WARNING



THE STOP AND PARKING LIGHTS IN THE REAR LIGHT ASSEMBLY ARE «LED» TYPE. IN CASE OF MALFUNCTION, BECAUSE DISASSEMBLY IS PARTICULARLY DIFFICULT, WE RECOMMEND SEEING AN AUTHORISED SERVICE CENTRE FOR REPLACEMENT.



03_54

Rear-view mirrors (03_54, 03_55, 03_56)

The mirrors can be set to the desired position by adjusting the mirror frame.



03_55

To remove the rear-view mirror slightly unscrew the lock nut «A», located in the lower part of the handlebar, to unlock the stem. unscrew the stem «b» to remove it.

CAUTION



DO NOT ADJUST THE MIRRORS WHILE DRIVING. THIS COULD CAUSE YOU TO LOSE CONTROL OF THE VEHICLE.



03_56



03_57



03_58

Front and rear disc brake (03_57, 03_58)

The brake disc and pad wear is automatically compensated, therefore it has no effect on the functioning of the front and rear brakes. For this reason it is not necessary to adjust the brakes. An excessively elastic brake lever stroke may indicate the presence of air in the braking circuit or a failure in the braking system. In this case, especially considering the fundamental role brakes play in your driving safety, it is necessary to take the vehicle to an **Authorised Service Centre or Dealer**.

CAUTION



BRAKING SHOULD BEGIN AFTER ABOUT 1/3 OF THE BRAKE LEVER STROKE.

CAUTION



HAVE THE BRAKE PADS CHECKED BY THE DEALER ACCORDING TO THE CHECKS SPECIFIED IN THE SCHEDULED MAINTENANCE TABLE. HOWEVER, IN THE EVENT OF NOISES COMING FROM THE FRONT AND/OR REAR BRAKING SYSTEM DURING OPERATION, IT IS ADVISABLE TO HAVE THE BRAKING SYSTEM CHECKED BY AN AUTHORISED SERVICE CENTRE OR DEALER. AF-

TER REPLACING THE BRAKE PADS, DO NOT USE THE SCOOTER UNTIL YOU HAVE OPERATED THE BRAKE LEVER SEVERAL TIMES IN ORDER TO ALLOW THE PLUNGERS TO SETTLE AND THE LEVER STROKE TO BE SET TO THE CORRECT POSITION.

CAUTION



THE PRESENCE OF SAND, MUD, SNOW MIXED WITH SALT, ETC. ON THE ROAD, CAN DRASTICALLY REDUCE THE LIFE OF THE BRAKE PADS. IN ORDER TO AVOID THIS, WE RECOMMEND WASHING THE VEHICLE FREQUENTLY WHEN RIDING IN THESE ROAD CONDITIONS.

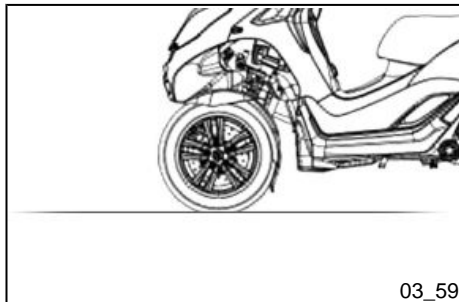
Puncture (03_59)

The vehicle is equipped with Tubeless tyres (without inner tube). In the event of a puncture, Tubeless tyres - unlike tyres with inner tubes - go flat very slowly, resulting in a greater steering safety. In the case of puncture, you can make an emergency repair using an inflation canister. For a complete repair job contact an **Authorised Service Centre**. Replacing a tyre means removing the wheel. For these operations, contact an **Authorised Service Centre**.

CAUTION



TO USE THE "INFLATE AND REPAIR" SPRAY CAN PROPERLY, FOLLOW THE INSTRUCTIONS ON THE PACKAGING.



