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 scooter and it will serve you well for a long time to come. This booklet forms an integral part of the vehicle; should the vehicle be sold, it must be transferred to the new owner.

X10 350ie Executive

Ed. 02_07/2012

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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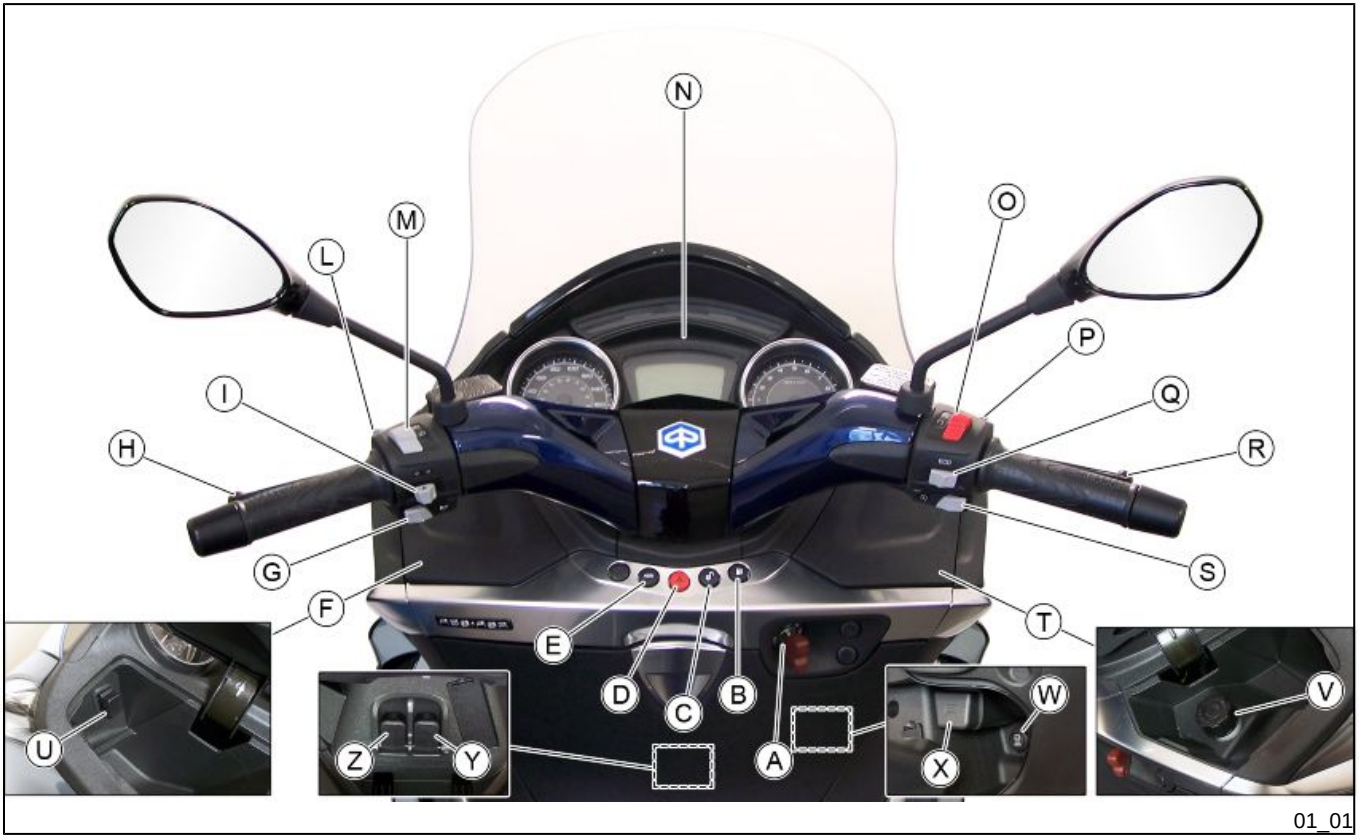
X10 350ie Executive

PIAGGIO

Chap. 01
Vehicle

Dashboard (01_01)



01_01

A = Ignition key-switch

B = Fuel tank door opening button

C = Saddle opening button

D = Hazard switch

E= ASR button

F = Dashboard left glove-box

G = Horn button

H = Rear brake lever

I = Turn indicator switch

L = Passing button

M = Headlight switch

N = Instrument panel

O = Engine stop switch (RUN/OFF)

P = Mode button

Q = Eco button

Q = Front brake lever

S = Starter button

T = Dashboard right glove-box

U = USB socket

V = Expansion tank cap

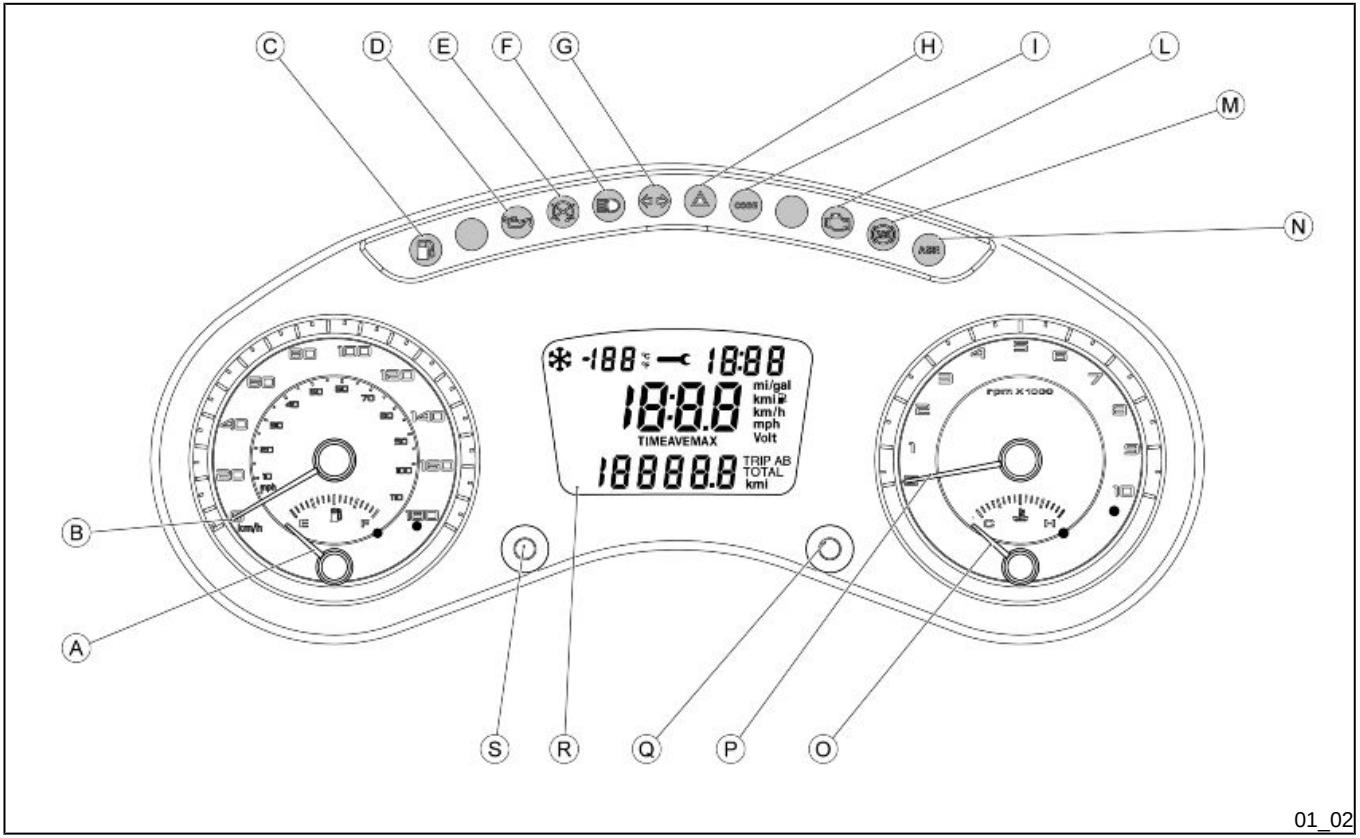
W = Plug socket

X = Toolkit compartment

Y = Fuel tank door emergency opening lever

Z = Saddle emergency opening lever

Analogue instrument panel (01_02)



A - Fuel gauge

B - Speedometer

C - Fuel reserve warning light

D - Insufficient oil pressure warning light

E - Engine not startable warning light

F - Low beam warning light

G - Turn indicator warning light

H - Hazard warning light

I - Immobilizer LED

L - Engine control telltale light and engine failure warning light

M - ABS warning light

N - ASR warning light

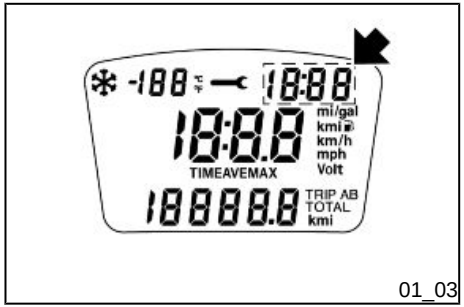
O - Coolant temperature indicator

P - Engine rpm indicator

Q - SET Button

R - Digital display

S - ODO/TRIP Button



01_03

Clock (01_03)

The clock displays, when the vehicle key is set to the «KEY ON» position, hours and minutes, as per manual setting, in the «hh:mm» format.

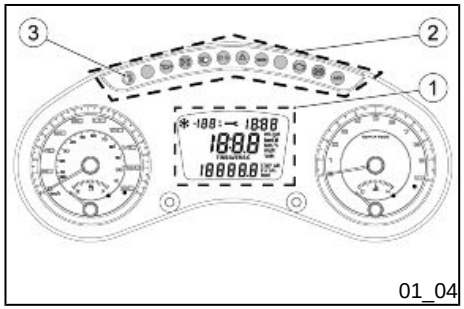
Set the correct time as described in «Hours/minutes function setting ».

WARNING

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

WARNING

DISCONNECTING THE BATTERY CABLES WILL RESET THE CLOCK

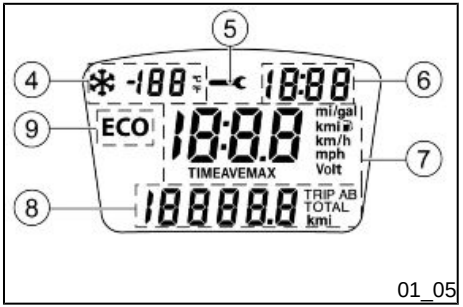


01_04

Digital lcd display (01_04, 01_05, 01_06, 01_07, 01_08, 01_09, 01_10, 01_11, 01_12, 01_13, 01_14, 01_15)

Turn the ignition key to the **KEY ON** position:

- all the functions on the digital display «1» light up;
- all the warning lights «2» on the instrument panel light up;
- the fuel reserve warning light «3» remains on for two seconds and stops on the indication on the amount of fuel in the tank, at ignition;
- the needles move up to full scale and back.



01_05

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

- indication of temperature and ice warning «4»;
- maintenance icon «5»;
- clock «6»;
- information about speed, instantaneous and average travel, autonomy and battery voltage «7»;
- information about distances «8» for the «TOTAL», «TRIP A» and «TRIP B» functions;
- Electronic control unit mapping setting «9».

01_06

The vehicle has three main buttons to navigate the digital display:

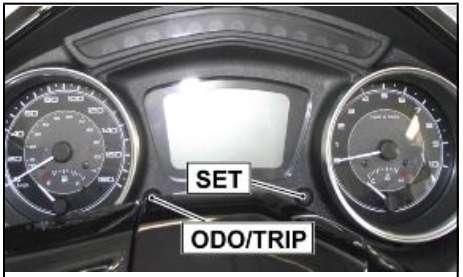
- «MODE» button, positioned on the right switch, front side;
- «ODO/TRIP» and «SET» buttons, positioned below the digital display.

N.B.

THE NAVIGATION OF THE DISPLAY DEFINES:

- «BRIEF PRESSURE»: PRESSING THE BUTTON INDICATED FOR LESS THAN HALF A SECOND;

- «LONG PRESSURE»: PRESSING THE BUTTON INDICATED FOR MORE THAN THREE SECONDS.



01_07

DISPLAY NAVIGATION

MAIN MENU

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

- «TOTAL»: is the totalizer screen page and shows the total information stored from the beginning of the first start of the vehicle;

- «TRIP A»: is the screen page of the first partial value to be stored; illustrates the related information the at determined intervals;

- «TRIP B»: is the screen page of the second partial value to be stored; illustrates the related information the at the determined interval.

It is possible to navigate between the «TOTAL», «TRIP A» and «TRIP B» main menus (in this order), by briefly pressing the «ODO/TRIP» button or by briefly double pressing the MODE button.

Each of these main menus is in turn navigable in different ways and with different functions, depending on the command that is applied:

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

- BRIEF PRESS OF THE «MODE» BUTTON

The «TOTAL» screen page in the central area of the display allows to check, in sequence:

- travel indicated in «km/l» or in «mi/gal»;

- residual estimated autonomy expressed in «km» or «mi»;

- battery voltage expressed in «V».

The total distance travelled since the first start of the vehicle, expressed in«km» or «mi» is indicated in the lower area of the display.

The «TRIP A» screen page in the central area of the display allows to check, in sequence:

- travel indicated in «km/l» or in «mi/gal»;
- average travel calculated starting from the statistics start «TRIP A», expressed in «km/l» or in «mi/gal»;
- residual estimated autonomy expressed in «km» or «mi»;
- time displayed in «hh:mm» calculated from the statistics start «TRIP A»;
- average speed starting from the statistics start «TRIP A», expressed in «km/h» or «mph»;
- maximum speed reached, recorded starting from the statistics start «TRIP A», expressed in «km/h» or «mph»;
- battery voltage expressed in «V».

