PIAGGIO WOULD LIKE TO THANK YOU

for choosing one of its products. We have prepared this booklet to help you to get the very best from your scooter. Please read it carefully before riding the scooter for the first time. It contains information, tips and precautions for using your scooter. It also describes features, details and devices to assure you that you have made the right choice. We believe that if you follow our suggestions, you will soon get to know your new vehicle and it will serve you well for a long time to come. This booklet forms an integral part of the scooter; should the scooter 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 scooter; 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 manual require the use of special tools and/or particular technical knowledge: to carry out these operations refer to any **authorised Dealer of 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 those parts of the booklet that should be read with particular care. As you can see, each sign consists of a different graphic symbol, making it quick and easy to locate the various topics.

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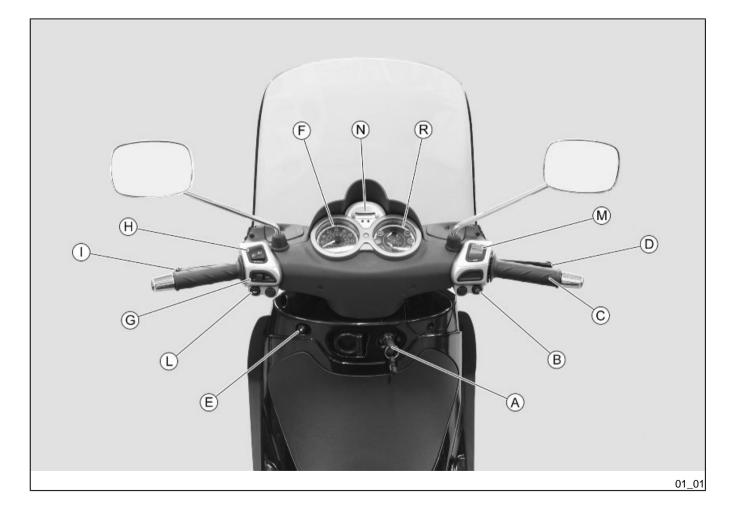




Chap. 01 Vehicle

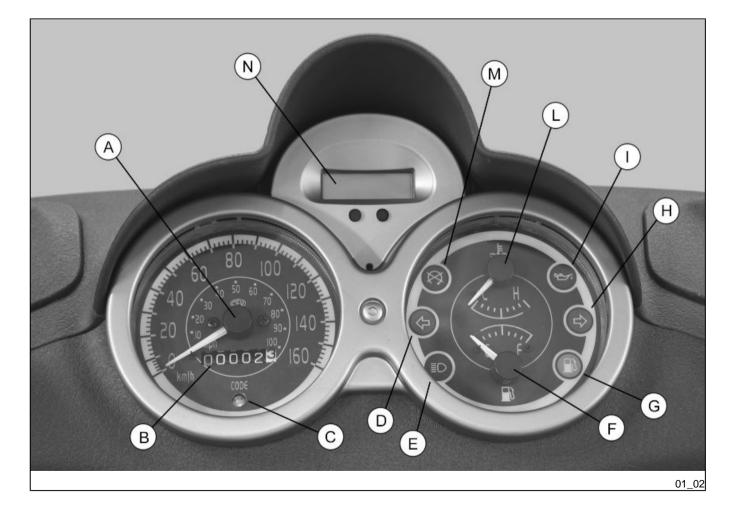
Dashboard (01_01)

- A = Key switch
- **B** = Starter button
- **C** = Throttle grip
- **D** = Front brake lever
- **E** = Electric seat opening button
- **F** = Odometer and speedometer
- **G** = Turn indicator switch
- **H** = Light switch
- I = Rear brake lever
- **L** = Horn button
- **M** = RUN OFF (immobiliser) switch
- N = Digital clock
- R = Instrument and warning lights panel



Analogue instrument panel (01_02)

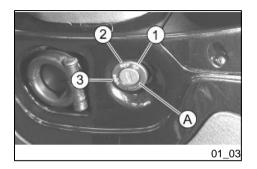
- A = Speedometer
- **B** = Odometer
- C = Immobiliser LED
- **D** = Left turn indicator warning light
- **E** = High-beam warning light
- F = Fuel gauge
- **G** = Low fuel warning light
- **H** = Right turn indicator warning light
- I = Low oil pressure warning light
- L = Coolant temperature gauge
- **M** = RUN-OFF (Engine stop) warning light
- N = Digital clock



1 Vehicle

Key switch (01_03)

Key switch «A» is located on the front knee-guard panel near the bag hook.



SWITCH POSITIONS

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

OFF «2»: Ignition disabled, extractable key, mechanical anti-theft device disabled.

LOCK «3»: Ignition disabled, extractable key, mechanical anti-theft device enabled.

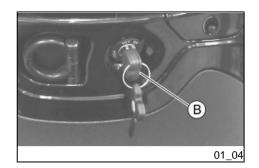
Locking the steering wheel

Turn the handlebar to the left as far as it will go; turn the key «B» to «LOCK » and remove it.

CAUTION



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



Releasing the steering wheel (01_04)

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

CAUTION



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



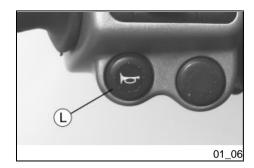
Switch direction indicators (01_05)

Lever towards **«1»** = left turn indicators switched on;

Lever towards **«2»** = right turn indicators switched on;

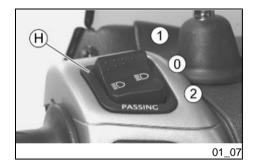
The lever automatically goes back to $\ensuremath{\text{``0}}$ and the indicators remain on; press the lever to turn them off.





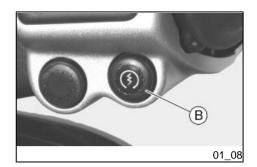
Horn button (01_06)

Push the button «L» to sound the horn.



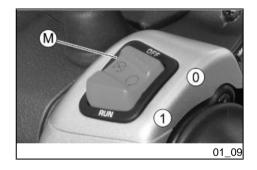
Light switch (01_07)

When the light switch **«H»** is set to **«0»**, the low-beam light is on. When set to **«1»**, the high-beam light is activated. If the light switch **«H»** is pressed when set to **«2»**, the high-beam light flashing is activated. The switch goes back to **«0»** automatically.



Start-up button (01_08)

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

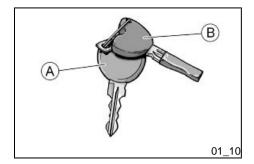


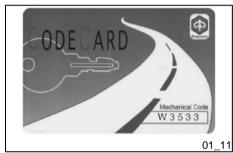
Engine stop button (01_09)

The engine can be started when the emergency cut-off switch ${}^{\diamond}M{}^{\diamond}$ is set to ${}^{\diamond}1{}^{\diamond}$ RUN; the engine cannot be started, or it shuts off if already running, if the emergency cut-off switch ${}^{\diamond}M{}^{\diamond}$ is set to ${}^{\diamond}0{}^{\diamond}$ OFF .

The immobilizer system

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







Keys (01_10, 01_11, 01_12)

Two types of keys come with the vehicle. The red-handgrip key "A" is 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. For this reason it is advised that it be used only in exceptional circumstances. The black key "B" (single copy supplied) is used for normal operations such as:

- engine start up
- glove-box opening

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

WARNING



LOSING THE RED KEY PREVENTS ANY REPAIRS OF THE 'PIAGGIO IMMOBILIZER' SYSTEM AND THE ENGINE CONTROL UNIT.

WARNING



KEEP THE 'CODE CARD' AND THE RED HANDGRIP KEY IN A SAFE PLACE (NOT ON YOUR VEHICLE).



Immobilizerdevice enabled indicator led (01_13)

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

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 starter 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 (red-coloured). 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 immobiliser is also activated in the engine is switched off with the RUN OFF switch. This happens even if the starter key is in position "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 red grip and all the black keys supplied to an **Authorised Piaggio Service Centre**. The codes of keys not submitted for the new storage 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 BY THE SYSTEM CONTROL UNIT.