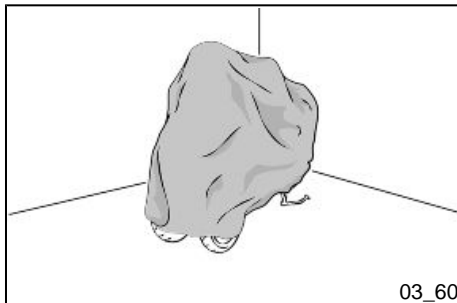
03_59

WARNING

THE WHEELS, COMPLETE WITH TYRES MUST ALWAYS BE BALANCED. RIDING THE VEHICLE WITH VERY LOW TYRE PRESSURE OR WITH INCORRECTLY BALANCED TYRES CAN LEAD TO DANGEROUS STEERING VIBRATIONS.

CAUTION**WARNING**

CARRY OUT THE DEFINITIVE REPAIRS AT AN AUTHORISED SERVICE CENTRE.

**Inactivity of the vehicle (03_60)**

The following operations are recommended:

1. Clean the vehicle thoroughly and then cover it with a canvas;
2. Take care to place the vehicle on the centre stand, deactivating the front suspension lock;
3. With engine off and piston at the bottom dead centre, remove the spark plug, add 1÷2 cm³ of oil through its hole (larger amounts are dangerous for the engine itself). Operate the starter button 1-2 times for roughly 1 second to turn the engine over slowly, then insert the spark plug again;
4. Remove all fuel from the vehicle; spread anti-rust grease on the uncoated metal parts; keep the wheels off the ground resting the frame on two wooden blocks;
5. As far as regards the battery, follow the instructions in paragraph «Battery».

Cleaning the vehicle (03_61, 03_62)

Use a low pressure jet of water to soften the caked dirt and mud deposited on the painted surfaces. Once softened, sponge off mud and dirt using a car body sponge soaked in a car body shampoo and water solution (2-4% of car shampoo in water). Then rinse with abundant water, and dry with a chamois cloth. For the engine exterior, use petrol, a brush and clean cloths. Petrol can damage paintwork. Remember that any polishing with silicone wax must always be preceded by washing.

WARNING



IN ORDER TO AVOID RISE OF OXIDATION, WASH THE VEHICLE EVERY TIME IT IS USED IN AREAS OR SPECIAL CONDITIONS OF:

- **ENVIRONMENTAL / SEASONAL CONDITIONS: USE OF SALT, ANTI-ICE CHEMICALS ON ROADS DURING WINTER.**
- **AIR POLLUTION: CITIES AND/OR INDUSTRIAL AREAS.**
- **SALINITY AND HUMIDITY: SEASHORE AREAS, HOT AND HUMID CLIMATE.**

WARNING



- **PREVENT DEPOSITS FROM REMAINING ON THE BODYWORK, INDUSTRIAL AND POLLUTANT RESIDUAL DUST, TAR SPOTS, DEAD INSECTS, BIRD DROPPINGS, ETC.**
- **AVOID PARKING THE VEHICLE UNDER TREES. IN SOME SEASONS, IN FACT, RESIDUES, RESINS, FRUITS OR LEAVES MAY FALL FROM THE TREES, CONTAINING CHEMICALS THAT ARE HARMFUL TO THE PAINTWORK.**

CAUTION

DETERGENTS CAN POLLUTE WATER. THE VEHICLE MUST BE WASHED AT A WASH STATION EQUIPPED WITH A SPECIAL WATER PURIFICATION SYSTEM.

WARNING

THE USE OF A HIGH-PRESSURE WATER JET IS STRONGLY DISCOURAGED FOR ANY ENGINE CLEANING OPERATION; HOWEVER, IF NO OTHER MEANS ARE AVAILABLE, IT IS THEN NECESSARY TO:

- **ONLY USE A FAN-LIKE SPRAY JET.**
- **DO NOT PLACE THE NOZZLE CLOSER THAN 60 CM.**
- **DO NOT USE WATER AT TEMPERATURES OVER 40°C.**
- **DO NOT USE HIGH-PRESSURE WATER JETS.**
- **DO NOT STEAM WASH.**
- **DO NOT AIM THE WATER JET DIRECTLY ONTO ELECTRICAL WIRING OR ONTO THE COOLING AIR APERTURES IN THE TRANSMISSION COVER.**