The distance travelled measured from the statistics start «TRIP A», expressed in«km» or «mi» is indicated in the lower area of the display.

The «TRIP B» screen page in the central area of the display allows to check, in sequence:

- travel indicated in «km/l» or in «mi/gal»;
- average travel calculated starting from the statistics start «TRIP B», expressed in «km/l» or in «mi/gal»;
- residual estimated autonomy expressed in «km» or «mi»;
- time displayed in «hh:mm» calculated from the statistics start «TRIP B»;
- average speed starting from the statistics start «TRIP B», expressed in «km/h» or «mph»;
- maximum speed reached, recorded starting from the statistics start «TRIP B», expressed in «km/h» or «mph»;
- battery voltage expressed in «V».

The distance travelled measured from the statistics start «TRIP B», expressed in«km» or «mi» is indicated in the lower area of the display.

BRIEF DOUBLE PRESS OF THE «MODE» BUTTON

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

LONG PRESS OF THE «MODE» BUTTON

From any function of any screen page, pressing and holding the «MODE» button switches to the «travel» of the respective screen page of the main menu.

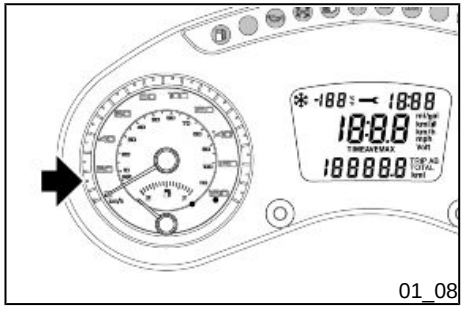
BRIEF PRESS OF «ODO/TRIP» BUTTON

The following screen pages are shown cyclically: «TOTAL», «TRIP A», «TRIP B».

LONG PRESS OF THE «ODO/TRIP»BUTTON

- If the «TOTAL» screen page is active, nothing will happen;
- in any of the screen pages of «TRIP A», the information stored since the statistics start «TRIP A» is reset;
- in any of the screen pages of «TRIP B», the information stored since the statistics start «TRIP B» is reset.

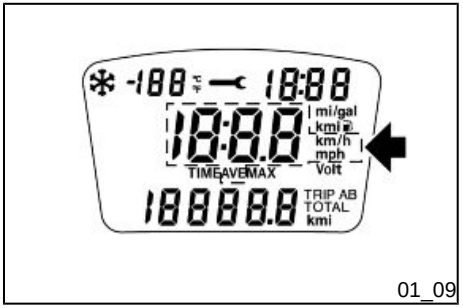
SCREEN PAGES AND OPERATIONS ON THE SUBMENU



01_08

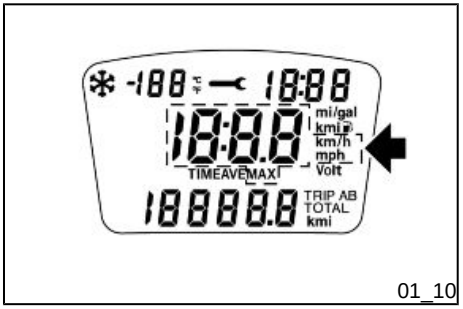
MAXIMUM, AVERAGE AND INSTANTANEOUS SPEED

- The indication of the instantaneous speed is detectable on the speedometer.



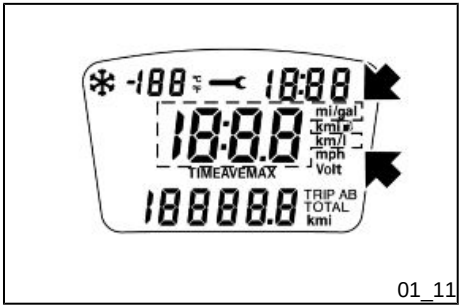
01_09

- Navigating on the display as described, the total «AVG» average speed of TRIP A or TRIP B can be displayed, depending on the menu consulted.



01_10

- Navigating on the display as described, the total «MAX» maximum speed reached of TRIP A or TRIP B can be displayed, depending on the menu consulted.



01_11

INSTANTANEOUS TRAVEL AND AVERAGE TRAVEL

Are indicated in «km/l» or in «mi/gal», according to the measurement unit set in the display.

- The travel is the first screen page displayed on the display and is also the one you return to, with a long press of the «MODE» button, that enables to exit from the sub-menu related to «TOTAL», «TRIP A» or «TRIP B».

- The average travel, in each of the submenus, is the next screen page and can be distinguished by the «AVG» indication.

Both consumptions are calculated values.

01_12

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

The average distance is also calculated with the vehicle stopped, but turned on. In the case of resetting data with the «ODO/TRIP» button, the average travel will be indicated after travelling at least 0.1 km (0.1 mi).

01_13

RESIDUAL AUTONOMY

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

Residual autonomy is estimated based on the average travel of the last three minutes, therefore a better estimation of autonomy if riding at a constant speed is calculated.

From the lighting up of the reserve warning light, the residual autonomy value indicated will be «---». Refuel as soon as possible.

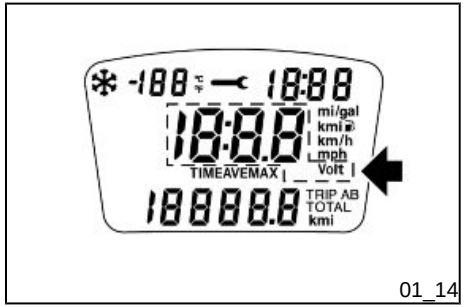
MEASUREMENT UNIT

To change the measurement units used on the display, proceed as follows:

- insert the key and turn it to the «KEY ON» position;
- pressing and holding the «MODE» button the measurement units on the display start flashing;

- with a brief press of the «MODE» button, it is possible to change the desired measurement, that will stop flashing;

- with a long press of the «SET» button the choice is confirmed and it is possible to repeat the operation for other sizes.



01_14

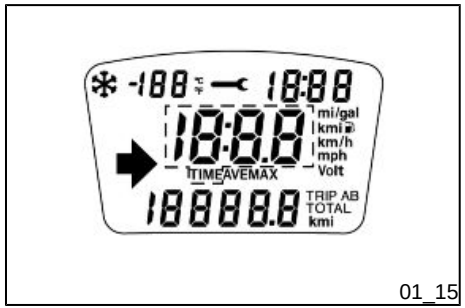
BATTERY

Indicates the instantaneous voltage (Volts) of the battery.

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

Under these conditions an efficient battery is properly charged to its maximum.

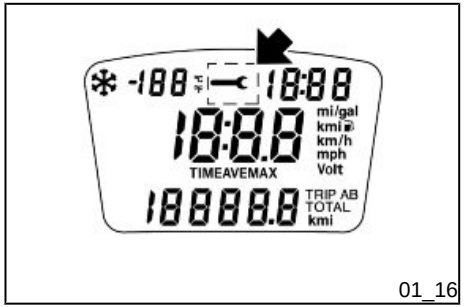
In the case where the battery voltage remains under 12.0V in riding conditions, it can indicate a malfunction in the battery recharge system or the battery itself. In case the engine is shut-down, the subsequent restarting may no longer be possible.



01_15

CHRONOMETER

The «TIME» submenu indicates time, expressed in «hh:mm», passed by the reset of the TRIP (A or B) in progress.



01_16

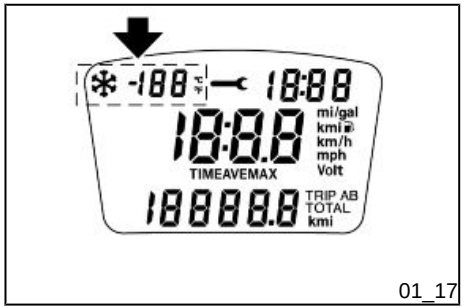
Maintenance icons (01_16)

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

Similarly, upon achieving the determined distance from the periodic maintenance intervals (the first at 1,000 km and then from 10,000 km included, after every 10,000 km), the icon stays on until the established maintenance is performed.

For routine maintenance and icon reset, contact an **Authorised Service Centre**.

OTHERWISE MAKE THE FIRST CHECK, AS DEFINED AND DETERMINED BY PERIODIC MAINTENANCE TABLE, AT A DISTANCE OF 1000 km.

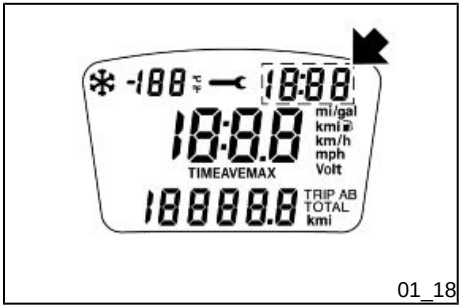


01_17

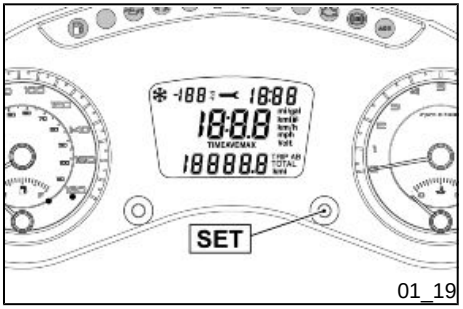
Setting the outside temperature display (01_17)

The outside temperature indication is shown on the left of the display, in «°C» or «° F» according to the measurement unit set.

In the case in which the outside temperature is less than 3°C, further caution is recommended in the use of the vehicle; the asterisk indicates the possible presence of ice on the road surface.



01_18



01_19

Setting the hour/minutes function (01_18, 01_19)

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

- with a long press of the "SET" button, the number of hours flashes in "hh" format;

- adjust the hours value by briefly pressing the same «SET» button;

- with a long press, the set value is confirmed (or present value if not modified) and it causes the flashing of the minutes value in the format «mm».

- adjust the minutes value by briefly pressing the same «SET» button;

- with a long press, the set value is confirmed (or present value if not modified) and it exits from the clock adjustment.

If, during the adjustment procedure, the «SET» button is not pressed for a time longer than ten seconds, the procedure is interrupted and clock value remains the same as before the adjustment; repeat the adjustment operations.

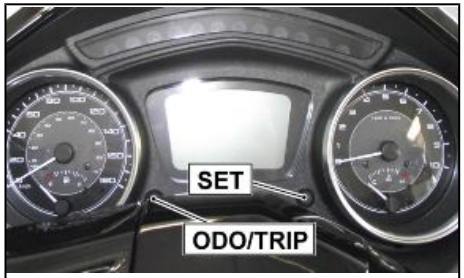
WARNING

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

WARNING

DISCONNECTING THE BATTERY CABLES WILL RESET THE CLOCK

01_20



01_21

MODE button (01_20, 01_21, 01_22, 01_23)

Pushing the "**ODO/TRIP**" button for less than a second allows consecutively the following functions:

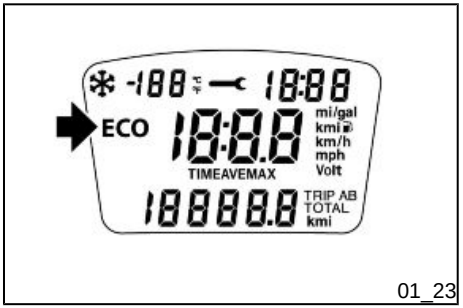
- Total odometer «**TOTAL**»
- Partial odometer «**TRIP A**»
- Partial odometer «**TRIP B**»

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

- **TOTAL**
  - Travel (km/l)
  - Estimated residual autonomy (km)
  - Battery voltage (V)
- **TRIP A**
  - Travel (km/l)
  - AVG Average travel (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**
  - Travel (km/l)
  - AVG Average travel (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_22



01_23

ECO Button

The pilot can vary the setting of the scooter according to the type of ride desired. Pressing the **ECO** button, it is possible to activate or deactivate the «**ECO**» mode. With the function activated, the message ECO will light up on the display.

The «**ECO**» mode acts on the mapping of the electronic control unit, with a setting that favours lower consumption compared to the performance.

Key switch (01_24)

The key switch «**A**» is located on the knee-guard panel.

01_24

SWITCH POSITIONS

ON«**1**»: Ready to start position, non-extractable key, mechanical antitheft device disabled.

OFF «**2**»: Ignition disabled, extractable key, steering lock disengaged, front glove-box unlocked (after pressure).

LOCK «**3**»: Ignition disabled, extractable key, steering lock disengaged.


01_25

Locking the steering wheel (01_25)

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


01_26

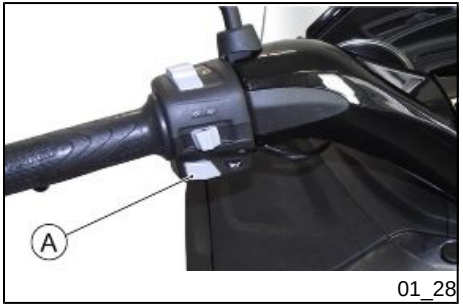
Releasing the steering wheel (01_26)

Reinsert the key and turn it to «**OFF**».

01_27

Switch direction indicators (01_27)

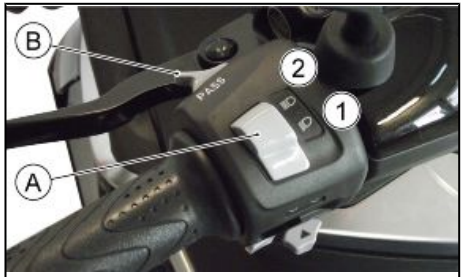
Move switch «**A**» to the left to indicate a left turn; move switch «**A**» to the right to indicate a right turn. Push the central part of switch «**A**» to deactivate the turn indicators.