VIOLENT SHOCKS MAY AFFECT THE ELECTRONIC COMPONENTS OF THE KEY.

IF OWNERSHIP OF THE VEHICLE IS TRANSFERRED, THE RED-HANDGRIP KEY (AS WELL AS THE OTHER KEYS) AND THE "CODE CARD" MUST ALSO BE TRANSFERRED TO THE NEW OWNER.

Programming the immobilizer system

In the following is described the procedure to follow to program the "PIAGGIO IM-MOBILIZER" system and/or enter other keys in the memory.

Procedure start - red key

Insert the red-handgrip key in the switch key (in "OFF" position) and turn it to "ON". After 1 - 3 seconds, turn the key to "OFF" again and pull it out.

Intermediate step - black key

After pulling out the red key, insert the black 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 black keys can be programmed by repeating the above procedure keeping the indicated times.

Final step - red key

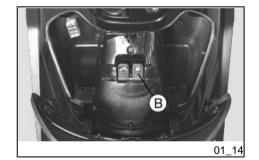
After pulling out the last black key, insert the red key again and turn it to "ON" (this operation should be performed within 10 seconds of pulling out the previous key). Leave it in this position for 1 to 3 seconds and return it to the «OFF» position.

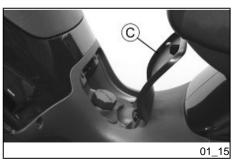
Proper programming check

Insert the red key disabling the transponder (i.e., tilt the key cap by 90°) and turn the key to "**ON**". Perform the engine start-up operation. Ensure that the engine does not start. Insert the black key and repeat the start-up operation. Check that engine starts.

WARNING

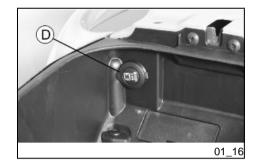
SHOULD THE ENGINE START WITH THE RED KEY (WITH TRANSPONDER OFF), OR IN THE EVENT OF WRONG OPERATION DURING PROGRAMMING, REPEAT THE PROCEDURE FROM THE BEGINNING.





Accessing the fuel tank (01_14, 01_15)

Insert the key into the switch and press down until the glove box opens. In the event that the key switch is in position "LOCK", turn the key to position "OFF" or "ON" before pressing down. Move the lever «B», the lid «C» opens to give access to the tank.



Power supply socket (01_16)

There is a plug socket **D** inside the helmet compartment.

The plug socket may be used for external consumers (mobile phone, inspection light, etc.).

CAUTION



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

Electric characteristic

Plug socket

12 V - 180 W MAX



The saddle (01_17, 01_18, 01_19, 01_20)

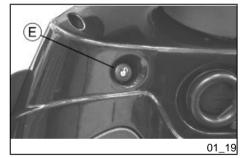
The saddle is supplied with a protection cover which may be used in case of rain. Lift the saddle and extract the cover from its housing. Fit it over the seat without pulling excessively to avoid tears and lower the seat again.

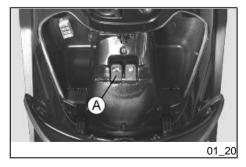
CAUTION



DO NOT USE THE VEHICLE WITHOUT THE PROTECTION COVER.







Opening the saddle

With the key set to **«OFF»** or **«ON»**, or with engine on, the saddle can be opened by means of an electrical device by pressing button **«E»**. If the electric opening does not work, use the emergency lever "A". When the key is set to **«LOCK»** the saddle cannot be opened.

Identification (01_21, 01_22)

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



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

Chassis number

To read the chassis number, remove the lid «A» in the helmet compartment.





01_22

Engine number

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

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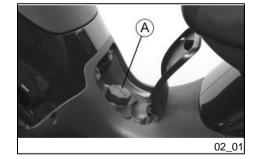


Chap. 02 Use

Checks

Before using the vehicle, check:

- 1. That the fuel tank is full.
- 2. Front and rear brake fluid level
- 3. That the tyres are properly inflated.
- **4.** The correct functioning of the tail lights, the headlamp, the turn indicators, the stop light and the license plate light.
- **5**. The correct functioning of the front and rear brakes.
- **6**. The oil level in the gearcase.
- **7**. The engine oil level.
- 8. The coolant level.



Refuelling (02_01)

Reach the fuel tank and unscrew the cap «A».

Use premium unleaded petrol, with minimum octane rating of 95.

A specific gauge on the instrument panel indicates the fuel level.

WARNING



SWITCH OFF THE ENGINE BEFORE REFUELLING WITH PETROL.

PETROL IS HIGHLY INFLAMMABLE.

DO NOT SMOKE AND KEEP OPEN FLAMES AT A DISTANCE:FIRE HAZARD.

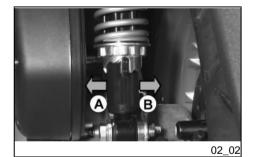
DO NOT INHALE FUEL FUMES.

DO NOT ALLOW PETROL TO COME INTO CONTACT WITH HOT ENGINE OR ANY PLASTIC PARTS.

CAUTION



PETROL DAMAGES THE PLASTIC PARTS OF THE BODYWORK.



Shock absorbers adjustment (02_02)

The preloading of the springs 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: driver only

Position 2 medium preloading: driver only

Position 3 medium preloading: rider and passenger

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

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

CAUTION



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

WARNING



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

WARNING



WE STRONGLY RECOMMEND NOT TO ADJUST BOTH SHOCK ABSORBERS WITH DIFFERENT PRELOADING

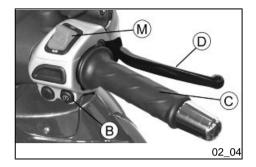


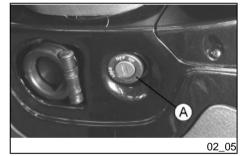
Running in (02 03)

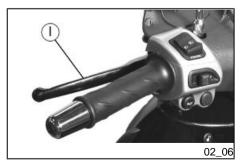
WARNING



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_04, 02_05, 02_06, 02_07)

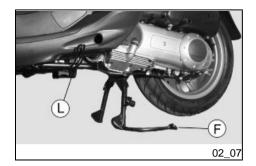
The vehicle is fitted with an ignition disabling system controlled by the emergency cutoff switch and the stand switch. The engine cannot start if the side stand is down or if the RUN/OFF switch is set to OFF If the engine is running, it shuts off when the side stand is lowered or the RUN/OFF switch is pressed when set to OFF. The scooter 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 still, progressively twist the throttle grip. The vehicle is equipped with an electric pump and a starter that switch on automatically as soon as the engine is started. In order to start the engine and before pressing the starter button "B", pull and hold the front brake lever "D" or the rear brake lever "I" to actuate the specific start-up enabling switch

- 1. Place the scooter on the centre stand «F» making sure the rear wheel does not touch the ground.
- 2. Keep the throttle grip «C» completely untwisted.
- 3. Insert the key into the switch «A» and turn to «ON».
- 4. Make sure that switch ${}^{\diamond}M{}^{\diamond}$ ${}^{\diamond}RUN/OFF{}^{\diamond}$ is set to ${}^{\diamond}RUN{}^{\diamond}$ and that the side stand ${}^{\diamond}L{}^{\diamond}$ is folded up.
- **5**. Pull the front brake lever **«D»** or the rear brake lever **«I»** to activate the starter button **«B»**.

