

PX₁₅₀

OWNER'S MANUAL



Vespa[®]

CONGRATULATIONS!

You have made an excellent choice with your new PX 150 motorscooter.

Before you set off, be sure to read this handbook from cover to cover.

You will find all the instructions you need to get to know your new vehicle thoroughly and use it correctly.

Reading through the numerous features and top level specifications described in the handbook will help you get a feel for your new vehicle, providing the basis for many years of riding pleasure.

PX150



PIAGGIO*

Your vehicle has been manufactured by the company Piaggio & C. S.p.A. at its factory in Pontedera, Italy.

www.vespausa.com

THE HANDBOOK

The instructions in this handbook are designed to provide a clear and simple guide to the use of your new vehicle. The handbook contains information regarding maintenance work and periodic checks that must be carried out by Authorized Vespa Service Centers.

You will also find instructions for several simple repair jobs you can do yourself. All operations not explicitly described in the handbook require the use of special tools and/or specific technical skills and should be performed exclusively by Authorized Vespa Service Centers.

Areas of text highlighted with the symbols shown on the next page contain important information regarding use of the vehicle and road safety.

SYMBOL FOR THE CORRECT USE OF YOUR NEW VEHICLE

The symbols on this page are important. They highlight areas of the handbook that deserve special attention. The three symbols are distinctive so that information can be located quickly.



PERSONAL SAFETY WARNING,

Failure to observe these instructions will result in a serious risk of personal injury or even death.



ENVIRONMENTAL RESPECT

Sections marked with this symbol indicate the correct use of the vehicle in full respect of your natural surroundings.



VEHICLE SAFETY CAUTION,

Failure to observe these instructions will result in the risk of serious damage to the vehicle and, in certain cases, may invalidate the warranty.

GENERAL SAFETY RULES

FOREWORD

This manual is an important and integral part of your vehicle. Keep it with your vehicle at all times and when vehicle is resold. Piaggio has prepared this manual to provide the owner, with correct and current information. However, since Piaggio constantly improves the design of its vehicles, there may be slight discrepancies between your vehicle and the material given in this manual.

If you have any questions about your vehicle, contact your local Vespa Dealer, as he will have the very latest technical information available from the factory or call toll free:

1-866-4 PIAGGIO (1-866-474-2444)

For tests and repairs not expressly described in this manual, to purchase Piaggio genuine spare parts, accessories, and other products, or for help with specific problems, please contact your local **Authorized Vespa Service Center**.

These professionals will be able to promptly and accurately help you. Thank you for choosing Piaggio. Have a great ride!

CARBON MONOXIDE

If it is necessary to let the engine run in order to carry out some work, make sure that the area in which you are operating is properly ventilated. Never run the engine in enclosed spaces. If it is necessary to work indoors, use an exhaust evacuation system.



WARNING

STARTING OR RUNNING THE ENGINE IN AN ENCLOSED AREA CAN LEAD TO SERIOUS ILLNESS OR EVEN DEATH. EXHAUST FUMES ARE POISONOUS AND MAY CAUSE LOSS OF CONSCIOUSNESS AND DEATH WITHIN A SHORT TIME SINCE THEY CONTAIN CARBON MONOXIDE, A POISONOUS GAS THAT IS BOTH ODORLESS AND TASTELESS. ALWAYS OPERATE YOUR MOTOR SCOOTER IN AN AREA WITH ADEQUATE VENTILATION.



FUEL

WARNING

GASOLINE IS EXTREMELY FLAMMABLE AND IN SOME CONDITIONS CAN BECOME EXPLOSIVE. THEREFORE, IT IS NECESSARY TO REFUEL AND CARRY OUT MAINTENANCE OPERA-

TIONS INVOLVING THE FUEL SYSTEM IN A WELL VENTILATED AREA WITH THE ENGINE OFF. DO NOT REFUEL OR PERFORM ANY MAINTENANCE ON THE FUEL SYSTEM WITH THE ENGINE RUNNING. DO NOT SMOKE WHILE REFUELING OR NEAR FUEL VAPORS. NEVER ALLOW ANY PORTION OF THE FUEL SYSTEM TO COME IN CONTACT WITH OPEN FLAMES, SPARKS AND/OR OTHER HEAT SOURCES. BE CAREFUL TO AVOID SPILLING FUEL WHEN YOU ARE REFUELING. SPILLED FUEL COULD IGNITE WHEN IT CONTACTS HOT ENGINE OR EXHAUST SYSTEM SURFACES. IF YOU ACCIDENTALLY SPILL SOME FUEL, MAKE SURE THAT IT IS WIPED UP OR COMPLETELY EVAPORATED BEFORE STARTING THE VEHICLE.

Since gasoline expands in the fuel tank when the vehicle is sitting in the open sun, never fill the tank completely to the brim. Leave at least one inch of expansion space. Avoid any contact of the fuel with your skin, and avoid inhalation of fuel vapors. Do not ever attempt to siphon fuel from one container to another using your mouth as suction for a siphon hose. Use a manual pump or a similar system.

**WARNING**

GASOLINE IS POISONOUS AND CARCINOGEN AND CONTAINS CHEMICAL SUBSTANCES THAT CAUSE BIRTH DEFECTS AND OTHER REPRODUCTIVE PROBLEMS. IF GASOLINE SHOULD BE ACCIDENTALLY SPILLED ON THE SKIN OR CLOTHES, IMMEDIATELY WASH IT OFF WITH SOAP AND WATER AND CHANGE CLOTHES.

Should you accidentally spill gasoline in your eyes, flush with a large quantity of water and immediately contact a health professional. Should you accidentally get gasoline into your mouth, do not induce vomiting. Drink a large quantity of milk or clear water and immediately contact a health professional. If your vehicle overturns, it may leak gasoline which is extremely flammable. Flames or sparks may ignite the gasoline, which will not only destroy the vehicle but also could do serious property damage to surrounding property and cause serious injuries or even death.

DISPOSE OF UNWANTED GASOLINE PROPERLY, DO NOT DUMP IT INTO STORM DRAINS, SINKS OR TOILETS.

KEEP GASOLINE AWAY FROM CHILDREN.

**HOT COMPONENTS****WARNING**

THE ENGINE AND ALL PARTS OF THE EXHAUST SYSTEM, AS WELL AS THE BRAKING SYSTEM, BECOME VERY HOT AND REMAIN HOT FOR SOME TIME AFTER THE MOTORCYCLE AND THE ENGINE ARE STOPPED. BEFORE HANDLING ANY COMPONENT OF YOUR MOTORCYCLE AFTER RIDING, ENSURE THAT IT HAS COOLED SUFFICIENTLY TO BE SAFE TO HANDLE.

**HIGH VOLTAGE CABLE****WARNING**

STARTING THE ENGINE, WHILE KEEPING IN YOUR HANDS THE HIGH VOLTAGE CABLE DISCONNECTED FROM THE SPARK PLUG, IS EXTREMELY DANGEROUS.

**COOLING FAN****WARNING**

KEEP YOUR FINGERS AND OTHER BODY PARTS, AS WELL AS ANY OTHER OBJECT, WELL CLEAR OF THE COOLING FAN WHEN THE ENGINE IS RUNNING. FAILURE TO OBSERVE THIS WARNING CAN DAMAGE YOUR ENGINE, AS WELL AS CAUSE SERIOUS INJURY TO YOU.

**REAR WHEEL****WARNING**

BE VERY CAREFUL TO KEEP YOUR FINGERS, ALL YOUR OTHER BODY PARTS, AND ANY OBJECT WELL CLEAR OF THE REAR WHEEL WHILE THE ENGINE IS RUNNING AND THE VEHICLE IS RESTING ON ITS STAND. FAILURE TO OBSERVE THIS WARNING CAN LEAD TO SERIOUS PERSONAL INJURY, AS WELL AS DAMAGE TO YOUR ENGINE.

**SHOCK-ABSORBERS****WARNING**

DO NOT DISASSEMBLE THE FRONT AND REAR SHOCK-ABSORBER. THE SHOCK-ABSORBERS HAVE PRE-LOADED SPRINGS. DISASSEMBLY CAN CAUSE SERIOUS INJURY AND EVEN DEATH.

**USED ENGINE OIL****WARNING**

USE LATEX GLOVES FOR THE MAINTENANCE OPERATIONS THAT REQUIRE CONTACT WITH USED OIL.

GENERAL SAFETY RULES



BRAKE FLUID

CAUTION

BRAKE FLUID IS EXTREMELY POISONOUS. NEVER ALLOW BRAKE FLUID TO BE INGESTED OR SWALLOWED. SHOULD BRAKE FLUID ACCIDENTALLY BE SWALLOWED, DRINK LARGE QUANTITIES OF MILK OR PURE WATER AND IMMEDIATELY SEEK PROFESSIONAL MEDICAL ASSISTANCE. BRAKE FLUID IS HIGHLY DESTRUCTIVE TO SKIN AND EYE TISSUE. SHOULD YOU ACCIDENTALLY SPILL BRAKE FLUID ON YOURSELF, REMOVE THE CONTAMINATED CLOTHING, WASH YOUR BODY WITH SOAP AND WARM WATER IMMEDIATELY AND SEEK PROFESSIONAL MEDICAL ASSISTANCE. SHOULD YOU ACCIDENTALLY SPLASH BRAKE FLUID INTO YOUR EYES, FLUSH WITH A LARGE QUANTITY OF COOL, CLEAR WATER AND IMMEDIATELY SEEK PROFESSIONAL MEDICAL ASSISTANCE. KEEP BRAKE FLUID AWAY FROM CHILDREN.



BATTERY HYDROGEN GAS AND ELECTROLYTE

WARNING

VEHICLE BATTERIES GIVE OFF NOXIOUS AND EXPLOSIVE GASES; KEEP

CIGARETTES, FLAMES AND SPARKS AWAY FROM THE BATTERY. PROVIDE ADEQUATE VENTILATION WHEN OPERATING OR RECHARGING THE BATTERY. DURING RECHARGING OR USE, MAKE SURE THAT THE ROOM IS PROPERLY VENTILATED AND AVOID INHALING THE GASES RELEASED DURING THE RECHARGING. THE BATTERY CONTAINS SULPHURIC ACID (ELECTROLYTE). CONTACT WITH THE SKIN OR EYES MAY CAUSE SERIOUS BURNS. ALWAYS WEAR PROTECTIVE CLOTHING, RUBBER GLOVES, AND TIGHT FITTING GOGGLES OR A FACE SHIELD WHEN WORKING AROUND THE BATTERY, ESPECIALLY WHEN FILLING THE BATTERY WITH EITHER WATER OR ELECTROLYTE. IN CASE OF CONTACT WITH THE SKIN, FLUSH IMMEDIATELY WITH PLENTY OF WATER. IN CASE OF CONTACT WITH THE EYES, FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IMMEDIATELY CONSULT A HEALTH PROFESSIONAL. THE ELECTROLYTE IS POISONOUS. IF THE ELECTROLYTE IS ACCIDENTALLY SWALLOWED, DRINK LARGE QUANTITIES OF WATER OR MILK AND THEN FOLLOW WITH MAGNESIA, BEATEN EGG OR VEGETABLE OIL IMMEDIATELY

CONSULT A HEALTH PROFESSIONAL. KEEP AWAY FROM CHILDREN.



PRECAUTIONS GENERAL ADVICE

WARNING

BEFORE STARTING THE ENGINE, CAREFULLY READ THIS MANUAL AND IN PARTICULAR THE CHAPTERS "PERSONAL SAFETY - ENVIRONMENTAL RESPECT - VEHICLE SAFETY" SEE P. 3. YOUR SAFETY AND THAT OF THOSE AROUND YOU DEPENDS NOT ONLY ON YOUR SKILL AS A RIDER, BUT ALSO YOUR KNOWLEDGE ABOUT YOUR MOTORSCOOTER AND ABOUT RIDING SAFELY. THEREFORE, IT IS ESSENTIAL THAT YOU DO NOT OPERATE YOUR VEHICLE ON PUBLIC STREETS UNTIL YOU HAVE RECEIVED INSTRUCTIONS FROM A QUALIFIED SAFETY ORGANIZATION SUCH AS THE MOTORCYCLE SAFETY FOUNDATION, AND ARE PROPERLY TRAINED AND LICENSED.

REPORTING OF DEFECTS THAT AFFECT SAFETY

If you believe that your motorscooter has a defect which could cause an accident or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Piaggio by calling toll free 1-866-4 PIAGGIO (1-866-474-2444). If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of motorscooters, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your Dealer, or Piaggio. To contact NHTSA, you may either call the Auto Safety Hotline toll free at 1-800-424-9393 (or 366-0123 in the Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about motorcycle safety from the Hotline.

ROAD REGULATIONS AND USE OF THE MOTORSCOOTER

Rules of the road vary from country to country or state to state. It is essential that you understand in advance the rules of the road of the country or of the state

in which your vehicle will be used.

WARNING

THIS MOTORSCOOTER HAS BEEN DESIGNED AND PRODUCED FOR USE ON EVEN AND PAVED ROADS OR SURFACES ONLY. DO NOT USE THE MOTORSCOOTER ON UNPAVED SURFACES, IN ORDER TO AVOID OVERTURNING OR OTHER ACCIDENTS.

WARNING

PIAGGIO RECOMMENDS YOU NOT TO RIDE YOUR MOTORSCOOTER ON STATE OR NATIONAL HIGHWAYS, FREEWAYS OR EXPRESSWAYS.

NOISE EMISSION WARRANTY

Piaggio warrants that this exhaust system, at the time of sale, meets all applicable U.S. EPA Federal noise standards. This warranty covers the first person who buys this exhaust system for purposes other than resale, and to all subsequent buyers.

Warranty claims should be directed to: Piaggio USA, Inc.
20003 South Rancho Way, Rancho Dominguez, CA 90220 USA.

INFORMATION ON THE NOISE AND EXHAUST GAS EMISSION CONTROL SYSTEM

ORIGIN OF THE EMISSIONS

The combustion process produces carbon monoxide and hydrocarbons. The control of hydrocarbons is very important, because under certain conditions they react to exposure to sunlight and produce photochemical smog. Carbon monoxide does not react in the same way, but it is toxic and poisonous. Piaggio utilizes "lean" carburetor settings to reduce the production of carbon monoxide and hydrocarbons.

EXHAUST EMISSION CONTROL SYSTEM

The Exhaust Emission Control System requires "lean" carburetor settings and no adjustments should be made, except idle speed by means of the appropriate screw. The vehicle is equipped with a catalytic converter in order to reduce air pollution.