CAUTION

NEVER WASH THE SCOOTER IN DIRECT SUNLIGHT, ESPECIALLY IN SUMMER WHEN THE BODYWORK IS STILL HOT AS THE SHAMPOO COULD DAMAGE THE PAINTWORK IF IT DRIES BEFORE BEING RINSED OFF. NEVER USE CLOTHS SOAKED IN ALCOHOL, PETROL, DIESEL OIL OR KEROSENE FOR CLEANING THE PAINTED OR PLASTIC SURFACES, IN ORDER NOT TO DAMAGE THE LUSTRE FINISH OR ALTER THEIR MECHANICAL PROPERTIES. USING SILICONE-BASED WAX CAN DAMAGE THE PAINTED SURFACES, DEPENDING ON THE VEHICLE COLOUR (SATIN COLOURS). FOR FURTHER

INFORMATION ON THIS MATTER, CONTACT AN AUTHORISED SERVICE CENTRE.

WARNING



CLEAN YOUR SCOOTER FREQUENTLY SO AS TO AVOID POSSIBLE DIRT OR MUD DEPOSITS THAT COULD CAUSE MALFUNCTIONING IN THE THROTTLE GRIP TRANSMISSION AND/OR OTHER COMPONENTS.

CAUTION

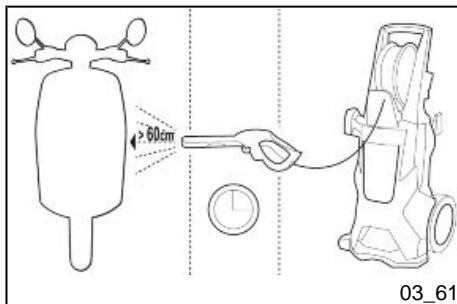


DURING VEHICLE CLEANING, WITH WATER JET UNDER PRESSURE, KEEP THE SADDLE CLOSED, AVOIDING TO DIRECT THE JET IN THE HELMET COMPARTMENT.

WARNING



WHEN CLEANING THE VEHICLE WITH A PRESSURE CLEANER, DO NOT DIRECT THE WATER JET ON ANY PART OF THE ENGINE OR BODYWORK FOR PROLONGED PERIODS.





In order to maintain the **satinfinish** characteristics, please follow these precautions:

CAUTION



AVOID ROLLS FROM CAR WASH AND PRESSURE WASHERS;

DO NOT USE GRINDING PASTE FOR THE REMOVAL OF SCRATCHES;

AVOID THE USE OF DRY CLOTHS FOR THE REMOVAL OF DUST OR FOR MANUAL DRYING AFTER CLEANING;

DO NOT USE SILICON WAX OR POLISHING AGENTS;

DO NOT USE ALCOHOL FOR CLEANING;

IT IS STRONGLY RECOMMENDED TO MANUALLY WASH WITH SPONGE AND NEUTRAL SHAMPOO, AVOIDING EXCESSIVE RUBBING THAT COULD AFFECT THE HAZE DEGREE OF THE PAINTING;

DO NOT USE ABRASIVE CLEANERS;

FAILURE TO FOLLOW THE ABOVE GIVEN ADVICE, COMPROMISES THE HAZE OF THE PAINTING;

DO NOT APPLY ADHESIVE ELEMENTS TO THE BODYWORK;

DO NOT POLISH OTHER VEHICLES CLOSE TO THE ONE WITH SATIN-FINISHING;

AVOID CONTACT AND/OR RUBBING OF CLOTHING WITH BUTTONS, BUCKLES, RINGS AND/OR NECKLACES ON SATIN-FINISHED SURFACES SINCE THIS MAY INDUCE DAMAGE AND/OR CHANGES IN HAZE OF SATIN-FINISHED PAINT;

STARTING FAILURE

Emergency switch in «OFF»	Set the switch back to « ON »
Fuse blown	Replace the damaged fuse and have the vehicle checked at an Authorised Service Centre

IGNITION PROBLEMS

Faulty spark plug	Contact an Authorised Service Centre .
Ignition/ injection control unit defective.	Contact an Authorised Service Centre .
Faulty coil. Due to the presence of high voltage, this check should only be carried out by an expert	Contact an Authorised Service Centre .

