PRESENTATION

GAS GAS appreciates your trust.

We are happy to see that you have decided on a GAS GAS EC HALLEY motorcycle and welcome you into the great family of GAS GAS users. Learn everything about your new machine. It contains a large amount of experience accumulated from many competitions where we have won important prizes. You are now the owner of a moped that, besides making you feel comfortable, offers a great many opportunities for you to show your skills while providing top safety levels.

This manual provides a wealth of basic information on the moped features and how best to use it. It also includes important safety instructions, together with basic maintenance and inspection routines.

Thank you for trusting us and welcome to GAS GAS Motorcycles.
IMPORTANT NOTICE

Read this manual thoroughly. It contains every single aspect that should help to provide safety for yourself and others, and to ensure the appropriate preservation and maintenance of the GAS GAS moped you have just purchased.

READ THE WHOLE CONTENTS OF THIS MANUAL BEFORE USING THE VEHICLE.

Important information about this manual

Specially important information is highlighted in this manual as follows:

**WARNING**

Ignoring the **WARNING** notice may result in serious or fatal injuries to the moped user, as well as to bystanders or the technicians inspecting or repairing it.

**ATTENTION**

This symbol identifies instructions or procedures that, unless strictly followed, may damage or destroy the equipment.

**NOTE**

*This symbol shows items of special interest for a better performance and a more convenient operation.*

Inadequate riding may cause environmental damage and conflicts with other people. Riding your motorcycle in a responsible manner prevent the appearance of such damage or conflicts.

PROTECTING THE FUTURE OF YOUR SPORT ENSURES THE LEGAL USE OF YOUR MOPED WHEN PROPER RESPECT FOR THE ENVIRONMENT AND OTHER PEOPLE’S RIGHTS IS SHOWN.

This manual includes the data and specifications available at the time of compilation. Any difference you may find with your vehicle data and specifications is a consequence of manufacturing and quality improvements. GAS GAS Motos S.A. constantly improves its vehicles so that you may enjoy them at their best.

**INSTRUCTIONS FOR USE**

A deep knowledge of your vehicle and how it works is extremely important.

- Remember that you are not to leave the engine running within a closed area, as the toxic exhaustion fumes might have fatal consequences.
- Tyre pressure has a direct influence on the vehicle stability.
- Sudden braking may result in skidding.

Engine performance and life depend to a great extent on how it is run in. We recommend strict adherence to the instructions supplied, at the very least during the initial 500 Kms.

- Do not keep the engine running at a high-revolution level.
- Do not change down as soon as the engine starts striving.
- Do not keep the engine running at top speed for a long time.
TABLE OF CONTENTS

- Presentation.................................................................3
- Important notice............................................................4
  Instructions for use........................................................4

- Table of contents..........................................................5
- Specifications...............................................................6
- Important information.....................................................8
  Identification numbers....................................................8

- Component location......................................................10
- Motorcycle components................................................12
  Main-beam pilot light....................................................12
  Indicator pilot light......................................................12
  Multifunction...............................................................12
  Ignition key.................................................................12
  Oil-reserve pilot light...................................................12
  Headlight indicator.......................................................12
  Clutch........................................................................12
  Lights..........................................................................12
  Start button..................................................................13
  Front brake...................................................................13
  Accelerator grip............................................................13
  Fuel tank......................................................................13
  Oil...............................................................................14
  Oil reservoir.................................................................14
  Fuel tap........................................................................14
  Saddle.........................................................................15
  Starting pedal...............................................................15
  Rear brake pedal..........................................................15
  Gear pedal....................................................................15

- Starting the motorcycle................................................16
  Starting the engine.......................................................16
  Stopping the engine......................................................16
  Choke..........................................................................16
  Gear box......................................................................17

- Stopping the moped......................................................17
- Adjustment....................................................................17

- Maintenance................................................................18
  Maintenance schedule..................................................18
  Before starting the moped for the first time....................19
  Engine.........................................................................19
  Gearbox and clutch......................................................19
  Carburettor.................................................................19
  Air filter........................................................................20
  Sparking-plug check......................................................20
  Radiator.......................................................................21
  Strip box.....................................................................21
  Clutch adjustment.........................................................22
  Chain lubrication..........................................................22
  Chain tightening............................................................22
  Front suspension..........................................................23
  Rear suspension............................................................23
  Cables..........................................................................24
  Front brake...................................................................24
  Rear brake...................................................................24
  Pump and brake pads.....................................................25
  Steering.......................................................................25
  Tyre pressure...............................................................25
  Checking operations at specialised garages.....................26
  Storage..........................................................................27

- Final advice................................................................27
  Preventive advice........................................................27
  Safe use of this moped....................................................27

- Events on the road........................................................28
  Carburettor problems....................................................28
  Ignition problems..........................................................28

- Diagnosis of damaged..................................................29-33
- Multifunction...............................................................34-41
- Terms of garanti...........................................................42-44
### SPECIFICATIONS

#### ENGINE
- **Cubic Capacity:** 124 cc
- **Type:** Two-stroke single-cylinder engine with straight-into-crankcase strip admission.
- **Number of Cylinders:** One.
- **Fuel Supply:** Fuel supply by means of petrol with separate oil-lubrication pump.
- **Cooling System:** Liquid.
- **Diameter per Stroke:** 54 x 54.5 mm
- **Carburettor:** Dell’Ortho* 26 VHTS diameter diffuser with air intake through an easy-to-clean filter placed within a large filter housing.
- **Ignition:** Electronic with adjustable early timing.
- **Clutch:** Specially designed hydraulic clutch, featuring multiple friction disks fitted with springs, submerged in a highly effective oil bath.
- **Gearbox:** 6 gears.
- **Transmission:** Primary, gear-operated; secondary, chain-operated.
- **Engine Lubrication:** Separator oil mixture.
- **Cooling:** Engine cooling is achieved through a large radiator that keeps the fluid at a constant temperature, never above 80° C.

