

Vespa 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.

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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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**Chap. 01
Vehicle**

Dashboard (01_01)

A = Speedometer

B = Odometer

C = Fuel gauge

D = Front brake lever

E = Turn signal indicator light

F = Engine oil warning light

G = Light indicator

H = Fuel warning light

I = Headlight indicator

L = Headlight high beam/dipped beam selector

M = Turn signal selector

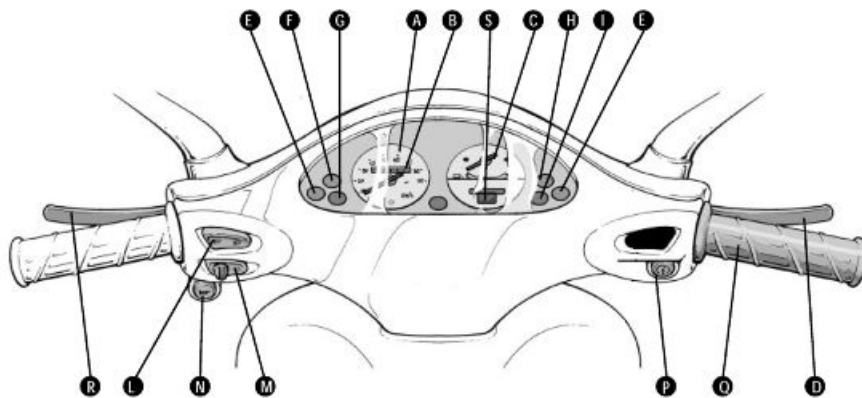
N = Horn button

P = Start button

Q = Throttle

R = Rear brake lever

S = Digital clock/Calendar

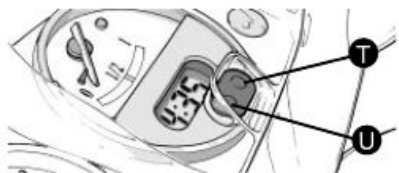


01_01

Clock (01_02)

Hours and minutes are displayed in a 1 to 12, AM or PM, format on the instrument panel.

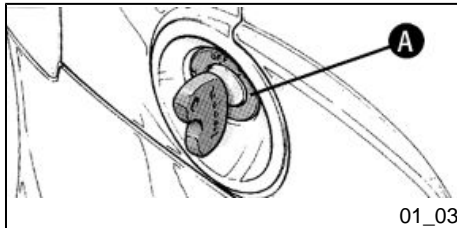
Operating the function selection switch «T» month, day and seconds can be seen besides hours and minutes. In order to adjust the above mentioned functions, operate button «U». The digital clock is powered by a battery (battery life is about 2 years); lift the whole instrument panel to replace the battery. It is advisable to take your vehicle to an **Authorised Service Centre** for this operation.



01_02

WARNING

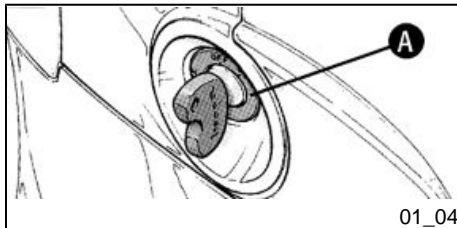
DEAD BATTERIES ARE HARMFUL TO THE ENVIRONMENT. THEY MUST BE DISPOSED OF IN SUITABLE CONTAINERS AS PRESCRIBED BY THE REGULATIONS IN FORCE.

**Keyswitch (01_03)**

LOCK= Ignition blocked, key can be extracted, steering lock installed.

OFF = Ignition blocked, key can be extracted, steering lock not on.

ON = Starter position, steering lock not on, key cannot be extracted.

**Locking the steering wheel (01_04)**

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

CAUTION

DO NOT TURN THE KEY TO «LOCK» OR «KEY OFF» WHILE RIDING.

Releasing the steering wheel

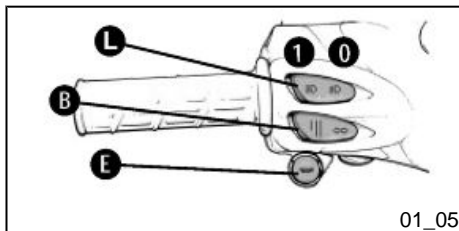
Reinsert the key and turn it to «**OFF**».

CAUTION

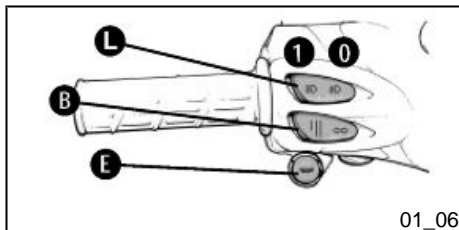
DO NOT TURN THE KEY TO «LOCK» OR «KEY OFF» WHILE RIDING.

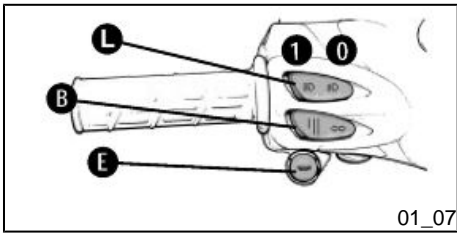
Switchdirectionindicators (01_05)

To set the left turn indicators flashing, move lever «**B**» to the left; to set the right turn indicators flashing, move it to the right. The lever automatically returns to the central position and the indicators remain on. To turn the indicators off, press the lever towards the switch.

**Hornbutton (01_06)**

Horn button «**E**»

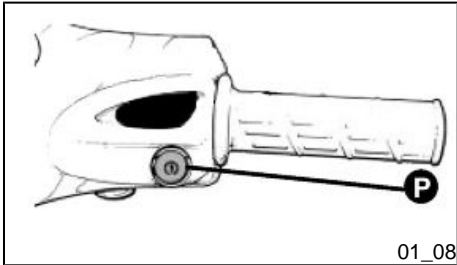




Lightswitch (01_07)

0 = Low-beam and tail light

1 = High-beam and tail light



Start-upbutton (01_08)

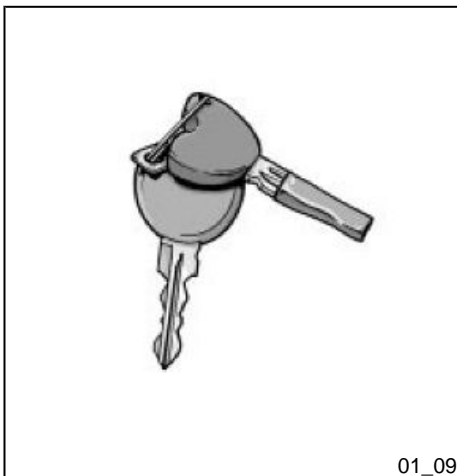
To start the engine, press the starter button, «P», after pulling either one of the two brake levers.

Keys (01_09)

The motorscooter is supplied with two keys (one spare) that serve to start the engine and unlock the saddle compartment. The keys are accompanied by a tag marked with the identification code to be quoted when ordering duplicates.