LACK OF COMPRESSION

Loose spark plug	Screw in the spark plug tightly
Cylinder head loose, piston gas rings worn	Contact an Authorised Service Centre .
Valve stuck	Contact an Authorised Service Centre .

HIGH FUEL CONSUMPTION AND BAD PERFORMANCE

Air filter blocked or dirty

Contact an **Authorised Service Centre**.

INSUFFICIENT BRAKING

Disc greasiness. Worn brake pads. Faulty braking system. Air in the front and rear brake circuits

Contact an **Authorised Service Centre**.

INEFFICIENT SUSPENSION

Shock absorber fault, oil leak, end buffers damaged; shock absorbers badly regulated in the pre-loading stage

Contact an **Authorised Service Centre**.

AUTOMATIC TRANSMISSION PROBLEMS

CVT rollers and/or drive belt damaged

Contact an **Authorised Service Centre**.

STAND DOES NOT RETURN TO POSITION

Presence of dirt

Clean and grease

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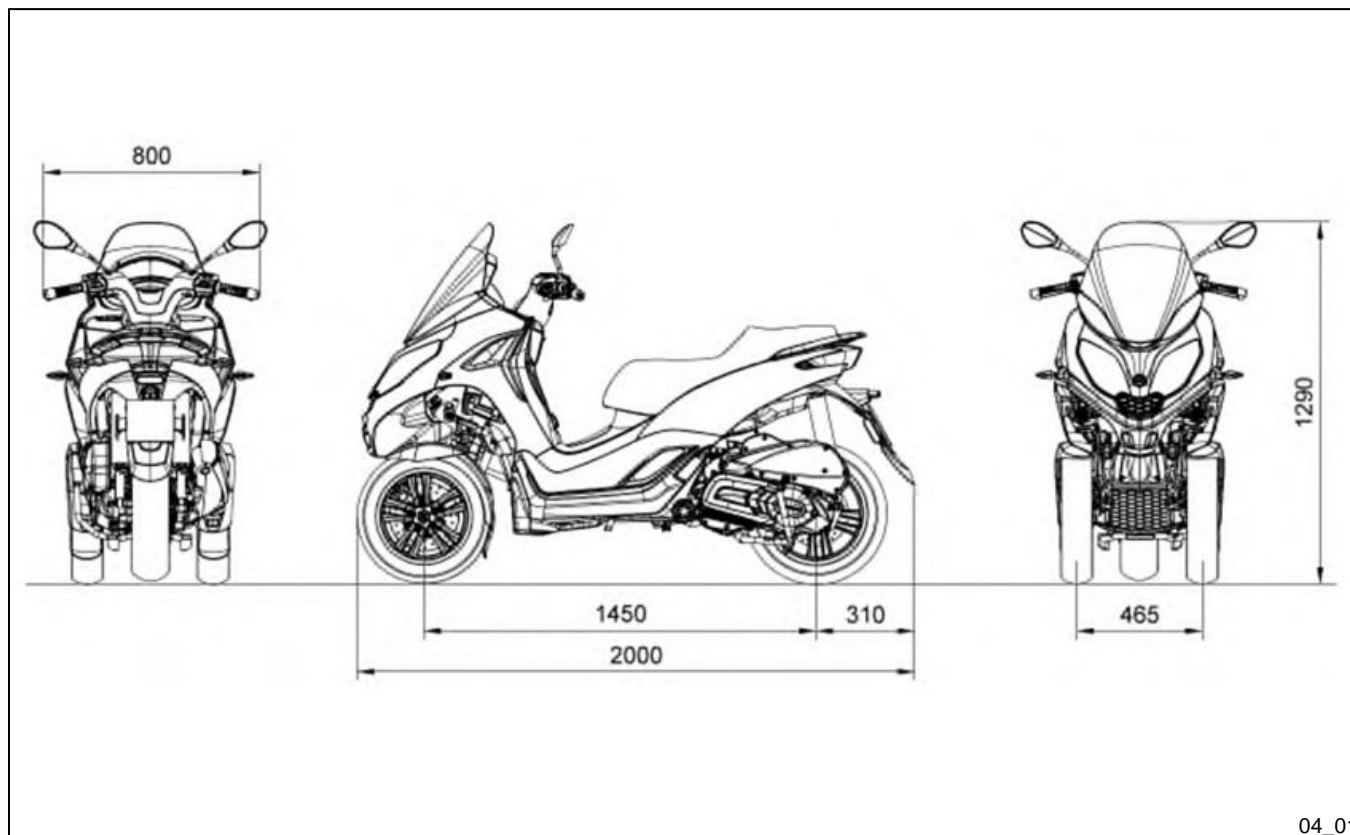