#### CHASSIS
- **Engine:**
  - The radiator, secured onto a double-wedge chassis that unfolds at cylinder level, has been welded with chromolibdene and features reinforcing brackets for a highly resistant, robust assembly.
- **Chassis:** Made from Cromoly rectangular tubes, aluminium rocker.
- **Front Suspension:** High performance Hydraulic forks ø 37 mm.
- **Rear Suspension:** Aluminium rocker. Progressive system fitted with SACHS* single shock absorber providing an extremely long wheel stroke.
- **Front Brake:** 260 mm disk fitted with 2-piston clip.
- **Rear Brake:** 220 mm disk fitted with 2-piston clip. Wrought aluminium.
### Dimensions

<table>
<thead>
<tr>
<th></th>
<th>SM</th>
<th>EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase:</td>
<td>1,440 mm</td>
<td>1,450 mm</td>
</tr>
<tr>
<td>Saddle Height:</td>
<td>870 mm</td>
<td>900 mm</td>
</tr>
<tr>
<td>Minimum Distance to Ground:</td>
<td>280 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Deadweight:</td>
<td>93 Kg</td>
<td></td>
</tr>
<tr>
<td>Tank Capacity:</td>
<td></td>
<td>9 litres. 98/95 NO unleaded petrol.</td>
</tr>
<tr>
<td>Oil Reservoir Capacity:</td>
<td>1,2 litres.</td>
<td></td>
</tr>
<tr>
<td>Oil Reservoir Reserve:</td>
<td>400 cc</td>
<td></td>
</tr>
<tr>
<td>Gearbox Oil:</td>
<td>SAE 15 - 30</td>
<td></td>
</tr>
<tr>
<td>Engine Output Pinion:</td>
<td>Z/ 13</td>
<td>Z/ 40</td>
</tr>
<tr>
<td>Driving Chuck:</td>
<td>Z/ 38</td>
<td></td>
</tr>
<tr>
<td>Chain:</td>
<td>5/8&quot; reinforced.</td>
<td>1/4 reinforced.</td>
</tr>
<tr>
<td>Sparking Plug:</td>
<td>DENSO 27. 0.6 – 0.7 mm electrode gap.</td>
<td></td>
</tr>
</tbody>
</table>

**Front Tyres:** EC - 80 x 90 x 21" 48P  
SM - 100 x 80 x 17" 525  
**Rear Tyres:** EC - 110 x 80 x 18" 62P  
SM - 130 x 70 x 17" 625  
**Starting Pedal:** Wrought aluminium  
**Brake Pedal:** Wrought aluminium with retractable tip.
IMPORTANT INFORMATION

IDENTIFICATION NUMBERS

Enter the vehicle identification number (serial number), the particulars shown on the model label, and the ignition-key identification number in the spaces provided, in order to simplify your future orders for spare parts or as a useful reference in the event of your vehicle being stolen.

Serial Number (A)

This has been printed on the steering arm. It shows the frame number used for registering this motorcycle.

Certification Plate (B)

The motorcycle carries a certification plate showing a serial number (B) that has also been printed on the front, and this information must coincide with that contained in the vehicle documents. We recommend that this information be entered in the box below.

Ignition Key Identification Number (C)

The motorcycle carries one two-key set (C). The identification number appears right on the key joints, as illustrated. This number may be quoted when ordering a spare to replace a lost key.
No-tampering transfer

The motorcycle carries an information label with a diagram illustrating some vehicle parts and their part numbers. Because these parts were included with the motorcycle during the certification process, replacing some of them might be punished with a fine if traffic police checks the vehicle.

As above, again for your own information and safety, we also recommend that all of these part numbers be entered in the spaces provided.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11.

NOTE

We recommend that a specialised garage be contacted if one of these parts requires replacement. The garage will provide advice on certified spare parts.
1- Clutch handle
2- Light Switches
3- Clutch fluid reservoir
4- Petrol tank
5- Brake fluid reservoir
7- Accelerator grip
8- Front brake handle
9- Main beam pilot light
10- Indicator pilot light
11- Multifunction
12- Ignition key
14- Oil reserve pilot light
15- Headlight indicator
15- Front shock absorber
16- Oil reservoir
17- Petrol tank
18- Saddle
19- Front brake disk
20- Front brake clip
21- Sparking plug
22- Gearbox pedal
23- Air filter

24- Rack
25- Chain guide
26- Rear shock absorber
27- Exhaust pipe
28- Rocker
29- Rear brake
30- Starting pedal
31- Exhaust
**MOTORCYCLE COMPONENTS**

**MAIN-BEAM PILOT LIGHT (A)**
This only lights up when the main beam is on.

**INDICATOR PILOT LIGHT (B)**
When lit, it confirms that either the left-hand or the right-hand indicator is on.

**MULTIFUNCTION (C)**
This provides information on speed, mileage, etc. (further details may be found at the end of this manual, under “Multifunction Instructions”).

**IGNITION KEY (D)**
The key has been located on the front of the handlebars. To start the engine, turn the key clockwise to the “ON” position. To stop the engine, turn the key anticlockwise to the “OFF” position.

**OIL-RESERVE PILOT LIGHT (F)**
This lights up when the oil level is too low, i.e. when the reserve level is reached. At this point, approximately 400ml. of a litre of oil are left in the reservoir.

**HEADLIGHT INDICATOR (K)**
When lit, it indicates that the headlight is on.

**CLUTCH (G)**
The clutch handle has been located on the left-hand side of the handlebars. Clutch engagement and disengagement is achieved by operating this handle. For the clutch to operate smoothly, the lever should be pressed quickly and released slowly.

**LIGHTS (H)**
All light controls have been located on the left-hand grip; the various positions available are reached by sliding the main switch, which is on the left end of the grip.

FRONT BRAKE (M)

Front-wheel braking is achieved through a 260mm-diameter disk brake operated by a clip and a hydraulic pump. For optimum results, the braking surface must be oil-free and clean. If, for any reason, the brake fluid must be drained and replaced, read the “Maintenance” section beforehand.

ACCELERATOR GRIP (N)

Make sure that this works properly by turning the grip to see if it has the right free play. The grip must spring back to its original position when the accelerator is released.

**WARNING**

Improper operation of the accelerator may impair your efforts to increase or reduce speed when required. This may result in an accident. Check the accelerator before starting the engine. If the accelerator does not work smoothly, find out the reason. Solve the problem before using the moped, or contact a specialised garage.

PETROL TANK

This holds 9 litres. To access the tank, unscrew the filler cap. Once open, fill up the tank and replace the cap correctly by turning it anticlockwise.

**Recommended Petrol**

Use unleaded petrol with an octane rating equal to or higher than the one shown in the chart.
This engine is designed to burn a mixture of combustible fuels, lead-free petrol and oil. The mixing is performed automatically by a mechanical pump. The only precaution it is necessary to take is that of maintaining an optimum level of fuel in the oil tank.

**OIL RESERVOIR**

This holds 1.2 litres. It has been placed in the left of the moped, behind of the left radiator. To access the reservoir, unscrew the filler cap and fill with oil. Never allow it to exhaust the oil contents, as this would require draining the oil pump to eliminate air accumulations.

**FUEL TAP**

This tap supplies fuel to the carburettor and has been located on the left-hand side, under the saddle. The tap has three positions.

**OFF:** No fuel flows through the system when the lever is in this position. Always turn the lever to this position when the engine is not running.

---

**OIL**

This engine is designed to burn a mixture of combustible fuels, lead-free petrol and oil. The mixing is performed automatically by a mechanical pump. The only precaution it is necessary to take is that of maintaining an optimum level of fuel in the oil tank.