GENERAL SAFETY RULES



TAMPERING

WARNING

TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED. FEDERAL LAW PROHIBITS THE FOLLOWING ACTS:

- A) REMOVAL OR RENDERING INOPERATIVE BY ANY PERSON OTHER THAN FOR PURPOSES OF MAINTENANCE, REPAIR, OR REPLACEMENT, ANY DEVICE OR ELEMENT OF DESIGN INCORPORATED INTO ANY NEW MOTORSCOOTER FOR THE PURPOSE OF NOISE CONTROL PRIOR TO ITS SALE OR DELIVERY TO THE ULTIMATE PURCHASER OR WHILE IT IS IN USE, OR
- B) USE OF THE MOTORSCOOTER AFTER SUCH DEVICE OR ELEMENT OF DESIGN HAS BEEN REMOVED OR RENDERED INOPERATIVE BY ANY PERSON. AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:
- A) REMOVAL OF, OR PUNCTURING THE MUFFLER, BAFFLES, HEAD-ER PIPES OR ANY OTHER COMPONENT WHICH CONDUCTS EXHAUST GASES.
- B) REMOVAL OR PUNCTURING OF ANY PART OF THE INTAKE SYSTEM.

C) LACK OF PROPER MAINTENANCE.

D) REPLACEMENT OF ANY MOVING PART OF THE MOTORSCOOTER, OR PARTS OF THE EXHAUST OR INTAKE SYSTEM, WITH PARTS OTHER THAN THOSE SPECIFIED BY PIAGGIO.



CAUTION

THE VEHICLE SHOULD BE CHECKED FOR REPAIR OR REPLACEMENT IF THE MOTORSCOOTER NOISE HAS INCREASED SIGNIFICANTLY THROUGH USE. OTHERWISE, THE OWNER MAY BECOME SUBJECT TO PENALTIES UNDER STATE AND LOCAL ORDINANCES.



CAUTION

IT IS STRICTLY FORBIDDEN TO MODIFY ANY PART OR FEATURE OF YOUR PX150 MOTORSCOOTER TO INCREASE THE HORSE POWER OR PERFORMANCE. ANY SUCH MODIFICATION IS STRICTLY ILLEGAL. FURTHER, SERIOUS DAMAGE MAY BE DONE TO YOUR MOTORSCOOTER, WORSE, ANY SUCH MODIFICATIONS MAY MAKE YOUR MOTORSCOOTER UNSAFE, WHICH COULD LEAD TO AN

UPSET OR ACCIDENT, WITH CONSEQUENT SERIOUS INJURY OR EVEN DEATH. FURTHER, ANY SUCH MODIFICATION WILL IMMEDIATELY AND COMPLETELY VOID THE WARRANTY. PLEASE CONSULT YOUR FRANCHISED VESPA DEALER TO DETERMINE WHAT ACCESSORIES MAY BE INSTALLED ON YOUR PX150 WITHOUT CHANGING THE PERFORMANCE OR VOIDING THE WARRANTY.

PROBLEMS THAT MAY AFFECT THE MOTORSCOOTER EMISSIONS

If any of the following symptoms are observed, immediately have your motor-scooter inspected and repaired by Authorized Vespa Service Center.

Symptoms:

- Difficulty starting or stalling after starting.
- Irregular idle.
- Misfiring or backfiring during acceleration.
- After-burning (backfiring).
- Poor engine performance, degraded handling, or poor fuel economy.

PROTECTIVE CLOTHING

For your safety, we strongly recommend that you always wear an approved motorcycle helmet, eye protection, boots, gloves, long pants, and a long-sleeved shirt or jacket whenever you ride.

Although complete protection is not possible, wearing proper gear can reduce the chance of injury. See your VESPA Dealer for stylish, comfortable and effective riding gear suggestions.

HELMETS AND EYE PROTECTION

Your helmet is your most important piece of riding gear because it offers the best protection against head injuries. A helmet should fit your head comfortably and securely. A bright-colored helmet can make you more noticeable in traffic, as can reflective strips.

An open-face helmet offers some protection, but a full-face helmet offers more. Always remember to properly fasten your crash helmet. Regardless of the style, look for a DOT (Department Of Transportation) sticker in any helmet you buy (USA only), and always wear a face shield or goggles to protect your eyes and help your vision.

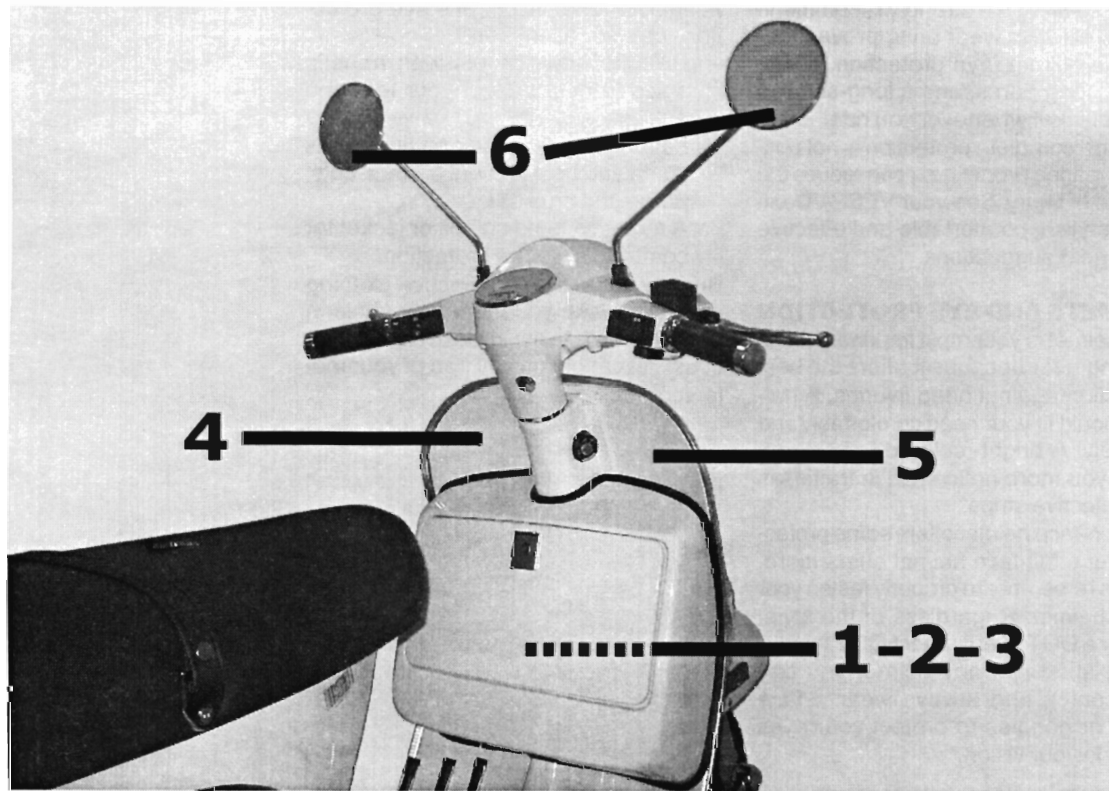
ADDITIONAL RIDING GEAR

In addition to a helmet and eye protection, we also recommend:

- Properly fitted boots with nonslip soles to help protect your feet and ankles.
- Leather gloves to keep your hands warm and help prevent blisters, cuts, burns and bruises.
- A motorcycle riding suit or jacket for comfort as well as protection.

Brightly colored and reflective clothing can help make you more noticeable in traffic. Be sure to avoid loose clothes that could get caught on any part of your motorscooter.

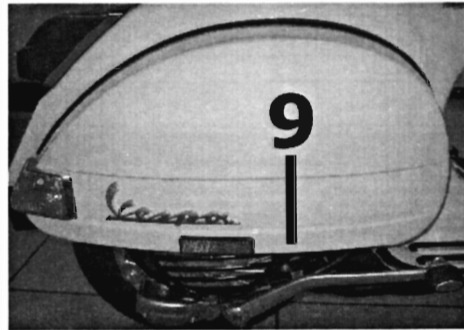
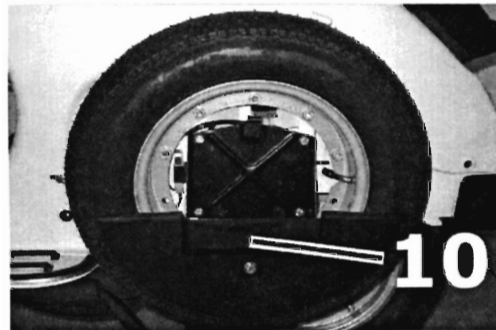
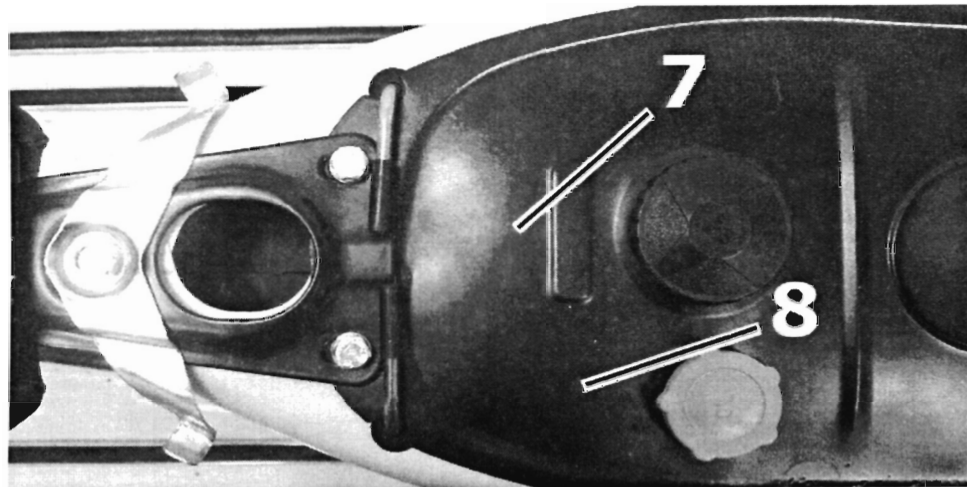
LOCATION OF THE LABELS



Ref.	Description												
1	<p>MOTORCYCLE NOISE EMISSION CONTROL INFORMATION</p> <p>THIS 2005 VES21P0150 MOTORCYCLE, 943883 MEETS EPA NOISE EMISSION REQUIREMENTS OF 80 dBA AT 4750 RPM BY THE FEDERAL TEST PROCEDURE. MODIFICATIONS WHICH CAUSE THIS MOTORCYCLE TO EXCEED FEDERAL NOISE STANDARDS ARE PROHIBITED BY FEDERAL LAW. SEE OWNER'S MANUAL.</p> <p style="text-align: right;">Dwg. 622720</p>												
2	<p>VEHICLE EMISSION CONTROL INFORMATION</p> <p>ENGINE DISPLACEMENT: 150 c.c. ENGINE FAMILY: 5PVMCO 15M09 THIS VEHICLE CONFORMS TO US EPA REGULATIONS APPLICABLE TO 2005 MODEL YEAR NEW MOTORCYCLES ENGINE EXHAUST CONTROL SYSTEM OC</p> <p>ENGINE TUNEUP SPECIFICATIONS IGNITION TIMING: 16° IDLE SPEED: 1350 ± 100 RPM IDLE CO (%) NO ADJUSTMENT</p> <p>SPARK PLUG: CHAMPION R62C SPARK PLUG GAP: 0.320 - 0.324 inch (8.1 - 8.3 mm) FUEL: MINIMUM OCTANE RATING (M+R)/2 METHOD 90 OIL: FOR MIXING DEVICE USE ONLY FULLY SYNTHETIC OIL API TC**</p> <p style="text-align: right;">Dwg. 622721</p>												
3	<p>▲ WARNING !</p> <p>Do not use any tire other than those recommended and approved by PIAGGIO & C. SpA. Maintain proper tire inflation. Do not use any tire with less than 1/16" (2 mm) tread remaining. Do not repair any tire, nor use a repaired tire. Do not ride your motorcycle overloaded or with an unbalanced load. Failure to follow these warnings can lead to an accident and serious injuries or death. See Owner's manual</p> <table border="1"> <thead> <tr> <th></th> <th>FRONT tire</th> <th>REAR tire</th> <th>RECOMMENDED TIRES</th> </tr> </thead> <tbody> <tr> <td>Driver</td> <td>1.3 bar (18.9 psi)</td> <td>1.8 bar (26 psi)</td> <td>Michelin S83</td> </tr> <tr> <td>Driver + passenger</td> <td>1.3 bar (18.9 psi)</td> <td>2.8 bar (40.6 psi)</td> <td>3.50-10 58J</td> </tr> </tbody> </table>		FRONT tire	REAR tire	RECOMMENDED TIRES	Driver	1.3 bar (18.9 psi)	1.8 bar (26 psi)	Michelin S83	Driver + passenger	1.3 bar (18.9 psi)	2.8 bar (40.6 psi)	3.50-10 58J
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Ref.	Description
4	<p>▲ WARNING !</p> <ul style="list-style-type: none"> - Wear a helmet, eyes protection and bright protective clothing - Don't ride after consuming alcohol or other drugs. - Slow down on slippery surface, unfamiliar terrain or when visibility is reduced. - Read Owner's manual carefully. - Failure to follow these warnings can lead to an accident and serious injuries or death - USE UNLEADED FUEL MINIMUM OCTANE RATING (M+R)/2 METHOD 90 - See Owner's manual for the correct running in and maintenance of the vehicle.
5	<p>MFD BY PIAGGIO & C. SPA 00/00</p> <p>GVWR: 327KG (720LB) GAWR FRONT: 91KG (200LB) WITH 3.50 - 10 58J TIRE, E10X2 10 RIM, AT 130 KPA (18.9 PSI) COLD. GAWR REAR: 236KG (520LB) WITH 3.50 - 10 69J TIRE, E10X2 10 RIM, AT 280 KPA (40.6 PSI) COLD</p> <p>THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE</p> <p>VIN: <input type="text"/></p> <p>TYPE: MOTORCYCLE</p>
6	<p style="text-align: center;">OBJECTS IN MIRROR ARE CLOSER THAN THEY APPEAR</p>

LOCATION OF THE LABELS



Ref.	Description
7	<div data-bbox="331 260 677 335" style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center;"> <p>UNLEADED FUEL</p> </div>
8	<div data-bbox="320 473 696 707" style="border: 1px solid black; padding: 10px;"> <div style="background-color: #cccccc; padding: 5px; text-align: center;">⚠ WARNING !</div> <p style="text-align: center;">ENGINE OIL Please use two stroke special oil undiluted. See Owner's manual</p> </div>
9	<div data-bbox="261 792 766 920" style="border: 1px solid black; padding: 10px;"> <div style="background-color: #cccccc; padding: 5px; text-align: center;">⚠ WARNING!</div> <p style="text-align: center;">Kick start lever. Improper use can cause severe injuries. See owner's manual</p> </div>