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Chap. 04
Technical data

Data (04_01, 04_02)



04_01

VEHICLE DATA

Frame	In tubes and steel sheet metal
Front suspension	Rolling system composed of a universal joint composed of aluminium rods and of two side tubes and shock absorbers with a hydraulic lock system
Rear suspension	Two double-acting shock absorbers, adjustable to four positions at pre-loading.
Front brake	Dual 258 mm hydraulically operated disc brakes controlled from RH handlebar lever; braking assisted by ABS system.
Rear brake	Ø 240 mm hydraulically operated disc brake controlled from LH handlebar lever; braking assisted by ABS system.
Integral braking system	A hydraulic system allowing the rider to operate all three brake discs simultaneously from the pedal on the footboard; braking assisted by ABS system.
Wheel rims type	Light alloy.
Front rim	13"x 3.00"
Rear rim	14"x 3.75"
Front tire	Tubeless 110/70 13" 48P
Rear tire	Tubeless 140/60-14" 64P

Front tire pressure	1.7 bar
Rear tyre pressure	2.2 bar (2.6 bar with passenger)
Kerb weight	225 kg
Maximum weight limit	420 kg
Battery	12 V - 10 Ah

ENGINE SPECIFICATIONS

Type	Single cylinder 4-stroke
Engine capacity	278 cm ³
Bore per stroke	75 X 63 mm
Compression ratio	11 ± 0.5: 1
Idle engine speed	1,700 ± 100 rpm
Timing system	Four valves, single overhead camshaft, chain-driven.
Valve clearance (cold engine)	Intake: 0.10 mm Exhaust: 0.15 mm
Max. power	19.3 kW at 7,750 rpm
MAX torque	26 Nm at 6.500 rpm
Transmission	CVT expandable pulley variator with torque server, V-belt, self-ventilating dry automatic centrifugal clutch and transmission housing with forced-circulation air cooling.

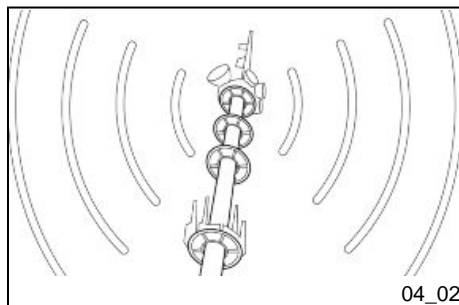
Final drive reduction gear	Gear reduction unit in oil bath.
Lubrication	Engine lubrication with lobe pump (inside crankcase), chain-driven, with double filter: mesh and paper.
Cooling	Forced coolant circulation system.
Starting	Electric
Ignition	Electronic inductive discharge ignition, high efficiency, with separate HV coil.
Ignition advance	α/N three-dimensional map managed by control unit
Power supply	Electronic injection with electric fuel pump.
Spark plug	NGK MR7BI-8
Fuel	Unleaded gasoline E10 (95 R.O.N.)
Silencer	With lambda probe.
Emissions compliance	EURO 4

CAPACITY

Engine oil	1.3 l
Transmission oil	250 cm ³
Cooling system fluid	~ 2 l
Fuel tank	11 ± 0.5 L

MEASUREMENT UNITS CONVERSION - FROM THE ANGLO-SAXON SYSTEM TO THE INTERNATIONAL SYSTEM (I.S.).