**ATENTION**

Never mix vegetal and mineral oils together. Too much oil may cause an excessive amount of fumes and spark-plug dirt. Too little oil may cause engine damage or early wear.

---

**OCTANE RATING METHOD**

<table>
<thead>
<tr>
<th>OCTANE RATING METHOD</th>
<th>MINIMUM RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antiknock Index (RON + MON)/2</td>
<td>90</td>
</tr>
<tr>
<td>Research Octane No. (RON)</td>
<td>98</td>
</tr>
</tbody>
</table>

---

**WARNING**

Petrol is extremely flammable and may become explosive under certain conditions. Never keep the engine running or smoke when refuelling. Make sure that the area is properly ventilated and free from flammable materials or sparks; this includes the operation of any light sources.
**REAR BRAKE PEDAL (D)**

The rear brake pedal is located on the right side of the lower chassis. Activate it to apply the brake to the rear wheels.

**ATTENTION**

If you must use the reserve, remember to fill the tank as soon as possible!

After refuelling, turn the fuel-tap lever (C) back to the “ON” position.

**GEAR PEDAL**

The vehicle features a 6-speed gearbox.

The change pedal is located on the left side of the engine and is used in combination with the clutch when changing gears.

**SADDLE**

This has been joined to the chassis by means of a screw secured to the tank and its housing in the saddle tongue. The rear section is also secured with screws that must be tightened through the top of the number plates.

**STARTING PEDAL (E)**

The pedal has been placed on the right-hand side of the motorcycle and is in the off-position; pull to place it in the on-position.
STARTING THE MOTORCYCLE

STARTING THE ENGINE

- Check to see that there is fuel in the tank.
- Turn the fuel tap to the "ON" position.
- Turn the ignition key clockwise (to the "ON" position), in order to open the electric circuits required for the engine to start.
- If the engine is cold, operate the choke by lifting the lever on the right-hand side of the carburettor (as illustrated on this page). This should provide a richer fuel mixture.
- Without operating the accelerator grip, press the electric starting button.
- If the engine still fails to start properly, you may also operate the starting lever.

STOPPING THE ENGINE

- Turn the key in the opposite direction to clockwise. The key is located to the left. The engine will not start.
- The key may be removed from contact.
- Finally, turn the fuel tap to the "OFF" position.

NOTE

Unless the engine is started when the ignition key is on the “ON” position, the battery may lose some power.

CHOKER

The choke is a device that increases the supply of fuel to a given extent, without the need to operate the accelerator grip, in order to help the operation of a cold engine. The engine will quickly reach its optimum working temperature with no danger to its component parts.

To use the choke, lift the lever on the left-hand side of the carburettor (A). This will allow the engine to start on reaching a given amount of revolutions.
Turn off the choke (B) after a few seconds, as the engine will have then reached the right temperature. To turn off the choke, just turn the accelerator grip as far as it will go.

**NOTE**
*If the engine should flood, start the moped with the accelerator fully on. The moped may be started with one gear in, if you press the clutch.*

**GEAR BOX**

This being a six-gear transmission with a return gear, shifting from first to third gear requires going through second gear, i.e. shifting gears upwards in a sequence.

To go into first gear from neutral it is imperative to press the clutch, then step on the gearbox pedal, release the gearbox pedal and finally release the clutch slowly.

**ATTENTION**

When shifting gears, press firmly on the gearbox pedal in order to ensure a positive shift. Incomplete gear shifting may cause the transmission to go into the wrong gear, thus damaging the engine.

**STOPPING THE MOPED**

For maximum deceleration, release the accelerator grip and operate both the front and rear brakes. Release the clutch and the moped will gradually stop. A separate use of either the front or the rear brake may be advantageous under certain conditions.

Change down sequentially while decelerating, to ensure the right response from the engine when you wish to accelerate.

**ADJUSTMENT**

The smooth operation required to maximize engine and transmission performance must be achieved through a previous running-in process. During the first 100 Km, have the engine running at low speed and a moderate rpm level.

**NOTE**
*Low speed during the running-in process may result in a dirty sparking plug. Check the condition of the standard sparking plug supplied and replace it, if necessary, with one of a higher thermal grade.*

During the initial 500 km, it is advisable not to go beyond medium speed for a long time and to avoid any type of situation that might cause the engine to reach too high a temperature. However, short-time (3 to 4 seconds) accelerations cannot damage the engine; on the contrary, they are beneficial. Every acceleration sequence must be followed by a rest period, to allow the engine to remove all of the heat accumulated. During this initial 500 km, it is advisable not to keep a constant speed, but to change it instead every now and then. During the next 1000 km, it is advisable not to go beyond 3/4 of the speed available for a long time.

**ATTENTION**

In any event, reckless accelerations may suffice to cause engine trouble. Be sure to always apply the skills and techniques required for a proper use of this moped.
## MAINTENANCE

### MAINTENANCE SCHEDULE

| After the initial 500 Km:                                                                 | - Gearbox-oil replacement after the running-in period.  
|                                                                                      | - Screw tightening and control adjustments.  
|                                                                                      | - Cooling-circuit inspection.  
|                                                                                      | - Brake-circuit level checking.  |
| Every 1.000 km:                                                                      | - Electrode-gap inspection and sparking plug cleaning.  
|                                                                                      | - Chain adjustment, tightening and lubrication.  
|                                                                                      | - Brake-circuit level checking.  
|                                                                                      | - Cooling-circuit level checking.  
|                                                                                      | - Air-filter cleaning.  
|                                                                                      | - Spark-plug replacement.  
|                                                                                      | - Brake-pad wear inspection.  
|                                                                                      | - Engine-oil replacement.  |
| Every 8.000 km:                                                                      | - Piston-, cylinder-head-, and exhaust-port decalcification.  
|                                                                                      | - Check to see that there are no obstructions in the exhaust pipe and silencer.  
|                                                                                      | - Check the early timing.  |
| Maintenance after riding over dusty ground:                                          | If dirt or particles get into the engine, this can cause wear of the pistons and rings. After using the moped, check the crank and replace it if the wear shown is excessive.  |
| Maintenance after riding over muddy ground or in the rain:                          | 1. Lubricate the rocker arm and the suspension system.  
|                                                                                      | 2. Check the chain and the wear on the crown wheel and pinion.  
|                                                                                      | 3. Clean the pinion and crown wheel and grease them together with the chain.  
|                                                                                      | 4. Check the cylinder piston and the crank bearings.  
|                                                                                      | 5. Lubricate the accelerator grip and the cable.  
|                                                                                      | 6. Clean the foam filter and the interior of the filter chamber.  |
BEFORE STARTING THE MOTORCYCLE FOR THE FIRST TIME

It is advisable to make sure that transportation from our warehouse to its final destination has not altered the original condition of the moped.

- Check the condition of the sparking plug by removing the cap and unscrewing the plug.

