

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.

Vespa LXV 125 3V ie - 150 3V ie



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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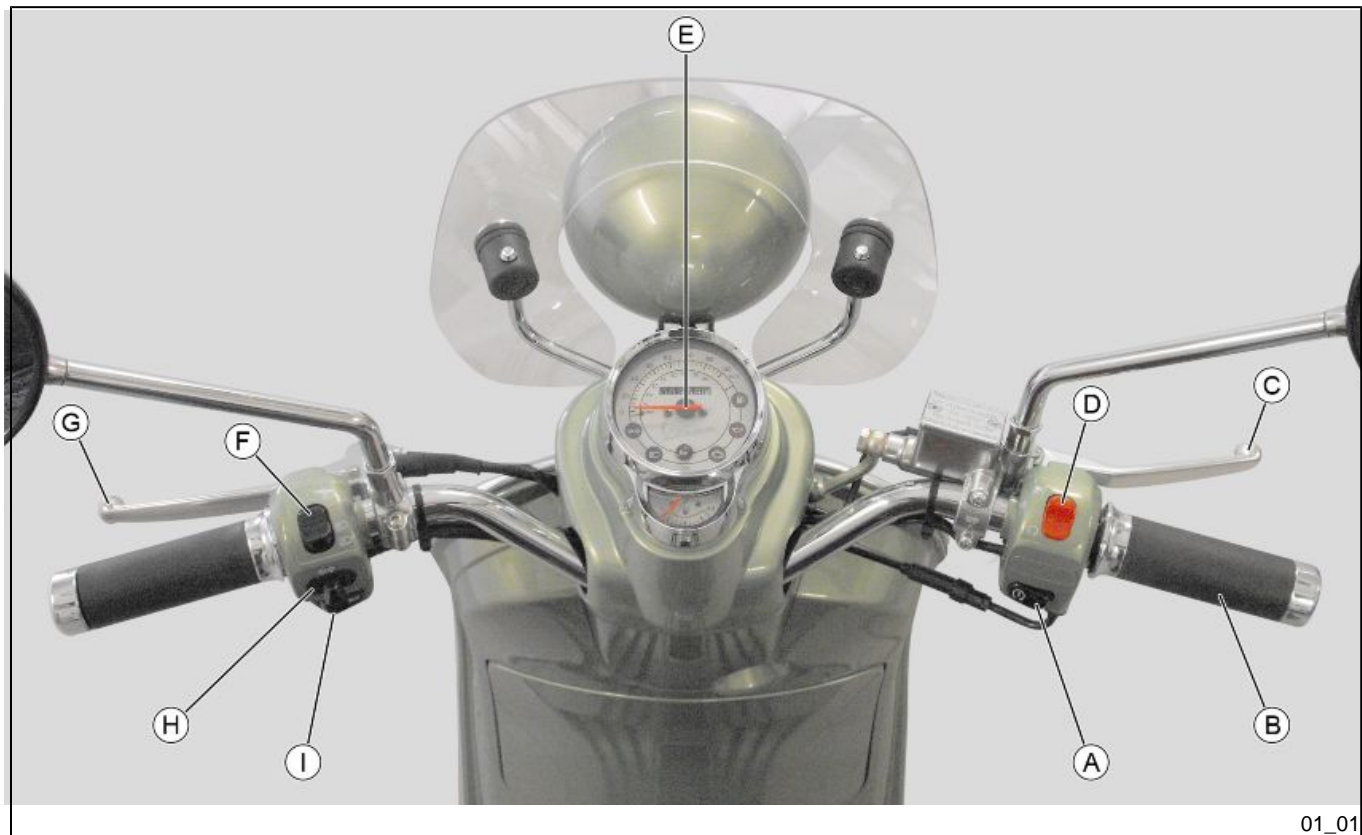
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**Chap. 01
Vehicle**



01_01

Dashboard (01_01)

A = Starter button

B = Throttle grip

C = Front brake lever

D = Run Off switch

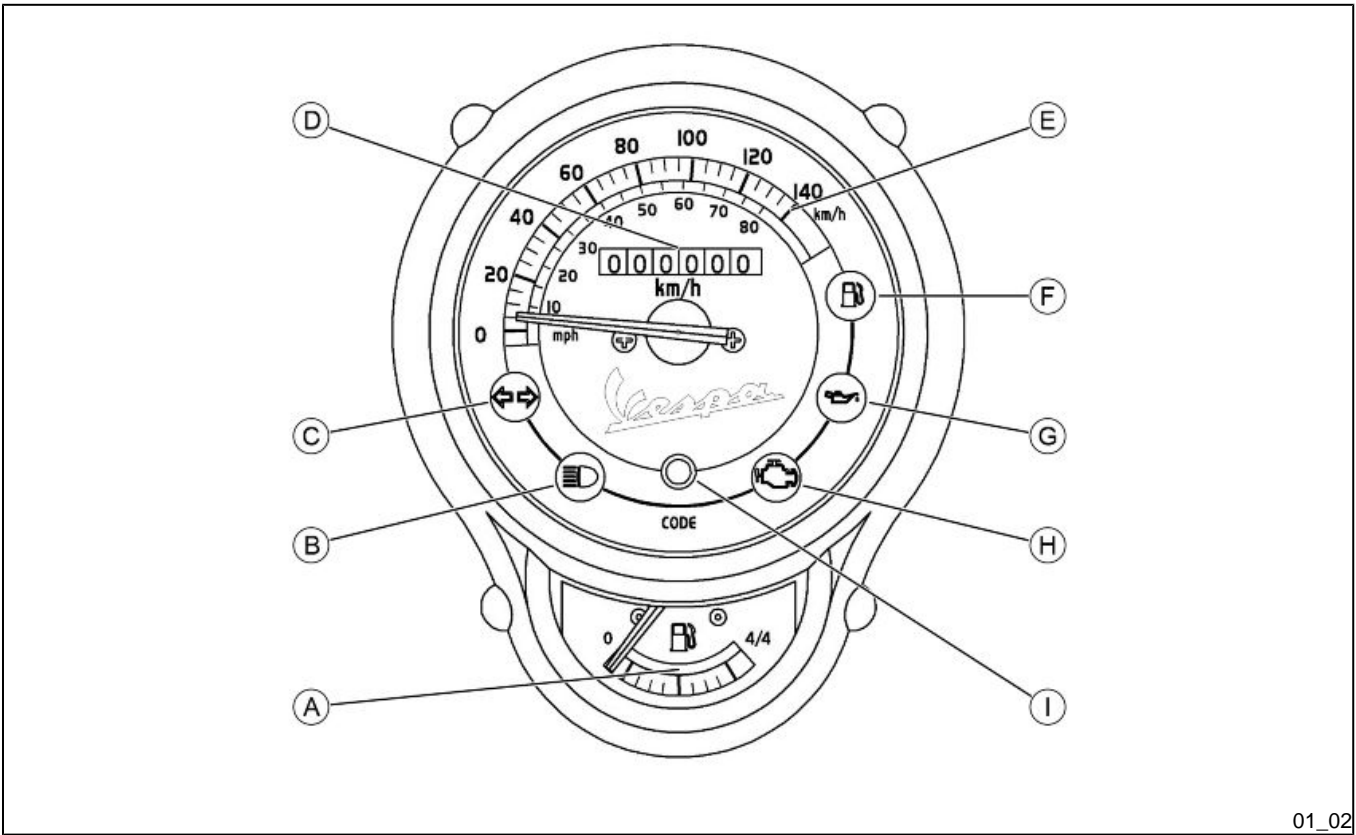
E = Instrument panel

F = Headlight switch

G = Rear brake lever

H = Turn indicators switch

I = Horn button



01_02

Analogue instrument panel (01_02)

A = Fuel gauge

B = High-beam warning light

C = Turn indicator warning light

D = Trip Counter

E = Speedometer

F = Low fuel warning light

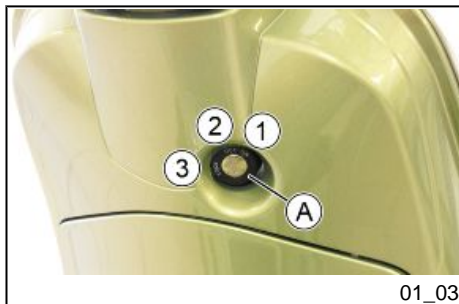
G = Low engine oil pressure warning light

H = Engine control telltale light

I = Immobilizer LED warning light

Keyswitch (01_03)

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



SWITCH POSITIONS

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

OFF «2»: Ignition disabled, extractable key, mechanical antitheft device disabled.

LOCK «3»: Ignition disabled, extractable key, mechanical antitheft device enabled.