01_28

Horn button (01_28)

Press the «**A**» button to sound the horn.



01_29

Light switch (01_29)

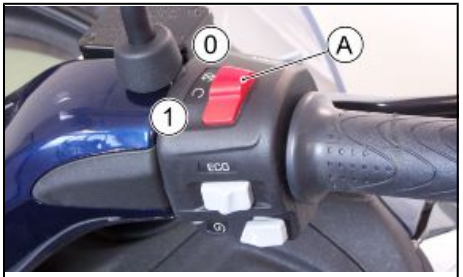
If the light switch «**A**» is set to «**1**», the low beam light is turned on; if it is set to «**2**» the high beam is activated.

Press the «**B**» button to activate the low beam light flashing (passing).

01_30

Emergency flashing light button (01_30)

It enables the activation of the four turn indicators simultaneously. The control «**D**» can be enabled only with the key set to «**ON**», but once enabled, it keeps functioning even if the key is set to «**OFF**» or «**LOCK**». To disable this function, simply turn the ignition switch to «**ON**».



01_31

01_32

Start-up button (01_31, 01_32)

Make sure the engine stop switch«**A**» is in the Run «**1**» position that the side stand is in a raised position.

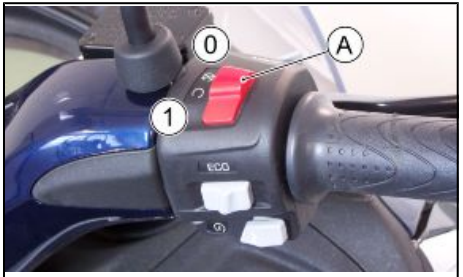
To start the engine, pull either one of the two brake levers and press the starter button «**B**».

The vehicle is equipped with assisted starter procedure management. The starter motor remains active for a few seconds until the engine starts even if switch «**B**» is released.

Keep one of the two brakes operated (front or rear) so as to not interrupt the starter procedure.

The throttle grip must remain in the minimum position, because any other position inhibits the vehicle starter.

The starter motor will remain active for a maximum of 5 consecutive seconds.



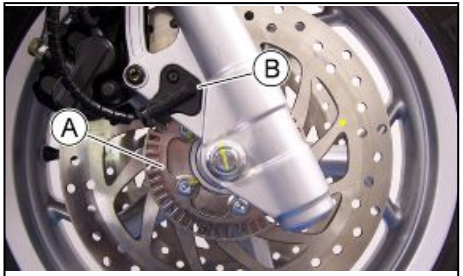
01_33

Engine stop button (01_33)

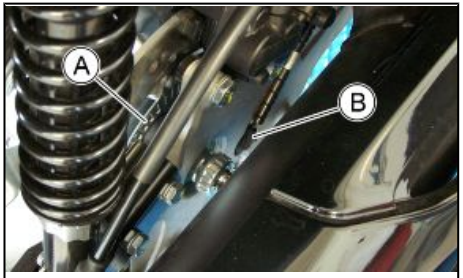
The engine can be started when the emergency stop switch «**A**» is in position «**1**» **RUN**; if the emergency stop switch «**A**» is in position «**0**» **OFF** the engine cannot be started or it stops if it was running.

CAUTION

WHILE RIDING OPERATE THE ENGINE STOP SWITCH ONLY IN CASE OF EMERGENCY.



01_34



01_35

System ABS (01_34, 01_35)

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 panel, 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.

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 STAYS ON UNTIL REACHING 5 KM/H.

CAUTION

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

System ASR (01_36, 01_37)

ASR SYSTEM

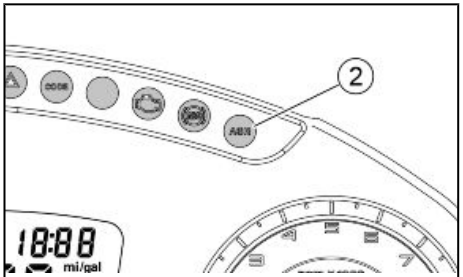
The ASR system is a device to help riding that helps the rider during acceleration manoeuvres, especially on slippery surfaces or in conditions that can cause sudden slippage of the rear wheel. The ASR in these situations automatically intervenes by reducing engine output within the limit imposed by 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 TYRE.

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

01_36



01_37

- **SWITCH «1»:** on / off.
- **WARNING LIGHT «2»:** operating indication warning light.

Flashing mode:

- Off with the vehicle in gear: the system is working, but is not active (normal condition).

- Flashing quickly with moving vehicle: the system is up and running (conditions of low grip and intervention to reduce engine power); we recommend the utmost caution because the grip limit has been exceeded; restore the vehicle safety conditions by gently reducing the throttle opening.

- Lit with moving vehicle: the system is disabled and will not intervene in case of loss of grip.

- If the deactivation was voluntary (by pressing the appropriate button **«1»** for 1 second) it is recommended to replace the system as soon as possible.
- If the deactivation was NOT voluntary, there is an ASR failure: in this case you must contact an **Authorised Service Centre** for the diagnosis and the reactivation of the system.

To ensure maximum safety of the vehicle it is advisable to keep the system active. 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.

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 CAN NOT 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 A ROAD FULL OF HOLES THERE BRIEF ACTIVATIONS OF THE ASR SYSTEM MAY OCCUR. THIS OCCURRENCE IS PART OF THE NORMAL CONDITIONS OF OPERATION 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 effectiveness of the ASR system following the replacement of one or both tyres a calibration procedure of the system must be performed as follows on a straight flat stretch of road.

• It is necessary that the diagnostic phase of the ASR systems and ABS is complete: for this purpose, after the key ON, ride a short distance above 5 km/h and wait for the flashing of the two warning lights to stop.

• Turn the ASR system off by pressing the button «**1**» on the handlebar and check that the ASR disabling warning light «**2**» is on.

• Allow the engine to idle for at least 3 seconds.

• Press simultaneously the right brake lever, the engine start-up button and the ASR on/off button «**1**» for at least 2 seconds. The activation process will be confirmed by the ASR warning light «**2**» turning on with slow flashing.

• Accelerate to a constant speed of **30 to 40 km/h** and maintain it for at least **7 to 8** seconds.

• The end of the procedure will be indicated by the flashing ASR warning light «**2**».

• Once the procedure is complete it is necessary to turn off the vehicle panel (key off) and wait 30 seconds before turning the panel on (key on).

• In case of failure to complete the procedure within 2 minutes the ASR warning light «**2**» will stay on steady and the ASR will remain off until the panel is turned off (key off).

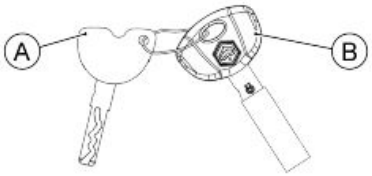
• To restart the vehicle panel (key on) it is necessary to reactivate the ASR. It is however necessary to repeat the process until it succeeds.

CAUTION

IF NECESSARY, CONTACT AN AUTHORISED SERVICE CENTRE.

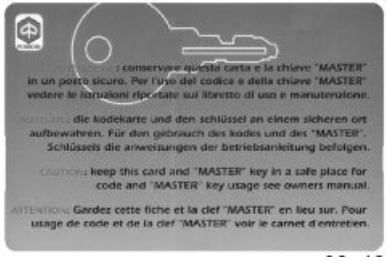
The immobilizer system

In order to enhance theft protection, the vehicle is equipped with a «**PIAGGIO IMMOBILIZER** » electronic engine locking device that is activated automatically when the ignition switch is removed. Upon start-up, the «**PIAGGIO IMMOBILIZER**» system checks the starter key, and only if this key is recognised will the Immobiliser system allow the vehicle to be started.



01_38

01_39



01_40

Keys (01_38, 01_39, 01_40)

The vehicle is supplied with two types of keys. The «**A**» key with a brown grip and the "**MASTER**" key. Only a single copy of this key is supplied, which is necessary to program all your other keys and for your dealer to perform some maintenance operations. We therefore recommend that it be used only under exceptional circumstances. The blue key «**B**» (single copy supplied) is used for normal operations and for start-up.

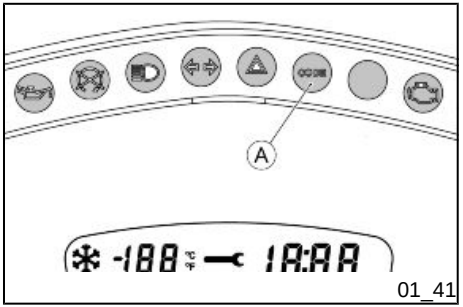
Together with the keys comes a CODE CARD which is imprinted with the mechanical code of the keys.

WARNING

THE LOSS OF THE BROWN KEY PREVENTS LATER REPAIRS TO THE "PIAGGIO IMMOBILIZER" SYSTEM AND TO THE ENGINE CONTROL UNIT.

WARNING

IT IS ADVISED THAT THE "CODE CARD" AND THE KEY WITH THE BROWN GRIP BE KEPT IN A SAFE PLACE (NOT ON THE VEHICLE).



Immobilizer device enabled indicator led (01_41)

The activation of the «**PIAGGIO IMMOBILISER»** system is signalled by the a flashing indicator «**A**».

In order to reduce battery discharge, the indicator LED turns off automatically after 48 hours of uninterrupted functioning.

Should the system fail, different LED flashing patterns will provide the **Authorised Service Centre** with information on the type of fault detected.

Operation

Each time the ignition switch **B**» is removed while in the «**OFF**» or «**LOCK**» positions, the protection system activates the engine lock. Turning the ignition key «**B**» to «**ON**» disables the engine lock, provided that the safety system recognises the code transmitted by the key. If the code is not recognised, turn the ignition switch **B**» first to «**OFF**» and then back to «**ON**» again; if lock persists, try again using the «**A**» MASTER key. If the engine cannot be started, contact an **Authorised Service Centre**, which is provided with the electronic equipment required to detect and repair the system.

When the supplementary starter keys are required, remember that the all the keys, whether new or existing, should be programmed.

Contact an **Authorised Service Centre** and bring the «**A**» MASTER key and all «**B**» starter keys that you own.

The codes of starter keys not submitted for the new programming procedure are deleted from the memory. Any lost starter keys will therefore not be enabled 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.

IF THE VEHICLE IS SOLD, THE MASTER-HANDGRIP KEY (AS WELL AS THE OTHER STARTER KEYS) AND THE «CODE CARD» MUST ALSO BE TRANSFERRED TO THE NEW OWNER.

Programming the immobilizer system (01_42)

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

START PROCEDURE

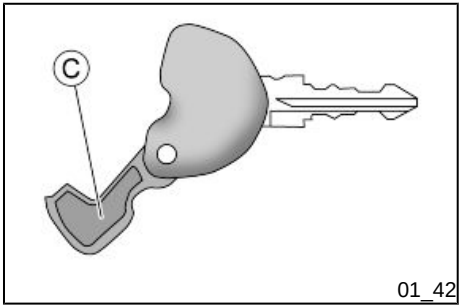
Insert the «MASTER» key «**A**» into the ignition switch (in «**OFF**») and turn it to «**ON**». After 1 - 3 seconds, turn the key to «**OFF** » again and pull it out.

INTERMEDIATE STAGE

After extracting the «MASTER» key «**A**», insert, within ten seconds, the key that is going to be programmed «**B**» and turn it immediately to «**ON**». After 1-3 seconds, turn the key to «**OFF**» again and pull it out. In this way, a maximum of 5 keys can be programmed by repeating the above procedure and keeping the indicated times.

FINAL STAGE

After extracting the key to be programmed «**B**», insert the «MASTER» key «**A**» again and turn it to «**ON**» (perform this operation within the 10 seconds following the extraction of 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**» disabling the transponder «**C**» (i.e., by tilting 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 engine 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.

Accessing the fuel tank (01_43, 01_44, 01_45)

To open the tank door it is possible to operate with two systems:

- assisted, from the dashboard;
- mechanical, from the key lock.

01_43

Opening from the dashboard

- To open the tank door, with the key inserted in the «**OFF**» or «**ON**» positions, press the appropriate button «**A**» positioned on the dashboard.

01_44

Opening from the glove-box

- To open the tank door, with the key inserted in the «**OFF**» or«**ON**» positions, press the key and open the glove-box.
- Pull the tank door opening lever «**B**» by releasing the door mechanically.
- Close the glove-box.

01_45

The door automatically rises; to refuel, unscrew the cap «**C**».

01_46

Power supply socket (01_46)

There is a 12V socket inside the glove-box, on the right side.

The socket can be used to feed appliances with power below 180 W (mobile phones, hand lamp, etc.).

CAUTION

PROLONGED USE OF THE PLUG SOCKET MAY DISCHARGE THE BATTERY.

CAUTION

THE PLUG SOCKET WORKS ALSO WITH THE KEY IN THE «OFF» POSITION: REMEMBER TO DISCONNECT ANY DEVICE FROM THE SOCKET TO AVOID FULL DISCHARGE OF THE BATTERY.

01_47

USB socket (01_47)

There is a USB socket inside the glove-box, on the left side of the dashboard.

To use it, remove the protective cap. Cover the socket with the cap to prevent water and/or moisture from damaging it.

CAUTION

THE USB SOCKET SUPPLIED IS COMPATIBLE WITH DEVICES OF THE FOLLOWING BRANDS: Apple iPhone, Apple iPod, Apple iPod Nano, Apple iPod

Touch, Blackberry Pearl, Blackberry 8xxx AND IT IS NOT COMPATIBLE WITH MOTOROLA DEVICES.