WARNING



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



CAUTION



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

Precautions

CAUTION

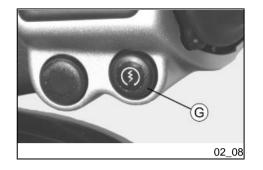


NEVER STRESS THE ENGINE AT LOW TEMPERATURES IN ORDER TO AVOID POSSIBLE DAMAGE. BE CAREFUL NEVER TO EXCEED THE MAXIMUM SPEED WHILE RUNNING DOWNHILL, IN ORDER TO AVOID DAMAGING THE ENGINE. IN ANY CASE, IN ORDER TO PRESERVE THE ENGINE FROM PROLONGED EXCESSIVE REVOLUTIONS, THE REVOLUTION LIMITER WILL BE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

WARNING



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



Difficult start up (02_08)

Should there be any problem, proceed as follows:

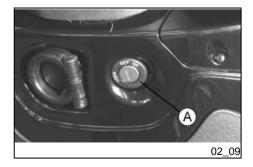
1. If the engine is flooded. Follow the same sequence of operations described above. Fully accelerate and press the starter button «G » for 5 seconds and then stop for 5 seconds keeping the throttle fully twisted, as fuel is delivered to the cylinder each time the throttle valve opens and closes.

If the engine does not start after a few attempts, let the engine rest for a few minutes and then repeat the above operations. In any case do not operate the starter long in the attempt to start the engine.

As a last alternative, remove the spark plug and operate the engine start-up to so as to expel fuel excess; then refit the spark plug and repeat the process from point 1.

- 2. If the tank runs out of fuel. After refuelling the scooter, start the engine by pressing the starter button «G» with the throttle completely untwisted to provide maximum depression to the fuel pump.
- **3. If the engine overheats.** Follow the same sequence of operations keeping the throttle grip slightly twisted.

If the scooter fails to start even after taking the steps described above, take it to an **Authorised PIAGGIO Dealer or Service Centre**.



Stopping the engine (02 09)

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

CAUTION



DUE TO THE HIGH TEMPERATURES THE CATALYTIC CONVERTER CAN REACH, ALWAYS TAKE CARE, WHEN PARKING THE SCOOTER, THAT THE

EXHAUST DOES NOT COME INTO CONTACT WITH FLAMMABLE MATERIALS, TO AVOID SERIOUS BURNS.

CAUTION



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

WARNING

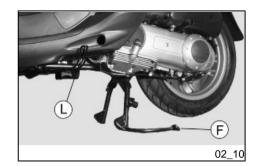


TO START AFTER A LONG STATIONARY PERIOD, OR IN SEVERE WEATHER CONDITIONS, FULLY TWIST THE THROTTLE 2÷3 TIMES BEFORE PRESSING THE STARTER BUTTON.

Stand (02_10)

CENTRE STAND

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



SIDE STAND

Push with your foot on the fork of the stand "L" to bring it into the open position while lifting the scooter at the same time.

CAUTION



TAMPERING MAY CAUSE SERIOUS ENGINE MALFUNCTION.

WARNING



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



Automatic transmission (02_11)

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

If you have to stop on an uphill slope (traffic lights, traffic jam, etc.) use only the brake to keep the vehicle still, leaving the engine running at idle speed. Using the engine to keep the vehicle still can cause the clutch to overheat, due to the friction of the clutch mechanism itself against the clutch bell.

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

Observe the following precautions if the clutch overheats:

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



Safe driving (02_12)

Some simple tips are provided below that will enable you to use your vehicle on a daily basis in greater safety and peace of mind. Your skill and your mechanical knowledge are the basis of safe riding. We recommend trying out the vehicle in traffic - free zones, in order to acquire a good knowledge of the vehicle it self.

- 1. Before riding off, remember to put on your helmet and fasten it correctly.
- 2.Reduce speed on rough roads and drive with care.
- **3.** After riding on a long stretch of wet road without using the brakes, braking can be poor at the beginning. Given these conditions, it is a good idea to operate the brakes from time to time.
- 4. Do not brake hard on wet, dirt or slippery road surfaces.
- **5**. Avoid riding off by mounting the scooter when resting on the support. In any case, the rear wheel should not be turning when in comes into contact with the ground, in order to avoid abrupt departures.
- **6.** When riding along roads covered by sand, mud, snow mixed with salt, etc. we recommend cleaning the brake disc frequently with a non-corrosive detergent in order to prevent corrosive particles from building up in the holes, which may cause early brake pad wear.

CAUTION



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

CAUTION



ANY CHANGES TO THE VEHICLE PERFORMANCE AS WELL AS ALTERATIONS TO ORIGINAL STRUCTURAL PARTS IS STRICTLY FORBIDDEN BY LAW, AND RENDERS THE VEHICLE NO LONGER CONFORMING TO THE APPROVED TYPE AND DANGEROUS FOR RIDING.

CAUTION



DO NOT ADJUST THE MIRRORS WHILE RIDING. THIS COULD CAUSE YOU TO LOOSE CONTROL OF THE VEHICLE.

WARNING



IN ORDER TO PREVENT ANY ACCIDENTS RIDE VERY CAREFULLY AFTER ADDING ACCESSORIES AND WHILE CARRYING LUGGAGE. THE ADDITION OF ACCESSORIES AND LUGGAGE CAN REDUCE YOUR SCOOTER STABILITY AND PERFORMANCE, AS WELL AS THE LEVEL OF SAFETY DURING USE. NEVER DRIVE THE SCOOTER EQUIPPED WITH ACCESSORIES AT A SPEED HIGHER THAN 100 km/h (see section "SPARE PARTS AND ACCESSORIES")

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Chap. 03 Maintenance

Engine oil level

In 4T engines, the engine oil is used to lubricate the distribution elements, the bench bearings and the thermal group. An insufficient quantity of oil can cause serious damage to the engine. In all four-stroke engines, a loss of efficiency in oil performance and 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). In order to prevent any problems, we recommend checking the oil level any time you use the vehicle. The scooter is, however, equipped with an oil pressure warning light on the instrument panel.



MAX MIN 03 02

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»**; during the oil check, 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 line 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.

Engine oil top-up

Always check oil level before topping-up and add oil without exceeding the MAX level. Getting an oil level between the MIN and MAX levels requires ~ 400 cm³ of oil. Take your vehicle to an Authorised Piaggio Service Centre to have the engine oil checked and if necessary topped-up, as indicated in the scheduled maintenance tables.

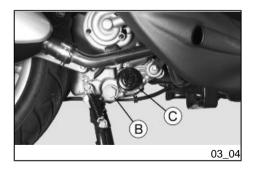


Warning light (insufficient oil pressure) (03 03)

The scooter is equipped with a warning light "I" that lights up when the key is turned to the "ON" position.

However, this light should switch off once the engine has been started.

If the light comes on during braking, at idling speed or while turning a corner, it is necessary to check the oil level and top-up if required. If after having topped up the oil, the warning light still turns on while braking, at idle speed or while turning a corner, it will be necessary to turn to an Authorised Service Centre.



Engine oil change (03_04)

The oil and the cartridge filter **«C»** must be changed as indicated in the scheduled maintenance tables at an **Authorised Piaggio Service Centre**. The engine should be emptied by draining the oil from the drainage plug **«B»** of the gauze filter on the flywheel side. In order to facilitate the oil drainage, loosen the cap/dipstick. Since a certain quantity of oil still remains in the circuit, filling must be done with approx. 600 ÷ 650 cm³ of oil through the cap **«A»**. Then start up the scooter, leave it running for a few minutes and switch it off: after five minutes, check the level and if necessary top-up **without exceeding the MAX. level**. The cartridge filter must be replaced at every oil change. For top-ups and changes, use new oil of the recommended type.

WARNING



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

WARNING



EXCESSIVE OIL LEVEL AT TOP-UPS CAN LEAD TO SCALE FORMATION AND VEHICLE MALFUNCTION.

CAUTION



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

CAUTION

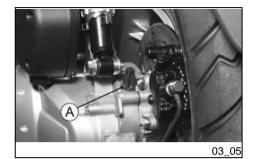


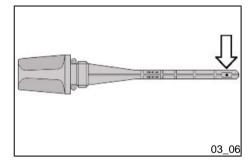
USING OILS OTHER THAN THOSE RECOMMENDED CAN SHORTEN THE LIFE OF THE ENGINE.