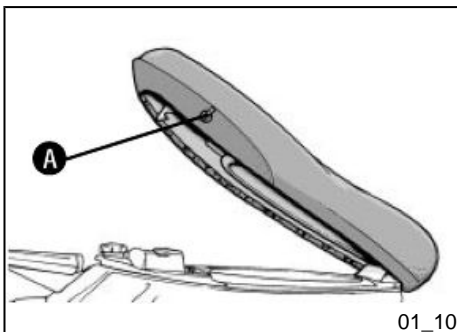
WARNING

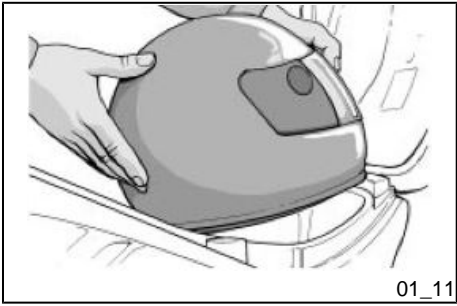
WE RECOMMEND KEEPING THE DUPLICATE KEY TOGETHER WITH ITS CODE IN A SAFE PLACE AND NOT ON THE VEHICLE



Opening the saddle (01_10, 01_11)

Insert the key in lock «A», turn it anticlockwise and tip the saddle forward.
After having tipped the saddle, place the helmet as shown in the figure.





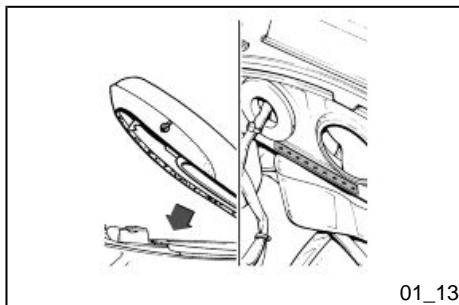
Identification (01_13, 01_14)

The identification numbers consist of a prefix stamped on the chassis and on the engine, followed by a number. They must be quoted when ordering spare parts. We recommend that you check that the prefix and chassis number stamped on the vehicle correspond with those in the vehicle documents.

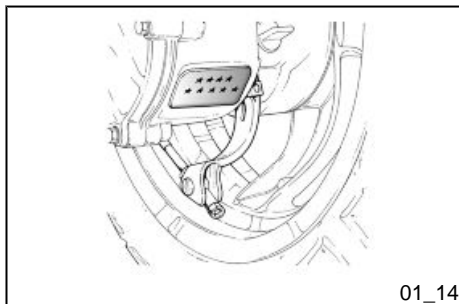
CAUTION



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



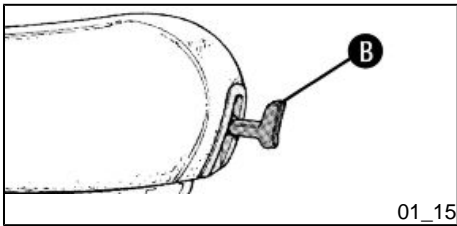
01_13



01_14

Rear top box opening

Press the key when it is in «**OFF**» or «**ON**» to open the glove-box. With the key is in «**LOCK**» the glove-box is locked.



Bagclip (01_15)

To use the retractable bag hook «B» located at the front end of the saddle, pull it forward lightly.

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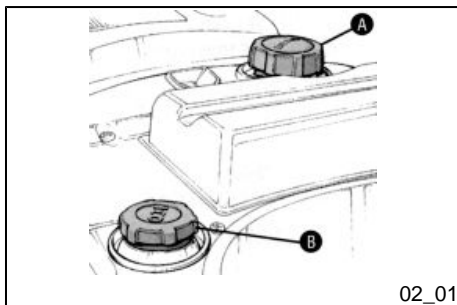


Chap. 02
Use

Checks

Before using the vehicle, check:

1. That the petrol tank and the oil reservoir are full.
2. Rear hub oil level.
3. That the tyres are properly inflated.
4. The correct functioning of headlights, rear light and turn indicators.
5. The correct functioning of front and rear brakes.
6. The fluid level in the brake pump reservoir.



Refuelling (02_01)

Fill fuel tank «A» with unleaded gasoline. Minimum octane rating method 95.. The rider is informed when fuel is low by the fuel warning light on the instrument panel (see section «The dashboard»). Fill engine oil tank «B» with new recommended engine oil. The rider is informed when engine oil is low by the oil warning light on the instrument panel (see section «The dashboard»). After this warning light goes on, at the next refuel (do not travel more than 150 km with the warning light on). When the oil light comes on you are advised to top up the oil tank. When the key is turned to «ON» the oil warning light illuminates for a few seconds, indicating the light and oil warning circuit are working correctly. If the warning light fails to illuminate, it is faulty. Contact an **Authorized Piaggio Service Center**.

CAUTION



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

CAUTION

DO NOT BRING NAKED FLAMES OR CIGARETTES NEAR THE MOUTH OF THE FUEL TANK: FIRE HAZARD. ALSO AVOID INHALING HARMFUL VAPOURS.



IMPORTANT: NEVER EMPTY THE MIXER OIL RESERVOIR.

CAUTION

THE USE OF OILS AND SPARK PLUGS OTHER THAN THOSE RECOMMENDED CAN SHORTEN THE LIFE OF THE ENGINE.

Recommended products

eni i-Ride PG 2t

*Synthetic based lubricant for low smoke 2-stroke engines and additives.
API TC - JASO FC - ISO-L-EGD*

Characteristic**Oil mixer tank**

In plastic, of capacity ~ 1,35 lt. (including reserve ~ 0.400 lt.)

Topping up mixer oil reservoir

Topping up oil reservoir: 0.5 ÷ 0.7 l

Tyrepressure

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.

Characteristic

Front tyre pressure

Front wheel: 1.3 bar

Tyre pressure (rear wheel)

Rear wheel: 1,8 bar

Rear wheel (Driver and luggage)

Rear wheel (Driver and luggage): 2 bar



Runningin (02_02)

WARNING



DURING THE FIRST 1000 KM DO NOT RIDE THE VEHICLE OVER 80% OF ITS MAXIMUM SPEED. AVOID TWISTING THE THROTTLE GRIP FULLY OR KEEPING A CONSTANT SPEED ALONG LONG SECTIONS OF ROAD. AFTER THE

FIRST 1000 KM, GRADUALLY INCREASE SPEED UNTIL REACHING THE MAXIMUM PERFORMANCE.

Starting up the engine (02_03)

Your scooter is equipped with an automatic transmission with direct intake. Always start the engine with the throttle rotated fully clockwise in the idle position. Gradually accelerate to pull away. This motorscooter has a fuel line tap and a choke which are automatically controlled when the start button is pressed. To start the engine, first pull the rear brake lever «**B**» or front brake lever «**C**» and then press starter button «**A**» .

A: Place the vehicle on the center stand and check that the rear tire is not touching the ground.

B: Keep the throttle closed.

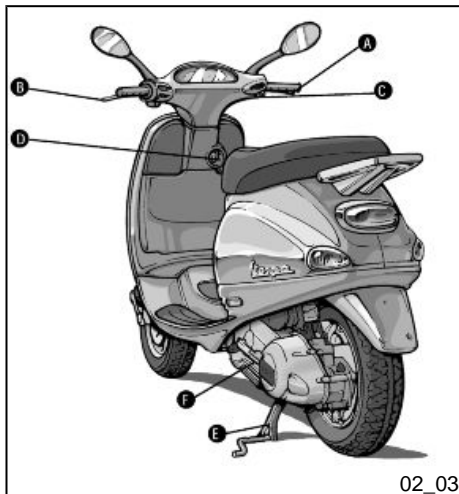
C: Insert the ignition key and turn it to "ON". When turning the key to "ON", the oil warning light and fuel warning light go on for a few seconds, indicating that the bulb and circuit for the oil warning light are working properly and that the bulb is working correctly for the fuel warning light.

D: Push the starter button after having pulled rear brake lever «**B**» or front brake lever «**C**».