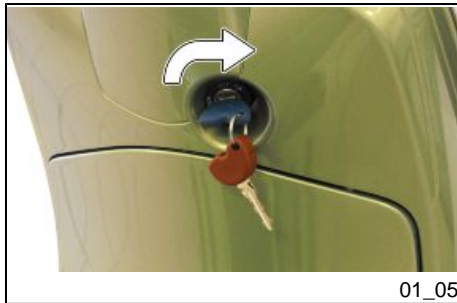
Locking the steering wheel (01_04)

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

CAUTION



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



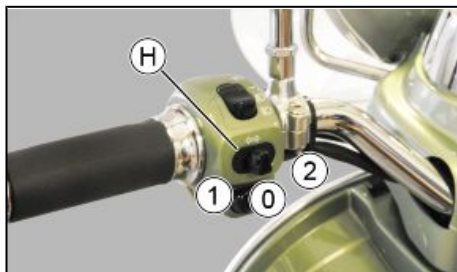
Releasing the steering wheel (01_05)

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

CAUTION



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



01_06

Switch direction indicators (01_06)

Lever «H» towards «1» = left turn indicators ON;

Lever «H» towards «2» = right turn indicators ON;

Lever «H» goes back into position «0» automatically and the turn indicators stay ON; press lever «H» to turn them off.



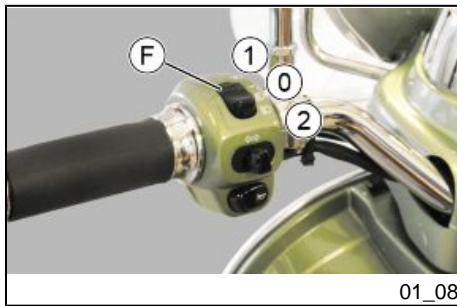
01_07

Horn button (01_07)

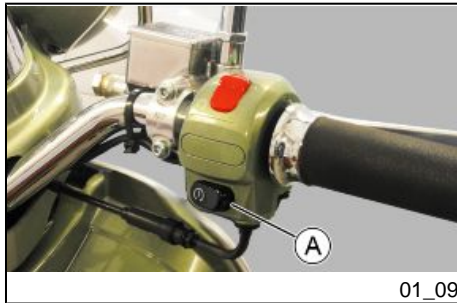
Press the «I» button to sound the horn.

Light switch (01_08)

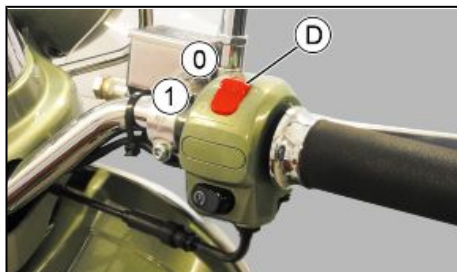
When the light switch «F» is in position «0» the low-beam light is ON; when it is in position «1» the high-beam light is ON. By pressing and releasing the switch in position «2» the high-beam light flashes.

**CAUTION**

DO NOT PLACE, TRANSPORT OBJECTS AND/OR CLOTHES OVER THE FRONT HEADLIGHT ASSEMBLY, WHEN THE HEADLIGHT IS TURNED ON OR OFF. FAILURE TO FOLLOW THIS PRECAUTION MAY CAUSE OVERHEATING AND THE SUBSEQUENT FUSION OF THE GLASS.

**Start-up button (01_09)**

To start the engine press push button «A» after having pulled one of the two brake levers.



01_10

Engine stop button (01_10)

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

CAUTION



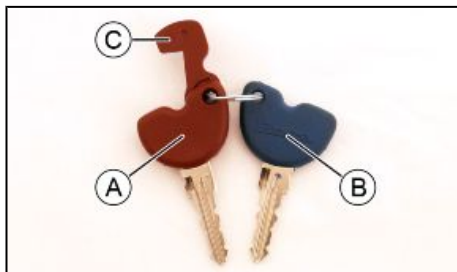
WHILE RIDING OPERATE THE ENGINE STOP SWITCH ONLY IN CASE OF EMERGENCY.

The immobilizer system

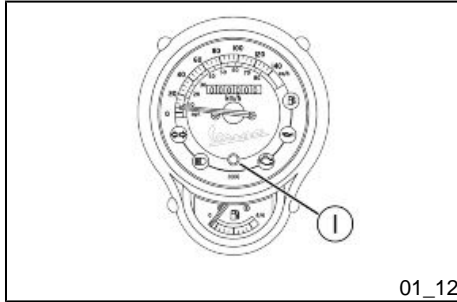
In order to enhance theft protection, the vehicle is equipped with a «**PIAGGIO IMMOBILIZER**» electronic engine locking device that is activated automatically when the ignition key is removed. Upon start-up, the «**PIAGGIO IMMOBILIZER**» system checks the starter key, and only if this key is recognised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

Keys (01_11)

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.



01_11



WARNING



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

Immobilizer device enabled indicator led (01_12)

Activation of the «**PIAGGIO IMMOBILIZER**» system is signalled by a flashing warning light «**I**» (see the "Analogue instrument panel" section).

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 be provided by an **Authorised Piaggio-Gilera Service Centre** with information on the type of fault detected.

Operation

Every time the ignition key is removed in the "OFF" or "LOCK" position, the safety system activates the immobilizer system. Turning the key 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 key first to "OFF" and then to "ON"; if the lock cannot be disabled, try with the other key supplied (brown). If the engine cannot be started, contact an **Authorised Piaggio Service Centre**, which is provided with the electronic equipment required to detect and repair the system. The Immobilizer is also activated by switching off the engine with the **RUN OFF** switch. This happens even if the starter key is in «ON».

When additional keys are required, please note that data storage (up to 3 keys max.) must be done on all keys, both new ones and existing ones. Take the key with the brown grip and all the blue keys supplied to an **Authorised Piaggio Service Cen-**

tre. The codes of keys not submitted for the new programming procedure are deleted from the memory. Any lost 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.

SHOULD THE VEHICLE CHANGE OWNER, IT IS ABSOLUTELY NECESSARY THAT THE NEW OWNER GET POSSESSION OF THE KEY WITH THE BROWN GRIP (AS WELL AS ALL OTHER KEYS).

Programming the immobilizer system

Below is described the procedure to follow for programming the **PIAGGIO IMMOBILISER** system and/or for storing other key codes.

Procedure start-brown key

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

Intermediate step-blu key

After extracting the brown key, insert the blue key within 10 seconds and promptly turn it to «**ON**». After 1-3 seconds, turn the key to «**OFF**» again and pull it out.

In this way, a maximum of 3 blue keys can be programmed by repeating the above procedure and keeping the indicated times.

Final step-brown key

After extracting the last blue key, insert the brown key again and turn it to «**ON**» (carry out this operation within 10 seconds after extracting the previous key). Leave it in this position for 1 to 3 seconds and return it to «**OFF**».

Proper programming check

Insert the brown key, disabling the transponder (i.e., by tilting the key hood by 90°), and turn the key to the «**ON**» position. Perform the engine starter operation. Ensure that the engine does not start. Insert the blue key and repeat the start-up operation. Check that engine starts.

WARNING

IF THE ENGINE STARTS WITH THE BROWN KEY (AND WITH A DISABLED TRANSPONDER) OR IF DURING THE PROGRAMMING A WRONG STEP HAS BEEN CARRIED OUT, IT IS NECESSARY TO REPEAT THE PROCESS FROM THE BEGINNING.



01_13

Fuel tank (01_13)

The fuel tank cap «A» is under the saddle. To reach it, tip the saddle forwards.



01_14

The saddle (01_14)

To maintain the characteristics of the saddle, we recommend the following devices: Protect it against atmospheric agents during stops with the supplied waterproof cover placed under the saddle.

In the event of forced and prolonged exposure to water, dry it away from heat sources, do not use alcohol, solvent based products and pay particular attention to the petrol when refuelling.

In case of stains, dry the area and if necessary clean it with warm water and neutral soap.

To avoid the removal of the waterproof cover of the saddle when the vehicle is unattended, we recommend using the hook near the saddle hinge as retainer.



Opening the saddle (01_15)

Insert the key into the saddle lock «A», turn it anticlockwise and tip the saddle forward.

Identification (01_16, 01_17)

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_16

Chassis number

The chassis number «**A**» is stamped near the battery compartment.

To read it proceed as follows:

- lift the saddle;
- lift the helmet compartment by removing it.



01_17

Engine number

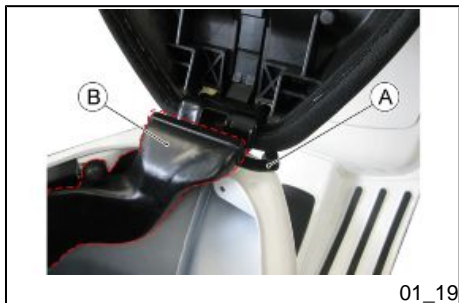
The engine number «**B**» is stamped near the rear left shock absorber lower support.



01_18

Rear top box opening (01_18)

Turn the key to «**OFF**». Then press it. When the key is set to «**LOCK**», the glove-box is locked.



Helmet Anti-theft Device (01_19)

When lifting the saddle, as described in paragraph «Saddle opening», you can reach the anti-theft device «A» at which it is possible to secure a helmet.