Ref.	Description
10	<div data-bbox="970 191 1455 393" style="border: 1px solid black; padding: 10px;"> <div style="background-color: #cccccc; padding: 5px; text-align: center;">⚠ WARNING !</div> <p>Batteries contain sulphuric acid which can cause severe injuries. AVOID contact with skin, eyes or clothing. Antidote: EXTERNAL - Flush with water INTERNAL - Drink large quantities of water or milk. Follow with milk or magnesium beaten egg or vegetable oil. Call physician immediately. Eyes: flush with water for 15 minutes and get prompt medical attention. KEEP OUT OF REACH OF CHILDREN. Batteries produce explosive gases. Keep sparks, flames, cigarettes away. Charge only in wet ventilated space. Always wear protective goggles when working around batteries. Always connect the battery vent tube. Failure to heed this warning will cause corrosion of electrical system.</p> </div>

INDEX

1 VEHICLE

Dashboard	1.1
Controls	1.2
Keys	1.3
Identification	1.4

2 USE

Checks and refuelling	2.1
Running-in	2.2
Starting the engine	2.3
Difficult start and stopping the engine	2.4
Precautions/Difficult start and stopping the engine	2.5
Automatic transmission / safe driving	2.6
Basic safety rules	2.7

3 MAINTENANCE

Gearbox oil level	3.1
Tires	3.2
Removing spark plug and air filter	3.3
Brake fluid level	3.4
Battery	3.5
Fuses	3.6
Lights	3.7
Rear-view mirrors	3.8
Idle adjustment	3.9

Front and rear brake	3.10
Puncture	3.11
Store the vehicle	3.12
Trouble shooting	3.13

4 TECHNICAL DATA

Technical data	4.1
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5 PARTS AND ACCESSORIES

Parts and accessories	5.1
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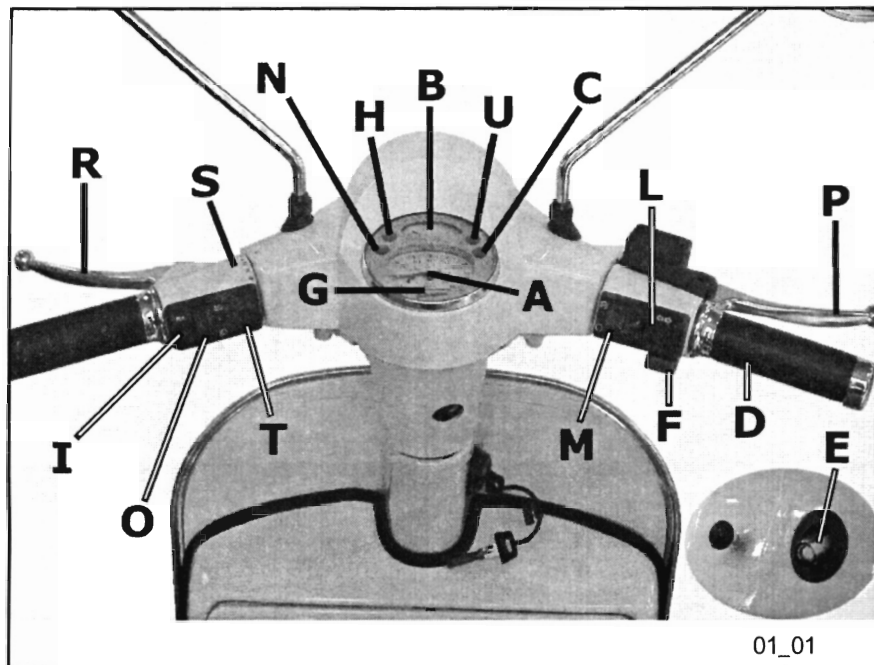
6 SCHEDULED MAINTENANCE

Service check sheets	6.1
Recommended products	6.2

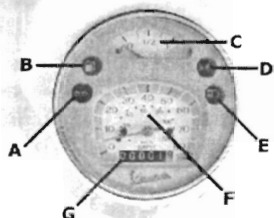
PX150



CHAP . 01 VEHICLE

**DASHBOARD (01_01)**

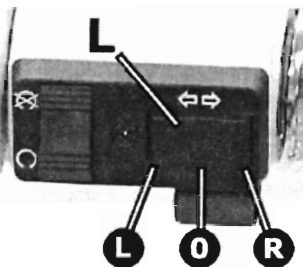
- A = Speedometer
- B = Fuel level indicator
- C = High beam indicator
- D = Throttle
- E = Oil reserve indicator
- F = Starter button
- G = Odometer
- H = Fuel reserve indicator
- I = Horn button
- L = Turn signal switch
- M = Emergency engine stop switch
- N = Turn signal indicator
- O = High beam/low beam switch
- P = Front brake lever
- R = Clutch lever
- S = Gear shift
- T = Not used switch on US models
- U = Light indicator



01_02



01_03



01_04

INSTRUMENTS (01_02)

- A = Turn signal warning light
- B = Fuel reserve indicator
- C = Fuel level gauge
- D = Headlamp warning light
- E = High-beam warning light
- F = Speedometer
- G = Odometer

KEY SWITCH (01_03)

- LOCK** = Ignition off, key may be removed, mechanical anti-theft device enabled.
- OFF** = Ignition off, key may be removed, mechanical anti-theft device disabled.
- ON** = Ready to start, non-extractable key, mechanical anti-theft device disabled.

LOCKING THE HANDLEBAR (01_03)

Turn the handlebar leftwards (to the end of the stroke), turn the key to «**LOCK**» and remove it.

RELEASING THE HANDLEBAR (01_03)

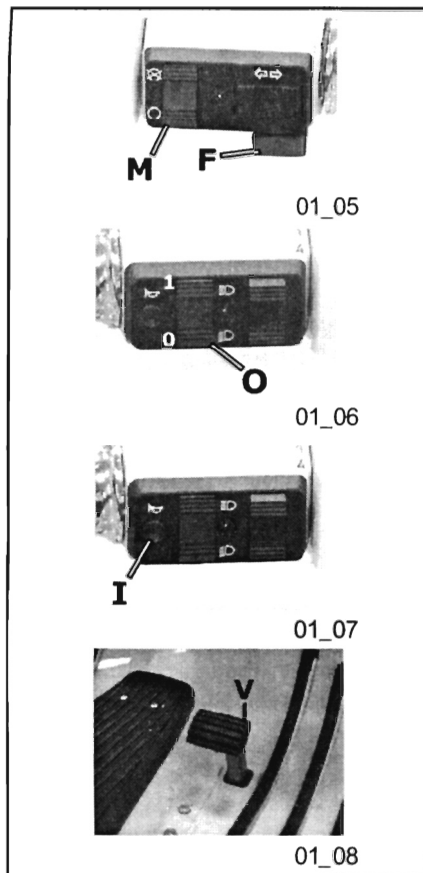
Insert the key and turn it to «**OFF**».

**WARNING**

DO NOT TURN THE KEY TO «LOCK» OR «OFF» WHILE RIDING. IF YOU ATTEMPT TO TURN THE KEY TO «LOCK», THE HANDLEBARS WILL LOCK IN ONE POSITION; IF YOU ATTEMPT TO TURN THE KEY TO «OFF», THE ENGINE WILL IMMEDIATELY STOP. IN BOTH CASES YOU WILL LOSE CONTROL AND A SERIOUS ACCIDENT CAN HAPPEN, LEADING TO INJURY OR EVEN DEATH.

TURN SIGNAL SWITCH «L» (01_04)

Lever to «**L**» = left direction indicators on;
 Lever to «**R**» = right direction indicators on;
 The lever automatically returns to position «**0**» and the indicators remain on; press the lever to turn them off.



EMERGENCY ENGINE STOP SWITCH «M» (01_05)

⊗ = OFF
 ○ = RUN

NOTE
 BEFORE STARTING THE ENGINE, WE RECOMMEND TO CHECK THAT THE EMERGENCY ENGINE STOP SWITCH IS IN RUN POSITION.

⚠ WARNING
 THE THROTTLE ON YOUR MOTOR SCOOTER CAN MALFUNCTION AND STICK. IF THIS OCCURS IT WILL MAKE IT DIFFICULT TO SPEED UP OR SLOW DOWN WHEN IT IS NECESSARY TO DO SO. ALSO, THE THROTTLE CAN STICK IN THE OPEN POSITION MAKING IT IMPOSSIBLE TO SLOW THE MOTOR SCOOTER. AVOID THIS DANGER BY CHECKING THE OPERATION OF THE THROTTLE EVERY TIME BEFORE YOU START THE ENGINE. ENSURE THAT IT RETURNS FULLY TO THE IDLE POSITION WHEN RELEASED. IF IT DOES NOT, HAVE YOUR MOTOR

SCOOTER SERVICED BY YOUR VESPA SERVICE CENTER. SHOULD THE THROTTLE STICK WHILE YOU ARE RIDING, BRING THE MOTOR SCOOTER TO A SAFE STOP WITH THE EMERGENCY ENGINE STOP SWITCH.

⚠ WARNING
 WE RECOMMEND NOT TO USE YOUR VEHICLE WITH DISCONNECTED BATTERY. WITH THE ABOVE CONDITIONS, THE EMERGENCY ENGINE STOP SWITCH DOESN'T WORK, THEREFORE, IN CASE OF FAULTY ENGINE, IT WILL BE POSSIBLE TO STOP ENGINE ONLY WITH KEY SWITCH TO «OFF» POSITION.

STARTER BUTTON «F» (01_05)

Pull the clutch lever, then press the starter button «F» to start the engine.

LIGHT SWITCH «O» (01_06)

0 = Low beam and rear position light
 1 = High beam, low beam and rear position light

HORN BUTTON «I» (01_07)

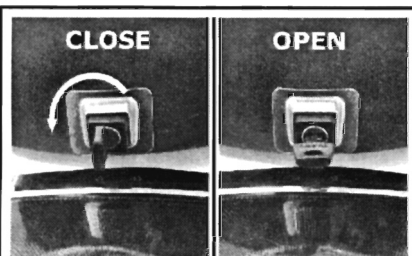
Press the button «I» to hoot the horn.

REAR BRAKE PEDAL «V» (01_08)

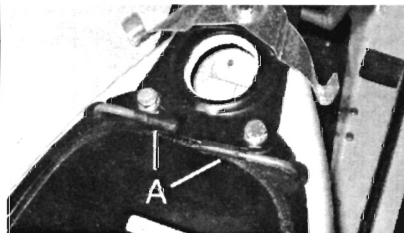
Press the pedal «V» in order to activate rear brake.

**WARNING**

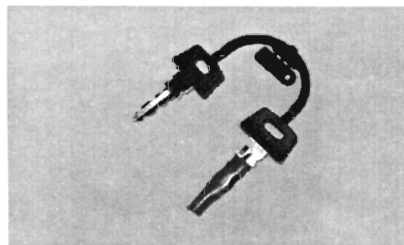
BRAKES ARE THE MOST IMPORTANT SAFETY SYSTEM OF YOUR MOTOR SCOOTER. NEVER RIDE WITH DEFECTIVE BRAKES. EFFECTIVENESS OF YOUR BRAKES ARE GREATLY REDUCED IF THEY ARE WET. IF THEY ARE WET, THIS CAN LEAD TO AN ACCIDENT WITH SERIOUS INJURY EVEN DEATH. WHEN THE ROAD IS WET WITH RAIN, YOU SHOULD PLAN TO USE DOUBLE THE NORMAL STOPPING DISTANCE SINCE BOTH BRAKES THEMSELVES AND THE TRACTION OF THE TIRES ON THE ROAD ARE REDUCED BY THE PRESENCE OF WATER. WATER ON THE BRAKES, FROM WASHING YOUR MOTOR SCOOTER, OR SPLASHED UP FROM WET ROADS OR CROSSING PUDDLES OR DITCHES CAN WET THE BRAKES SUFFICIENTLY TO GREATLY REDUCE THEIR EFFECTIVENESS. ALLOW DOUBLE THE NORMAL STOPPING DISTANCE.



01_09



01_10



01_11

OPENING THE SADDLE KEYS (01_09)

Turn the key counter-clockwise, press the square button and lift the saddle.

OPENING THE SIDE PANELS (01_10)

Lift the seat in order to reach the release levers: turn the lever «A» (engine cowl), then pull the cowl outwards, until the forward knob projects from the corresponding hole in the chassis. Push the front end of the cowl upwards, so to rotate it about its aft pivot, thus releasing the fixing hook from the chassis.

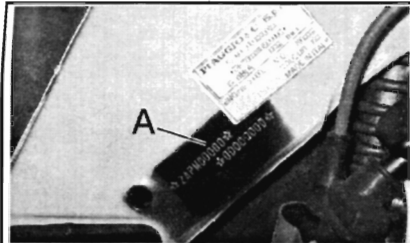
! WARNING
THE ENGINE COWLING MUST BE REMOVED WHILE THE ENGINE IS NOT RUNNING.

KEYS (01_11)

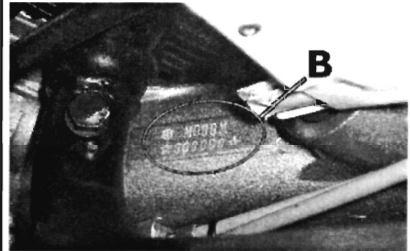
The vehicle is supplied with two keys (one spare) that serve to start the engine and unlock the saddle compartment.

The keys are accompanied by a tag marked with the identification code to be quoted when ordering duplicates.

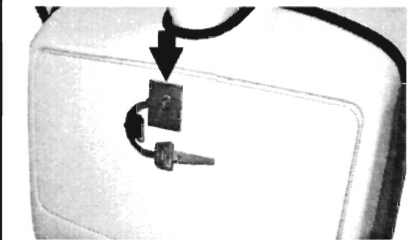
! CAUTION
KEEP THE DUPLICATE KEY IN A SAFE PLACE (NOT ON YOUR VEHICLE)



01_11



01_12



01_13

IDENTIFICATION (01_10, 01_11)

The VIN, vehicle identification No. «**A**» and engine No. «**B**», consist of a prefix stamped on the chassis and engine respectively, followed by a number.

These should always be indicated when ordering spare parts.

We recommend to check that the vehicle identification number stamped on the vehicle, corresponds with that on the vehicle's documentation.



CAUTION

IN ALL STATES AND COUNTRIES, IT IS AGAINST THE LAW TO ALTER THE VEHICLE IDENTIFICATION NUMBER (VIN) AND CAN RESULT IN SEVERE PENALTIES. THIS WILL IMMEDIATELY INVALIDATE YOUR WARRANTY.

GLOVE BOX OPENING (01_13)

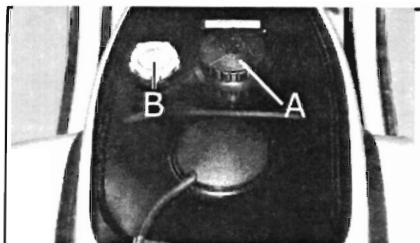
Turn the key (completely) and press the square button downwards.