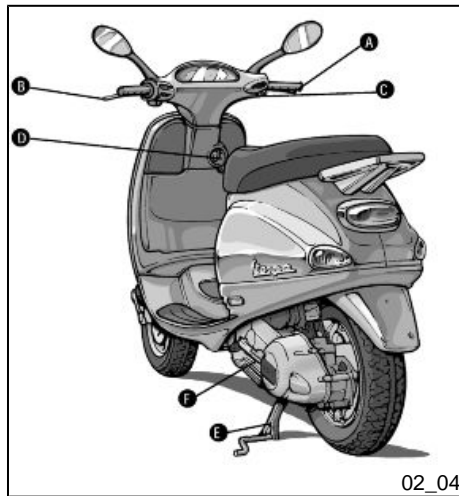
CAUTION



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



02_03



Difficultstartup (02_04)

1. Check fuel level.

2. Check ignition spark plug condition.

A. If the engine is flooded. Open throttle fully and press the starter button for 5 seconds and releasing it for other 5 seconds; follow the same sequence of steps described above. If necessary, repeat this process but do not persist for too long with the starter in the attempt to start the engine.

B. In case of battery or starter motor inefficiency. Place the vehicle on stand «E»; make sure that the rear wheel is off the ground, turn the key switch «D» to "ON" and use kick-starter «F».

C. If fuel tank is empty. After refuelling the scooter, start the engine by pressing the starter button «A» with the throttle at a minimum to provide maximum aspiration for the tap. If the scooter fails to start even after taking the steps described above, contact an **Authorised Piaggio Service Centre**.

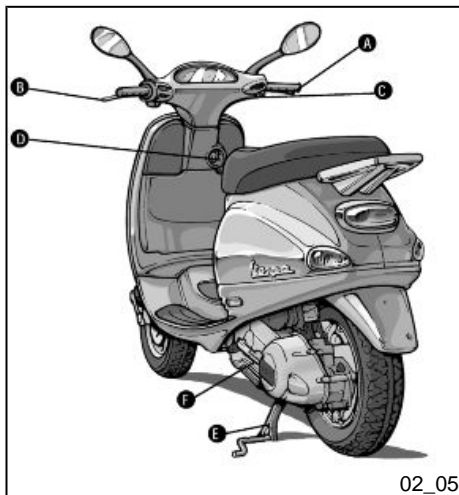
CAUTION



ALWAYS PLACE THE VEHICLE ON ITS STAND BEFORE KICK STARTING.

Stoppingtheengine (02_05)

Stop acceleration, then turn the key switch «D» to «OFF » to stop the engine (extractable key).



02_05

Catalyticsilencer

CAUTION



TAMPERING WITH THE CATALYTIC SILENCER MAY CAUSE SEVERE DAMAGE TO THE ENGINE.

CAUTION



WHEN PARKING THE VEHICLE, DUE TO THE HIGH TEMPERATURES THE CATALYTIC CONVERTER CAN REACH, ALWAYS BE CAREFUL THAT THE MUF-

FLER 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.



Automatictransmission (02_06)

To ensure simple, pleasurable riding, the scooter is equipped with automatic transmission with regulator and centrifugal clutch. The system is designed to give the best possible performance in terms of both acceleration and consumption, on level ground and uphill, thanks to the adjustments made to engine speed and transmitted torque. If you have to stop on an uphill slope (traffic lights, traffic jam, etc.) only use the brake to keep the vehicle still, leaving the motor running at idling speed. Using the motor to keep the vehicle still can cause the clutch to overheat. This problem is due to the friction of the clutch parts on the capstan. It is therefore recommended to avoid conditions of prolonged clutch slippage leading to clutch overheating (for example, besides the situation described before, driving uphill fully laden on steep slopes or starting off at greater than 35%

In countries where carrying passengers is permitted the maximum admissible slope is 24%):

1. Do not continue riding in such conditions.
2. Let the clutch cool down with the engine at idle speed for a few minutes.

Safedriving (02_07)

WARNING



SOME SIMPLE TIPS ARE PROVIDED BELOW WHICH WILL ENABLE YOU TO USE YOUR VEHICLE ON A DAILY BASIS MORE EASILY AND SAFELY.

<

Your ability and your knowledge of the vehicle form the basis of safe riding. We recommend trying out the vehicle in traffic-free zones to get to know your vehicle completely.

ALWAYS DRIVE WITHIN YOUR LIMITS

1. Before riding off, remember to put on your helmet and fasten it correctly.
2. Reduce speed and ride cautiously on uneven roads.
3. Remember that after riding on a long stretch of wet road without using the brakes, the braking effect is initially lower. Under these conditions, it is a good idea to operate the brakes from time to time.
4. Do not brake hard on a wet surface, on dirt tracks or on any slippery road surface.
5. If you have to brake, use both brakes in order to divide the braking action between both wheels.
6. Avoid starting off by mounting the vehicle while it is still resting on its stand. In any case, the rear wheel should not be turning when it comes into contact with the ground, in order to avoid abrupt departures.
7. If the vehicle is used on roads covered with sand, mud, snow mixed with salt, etc., clean the brake disc frequently with mild detergent in order to prevent abrasive substances from building up within the holes, which can result in early wear of the brake pads.



02_07

8. Any elaboration that modifies the vehicle's performances, such as tampering with original structural parts is strictly forbidden by law, and renders the vehicle not conforming to the approved type and therefor dangerous to ride.

CAUTION

RIDING UNDER THE INFLUENCE OF ALCOHOL, DRUGS OR CERTAIN MEDICINES CAN BE EXTREMELY DANGEROUS FOR ONESELF AND FOR OTHERS.

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.

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**Chap. 03
Maintenance**

Huboillevel (03_01, 03_02, 03_03)

Check that there is oil in the rear hub

Recommended products

AGIP GEAR SAE 80W-90

Lubricant for gearboxes and transmissions.

API GL-4

Characteristic

Rear hub oil

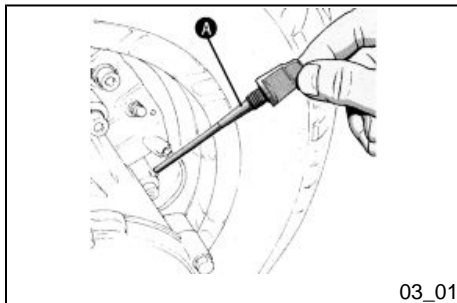
Quantity: approx. 75 cm³

Remove the oil filler cap/dipstick «**A**» Unscrew the oil filler plug «**B**» and drain out all the oil. Screw in the drainage cap again and fill the hub with the specified oil.

Characteristic

Rear hub oil

Quantity: approx. 75 cm³

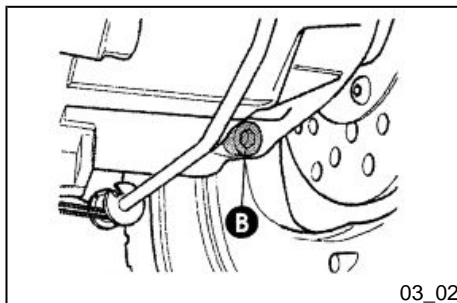


Rest the vehicle on its centre stand on an even surface. Unscrew the dipstick «**A**», dry it with a clean cloth and then reinsert it, **screwing it tightly into place**. Take out the dipstick and check that the oil level reaches the 3rd notch from the bottom. Screw the dipstick back into place completely.