CAUTION



IN ORDER TO AVOID ENDANGERING THE STABILITY WHEN RIDING, DO NOT RIDE THE SCOOTER WITH THE HELMET INSERTED INTO THE ANTITHEFT DEVICE.

CAUTION



THE INDICATED COMPONENT «B» REPRESENTS THE AIR INTAKE OF THE MOTOR: DO NOT OBSTRUCT EXTERNALLY OR INTERNALLY, WITH ANY OBJECT, THE ENDS UNDER THE SADDLE, IN ORDER TO AVOID SERIOUS ENDANGERING OF THE VEHICLE.

WARNING



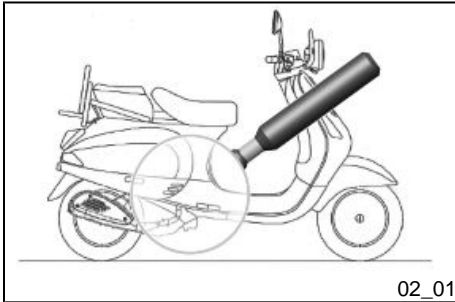
THIS ACCESSORY IS NOT A THEFT PREVENTION GUARANTEE, IT IS ONLY A DETERRENT.

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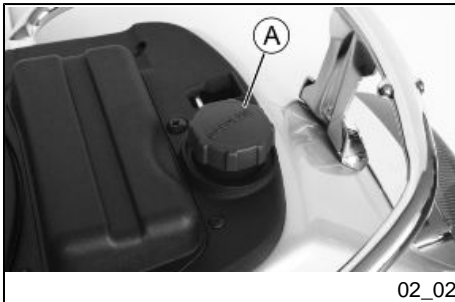
Chap. 02
Use



Checks (02_01)

Before using the vehicle, check:

1. That the fuel tank is full.
2. Rear hub oil level.
3. Engine oil level (see the «Engine oil level» section).
4. That the tyres are properly inflated.
5. The correct functioning of headlights, rear light and turn indicators.
6. The correct functioning of front and rear brakes.



Refuelling (02_02)

Fill fuel tank «A» with unleaded petrol (minimum octane rating = 95).

When the fuel reaches the low fuel level, the warning light on the instrument panel lights up.

CAUTION



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

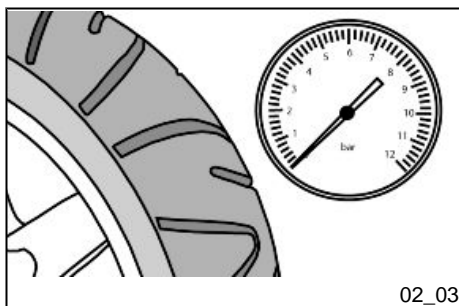
CAUTION

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

FUEL TANK CAPACITY

Fuel tank (reserve)

~7.0 ± 0.5 l (~2.5 l)

**Tyre pressure (02_03)**

Check tyre pressure as indicated in the scheduled maintenance table.

CAUTION

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

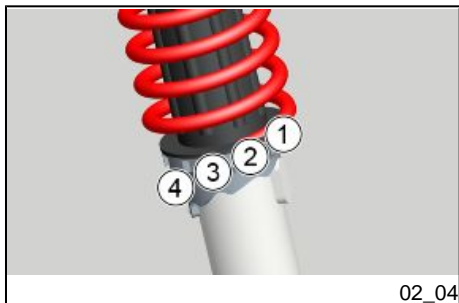
TYRES MUST BE REPLACED WHEN THE TREAD REACHES THE WEAR LIMITS SET FORTH BY LAW.

TYRE INFLATION PRESSURE

Front tyre pressure	1.6 bar
Rear tyre pressure (with passenger)	2.0 bar (2.3 bar)

TYRES

Front tyre	Tubeless, 110/70 - 11" 45L
Rear tyre	Tubeless, 120/70 - 10" 54L



Shock absorbers adjustment (02_04, 02_05)

The preloading of the spring can be adjusted to 4 positions using the ring nut located in the lower part of the shock absorbers and the specific spanner supplied.

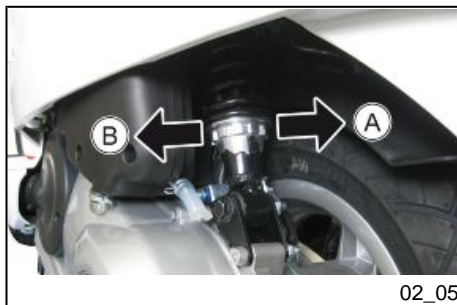
Position 1: minimum preload: rider only

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**

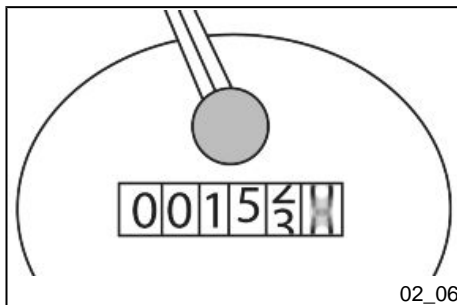
RIDING THE VEHICLE WITH THE SPRING PRELOADING NOT CORRECTLY SET FOR THE RIDER AND POSSIBLE PASSENGER, COULD REDUCE THE COMFORT OF THE RIDE AND THE PRECISION OF THE STEERING.

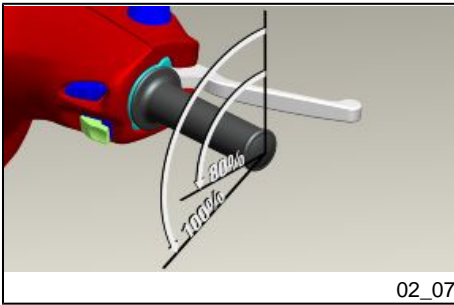
WARNING

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

Running in (02_06, 02_07)**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_08, 02_09, 02_10, 02_11)

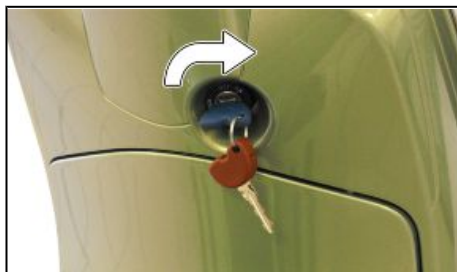
The vehicle is equipped with automatic transmission with direct drive, so that starting is effected by turning the throttle grip to idle speed; to start-off from stationary position, progressively twist the throttle grip.

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.

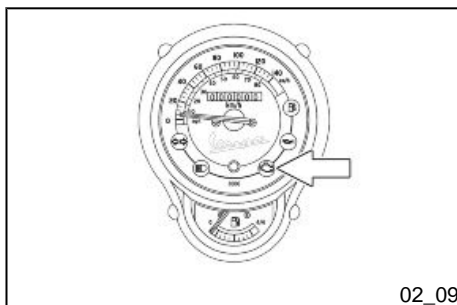
To start it up, it is necessary to:

- Rest the vehicle on its centre stand, ensuring the rear wheel is not touching the ground.
- Keep the throttle grip to idle speed.



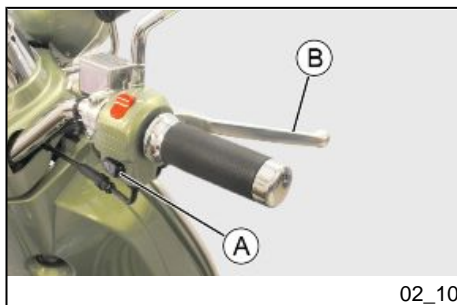
02_08

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



02_09

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



02_10

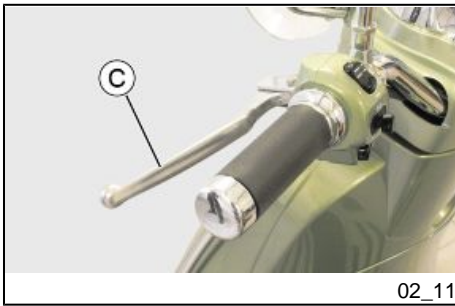
- To start the engine, pull either of the two brake levers «**B-C**» and then push the button «**A**».

The vehicle is equipped with special starter procedure management. The starter motor remains active until the engine starts even if switch «**L**» 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_11

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.

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 OVERREVING, 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.

WARNING

DO NOT RIDE THE SCOOTER AT MAXIMUM REVS FOR A LONG TIME; EVEN THOUGH THE ENGINE IS PROVIDED WITH AN ELECTRONIC REVOLUTION LIMITER, DO NOT DO ACCELERATE AT MAX REVS FOR A LONG TIME AS THIS COULD CAUSE OVERHEATING AND THE CATALYTIC CONVERTER CAN BE DAMAGED.