The USB socket is activated once the key is turned to the «**ON**» position.

CAUTION

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

USB SOCKET

USB Socket

Output voltage	(5.00±0.25) Vdc
Charge current	1 A max

01_48

01_49

The saddle (01_48, 01_49)

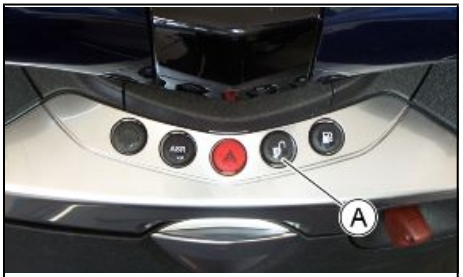
The saddle is supplied with a protection cover which may be used in case of rain.

The cover is normally housed within the front glove-box, on the right side.

Fit the cover with the saddle raised, starting from the front; lower the saddle once the operation is complete. While placing the cap on the saddle, do not pull it excessively to avoid tears.

CAUTION

DON'T RIDE THE VEHICLE WITH THE PROTECTION COVER ON THE SADDLE .

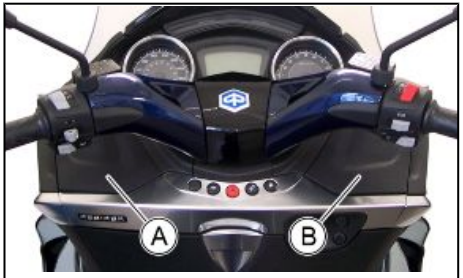


01_50

Opening the saddle (01_50, 01_51)

With the key in position «**OFF**» or «**ON**» or with the engine ON, you can electrically open the saddle by pressing button «**A**». If the electric opening does not work, use the emergency lever **B**.

01_51



01_52

Opening the side panels. (01_52)

DASHBOARD LEFT GLOVE-BOX OPENING

Turn the handlebars completely to the right, with the vehicle on the central stand and lift the door «**A**» of the compartment.

The USB socket is positioned inside.

DASHBOARD RIGHT GLOVE-BOX OPENING

Turn the handlebars completely to the left, with the vehicle on the central stand and lift the door «**B**» of the compartment.

There is a cap positioned inside to check and top-up the cooling liquid.

CAUTION

THE RIGHT AND LEFT GLOVE-BOXES OF THE DASHBOARD ARE NOT WATERPROOF.

DO NOT STORE OBJECTS THAT COULD BE AFFECTED BY HUMIDITY OR THE ACTION OF ANY MATERIALS POURED ON THE DOORS, EVEN IF CLOSED.

Identification (01_53, 01_54, 01_55)

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

CAUTION

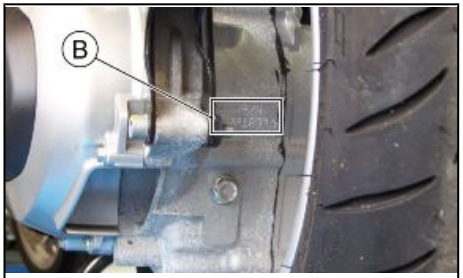
PLEASE REMIND THAT ALTERING IDENTIFICATION REGISTRATION NUMBERS CAN LEAD TO SERIOUS PENAL SANCTIONS (IMPOUNDING OF THE VEHICLE, ETC.).

01_53

Chassis number

To read the chassis number, remove the port **A** in the front case.

01_54



01_55

Engine number

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

01_56

Rear top box opening (01_56)

Insert the key into the switch and press down until the glove box opens. In the event that the switch is set to «**LOCK**» before pressing, turn the key to the «**OFF**» position.

Inside of the front glove-box, there are:

- toolkit;
- 12V socket;
- saddle emergency opening lever;
- fuel tank emergency opening lever;
- saddle cover.

Predisposed for installation of accessories

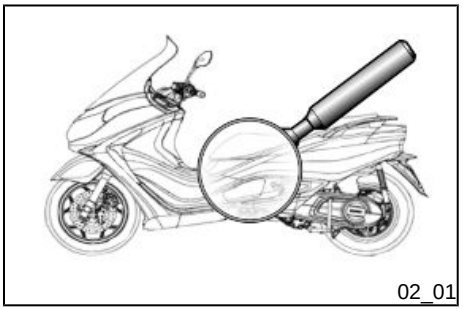
This vehicle is equipped with provision for installation of a satellite navigation system.

Contact an **Authorised Service Centre** for more information and installation procedures.

X10 350ie Executive

PIAGGIO

Chap. 02
Use



02_01

Checks (02_01)

Before using the vehicle, check:

1. That the fuel tank is full.

2. The front and rear brake fluid level.

3. That the tyres are properly inflated.

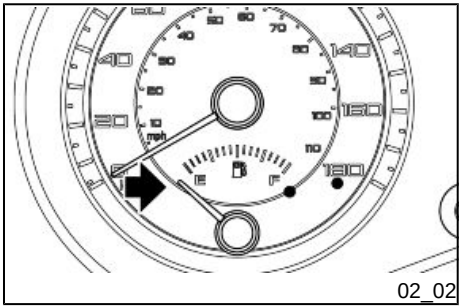
4. Correct functioning of daylight running lights, headlight, and turn indicators.

5. The correct functioning of front and integral brakes.

6. The oil level in the gearcase.

7. The engine oil level.

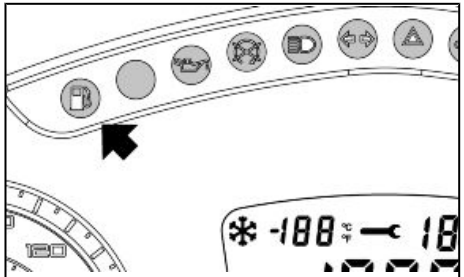
8. Coolant level



02_02

Refuelling (02_02, 02_03, 02_04)

The filling state of the fuel tank is shown on the instrument panel, shown by the indicator.



02_03


02_04

The reserve fuel level is indicated by the warning light on the instrument panel turned on.
Once the door is opened as described, unscrew and remove the cap and refill.

CAUTION

SWITCH OFF THE ENGINE BEFORE REFUELLING WITH PETROL.

REFUEL ONLY WHEN THE VEHICLE IS RESTING ON ITS CENTRE STAND.

PETROL IS HIGHLY INFLAMMABLE.

DO NOT SMOKE AND KEEP IT AWAY FROM NAKED FLAMES.

FIRE HAZARD.

DO NOT INHALE FUEL FUMES.

DO NOT ALLOW PETROL TO COME INTO CONTACT WITH THE HOT ENGINE.

CAUTION

DO NOT USE THE VEHICLE TO THE COMPLETE EXHAUSTION OF THE FUEL; SHOULD THIS OCCUR, DO NOT ATTEMPT TO START THE ENGINE. TURN THE IGNITION SWITCH TO «OFF» AND TOP-UP THE TANK AS SOON AS POSSIBLE. FAILURE TO FOLLOW THESE GUIDELINES COULD DAMAGE THE FUEL PUMP.

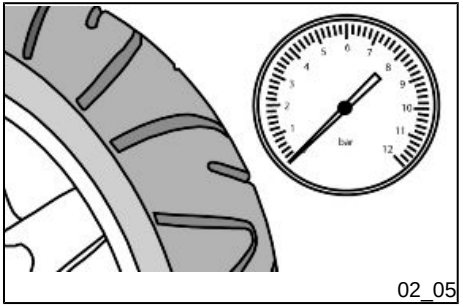
CAUTION

CLEAN IMMEDIATELY THE PAINTED OR PLASTIC SURFACES THAT COME INTO CONTACT WITH THE FUEL TO AVOID LOSS OF THEIR SHINE OR ALTERATION OF THEIR MECHANICAL CHARACTERISTICS.

Characteristic

Fuel tank

15.5 litres (2 l of which is reserve)



02_05

Tyre pressure (02_05)

Check tyre pressure and wear periodically as indicated in the scheduled maintenance table. 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, go to an authorised workshop or at least to a workshop equipped to replace tyres.

CAUTION

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

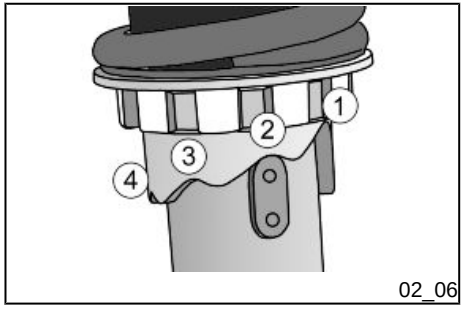
TYRES MUST BE REPLACED WHEN THE TREAD REACHES THE WEAR LIMITS SET FORTH BY LAW.

TYRES

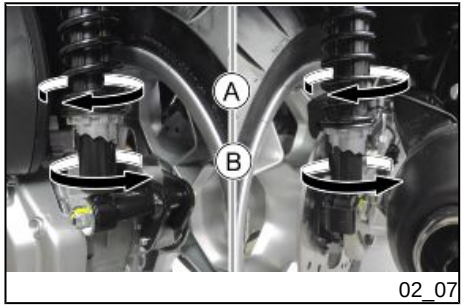
Front tyre	120/70-15" M/C 56S Tubeless
Rear tyre	150/70-13" M/C 64S Tubeless

TYRE INFLATION PRESSURE

Front tyre pressure (with passenger)	2.3 bar (2.3 bar)
Rear tyre pressure (with passenger)	2.4 bar (2.6 bar)



02_06



02_07

Shock absorbers adjustment (02_06, 02_07)

The preloading of the springs can be adjusted to 4 positions acting on the ring nut located in the lower part of the shock absorbers with the specific spanner supplied.

Position 1: minimum preload: rider only

Position 2 medium preloading: rider only

Position 3 medium preloading: rider and passenger

Position 4: maximum preloading: rider, passenger, and luggage.

In order to carry out this operation you will need to use the specific spanner in the kit. Spring preloading increases by turning the ring nut towards «**A**», but decreases if the ring nut is turned towards «**B**».

CAUTION

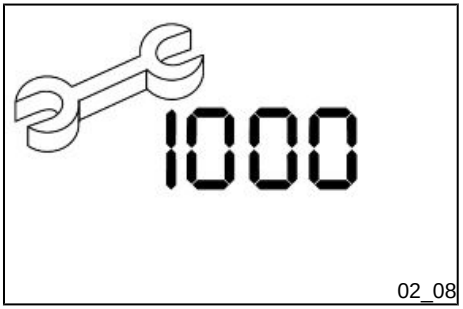
RIDING THE VEHICLE WITH THE SPRING PRELOADING NOT CORRECTLY SET FOR THE RIDER AND POSSIBLE PASSENGER, COULD REDUCE THE COMFORT OF THE RIDE AND THE PRECISION OF THE STEERING.

WARNING

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

WARNING

IT IS ABSOLUTELY FORBIDDEN TO ADJUST THE PRELOAD DIFFERENTLY ON THE TWO SHOCK ABSORBERS

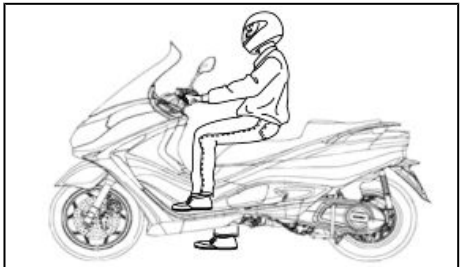


Running in (02_08)

DURING THE FIRST 1000 KM. DO NOT RIDE THE VEHICLE OVER 80% OF ITS MAX. SPEED. AVOID OPENING THE THROTTLE GRIP COMPLETELY OR KEEPING A CONSTANT SPEED ALONG LONG SECTIONS OF ROAD. AFTER THE FIRST 1000 KM. INCREASE SPEED PROGRESSIVELY, IF POSSIBLE, UNTIL THE MAXIMUM PERFORMANCE IS OBTAINED.

CAUTION

IN ORDER TO AVOID DAMAGING THE VEHICLE, PLEASE COMPLY WITH THE RULES LISTED ABOVE.



02_09

Starting up the engine (02_09, 02_10, 02_11, 02_12, 02_13, 02_14)

The vehicle is equipped with automatic transmission with direct drive, so that starting is effected by turning the throttle grip to idle speed; 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 equipped with a **servo assisted** starter system.

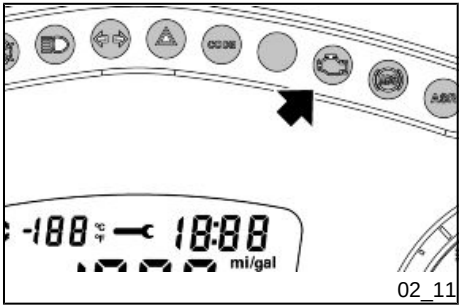
To start it up, it is necessary to:

- Rest the vehicle on its centre stand, ensuring the rear wheel is not touching the ground.

- Keep the throttle grip to idle speed.

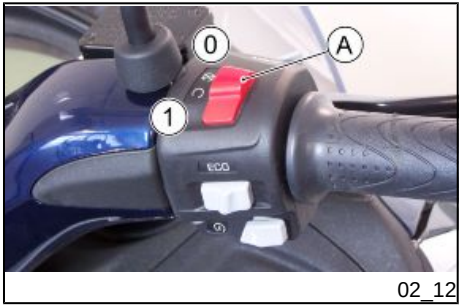
02_10

- Insert the key into the ignition key and turn it to «ON».



02_11

- Wait for the engine control telltale light to turn off.