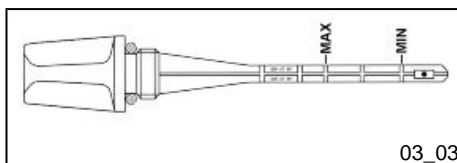
CAUTION



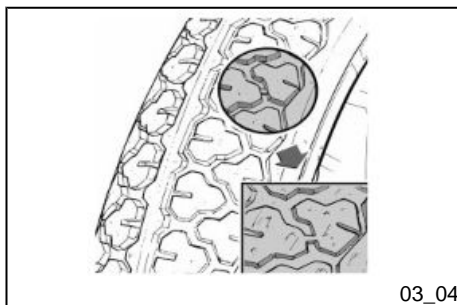
RUNNING THE ENGINE WITH INSUFFICIENT LUBRICATION OR WITH THE INADEQUATE LUBRICANTS ACCELERATES WEAR AND TEAR OF THE MOVING PARTS AND CAN CAUSE IRRETRIEVABLE DAMAGE.



03_02



03_03



03_04



USED OILS CONTAIN SUBSTANCES HARMFUL TO THE ENVIRONMENT. TO HAVE THE OIL CHANGED, CONTACT AN AUTHORISED PIAGGIO SERVICE CENTRE, WHICH ARE EQUIPPED TO DISPOSE OF USED OILS IN ENVIRONMENTALLY-FRIENDLY MANNER AND IN COMPLIANCE WITH THE REGULATIONS IN FORCE.

N.B.

THE NOTCHES ON THE HUB OIL LEVEL DIPSTICK, EXCEPT THE ONE INDICATING THE MAXIMUM AND MINIMUM LEVEL, REFER TO OTHER MODELS BY THE MANUFACTURER AND HAVE NO SPECIFIC FUNCTION FOR THIS MODEL.

Recommended products

AGIP GEAR SAE 80W-90

Lubricant for gearboxes and transmissions.
API GL-4

Tyres (03_04)

Periodically check the inflation pressure of each tire (when they are cool). The tires have wear indicators and must be replaced as soon as the indicators are visible on the tread. Check also for cuts on the tire walls and uneven tread wear. Tires must be changed by authorized mechanics or those equipped for fitting them.

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.

Characteristic

Tyre pressure (rear wheel)

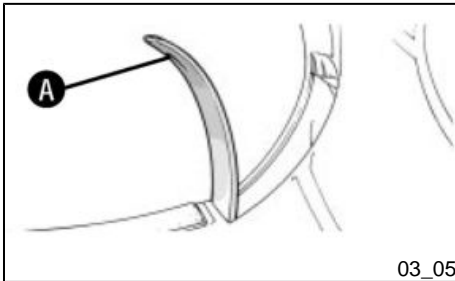
Rear wheel: 1,8 bar

Front tyre pressure

Front wheel: 1.3 bar

Rear wheel (Driver and luggage)

Rear wheel (Driver and luggage): 2 bar



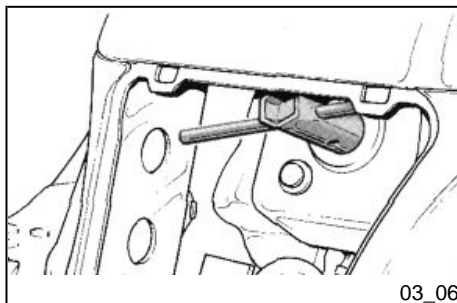
Sparkplugdismantlement (03_05, 03_06)

Remove cover «A» by unscrewing the relevant screw. Remove the shielded plug cap and unscrew the plug with the supplied spark plug wrench. When refitting the plug it should be hand-tightened initially. Be sure to engage the threads properly by holding it at the correct angle. Use the spark plug wrench only to fully tighten the plug. Refit the shielded plug cap carefully. If you need to access the spark plug when the engine is hot, to avoid the risk of burning the hands work from above by tipping open the saddle and removing the helmet compartment. Refit the cover, taking care to engage the interlocking tabs in the lower part of the body panel.

CAUTION



FOLLOW THESE PROCEDURES VERY CAREFULLY TO AVOID ANY SEVERE DAMAGE THAT MAY BE CAUSED BY THE VERY POWERFUL IGNITION SYSTEM.



03_06



THE SPARK PLUG CAN ONLY BE REMOVED WHEN THE ENGINE IS COOL. THE USE OF ELECTRONIC IGNITIONS AND SPARK PLUGS OTHER THAN THE PRESCRIBED TYPES (SEE SECTION TECHNICAL DATA) CAN RESULT IN SERIOUS DAMAGE TO THE ENGINE. THE SPARK PLUG MUST BE CHANGED EVERY 5,000 KM. THE SPARK PLUG MUST BE CHECKED EVERY 5,000 KM. AND CHANGED EVERY 15,000 KM. (INJECTION VEHICLES).

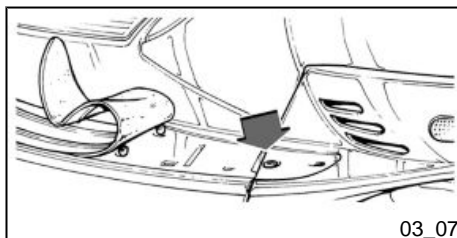
Characteristic

recommended spark plug:

CHAMPION RN3C

Electrode gap

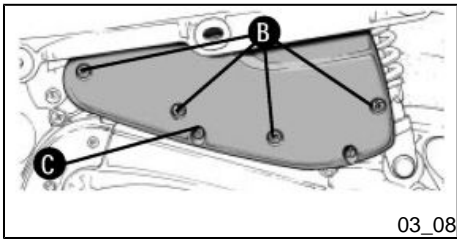
0.6 ÷ 0.7 mm



03_07

Removing the air filter (03_07, 03_08)

Disassemble left hand lower side panel, unscrew the four fixing screws «B» and the two knobs (accessible by tipping the saddle and removing the helmet compartment), remove air cleaner plug «C» and withdraw the filter element



Airfiltercleaning

1. Wash the sponge with water and mild soap.
2. Dry it with a clean cloth and short blasts of compressed air.
3. Impregnate the sponge with a mixture of 50% petrol and 50% specified oil.
4. Gently squeeze the filtering element, let it drip dry and then refit it.

CAUTION



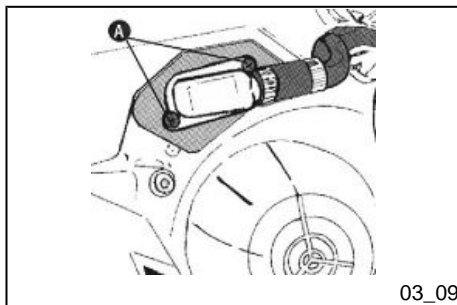
IF THE VEHICLE IS USED ON DUSTY ROADS IT IS NECESSARY TO CARRY OUT MAINTENANCE CHECKS OF THE AIR FILTER MORE OFTEN TO AVOID DAMAGING THE ENGINE.

Recommended products

AGIP FILTER OIL

Special product for the treatment of foam filters.

-



03_09

Secondary air system (03_09)

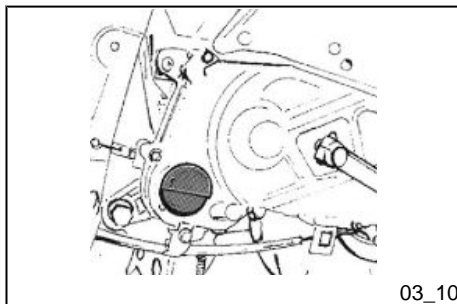
Remove the two screws «A» from the aluminium SAS cover. Release the metal tube from the rubber housing on the cover without extracting the tube from the cover/sleeve. Remove the tab and plastic cover, extract the sponge and wash it in water and soap.