<table>
<thead>
<tr>
<th>Spark plug condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
</tr>
<tr>
<td>Poor</td>
</tr>
<tr>
<td>Rich</td>
</tr>
</tbody>
</table>

- If the witness is not lit intermittently with the engine running, stop the engine and go to GAS GAS official service.

- Check the clutch-fluid level and the front- and rear-brake fluid level.

GEARBOX AND CLUTCH

Gearbox and clutch lubrication is achieved through the spluttering of the oil inside the crankcase. Both the gearbox and the clutch are lubricated by the same oil contained in the 750cc crankcase.

This draining operation may be carried out by removing the clutch cap or by operating the oil-drain screw.

- Draining the oil by operating the screw is easier. This should be done while the engine is still hot, in order to achieve a cleaner crankcase and to benefit from a more fluid condition of the oil that will speed up the draining operation. Remove the screw and wait for the crankcase to empty. Next, replace the screw, fill the crankcase, and use the dipstick to check that the right level has been reached. It is advisable to change the oil after the initial 500 Kms, with an oil-level check every 2500 Kms and a new change every 5000 Kms.

CARBURETTOR

This is one of the most crucial items for a proper engine performance, as it is within the carburettor that the petrol-air mixture is produced: a deficient carburetion process translates into a poor performance and may damage the thermal area of the engine. Consequently, it is advisable to have the carburettor adjustment checked, ideally by an Authorized GAS GAS Dealer.

Efforts must be made to ensure that the carburettor internal components are clean and in good condition. For this purpose, periodically clean the carburettor and especially its jet by using an air jet or simply by blowing through it. Never use a wire to clean the carburettor, as this might alter the bore and affect the engine negatively. Yet another cause of carburettor malfunctioning may be a blocked fuel-intake filter. Remove the screw securing the intake adapter, clean the filter if it is dirty, and replace it carefully to avoid damaging its filtering cloth.

<table>
<thead>
<tr>
<th>Correct</th>
<th>Poor</th>
<th>Rich</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry and clear insulation</td>
<td>White insulation</td>
<td>Damp and black insulation</td>
</tr>
</tbody>
</table>

Change carburation one step higher.
Change carburation one step lower.
AIR FILTER

The adequate performance and durability of the various engine components (connecting rod, piston, piston rings, crank bearings, even the cylinder) depend to a great extent on the air filter being clean and properly lubricated.

WARNING

Always clean the filter in an area that is properly ventilated and free from sparks or flames in the vicinity (this includes any powerful light sources). Do not use petrol to clean the filter, as this might cause an explosion.

To access the filter, remove the screw of the seat.

Once removed the seat, check the condition of the filter housing, wash the filter if it is dirty, and then lubricate it. To lubricate the filter, apply a few drops of oil to soak the foam and press it with one hand without twisting it, then make sure to replace it correctly in its housing; otherwise, unfiltered air might reach the carburettor and cause serious damage to the moped.

SPARKING-PLUG CHECK

Denso W27ESR-U

(C). Spark plug removed from the valve cover.
The proper working of the engine depends on the good condition of the sparking plug; therefore, this is an extremely important component that can be easily inspected. Disassemble and check the sparking plug periodically. For instance, if the central-electrode porcelain insulation appears to be too white, this might be due to a leak in the carburettor air-intake tube, or to carburettor damage or malfunction. The high temperatures the electrode is subjected to, together with carbon deposits, result in excessive wear and eventually render it useless. When this stage is reached, replace the sparking plug with a new one of the same type and recommended thermal grade (Denso W27 ESR-U), or any other brand of a similar thermal grade.

Carburettors must always be checked by an authorized GAS GAS dealer.

\[ 0.6 \approx 0.7 \text{ mm} \]

Remove the dirt on the thread and clean the gasket seating, in order to prevent any foreign matter from entering the combustion chamber. Sparking-plug replacement requires checking to see that the electrode gap remains between 0.6 and 0.7 mm.

**RADIATOR (D)**

The radiator, which reduces the temperature of the engine-cooling water, has been secured with silent blocks under the petrol tank.

**ATENTION**

Not to touch the carburetor mixture screw (A).

The only precaution to bear in mind is that of ensuring that it is completely full of liquid, since, in this way, the water is guaranteed to complete the whole circuit. The use of closed circuit antifreeze liquid is strongly recommended. In this way the you avoid the freezing of the water with the attendant risks engine seizures or breakages of the pump blades.
CLUTCH ADJUSTMENT

Clutch adjustment may be carried out by means of the tightening device supplied with the handle. This is achieved by tightening or loosening the tightening screw, as required. The handle should have a 4-5 mm clearance. Due to its hydraulic action, the clutch assembly requires no handle-clearance adjustments.

(A). Clutch.

CHAIN LUBRICATION

The chain should be cleaned and checked periodically. To achieve this, remove the chain while keeping the hook at one of its ends, which will both confirm its previous position and avoid the risk of losing it. Clean the chain thoroughly with a metal brush, by submerging it in a petrol bath and shaking it until all of its links are clean and free from obstructions. Submerge it again in clean petrol or gas oil, rinse and allow it to dry for a few minutes. Lubricate and reassemble it, always making sure that the hook is placed in the opposite direction to the chain movement. It is most advisable to lubricate the chain every 100 or 200 Kms with special chain-lubrication oil.

CHAIN TIGHTENING

Tightening and aligning the chain is easily achieved by loosening the nuts on the wheel axle (A) and by turning the nuts on the chain tighteners (B) as required, until the right chain tension or sag is achieved, together with a proper wheel centering and alignment.

WARNING

Always try to achieve a proper chain-and-wheel alignment, as otherwise the chain might come off and hit and damage the crankcase.

(A). Wheel axle nut.
(B). Chain adjuster locknuts.
FRONT SUSPENSION

The front suspension, featuring state-of-the-art technology and design, includes an inverted hydraulic fork with 37 mm-diameter rods. Each rod has its own purpose and effect, as, whilst one of them acts mechanically through compression springs, the other one only operates hydraulically.

**Quantity of oil:**

Camara air or oil level without spring
-110ml.

**Hydraulic oil**  SAE 5

REAR SUSPENSION

The rear suspension, which is of the swivelling type and features a hydraulic shock absorber, requires no more attention than checking its wear and the play on the swivelling arm. Should the silent blocks securing the shock absorber loose their shape, for any reason whatsoever, replace the shock absorber to prevent damaging the chassis geometry.
CABLE

The accelerator cable should always be in perfect condition; therefore, whenever the slightest crack is detected, it must be replaced immediately. However, in order to extend its life and enhance its operation, it should be lubricated approximately every 1000 Kms. Do this by inserting a few drops of SAE-20 between the cable and its guide.