Difficult start up

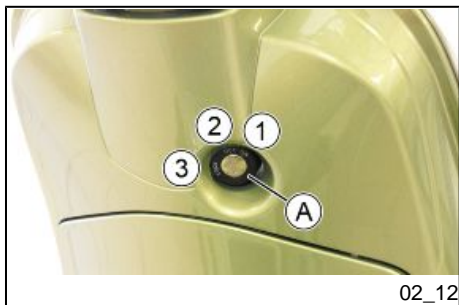
Follow carefully the procedure described in the «**Engine start-up**» section

WARNING

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

CAUTION

IF NECESSARY, CONTACT AN AUTHORISED SERVICE CENTRE.



02_12

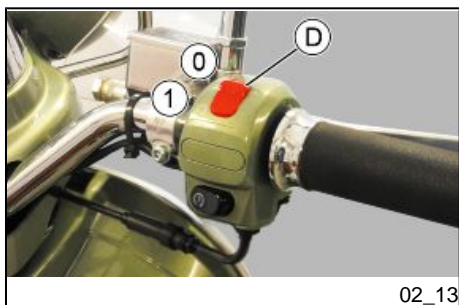
Stopping the engine (02_12, 02_13)

After the vehicle has been stopped, turn the ignition key «A» to position «2» OFF or put the engine stop switch «D» on «0» OFF.

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_13



02_14

Anti-theft ring (02_14)

The ring shown in the figure, located on the right side of the vehicle is used to fasten the vehicle to a stable object using a vehicle chain. Do not use the ring for other purposes.

WARNING

THIS ACCESSORY IS NOT A THEFT PREVENTION GUARANTEE, IT IS ONLY A DETERRENT.

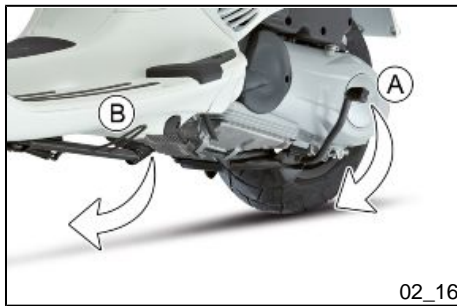
Catalytic silencer (02_15)**CAUTION**

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

CAUTION

DUE TO THE HIGH TEMPERATURES THAT CAN BE REACHED IN THE CATALYTIC CONVERTER, WHEN PARKING THE VEHICLE, PAY ATTENTION TO THE MUFFLER: TO AVOID SERIOUS BURNS OR FIRE, THE MUFFLER SHOULD NEVER COME INTO CONTACT WITH FLAMMABLE MATERIALS.





Stand (02_16)

CENTRE STAND:

Lower the centre stand «A» by kicking the bracket while pulling the vehicle backward, holding onto the handlebar.

SIDE STAND:

With your foot push the projection of the side stand «B» in order to open it and at the same time lean the vehicle on you. There is a switch that hinders the vehicle starter with lowered stand.

WARNING



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

WARNING



TAMPERING MAY CAUSE SERIOUS ENGINE MALFUNCTION.

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.

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.

Automatic transmission

To ensure simple, pleasurable riding, the vehicle 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 clutch bell. It is therefore recommended to avoid conditions of prolonged clutch slippage leading to clutch overheating (for example, as well as the situation described above, riding uphill fully laden on steep slopes or starting off on slopes greater than 25%, etc.):

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

Safe driving

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 RIDE WITHIN YOUR LIMITS

1. Before riding off, remember to put the helmet on and fasten it correctly.
- 2.Reduce speed on rough roads and ride with caution.
- 3.Remember that after riding on a long stretch of wet road without using the brakes, braking can be poor at the beginning. Under these conditions, it is a good idea to operate the brakes from time to time.
- 4.Do not brake hard on wet, unsurfaced or slippery roads.
- 5.If you have to brake, use both brakes in order to spread the braking action between both wheels.
- 6.Avoid riding off by mounting the scooter when it is resting on its support. 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 brake discs frequently with a mild detergent in order to avoid the formation of abrasive substances in the holes, which could result in early wear of the brake pads.
- 8.Remember that any change that modifies the vehicle's performance, such as tampering with original structural parts, renders the vehicle not conforming to the approved type and therefore 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.

Rear rack (02_17)

The vehicle is equipped with a rear luggage rack, we recommend not exceeding the maximum allowed load.

WARNING

Maximum admissible load: 6 kg



Vespa LXV 125 3V ie - 150 3V ie

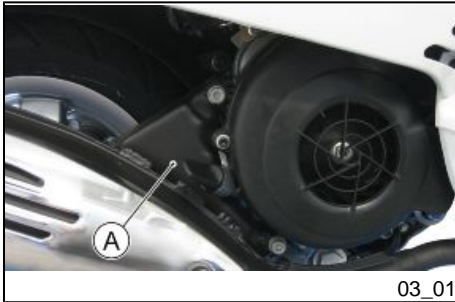
Vespa®



**Chap. 03
Maintenance**

Engine oil level

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

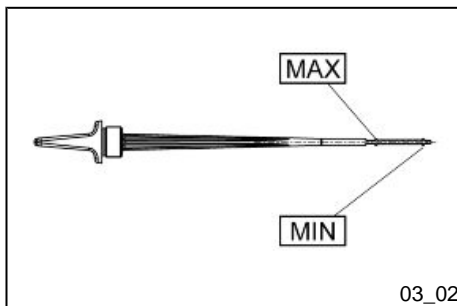


03_01

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.

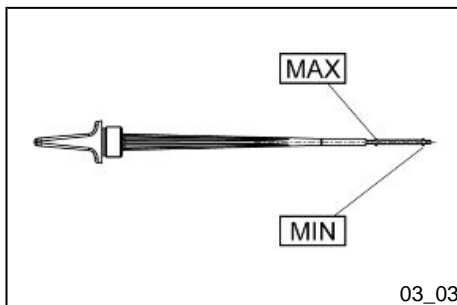


03_02

ENGINE OIL CAPACITY

Engine oil

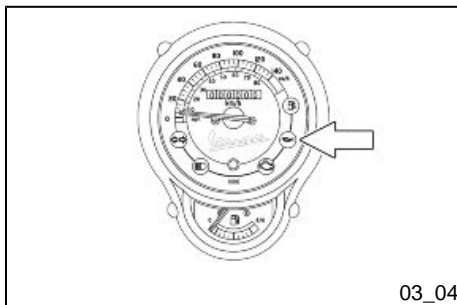
1,340 cm³ (of which 120 cm³ in the filtering cartridge)



03_03

Engine oil top-up (03_03)

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



03_04

Warning light (insufficient oil pressure) (03_04)

The vehicle is equipped with a warning light that comes on when the key is turned to «ON». However, this light should 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.**



03_05

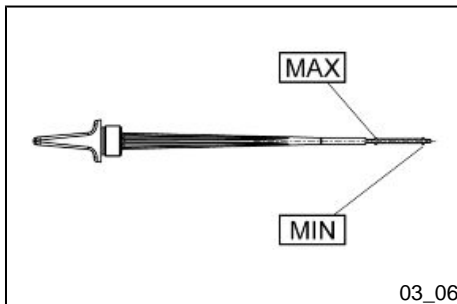
Engine oil change (03_05, 03_06, 03_07)

The oil and the cartridge filter «C» must be changed as indicated in the scheduled maintenance tables at an **Authorised Service Centre**. The engine should be emptied by draining the oil through drainage plug «B» of the mesh filter on the flywheel side. In order to facilitate oil drainage, loosen the cap/dipstick. Since a certain quantity of oil still remains in the circuit, add approximately 1000 cm³ of oil through cap «A». Then start up the vehicle, leave it running for a few minutes and switch it off: after about five minutes check the level and if necessary top up **without exceeding the MAX level**. The cartridge filter must be replaced every time the oil is changed. For top-ups and changes, use new oil of the recommended type.

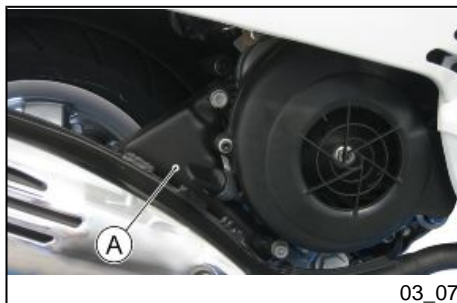
WARNING



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



03_06



03_07

WARNING

A LEVEL HIGHER THAN THE MAXIMUM AMOUNT INDICATED BY THE DIPSTICK, CAN CAUSE VEHICLE MALFUNCTION.

CAUTION

USED OIL CONTAINS SUBSTANCES WHICH CAN BE 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.

CAUTION

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

Recommended products

eni i-Ride PG 10W-40

Synthetic-based lubricant for four stroke engines.

JASO MA, MA2 - API SL - ACEA A3

ENGINE OIL CAPACITY

Engine oil

1,340 cm³ (of which 120 cm³ in the filtering cartridge)

Hub oil level (03_08)

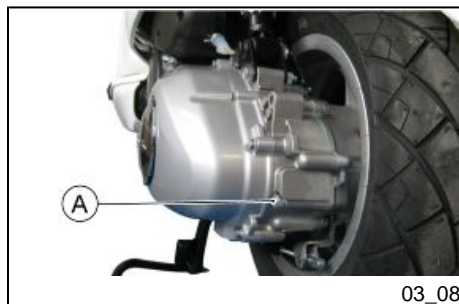
Check the presence of oil in the hub, according to the regular controls shown in the table of the scheduled maintenance.