Recommended products

AGIP CITY HI TEC 4T

Engine oil SAE 5W-40, API SL, ACEA A3, JASO MA Synthetic oil





Hub oil level (03_05, 03_06)

Check the oil in the rear hub.

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

- 1) Park the scooter on level ground and place it on the centre stand.
- 2) Unscrew the dipstick "A", dry it with a clean rag and then reinsert it, screwing it tightly into place;
- 3) Remove the dipstick and check that the oil level is above the first reference from the bottom.
- 4) Screw the dipstick back in, checking that it is locked in place.

N.B.

THE REFERENCE MARKS ON THE HUB OIL LEVEL DIPSTICK, EXCEPT FOR THE ONE INDICATING THE "MAX" LEVEL, REFER TO OTHER MODELS BY THE MANUFACTURER AND HAVE NO SPECIFIC FUNCTION FOR THIS MODEL.

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.

CAUTION



UPON REPLACING HUB OIL, AVOID THE OIL COMING INTO CONTACT WITH THE REAR BRAKE DISC.

Recommended products

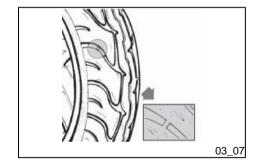
AGIP ROTRA 80W-90

Rear hub oil SAE 80W/90 Oil that exceeds the requirements of API GL3 specifications

Characteristic

Hub Oil Quantity

See the Technical Data Chapter



Tyres (03_07)

Check tyre pressure frequently. Tyres feature wear indicators; replace tyres as soon as these indicators become visible on the tyre tread. Also check that the tyres do not show signs of splitting at the side or irregular tread wear; if this occurs, go to an authorised workshop or at least to a workshop equipped to perform the replacement.

CAUTION



TYRE PRESSURE SHOULD BE CHECKED WHEN TYRES ARE COLD.INCOR-RECT TYRE PRESSURE CAUSES ABNORMAL TYRE WEAR AND MAKES RID-ING DANGEROUS.

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

Characteristic

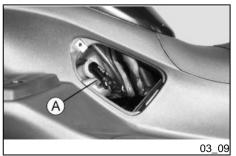
Front tyre pressure (with passenger)

2.3 bar (-)

Rear tyre pressure (with passenger)

2.3 bar (2.5 bar)





Spark plug dismantlement (03_08, 03_09)

Proceed as follows:

- 1. Remove the access cover over the spark plug on the right-hand side of the scooter and reach into the spark plug with your hand;
- 2. Disconnect spark plug HV wire cap «A»;
- 3. Unscrew the spark plug using the spark plug wrench supplied;
- **4.** When refitting, place the spark plug into the hole at the required angle and tighten by hand until it is finger tight:
- **5.** Use the wrench only for final tightening of the spark plug;
- 6. Place hood "A" fully over the spark plug.

N.B.

THE USE OF SPARK PLUGS OTHER THAN THE INDICATED TYPE OR OF SHIELDLESS SPARK PLUG CAPS CAN CAUSE ELECTRICAL SYSTEM FAIL-URES.

WARNING



THE SPARK PLUG MUST BE REMOVED WHEN THE ENGINE IS COLD. CHECK THE SPARK PLUG AS INDICATED IN THE SCHEDULED MAINTENANCE TABLE. USING NON-COMPLYING ELECTRONIC CENTRAL UNITS AND ELECTRONIC IGNITIONS OR SPARK PLUGS OTHER THAN THOSE PRESCRIBED MAY SERIOUSLY DAMAGE THE ENGINE. IF THE SPARK PLUG IS REMOVED AFTER A FLOODED ENGINE (EXCESSIVE FUEL EXPULSION IN THE «SAFE RIDING» SECTION), KEEP THE TUBE CONNECTED TO THE SPARK PLUG AND THE LATTER IN CONTACT WITH A GROUND POINT FAR FROM THE SPARK PLUG HOLE ITSELF IN ORDER TO AVOID THE EXPELLED FUEL FROM CATCHING FIRE.

Characteristic

Recommended spark plug

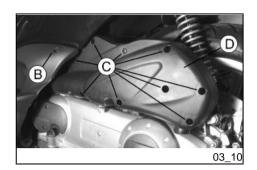
Champion RG 4 HC

Alternative spark plug

NGK CR8EB

Electrode gap

0.7-0.8 mm



Removing the air filter (03_10)

Proceed as follows:

- 1. Remove screw "B"
- 2. Undo the 9 fixing screws «C» and remove the cover «D » of the air filter.

Air filter cleaning

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

CAUTION

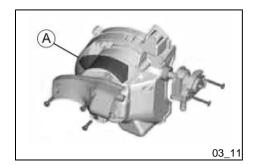


IF THE VEHICLE IS USED ON DUSTY ROADS, IT IS NECESSARY TO SERVICE THE AIR FILTER MORE OFTEN TO AVOID DAMAGING THE ENGINE.

Recommended products

AGIP FILTER OIL

Oil for air filter sponge Mineral oil with specific additives for increased adhesiveness



Secondary air system (03_11)

In order to reduce polluting emissions, the vehicle is furnished with a catalytic converter in the muffler.

To facilitate the catalytic process, a further quantity of previously filtered air is brought in through the exhaust duct on the head by the secondary air system (SAS).

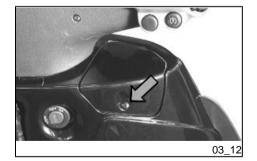
This system allows more oxygen to be added to the unburned gases before reaching the catalytic converter, thus improving the catalytic converter reaction.

The system has a control valve that disables operation during deceleration in order to avoid abnormal noises.

To ensure the best functioning of the SAS, take your vehicle to an **Authorised Piaggio Service Centre** for maintenance operations, at the intervals indicated in the scheduled maintenance table.

This system requires a filter «A».

The filter sponge should be cleaned with water and mild soap, then it should be dried with a cloth and slight blows of compressed air.



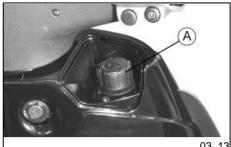
Cooling fluid level (03 12, 03 13, 03 14)

Engine cooling is carried out by a forced-circulation coolant system. The cooling circuit holds approx. 1.8 litres of coolant consisting of a mixture of 50% demineralised water and 50% glycol ethylene-based antifreeze solution with corrosion inhibitors.

The liquid supplied with the scooter is already mixed and ready for use.

For proper functioning of the engine, ensure that the temperature of the coolant remains in the middle zone of gauge "L" on the instrument panel. If the needle of the gauge enters the red zone, switch off the engine, allow to cool down and check the coolant level; if the result is normal, turn to an **Authorised Piaggio Service Centre**.

The fluid inspection should be carried out every 6,000 km when the engine is cold, following the methods indicated below.







- a) Place the scooter in a vertical position on the stand. Remove the cover by pulling out the screw as shown in the figure.
- b) Remove the expansion tank cover "A", turning in anticlockwise direction.
- c) Look inside the expansion tank; a mark on the plastic part indicates the maximum and minimum reference of the expansion tank.
- d) Top up, if necessary, if the fluid level is below the MIN level on the scale inside the expansion tank.

The fluid level must always be between MIN and MAX level

If the fluid is near the minimum level, proceed with the top-up operation to be carried out when the engine is cold. If it is necessary to top up the coolant frequently, or if the expansion tank is completely dry, you should look for the cause in the cooling system. It is therefore indispensable to have the cooling system checked at an Authorised Piaggio Service Centre.

Replace coolant as indicated in the scheduled maintenance table. For this operation, please contact an Authorised Piaggio Service Centre.

N.B.

IF THE COOLANT WARNING LIGHT TURNS ON WHILE RIDING THE SCOOTER. SHUT OFF THE ENGINE AND LET IT COOL DOWN. THEN CHECK THE COOLANT LEVEL: IF THE LEVEL IS NOT CORRECT, CONTACT AN AUTHORISED SERVICE CENTRE.