FRONT BRAKE

Front-wheel braking is achieved through a 260mm-diameter disk brake operated by a clip and a hydraulic pump. For optimum results, the braking surface must be oil-free and clean. If, for any reason, the brake fluid must be drained and replaced, proceed as follows:

- Use an aerosol cable lubricant with a pressure luber:
  - Apply grease to the following point throttle inner cable upper ends (A).

REAR BRAKE

(B). Bleeder screw.
(C). Disk brake.
(D). Brake caliper.

Remove the pump cap and pour brake fluid to just under the top level. Next, loosen the bleeder screw and insert a tube in it. The tube end should be inserted in a container to avoid fluid spilling. After filling the pump and loosening the bleeder, operate the brake handle until the fluid drops, making sure that no bubbles come out through the inserted tube. Then, turn off the bleeder and pour brake fluid into the reservoir to reach the mid-level mark. Replace the cap and operate until the braking is perfect.
Rear-wheel braking is achieved through a foot-operated lever and a 220mm-diameter disk brake. It is very important that the fluid-pump piston push rod has some play with the piston, as otherwise an excessively hot fluid would cause it to expand and might block the wheel, with serious consequences for the user.

**PUMP AND BRAKE PADS**

Make sure that both brakes have the right amount of brake fluid, and refill if required. Replace any worn brake pads on the hydraulic clips.

Minimum pad thickness: 2mm

Below this level, they still work correctly. However, besides the risk of defective braking, when this is required, the braking surface of the disk might also be seriously damaged. Remember that these operations should always be carried out by a specialised garage.

**STEERING**

The steering of a properly tuned up moped must turn easily; therefore, if the steering feels hard or works erratically, this may be due to either excessive tightening or defective condition of the ball race or of the ball-bearing balls. Should the latter be the cause of the problem, disassemble and replace the ball races and the steel balls. Remember that the steering should always turn smoothly and must never have any play.

**TYRE PRESSURE**

The HALLEY features two wheels of different sizes and pressures:

<table>
<thead>
<tr>
<th>Part</th>
<th>EC</th>
<th>SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front wheel</td>
<td>80 x 90 x 21&quot;</td>
<td>With 1 passenger: 1 Bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With 2 passengers: 1.5 Bar</td>
</tr>
<tr>
<td>Rear wheel</td>
<td>110 x 80 x 18&quot;</td>
<td>With 1 passenger: 1.2 Bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With 2 passengers: 1.7 Bar</td>
</tr>
</tbody>
</table>
## CHECKING OPERATIONS AT SPECIALISED GARAGES

<table>
<thead>
<tr>
<th>MAINTENANCE OPERATIONS</th>
<th>1° CHECKING</th>
<th>2° CHECKING</th>
<th>3° CHECKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.000 Km</td>
<td>3.000 Km</td>
<td>5.000 Km</td>
</tr>
<tr>
<td>Checking brake systems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Checking transmission oil level</td>
<td>Change</td>
<td>✓</td>
<td>Change</td>
</tr>
<tr>
<td>Checking chain tightening and wear</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Checking suspension systems</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking, adjusting &amp; lubr. controls and cables</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tightening spokes</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking filter and carburettor (cleaning)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Check and adjust the spark plug electrode.</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking chassis screws and nuts (plastics)</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking brake- and clutch-fluid levels</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Checking braking-pad wear</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking electric system</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking piston-ring wear</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Checking radiator water levels</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
STORAGE

Proceed as follows, before storing the moped for some time:

- Clean the moped thoroughly.
- Start the engine and keep it running for approximately 5 minutes to heat the transmission oil, then drain it (see the Transmission section).
- Refill with new oil.
- Drain the petrol tank (if left in the tank for a long time, petrol loses quality).
- Disconnect the battery.
- Lubricate the chain and all the cables.
- Apply oil on all non-sprayed metal surfaces to prevent rust, but not on the brakes or rubber parts.
- Wrap the outside of the exhaust pipe in a plastic bag to prevent rust.
- Place the moped in such a way as to avoid contact of the wheels with the ground (if this is not possible, place some cardboard under the wheels).
- Cover the moped to avoid dust and dirt.

Starting the moped after a period in storage:

- Remove the plastic bag from the exhaust pipe.
- Tighten the sparking plug.
- Fill the petrol tank.
- Check the steps set forth in the section entitled "Inspection prior to using the moped".
- General lubrication.
- Connect the battery.
- Check tyre pressure.

FINAL THINKS

PREVENTIVE ADVICE

Periodic maintenance and thorough checking of every function before starting the moped. Periodic checking operations of this moped must only be carried out by GAS GAS After-Sales specialists.

SAFE USE OF THIS MOPED

Safe use of a moped does not only depend on the vehicle. Here, the rider’s common sense and intelligence play a crucial role. Therefore, we recommend that you wear the required gear (helmet, boots, etc.) to practise your favourite sport.

In the interest of technical development, we reserve the right to modify the construction, standard equipment and accessories of this moped. Data concerning measurements, weights and power includes the relevant tolerances.

Depending on the equipment and accessories included with this moped, as well as on the various versions designed for world markets, there may be differences between this vehicle and the descriptions and illustrations supplied. Because of this, errors and omissions excepted, no claims will be accepted in this connection.

GAS GAS MOTOS, S.A. reserves the right to introduce changes and / or modifications without prior warning.
EVENTS ON THE ROAD

If the engine works normally, it should start with no difficulties. Should the engine fail to start after repeated attempts, check to see whether the problem is with the carburettor or with the ignition.

CARBURETTOR PROBLEMS

- The engine is cold.
- There is no petrol in the tank.
- The petrol tap is off.
- The petrol-cap hole (breather) is obstructed.
- There is an obstruction between the petrol tank and the carburettor tap.
- Partial breakage of one or more of the reeds in the reed valve assembly or their opening.

IGNITION PROBLEMS

- Check to see that the sparking plug is clean and the electrode gap is correct.
- Make sure that the sparking plug is producing sparks; to do this, bring the sparking plug (connected to the tube) closer to the fins or outside area of the cylinder, then kick the starting pedal.
- Make sure that the sparking-plug tube is properly connected.
- If the sparking plug fails to produce sparks, replace it with a new one and check again.

Should the motorcycle still fail to start after the above checking operations, there may be a mechanical problem. Have it checked by an authorised GAS GAS Dealer.

GAS GAS MOTOS, S.A. recommends the use of the following products for its EC HALLEY 125 cc model.

<table>
<thead>
<tr>
<th>UTILISATION</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear oil</td>
<td>SAE 15 - 30</td>
</tr>
<tr>
<td>Oil for mixed</td>
<td>2T sintetic</td>
</tr>
</tbody>
</table>

REMARK:
NOTE
This is not an exhaustive list of malfunctions, it only shows the most common problems.