WARNING



FOR THE REGULAR CHECK OF THE HUB OIL LEVEL SHOWN IN THE SCHEDULED MAINTENANCE TABLE, CONTACT AN Authorised Service Centre.

FOR THE CONTROLS OF THE HUB OIL LEVEL THAT ARE NOT PREDETERMINED BY THE SCHEDULED MAINTENANCE TABLE, OPERATE AS DESCRIBED.



LEVEL CHECK

- Park the vehicle on level ground and centre stand.
- Undo the screw «A» and by inserting punch, check the presence of oil that must be below the lower edge of the loading hole.
- With a cloth carefully clean the transmission crankcase.

WARNING



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

Characteristic

Hub oil

200 cm³

TOP-UP

If necessary carry out the top-up, **DO NOT use the vehicle** and contact an **Authorised Service Centre**.

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 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.

Recommended products

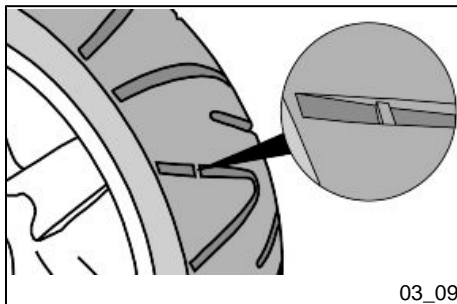
AGIP GEAR SAE 80W-90

Lubricant for gearboxes and transmissions.

API GL-4

HUB OIL CAPACITY

Hub oil	200 cm ³
---------	---------------------



Tyres (03_09)

Periodically check the inflation pressure of each tyre (when cold).

Tyres are fitted with wear indicators; tyres should be replaced 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 a workshop adequately equipped to remove and refit 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

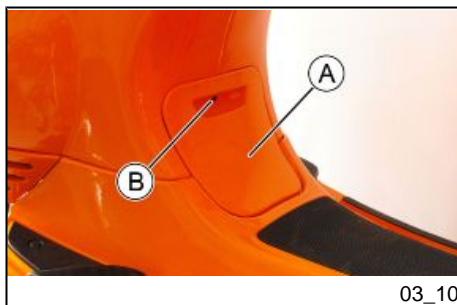
Front tyre	Tubeless, 110/70 - 11" 45L
Rear tyre	Tubeless, 120/70 - 10" 54L

TYRE INFLATION PRESSURE

Front tyre pressure	1.6 bar
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Rear tyre pressure (with passenger)

2.0 bar (2.3 bar)



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

Removal

In order to inspect the spark plug, follow the operation described when the engine is cold:

- Slide off the spark plug inspection cover «A» by unscrewing the screw «B».
- Slide off the spark plug tube «C».
- Remove the spark plug using the box-spanner supplied.

Fitting

- Use the box-spanner to refit the spark plug in its saddle, then tighten it. Care should be taken while installing and fixing it with the correct inclination.
- Insert the spark plug tube «C».
- Place the inspection cover «A» and tighten the screw «B».

CAUTION



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

CAUTION



THE SPARK PLUG MUST BE REMOVED WHEN THE ENGINE IS COLD.





03_12

USING IGNITION ELECTRONIC CENTRAL UNITS OR SPARK PLUGS OTHER THAN THE TYPES PRESCRIBED (SEE «TECHNICAL DATA» SECTION) CAN CAUSE SERIOUS DAMAGE TO THE ENGINE.

CAUTION



PROCEED WITH CAUTION.

DO NOT DAMAGE THE TONGUES OR THEIR SEATS. HANDLE THE PAINTED AND PLASTIC COMPONENTS CAREFULLY. DO NOT SCRATCH OR DAMAGE THEM.

RECOMMENDED SPARK PLUG

Spark plug (125 cm ³)	NGK CR8EB
Spark plug (150 cm ³)	NGK CR8EB
Electrode gap	0.7 to 0.8 mm

Removing the air filter

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



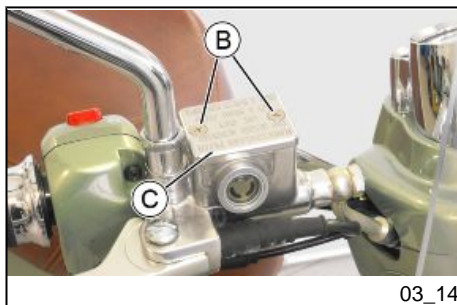
03_13

Checking the brake oil level (03_13)

The brake fluid reservoir is equipped with a sight glass «A» made of transparent material; the quantity of liquid contained in the sight glass indicates the level of liquid in the reservoir.

When the sight glass «A» is full, the level inside the reservoir exceeds the MIN level; when it is partially full, the level drops to the MIN level; when it is fully empty, the level of fluid in the reservoir is below the MIN level.

The brake fluid level may fall due to wear on the brake pads. In case the pad wear is below the minimum mark, contact an **Authorised Service Centre** to have the braking system thoroughly checked.



03_14

Braking system fluid top up (03_14)

Remove the tank cap «C» after having loosened the two securing screws «B» and top up with the prescribed fluid only, without exceeding the maximum level.

Under standard climatic conditions, replace fluid as indicated in the scheduled maintenance table. This operation must be carried out by trained technicians; take your scooter to an **authorised Service Centre or Dealer**.

WARNING



ONLY USE DOT 4-CLASSIFIED BRAKE FLUID. BRAKE CIRCUIT FLUID IS VERY CORROSIVE; MAKE SURE THAT IT DOES NOT COME INTO CONTACT WITH THE PAINTWORK.

CAUTION



AVOID CONTACT OF BRAKE FLUID WITH EYES, SKIN, AND CLOTHING. IN CASE OF CONTACT, RINSE WITH WATER. THE BRAKING CIRCUIT FLUID IS HYGROSCOPIC, THAT IS, IT ABSORBS HUMIDITY FROM THE SURROUNDING

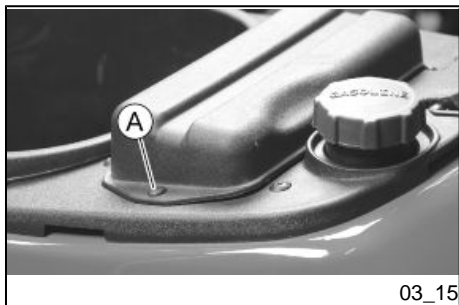
AIR. IF THE HUMIDITY IN THE BRAKING FLUID EXCEEDS A CERTAIN VALUE, IT WILL LEAD TO INEFFICIENT BRAKING. NEVER USE BRAKING FLUID KEPT IN CONTAINERS THAT HAVE ALREADY BEEN OPENED, OR PARTIALLY USED.

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_15)

To access the battery, tilt the saddle forwards, then remove the battery compartment access door by unscrewing the star-shaped screw "A" shown in the figure.

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

WARNING



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

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.

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.

Use of a new battery (03_16)

To install a new battery:

1. Place the battery in its housing.
2. Connect the positive pole «+» first and then the negative pole «-».
3. Fit the battery cover.

CAUTION

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

WARNING

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

Characteristic

Battery



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_17, 03_18, 03_19, 03_20, 03_21, 03_22)

The electrical system is protected by:

- a 20A and a 10A fuse in terminal block «A» located in the battery compartment under the saddle;
- 10A and a 7.5A fuse in terminal block «B», two x 7.5A fuses in terminal block «C» located inside the front shield under the steering cover;

To reach them:

- Using a screwdriver, remove the clip-on badge «D».

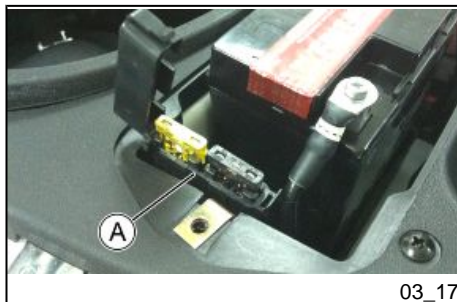
- Unscrew the screw «E».

- Turn the handlebar completely to one side. Push the steering column cover upwards and pull to release the retaining tongues.