WARNING



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

WARNING



IN ORDER TO AVOID HARMFUL FLUID LEAKS WHILE RIDING, IT IS IMPORTANT TO MAKE SURE THAT THE LEVEL NEVER EXCEEDS THE MAXIMUM VALUE.

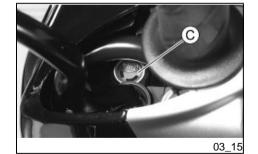
IN ORDER TO GUARANTEE THE PROPER FUNCTION OF THE ENGINE, IT IS NECESSARY TO KEEP THE RADIATOR GRILLE CLEAN.

Recommended products

AGIP PERMANENT SPEZIAL

coolant

Monoethylene glycol-based antifreeze fluid, CUNA NC 956-16



Checking the brake oil level (03 15)

The brake fluid tanks of the front and rear brakes are located on the pumps under the covers on the handlebar. Proceed as follows:

- 1. Place the scooter on its centre stand and make sure the handlebar is centred;
- 2. Check the fluid level through the respective sight glass "C".

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

Braking system fluid top up

Proceed as follows:

Remove tank covers "A" and loosen the two screws and top up the brake fluid level using only the prescribed brake fluid and without exceeding the maximum level.

Under standard climatic conditions, replace coolant as indicated in the scheduled maintenance table. This operation must be carried out by trained technicians; please contact your nearest **PIAGGIO Dealer or Authorised Service Centre**.

WARNING



ONLY USE DOT 4 CLASS BRAKE FLUIDS. COOLING SYSTEM FLUIDS ARE HIGHLY CORROSIVE. MAKE SURE THAT IT DOES NOT COME INTO CONTACT WITH THE PAINTWORK

CAUTION

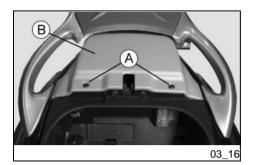


AVOID CONTACT OF BRAKE FLUID WITH EYES, SKIN, AND CLOTHING. IN CASE OF CONTACT, RINSE WITH WATER. THE BRAKING CIRCUIT FLUID IS HYGROSCOPIC, THAT IS, IT ABSORBS HUMIDITY FROM THE SURROUNDING AIR. IF THE HUMIDITY IN THE BRAKING FLUID EXCEEDS A CERTAIN VALUE, IT WILL LEAD TO INEFFICIENT BRAKING. NEVER USE BRAKING FLUID KEPT IN CONTAINERS THAT HAVE ALREADY BEEN OPENED, OR PARTIALLY USED.

Recommended products

AGIP BRAKE 4

Brake fluid FMVSS DOT 4 Synthetic fluid





Battery (03_16, 03_17)

To access the battery, proceed as follows:

- 1. Place the scooter on its centre stand;
- 2. Open the saddle;
- 3. Remove retainers "A" and cover "B".

The battery is the electrical device that requires the most frequent inspections and diligent maintenance. The main points of maintenance to be observed are as follows:

CAUTION



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

.

Use of a new battery

Make sure that the terminals are connected correctly.

CAUTION



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

WARNING



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

Long periods of inactivity

Battery performance will decrease if the vehicle is not used for a long time. This is the result of the natural phenomenon of battery discharging plus residual absorption by vehicle components with constant power consumption. Poor battery performance may also be due to environmental conditions and the cleanness 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

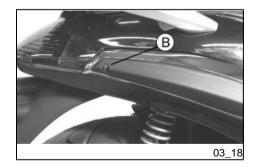


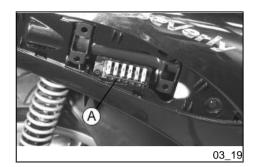
DO NOT DISCONNECT THE BATTERY CABLES WITH THE ENGINE RUNNING, THIS CAN CAUSE PERMANENT DAMAGE TO THE VEHICLE ELECTRONIC CONTROL UNIT.

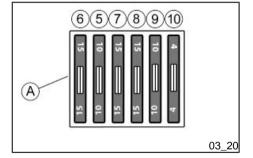
WARNING

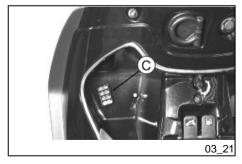


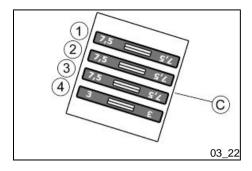
SPENT BATTERIES ARE HARMFUL FOR THE ENVIRONMENT. COLLECTION AND DISPOSAL SHOULD BE CARRIED OUT IN COMPLIANCE WITH CURRENT REGULATIONS.











Fuses (03_22)

The electrical system is equipped with:

- 1. Four protection fuses «A». To reach the board of fuses «A» remove the screw «B» and then the mouldings.
- 2. Four protection fuses **«C»** for the different circuits of the electrical system, located inside the front case to the left.

The tables show the position and characteristics of the fuses on the scooter.

CAUTION



BEFORE REPLACING A BLOWN FUSE, FIND AND SOLVE THE FAILURE THAT CAUSED IT TO BLOW. NEVER TRY TO REPLACE THE FUSE WITH ANY OTHER MATERIAL (E.G., A PIECE OF ELECTRIC WIRE).

FUSE TABLE

Fuse No. 1 Position on fuse holder:1

| | Capacity: 7.5 A |
|------------|--|
| | Protected circuits: Front tail light - Rear tail light - Instrument panel lighting - License plate light |
| | Location: Front case |
| Fuse No. 2 | Position on fuse holder:2 |
| | Capacity: 7.5 A |
| | Protected circuits: Power supply for Instrument panel - Horn - Light switch |
| | Location: Front case |
| Fuse No. 3 | Position on fuse holder:3 |
| | Capacity: 7.5 A |
| | |
| | Protected circuits: Scooter start- up enabling switch - Ignition - Engine disabled warning light |
| | up enabling switch - Ignition - |
| Fuse No. 4 | up enabling switch - Ignition - Engine disabled warning light |
| Fuse No. 4 | up enabling switch - Ignition - Engine disabled warning light Location: Front case |
| Fuse No. 4 | up enabling switch - Ignition - Engine disabled warning light Location: Front case Position on fuse holder: 4 |
| Fuse No. 4 | up enabling switch - Ignition - Engine disabled warning light Location: Front case Position on fuse holder: 4 Capacity: 3A Protected circuits: Electric pump |
| Fuse No. 4 | up enabling switch - Ignition - Engine disabled warning light Location: Front case Position on fuse holder: 4 Capacity: 3A Protected circuits: Electric pump control device |
| | up enabling switch - Ignition - Engine disabled warning light Location: Front case Position on fuse holder: 4 Capacity: 3A Protected circuits: Electric pump control device Location: Front case |

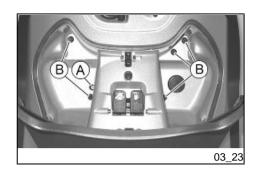
| | Location: Right fairing |
|------------|--|
| Fuse No. 6 | Position on fuse holder: 6 |
| | Capacity: 10 A |
| | Protected circuits: Spare fuse |
| | Location: Right fairing |
| Fuse No. 7 | Position on fuse holder: 7 |
| | Capacity: 15A |
| | Protected circuits: Radiator electrical fan - Battery recharge - Ignition - Lines protected by fuses 1; 2; 4 |
| | Location: Right fairing |
| Fuse No. 8 | Position on fuse holder: 8 |
| | Capacity: 15A |
| | Protected circuits: 12V-180W Socket for electrical equipment - Helmet compartment light - Electrical saddle opening |
| | Location: Right fairing |
| Fuse No. 9 | Position on fuse holder: 9 |
| | Capacity: 10 A |
| | Protected circuits: Low- and high-beam light - Headlight remote control - Light switch |
| | Location:Right fairing |

| Position on fuse holder: 10 |
|---|
| Capacity: 4A |
| Protected circuits: Clock - Immobilizer LED |
| Location: Right fairing |
| |