02_12

- Make sure the engine stop switch «**A**» is in the **RUN** «**1**» position, that the stand is raised and that the «engine not startable» warning light is turned off.

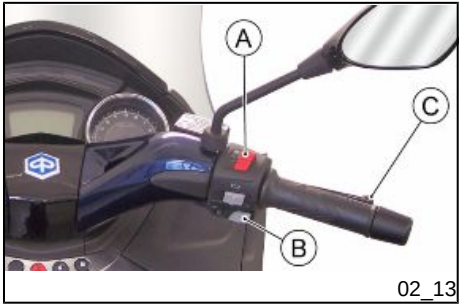
To start the engine, pull either one of the two brake levers «**C-D**» and press the starter button «**B**».

The vehicle is equipped with assisted starter procedure management. The starter motor remains active for a few seconds until the engine starts even if switch «**B**» is released.

Keep one of the two brakes operated (front or rear) so as to not interrupt the starter procedure.

The throttle grip must remain in the minimum position, because any other position inhibits the vehicle starter.

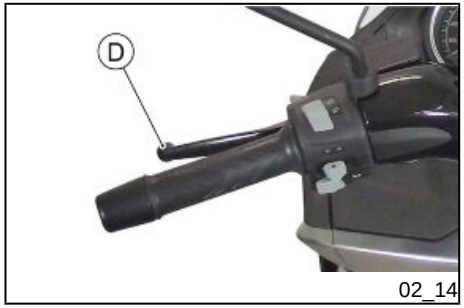
The starter motor will remain active for a maximum of 5 consecutive seconds.



02_13

N.B.

STARTING THE ENGINE IS DISABLED WHEN AT LEAST ONE OF THE FOLLOWING CONDITIONS ARE FOUND: STAND NOT RAISED, THROTTLE GRIP NOT IN IDLE, SCOOTER LYING ON ITS SIDE AND «ENGINE NOT STARTABLE» WARNING LIGHT ON.



02_14

CAUTION

DO NOT CARRY OUT THESE OPERATIONS IN CLOSED AREAS SINCE EXHAUST GASES ARE TOXIC.

CAUTION

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

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

DURING THE RUN-IN PERIOD, IT IS POSSIBLE THAT THE REAR WHEEL WITH THE ENGINE IDLE AND THE VEHICLE ON THE STAND, MAY TURN SLIGHTLY; THIS PHENOMENON SHOULD BE CONSIDERED NORMAL AND USUALLY DISAPPEARS AFTER A SHORT PERIOD OF USE.

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 OVERREVVING, 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.

02_15

Stopping the engine (02_15, 02_16)

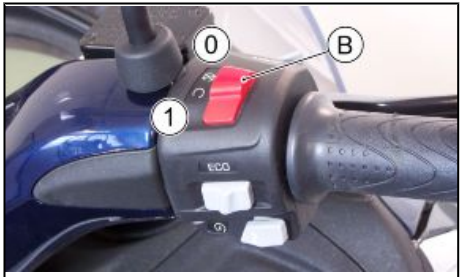
Fully untwist the throttle grip, then rotate the key in the switch «**A** » to «**KEY OFF**» (extractable key).

CAUTION

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

CAUTION

DO NOT SHUT OFF THE ENGINE WHILE THE VEHICLE IS MOVING. UNBURNED FUEL COULD ENTER THE CATALYTIC CONVERTER AND BURN, CAUSING THE CONVERTER TO OVERHEAT AND POSSIBLY DESTROYING IT.

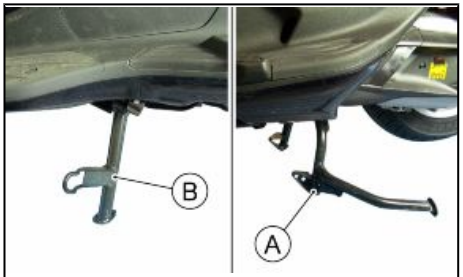


02_16

Position the engine stop switch «**B**» to the «**0**» of **OFF** position.

N.B.

AFTER STOPPING THE ENGINE THROUGH THE DEDICATED SWITCH, IN ORDER TO PREVENT THE BATTERY FROM DISCHARGING, TURN THE IGNITION KEY TO THE «OFF» POSITION (KEY REMOVABLE).



02_17

Stand (02_17)

Centre stand bracket

Push with your foot on the centre stand's fork "**A**" while lifting the vehicle backward, using the handlebar.

Side stand

Push with your foot on the fork of the stand **«B»** to bring it into open position, while lifting the vehicle at the same time.

WARNING

THE SIDE STAND CAUSES THE ENGINE TO TURN ITSELF OFF WHENEVER IT IS LOWERED.

TAMPERING MAY CAUSE SERIOUS VEHICLE MALFUNCTION.

CAUTION

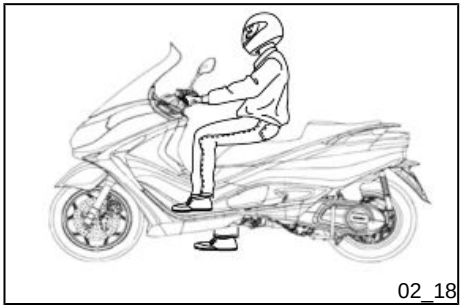
DUE TO THE HIGH TEMPERATURES THE CATALYTIC CONVERTER CAN REACH, ALWAYS TAKE CARE, WHEN PARKING THE VEHICLE, THAT THE EXHAUST DOES NOT COME INTO CONTACT WITH FLAMMABLE MATERIALS, TO AVOID SERIOUS BURNS.

CAUTION

DO NOT SHUT OFF THE ENGINE WHILE THE VEHICLE IS MOVING. UNBURNED FUEL COULD ENTER THE CATALYTIC CONVERTER AND BURN, CAUSING THE CONVERTER TO OVERHEAT AND POSSIBLY DESTROYING IT.

CAUTION

LOWERING THE SIDE STAND SIMULTANEOUSLY MOVES THE PARKING BRAKE. BEFORE LEAVING BE SURE TO HAVE STORED IT.


02_18

Automatic transmission (02_18)

To ensure simple, pleasurable riding, the vehicle is equipped with automatic transmission with regulator and centrifugal clutch. The system is designed to provide the best performance (acceleration and consumption) while driving on both flat roads and uphill.

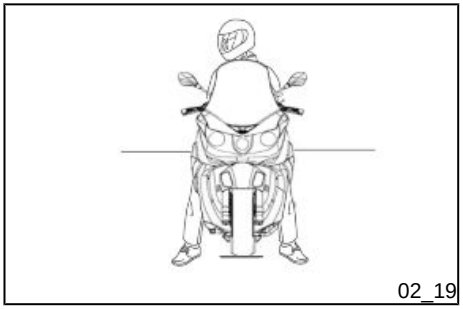
If you have to stop on an uphill slope (traffic lights, traffic jam, etc.) **use only the brake to keep the vehicle still, leaving the engine running at idle speed. Using the motor to keep the vehicle still can cause the clutch to overheat.**

It is therefore recommended to avoid conditions of prolonged clutch slippage (other than those previously indicated) such as driving uphill fully laden on steep slopes, or starting off with driver and passenger at slopes greater than 25%.

Take the following precautions if the clutch overheats:

1.Do not continue riding in such conditions.

2. Let the clutch cool down with the engine at idle speed for a few minutes.


02_19

Safe driving (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 skill and your mechanical knowledge are the basis of a safe ride. We recommend trying out the vehicle in traffic - free zones, in order to acquire a good knowledge of the vehicle it self.

1. Before riding off, remember to put the helmet on and fasten it correctly.

2. Reduce speed on rough roads and ride with care.

3. After riding on a long stretch of wet road without using the brakes, braking can be poor at the beginning. In these conditions, it is a good idea to apply the brakes from time to time.

4. Do not brake hard on wet, unsurfaced or slippery roads.

5. Avoid riding off by mounting the scooter when it is resting on its support. In any case, in order to avoid abrupt departures, the rear wheel should not be turning when in comes into contact with the ground.

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 pad wear.

CAUTION

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

CAUTION

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.

NEVER RIDE THE VEHICLE EQUIPPED WITH ACCESSORIES (PANNIERS, TOP BOX AND/OR WINDSHIELD) AT A SPEED HIGHER THAN 110 km/h.

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 RIDING. THIS COULD CAUSE YOU TO LOOSE 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.

X10 350ie Executive

PIAGGIO

Chap. 03
Maintenance

Engine oil level

In 4-stroke engines, engine oil is used to lubricate the distribution elements, the bushes and the thermal group. **An insufficient quantity of oil can cause serious damage to 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.

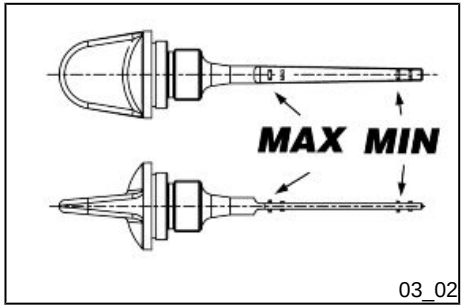
In order to prevent any problems, we recommend checking oil level more frequently than indicated in the Scheduled Maintenance table or before setting off on long journeys. The scooter is, however, equipped with an oil pressure warning light on the instrument panel.

03_01

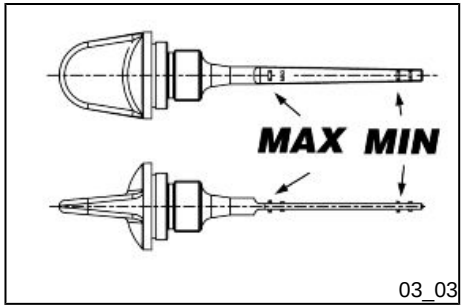
Engine oil level check (03_01, 03_02)

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_02



03_03

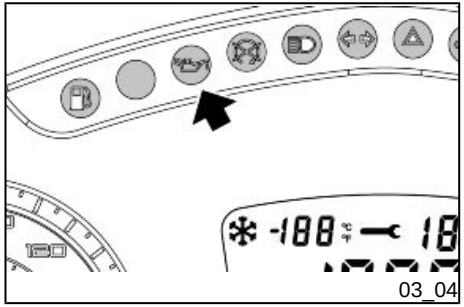
Engine oil top-up (03_03)

The oil should be topped up after having checked the level and in any case by adding oil **without ever exceeding the MAX. level**. The recovery level between the **MIN** and **MAX** level entails a quantity of oil of approx. 600 cm³.

Recommended products

eni i-Ride PG 15W-50

Synthetic-based lubricant for four stroke engines.
JASO MA, MA2 - API SJ - ACEA A3


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 switch 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 replace the engine oil and oil filter, as reported in the scheduled maintenance table, contact an **Authorised Service Centre**.

CAUTION

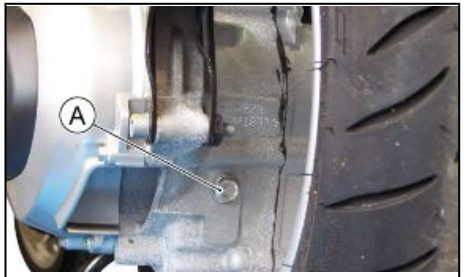
RUNNING THE ENGINE WITH INSUFFICIENT LUBRICATION OR WITH INADEQUATE LUBRICANTS ACCELERATES THE WEAR AND TEAR OF THE MOVING PARTS AND CAN CAUSE IRRETRIEVABLE DAMAGE.

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 AN AUTHORISED SERVICE CENTRE WHICH IS EQUIPPED TO DISPOSE OF USED OILS IN AN ENVIRONMENTALLY FRIENDLY AND LEGAL WAY.



03_05

Hub oil level (03_05)

Check the oil in the rear hub. To check the rear hub oil level, proceed as follows:

1. Rest the vehicle onto its centre stand, on level ground.

2. Unscrew the screw «**A**» and if oil comes out or touches the screw hole the level is correct. Otherwise, top up the oil.

3. Screw the screw back in, checking that 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 CAN HARM THE ENVIRONMENT. COLLECTION AND DISPOSAL SHOULD BE CARRIED OUT IN COMPLIANCE WITH REGULATIONS IN FORCE.

CAUTION

UPON REPLACING HUB OIL, AVOID THE OIL COMING INTO CONTACT WITH THE REAR WHEEL AND TYRE.

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.

Recommended products

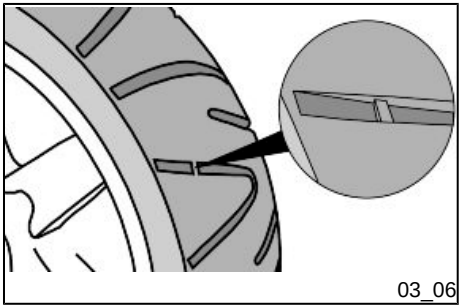
AGIP GEAR SAE 80W-90

Lubricant for gearboxes and transmissions.
API GL-4

Characteristic

Transmission oil

About 500 cc


03_06

Tyres (03_06)

Check tyre pressure and wear periodically as indicated in the scheduled maintenance table. 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, go to an authorised workshop or at least to a workshop equipped to replace tyres.

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 FITTED WITH TYRES SHOULD ALWAYS BE BALANCED. RIDING THE VEHICLE WITH VERY LOW TYRE PRESSURE OR WITH INCORRECTLY BALANCED TYRES CAN LEAD TO DANGEROUS STEERING VIBRATIONS.