Dry it with compressed air before refitting it, making sure to correctly fit the tab in the housing on the two plastic and aluminium covers. Every time you disassemble the filter, replace the O-ring seal located in the cover.

CAUTION



CONTACT AN AUTHORISED PIAGGIO SERVICE CENTRE TO CARRY OUT THESE OPERATIONS.



03_10

Intake plug (03_10)

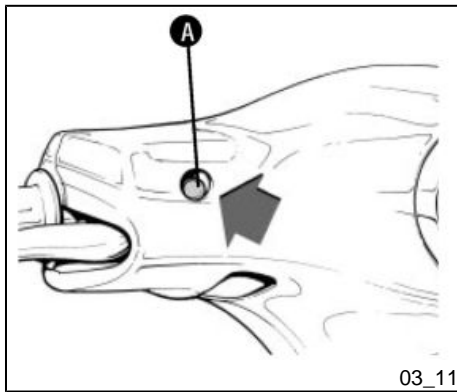
Remove the cap of the transmission cover operating on the corresponding release slots with a plain slot screwdriver. Wash the sponge in water and soap without removing it from its seat.

Dry it with compressed air before refitting it taking care to do so at the correct angle.

CAUTION

WARNING!

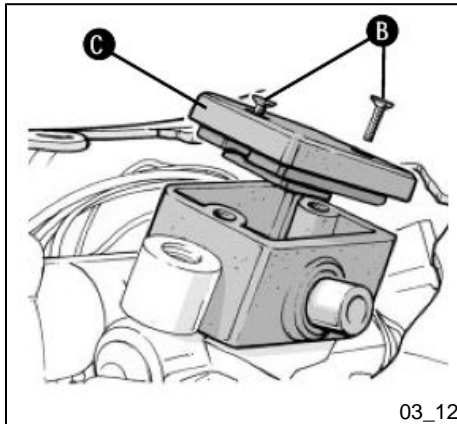
SHOULD THERE BE ANY PROBLEMS WHEN ADJUSTING IDLE SPEED, IT MAY BE NECESSARY TO ADJUST EXHAUST GASES (CO) TOO. TURN TO AN AUTHORISED PIAGGIO SERVICE CENTRE TO CARRY OUT THESE OPERATIONS.



Checking the brake oil level (03_11, 03_12)

The brake fluid reservoir has a sight glass «A» made of transparent (located into the hole drilled in the handlebar cover, right side); the quantity of liquid that can be seen inside the sight glass indicates the quantity of liquid in the reservoir. When sight glass «A» is full, the level inside the reservoir exceeds the Min. mark. When it descends even a little below the maximum level, the oil level is considered to be at Min. When it is empty, the level is below the Minimum. The brake fluid level may fall due to wear on the brake pads. Should the level be below the minimum, the Customer is advised to contact an **Authorised Piaggio Service Centre** for a thorough check of the braking system. Should level be restored, follow the instructions below. Remove the front handlebar cover following instructions indicated in the «Front headlight assembly» section, then unscrew the 2 screws «B», lift the cover of the brake fluid reservoir «C» and add the necessary quantity of fluid (fluid must always be over the minimum level).

Check these levels with the reservoir in a horizontal position, i.e. with the handlebars straight and the scooter perfectly level.



CAUTION



TOP-UPS SHOULD ONLY BE CARRIED OUT WITH DOT4 CLASSIFIED BRAKE FLUID.



DO NOT LET THE HIGHLY CORROSIVE BRAKE FLUID CONTACT PAINTED PARTS. SHOULD THIS OCCUR, IMMEDIATELY WASH OFF WITH WATER.



BRAKING CIRCUIT FLUID IS HYGROSCOPIC, MEANING THAT IT ABSORBS HUMIDITY FROM THE SURROUNDING AIR; IF THE HUMIDITY CONTAINED IN THE BRAKE FLUID EXCEEDS A CERTAIN VALUE, THIS WILL RESULT IN INEFFICIENT BRAKING.

WARNING

IN NORMAL CLIMATIC CONDITIONS IT IS ADVISABLE TO REPLACE THE ABOVE-MENTIONED FLUID EVERY 2 YEAR. NEVER USE BRAKE FLUID CONTAINED IN CONTAINERS WHICH ARE ALREADY OPEN OR PARTIALLY USED.



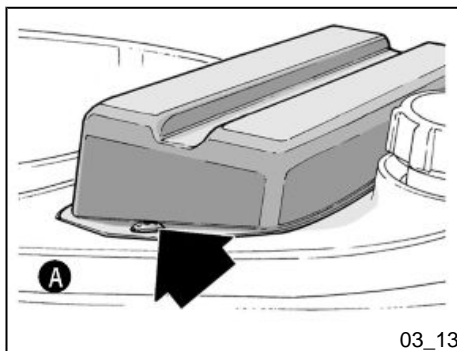
THE (O) SYMBOL ON THE CONTAINER INDICATES THIS IS A SYNTHETIC BRAKE FLUID AND NOT A MINERAL TYPE ONE. USING MINERAL BRAKE FLUID CAUSES IRREPARABLE DAMAGE SPECIALLY TO THE RUBBER GASKETS IN THE BRAKING SYSTEM.

Battery (03_13)

To have access to the battery it is necessary to remove the saddle («Keys» section) and the access hatch to the battery compartment unscrewing the star-head screws «A» shown in the figure

CAUTION

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



CAUTION

ELECTROLYTE CONTAINS SULPHURIC ACID: AVOID CONTACT WITH EYES, SKIN AND CLOTHES. IN CASE OF ACCIDENTAL CONTACT, RINSE WITH ABUNDANT WATER AND CONSULT A DOCTOR.

WARNING

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

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.
- Take your vehicle to a garage (as indicated in the «Vehicle not used for extended periods» section) to have the battery removed. Have the battery cleaned, charged fully and stored in a dry, ventilated place. Recharge **at least once every two months**.

N.B.

THE BATTERY MUST BE CHARGED WITH A CURRENT EQUAL TO 1/10 OF THE RATED CAPACITY OF THE BATTERY AND FOR NOT LONGER THAN 10 HOURS. CONTACT AN AUTHORISED SERVICE CENTRE TO CARRY OUT THIS OPERATION SAFELY. WHEN REFITTING THE BATTERY MAKE SURE THE LEADS ARE CORRECTLY CONNECTED TO THE TERMINALS.

WARNING

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

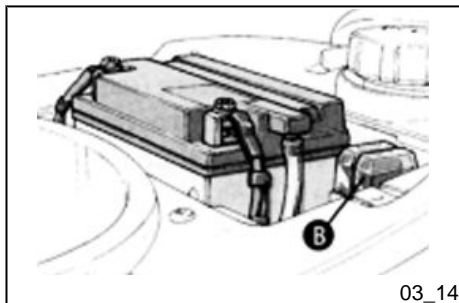
WARNING

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

Fuses (03_14)

The electrical system is protected by a plug fuse «B» located to the left of the battery compartment. The ignition system, headlight and the rear light are not fuse-protected.