LIGHT BULB TABLE

| High-beam light bulb | Type: HALOGEN (H7) |
|-----------------------|--------------------------|
| | Power: 12V - 55W |
| | Quantity: 1 |
| Low-beam bulb | Type: HALOGEN (H1) |
| | Power: 12V - 55W |
| | Quantity: 1 |
| Front tail light bulb | Type: ALL GLASS |
| | Power: 12V - 5W |
| | Quantity: 2 |
| Instrument panel bulb | Type: ALL GLASS |
| | Power: 12V - 1.2W |
| | Quantity: 5 |
| | |

| Front turn indicator bulb | Type: SPHERICAL |
|-------------------------------|-------------------------|
| | Power: 12V - 10W |
| | Quantity: 1 RHS + 1 LHS |
| Helmet compartment light bulb | Type: CYLINDRIC |
| | Power: 12V - 5W |
| | Quantity: 1 |
| Rear turn indicator bulb | Type: SPHERICAL |
| | Power: 12V - 10W |
| | Quantity: 1 RHS + 1 LHS |
| Taillight bulb | Type: SPHERICAL |
| | Power: 12V - 3W |
| | Quantity: 2 |
| Stop light bulb | Type: ALL GLASS |
| | Power: 12V - 10W |
| | Quantity: 1 |
| License plate light bulb | Type: ALL GLASS |
| | Power: 12V - 5W |
| | Quantity: 1 |



Front light group (03_23)

To remove the rear light assembly, proceed as follows:

- 1. Remove the five screws «B».
- 2. Remove the light assembly from its seat and proceed to replace the blown bulb.

To reassemble, repeat the operation in the reverse order.

WARNING



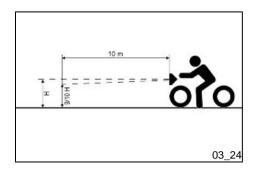
HIGH AND LOW BEAM LIGHT ARE OF THE HALOGEN TYPE: DO NOT TOUCH WITH YOUR FINGERS TO AVOID DAMAGING THEIR FUNCTION.

N.B.

IF MISTING IS NOTICED ON THE INSIDE OF THE HEADLAMP GLASS, THIS DOES NOT INDICATE A FAULT AND IS RELATED TO THE 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 PIAGGIO AFTER-SALES SERVICE NETWORK.



Headlight adjustment (03_24)

Proceed as follows:

- 1. Position the unloaded scooter, 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 the axis of the scooter is perpendicular to the screen;
- 2. Turn on the headlight and check that the limit of the projected light beam is not over 9/10 or below 7/10 of the distance from the ground to the centre of the headlight;
- 3. If this is not the case, regulate the headlight by turning screw "A".

N.B.

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

Front direction indicators

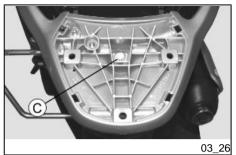
To replace a burnt out bulb remove the right and left screw «F».

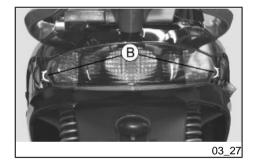


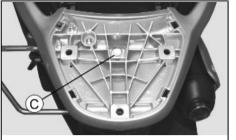
Rear optical unit (03 25, 03 26, 03 27)

To remove the rear light assembly, proceed as follows:

- 1. Remove the two side mouldings.
- 2. Remove the plastic cover of the luggage rack and remove the screw «C».
- 3. Remove screws "B" and pull out the rear light assembly.
- 4. If necessary, replace the blown bulb.







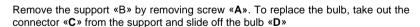
N.B.

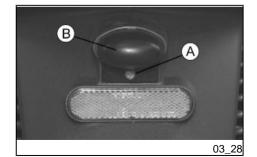
IF MISTING IS NOTICED ON THE INSIDE OF THE HEADLAMP GLASS, THIS DOES NOT INDICATE A FAULT AND IS RELATED TO THE HUMIDITY AND/OR TO LOW TEMPERATURES.

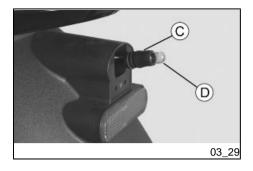
THE PHENOMENON SHOULD QUICKLY DISAPPEAR WHEN THE LIGHT IS SWITCHED ON.

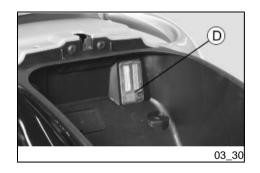
THE PRESENCE OF DROPS OF WATER, ON THE OTHER HAND, COULD INDI-CATE THAT WATER IS INFILTRATING. CONTACT THE PIAGGIO AFTER-SALES SERVICE NETWORK.





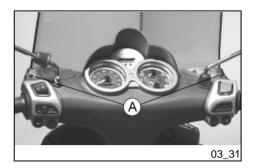


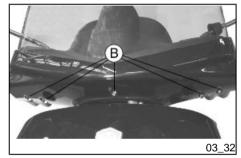


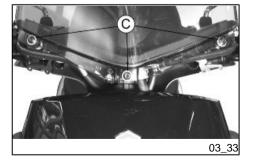


Helmet compartment lighting bulb (03_30)

Open the helmet compartment, take out the pressure mounted transparent cover "D" and replace the bulb.





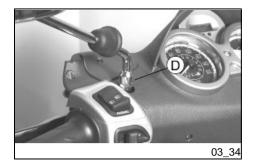


Rear-view mirrors (03_31, 03_32, 03_33, 03_34)

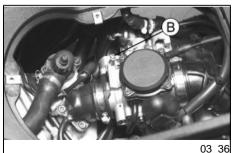
In order to remove the rear-view mirrors:

- 1. Remove the two screws «A» on the instrument panel upper section.
- 2. Remove the five screws «B» of the front handlebar cover.
- 3. Undo the three screws «C» fixing the windshield and collect the washers.
- **4**. Loosen the lock nut **«D»** fixing the mirror and then remove the mirror.

To adjust the mirror, hold it and turn until it is adjusted to the adequate angle.







Idle adjustment (03_35, 03_36)

Proceed as follows:

- 1. Rest the scooter on its centre stand and lift the saddle.
- 2. Unscrew the two fixing screws «A» and remove the flap to be able to reach the carburettor.
- 3. To adjust idle speed, start the engine, then loose or tighten the screw «B» until you reach the recommended idle speed taking care the engine does not make the rear wheel move.

If it is difficult to adjust the idle speed, take your vehicle to an **Authorised PIAGGIO** Service Centre or Dealer.

WARNING



IDLE SPEED MUST BE ADJUSTED WHEN THE ENGINE IS VERY HOT. BEFORE THIS OPERATION, MAKE SURE THAT THE THROTTLE GRIP HAS THE RECOMMENDED BACKLASH. IF BACKLASH IN THE THROTTLE CONTROL TRANSMISSION NEEDS ADJUSTING TAKE YOUR SCOOTER TO A PIAGGIO DEALER OR AUTHORISED SERVICE CENTRE

Characteristic

Engine idle speed

1,650±100 rpm

Front and rear disc brake

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



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

CAUTION

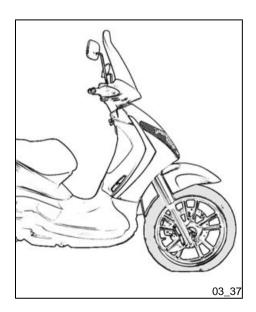


HAVE THE BRAKE PADS CHECKED BY THE DEALER ACCORDING TO THE CHECKS SPECIFIED IN THE SCHEDULED MAINTENANCE TABLE. HOWEVER, IN THE EVENT OF NOISES COMING FROM THE FRONT AND/OR REAR BRAKE SYSTEM DURING OPERATION, IT IS ADVISABLE TO HAVE THE BRAKE SYSTEM CHECKED BY A PIAGGIO DEALER OR AUTHORISED SERVICE CENTRE. AFTER REPLACING THE BRAKE PADS, DO NOT USE THE SCOOTER BEFORE HAVING USED THE BRAKE LEVER SEVERAL TIMES IN ORDER TO ALLOW THE PISTONS 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 DURATION OF THE BRAKE PADS. IN ORDER TO AVOID THIS, WE RECOMMEND WASHING THE VEHICLE FREQUENTLY WHEN RIDING IN THESE ROAD CONDITIONS.