TYRES

Front tyre	120/70-15" M/C 56S Tubeless
Rear tyre	150/70-13" M/C 64S Tubeless

TYRE INFLATION PRESSURE

Front tyre pressure (with passenger)	2.3 bar (2.3 bar)
Rear tyre pressure (with passenger)	2.4 bar (2.6 bar)

03_07

03_08

03_09

Spark plug dismantlement (03_07, 03_08, 03_09)

Proceed as follows:

- Remove the case that grants access to the spark plug located on the right side fairing by unscrewing the indicated screw.

- Disconnect spark plug HV wire cap «**A**».

- Unscrew the spark plug using the wrench supplied.

- When refitting, place the spark plug into the hole at the corresponding angle and finger tighten it as far as it will go. Use the wrench only to tighten it.

- Place cap «**A**» fully over the spark plug.

WARNING

SPARK PLUG MUST BE REMOVED WHEN THE ENGINE IS COLD. REPLACE THE SPARK PLUG AS INDICATED IN THE SCHEDULED MAINTENANCE TABLE. USE OF SPARK PLUGS OTHER THAN THE INDICATED TYPE CAN SERIOUSLY DAMAGE THE ENGINE.

N.B.

USE OF SPARK PLUGS OTHER THAN THE INDICATED TYPE OR UNSHIELDED SPARK PLUG CAPS CAN LEAD TO FAULTS IN THE VEHICLE 'S ELECTRICAL SYSTEM.

WHEN REFITTING THE ACCESS DOOR, PAY ATTENTION TO THE FITTING FINS REQUIRED FOR THE CORRECT POSITIONING AND FIXING OF THE SAME DOOR.

Characteristic

Spark plug

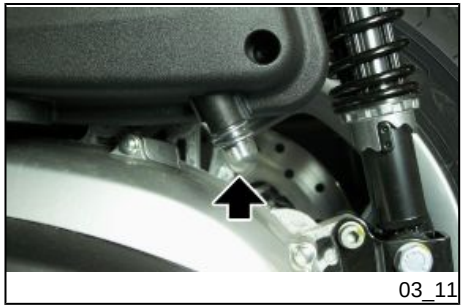
03_10

Removing the air filter (03_10)

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

CAUTION

IF THE VEHICLE IS USED ON DUSTY ROADS, IT IS NECESSARY TO SERVICE THE AIR FILTER AND THE CVT FILTER MORE OFTEN TO AVOID DAMAGING THE ENGINE.



03_11

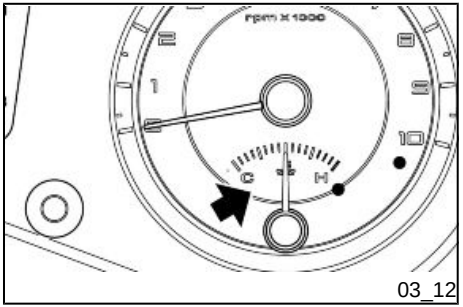
Air filter cleaning (03_11)

To clean the air filter, as according to the intervals indicated in the scheduled maintenance table, contact an **Authorised Service Centre**.

Regularly check the lower part of the bleed cap for dirt.

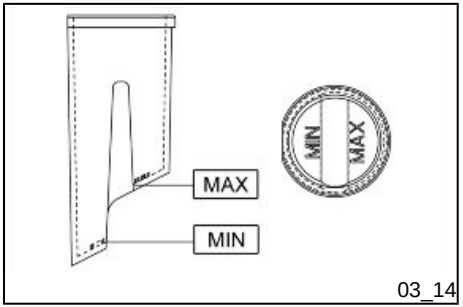
REMOVE ANY DEPOSIT THAT MAY HAVE FORMED IN THE BLEED PIPE, COMING FROM THE FILTER BOX. PROCEED AS FOLLOWS:

1. **remove the cap;**
2. **discharge the contents into a container and send it to a recycling bank.**



03_12

03_13



03_14

Cooling fluid level (03_12, 03_13, 03_14)

Engine cooling is carried out by a forced-circulation coolant system. The coolant consists of a mixture 50% de-ionised water and 50% glycol ethylene-based antifreeze solution with corrosion inhibitors. The coolant supplied with the scooter is already mixed and ready for use.

For the proper operation of the engine, the temperature of the cooling liquid must be maintained at about 90°C (mid-scale instrument indicator, approximately). If the needle of the gauge enters the red zone, stop the engine, let it cool down and check the coolant level; if the level is OK, contact an **Authorised Service Centre.**

Check coolant when the engine is cold and as indicated in the scheduled maintenance tables, following the steps below.

1. Put the vehicle in an upright position on its stand and turn completely left the handlebars.

2. Open the right dashboard glove-box by lifting it.

3. Remove the expansion tank cap «**A**» by turning it anticlockwise.

4. Look inside the expansion tank and check that the fluid level is always between the «**MIN**» and «**MAX**» level marks.

5. Top-up the fluid when it is close to the minimum mark.

If the level is not correct, proceed to top-up when the engine is cold. If the coolant needs to be topped up frequently or the expansion tank is completely dry, check the cooling system to find the cause of the problem. It is therefore essential to have the cooling system checked at an **Authorised Service Centre**.

Replace coolant as indicated in the scheduled maintenance table. Take your vehicle to an **Authorised Service Centre** for this operation.

WARNING

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

WARNING

IN ORDER TO AVOID HARMFUL FLUID LEAKS WHILE RIDING, IT IS IMPORTANT TO MAKE SURE THAT THE LEVEL DOES NOT EXCEED THE REFERENCE TONGUE TOO MUCH.

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

Recommended products

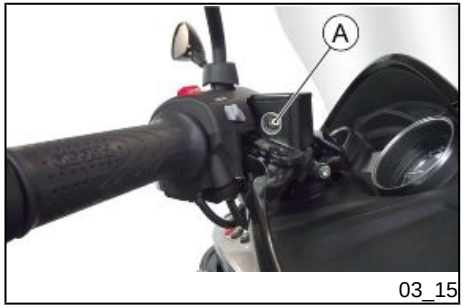
AGIP PERMANENT SPEZIAL

Ethylene glycol-based antifreeze fluid with organic inhibition additives. Red, ready to use.
ASTM D 3306 - ASTM D 4656 - ASTM D 4985 - CUNA NC 956-16

Characteristic

Cooling system fluid

1.75 l



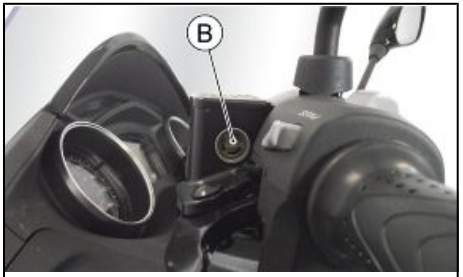
03_15

Checking the brake oil level (03_15, 03_16)

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

- Rest the vehicle on its centre stand with the handlebars perfectly horizontal;

- Check the fluid level through the transparent indicator «**A**» (front brake) and «**B**» (rear brake).



03_16

A certain lowering of the level is caused by wear on the brake pads. Should the level appear to be below the minimum mark, please contact an **Authorised Service Centre or Dealer** in order to have a thorough inspection of the braking system carried out.

03_17

Braking system fluid top up (03_17)

- To top-up the brake fluid, unscrew the two screws "**A**" and remove the cap "**B**" from the brake pump to restore the optimal level.

WARNING

BRAKING CIRCUIT FLUID IS HIGHLY CORROSIVE; MAKE SURE THAT IT DOES NOT COME INTO CONTACT WITH THE PAINTWORK.

CAUTION

ONLY USE DOT 4-CLASSIFIED BRAKE FLUID.

WARNING

THE BRAKE FLUID IS HAZARDOUS: IN CASE OF ACCIDENTAL CONTACT, WASH OFF WITH WATER.

WARNING

THE BRAKING CIRCUIT LIQUID IS HYGROSCOPIC, AND ABSORBS THE HUMIDITY OF SURROUNDING AIR. IF THE HUMIDITY IN THE BRAKING FLUID EXCEEDS A CERTAIN VALUE, IT WILL LEAD TO INEFFICIENT BRAKING. NEVER USE BRAKING FLUID KEPT IN CONTAINERS THAT HAVE ALREADY BEEN OPENED, OR PARTIALLY USED.

Recommended products

AGIP BRAKE 4

Brake fluid.
Synthetic fluid SAE J 1703 -FMVSS 116 - DOT 3/4 - ISO 4925 - CUNA NC 956 DOT 4

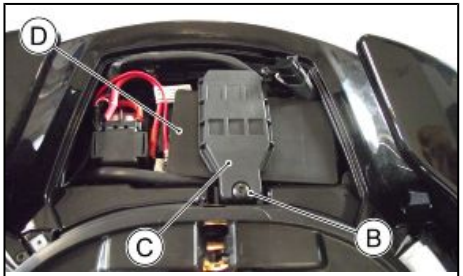
Battery (03_18, 03_19, 03_20, 03_21)

To access the battery, place the vehicle on the (central or lateral) stand and lift the saddle, as described in the relative paragraph.

Unscrew and remove the two fixing screws «**A**» and remove the cover from the fittings.

03_18

Unscrew and remove the screw «**B**» and remove the bracket «**C**» from the rear fitting and the cover «**D**».



03_19

03_20

The battery is the electrical device that requires the most frequent attention and the most thorough maintenance.

The observance of the warnings listed below preserves its integrity.

CAUTION

DO NOT CONNECT JUMP START OR BATTERY CHARGER WITH BATTERY VOLTAGE EXCEEDING 14.5V TO THE BATTERY IF CONNECTED TO THE VEHICLE SYSTEM. THIS WILL IRREPARABLY DAMAGE THE ELECTRONIC DEVICES ON THE VEHICLE.

CAUTION

UPON INSTALLATION, IN ORDER TO NOT DAMAGE THE BATTERY AND ELECTRICAL COMPONENTS, CONNECT THE POSITIVE CABLE (RED) AND THEN THE NEGATIVE CABLE (BLACK) IN THIS ORDER.

WARNING

DO NOT DISCONNECT THE BATTERY CABLES WITH THE ENGINE RUNNING, THIS CAN CAUSE IRREPARABLE DAMAGE TO THE VEHICLE'S ELECTRONIC CONTROL UNIT.

WARNING

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

Characteristic

Battery

SEALED 12V/10Ah

03_21

When refitting the components, be very careful not damage the retainer fins of the cover.

03_22

Use of a new battery (03_22)

Ensure that the terminals are connected correctly and check the voltage.

CAUTION

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

Long periods of inactivity

Battery performance will be poor if the vehicle is not used for a long time. This is the result of the natural phenomenon of battery discharging, and may be due to residual absorption by vehicle components with constant power consumption. Poor battery performance may also be due to environmental conditions and the cleanliness of the poles. In order to avoid difficult starts and/or irreversible damage to the battery, follow any of these steps:

- At least once a month start the engine and run it slightly above idle speed for 10-15 minutes. This keeps all the engine components, as well as the battery, in good working order.

- Store the vehicle (as indicated in the «Vehicle inactivity» section in this chapter) with the battery removed. Have the battery cleaned, charged fully and stored in a dry, ventilated place. Recharge **at least once every two months**.

CAUTION

THE BATTERY MUST BE RECHARGED WITH A CURRENT LOAD EQUAL TO 1/10 OF THE BATTERY RATED CAPACITY AND FOR A PERIOD NOT LONGER THAN 8 HOURS. TAKE THE VEHICLE TO AN AUTHORISED PIAGGIO SERVICE CENTRE FOR THIS OPERATION. WHEN REFITTING THE BATTERY MAKE SURE THE LEADS ARE CORRECTLY CONNECTED TO THE TERMINALS.

03_23

Fuses (03_23, 03_24, 03_25, 03_26, 03_27, 03_28, 03_29)

The fuses are located to the right of the battery.

To access it, operate as described:

- rest the vehicle on its stand;

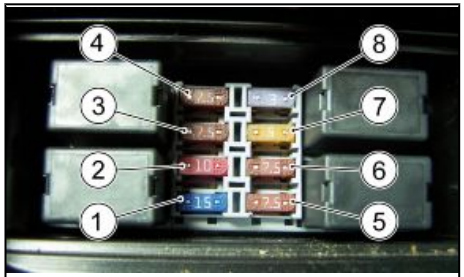
- lift the saddle;

- remove the battery cover, as described in the procedure to access the battery.

Remove the main fuse box «**A**» from the tongue «**B**».

03_24

Once the main fuse box «**A**» is removed, unscrew the screw «**F**» and remove the cover«**E**» of the secondary fuse box.



03_25

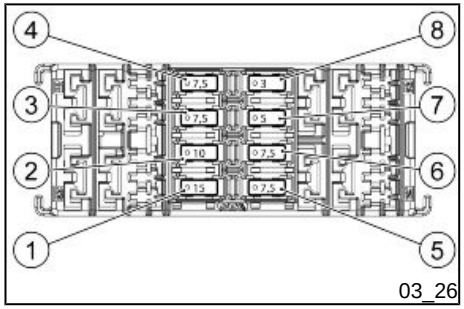
SECONDARY FUSES

AUXILIARY FUSES

Fuse No. 1	**Capacity:** 15 A **Protected circuits:** LV socket, helmet compartment lighting button, actuators and buttons for the fuel door and saddle release (live), turn indicators control

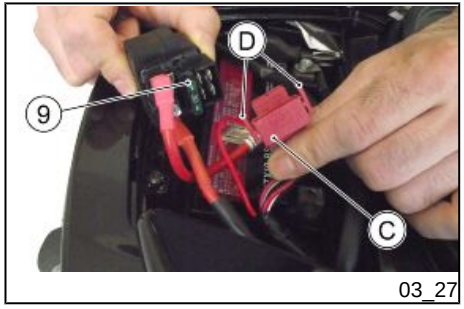
	device, instrument panel, antitheft-device pre-installation.
Fuse No. 2	**Capacity:** 10A **Protected circuits:** Light solenoid, light switch.
Fuse No. 3	**Capacity:** 7.5 A **Protected circuits:** control unit, injection load relay.
Fuse No. 4	**Capacity:** 7.5 A **Protected circuits:** Electric fan relay.
Fuse No. 5	**Capacity:** 7.5 A **Protected circuits (live):** Turn indicators control device, instrument panel, antitheft-device pre-installation, horn, stop buttons.
Fuse No. 6	**Capacity:** 7.5 A **Protected circuits (live):** Light switch.
Fuse No. 7	**Capacity:** 5A **Protected circuits (live):**Control unit, ABS control unit, immobilizer antenna, anti-tipping sensor, injection load solenoid, Light solenoid.