PX150

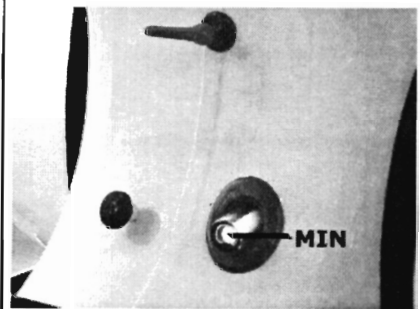


CHAP . 02 **USE**

2 USE



02_01



02_02

CHECKS

Before using the vehicle for the first time, every day, check:

1. That the fuel and oil tanks are full.
2. The oil level in the gear-box.
3. That the tires are correctly inflated.
4. That the headlight, tail light and direction indicators are in working order.
5. That the front and rear brakes are in working order.
6. The level in the brake fluid tank.



WARNING

ALWAYS INSPECT YOUR VEHICLE EACH TIME BEFORE YOU USE IT TO MAKE SURE THAT IT IS IN SAFE OPERATING CONDITION. ALWAYS FOLLOW THE INSPECTION AND MAINTENANCE SCHEDULED THAT ARE SHOWN IN THIS OWNER'S MANUAL. FAILURE TO DETECT A DANGEROUS MAINTENANCE CONDITION OR FAULT IN THE VEHICLE, CAN LEAD TO A SERIOUS ACCIDENT, INJURY OR EVEN DEATH.

REFUELING (02_01, 02_02)

Fill fuel tank «A» with unleaded gasoline. Minimum octane rating (M+R)/2 method 90. The rider is informed when fuel is low by the fuel warning light «B» on the dashboard (01_02 page.19). Fill the engine oil tank with recommended oil. The minimum oil mark is shown on the oil window (usually filled up to the top), which allows to observe the formation of an air bubble as the level reaches the reserve quantity.

In this case, at the first refuelling or in any case, not more than 90 miles (150 Km) distance covered, top up the oil tank with at least 0.1÷0.2 gal (0.5÷0.7 lt.).

If the mixer is removed and/or replaced, bleeding is needed. However, the ducts may remain without oil. After carried out these operations, fill the tank with ¼ gal. (~3 l.) fuel mixture at 2% oil Selenia HI Scooter 2 Tech. At the next refuelling, use only gasoline.



WARNING

SWITCH OFF THE ENGINE BEFORE REFUELING WITH GASOLINE. GASOLINE IS HIGHLY INFLAMMABLE. DO NOT SMOKE AND KEEP OPEN FLAMES AT A DISTANCE: FIRE HAZARD. DO NOT INHALE FUEL FUMES. DO NOT ALLOW GASOLINE TO COME INTO CONTACT WITH THE HOT ENGINE AND ANY PLASTIC PARTS.



CAUTION

USE ONLY RECOMMENDED TYPES OF OIL. SEE PAR. 6.2. USE OF INFERIOR OIL WILL LEAD TO REDUCED ENGINE LIFE, AND CAN LEAD TO AN ENGINE SEIZURE, WITH SUBSEQUENT UPSET, SERIOUS ACCIDENT, AND SERIOUS INJURY, OR EVEN DEATH.



CAUTION

FAILURE TO ADD OIL INTO THE TANK, COULD CAUSE THE VEHICLE TO SUDDENLY STOP WITH SERIOUS INJURIES OR EVEN DEATH.

Recommended products

SELENIA HI Scooter 2 Tech

Mixer Oil

Synthetic oil that passes API TC ++ specifications

Oil mixer tank capacity

~ 0,39 ÷ 0,45 gal. (1,5 ÷ 1,7 lt.) including 0,1 gal. reserve

Fuel tank capacity

~ 2,11 gal. (8 lt.) including 0,5 gal. reserve



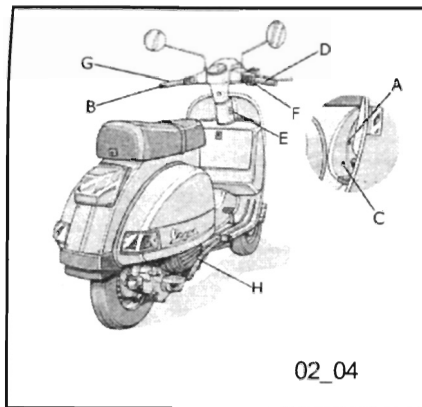
02_03

RUNNING IN (02_03)

DURING THE FIRST 600 MILES (1000 KM). DO NOT USE THE VEHICLE AT OVER 80% OF ITS MAX SPEED. AVOID OPENING THE THROTTLE COMPLETELY AND KEEPING A CONSTANT SPEED ALONG LONG SECTIONS OF ROAD.

AFTER THE FIRST 600 MILES (1000 KM) PROGRESSIVELY INCREASE SPEED, IF POSSIBLE, UNTIL REACHING THE MAXIMUM PERFORMANCE.





STARTING THE ENGINE (02_04)

1. Rest the vehicle on the central stand.
2. Open the fuel tap «A».
3. Set the gear shift onto "neutral".
4. Pull the choke lever «C» (with engine cold).
5. Keep the throttle «D» at idle.
6. Insert the key «E» in the ignition switch, and turn it onto the "ON" position.
7. Press the starter button «F» while pulling the clutch lever, «G».

WARNING
DO NOT START UP THE ENGINE IN CLOSED AREAS AS THE EXHAUST FUMES ARE HIGHLY TOXIC.

WARNING
IN ORDER TO START THE ENGINE, IT IS NECESSARY TO PULL THE CLUTCH LEVER, «G», BEFORE PRESSING STARTER BUTTON, «F», IN ORDER TO DISARM THE SAFETY SWITCH.

WARNING
DO NOT USE THE CHOKE DEVICE WITH WARM ENGINE; ONCE THE ENGINE IS STARTED PUSH THE CHOKE LEVER BACK TO ITS INITIAL POSITION.

CAUTION
AVOID, DURING VEHICLE STOPPING, TO KEEP RPM ABOVE IDLE FOR LONG PERIOD OF TIME; THIS CONDITION COULD CAUSE ENGINE OR OTHER COMPONENTS TO BE DAMAGED.

DIFFICULT START

In the event of difficulties, it is possible to proceed as follows:

1. Flooded engine. Follow the same procedure indicated above. Give full throttle and press starter button, «F», for 5-6 times. Do not attempt starting the vehicle for excessively long periods of time using the starter motor.

2. Weak battery or inefficient starter motor. Rest the vehicle on its centre stand; turn key switch «E» onto "ON" position and use the kick-starter, «H».

3. Push-start. Turn the key-switch onto the "ON" position, engage the second gear, pull the clutch, push the vehicle and release the clutch as it gains sufficient speed, hence immediately pull the clutch as soon as the engine starts running. Such procedure requires a considerable amount of expertise and may only be attempted by carefully following the above instructions, and on a flat road with no traffic.





WARNING
ALWAYS PUT THE VEHICLE ON ITS STAND BEFORE KICK STARTING.


STOPPING THE ENGINE

Before shutting the engine down, move into "neutral"; hence turn key-switch «E» onto the «OFF» position to stop the engine (the key may now be removed).


CATALYTIC CONVERTER

 **WARNING**
DUE TO THE HIGH TEMPERATURES THAT CAN BE REACHED IN THE CATALYTIC CONVERTER, BE CAREFUL, WHEN PARKING THE VEHICLE, THAT THE SILENCER DOES NOT COME INTO CONTACT WITH INFLAMMABLE MATERIALS, OR WITH PARTS OF THE BODY, IN ORDER TO AVOID SERIOUS BURNS.

 **WARNING**
DO NOT SWITCH OFF THE ENGINE WHILE THE MOTOR SCOOTER IS MOVING. UNBURNED FUEL WILL ENTER THE CATALYTIC CONVERTER CAUSING IT TO OVERHEAT AND DESTROY ITSELF.

 **CAUTION**
NEVER RIDE AWAY ABRUPTLY WITH A COLD ENGINE. TO REDUCE THE EMISSION OF POLLUTING SUBSTANCES AND THE CONSUMPTION OF FUEL, WARM UP THE ENGINE BY PROCEEDING AT LOW SPEED FOR THE FIRST FEW MILES.

PRECAUTIONS

 **WARNING**
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.

 **WARNING**
ANY TAMPERING CAN LEAD TO SERIOUS ENGINE MALFUNCTIONS.



SAFE DRIVING


Below are some simple suggestions which will allow you to ride your vehicle more comfortably and more safely during your daily routine. Your riding skills and your knowledge of the vehicle constitute the basis of safe riding. You are therefore advised to practise with your vehicle in empty roads until you have become fully acquainted with it


1. Before driving off, remember to put on your helmet and fasten it correctly.
2. To pull away, with the engine at idle select first gear and slowly release the clutch while opening the throttle at the same time.
3. Reduce speed and drive prudently on bad roads.
4. After having driven over a long section of wet roads without having used the brakes, the braking effect will initially be smaller. In these driving conditions it is best to activate the brakes periodically in order to expel the water film between disk and brake pads.
5. Do not brake hard on a wet surface, on dirt tracks or on any slippery road surface.
6. When braking, use both front and rear brakes, so to distribute the braking action evenly on both wheels.
7. Avoid driving off by mounting the vehicle when resting on the 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.
8. If the vehicle is often ridden on sandy roads, mud, snow mixed with salt, etc, it is strongly recommended to clean the brake disc frequently, using a neutral detergent, in order to prevent abrasive build-ups from forming inside the cooling holes and causing the brake pads to undergo early wear.
9. Do not downshift when the engine is at high revs as this will cause it to over-rev and, in the long run, may damage the engine.


10. When riding downhill do not move into neutral, reduce your speed by shutting the throttle. Use both brakes to maintain your speed under control without applying them for long periods of time in order to prevent them from overheating, and hence decrease their efficiency. If the gradient is particularly steep, it is advisable to downshift so to exploit the engine braking action.


11. To quickly gain speed with the engine at low revs, i.e. when overtaking, downshift, so to immediately obtain the amount power required.

12. When climbing steep hills, downshift in order to always have sufficient power available.

 **WARNING**
ALWAYS DRIVE WITHIN THE LIMITS OF YOUR ABILITY. DRIVING WHILE DRUNK OR UNDER THE EFFECT OF DRUGS OR CERTAIN MEDICINES IS EXTREMELY DANGEROUS.

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

 **WARNING**
MODIFYING YOUR MOTOR SCOOTER CAN PRESENT SERIOUS DANGERS. MODIFICATIONS WHICH INVOLVE THE HANDLING, OR PERFORMANCE OF THE ENGINE, OR ADD SIGNIFICANT WEIGHT, OR CAUSE THE MOTOR SCOOTER TO BECOME UNBALANCED, CAN LEAD YOU TO LOOSE CONTROL OF YOUR MOTOR SCOOTER. THIS CAN LEAD TO A SERIOUS ACCIDENT AND SERIOUS INJURY OR EVEN DEATH. USE ONLY VESPA APPROVED ACCESSORIES, AVAILABLE FROM YOUR VESPA DEALER.

 **WARNING**
NEVER TAKE YOUR HANDS OFF THE HAND GRIPS OR YOUR FEET OFF THE FOOTREST WHILE YOU ARE RIDING. FAILURE TO DO THIS COULD UPSET THE STABILITY OF THE VEHICLE. BEFORE RIDING AWAY, MAKE SURE THAT THE STAND IS COMPLETELY UP. FAILURE TO FOLLOW THESE WARNINGS MAY CAUSE AN ACCIDENT WITH CONSEQUENT RISK OF SERIOUS INJURY OR EVEN DEATH.

2 USE

To ride away:

- Allow the throttle to return to idle, apply the rear brake, then remove the vehicle from the stand.
- Get on the vehicle, keeping at least one foot on the ground in order not to lose balance.
- Before driving, be sure that the rear view mirrors are correctly adjusted.



CAUTION

WHEN THE VEHICLE IS NEW TO YOU, PRACTICE LOOKING IN THE REAR VIEW MIRRORS. ONLY EXPERIENCE WILL ALLOW YOU TO CORRECTLY DETERMINE THE EXACT LOCATION OF OTHER VEHICLES AND OBJECTS BEHIND YOU.

- To begin, release the brake lever and accelerate by gently rotating the throttle grip; the vehicle will start moving.
- Ride at reduced speed for the first few miles in order to warm up the engine.



WARNING

WHEN BRAKING, REDUCE THE THROTTLE AND APPLY BOTH BRAKES SIMULTANEOUSLY IN ORDER TO OBTAIN THE BEST BRAKE PERFORMANCE. BY APPLYING ONLY THE FRONT BRAKE OR ONLY THE REAR BRAKE, YOU REDUCE THE BRAKING EFFICIENCY CONSIDERABLY, AND RUN THE RISK OF LOCKING UP ONE WHEEL. THIS CAN CAUSE AN UPSET AND SUBSEQUENT SERIOUS INJURY OR EVEN DEATH.

Do not attempt to maintain your position on a hill by running the engine. This will very quickly destroy the transmission, and overheat the engine.

Before entering a turn, slow the motor-scooter using the brakes, to a constant speed and then accelerate slightly through the turn. Avoid braking at the last moment. This can cause you to lose control of your vehicle. If the brakes are operated continuously on downhill grades, the discs and pads will overheat, reducing the braking efficiency. Use the brakes as little as possible to maintain a safe speed. Never coast downhill with the engine off.

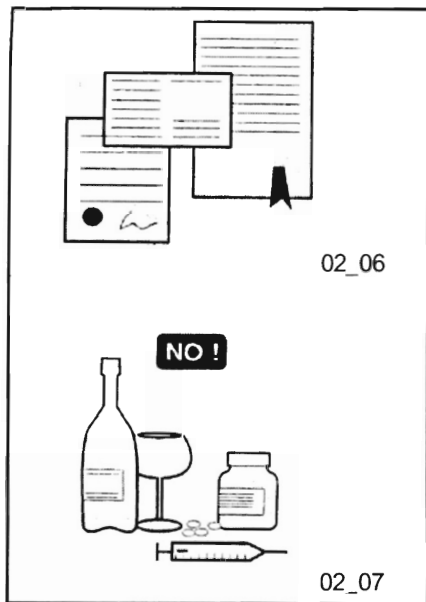
Pay very close attention to any obstacles or variations of the road surface. Uneven roads, rails, manhole covers, painted traffic stripes, traffic dots all become slippery when wet. Avoid particularly steel plates which are sometimes used during road maintenance. They become more slippery than ice once they are wet by rain. If you must ride on such surfaces, decrease your speed and operate the throttle, brakes and steering very gently.

Always use the turn signals any time you intend to change lanes or change direction, and avoid sudden or abrupt turning.

Switch off the direction indicators as soon as you have changed direction.

Overtake and pass with care, especially in rainy weather. A water cloud created by larger vehicles will reduce visibility and the slip stream could cause you to lose control of your vehicle.