Before replacing a blown fuse, find and solve the problem that caused it to blow. Do not substitute the fuse with any alternative form of conductor

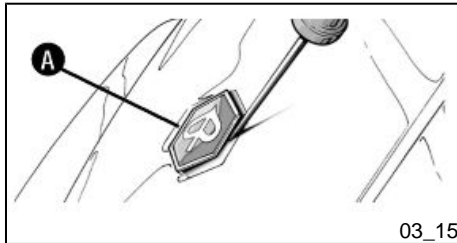


CAUTION

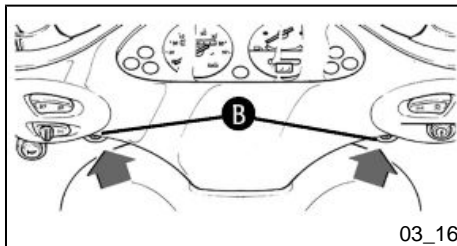
IN ORDER TO AVOID DAMAGING THE ELECTRICAL SYSTEM, NEVER DISCONNECT THE WIRING WHILE THE ENGINE IS RUNNING. DO NOT TIP THE VEHICLE TOO MUCH IN ORDER TO AVOID DANGEROUS LEAKAGE OF THE BATTERY ELECTROLYTE.

Electric characteristic**Fuse**

Fuse valve: 7.5A



03_15

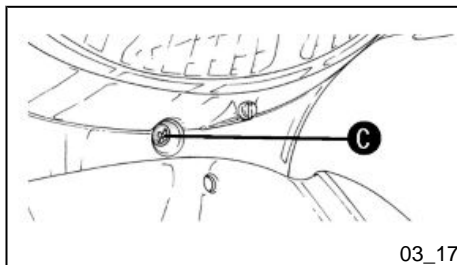


03_16

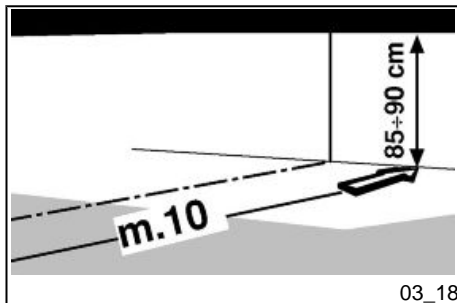
Frontlightgroup (03_15, 03_16, 03_17)

To access the headlight bulb (no. 1 bulb for high and low beam and no. 1 bulb for position light) remove the front of the handlebar fairing as described below:

- 1) Remove the rear-view mirrors as described and illustrated in section «Adjusting the rear-view mirrors»
- 2) Remove the front grille panel by unscrewing screw «A» after having removed the Piaggio shield by means of a screwdriver. Be careful not to scratch the paint.
- 3) Unscrew the 3 screws one at the front «C» and those at the rear «B» that secure the handlebar fairing.
- 4) Then remove the fairing to access the bulbs.



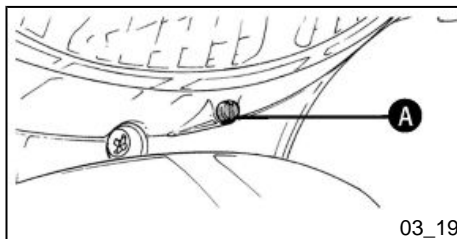
03_17



03_18

Headlight adjustment (03_18, 03_19)

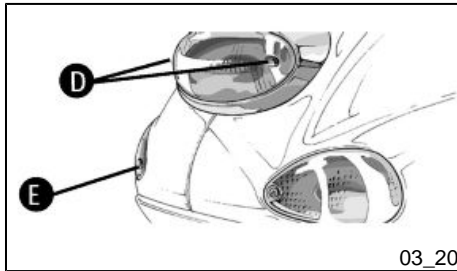
Set the unladen motorscooter on level ground at a distance of 10 m. from a white screen in semi-darkness . Make sure the vehicle axis is at right angles to the screen. Mark the screen with a horizontal line 85-90 cm. from the ground. Start the engine, switch on the headlight lower beam and position it so that the boundary between the brightly illuminated area and the surrounding area is no higher than the line you have drawn. The headlight position is adjusted by means of screw «A» located immediately beneath the headlight as shown in section «Tyre pressure » .



03_19

Frontdirectionindicators

In order to replace the front turn indicator bulbs remove the light taking off the retaining screws, then remove the bulb holder from its support; gently turn the bulb around 30° and remove it. Follow the process in reverse order to refit.



Rearopticalunit (03_20)

To access the taillight, remove the 2 screws «D» that secure it. To access the turn indicator bulbs remove screws «E». The bulbs have a bayonet coupling, to remove them press gently and twist counterclockwise about 30°. To reassemble the parts follow the above steps on the opposite order.

N.B.

IF MISTING IS NOTICED ON THE INSIDE OF THE HEADLAMP GLASS, THIS DOES NOT INDICATE A FAULT AND IS ATTRIBUTABLE TO HUMIDITY AND/OR TO LOW TEMPERATURES.

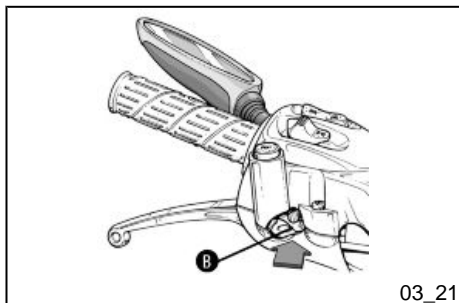
THE PHENOMENON SHOULD QUICKLY DISAPPEAR WHEN THE LIGHT IS SWITCHED ON.

THE PRESENCE OF DROPS OF WATER, ON THE OTHER HAND, COULD INDICATE THAT WATER IS INFILTRATING. CONTACT THE AFTER-SALES SERVICE NETWORK.

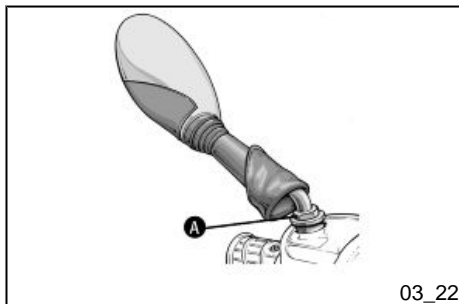
Rear-view mirrors (03_21, 03_22)

To adjust the left mirror position, hold the mirror stem firmly at the desired position and lock the nut «B» with a 13mm box-spanner. The rear view mirror is mounted on the stem with a ball "joint" «A». The mirror can be adjusted to the desired position manually.

Adjust the right wing mirror as shown in the picture; having screwed the stem in the desired position, operate the ball "joint" until correctly aligned.



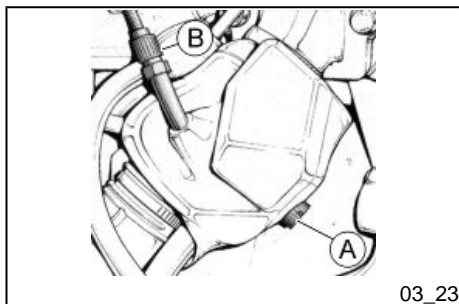
03_21



03_22

Idle adjustment (03_23)

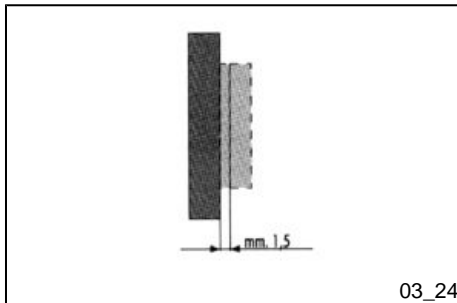
The idle speed is adjusted by means of an idle speed adjuster screw «A» located on the carburetor. See figure to carry out this operation and open the saddle and remove the helmet compartment. Adjust the slack from the throttle cable «B». Be sure to refit the rubber cover when you have completed the adjustment. Adjust the idle speed with the rear wheel off the ground (vehicle on stand) and with a warm engine. Rotate the screw in or out until the engine idles smoothly (around 1700-1900 rpm), **without letting the rear wheel be put into motion by the engine**. If you are unable to carry out this adjustment contact your **Authorized Piaggio Service Center** to have the **minimum CO** (carbon monoxide exhaust emission) level reset.