Puncture (03_37)

The vehicle is equipped with Tubeless tyres (without inner tube). In the event of a puncture, contrary to the situation with a tyre with inner tube, the tyre deflates more slowly, resulting in a greater steering safety. In the event of a puncture, it is admissible to make an emergency repair 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 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.



Periods of inactivity (03_38)

We recommend carrying out the following operations:

- 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, fill with 1÷2 cm³ of oil (adding more than this quantity is dangerous for the engine). 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 antirust grease on the unpainted 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

AGIP CITY HI TEC 4T

Oil to lubricate flexible transmissions (throttle control) Oil for 4-stroke engines

Cleaning the vehicle

Use a low pressure jet of water to soften the caked dirt and mud deposited on the painted surfaces. Once softened, sponge off mud and dirt using a car body sponge soaked in a car body shampoo and water solution (2-4% of car shampoo in water). Then rinse abundantly with water, and dry with a shammy cloth. For the outside of the engine, use petroleum, 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.

WARNING



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

- ONLY USE THE FAN 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 DIRECT THE JET AT: THE CARBURETTOR, THE ELECTRIC CABLES, THE SLOT DIFFUSERS IN THE TRANSMISSION COVER AND THE SCROLL COVER.

CAUTION



NEVER WASH THE SCOOTER IN DIRECT SUNLIGHT, ESPECIALLY IN SUMMER WHEN THE BODYWORK IS STILL HOT AS THE SHAMPOO COULD DAMAGE THE PAINTWORK IF IT DRIES BEFORE BEING RINSED OFF. NEVER USE CLOTHS SOAKED IN ALCOHOL, PETROL, DIESEL OIL OR KEROSENE FOR CLEANING THE PAINTED OR PLASTIC SURFACES, IN ORDER NOT TO DAMAGE THE LUSTRE FINISH OR ALTER THE 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 .

DIFFICULT STARTING

| No fuel in tank | Refuelling |
|--|---|
| Filters, carburettor jets dirty or clogged, fuel filter, fuel pipes clogged, fuel pump damaged | Contact an Authorised Piaggio Service Centre |
| Battery flat | Recharge the battery. |

IGNITION PROBLEM

LACK OF COMPRESSION

| Spark plug loose. Loose cylinder | Screw the spark plug. |
|--|---|
| head, worn piston retaining rings. Incorrect valve clearance | Contact an Authorised Piaggio Service Centre |

3 Maintenance

HIGH CONSUMPTION AND LOW PERFORMANCE

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

INSUFFICIENT BRAKING

| Greasy disc. Worn pads | Contact an Authorised Piaggio Service Centre |
|--|---|
| Air in the front and rear brake circuits | Contact an Authorised Piaggio Service Centre |

INEFFICIENT SUSPENSIONS

| Inefficient shock absorbers, oil leakage, deteriorated end of stroke | Contact an Authorised Service Centre |
|--|--------------------------------------|
| buffers. | |

IRREGULAR AUTOMATIC TRANSMISSION

| Deteriorated variable speed rollers | Contact an Authorised Service |
|-------------------------------------|-------------------------------|
| and/or driving belt and/or clutch | Centre |

EXHAUST NOISE

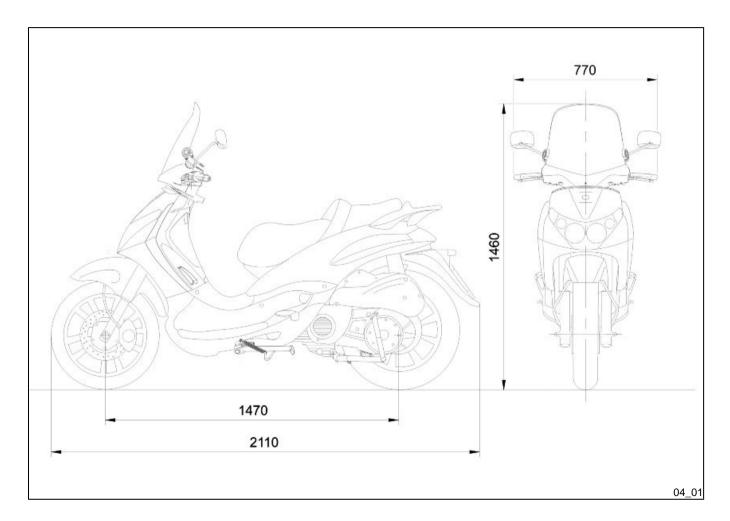
Depression tube damaged/ Contact an **Authorised Service** disconnected or secondary valve damaged **Centre**

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Chap. 04 Technical data



ENGINE TECHNICAL DATA

| Туре | Single-cylinder, 4-stroke | |
|-------------------|--|--|
| Cubic capacity | 124 cm ³ | |
| Bore x stroke | 57.0 x 48.6 mm | |
| Compression ratio | 12 ± 0.5: 1 | |
| Timing system | 4 valves, single overhead camshaft, chain-driven. | |
| Valve clearance | Inlet: 0.10 mm Outlet: 0.15 mm | |
| Max. Power | 11 kW at 9,750 rpm | |
| MAX. torque | 12 Nm at 8,000 rpm | |
| Main drive | Automatic expandable pulley variator with torque server, V-belt, automatic self-ventilating centrifugal dry clutch | |
| Final reduction | Gear reduction unit in oil bath. | |
| Lubrication | Engine lubrication with lobe pump (inside crankcase) controlled by a chain with double filter: mesh and paper. | |
| Cooling | Forced-circulation coolant system. | |
| Start-up | Electric | |
| Ignition | Capacitive discharge ignition, with variable advance and separate HV coil. | |

| Ignition advance | from 10° ± 1° at 2.000 rpm to 32° ± 1° at 6.500 rpm |
|------------------------|---|
| Spark plug | CHAMPION RG4HC |
| Alternative spark plug | NGK CR8EB |
| Fuel supply | KEIHIN CVEK 30 carburettor and electrical fuel pump. |
| Fuel | Unleaded petrol (95 RON) |
| Exhaust muffler | absorption-type exhaust muffler with catalytic converter. |
| Emission regulations | EURO 3 |

VEHICLE TECHNICAL DATA

| Chassis | Tubular and sheet steel. |
|------------------|--|
| Front suspension | Hydraulic telescopic fork with Ø 35- mm stem |
| Rear suspension | Two double-acting shock absorbers, adjustable to four positions at preloading. |
| Front brake | Ø 260-mm disc brake with hydraulic control activated by handlebar right lever. |
| Rear brake | Ø 260-mm disc brake with hydraulic control activated by handlebar left lever. |
| Wheel rim type | Light alloy rims. |

| Front rim | 16" x 3.00 |
|--------------------------------------|----------------------|
| Rear rim | 16 x 3.50" |
| Front tyre pressure (with passenger) | 2.3 bar (-) |
| Rear tyre pressure (with passenger) | 2.3 bar (2.5 bar) |
| Kerb weight | 161 ± 5 kg |
| Maximum weight allowed | 350 kg |
| Battery | Sealed, 12 V / 10 Ah |
| | |

CAPACITY

| Engine oil | 1.10 |
|----------------------|---------------------|
| Transmission oil | 250 cm ³ |
| Cooling system fluid | 1.75 |
| Fuel tank (reserve) | ~ 10 l (2 l) |

Kit equipment

One box spanner; one lever for box spanner; one twin screwdriver; one hexagonal wrench (mm 6); one special wrench for adjusting the rear shock absorbers. The tools are stored in the helmet compartment.