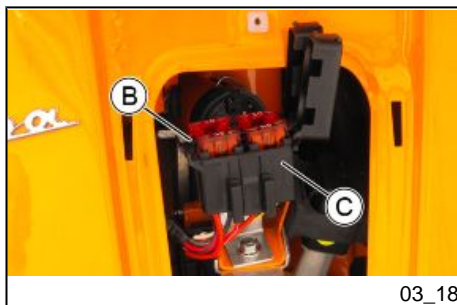
Before replacing a fuse, find and solve the failure that caused it to blow. Do not replace the fuse with any alternative form of conductor

CAUTION

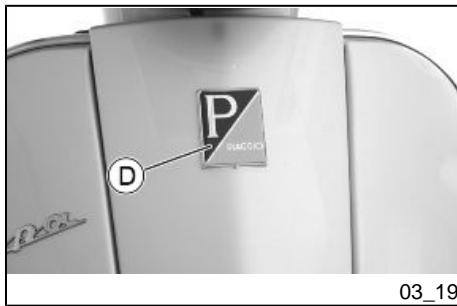
IN ORDER TO AVOID DAMAGING THE ELECTRICAL SYSTEM, NEVER DISCONNECT THE WIRING WHILE THE ENGINE IS RUNNING. DO NOT TIP THE VEHICLE TOO MUCH IN ORDER TO AVOID DANGEROUS LEAKAGE OF THE BATTERY ELECTROLYTE.



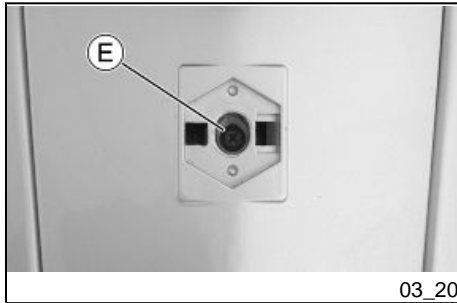
03_17



03_18



03_19



03_20



03_21

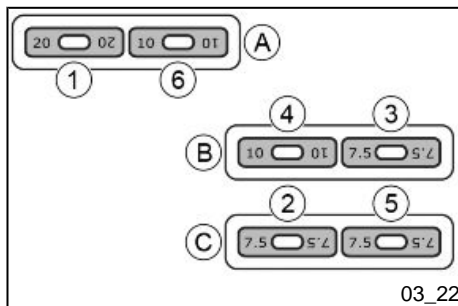
CAUTION

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

CAUTION

PROCEED WITH CAUTION.

DO NOT DAMAGE THE TONGUES OR THEIR SEATS. HANDLE THE PAINTED AND PLASTIC COMPONENTS CAREFULLY. DO NOT SCRATCH OR DAMAGE THEM.



03_22

FUSES

Fuse No. 1

Capacity: 20A

Protected circuits: battery-powered recharge system and fuse No. 4. Live power supply to fuses No. 2, 3 and 5.

Location: battery compartment.

Fuse No. 2

Capacity: 7.5A

Protected circuits: live power supply to injection load solenoid, Immobilizer aerial, ECU.

Location: steering cover.

Fuse No. 3

Capacity: 7.5 A

Protected circuits: live power supply to instrument panel, horn,

turn indicator control device, stop light, starter relay, light switch.

Location:steering cover.

Fuse No. 4

Capacity: 10A

Protected circuits: battery-powered high-beam light relay, low beam light relay.

Location:steering cover.

Fuse No. 5

Capacity: 7.5A

Protected circuits: live power supply to daylight running light, dashboard lighting.

Location:steering cover.

Fuse No. 6

Capacity: 10A

Protected circuits: battery-powered injection solenoid, ECU, Immobilizer LED.

Location:battery compartment.

BULBS

High/low beam light bulb

Type: Halogen (H4)

Power: 12V - 60/55W

	Quantity: 1
Front side light bulb	Type: All glass Power: 12V 5W Quantity: 1
Front turn indicator light bulb	Type: Spherical Power: 12V - 10W Quantity: 1 RHS + 1 LHS
Rear turn indicator light bulb	Type: Spherical Power: 12V - 10W Quantity: 1 RHS + 1 LHS
Stop and tail light bulb	Type: Spherical Power: 12V - 18/5W Quantity: 1
License plate bulb	Type: ALL GLASS Power: 12V - 5W Quantity: 1
Warning light bulbs	Type: All glass Power: 12V - 2W Application: Turn indicators, engine oil pressure, fuel warning light, high beam light, engine control.

Quantity: 5

Instrument panel lighting bulbs

Type: All glass

Power: 12V 1.2W

Quantity: 4

Front light group (03_23, 03_24, 03_25, 03_26)

To reach the headlight bulbs proceed as follows:

- Undo the two screws «**A**» that are supporting the unit. Retrieve the nut «**B**» from the rear screw.
- Undo the two screws «**C**», remove the front frame and pull the headlight assembly parabola out.

To replace the high-/low-beam headlight bulb:

- Disconnect the connector, disengage the tab and pull the bulb «**D**» out.

To replace the tail light bulb:

- Pull the rubber bulb holder «**E**» out from its seat.
- Take hold of the lamp and pull it out.

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.

CAUTION



PROCEED WITH CAUTION.

DO NOT DAMAGE THE TONGUES OR THEIR SEATS. HANDLE THE PAINTED AND PLASTIC COMPONENTS CAREFULLY. DO NOT SCRATCH OR DAMAGE THEM.

CAUTION

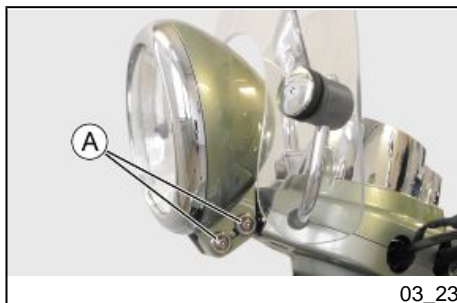


DO NOT PULL THE ELECTRICAL WIRING TO EXTRACT THE BULB HOLDER.

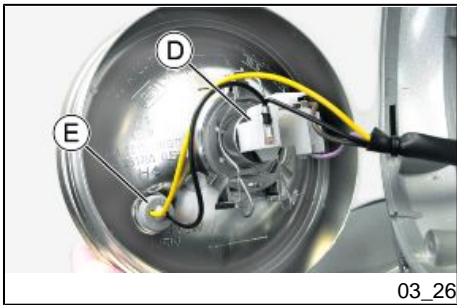
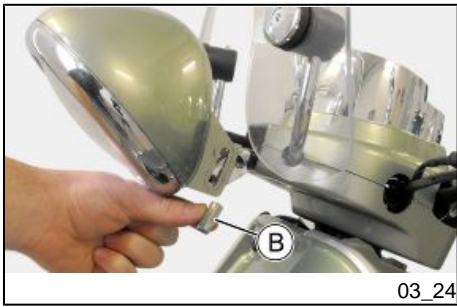
CAUTION

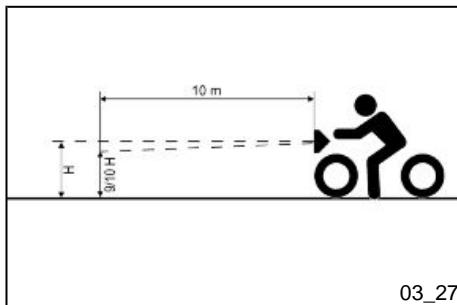


DO NOT PLACE, TRANSPORT OBJECTS AND/OR CLOTHES OVER THE FRONT HEADLIGHT ASSEMBLY, WHEN THE HEADLIGHT IS TURNED ON OR OFF. FAILURE TO FOLLOW THIS PRECAUTION MAY CAUSE OVERHEATING AND THE SUBSEQUENT FUSION OF THE GLASS.



03_23





03_27

Head light adjustment (03_27, 03_28)

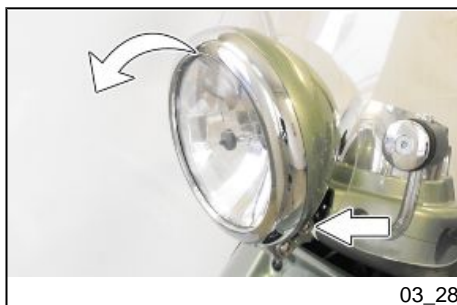
Proceed as follows:

1. Position the vehicle in running order and with the tyres inflated to the prescribed pressure, onto a flat surface 10 m away from a half-lit white screen; ensure that the longitudinal axis of the vehicle is perpendicular to the screen;
2. Turn on the headlight and check that the boundary of the light beam projected onto the screen is not higher than 9/10 or lower than 7/10 of the distance between the centre of the headlight and the ground;
3. Otherwise, adjust the right headlight with screw «A».

CAUTION



DO NOT CARRY ANY GARMENTS ON THE FRONT HEADLIGHT ASSEMBLY. THIS MAY CAUSE BULBS TO OVERHEAT AND THEREFORE ABNORMAL WEAR.