<table>
<thead>
<tr>
<th>MALFUNCTION</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Engine does not crank</td>
<td>- Seized crankshaft.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Seized cylinder / piston / journal bearing.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Seized transmission assembly.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Motorcycle inactive too long.</td>
<td>- Drain old fuel out of the tank. With the fuel tank filled with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>new fuel, the engine will start immediately.</td>
</tr>
<tr>
<td></td>
<td>- Wet or fouled spark plug.</td>
<td>- Clean and dry or replace the spark plug.</td>
</tr>
<tr>
<td></td>
<td>- Flooded engine.</td>
<td>- In order to &quot;relieve the engine&quot;, accelerate to max. speed,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>press the starter pedal 5 or 10 times. Then, start the engine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>as described above. If the engine fails to start, remove the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>spark plug and dry it.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect air/fuel mixture.</td>
<td>- Clean the fuel tank air vent. Adjust the air cleaner duct.</td>
</tr>
<tr>
<td>2 Engine cranks but then stops</td>
<td>- Incorrect air supply.</td>
<td>- Close the starter. Clean fuel tank air vent. Adjust the air</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cleaner duct.</td>
</tr>
<tr>
<td></td>
<td>- No fuel.</td>
<td>- Fill up the fuel tank.</td>
</tr>
<tr>
<td>3 Engine overheating</td>
<td>- Insufficient cooling liquid in the circuit.</td>
<td>- Fill up cooling liquid, verify the refrigeration system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>watertightness.</td>
</tr>
<tr>
<td></td>
<td>- Radiator is dirty or partially restricted.</td>
<td>- Clean radiator fins or replace it.</td>
</tr>
<tr>
<td>4 The engine operates irregularly</td>
<td>- Spark plug dirty, or misadjusted.</td>
<td>- Verify the spark plug condition and clean it accordingly,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tighten or replace it.</td>
</tr>
<tr>
<td></td>
<td>- Poor contact with the spark plug cap or cable loose in cap.</td>
<td>- Verify the spark plug cap condition. Replace if deteriorated.</td>
</tr>
<tr>
<td>MALFUNCTION</td>
<td>POSSIBLE CAUSE</td>
<td>REMEDY</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4 The engine operates irregularly</td>
<td>- Ignition rotor damaged.</td>
<td>- Replace the rotor.</td>
</tr>
<tr>
<td></td>
<td>- Water in fuel.</td>
<td>- Drain the fuel tank and fill up with new fuel.</td>
</tr>
<tr>
<td>5 Engine lacks power or poor acceleration</td>
<td>- Fuel supply defective.</td>
<td>- Clean the fuel system and verify its operation.</td>
</tr>
<tr>
<td></td>
<td>- Dirty air cleaner.</td>
<td>- Clean or replace the air cleaner. Verify its operation.</td>
</tr>
<tr>
<td></td>
<td>- Leaking or deteriorated exhaust system.</td>
<td>- Verify if the exhaust system is damaged. Replace the muffler fiberglass packing, if necessary.</td>
</tr>
<tr>
<td></td>
<td>- Dirty carburetor jets.</td>
<td>- Disassemble the carburetor and clean all jets.</td>
</tr>
<tr>
<td></td>
<td>- Worn or damaged crankshaft bearings.</td>
<td>- Replace the crankshaft bearings.</td>
</tr>
<tr>
<td></td>
<td>- Clutch slips.</td>
<td>- Verify the clutch operation. Go to a specialized workshop.</td>
</tr>
<tr>
<td>6 Abnormal engine noise</td>
<td>- Ignition problem.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Overheating.</td>
<td>- Refer to section 5.</td>
</tr>
<tr>
<td>7 Detonations from the exhaust pipe</td>
<td>- Carbon build up in combustion chamber.</td>
<td>- Clean the combustion chamber.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect octane or poor quality gasoline.</td>
<td>- Drain all gasoline and fill up with a higher octane fuel.</td>
</tr>
<tr>
<td></td>
<td>- Damaged spark plug or incorrect specifications.</td>
<td>- Replace the spark plug with a new one of the correct type.</td>
</tr>
<tr>
<td></td>
<td>- Deteriorated exhaust system gaskets.</td>
<td>- Verify if the exhaust system is damaged. All gaskets must be in perfect conditions, otherwise replace them with new ones if necessary.</td>
</tr>
<tr>
<td>8 White smoke coming out of the exhaust pipe</td>
<td>- Deteriorated cylinder head gasket (water leakage into the cylinder).</td>
<td>- Replace the cylinder head gasket. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect throttle valve cable adjustment.</td>
<td>- Readjust the throttle valve cable.</td>
</tr>
<tr>
<td>9 Brown smoke coming out of the exhaust pipe</td>
<td>- Restricted air cleaner.</td>
<td>- Clean or replace the air cleaner. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Main jet set too high.</td>
<td>- Verify main jet operation. Go to a specialized workshop.</td>
</tr>
<tr>
<td>MALFUNCTION</td>
<td>POSSIBLE CAUSE</td>
<td>REMEDY</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10 Gears do not engage correctly</td>
<td>- Clutch does not disengage.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Bent or seized shift fork.</td>
<td>- Replace the shift fork.</td>
</tr>
<tr>
<td></td>
<td>- Gear seized at the transmission.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Damaged gearshift lever.</td>
<td>- Replace the gearshift lever.</td>
</tr>
<tr>
<td></td>
<td>- Broken or loose selector position spring.</td>
<td>- Adjust or replace the selector position spring.</td>
</tr>
<tr>
<td></td>
<td>- Broken spring in the reverse selector mechanism.</td>
<td>- Replace the spring in the reverse selector mechanism.</td>
</tr>
<tr>
<td></td>
<td>- Broken spring in the reverse selector mechanism.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Broken gear drum.</td>
<td>- Replace the gear drum.</td>