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Chap. 05
Spare parts and
accessories



Warnings (05_01)

WARNING



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

WARNING





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

WARNING





PIAGGIO MARKETS ITS OWN LINE OF ACCESSORIES THAT ARE RECOGNISED AND GUARANTEED FOR USE. IT IS THEREFORE ESSENTIAL, IN ORDER TO CHOOSE AND MOUNT THE ACCESSORIES CORRECTLY, TO CONTACT AN AUTHORISED DEALER OR SERVICE CENTRE. 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.

WARNING



NEVER RIDE THE SCOOTER EQUIPPED WITH ACCESSORIES (TOP BOX AND/ OR WINDSHIELD) AT A SPEED HIGHER THAN 100 km/h.

THE SCOOTER CAN BE RIDDEN AT A HIGHER SPEED WITHOUT THE ACCESSORIES MENTIONED BEFORE WITHIN THE LIMITS ESTABLISHED BY LAW.

IF THERE SHOULD BE NON-PIAGGIO ACCESSORIES INSTALLED, OR AN ABNORMAL LOAD, OR IF THE SCOOTER IS NOT IN A GENERALLY GOOD CONDITION, OR WHENEVER WEATHER CONDITIONS DEMAND IT, SPEED SHOULD BE REDUCED FURTHER.

WARNING



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

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

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Chap. 06 Programmed maintenance

Scheduled maintenance table

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.

All scheduled maintenance services must be carried out at the specified intervals, even if the stated mileage has not yet been reached. Punctual scooter servicing is essential to ensure your warranty remains valid. For any further information concerning Warranty procedures and "Scheduled Maintenance", please refer to the "Warranty Booklet".

EVERY 2 YEARS

Coolant - change

Brake fluid - change

Secondary air filter (external / internal) - Clean

EVERY 3.000 KM

Engine oil - level check/ top-up

AFTER 1,000 KM

Engine oil - replacement Hub oil - change Engine oil - change Idle speed (*) - adjustment Throttle lever - adjustment Steering - adjustment Brake control levers - greasing Brake pads - check condition and wear Brake fluid level - check Safety locks - check Electrical system and battery - check Tyre pressure and wear - check

Vehicle and brake test - road test

(*) See instructions in the «Idle speed adjustment» section

AFTER 6.000 KM

Engine oil - change

Hub oil level - check

Spark plug/ electrode gap - check

Air filter - clean

Oil filter -Replacement

Valve clearance - Check

Sliding blocks / variable speed rollers - check

Driving belt - checking

Coolant level - check

Brake pads - check condition and wear

Brake fluid level - check

Electrical system and battery - check

Tyre pressure and wear - check

Vehicle and brake test - road test

AT 12,000 KM AND AT 60,000 KM

Engine oil - replacement

Hub oil level - check

Spark plug - replacement

Air filter - clean

Engine oil - change

Idle speed (*) - adjustment

Sliding block / variable speed rollers - change

Throttle lever - adjustment

Coolant level - check

Steering - adjustment

Brake control levers - greasing

Brake pads - check condition and wear

Brake fluid level - check

Transmission elements - lubrication

Safety locks - check

Suspensions - check

Electrical system and battery - check

Headlight - adjustment

Tyre pressure and wear - check

Vehicle and brake test - road test

Driving belt - replacement

(*) See instructions in the «Idle speed adjustment» section

AT 18,000 KM AND AT 54,000 KM

Engine oil - change

Hub oil level - check

Spark plug/ electrode gap - check

Air filter - clean

Oil filter -Replacement

Valve clearance - check

Sliding blocks / variable speed rollers - check

Coolant level - check

Radiator - external cleaning/ check

Brake pads - check condition and wear

Brake fluid level - check

Electrical system and battery - check

Tyre pressure and wear - check

Vehicle and brake test - road test

Driving belt - checking

AT 24,000 KM AND AT 48,000 KM

| Engine oil - replacement | |
|---|--|
| Hub oil - change | |
| Spark plug - replacement | |
| Air filter - clean | |
| Engine oil - change | |
| Idle speed (*) - adjustment | |
| Sliding block / variable speed rollers - change | |
| Throttle lever - adjustment | |
| Coolant level - check | |
| | |

Steering - adjustment

Brake control levers - greasing

Brake pads - check condition and wear

Brake fluid level - check

Transmission elements - lubrication

Safety locks - check

Suspensions - check

Electrical system and battery - check

Headlight - adjustment

Tyre pressure and wear - check

Tyre pressure and wear - eneck

Vehicle and brake test - road test

Driving Belt - replacement

(*) See instructions in the «Idle speed adjustment» section

AT 30,000 KM, AT 42,000 KM AND AT 66,000 KM

Hub oil level - check

Spark plug/ electrode gap - check

Air filter - clean

Variable speed rollers - check or replacement

Driving belt - checking

Coolant level - check

| Brake pads - check condition and wear | |
|---------------------------------------|--|
| Brake fluid level - check | |
| Electrical system and battery - check | |
| Tyre pressure and wear - check | |
| Vehicle and brake test - road test | |
| Engine oil - replacement | |
| Oil filter -Replacement | |

AFTER 36,000 KM

| Engine oil - replacement | |
|---|--|
| Hub oil level - check | |
| Spark plugs - replacement | |
| Air filter - clean | |
| Engine oil - change | |
| Valve clearance - Check | |
| Idle speed (*) - adjustment | |
| Sliding block / variable speed rollers - change | |
| Throttle lever - adjustment | |
| Driving belt - replacement | |
| Coolant level - check | |
| Radiator - external cleaning/ check | |

Steering - adjustment

Brake control levers - greasing

Brake pads - check condition and wear

Brake fluid level - check

Transmission elements - lubrication

Safety locks - check

Suspensions - check

Electrical system and battery - check

Headlight - adjustment

Tyre pressure and wear - check

Vehicle and brake test - road test

(*) See instructions in the «Idle speed adjustment» section

AFTER 72,000 KM

Engine oil - replacement

Hub oil - change

Spark plugs - replacement

Air filter - clean

Valve clearance - Check

Engine oil - change

Idle speed (*) - adjustment

| Sliding block / variable speed rollers - change |
|---|
| Throttle lever - adjustment |
| Driving belt - replacement |
| Coolant level - check |
| Radiator - external cleaning/ check |
| Steering - adjustment |
| Brake control levers - greasing |
| Brake pads - check condition and wear |
| Brake fluid level - check |
| Transmission elements - lubrication |
| Safety locks - check |
| Suspensions - check |
| Electrical system and battery - check |
| Headlight - adjustment |
| Tyre pressure and wear - check |
| Vehicle and brake test - road test |

(*) See instructions in the «Idle speed adjustment» section

RECOMMENDED PRODUCTS TABLE

| Product | Description | Specifications |
|------------------------|--|---|
| AGIP ROTRA 80W-90 | Rear hub oil | SAE 80W/90 Oil that exceeds the requirements of API GL3 specifications |
| AGIP CITY HI TEC 4T | Oil to lubricate flexible transmissions (throttle control) | Oil for 4-stroke engines |
| AGIP FILTER OIL | Oil for air filter sponge | Mineral oil with specific additives for increased adhesiveness |
| AGIP GP 330 | Grease for brake levers, throttle | White calcium complex soap-based spray grease with NLGI 2; ISO-L-XBCIB2 |
| AGIP CITY HI TEC 4T | Engine oil | SAE 5W-40, API SL, ACEA A3, JASO MA Synthetic oil |
| AGIP BRAKE 4 | Brake fluid | FMVSS DOT 4 Synthetic fluid |
| AGIP PERMANENT SPEZIAL | coolant | Monoethylene glycol-based antifreeze fluid, CUNA NC 956-16 |

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