1 Inch (in)	25.4 Millimetres (mm)
1 Foot (ft)	0.305 Metres (m)
1 Mile (mi)	1.609 Kilometres (km)
1 US gallon (gal US)	3.785 Litres (l)
1 Pound (lb)	0.454 Kilograms (Kg)
1 Cubic inch (in ³)	16.4 Cubic centimetres (cm ³)
1 Pound per foot (lb ft)	1.356 Newton metres (N m)
1 Mile per hour (mi/h)	1.602 Kilometres per hour (km/h)
1 Pound per square foot (PSI)	0.069 (bar)
1 Fahrenheit (°F)	32+(9/5) Celsius (°C)



RED DIRECTIVE 2014/53/EU

All the radio frequency devices installed on this vehicle by the constructor are compliant with EU Directive 2014/53/EU (also known as the RED directive).

The documentation relative to the homologation of the vehicle may be viewed at the relative internet address:

redhomologation.piaggiogroup.com

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Chap. 05
Spare parts and
accessories



05_01



05_02

Warnings (05_01, 05_02)

WARNING



PIAGGIO MARKETS ITS OWN LINE OF ACCESSORIES THAT ARE RECOGNISED AND GUARANTEED FOR USE. IT IS THEREFORE ESSENTIAL TO CONTACT AN AUTHORISED SERVICE CENTRE IN ORDER TO CHOOSE AND FIT ACCESSORIES CORRECTLY. THE USE OF NON-ORIGINAL ACCESSORIES MAY AFFECT THE STABILITY AND OPERATION OF YOUR VEHICLE AND REDUCE SAFETY LEVELS WITH POSSIBLE RISKS FOR THE RIDER.

WARNING



ONLY USE ORIGINAL PIAGGIO ACCESSORIES AND DEVICES AS INDICATED IN THE SECTION «VEHICLE/PRE-INSTALLATION FOR ACCESSORY INSTALLATION».

THE USE OF NON-ORIGINAL ACCESSORIES WILL VOID THE GUARANTEE.

WARNING



TO PREVENT ACCIDENTS AND TO GUARANTEE PROPER STABILITY, PERFORMANCE AND SAFETY, RIDE THE VEHICLE VERY CAREFULLY WHEN IT IS FITTED WITH ACCESSORIES OR WITH UNUSUAL LOADS.

WARNING



WHEN RIDING THE SCOOTER EQUIPPED WITH ACCESSORIES (CASE AND/OR WINDSHIELD), REDUCE THE SPEED. THE VEHICLE CAN BE RIDDEN AT A

HIGHER SPEED WITHOUT THE ACCESSORIES MENTIONED BEFORE WITHIN THE LIMITS ESTABLISHED BY LAW. IF THERE ARE ANY NON-PIAGGIO ACCESSORIES INSTALLED, OR AN ABNORMAL LOAD, OR IF THE SCOOTER IS NOT IN A GENERALLY GOOD CONDITION, OR WHENEVER WEATHER CONDITIONS DEMAND IT, SPEED SHOULD BE FURTHER REDUCED.

WARNING



BE EXTREMELY CAREFUL WHEN INSTALLING AND REMOVING THE MECHANICAL ANTI-THEFT DEVICE ON THE VEHICLE (U-SHAPED PADLOCK, DISC BLOCK, ETC.).

MAINLY NEAR THE BRAKE PIPES, TRANSMISSIONS AND/OR ELECTRIC CABLES, AN INCORRECT INSTALLATION OR REMOVAL OF THE ANTI-THEFT DEVICE AS WELL AS LEAVING IT ON BEFORE STARTING THE VEHICLE CAN SERIOUSLY DAMAGE ITS COMPONENTS, COMPROMISE THE CORRECT FUNCTIONING OF THE VEHICLE AND USERS' SAFETY.

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Chap. 06
Scheduled
maintenance



06_01

Scheduled servicing table (06_01)

Adequate maintenance is fundamental to ensure long-lasting, optimum operation and performance of your vehicle.