2 USE



The instructions given below cover normal operation of your motorscooter and must be carefully observed. By following these rules you will enhance your own safety and the safety of others. You will also maximize the life and utility of your motorscooter. Motorscooters obviously do not provide some of the protection provided by automobiles, therefore it is essential that you wear appropriate protective clothing. Never operate your motorscooter without wearing a helmet, gloves, eye protection, a heavy jacket, sturdy footwear, and sturdy full length pants.

However, do not assume that even the best clothing and helmet will protect you in the event of an upset or a crash with another vehicle. At best, this gear provides some protection from scrapes and scratches, but very little, if any, impact protection.

Be sure that you meet all the requirements prescribed by local law, including driver's license, minimum age, training, insurance, taxes, motorcycle registration, license plate, etc.

When you first receive your motorscooter, practice by riding in areas where there is no traffic. Do not attempt to ride in heavy traffic until you are thoroughly ex-

perienced and riding your motorscooter has become second nature to you.

Most states prohibit the operation of this size motorscooter on freeways or expressways. Be sure that it is legal to use your motorscooter before you take any particular road.

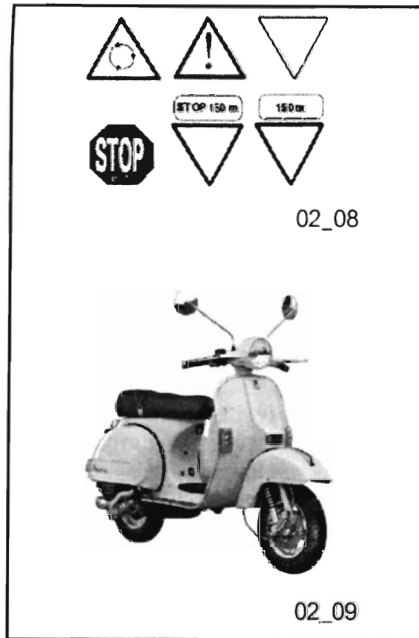
A new motorscooter must be carefully broken in, see paragraph 2.2 (RUNNING IN).

Before starting the engine, make sure that the brakes, transmission and throttle controls work properly and that the fuel and oil supply is adequate.

The exhaust system, brakes, and some other parts of the motorscooter become very hot during operation. Do not touch any of these parts.

Some medicines or drugs, illegal or prescribed, and alcohol significantly increase the risk of accidents.

Do not ride while you are under the influence of alcohol or drugs, whether they are illegal or prescribed. Make sure you are in good physical condition and not ill before riding your motorscooter. Do not ride your motorscooter when you are particularly tired. Alcohol, drugs and fatigue are leading causes of motorscooter accidents.




Many accidents are caused by the rider's inexperience and lack of training. Do not ride your motorscooter until you have received training from a recognized training organization such as the Motorcycle Safety Foundation.

Remember that riding a motorscooter, though easy and fun, is quite different from driving a car. Do not assume that you can operate your motorscooter safely just because you are a competent automobile driver.

Never lend your motorscooter to others unless you are sure that they are competent and properly licensed motorcycle operators.

If the throttle sticks open, it may cause a collision with another vehicle or an upset. If the throttle sticks, turn off the engine with the engine stop switch located on the right hand side of the handlebar. Do not attempt to restart the engine until the throttle has been repaired and works perfectly. Failure to obey this warning can lead to a run away with serious injuries or even death.

 **WARNING**
IN CASE OF EMERGENCY ALWAYS USE THE ENGINE STOP SWITCH LOCATED ON THE RIGHT

HAND SIDE OF THE HANDLEBAR. DO NOT RIDE THE MOTORSCOOTER IF THE THROTTLE DOES NOT AUTOMATICALLY RETURN TO IDLE IN ORDER TO AVOID SERIOUS ACCIDENT WITH SUBSEQUENTLY INJURY OR EVEN DEATH. CONTACT YOUR AUTHORIZED VESPA SERVICE CENTER WHO WILL PROVIDE FOR THE NECESSARY REPAIRS.

It is very important to your safety that you give full attention to the riding task. Watch what you are doing, do not allow yourself to be distracted by other cars, people or things on the roadside, etc. Never smoke, eat, drink, read, etc. while riding your motorscooter. If you must consult a map, pull over when it can be done safely.

Use only your motorscooter's specific fuels and lubricants indicated in the "RECOMMENDED PRODUCTS" see paragraph 6.2; check the oil and fuel levels regularly.

If you and your motorscooter are involved in an accident, ensure that there has been no damage to the control levers, tubes,

2 USE

wires, braking system and other vital parts. If your motorscooter is involved in an accident, take it immediately to your Authorized Vespa Service Center who has the equipment and knowledge to check for damage which may compromise your safety. Your Vespa Dealer is qualified to help you with any safety problems that you might have, but of course it is necessary for you to report any malfunctions to your mechanic in order for him to help you.

Do not use your motorscooter if it is damaged.

A damaged motorscooter may become unstable or present other problems which can increase the risk of accident, and therefore serious injury or even death.

Do not attempt to modify the position, angle or color of your license plate. Do not cover it with even a clear plastic covering. Do not modify any of the safety equipment of your motorscooter, especially such safety related items as directional indicators, rear view mirrors, lights or horn. Any modification to your motorscooter will invalidate the warranty.

Do not modify your engine in an attempt to increase the horsepower. This can result in irreparable damage to the

engine, as well as degradation of the performance and handling of your motorscooter which could lead to an upset, and serious injury or even death.

Have your motorscooter repaired only with original parts, and use only original Vespa accessories.

The use of aftermarket accessories and parts can seriously compromise the safety of your motorscooter as well as affect its performance, stability and serviceability. Any modification which affects performance or safety voids your warranty completely.

For the reasons stated above, tampering with the exhaust emission or noise control systems of your motorscooter can lead to large fines. Also, in some jurisdictions, helmets are required by law, and in all jurisdictions, you must maintain your motorcycle in current registration (License plate up-to-date). Also, many jurisdictions require a special motorcycle license, and you must not ride your motorscooter without having first obtained this license.

This motorscooter was not designed to be equipped with a sidecar or to be used to tow trailers, motorcycles, motorscooters or bicycles.

Vespa does not manufacture side-cars or trailers and therefore cannot predict the effects of such accessories on the maneuverability or stability of your motorscooter: it can only warn that such effects may be negative and that any damage to the motorscooter components caused by the use of such accessories will not be covered by the warranty.

Never race other motorscooters or motorcycles with your motorscooter. Brake with both the front and rear brakes.

The use of one brake only for sudden braking may cause the motorscooter to skid or make the rider lose control of the motorscooter itself.

Always ride at a safe speed and avoid unnecessary hard acceleration.

This also reduces fuel consumption and increases the life of the motorscooter. If you must ride your motorscooter in rainy weather, or on loose surfaces, remember that traction is greatly reduced. Under these conditions, all handling of the motorscooter must be done gradually and smoothly. Sudden acceleration, braking or turning may cause you to lose control of your motorscooter. When traction is reduced, accelerate gradually and when slowing down

release throttle and use your motorscooter engine braking in so far as possible, instead of braking abruptly. Avoid rapid, harsh application of the brakes.

Gradually open and close the throttle, to avoid spinning or skidding the rear wheel. On rough road surfaces, slow down and ride with particular care. Avoid wide open throttle accelerations, unless they are necessary for passing. Remember that excessively aggressive cornering can cause your motorscooter's tires to lose traction, which can result in an upset and serious injury or even death.

Always observe posted and statutory speed limits, but do not assume that you can ride as fast as the speed limit allows under all road conditions. Slowing down a little can greatly increase your safety under all road conditions. Do not ride your motorscooter off road. Do not tamper with the muffler system or the emission control system of your motorscooter. This is not only bad for the environment, it can subject you to serious penalties.

CLOTHING

Before riding your motorscooter, ensure that your riding gear is in good condition. Your helmet must fit properly, and the visor or other eye protection must be clean.

Both research and experience have shown that drivers of other motorvehicles often do not see motorcycles riders. In order to make yourself more conspicuous to these drivers, wear bright reflective clothing, such as a reflective vest, or clothing with reflective sections sewn into the jacket, pants and gloves. Be particularly aware of approaching automobiles and trucks that might be trying to turn left in front of you.

Many motorcycle accidents are caused by an opposing automobile driver making a left turn without warning in front of the motorscooter.

Inevitably, the driver will look right at you, and yet swear that they did not see you before they turned directly into your path. Stay alert! Wear protective clothing, preferably in light and/ or reflecting colors. In this way you will make yourself more visible to the other drivers, thus notably

reducing the risk of being hit, and you will be more protected in case of such an incident.

Always wear your helmet. Many accidents are fatal because of injuries to the head.

An open-face helmet offers some protection, but a full-face helmet offers more. Regardless of the style, look for a DOT (Department of Transportation) sticker in any helmet you buy (USA only), and always wear a face shield or goggles to protect your eyes and help your vision.

ADDITIONAL RIDING GEAR

In addition to a helmet and eye protection, we also recommend:

- Sturdy boots with non-slip soles to help protect your feet and ankles.
- Leather gloves to keep your hands warm and help prevent blisters, cuts, burns and bruises.
- A motorscooter riding suit or jacket for comfort as well as protection. Bright-colored and reflective clothing can help make you more noticeable in traffic. Be sure to avoid loose clothes that could get caught on any part of your motorscooter.

2 USE

Clothing should be very tight-fitting and fastened at the wrists and ankles. Strings, belts and ties should not be hanging loose; prevent these and other objects from interfering with driving by getting entangled with moving parts or driving mechanisms. Do not carry sharp objects in your pockets that could be dangerous in case of an upset. For example, pens or mechanical pencils, etc. Also, make sure that your passengers follow this recommendation.

ACCESSORIES

The owner of the motorscooter is responsible for the choice, installation and use of any accessory.

The installation of inappropriate accessories or the overloading of the motorscooter may result in the instability of the motorscooter itself and cause accidents with consequent risk of serious injuries or even death. Windshields, in particular, can be dangerous, as they can break and injure the rider or passenger in case of an accident. If you have any doubt with regard to any accessory you would like to install, or any load you would like to carry, consult your local Vespa Dealer beforehand. Avoid installing acces-

sories that cover horns or lights, or that could impair their functions. Don't install accessories that limit the suspension stroke or the steering angle, that interfere with the operations of the controls, or that reduce the scooter's lean angle in turns. Also, don't install accessories that could hamper your access to the various controls, since this could prolong reaction time during an emergency.

Fairings and windshields, or any other accessory that presents a considerable cross section, may produce aerodynamic forces that will affect the stability of the motorscooter, particularly at high speeds or in cross winds.

Make sure that anything carried on your motorscooter is securely attached, and cannot come loose and jam the wheels, forks, etc.

Do not install any electrical accessories, and do not modify the electrical system of your motorscooter. Anything that could cause an electrical overload or other fault could cause the motorscooter to suddenly stop, the lights to dim or fail, or the horn and other safety accessories not to work. Use only Vespa genuine accessories.

LOAD

Do not overload your motorscooter. Attach luggage or packages as closely as possible to the center of your motorscooter and distribute the load from side to side as evenly as possible, to keep imbalance to a minimum. Remember that loads tend to loosen with riding, so frequently check the security of your load.

Do not hang anything from your motorscooter handlebar, fenders, or forks, because this will upset the handling of your motorscooter, and could prevent you from avoiding an accident.

Failure to heed this warning can lead to an upset with subsequent serious injury or even death. Do not ride with your crash helmet hung from the strap because it could easily become entangled with the wheels, fenders, or forks, causing an upset and subsequent serious injury or even death. When carrying a passenger, remember that your motorscooter's handling is degraded, that the brakes are less efficient, and the center of gravity is higher and further to the rear. This makes it more likely that the front wheel will come up off the ground, espe-

cially on acceleration. Therefore, you should avoid hard acceleration and hard braking. Many accidents are caused by inexperienced rider carrying passengers. Remember that allowance must be made for the extra weight of the passenger for all driving maneuvers. Avoid abrupt and excessive acceleration.

Always slow down in time and calculate longer stopping and maneuvering distances. Noncompliance with these instructions may lead to the overturning of the motorscooter or to other accidents with consequent serious injuries or even death. Never carry loosely packaged items and make sure that everything that you carry on your motorscooter is carefully secured.

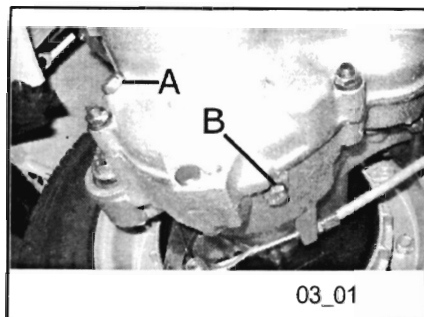
Do not carry packages which protrude from the luggage rack or which cover any of the signal lights, the headlight, or the horn.

Children or animals must not be carried anywhere on your motorscooter. Overloading your motorscooter seriously reduces its stability and maneuverability and can lead to an upset with subsequent serious injury or death.

PX150



CHAP . 03 **MAINTENANCE**





03_01

GEARBOX OIL LEVEL (03_01)

Ensure there is oil inside the gearbox; with the vehicle axis perpendicular to the ground, the oil level must reach the filler hole, «A». When replacing the oil, drain the gearbox from hole «B»; introduce a small amount of fresh oil and run the engine for a few seconds; hence drain the gearbox again and fill it back up, through hole «A», with 8,45 fl.oz. (250cc) of recommended oil (until it reaches the edge of the hole).

Gearbox oil capacity
8,45 fl.oz. (250cc)

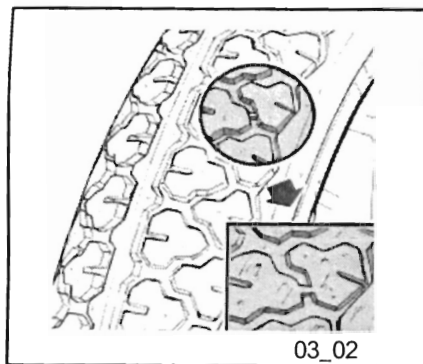
 **WARNING**
IF YOUR MOTOR SCOOTER IS RUN WITHOUT AN ADEQUATE AMOUNT OF OIL IN THE GEARBOX, THE MOTOR SCOOTER CAN SEIZE, CAUSING AN UPSET AND SUBSEQUENT SERIOUS INJURY OR EVEN DEATH. CHECK FREQUENTLY THE GEARBOX OIL LEVEL. NEVER RIDE YOUR MOTOR SCOOTER IF THE LEVEL IS LOW, OR THE GEARBOX IS LEAKING.

 **CAUTION**
USING THE VEHICLE WITH INSUFFICIENT LUBRICATION OR WITH CONTAMINATED OR IMPROPER LUBRICANTS, ACCELERATES THE WEAR AND TEAR OF THE MOVING PARTS AND CAN CAUSE SERIOUS DAMAGE.