Fuse No. 8	**Capacity:** 3A **Protected circuits (live):**Daylight running light, license plate light, control lighting, instrument lighting.



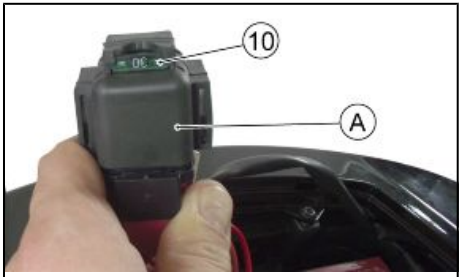
03_26

MAIN FUSES



03_27

Working on the side fins«**D**», remove the cover«**C**» to access the main fuse «**9**».



03_28

The spare fuse «**10**» is positioned in the same box, but on the side.

03_29

On the other side of the battery compartment, the main fuse is located instead «**11**».

MAIN FUSES

Fuse No. 9	**Capacity:** 30 A **Protected circuits:**Recharge, fuses No. 5, No. 6, No. 7 and No. 8 (live).
Fuse No. 10	**Capacity:** 30 A

	Protected circuits: Reserve.
Fuse No. 11	**Capacity:** 40A **Protected circuits:**ABS control unit.

Lamps

BULBS

Low beam light bulb	**Type**: Halogen H7 **Quantity**: 1 **Power**: 12V - 55W
High beam light bulb	**Type**: Halogen H7 **Quantity**: 1 **Power**: 12V - 55W
Front tail light bulb	**Type**: LED **Quantity**: 1 Right - 1 Left **Power**: -
Turn indicator bulbs	**Type**: Amber spherical BAU 15s **Quantity**: 1 Right -1 Left (front); 1 Right -1 Left (rear)

	Power: 12V - 10W
Stop light/rear daylight running light bulb	**Type**: LED **Quantity**: 1 Right - 1 Left **Power**: -
License plate light bulb	**Type**: All glass W5W **Quantity**: 1 **Power**: 12V - 5W
Helmet compartment light bulb	**Type**: Cylindrical C5W **Quantity**: 1 **Power**: 12V - 5W
Instrument panel lighting bulb	**Type**: LED **Quantity**: 10 **Power**: -
Switches lighting bulb	**Type**: LED **Quantity**: 2 **Power**: -

Front light group

To replace the front headlight assembly bulbs, contact an **Authorised Service Centre**.

Headlight adjustment (03_30, 03_31, 03_32, 03_33, 03_34, 03_35, 03_36, 03_37)

To adjust the front headlight, remove the front cover of the vehicle.

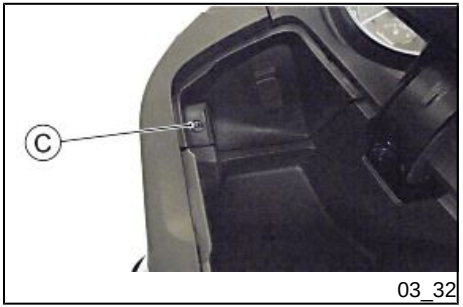
FRONT COVER REMOVAL

03_30

Using a screwdriver and paying attention to the bodywork, remove the Piaggio clip-on badge «**A**».

03_31

Unscrew and remove the front screw «**B**».



03_32

Turn the handlebars to the side opposite to the one on which you are operating and, after lifting the door of the respective dashboard glove-box, unscrew the screw «**C**», first operating on the left side and then on the right side of the vehicle.


03_33

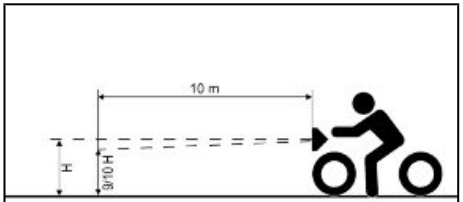
Remove the plastic cover from both sides.

03_34

Operating from both sides of the vehicle, unscrew and remove the screw «**D**».

03_35

Remove the front cover from the front.



03_36

Now it is possible to check and adjust the headlight if necessary.

Proceed as follows:

- Place the vehicle in running order and with the tyres inflated to the prescribed pressure, on a flat surface 10 m (32.8 ft) away from a white screen in a shaded area, making sure that the axis of the vehicle is perpendicular to the screen.

- Turn on the headlight and make sure that the limit of the light beam projected on the screen does not exceed 9/10 of the height of the centre of the headlamp from the ground and is no less than 7/10.

Otherwise, adjust the headlight:

- The screw «**E**» adjusts the height of the right headlight.
- The screw «**F**» adjusts the height of the left headlight.

03_37

N.B.

THE ABOVE PROCEDURE COMPLIES WITH THE EUROPEAN STANDARDS REGARDING MAXIMUM AND MINIMUM HEIGHT OF LIGHT BEAMS. REFER TO THE STATUTORY REGULATIONS IN FORCE IN EVERY COUNTRY WHERE THE VEHICLE IS USED.

COMPONENTS ASSEMBLY

To refit the components removed, operate in the reverse order as described for the removal.

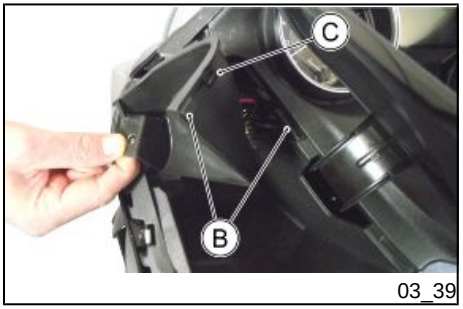
03_38

Front direction indicators (03_38, 03_39, 03_40)

The operations are described for a turn indicator but are valid for both.

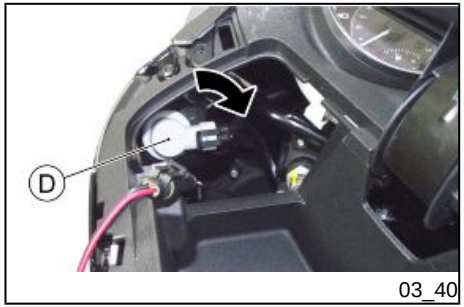
Turn the handlebar completely, in the opposite direction to that of the bulb to be replaced.

Open the respective glove-box on the dashboard and unscrew the screw «**A**».



03_39

Remove the plastic cover of the glove-box, paying attention to the retainer fins«**B**» (press fit from top to bottom) and «**C**» (lower press fit).



03_40

Turn the lamp holder «**D**» by 1/4 a turn clockwise and remove it.

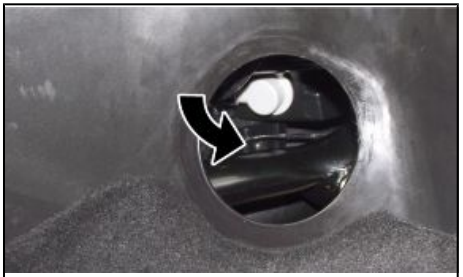
Remove the bulb from the lamp holder by turning it anticlockwise and removing it.

Rear optical unit

WARNING

THE DAYLIGHT RUNNING LIGHTS PRESENT IN THE SAME GROUP ARE «LED» TYPES. IN CASE OF MALFUNCTIONING, AS THE REMOVAL IS PARTICULARLY DIFFICULT, WE ADVISE ADDRESSING AN Authorised PIAGGIO Service Centre FOR THE REPLACEMENT.

03_41



03_42

03_43

Rear turn indicators (03_41, 03_42, 03_43)

To replace the indicator bulbs proceed as follows:

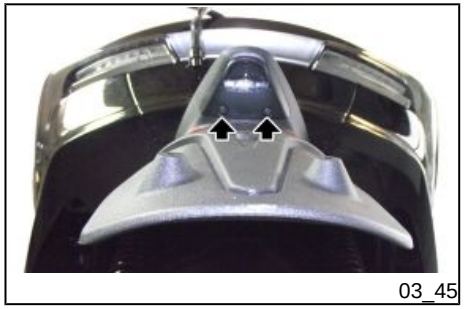
- Open the saddle
- Remove the rubber protection
- Remove the lamp holder turning it towards the base
- Lightly press the lamp and turn it anticlockwise and remove it.

03_44

Number plate light (03_44, 03_45)

To replace the license plate light it is necessary to remove the plate holder, unscrew the three screws indicated and recovering the washers and at the rear and nuts.

With the license plate fitted, remove only the rear nuts but pay attention to the correct position of the screws: once removed, place the plate in a horizontal position and keeping the numbering visible.

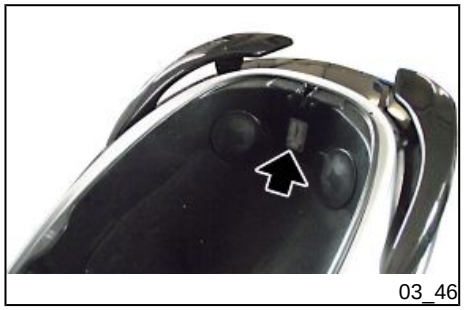


03_45

Unscrew and remove the two screws and remove the license plate holder.

CAUTION

DO NOT PULL THE ELECTRICAL CABLES WHEN TAKING OUT THE BULB HOLDER.



03_46

Helmet compartment lighting bulb (03_46)

Open the helmet compartment, take out the snap-on transparent glass and replace the bulb.


03_47

Rear-view mirrors (03_47)

Adjust the mirrors by applying slight pressure to the side of the mirror to move it to the desired position.


03_48

Front and rear disc brake (03_48)

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, mainly due to the importance of brakes to guarantee safe riding conditions, the vehicle should be taken to an **Authorised Service Centre or Dealer.**

CAUTION

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

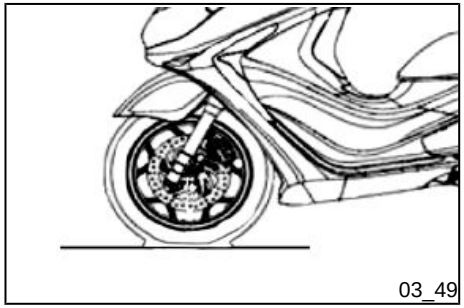
CAUTION

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 BRAK-

ING SYSTEM DURING OPERATION, IT IS ADVISABLE TO HAVE THE BRAKING SYSTEM CHECKED BY AN AUTHORISED SERVICE CENTRE OR DEALER. AFTER 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. WHEN RIDING THE VEHICLE ON ROADS WITH THE ABOVE MENTIONED CHARACTERISTICS, WE RECOMMEND TO CLEAN THE BRAKE DISC FREQUENTLY WITH A NON-AGGRESSIVE DETERGENT IN ORDER TO AVOID THE FORMATION OF ABRASIVE BUILD-UPS IN THE HOLES, WHICH COULD RESULT IN EARLY WEAR OF BRAKE PADS.



03_49

Puncture (03_49)

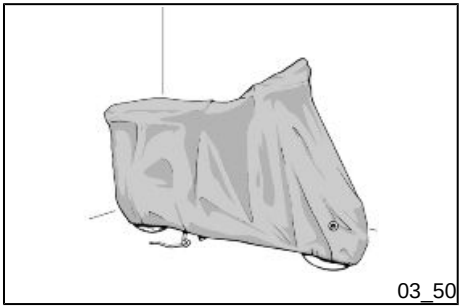
The vehicle is equipped with Tubeless tyres (without inner tube). In the event of a puncture, Tubeless tyres - unlike tyres with inner tubes - go flat very slowly, resulting in a greater steering safety. In the event of a puncture, an emergency repair can be carried out using an "inflate and repair" spray can. For a final repair, take your vehicle to an **Authorised Service Centre or Dealer.** The replacement of a tyre involves removing the wheel in question. Take your vehicle to an **Authorised Service Centre or Dealer** for these operations.

CAUTION

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

WARNING

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


03_50

Periods of inactivity (03_50)

The following operations are recommended:

1. Clean the scooter thoroughly and then cover it with a canvas;

2. With the engine off and the piston at the bottom dead centre position, remove the spark plug, and pour 1 ÷ 2 cm³ of the recommended oil through its hole. Operate the starter button 1-2 times for roughly 1 second to turn the engine over slowly, then insert the spark plug again;

3. Ensure that **the fuel tank is at least half full (so that the fuel pump is fully covered)**; spread antirust grease on the uncoated metal parts; keep the wheels lifted above the ground by resting the chassis on two wooden wedges;

4. As regards the battery, follow the instructions in the «Battery» section.

Recommended products

eni i-Ride PG 15W-50

Synthetic-based lubricant for four stroke engines.

Cleaning the vehicle

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 shammy 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.