For this reason a series of checks and maintenance services has been prepared, available for purchase separately, listed together in the chart on the following page. It is a good idea to report small performance anomalies right away to an **Authorised Service Centre**, without waiting for the next scheduled service, so they can be repaired immediately.

It is necessary to have your vehicle serviced to the prescribed intervals of time, even if you have not reached the predicted mileage. Services must be performed punctually at the correct intervals to maintain the validity of the warranty. For any additional information concerning Warranty procedures and 'Scheduled Maintenance', please consult the 'Warranty Conditions'.

SCHEDULED MAINTENANCE TABLE

km x 1,000 (mi x 1,000)	1 (0.6)	10 (6.2)	20 (12.4)	30 (18.6)	40 (24.8)	50 (31)	EVERY 12 MONTHS	EVERY 24 MONTHS
Safety blocks	I	I		I		I		
Spark plug			R		R			
Centre stand		L	L	L	L	L	L	L
Roll lock calliper control cable		A	A	A	A	A		
Drive belt		R	R	R	R	R		
Throttle control	I	I	I	I	I	I	I	I
Complete roller housing		I	I	I	I	I		
Diagnosis by tool	I	I	I	I	I	I	I	I

km x 1,000 (mi x 1,000)	1 (0.6)	10 (6.2)	20 (12.4)	30 (18.6)	40 (24.8)	50 (31)	EVERY 12 MONTHS	EVERY 24 MONTHS
Air filter		R	R	R	R	R		
CVT Filter		I	I	I	I	I		
Engine oil filter	R	R	R	R	R	R	R	R
Valve clearance		A	A	A	A	A		
Clutch assembly		I	I	I	I	I		
Electrical system and battery	I	I	I	I	I	I		
Braking system	I	I	I	I	I	I	I	I
Coolant	I	I	I	I	I	I	I	R
Brake Fluid	I	I	I	I	I	I	I	R
Engine oil	R	R	R	R	R	R	R	R
Hub oil	R	I	R	I	R	I	I	I
Headlight direction adjustment		I		I		I		
Brake pads	I	I	I	I	I	I	I	I
Sliding shoes / CVT rollers		R	R	R	R	R		
Tire pressure and wear	I	I	I	I	I	I	I	I
Vehicle road test	I	I	I	I	I	I	I	I
Driven pulley - roller casings		I	I	I	I	I		
Suspensions		I	I	I	I	I	I	I
Centre and side steering	A	A	A	A	A	A	I	I

km x 1,000 (mi x 1,000)	1 (0.6)	10 (6.2)	20 (12.4)	30 (18.6)	40 (24.8)	50 (31)	EVERY 12 MONTHS	EVERY 24 MONTHS
Transmission								

I: CHECK AND CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY.

C: CLEAN, R: REPLACE, A: ADJUST, L: LUBRICATE



Recommended products (06_02)

Piaggio Group recommends the use of products from its Castrol official partner for the scheduled maintenance of its vehicles.

Only use lubricants and fluids which meet or exceed the performance characteristics specified. This also applies when topping up only.

TABLE OF RECOMMENDED PRODUCTS

Product	Description	Specifications
Engine oil 5W -40	Synthetic-based lubricant for four-stroke engines.	SAE 5W-40; JASO MA, MA2; API SL; ACEA A3
Transmission oil 80W-90	Lubricant for gearboxes and transmissions.	SAE 80W-90 API GL-4
Anti-freeze liquid, ready to use, colour red	Ethylene glycol antifreeze liquid with organic inhibition additives. Red, ready to use.	ASTM D 3306 - ASTM D 4656 - ASTM D 4985 - CUNA NC 956-16
DOT 4 brake fluid	Synthetic brake fluid.	SAE J 1703; FMVSS 116; ISO 4925; CUNA NC 956 DOT4

Product	Description	Specifications
Lubricant grease	Lithium and medium fibre yellow brown coloured grease suitable for various uses.	ISO L-X-BCHA 3 - DIN 51 825 K3K -20
Water repellent spray grease	Water repellent pouring calcium spray grease.	White, soap base spray grease with NLGI 2 Calcium complex; ISO-L-XBCIB2

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