THE OIL USED CONTAINS ENVIRONMENTALLY HARMFUL SUBSTANCES. FOR THE REPLACEMENT OF THE HUB OIL WE RECOMMEND TURNING TO AN AUTHORIZED VESPA SERVICE CENTRE THAT IS EQUIPPED FOR THE DISPOSAL OF USED OIL IN RESPECT OF NATURE AND LEGAL REGULATIONS.

Recommended products


Gearbox oil
TUTELA MATRYX
SAE 75W/85 oil that passes API GL4 specifications




TIRES (03_02)

Periodically (approx. every 500 km) inspect the tyre treads and check their inflation pressure. The tyres are equipped with a wear indicator, and they must be replaced as soon as such indicators become visible on the tread. Ensure the sidewalls show no sign of cracks and the tread is not abnormally worn; if necessary refer to an authorised service station or workshop to carry out the replacement.

 **WARNING**
THE TIRE PRESSURE MUST BE CHECKED WHEN THE TIRES ARE COLD.

 **WARNING**
USING TIRES THAT ARE EXCESSIVELY WORN OR IMPROPERLY INFLATED CAN CAUSE AN ACCIDENT IN WHICH YOU CAN BE SERIOUSLY

HURT OR KILLED. FOLLOW ALL INSTRUCTIONS IN THIS OWNER'S MANUAL REGARDING TIRE INFLATION AND MAINTENANCE. PIAGGIO RECOMMENDS TO USE ORIGINAL TIRES WHEN REPLACING.

 **WARNING**
INCORRECT TIRE INFLATION PRESSURE CAUSES UNEVEN TREAD WEAR AND WILL MAKE YOUR SCOOTER UNSTABLE AND POTENTIALLY DANGEROUS. DO NOT USE THE SCOOTER IF THE TIRE WEAR INDICATORS SHOW THAT THE TIRE IS WORN OUT. THERE ARE SEVERAL KINDS OF TREADWEAR INDICATORS. FOR INFORMATION ON HOW TO CHECK THE WEAR, SEE YOUR PIAGGIO DEALER. HOWEVER, IF THE TIRES APPEAR TO YOU TO BE WORN OUT, THEY CERTAINLY ARE, AND SHOULD BE CHANGED.

TIRE PRESSURE

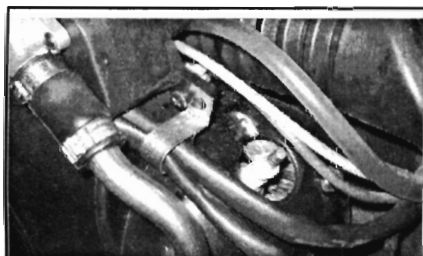
ONLY DRIVER
Front tire
19.0 PSI (1.3 bar)

Rear tire
26.1 PSI (1.8 bar)

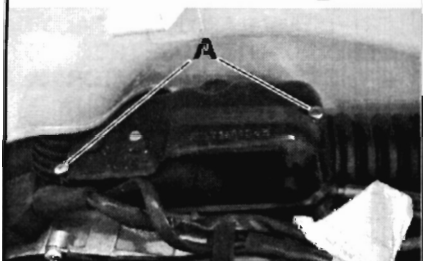
DRIVER AND PASSENGER
Front tire
19.0 PSI (1.3 bar)

Rear tire
40.6 PSI (2.8 bar)

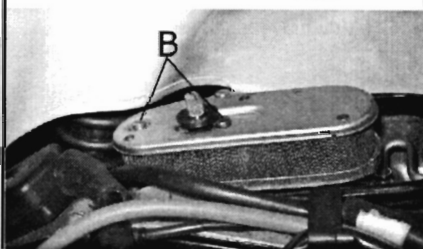
3 MAINTENANCE



03_03



03_04



03_05

SPARK PLUG REMOVAL (03_03)

Remove the right engine cowling, disconnect the spark plug cap and loosen the spark plug using the supplied socket wrench. When refitting, screw the spark plug back in by hand, at the correct angle; use the socket wrench for tightening.



CAUTION

THE SPARK PLUG MUST BE REMOVED WITH COLD ENGINE. USING PLUGS WITH A DIFFERENT HEAT RANGE FROM THAT PRESCRIBED OR WITH UNSUITABLE THREADING MAY SERIOUSLY DAMAGE THE ENGINE. THE PLUG MUST BE REPLACED EVERY 3125 MILES (5,000 KM).



CAUTION

REPLACEMENT OR REMOVAL OF THE SPARK PLUG CAN RESULT IN FAULTS IF THE PLUG IS INCORRECTLY TIGHTENED IN THE CYLINDER HEAD. YOU SHOULD ALWAYS CHECK TIGHTENING TORQUE AND/OR REFER TO AN AUTHORIZED PIAGGIO SERVICE CENTER TO AVOID THE RISK OF SEIZURE.

Recommended spark plug
CHAMPION RL82C

Electrode gap
0,0195-0,0234 in (0,5-0,6 mm)

REMOVING THE AIR FILTER (03_04, 03_05)

Remove the right engine cover and filter cover by removing the two fasteners «A». Then loosen the three fastening screws «B». Remove the filter, and wash in fire-proof solvent. Carefully dry the filter with compressed air, and treat with gasoline and mix oil with a 10:1 ratio.



WARNING

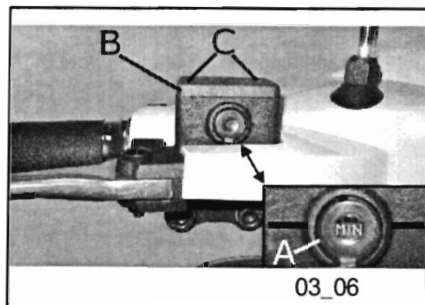
TAKE EXTREME CARE WHEN SERVICING THE FILTER. ANY TIME YOU ARE USING COMPRESSED AIR, YOU SHOULD WEAR ANSI APPROVED GOGGLES. ALSO, YOU SHOULD WEAR LATEX OR NITRILE GLOVES WHILE PERFORMING THIS OPERATION, AS CONTACT WITH THE SOLVENT MAY CAUSE PROBLEMS WITH THE HEALTH OF YOUR SKIN.



CAUTION

IF YOU USE THE VEHICLE ON DUSTY ROADS YOU NEED TO CLEAN THE AIR FILTER MORE FREQUENTLY TO AVOID DAMAGING THE ENGINE.


3 MAINTENANCE




CHECKING THE BRAKE FLUID LEVEL (03_06)

The brake reservoir is fitted with a see-through inspection hole, «A»; this allows you to inspect the brake fluid level inside the reservoir, and hence the entire system. When inspection hole «A» is completely filled with fluid, the level is above the minimum. As soon as this lowers, even by a few millimetres, the fluid level is to be considered at the minimum allowable. When no fluid is visible through the inspection hole, the level is below the minimum. A reduction of the brake fluid level may be caused by worn pads. In the event that the fluid level is found to be below the minimum, you are advised to contact your nearest **Authorised Vespa Service Station**, so that a thor-

ough inspection of your vehicle's braking system may be carried out. Should it be necessary to top-up the fluid level, please follow the instructions given below. Lift the reservoir cap, «B», after removing the two fastening screws, «C»; hence, top-up the reservoir as required (the fluid level must always be above the minimum). The inspection of the fluid level must be carried out with the reservoir perfectly horizontal, i.e. with the handlebars straight and the vehicle perpendicular to the ground.

 **WARNING**
THERE IS A POTENTIAL HAZARD IN IMPROPER HANDLING OF BRAKE FLUID. BRAKE FLUID IS HIGHLY TOXIC AND CORROSIVE. IF SPILLED ON PAINTED OR PLASTIC PARTS IT WILL QUICKLY DESTROY THEM. IF SWALLOWED IT IS POISONOUS. TREAT BRAKE FLUID AS YOU WOULD ANY POISONOUS LIQUID. AVOID INGESTING EVEN THE TINIEST QUANTITIES. KEEP BRAKE FLUID OUT THE REACH OF CHILDREN. WHENEVER WORKING WITH BRAKE FLUID, ALWAYS WEAR ANSI AP-

PROVED EYE PROTECTION, AND LATEX OR NITRILE GLOVES TO PROTECT YOUR SKIN.


 **CAUTION**
THE USE OF IMPROPER BRAKE FLUID CAN GREATLY REDUCE THE EFFECTIVENESS OF YOUR BRAKES. USE ONLY DOT 4 BRAKE FLUID. INFERIOR QUALITY OR DIRTY FLUID GREATLY REDUCES THE EFFECTIVENESS OF YOUR BRAKE SYSTEM. BRAKE FLUID ABSORBS MOISTURE OVER TIME THROUGH BRAKE LINES AND RESERVOIRS THUS DEGRADING ITS PROPERTIES. THE USE OF IMPROPER BRAKE FLUID CAN CAUSE FAILURE OF THE BRAKE SYSTEM. NEVER RE-USE BRAKE FLUID.


Recommended products



TUTELA TOP 4

Brake fluid


Synthetic fluid SAE J1703, NHTSA 116 DOT 4, ISO 4925

 **CAUTION**
BRAKE FLUID TENDS TO ABSORB MOISTURE FROM THE AIR. IF THE BRAKE FLUID IN THE CIRCUIT CONTAINS EXCESS MOISTURE, BRAKING EFFICIENCY WILL BE IMPAIRED.


 **CAUTION**
IN TEMPERATE CLIMATES, BRAKE FLUID SHOULD BE CHANGED EVERY TWO YEARS. DO NOT USE FLUID FROM PREVIOUSLY OPENED OR PART-EMPTY CONTAINERS.

 **CAUTION**
ALWAYS USE SYNTHETIC BRAKE FLUID (IDENTIFIED BY THE MARKING  ON THE CONTAINER). MINERAL TYPE BRAKE FLUID WILL DAMAGE THE RUBBER SEALS ON THE BRAKE CIRCUIT AND MUST NOT BE USED ON ANY ACCOUNT.


In normal temperatures the brake fluid must be replaced every 12,000 miles (20,000km) or at least every 2 years. The operation requires specialized personnel, it is essential to contact a Local VESPA dealer or authorized service center.


 **BRAKES**
WARNING
DO NOT RIDE YOUR VEHICLE WITH WORN OR MALFUNCTIONING BRAKES! THE BRAKES ARE THE MOST IMPORTANT SAFETY SYSTEM OF YOUR VEHICLE. USING THE MOTOR-SCOOTER WITH BRAKES THAT ARE ANYTHING LESS THAN PERFECT IS VERY LIKELY TO LEAD TO A COLLISION OR UPSET, WITH CONSEQUENT RISK OF SERIOUS INJURY OR DEATH.


CHECK THE BRAKE PAD WEAR, AS SHOWN ON PAR. 4.4 (CHECKING THE BRAKE PAD WEAR). HAVE YOUR BRAKES SERVICED BY YOUR LOCAL VESPA DEALER.


 **WARNING**
WET CONDITIONS SERIOUSLY DEGRADE THE PERFORMANCE OF YOUR BRAKES. WHEN THE ROAD IS WET FROM RAIN, YOU SHOULD PLAN TO USE DOUBLE THE NORMAL STOPPING DISTANCES SINCE BOTH THE BRAKES THEMSELVES AND THE TRACTION OF THE TIRES ON THE ROAD ARE REDUCED BY THE PRESENCE OF WATER.

WATER ON THE BRAKES FROM WASHING YOUR VEHICLE, OR SPLASHED UP FROM WET ROADS, OR CROSSING PUDDLES OR DITCHES, CAN WET THE BRAKES SUFFICIENTLY TO GREATLY REDUCE THEIR EFFECTIVENESS. WHENEVER THE BRAKES HAVE BECOME WET, DRY THEM BY GENTLY APPLYING THE BRAKES, REPEATEDLY, UNTIL THE HEAT CAUSES THE BRAKES TO DRY, AND FULL BRAKE FUNCTION IS RESTORED. FAILURE TO FOLLOW THIS PROCEDURE CAN LEAD TO LOSS OF BRAKE EFFECTIVENESS AND A SERIOUS ACCIDENT.

 **WARNING**
THE BRAKES ARE EXTREMELY IMPORTANT FOR YOUR SAFETY. DO NOT USE THE VEHICLE IF THE BRAKES DO NOT WORK PERFECTLY. ALWAYS CHECK THE BRAKE EFFICIENCY BEFORE RIDING.

 **WARNING**
IF THE "FEEL" OR POSITION OF THE BRAKE LEVER CHANGES, THIS MAY BE DUE TO SOME PROBLEM IN THE HYDRAULIC BRAKE SYSTEM. IF YOU HAVE ANY DOUBT REGARDING THE PERFECT FUNCTIONING OF YOUR BRAKE SYSTEM, OR IF THE NORMAL PRERIDE CHECKS INDICATE ANY DISCREPANCY, CONTACT YOUR LOCAL VESPA DEALER OR AUTHORIZED VESPA SERVICE CENTER BEFORE RIDING.

 **CAUTION**
PAY SPECIAL ATTENTION TO THE BRAKE DISC AND FRICTION MATERIAL, MAKING SURE THAT THEY ARE NEITHER DIRTY OR OIL, ESPECIALLY AFTER MAINTENANCE OPERATIONS OR INSPECTIONS. CHECK THE BRAKE LINE, MAKE SURE THAT IT IS NOT TWISTED, CRIMPED, OR LEAKING.


 **WARNING**
DISPOSE OF USED BRAKE FLUID PROPERLY. SEE THE GENERAL WARNINGS ON PAGE 6 (BRAKE FLUID).


KEEP AWAY FROM CHILDREN.




BATTERY (03_07)

To access the battery it is necessary to remove the LHS cowling. Your battery must be carefully inspected and regularly serviced to perform its best.

 **CAUTION**
IN ORDER TO AVOID DAMAGING THE ELECTRIC SYSTEM, NEVER DISCONNECT THE WIRING WHILE THE ENGINE IS RUNNING. DO NOT TIP THE VEHICLE TOO MUCH IN ORDER TO AVOID DANGEROUS LEAKAGES FROM THE BATTERY ELECTROLYTE.

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

 **WARNING**
DEAD BATTERIES CAN HARM THE ENVIRONMENT. THE COLLECTION AND DISPOSAL SHOULD BE CARRIED OUT IN COMPLIANCE WITH CURRENT REGULATIONS.

USE OF A NEW BATTERY

Make sure that the terminals are connected correctly and check the voltage.

 **CAUTION**
DO NOT INVERT THE POLARITIES: RISK OF SHORT CIRCUITS AND DAMAGE TO THE ELECTRIC DEVICES.

ELECTROLYTE LEVEL CHECK

Check regularly that the electrolyte is at maximum level. Top **only with distilled water**. If the battery needs topping too frequently, check the motorscooter electrics (the battery is probably working in overload conditions which will lead to rapid deterioration).