CAUTION

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

CAUTION

DO NOT USE A HIGH-PRESSURE WATER JET MACHINE TO CLEAN THE ENGINE AND/OR VEHICLE; HOWEVER, IF NO OTHER MEANS ARE AVAILABLE, IT IS THEN NECESSARY TO:

- **ONLY USE A FANLIKE SPRAY JET.**
- **DO NOT PLACE THE NOZZLE CLOSER THAN 60 CM.**
- **DO NOT USE WATER AT TEMPERATURES OVER 40ºC.**
- **DO NOT USE HIGH-PRESSURE WATER JETS.**
- **DO NOT STEAM WASH.**

• DO NOT AIM THE JET AT: THE ENGINE, THE WIRING, THE COOLING SLITS ON THE TRANSMISSION OR SCROLL COVERS.

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.

Troubleshooting

STARTING FAILURE

Emergency switch in «OFF»	Set the switch back to «**ON**»
Fuse blown	Replace the blown fuse and have the vehicle checked by an **Authorised Service Centre.**
«Engine not startable» warning light turned on	Check that the starting procedure described in the «Engine start-up» section is performed correctly. If the light remains turned on, contact an **Authorised Service Centre.**

DIFFICULTY STARTING

Lack of fuel in tank.	Refuelling
Injection system fault	Contact an **Authorised Service Centre**
Fuel pump fault	Contact an **Authorised Service Centre**
Flat battery	Recharge the battery.

**** IMPORTANT: DO NOT USE THE SCOOTER TO THE COMPLETE EXHAUSTION OF FUEL; SHOULD THIS OCCUR, DO NOT ATTEMPT TO START THE ENGINE. TURN THE IGNITION KEY TO «OFF» AND TOP-UP THE FUEL TANK AS SOON AS POSSIBLE. FAILURE TO FOLLOW THESE GUIDELINES COULD DAMAGE THE FUEL PUMP AND/OR THE CATALYTIC CONVERTER.***

IGNITION PROBLEMS

Faulty spark plug	Contact an **Authorised Service Centre.**
Faulty ignition / injection control unit. 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 CONSUMPTION AND LOW PERFORMANCE

Air filter blocked or dirty.	Contact an **Authorised Service Centre**.

INSUFFICIENT BRAKING

Greasy disc. Worn pads. Faulty braking system. Presence of air in the front and rear brake circuit.	Contact an **Authorised Service Centre.**

INEFFICIENT SUSPENSION

Shock absorber fault, oil leak, end buffers damaged; shock absorber preloading incorrectly set	Contact an **Authorised Service Centre.**

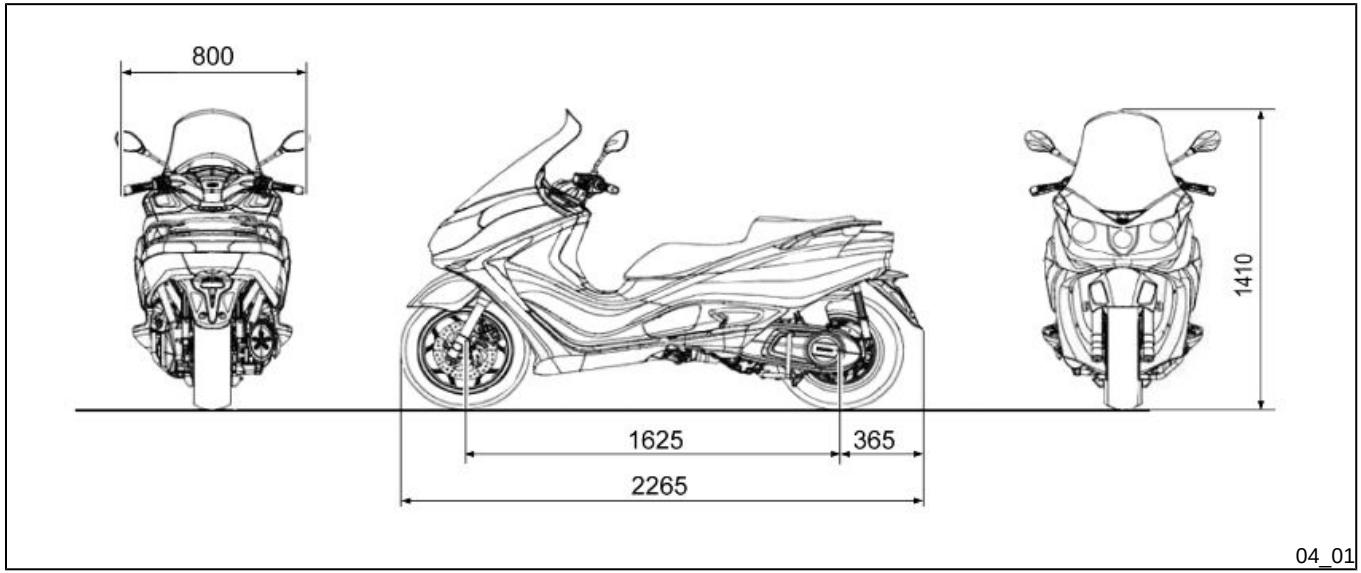
AUTOMATIC TRANSMISSION PROBLEMS

CVT rollers and/or drive belt damaged	Contact an **Authorised Service Centre.**

X10 350ie Executive

PIAGGIO

Chap. 04
Technical data



VEHICLE TECHNICAL DATA

Chassis	A closed double cradle in steel tubes
Front suspension	Hydraulic telescopic fork Ø 35 mm
Rear suspension	Two double-acting shock absorbers, adjustable to four positions at preloading.

Front brake	Double disc Ø280 with hydraulic control actuated by the right lever; braking assisted by ABS system.
Integral brake	Disc Ø240 with hydraulic control actuated by the left lever; the front disc Ø280 is served by a pressure relief valve; braking assisted by ABS system.
Wheel rim type	Light alloy wheel rims.
Front wheel rim	3.50"x15"
Rear wheel rim	4.00"x13"
Front tyre	120/70-15" M/C 56S Tubeless
Rear tyre	150/70-13" M/C 64S Tubeless
Front tyre pressure (with passenger)	2.3 bar (2.3 bar)
Rear tyre pressure (with passenger)	2.4 bar (2.6 bar)
Kerb weight	203 kg
Maximum weight allowed	400 kg
Battery	SEALED 12V/10Ah

ENGINE TECHNICAL DATA

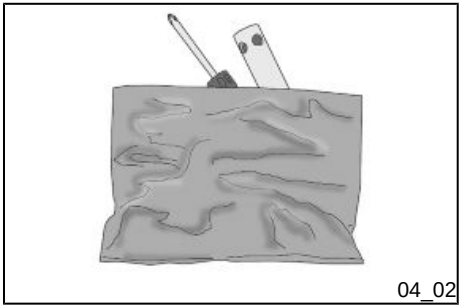
Type	Single-cylinder, 4-stroke
Engine capacity	330 cm^3

Bore x stroke	78 x 69 mm
Compression ratio	11 ± 0.5 **:** 1
Engine idle speed	1700±100 rpm
Timing system	Four valves, single overhead camshaft, chain-driven.
Valve clearance	Intake: 0.10 mm Exhaust: 0.15 mm
Max power to the shaft	24.5 kW at 8250 rpm
MAX. torque	32.3 Nm at 6250 rpm
Transmission	With continuously variable transmission, torque server, V belt, centrifugal automatic clutch in oil bath.
Final reduction gear	Gear reduction unit in oil bath.
Lubrication	Engine lubrication with trochoidal pump (inside the crankcase), oil filter and pressure adjustment by-pass.
Cooling	Forced coolant circulation system.
Electric	Electric starter
Ignition	Electronic, inductive, high efficiency ignition, integrated with the injection system, with variable advance and separate H.V. coil.

Ignition advance	Three-dimensional map managed by control unit
Fuel system	IAWM3G electronic injection with 38 mm diameter throttle body, electric fuel pump.
Spark plug	NGK CR7EKB
Fuel	Unleaded petrol (95 RON)
Silencer	Absorption-type exhaust silencer with a three-way catalytic converter and lambda probe to the exhaust.
Emissions compliance	EURO 3

CAPACITIES

Engine oil	about 1.5 l
Transmission oil	about 500 cc
Cooling system fluid	1.75 l
Fuel tank	15.5 litres (2 l of which is reserve)



04_02

04_03

Toolkit (04_02, 04_03)

The tools are positioned in the front glove-box, within the housing indicated on the right side.

The toolkit includes:

- A box-spanner to remove the spark plug
- One twin screwdriver
- One special key for adjusting rear shock absorbers
- An extractor for fuses
- One lever for box-spanner
- One double torx wrench

X10 350ie Executive

Chap. 05
Spare parts and accessories

05_01

Warnings (05_01)

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

IT IS ALSO RECOMMENDED THAT ORIGINAL PIAGGIO SPARE PARTS BE USED, AS THESE ARE THE ONLY ONES OFFERING YOU THE SAME QUALITY GUARANTEE AS THOSE INITIALLY FITTED ON THE SCOOTER. THE USE OF NON-ORIGINAL SPARE PARTS RENDERS THE WARRANTY VOID.

WARNING

PIAGGIO MARKETS ITS OWN LINE OF ACCESSORIES THAT ARE RECOGNISED AND GUARANTEED FOR USE. IT IS THEREFORE ESSENTIAL TO CONTACT AN AUTHORISED DEALER OR 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 POTENTIAL RISKS FOR THE RIDER.

NEVER RIDE THE VEHICLE EQUIPPED WITH ACCESSORIES (PANNIERS, TOP BOX AND/OR WINDSHIELD) AT A SPEED HIGHER THAN 110 km/h.

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 ANTITHEFT 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 ANTITHEFT 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.

X10 350ie Executive

Chap. 06
Scheduled maintenance

06_01

Scheduled servicing table (06_01)

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

To this end, a series of checks and maintenance operations (at the owner's expense) have been suggested, which are included in the summary table on the following page. Any minor faults should be reported without delay to an **Authorised Service Centre or Dealer** without waiting until the next scheduled service to solve it.

It is indispensable to have your vehicle serviced to the prescribed intervals of time, even if you have not reached the predicted mileage. Punctual vehicle servicing is necessary for the correct use of the guarantee. For all further information regarding the Guarantee application modes and the execution of the "Programmed Maintenance" refer to the "Guarantee Booklet".

SCHEDULED MAINTENANCE TABLE

km x 1,000	1	10	15	20	30	40	45	50	60
Safety fasteners	I	I		I	I	I		I	I
Spark plug		R		R	R	R		R	R
Centre stand bracket	L	L		L	L	L		L	L
Drive belt				R		R			R
Throttle control	I	I		I	I	I		I	I
Roller housing / Roller counter				C/I		C/I			C/I
Engine air filter (*)		C		C	C	C		C	C
Engine oil filter	R	R		R	R	R		R	R
Belt compartment filter(*)		C		C	C	C		C	C
Parking brake	A	A		A	A	A		A	A

km x 1,000	1	10	15	20	30	40	45	50	60
Valve clearance						I			
Electrical system and battery	I	I		I	I	I		I	I
Coolant (****)	I	I		I	I	I		I	I
Brake fluid (****)	I	I		I	I	I		I	I
Engine oil (**)	R	R		R	R	R		R	R
Hub oil	R					I			
Brake pads	I	I		I	I	I		I	I
CVT sliders and rollers				R		R			R
Brake pumps			R		R		R		R
Tyre pressure and wear	I	I		I	I	I		I	I
Vehicle road test	I	I		I	I	I		I	I
Crankcase breather (***)				C		C			C
Suspension	I	I		I	I	I		I	I
Steering	A	I		I	I	I		I	I

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

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

** Perform maintenance more frequently when riding in unusually wet or dusty areas*

*** Check, however, the level every time you use your vehicle*

**** Perform maintenance more frequently if you drive mainly at full acceleration*

**** Replace every 2 years*

RECOMMENDED PRODUCTS TABLE

Product	Description	Specifications
AGIP GEAR SAE 80W-90	Lubricant for gearboxes and transmissions.	API GL-4
AGIP FILTER OIL	Special product for the treatment of foam filters.	-
AGIP GP 330	Water repellent stringy calcium spray grease.	R.I.D./A.D.R. 2 10°b) 2 R.I.Na. 2.42 - I.A.T.A. 2 - I.M.D.G. class 2 UN 1950 Page 9022 EM 25-89
eni i-Ride PG 15W-50	Synthetic-based lubricant for four stroke engines.	JASO MA, MA2 - API SJ - ACEA A3
AGIP BRAKE 4	Brake fluid.	Synthetic fluid SAE J 1703 -FMVSS 116 - DOT 3/4 - ISO 4925 - CUNA NC 956 DOT 4
AGIP PERMANENT SPEZIAL	Ethylene glycol-based antifreeze fluid with organic inhibition additives. Red, ready to use.	ASTM D 3306 - ASTM D 4656 - ASTM D 4985 - CUNA NC 956-16

UNIT OF MEASURE - CONVERSION - ENGLISH SYSTEM TO INTERNATIONAL SYSTEM (IS).

1 Inch (in)	25.4 Millimetres (mm)
1 Foot (ft)	0.305 Meter (m)
1 Mile (mi)	1.609 Kilometre (km)
1 US Gallon (USgal)	3.785 Litre (l)
1 Pound (lb)	0.454 Kilogram (kg)
1 Cubic inch (in^3)	16.4 Cubic centimetres (cm^3)
1 Foot pound (ft lb)	1,356 Newton meter (Nm)

1 Miles per hour (mi/h)	1.602 Kilometres per hour (km/h)
1 Pound per square inch (PSI)	0.069 (bar)
1 Fahrenheit (°F)	32+(9/5) Celsius (°C)

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