</tr>
<tr>
<td></td>
<td>- Broken spring in the gear selector ratchet.</td>
<td>- Replace the spring in the gear selector ratchet.</td>
</tr>
<tr>
<td>11 Jumps out of gear</td>
<td>- Shift fork worn at the gears.</td>
<td>- Replace the shift fork.</td>
</tr>
<tr>
<td></td>
<td>- Worn gear grooves.</td>
<td>- Replace. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Worn gear dogs.</td>
<td>- Replace. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Worn shift drum groove.</td>
<td>- Replace. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Worn shift fork shaft.</td>
<td>- Replace shaft. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Broken selector drum position spring.</td>
<td>- Replace the spring. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Broken gears.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td>12 Clutch slips</td>
<td>- No clutch lever free play.</td>
<td>- Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Worn clutch friction plate.</td>
<td>- Replace the clutch friction plate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Worn clutch center hub.</td>
<td>- Replace the clutch center hub.</td>
</tr>
<tr>
<td></td>
<td>- Broken or weak clutch spring.</td>
<td>- Adjust or replace the clutch spring.</td>
</tr>
<tr>
<td></td>
<td>- Unevenly worn clutch discs.</td>
<td>- Replace the clutch discs. Go to a specialized workshop.</td>
</tr>
<tr>
<td>13 The motorcycle is unstable</td>
<td>- Cable interferes with the handlebar turns.</td>
<td>- Move or loosen the cable just a little.</td>
</tr>
<tr>
<td></td>
<td>- Steering stem locknut too tight.</td>
<td>- Loosen the steering stem locknut.</td>
</tr>
<tr>
<td></td>
<td>- Damaged or worn steering bearings.</td>
<td>- Replace the steering bearings.</td>
</tr>
<tr>
<td></td>
<td>- Bent steering stem.</td>
<td>- Replace the steering stem. Go to a specialized workshop.</td>
</tr>
<tr>
<td>MALFUNCTION</td>
<td>POSSIBLE CAUSE</td>
<td>REMEDY</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 14 Shock absorber set too hard | - Excessive front fork oil.  
- Front fork oil viscosity too high.  
- Bent front fork.  
- Tire air pressure set too high.  
- Incorrect rear shock absorber adjustment. | - Pour excess oil until reaching the correct oil level.  
- Drain fork oil and fill with correct fork oil viscosity.  
- Replace the front fork. Go to a specialized workshop.  
- Check tire air pressure.  
- Adjust rear shock absorber. |
| 15 Shock absorber set too soft | - Insufficient front fork oil.  
- Front fork oil viscosity too low.  
- Bent front fork.  
- Tire air pressure too low.  
- Incorrect rear shock absorber adjustment. | - Fill with fork oil until reaching the correct oil level.  
- Drain fork oil and fill with correct fork oil viscosity.  
- Replace the front fork. Go to a specialized workshop.  
- Check tire air pressure.  
- Adjust the rear shock absorber. |
| 16 Abnormal motorcycle noises | - Incorrect drive chain adjustment .  
- Worn drive chain.  
- Worn rear sprocket teeth.  
- Insufficient drive chain lubrication .  
- Incorrect rear wheel alignment.  
- Insufficient front fork oil.  
- Weak or broken front fork spring.  
- Worn disc brake.  
- Pad installed incorrectly or surface glazed.  
- Damaged cylinder.  
- Improperly tightened brackets, nuts, bolts. | - Adjust the drive chain.  
- Replace the drive chain, rear sprocket and the secondary transmission pinion.  
- Replace the rear sprocket.  
- Lubricate with appropriate chain oil.  
- Align the rear wheel. Go to a specialized workshop.  
- Add front fork oil until reaching the correct level.  
- Replace the front fork spring.  
- Change the disc brake.  
- Reinstall or replace pad.  
- Replace the damaged cylinder.  
- Verify and adjust to the correct torque values. |
| 17 Handlebar vibration | - Worn tire, and worn swingarm or its needle bearings.  
- Wheel rim off-centre.  
- Incorrect wheel alignment. | - Replace worn parts with new ones.  
- Centre rim.  
- Verify wheel spokes tension. Readjust if necessary. |
<table>
<thead>
<tr>
<th>MALFUNCTION</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 Handlebar vibration</td>
<td>- Excessive steering axles tolerances.</td>
<td>- Tighten steering bracket and steering stem locknut to the correct torque values.</td>
</tr>
<tr>
<td></td>
<td>- Loose handlebar bracket, and loose handlebar stem locknut.</td>
<td>- Tighten steering bracket and steering stem locknut to the correct torque values.</td>
</tr>
<tr>
<td>18 Motorcycle pull to one side</td>
<td>- Bent chassis.</td>
<td>- Replace the chassis. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect steering adjustment.</td>
<td>- Adjust the steering. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Bent steering stem.</td>
<td>- Replace the steering stem. Go to a specialized workshop.</td>
</tr>
<tr>
<td></td>
<td>- Bent front fork.</td>
<td>- Replace the front fork.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect wheel alignment.</td>
<td>- Align the wheels.</td>
</tr>
<tr>
<td>19 Brakes do not operate correctly</td>
<td>- Worn discs.</td>
<td>- Replace the discs.</td>
</tr>
<tr>
<td></td>
<td>- Leaking brake fluid.</td>
<td>- Verify the brake circuits. Replace the damaged or broken parts.</td>
</tr>
<tr>
<td></td>
<td>- Deteriorated brake fluid.</td>
<td>- Drain the brake fluid and fill with the new fluid recommended by the manufacturer.</td>
</tr>
<tr>
<td></td>
<td>- Broken pump piston.</td>
<td>- Replace the pump piston.</td>
</tr>
<tr>
<td></td>
<td>- Incorrect brake adjustment.</td>
<td>- Adjust brakes.</td>
</tr>
<tr>
<td>20 Blown light bulbs</td>
<td>- Voltage regulator faulty.</td>
<td>- Remove the seat and the fuel tank, and check all connections, check the voltage regulator and the fuses in the fuse box.</td>
</tr>
</tbody>
</table>
GAS GAS MULTIFUNCTION INSTRUCTIONS