03_23

CAUTION

WHEN ADJUSTING IDLE SPEED, BE CAREFUL NOT TO TOUCH HOT PARTS OF THE ENGINE TO AVOID BURNS.

**Frontandrear disc brake (03_24)**

The wear of the discs and pads is automatically compensated, therefore it does not have any effect on the brake functions. Because of this it is never necessary to adjust the brakes. If there is excessive elasticity when activating the brake lever, this is due, in all probability, to the presence of air in the circuit or to the irregular functioning of the brake itself. In this case, especially in consideration of the fundamental role that the brakes have in your driving safety, we recommend that you take the vehicle to an **Authorized Piaggio Help Point** in order to have appropriate checks carried out.

CAUTION

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



CHECK THE BRAKE PADS PERIODICALLY (EVERY 5000 KM). IF THE THICKNESS OF ONE OR BOTH PADS IS IN THE REGION OF 1.5 MM, BOTH PADS MUST BE CHANGED. THIS OPERATION SHOULD BE CARRIED OUT BY AN AUTHORIZED PIAGGIO SERVICE CENTER. AFTER FITTING NEW BRAKE PADS DO NOT USE THE MOTORSCOOTER UNTIL YOU HAVE ACTIVATED THE BRAKE REPEATEDLY TO BED IN THE BRAKES AND RESTORE THE LEVER TO ITS CORRECT POSITION.

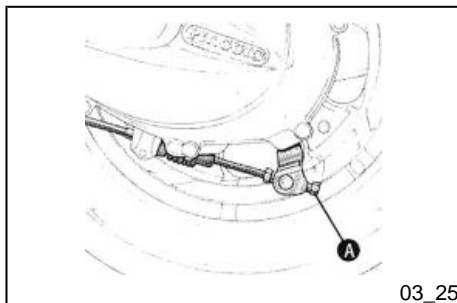
Reardrumbrake (03_25)

Actuate on the set screw «A» indicated on the figure bearing in mind that **the wheel must rotate freely** when the control lever is in neutral.

CAUTION



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



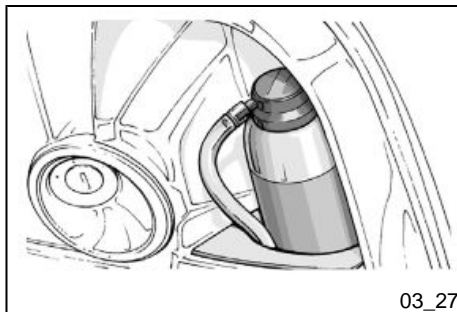
03_25

Puncture (03_26, 03_27)

The scooter is equipped with Tubeless tires. If the tire is punctured, it loses air very slowly, unlike a standard tire with inner tube. This makes for safer riding. Slow deflation also makes it possible to use the "INFLATE AND REPAIR" spray in an emergency. VESPA has a special compartment for this "INFLATE AND REPAIR" which can be purchased separately. The tire must be professionally repaired or replaced at a **Piaggio Service Center**.



03_26



03_27



delveicolo (03_28)

We recommend carrying out the following operations:

1. General cleaning of the vehicle.
2. With the engine off and the piston at the bottom dead centre position, **remove the spark plug**, and pour 1-2 cm³ of recommended oil through its hole. Press the engine start pedal 3 or 4 times letting the engine perform a few revolutions slowly, then replace the spark plug.
3. Drain up all the vehicle fuel; spread antirust grease on the uncoated metal parts; keep the wheels off the ground, by resting the chassis on two wooden wedges.
4. For the battery, follow the procedures described in the «Battery» section.
5. Drain the petrol from the carburettor float chamber through the bleed cap.

Recommended products

eni i-Ride PG 5W-40

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

Cleaningthevehicle (03_29)

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.

WARNING



To avoid the appearance of oxidations, wash the vehicle every time it is used in certain areas or in special conditions of:

- **Environmental / seasonal conditions:** use of salt, de-icer chemical products on the road in winter.
- **Air pollution:** city and/or industrial areas.
- **Salinity and humidity of the atmosphere:** marine areas, hot and wet weather.

WARNING



- **Prevent deposits from remaining on the bodywork, industrial and pollutant residual dust, tar spots, dead insects, bird droppings, etc.**
- **Do not park the vehicle under the trees. In some seasons, in fact, residues, resins, fruits or leaves may fall from the trees, containing chemicals that are harmful to the paintwork.**



03_29

CAUTION

DETERGENTS POLLUTE WATER. THEREFORE THE VEHICLE SHOULD BE WASHED IN AN AREA EQUIPPED FOR THE COLLECTION AND PURIFICATION OF THE LIQUIDS USED.

WARNING

NEVER WASH THE VEHICLE UNDER DIRECT SUNLIGHT, ESPECIALLY IN SUMMER WHEN THE BODYWORK IS STILL HOT, AS THE CAR SHAMPOO MAY DRY BEFORE BEING RINSED OFF, AND COULD DAMAGE THE PAINTWORK. NEVER USE RAGS SOAKED IN PETROL OR DIESEL OIL TO CLEAN THE PAINTED OR PLASTIC SURFACES, IN ORDER TO PREVENT THEM LOSING THEIR SHINE AND MECHANICAL CHARACTERISTICS.

WARNING

WHEN WASHING THE ENGINE WITH A HIGH-PRESSURE WATER JET:

- **ONLY USE FAN SPRAY JETS.**
- **DO NOT PLACE THE NOZZLE CLOSER THAN 60 CM.**
- **DO NOT USE WATER AT TEMPERATURES OVER 40° C.**
- **DO NOT DIRECT THE JETS DIRECTLY TO CARBURETTOR, WIRINGS, SLOT DIFFUSERS ON THE TRANSMISSION COVER AND SCROLL COVER.**

START-UP PROBLEMS

No fuel in tank	Refuel
Filters, jets or carburettor body dirty or clogged.	Contact an Authorised Service Centre.
Insufficient battery charge	Kick-start. Recharge the battery.

IGNITION PROBLEMS

No spark from spark plug. Due to the presence of high voltage, this element should only be checked by an expert.	Contact an Authorised Piaggio Service Centre
--	---

LACK OF COMPRESSION

Spark plug loose. Loose cylinder head, worn piston retaining rings.	Contact an Authorised Service Centre.
---	--

HIGH CONSUMPTION AND LOW PERFORMANCE

Air filter blocked or dirty.	Clean with water and shampoo and impregnate with petrol and specific oil («Air filter removal» section)
------------------------------	---

INSUFFICIENT BRAKING

Oil on drum or disc. Worn Pads/ Shoes	Contact an Authorised Service Centre
--	---

Rear brake incorrectly adjusted. Air in the front brakes circuit	Turn to an Authorised Piaggio Service Centre
---	---

INEFFICIENT SUSPENSION

Oil leak; worn limit switch bumpers; worn shock absorber attachment points	Contact an Authorised Service Centre
--	---

AUTOMATIC TRANSMISSION PROBLEMS

Deteriorated roller housing or belt.	Contact an Authorised Service Centre.
--------------------------------------	--

INCREASED EXHAUST NOISE

Deterioration of the SAS system and/or of the tab	Contact an Authorised Service Centre.
--	--