WARNING

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



DEAD BATTERIES CAN HARM THE ENVIRONMENT. THE 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 a natural phenomenon of battery discharging and due to possible residual absorption of the vehicle, due to components with constant power supply. Poor battery performance may also be due to environmental conditions and the cleanness of the leads. One of the following processes should be effected to avoid difficult starting and/or irreparable damage to the battery:

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

- Store the vehicle (as described in the «Periods of inactivity» section) and remove the battery. The battery must be clean, completely charged and stored in a dry and wellventilated area. Recharge **at least once every two months**.



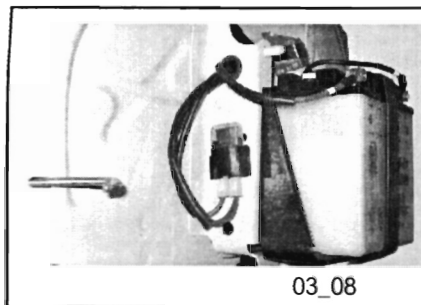
CAUTION

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. TAKE THE VEHICLE TO AN AUTHORIZED VESPA SERVICE CENTER FOR THIS OPERATION. WHEN REMOUNTING THE BATTERY MAKE SURE THE TERMINALS ARE CORRECTLY CONNECTED TO THE LEADS.



CAUTION

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



FUSES (03_08)

The electric system are protected by a 7.5A fuse, located on the LHS of the battery tray. If, after replacement, the fuse blows again, we recommend to take your vehicle to an Authorized Vespa Service Center. Never attempt to close the circuit using other material than the fuse.



WARNING

BEFORE REPLACING THE BLOWN FUSE, TRY TO ELIMINATE THE FAULT THAT HAS CAUSED IT TO BLOW. NEVER TRY TO REPLACE A FUSE USING DIFFERENT MATERIAL (FOR EXAMPLE A PIECE OF ELECTRIC WIRE).



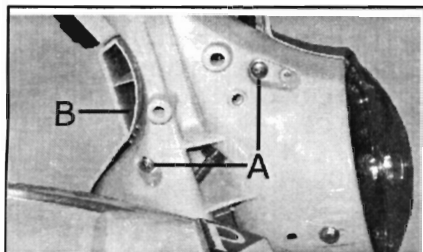
WARNING

MODIFICATIONS OR REPAIRS TO THE ELECTRIC SYSTEM CARRIED OUT INCORRECTLY OR WITHOUT TAKING NOTE OF THE SYSTEM'S TECHNICAL CHARACTERISTICS, CAN CAUSE FUNCTION ANOMALIES AND FIRE HAZARD.

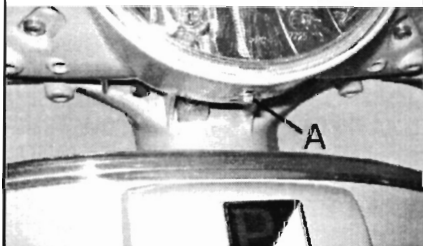


BATTERIES CONTAIN VERY DANGEROUS SUBSTANCES FOR THE ENVIRONMENT. TO REPLACE THE BATTERY, CONTACT A VESPA SERVICE CENTER, EQUIPPED FOR DISPOSAL IN COMPLIANCE WITH THE REGULATIONS IN FORCE.

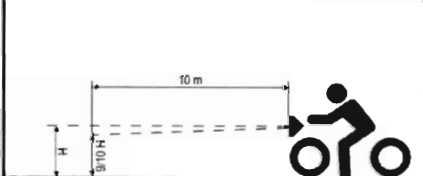
3 MAINTENANCE



03_09



03_10



03_11

HEADLIGHT LAMPS (03_09)

To reach the headlight bulbs, remove the top handlebar cover, as described below. After removing the driving mirrors, loosen the two screws, «A», and the two opposite screws underneath the handlebar. Lift cover «B» and release the two springs which allow extracting the bulb socket from its housing. To remove the bulbs, push downwards and rotate them anticlockwise. To replace warning light bulbs, it is sufficient to pull them off.



WARNING

SHOULD YOU NOTICE ANY MISTING DEVELOPING WITHIN THE INTERNAL SURFACE OF THE HEADLIGHT, PLEASE NOTE THAT THIS IS PERFECTLY NORMAL AND IS SIMPLY DUE TO THE HIGH LEVEL OF HUMIDITY AND/OR LOW ATMOSPHERIC TEMPERATURE.

THE PHENOMENON WILL RAPIDLY VANISH ONCE THE HEADLIGHT IS SWITCHED ON. ON THE OTHER HAND, THE PRESENCE OF WATER DROPS MAY INDICATE AN INFILTRATION, PLEASE CONTACT YOUR LOCAL VESPA SERVICE STATION.

HEADLIGHT ADJUSTMENT (03_10 ; 03_11)

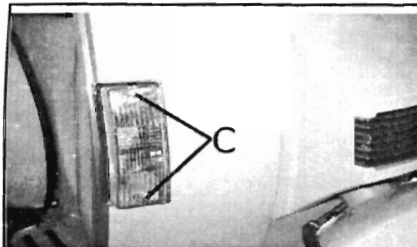
Proceed as follows:

1. Place the vehicle, in riding order and with the tyres inflated to the prescribed pressure, on flat ground, 10 m away from a half-lit white screen. Ensure the vehicle axis is perpendicular to the screen;
2. Turn the headlight on and check the projection of the light beam is between 7/10 and 9/10 of the distance measured from the ground to the centre of the headlight;
3. Adjust the headlight as necessary, screw «A».



WARNING

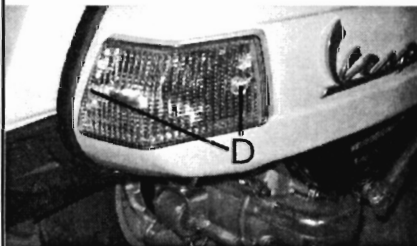
THE PROCEDURE DESCRIBED ABOVE COMPLIES WITH THE "EURONORM" CONCERNING THE MAX. AND MIN. HEIGHT OF THE LIGHT BEAM OF A ROAD VEHICLE. PLEASE CHECK WITH THE LOCAL AUTHORITIES FOR WHAT REQUIREMENTS MUST BE FULFILLED IN EVERY SINGLE COUNTRY WHERE THE VEHICLE IS TO BE USED.



03_12



03_13



03_14

FRONT DIRECTION INDICATORS (03_12)

Use a phillips screwdriver to remove screws «C». The bulbs have a bayonet fitting: to remove , press and twist anti-clockwise through about 30°. Fit the new bulb(s) and then refit the indicator lenses by performing the above steps in reverse order.

REAR DIRECTION INDICATORS (03_14)

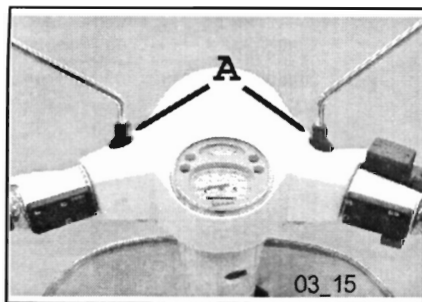
Use a phillips screwdriver to remove screws «D». The bulbs have a bayonet fitting: to remove , press and twist anti-clockwise through about 30°. Fit the new bulb(s) and then refit the indicator lenses by performing the above steps in reverse order.

REAR OPTICAL UNIT (03_13)

To reach the taillight bulbs, it is necessary to remove the 2 fixing screws, «E».

LIGHT CHARTS

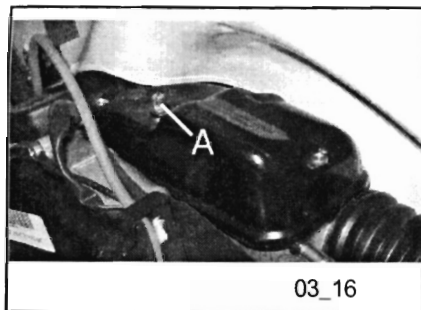
USE	VOLTAGE SUPPLY/POWER	TYPE
High/Low beam	12V-60/55W	H4
Turn signal	N°4 12V-21W	SPHERIC
Rear position	12V-5W	SPHERIC
Stop	12V-21W	SPHERIC
Dashboard	12V-1,2W	BAYONET
Warning lights	N°4 12V-1,2W	BAYONET



REAR-VIEW MIRRORS (03_15)

To adjust the stems, loosen nuts «A» with an open spanner (17 mm); hence orient the stems and tighten the nuts.


During this operation, it is necessary to stop the mirror supports, located under the protection caps, with a 14mm open spanner in order to avoid loosening from the handlebar. The driving mirrors are mounted onto the stems via a universal joint. It is therefore possible to adjust the mirrors by manually pushing them in the desired position.




03_16

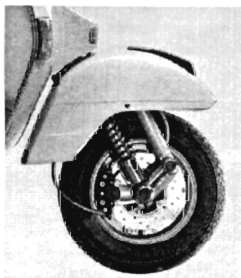
IDLE ADJUSTMENT (03_16)

The idle may be adjusted via screw «A», located on the carburettor. The throttle adjuster may be found on the carburettor body; adjust the throttle only in the event of servicing operations.

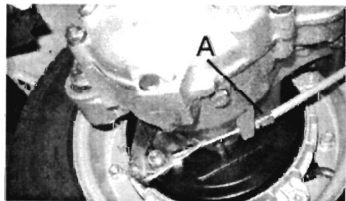
 **WARNING**
THE IDLING SPEED ADJUSTMENT SHOULD BE CARRIED OUT WHEN THE ENGINE IS HOT. BEFORE PROCEEDING, MAKE SURE THAT THE ACCELERATOR COMMAND HAS THE PRESCRIBED PLAY. IF IT IS NECESSARY TO ADJUST THE ACCELERATION COMMAND TRANSMISSION PLAY, WE RECOMMEND TURNING TO AN AUTHORIZED VESPA DEALER OR SERVICE CENTRE.

 **WARNING**
WHEN ADJUSTING IDLE, DO NOT TOUCH THE SILENCER AND HOT ENGINE PARTS TO PREVENT BURNS.

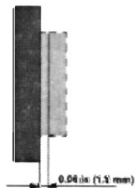
3 MAINTENANCE



03_17




03_18





03_19

FRONT DISC BRAKE (03_17, 03_19)

The brake disc and lining wear is automatically compensated, therefore it has no effect on the function of the brakes. For this reason it is not necessary to adjust the brakes. If, when activating the brake lever, you notice excessive elasticity, this is most probably due to the presence of air in the circuit or to the irregular functioning of the brake itself. In this case, given the fundamental rule that the brakes play in your driving safety, it is necessary to take the vehicle to an **Authorized Vespa Dealer or Service Centre**.

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

 **WARNING**
THE BRAKE PADS THICKNESS IS CHECKED BY THE DEALER ACCORDING TO THE INSPECTIONS PROVIDED BY THE SCHEDULED MAINTENANCE TABLE. IF YOU HEAR ABNORMAL NOISE FROM THE FRONT AND/OR BRAKING SYSTEM DURING USE, TURN TO A DEALER OR TO AN AUTHORISED VESPA SERVICE CENTRE. AFTER REPLACING THE BRAKE PADS, DO NOT USE THE VEHICLE BEFORE HAVING ACTUATED THE BRAKE LEVER SEVERAL TIMES, FOR THE PURPOSE OF SETTLING THE PISTONS AND TAKING THE LEVER STROKE TO THE CORRECT POSITION.

 **WARNING**
THE PRESENCE OF SAND, MUD, SNOW MIXED WITH SALT, ETC. ON THE ROAD, CAN DRASTICALLY REDUCE THE DURATION OF THE BRAKE LINING. IN ORDER TO AVOID THIS, WE RECOMMEND WASHING THE VEHICLE FREQUENTLY IN THE PRESENCE OF THESE ROAD CONDI-



WARNING

CHECK THE BRAKE PADS AFTER THE FIRST 625 MILES (1.000 KM) AND EVERY 3.125 MILES (5.000 KM) THEREAFTER. IF THE THICKNESS OF ONE OR BOTH PADS IS IN THE REGION OF 0.06 IN (1.5 MM) (SEE FIG. 03_19), BOTH PADS MUST BE CHANGED.

THIS OPERATION SHOULD BE CARRIED OUT BY AN AUTHORIZED VESPA SERVICE CENTER.

FIT ONLY GENUINE ORIGINAL VESPA REPLACEMENT PADS.

NON GENUINE PADS MIGHT NOT WORK PERFECTLY RESULTING TO BRAKE FAILURES AND A SERIOUS RISK OF INJURIES OR EVEN DEATH.

REAR DRUM BRAKE (03_18)

Tighten or loosen adjusting screw «A», bearing in mind that, when the pedal is released, **the wheel must spin freely.**

NOTE

HEAT THAT IS GENERATED DURING NORMAL USE OF THE BRAKES WILL CHANGE THE CLEARANCE BETWEEN THE BRAKE SHOE AND THE DRUM. BECAUSE OF THIS, YOU SHOULD CHECK THE CLEARANCE WITH THE BRAKES AT NORMAL OPERATING TEMPERATURE.

• **TEST THE BRAKES AFTER ANY ADJUSTMENT TO ENSURE THAT THEY FUNCTION PROPERLY.**



CAUTION

IF THE ADJUSTER CAN BE SCREWED COMPLETELY ON TO THE REAR BRAKE ROD, THE BRAKE SHOES ARE WORN OUT AND MUST BE REPLACED. IN THIS CASE, CONTACT YOUR LOCAL VESPA DEALER.



WARNING

THE BRAKES ARE THE PARTS THAT MOST ENSURE YOUR SAFETY AND FOR THIS REASON THEY MUST ALWAYS BE IN PERFECT WORKING ORDER. IF IN DOUBT REGARDING THE PERFECT FUNCTIONING OF THE BRAKING SYSTEM AND IN CASE YOU ARE NOT ABLE TO CARRY OUT THE USUAL CHECKING OPERATIONS, CONTACT YOUR LOCAL VESPA DEALER.



WARNING

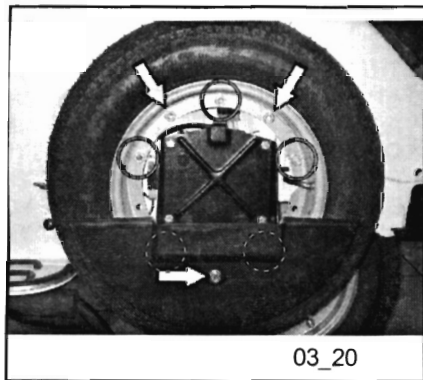
RIDING WITH WORN REAR BRAKE PADS CAN LEAD TO AN UPSET, SERIOUS ACCIDENT, AND INJURY OR EVEN DEATH.



CAUTION

AFTER SERVICING THE BRAKES, ALWAYS CHECK THEM FOR FUNCTION. IF THE STROKE OF THE LEVER IS EXCESSIVE, OR IF YOU DETECT THAT THE EFFECTIVENESS OF THE BRAKES IS REDUCED IN ANY WAY, HAVE YOUR VEHICLE SERVICED BY YOUR LOCAL VESPA DEALER.