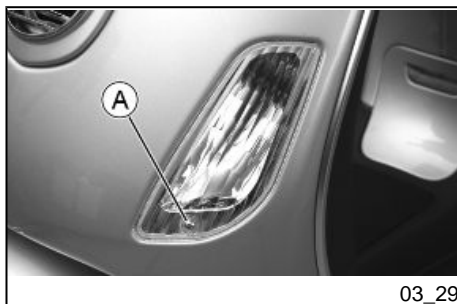
03_28

Front direction indicators (03_29, 03_30)

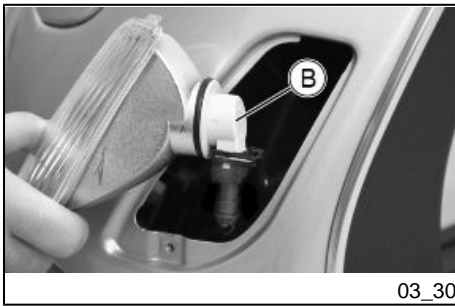
To replace the bulbs:

1. Remove the turn indicator from its fitting by undoing the screw «A».
2. Take out the bulb holder «B» from its fitting by turning it anticlockwise.
3. Press the bulb, turn it anticlockwise and then take it out.

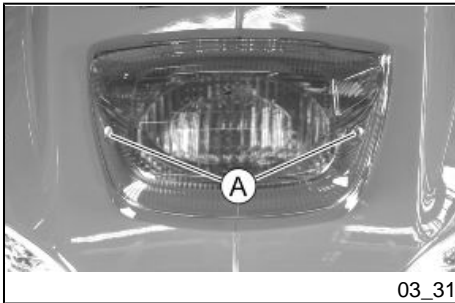
To refit, proceed in reverse order.



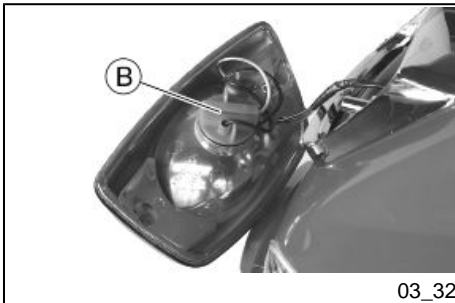
03_29



03_30



03_31



03_32

Rear optical unit (03_31, 03_32)

To replace the taillight bulb:

1. Remove the two screws «A».
2. Take out the bulb holder «B» from its fitting by turning it anticlockwise.
3. Press the bulb, turn it anticlockwise and then take it out.

To refit, proceed in reverse 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 turn indicators (03_33, 03_34)

To replace the bulbs:

1. Remove the turn indicator from its fitting by undoing the screw «A».
2. Take out the bulb holder «B» from its fitting by turning it anticlockwise.
3. Press the bulb, turn it anticlockwise and then take it out.

To refit, proceed in reverse order.





Number plate light (03_35, 03_36)

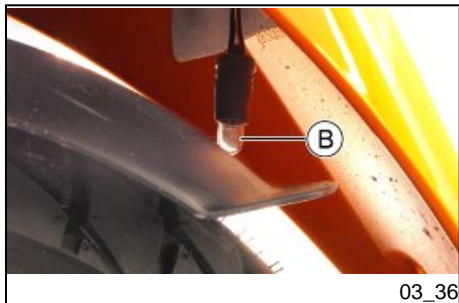
To remove the license plate bulb proceed as follows:

- Slide off the bulb holder «A» from its seat by operating from the inside of the license plate holder.
- Slide off bulb «B».

CAUTION



DO NOT PULL THE ELECTRICAL WIRING TO EXTRACT THE BULB HOLDER.



Rear-view mirrors (03_37)

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



To remove the rear-view mirror loosen the lock nut indicated in the figure and turn the supporting stem anticlockwise.



Front disc brake (03_38)

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 BRAKING SYSTEM DURING OPERATION, IT IS ADVISABLE TO HAVE THE BRAKING SYSTEM CHECKED BY AN AUTHORISED SERVICE CENTRE OR DEALER. AF-

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

CAUTION



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



Puncture (03_39)

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.

Inactivity of the vehicle (03_40)

The following operations are recommended:

1. Clean the scooter thoroughly and then cover it with a canvas;
2. With engine off and piston at the bottom dead centre, remove the spark plug, add $1\div 2$ cm³ of oil through its hole (larger amounts are dangerous for the engine itself). Operate the starter button 1-2 times for roughly 1 second to turn the engine over slowly, then insert the spark plug again;
3. Drain all the fuel from the scooter; spread anti rust 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 10W-40**

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



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 FAN-LIKE SPRAY JET.**
- **DO NOT PLACE THE NOZZLE CLOSER THAN 60 CM.**
- **DO NOT USE WATER AT TEMPERATURES OVER 40°C.**
- **DO NOT USE HIGH-PRESSURE WATER JETS.**
- **DO NOT STEAM WASH.**
- **DO NOT AIM THE 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.

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.

CLEANING CHROME-PLATED PARTS

After cleaning chrome-plated parts, polish them with a specific product for chrome-plated, aluminium or stainless steel surfaces. To prevent corrosion, apply a protective spray on all the metal surfaces, including chrome- and nickel-plated ones. Apply spray oil and wax with moderation and make sure to wipe off excess product immediately.

CAUTION

NEVER APPLY OIL AND WAX ON RUBBER AND PLASTIC PARTS.

CAUTION

CHECK THAT THERE IS NO OIL OR WAX ON THE TYRES. BEFORE USING YOUR SCOOTER TEST ITS BRAKING EFFICIENCY AND BEHAVIOUR ON A BEND.

START-UP PROBLEMS

No fuel in tank	Refuel
Injection system fault	Contact an Authorised Service Centre.
Insufficient battery charge	Recharge the battery.
Fuel pump fault	Contact an Authorised Service Centre.

IGNITION PROBLEMS

No spark from spark plug. Due to the presence of high voltage, this check should only be carried out by an expert.	Check that the electrodes are properly adjusted (0.7÷ 0.8 mm). check the cleaning of the electrodes. Check the spark plug insulator: Replace the spark plug if the insulator is cracked or broken. If the spark plug is in good conditions, contact an Authorised Service Centre.
Faulty ignition / injection control unit.	Contact an Authorised Service Centre.

LACK OF COMPRESSION

Spark plug adapter "worn", valve clearance not adequate; worn piston gas rings	Contact an Authorised Service Centre.
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HIGH CONSUMPTION AND LOW PERFORMANCE

Air filter blocked or dirty.	Contact an Authorised Service Centre .
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INEFFICIENT BRAKING

Oil on drum or disc. Worn Pads/ Shoes	Contact an Authorised Service Centre
incorrect rear brake adjustment	Adjust

INEFFICIENT SUSPENSION

Inefficient shock absorbers, oil leakage, deteriorated end of stroke buffers.	Contact an Authorised Service Centre
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AUTOMATIC TRANSMISSION PROBLEMS

Deteriorated CVT rollers and/or drive belt and/or clutch	Contact an Authorised Service Centre
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STAND DOES NOT RETURN TO POSITION

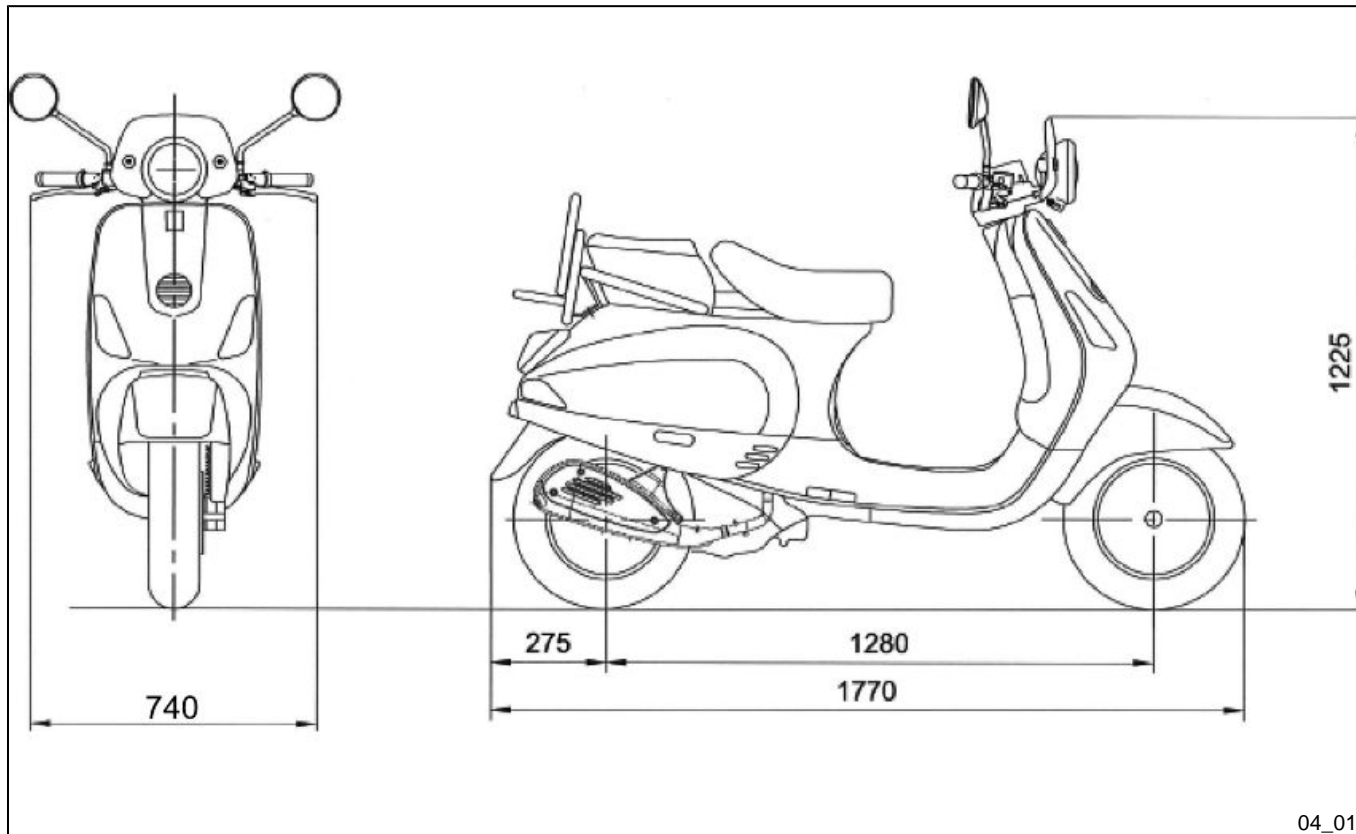
Presence of dirt	Clean and grease
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Chap. 04
Technical data