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Chap. 04
Technical data

DATA

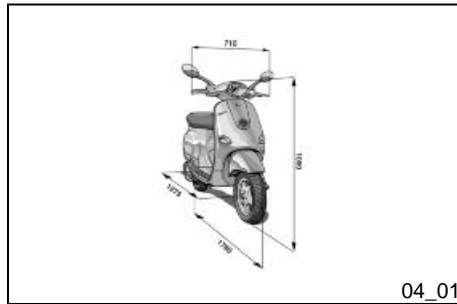
Version	50 cc
ENGINE	single cylinder; 2-stroke
Bore x stroke	40 X 39.3 mm
Piston displacement	49,4 cm ³
Compression ratio	10,3:1
Ignition advance (before tdc)	Fixed to 17°
Carburettor Weber	12 OM
Carburettor Dellorto	PHVA 12
Spark plugs	CHAMPION RN3C
Max. speed	According to current legislation

SPECIFICATION

Maximum width	710 mm.
Maximum length	1780 mm.
Maximum height	1090 mm.
Wheel base	1275 mm.
Fuel	Unleaded gasoline-oil mixture and carburetor. Automatic vacuum tap.
Fuel intake	Reed valve on crankcase.

Lubrication	Separate lubrication of engine (piston, cylinder, crankshaft, main bearings) with oil supplied by mixer pump with variable flow rate in relation to engine speed and throttle position.
Cooling	Forced air cooling with air duct and scroll-shaped fan cover with sound-proofing.
Transmission	Expanding pulley type automatic speed variator with vee belt, centrifugal clutch, torque regulator and gear final drive
Oil mixer tank	In plastic, of capacity ~ 1,35 lt. (including reserve ~ 0.400 lt.)
Topping up mixer oil reservoir	Topping up oil reservoir: 0.5 ÷ 0.7 l
Fuel tank	Plastic, capacity ~ 8.6 l. (including ~ 1.5 l. reserve).
Front suspension	Steering tube with single fork arm; double acting shock absorber with coil spring.
Rear suspension	Swing arm and single chamber double acting hydraulic shock absorber with coil spring.
Front wheel	Front rims 2.5x10"
Rear wheel	With 3 X 10" rims
Front tyre	100/80-10"
Rear tyre	120/70-10"
Exhaust system	Expansion chamber absorption type.

Electronic ignition	Electronic ignition device with incorporated HV coil.
Frame	Structural frame in pressed sheet steel
Front disc	Front disc brake (200 mm. diameter) with hydraulic linkage (lever on right end of handlebars).
Rear brake	(Ø 110 mm) drum brake with expanding shoes, mechanically controlled (lever on the handlebar left hand end).
Curbside weight	98 Kg.
Maximum load	Driver only.



Toolkit

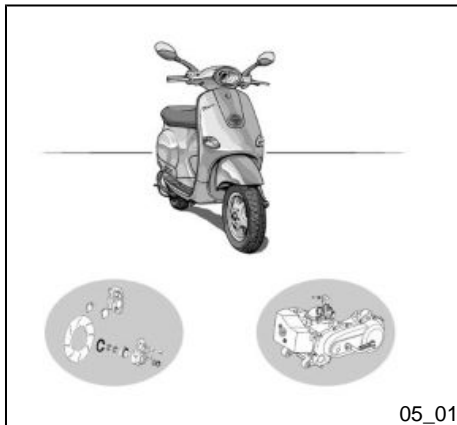
Wrenches: one box wrench (13-21 mm); one lever bar for box wrench; one double screwdriver and an Allen wrench. The tools are located in a toolbox under the saddle.

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Chap. 05
Spareparts and
accessories



Warnings (05_01, 05_02)

WARNING



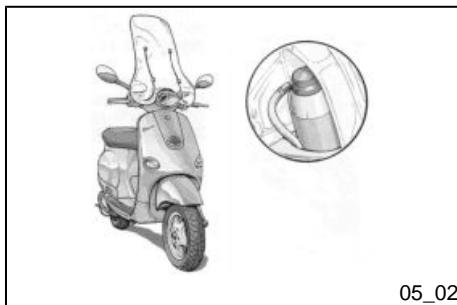
IT IS RECOMMENDED THAT "ORIGINAL PIAGGIO SPARE PARTS" BE USED, AS THESE ARE THE ONLY ONES OFFERING YOU THE SAME QUALITY ASSURANCE AS THOSE INITIALLY FITTED ON THE VEHICLE.

IT SHOULD BE REMEMBERED THAT USING NON-ORIGINAL SPARE PARTS CAUSES YOUR WARRANTY RIGHTS TO EXPIRE.

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.



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Chap. 06
Scheduled maintenance



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 any further information concerning Warranty procedures and 'Scheduled Maintenance', please refer to the 'Warranty Booklet'.

MAINTENANCE TABLE

km x 1,000	1	5	10	15	20	25	30	35	40	45	50	55	60
Safety fasteners	I		I		I		I		I		I		I
Spark plug		I	R	I	R	I	R	I	R	I	R	I	R
Drive belt			I	R	I		R		I	R	I		R
Mixer belt					R				R				R
Throttle control - mixer	A	A	A	A	A	A	A	A	A	A	A	A	A
Air filter		C	C	C	C	C	C	C	C	C	C	C	C
SAS filter			I	C	I		C		I	C	I		C
Electrical system and battery	I	I	I	I	I	I	I	I	I	I	I	I	I
Cylinder ventilation system					I				I				
Brake levers	L	L	L	L	L	L	L	L	L	L	L	L	L

km x 1,000	1	5	10	15	20	25	30	35	40	45	50	55	60
Brake fluid **	I	I	I	I	I	I	I	I	I	I	I	I	I
Mixer	I	I	I	I	I	I	I	I	I	I	I	I	I
Mixer oil*	I	I	I	I	I	I	I	I	I	I	I	I	I
Hub oil	R	I	R	I	R	I	R	I	R	I	R	I	R
Headlight direction adjustment			A		A		A		A		A		A
Brake Pads/Shoes	I	I	I	I	I	I	I	I	I	I	I	I	I
Sliding shoes / CVT rollers			R		R		R		R		R		R
Tyre pressure and wear	I	I	I	I	I	I	I	I	I	I	I	I	I
Vehicle road test	I	I	I	I	I	I	I	I	I	I	I	I	I
Idle speed	A		A		A		A		A		A		A
Odometer gear	L		L		L		L		L		L		L
Suspension			I		I		I		I		I		I
Steering	A		I		I		I		I		I		I
Transmission			L		L		L		L		L		L
Mixer oil pipes	I		I		I		I		I		I		I

I: INSPECT AND CLEAN, ADJUST, LUBRICATE OR REPLACE, IF NECESSARY

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

Clean the SAS air filter every 2 years

** Check level every 500 km*

*** Replace every 2 years*

RECOMMENDED PRODUCTS TABLE

Product	Description	Specifications
AGIP GEAR SAE 80W-90	Lubricant for gearboxes and transmissions.	API GL-4
AGIP BRAKE 4	Brake fluid.	Synthetic fluid SAE J 1703 - FMVSS 116 - DOT 3/4 - ISO 4925 - CUNA NC 956 DOT 4
eni i-Ride PG 5W-40	Synthetic based lubricant for high-performance four-stroke engines.	JASO MA, MA2 - API SL - ACEA A3
AGIP FILTER OIL	Special product for the treatment of foam filters.	-
eni i-Ride PG 2t	Synthetic based lubricant for low smoke 2-stroke engines and additives.	API TC - JASO FC - ISO-L-EGD
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

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