HE WILL HAVE THE EQUIPMENT AND KNOWLEDGE TO ENSURE THAT THE REAR BRAKE IS WORKING PERFECTLY.



PUNCTURE (03_20)

The vehicle is equipped with a spare wheel which can be replaced, in case of puncture, as follows:

- 1) Remove the left engine cowling.
- 2) Unscrew the two upper nuts and the lower screw (shown in picture by arrows).
- 3) Replace, on the hub, the punctured wheel with the spare one.
- 4) Assemble, to the frame, the punctured wheel and the left engine cowling.

It is also possible, in the case of a puncture you may carry out an emergency repair with the use of an "inflate and repair" type cylinder. For a definitive repair turn to an **Authorized VESPA Dealer or Service Centre**.



WARNING

THE WHEELS, COMPLETE WITH TYRES, SHOULD ALWAYS BE BALANCED. USING THE VEHICLE WITH A LOW PRESSURE TYRE OR WITH AN INCORRECT BALANCE CAN LEAD TO DANGEROUS STEERING VIBRATIONS.



CAUTION

WHEELS ARE EQUIPPED WITH FIVE BOLTS JOINING OF RIMS HALVES (SHOWN IN PICTURE BY CIRCLES). DURING REPLACEMENT, BE CAREFUL TO NOT TO UNSCREW THESE BOLTS ON THE SPARE WHEEL. THIS WILL CAUSE THE DAMAGING OF TIRE AND INNER TUBE WITH CONSEQUENT POSSIBILITY OF ACCIDENT, SERIOUS INJURIES OR EVEN DEATH.



PERIODS OF INACTIVITY (03_21)

Prepare the motorscooter as follows:

- 1 - Wash the bodywork thoroughly.
- 2 - With the engine stopped, **remove the spark plug** and, with the piston at the bottom of its stroke, pour about 1/16 oz or 27 grains (1-2 cc) of **SELENIA HI SCOOTER 2 TECH** engine oil into the cylinder. Now turn over the engine a few times using the kick-start and then refit the spark plug.
- 3 - Drain the fuel tank and coat unpainted metal parts with protective grease: position the scooter so that the tires are not resting on the ground.
- 4 - For the battery, follow the procedures described on section «Battery and fuse».

CLEANING THE VEHICLE

Use a low pressure water jet in order to soften the dirt and mud deposited on the painted surfaces. Once softened, mud and dirt should be removed with a soft sponge for bodywork soaked in a lot of water and shampoo (2-4% of shampoo in water). Then rinse with plenty of water, and dry with shammy leather. Polishing with silicone wax should always be preceded by washing.

 **DETERGENT PRODUCTS CAN POLLUTE WATER.**

THE VEHICLE SHOULD BE WASHED AT WASHING STATIONS EQUIPPED WITH SUITABLE DEVICES FOR THE PURIFICATION OF THE WASHING WATER.



CAUTION

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.**
- **NOT PLACE THE JET NOZZLE WITHIN 1,96 FT (60 CM) FROM THE ENGINE.**
- **NOT USE WATER AT A TEMPERATURE OF OVER 104°F (40°C).**
- **NOT USE THE JET AT HIGH PRESSURE.**
- **NOT USE STEAM WASHING.**
- **NOT DIRECT THE JET DIRECTLY TOWARDS: CARBURETTOR, WIRINGS, COOLING SLITS IN THE TRANSMISSION COVER AND IN THE SPIRAL COVER.**





CAUTION

THE VEHICLE SHOULD NEVER BE WASHED IN DIRECT SUNLIGHT, ESPECIALLY DURING THE SUMMER WHEN THE BODYWORK IS STILL HOT, AS THE SHAMPOO CAN DAMAGE THE PAINTWORK IF IT DRIES BEFORE BEING RINSED OFF. NEVER USE CLOTHS SOAKED IN PETROL, DIESEL OIL OR PETROLEUM FOR CLEANING THE PAINTED OR PLASTIC SURFACES, IN ORDER TO PREVENT THE LOSS OF THEIR SHINE OR THE ALTERATION OF THE MECHANICAL CHARACTERISTICS.



DETERGENTS CAN POLLUTE RIVERS, STREAMS AND THE SOIL. DO NOT WASH THE MOTOR-SCOOTER IN THE ROAD. RESPECT THE ENVIRONMENT (LIMIT THE AMOUNT OF SOAP YOU USE).

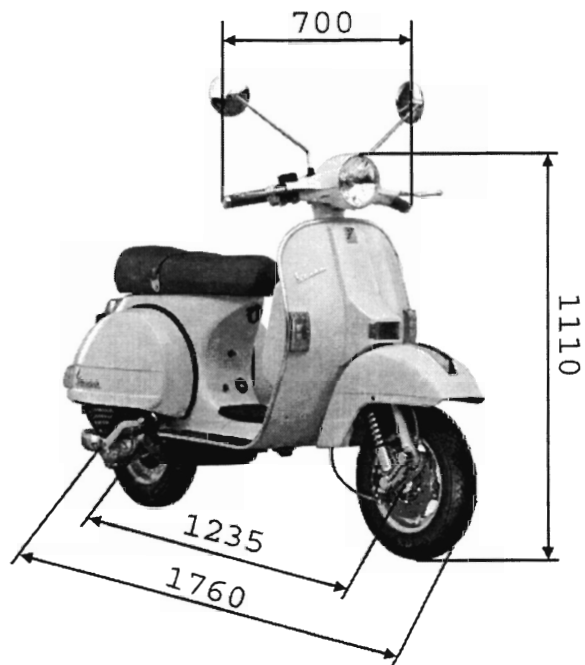
SYMPTOM	POSSIBLE CAUSE	ACTION
DIFFICULTY STARTING	Fuel tank empty	Refuel
	Filter jets or carburetor dirty	Contact an Authorized Vespa Service Center
	Dead battery	Kick-starter. Recharge the battery.
IRREGULAR FIRING	No spark on plug  Danger: high voltage.. This inspection should be carried out by a skilled mechanic	Contact an Authorized Vespa Service Center
IRREGULAR IGNITION	Loose spark plug. Loose cylinder head, worn piston seal rings.	Tighten the spark plug. Turn to an Authorized Vespa Service Centre .
POOR COMPRESSION	Spark plug bore thread damaged; head bolts insufficiently torqued; worn piston rings.	Contact an Authorized Vespa Service Center
HIGH FUEL CONSUMPTION AND POOR PERFORMANCE	Dirty air filter.	Lubricate as described on section 3.3.
	Excessive build-up of deposits in the exhaust system.	Contact an Authorized Vespa Service Center
POOR BRAKING ACTION	Oil on brake drum or disc. Worn brake pads/shoes	Turn to an Authorized Vespa Help Point .
	 Rear brake incorrectly adjusted. Air in front brake circuit.	Adjust Contact an Authorized Vespa Service Center
POOR SUSPENSION	Oil leak; worn stroke end bumpers; worn shock absorber attachment points	Contact an Authorized Vespa Service Center

PX150



CHAP . 04 **TECHNICAL DATA**

4 TECHNICAL DATA



VERSION	150
ENGINE	Single cylinder 2-Stroke Piaggio
DISPLACEMENT	150 cc
BORE X STROKE	2,2x2,2 in 58x57 mm
COMPRESSION RATIO	8 ÷ 1
IGNITION ADVANCE (BEFORE T.D.C.)	18 ± 1
CARBURETOR DELLORTO	SI 20/20 D
SPARK PLUG	CHAMPION RL82C
TOP SPEED	47 mph (75 Km/h)

FUEL SYSTEM

Unleaded gasoline-oil mixture and carburetor. Manual vacuum tap.

STARTER SYSTEM

Electric and kick-start

MUFFLER

Combined type with expansion and contraction.

ELECTRONIC IGNITION

Discharge capacitor with HT coil included.

LUBRICATION

Separate lubrication of engine (piston, cylinder, crankshaft, main bearings) with oil supplied by mixer pump with variable flow rate in relation to engine speed and throttle position.

COOLING

By forced air with centrifugal fan.

BRAKES

Front brake: 200 mm disc hydraulically activated via RHS lever on handlebar.

Rear brake: 150 mm drum with expanding shoes mechanically controlled via pedal on footrest (RHS of the vehicle).

WHEELS

Front: rims 2.1x10"

Rear: rims 2.1x10"

TIRES

Front: 3.50 -10 59J

Rear: 3.50 -10 59J

CLUTCH

Multi-disc in oil.

GEAR

4-speed with constantly meshed gears.

SUSPENSION

Front: steering tube connected to front hub; coil spring suspension with hydraulic double acting shock absorber.

Rear: with hydraulic double acting shock absorber and coaxial spring.

FRAME

Open section pressed-steel monocoque type and fairings.

TOTAL VEHICLE WEIGHT

256 Lb (116 Kg)

CARRYING CAPACITY

Pilot, passenger and 9 lb (4Kg) on each luggage rack.

TOOL KIT

One box spanner 0,5 - 0,8 in (13-21 mm), one tommy bar for box spanner . one double screwdriver. The tools are accommodated in a toolbox under the saddle.

MIXER OIL TANK

Metallic, capacity ~ 0,39 - 0,45 gal. (1,5 - 1,7 lt.) including 0,1 gal. reserve.

GASOLINE TANK

Metallic, capacity ~ 2,11 gal. (8 lt) including 0,5 gal. reserve.

PX150



CHAP . 05 PARTS AND ACCESSORIES



! **WARNING**
IN ORDER TO PREVENT ANY ACCIDENTS USE THE MAXIMUM PRUDENCE WHEN DRIVING THE VEHICLE WITH ACCESSORIES AND ANOMALOUS LOADS, AS THIS CAN REDUCE THE SCOOTER'S STABILITY, PERFORMANCE AND SAFETY.

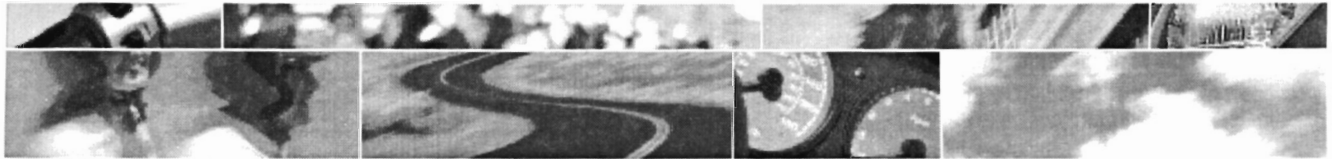
! **CAUTION**
WE RECOMMEND THE USE OF ONLY ORIGINAL VESPA SPARE PARTS, THE ONLY PARTS THAT OFFER THE SAME QUALITY GUARANTEE AS THE ORIGINAL PARTS ASSEMBLED ON MOTOR SCOOTER. PLEASE REMEMBER THAT THE USE OF NON-ORIGINAL PARTS MAY INVALIDATE YOUR WARRANTY.

! **WARNING**
VESPA MARKETS ITS OWN LINE OF ACCESSORIES THAT ARE THEREFORE ALSO RECOGNIZED AND GUARANTEED IN RELATION TO THEIR USE. IT IS THEREFORE INDISPENSABLE TO TURN TO AN AUTHORIZED VESPA DEALER OR SERVICE CENTRE, IN ORDER TO SELECT THEM AND HAVE THEM CORRECTLY ASSEMBLED. THE USE OF NON ORIGINAL

ACCESSORIES AND/OR THOSE NOT CORRESPONDING TO THE PRODUCT MODEL CAN COMPROMISE THE STABILITY AND FUNCTION OF THE VEHICLE, LEADING TO CONSEQUENT DANGEROUS DRIVING AND RELATIVE RISK TO THE DRIVER.

! **WARNING**
IF NON ORIGINAL VESPA ACCESSORIES ARE INSTALLED ON THE SCOOTER, THERE IS AN ANOMALOUS LOAD. THE SCOOTER IS NOT IN OPTIMAL GENERAL CONDITIONS AND WHEN THE ATMOSPHERIC CONDITIONS DO NOT ALLOW IT, THE SPEED SHOULD BE FURTHER REDUCED.

PX150



CHAP . 06 SCHEDULED MAINTENANCE

6 SCHEDULED MAINTENANCE

Adequate maintenance is a determining factor in the vehicle's duration in optimal function and performance conditions.

For this purpose, PIAGGIO has prepared a series of inspection and maintenance operations that can be paid for, grouped together in the summary table on the next page. It is a good rule to point out any small function anomalies to an **Authorized Vespa Dealer or Service Centre** at once, without waiting until the next time your vehicle is serviced, in order to remedy them as soon as possible.

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

Check ■		X 100 miles	6,2	40	60	90	120	150	180	210	240	270	300	330	360	
Replace ●		Months	4	12	24											
Brake oil	Replace															EVERY 2 YEARS
Gear-box oil level	Check / Replace		●	■	●	■	●	■	●	■	●	■	●	■	●	
Spark plug	Replace			●	●	●	●	●	●	●	●	●	●	●	●	■
Air filter on carburetor	Clean			■	■	■	■	■	■	■	■	■	■	■	■	■
Idling speed	Adjustment				■		■		■		■		■		■	
Cylinder cooling system	Check/Clean						■				■				■	
Throttle mixer cable	Adjustment		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Speedometer cable	Grease		■		■		■		■		■		■		■	
Steering	Adjust		■		■		■		■		■		■		■	
Brake and clutch lever	Greasing		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Brake pads	Check condition + wear			■	■	■	■	■	■	■	■	■	■	■	■	■
Brake oil level	Check		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Trasmissions	Lubricate				■		■		■		■		■		■	
Nuts, bolts and fasteners	Check		■		■		■		■		■		■		■	
Suspensions	Check				■		■		■		■		■		■	
Electrical system and battery	Check		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Headlight	Check / adjustment				■		■		■		■		■		■	
Tyres condition and wear	Check			■	■	■	■	■	■	■	■	■	■	■	■	■
Tyres condition and wear	Check		■	■	■	■	■	■	■	■	■	■	■	■	■	■
Vehicle and brake test	Road test		■	■	■	■	■	■	■	■	■	■	■	■	■	■

RECOMMENDED PRODUCTS		
Use	Specification	Product
Gearbox Oil	SAE 75W/85 oil with API GL4 specifications	TUTELA MATRYX
Lubrication oil for flex transmission (throttle, rear brake, speedometer)	Two stroke engine oil	SELENIA HI-SCOOTER 2 TECH
Grease (brake level, throttle twistgrip, gaer)	Calcium complex soap grease NLGI 1-2	TUTELA TP1
Mix Oil	Synthetic oil with API TC ++ specifications	SELENIA HI Scooter 2 Tech
Grease for speedo sender	Molybdenum disulphide grease and lithium soap	TUTELA MRM2
Brake fluid	Synthetic fluid SAE J1703, NHTSA 116 DOT 4, ISO 4925	TUTELA TOP 4



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