VEHICLE SPECIFICATIONS

Chassis	Stamped plate body with welded structural reinforcements.
Front suspension	Single arm with helical spring and single double-acting hydraulic shock absorber.
Rear suspension	Double-acting shock absorber, adjustable to four positions at preloading.
Front brake	Ø 200-mm disc brake with hydraulic control activated by handlebar right-side lever.
Rear brake	Ø 110-mm drum brake with mechanical control activated by handlebar left-side lever.
Wheel rim type	Light alloy wheel rims.
Front wheel rim	11" x 2.50
Rear wheel rim	10" x 3.00
Front tyre	Tubeless, 110/70 - 11" 45L
Rear tyre	Tubeless, 120/70 - 10" 54L
Front tyre pressure	1.6 bar
Rear tyre pressure (with passenger)	2.0 bar (2.3 bar)
Kerb weight	122 Kg
Maximum weight allowed	272 Kg
Battery	Sealed 12V/6Ah

125 cm³ ENGINE SPECIFICATIONS

Type	Single-cylinder, 4-stroke
Engine capacity	124.5 cm ³
Bore x stroke	52.0 x 58.6 mm
Max. power	7.2 kW at 7750 rpm
MAX. torque	9.5 Nm at 6000 rpm
Compression ratio	10:1
Idle speed	1750±50 rpm
Valve clearance (cold engine)	intake: 0.08 mm exhaust: 0.08 mm
Timing system	3 valves (2 intake, 1 drainage). single overhead camshaft chain- driven.
Transmission	CVT expandable pulley variator with torque server, V-belt, self- ventilating dry automatic centrifugal clutch and transmission housing with forced-circulation air cooling.
Final reduction gear	Gear reduction unit in oil bath.
Lubrication	Engine lubrication with lobe pump (inside crankcase), chain-driven, with double filter: mesh and paper.
Cooling	Forced-air circulation cooling.
Electric	Starter

Ignition	Electronic inductive discharge ignition, with variable advance and separate HV coil.
Ignition advance	Three-dimensional map managed by control unit
Spark plug (125 cm ³)	NGK CR8EB
Electrode gap	0.7 - 0.8 mm
Fuel system	Electronic injection with Ø 26 mm throttle body, single injector.
Fuel	Unleaded petrol (95 RON)
Exhaust silencer	Absorption-type exhaust muffler with catalytic converter.
Emissions compliance	EURO 3

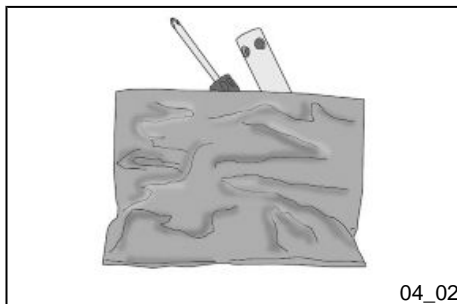
150 cm³ ENGINE SPECIFICATIONS

Type	Single-cylinder, 4-stroke
Engine capacity	154.8 cm ³
Bore x stroke	58.0 x 58.6 mm
Max. power	8.7 kW at 7500 rpm
MAX. torque	12 Nm at 5000 rpm
Compression ratio	10.5: 1
Idle speed	1750±50 rpm
Valve clearance (cold engine)	intake: 0.08 mm exhaust: 0.08 mm

Timing system	3 valves (2 intake, 1 drainage). single overhead camshaft chain-driven.
Transmission	CVT expandable pulley variator with torque server, V-belt, self-ventilating dry automatic centrifugal clutch and transmission housing with forced-circulation air cooling.
Final reduction gear	Gear reduction unit in oil bath.
Lubrication	Engine lubrication with lobe pump (inside crankcase), chain-driven, with double filter: mesh and paper.
Cooling	Forced-air circulation cooling.
Electric	Starter
Ignition	Electronic inductive discharge ignition, with variable advance and separate HV coil.
Ignition advance	Three-dimensional map managed by control unit
Spark plug (150 cm ³)	NGK CR8EB
Electrode gap	0.7 - 0.8 mm
Fuel system	Electronic injection with Ø 26 mm throttle body, single injector.
Fuel	Unleaded petrol (95 RON)
Exhaust silencer	Absorption-type exhaust muffler with catalytic converter.
Emissions compliance	EURO 3

CAPACITIES

Engine oil	1,340 cm ³ (of which 120 cm ³ in the filtering cartridge)
Hub oil	200 cm ³
Fuel tank (reserve)	~7.0 ± 0.5 l (~2.5 l)

**Tool kit (04_02)**

Wrenches: box-spanner (16 mm); one twin screwdriver; one spanner for shock absorbers. The tools are located under the seat in a specific container.

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**Chap. 05
Spare parts and
accessories**



Warnings (05_01)

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 necessary to have your vehicle serviced to the prescribed intervals of time, even if you have not reached the predicted mileage. Carrying out scheduled services on time is essential for the validity of your warranty. 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 or (months) maximum	1 (1)	5 (5)	10 (10)	15 (15)	20 (20)	25 (25)
Safety fasteners	I		I		I	
Spark plug		I	R	I	R	I
Cartridge air filter			C		C	
Centre stand		L	L	L	L	L
Drive belt (125 cm ³)			I		R	
Drive belt (150 cm ³)			R		R	
Throttle control	A		A		A	
Roller housing			I		I	
Air filter			I		I	
Engine oil filter	R		R		R	

km x 1,000 or (months) maximum	1 (1)	5 (5)	10 (10)	15 (15)	20 (20)	25 (25)
Valve clearance	A		A		A	
Electrical system and battery	I	I	I	I	I	I
Cylinder ventilation system						I
Brake levers	L		L		L	
Brake fluid **	I	I	I	I	I	I
Engine oil*	R	I	R	I	R	I
Hub oil			I		I	
Headlight direction adjustment			A		A	
Brake pads	I	I	I	I	I	I
Tyre pressure and wear	I	I	I	I	I	I
Vehicle road test	I	I	I	I	I	I
Odometer gear			L		L	
Suspension			I		I	
Steering	A		A		A	
Transmission			L		L	

I: CHECK AND CLEAN, ADJUST, LUBRICATE OR REPLACE, IF NECESSARY C: CLEAN; R: REPLACE; A: ADJUST; L: LUBRICATE

** Check level every 2,500 km*

*** Replace every 2 years*

Table of recommended products

RECOMMENDED PRODUCTS TABLE

Product	Description	Specifications
Lubricant for gearboxes and transmissions	Lubricant for gearboxes and transmissions.	SAE 80W/90, API GL4 - API GL5
Brake fluid	Brake fluid.	Synthetic fluid SAE J 1703 - FMVSS 116 - DOT 3/4 - ISO 4925 - CUNA NC 956 DOT 4
Stand, throttle, brake lever lubrication	Grease for brake levers, throttle, stand	White calcium complex soap-based spray grease with NLGI 2; ISO-L-XBCIB2
Oil for air filter sponge	Special product for the treatment of foam filters.	-
Engine oil	Synthetic-based lubricant for four stroke engines.	SAE 10W-40, API SL, ACEA A3, JASO MA
Grease	Yellow-brown, lithium-base, medium-fibre multi-purpose grease.	ISO L-X-BCHA 3 - DIN 51 825 K3K -20
Transmission flexible hoses - lubrication	Synthetic-based lubricant for four stroke engines.	SAE 5W-40, API SL, ACEA A3, JASO MA

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 (lb ft)	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)

6 Scheduled maintenance

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Not all versions/models shown in this publication are available in all countries. The availability of each model should be checked at the official Piaggio sales network.

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PIAGGIO VIỆT NAM- After Sales

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