The multifunction apparatus, which is waterproof, has 2 LED indicators on a central indicator screen. This central indicator screen, made of liquid crystal and with illumination, gives information about the rpm, speed, distance travelled, total kilometres travelled, time, average speed, maximum speed, ambient temperature, length of time with motor running and total time. The odometer and the control for the total time with motor running save the data to the memory, even when the device is switched off. When the multifunction apparatus is not activated, it displays a clock. The value of the wheel circumference can be altered, as well as the system of measurement (metric or British). The ambient temperature is displayed on the upper left-hand part of the screen.

The screen can display the engine temperature from an optional temperature sensor. If this is too high, a warning LED lights up in yellow. If the rpm are too high, the second warning LED lights up in red.

1. Yellow warning LED
2. Red warning LED
3. Right-hand button
4. MODE button
5. Left-hand button
6. Central display screen
### Technical characteristics

<table>
<thead>
<tr>
<th>FUNCTIONS</th>
<th>SYMBOL</th>
<th>TECHNICAL CHARACTERISTICS</th>
<th>INCREMENTS</th>
<th>PRECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT SPEED</td>
<td>SPD:</td>
<td>4 – 399.9 kmph or mph</td>
<td>0.1 kmph or mph</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>TACHOMETER</td>
<td>RPM</td>
<td>0 -19999 rpm</td>
<td>10 rpm</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>TACHOMETER BAR</td>
<td>MS</td>
<td>0 -12000 rpm. Variable</td>
<td></td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>MAXIMUM SPEED</td>
<td>MS</td>
<td>4 – 399.9 kmph or mph</td>
<td>0.1 kmph or mph</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>DISTANCE TRAVELLED</td>
<td>DST</td>
<td>0.0 - 19999 km or mi.</td>
<td>0.1 kmph or mph</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>TIME RUNNING</td>
<td>TT</td>
<td>0 - 9999 hours 59 minutes</td>
<td>1 second</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>ODOMETER</td>
<td>ODO</td>
<td>0.0 – 999999</td>
<td>1</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>OPERATION TIME</td>
<td>RT</td>
<td>0 - 999 hours 59 minutes</td>
<td>1 minute</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>OPERATION TIME ACCUMULATED</td>
<td>ART</td>
<td>0 - 9999 hours 59 minutes</td>
<td>1 minute</td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>CLOCK</td>
<td>00:00:00</td>
<td>12:59:59 or 23:59:59</td>
<td></td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>BATTERY LOW</td>
<td>LO</td>
<td>Approximately 1 year life</td>
<td></td>
<td>+/- 0,1%</td>
</tr>
<tr>
<td>TYRE SIZE</td>
<td></td>
<td>0 – 3999 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initial voltage: 9 - 400 V AC/DC.
Speed sensor: Non-contact magnetic sensor.
Tachometer input: Electrical pulse sensor.
Wheel circumference adjustment: 1 mm – 3.999 mm (1 mm increments).
Operating / storage temperature: from 0 °C to 60 °C (from 32 °F to 140 °F) / from -20 °C to 80 °C (from -4 °F to 176 °F).
Battery / life: 3V CR2032 / Approx. 1 year
Functions

RPM: Bar
Tachometer with bar graph. The bar graph of the tachometer displays up to 12,000 rpm.

RPM: Digital Tachometer
The rpm are shown on the right side, second row. The digital tachometer displays up to 12,000 rpm. The tachometer signal can be captured from the sparkplug cable.

Gear change indicator according to rpm
This function permits setting an indicator for changing gears at a specific rpm level. The red LED warning light flashes when the rpm reaches the specific level and stops flashing when the gear is changed.

SPD: Speedometer
The speedometer information appears in the centre of the screen. It shows up to 399.9 kmph or mph.

MS: Maximum speed gauge
It shows the highest speed reached since the last resetting of the data.

DST: Distance travelled
This appears on the right side, in the second line of the screen. The TRIP function contains the vehicle’s accumulated mileage since the last RESET operation.

ODO: Odometer
It shows the total mileage accumulated by the vehicle. The data is stored in the memory, even when the device is not running.

ART: Time of use controller
Calculates the total time in operation. It starts counting from the moment the motor is turned on.

RT: Total time of use controller
It calculates the vehicle’s operation time since the last RESET operation. It starts counting from the moment that movement begins. The data is stored in the memory, even when the device is not running.

12/24 hour clock
It shows the time in either 12 or 24 hour formats.

Ambient temperature / engine temperature gauge
The ambient temperature is displayed on the upper left-hand part of the screen. The screen can display the engine temperature from an optional temperature sensor. If this is too high, a warning LED lights up in yellow.

High rpm gauge / Gear change warning according to rpm
If the rpm are too high, the second warning LED lights up in red. This function permits setting an indicator for changing gear at a specific rpm level. The red LED warning light flashes when the rpm reaches the specific level and stops flashing when the gear is changed.
Setting the multifunction display parameters
After confirming each value, the display goes from one screen to the next until all have been displayed. If no button is pressed, the display returns to the home screen after 15 seconds.

Activating adjustment mode
To start setting mode for the multifunction display, press buttons 1, 2, and 3 simultaneously for 3 seconds, and then release.

Selecting the speed unit
To change between kmph and mph, press button 1. Confirm the selection by pressing button 2.

Selecting the values for the wheel circumference
Enter the value for the wheel circumference by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2. Note: If you do not know the value of the wheel circumference, see the section on "Measuring the wheel circumference"

Selecting the time format
To change between the 12 and 24 hour clock, press button 1. Confirm by pressing button 2.
Setting the time
Enter the value for the time by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.

Setting the pulse per revolution (PPR)
Note: This step is only to be taken if a value of 0 was entered in the previous step.
Default value: 1.0
If you do not know this value, press button 2 to go on to the next screen.
Enter the value by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.
Selecting the temperature unit
To change the temperature display between °C and °F, press button 1. Confirm by pressing button 2.

Selecting the temperature unit
To change the temperature display between °C and °F, press button 1. Confirm by pressing button 2.

Selecting the danger temperature
Note: This step can only be taken on vehicles fitted with the optional temperature sensor.
When the engine temperature exceeds the set value, the warning LED on the right lights up.
Default value: 110 °C (230°F)
Enter the value by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.

Selecting the warning temperature
Note: This step can only be taken on vehicles fitted with the optional temperature sensor.
When the engine temperature exceeds the set value, the warning LED on the left lights up.
Default value: 90 °C (190°F)
Enter the value by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.

Selecting the rpm for a gear change
When the set rpm is reached, the left-hand warning LED flashes to show that the gear must be changed.
Default value: 6000 rpm
Enter the value by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.
Selecting the danger rpm
When the set rpm is reached, the right-hand warning LED flashes to show that the rpm on the engine are too high.
Default value: 10000 rpm
Enter the value by pressing button 1 in succession. To go on to the next digit, press button 3. Confirm by pressing button 2.

Total reset of the display
Press the RESET button, using a suitable object. The display will start from zero, except for the data for total accumulated distance and time.

Resetting the display functions after each use of the vehicle.

After each use of the vehicle, the following functions can be reset simultaneously:
- Maximum speed
- Distance
- Chronometer
- Maximum temperature
- Maximum rpm
Confirm the reset by pressing buttons 1 and 2 simultaneously.

Internal battery
The display is powered by an internal 3 V battery, type CR2032. When the voltage in the internal battery drops below 2.45V, the screen displays LO.
To change the battery, open the cover behind the display, and use a coin to unscrew it counter-clockwise. Make sure that the positive terminal on the battery is facing upward.
Screen options

The multifunction display shows all the information on three different screens.
While in motion, screens 1 and 2 are on display. Screen 3 is displayed for 3 seconds, and then returns to screen 1.
To change from one screen to another, press button 2 ("Mode") in succession.
To edit the distance travelled (DST), keep button 3 pressed down.

Screen 1:
- Speed, distance travelled, time, ambient temperature, tachometer (bar).

Screen 2:
- Speed, digital tachometer, time in motion, time in operation, engine temperature*, tachometer (bar).

Screen 3:
- Maximum speed, danger rpm, accumulated time in operation, odometer, maximum temperature*.

*Optional

Lighting
The display is powered by an internal 3 V battery, type CR2032.
To change the battery, open the cover behind the display, and use a coin to unscrew it counter-clockwise. Make sure that the positive terminal on the battery is facing upward.

When the display is powered by the internal battery only, the screen lights up partially for 3 seconds when the button is pressed.
If the lighting is connected to the 12V system on the vehicle, it will be brighter and stay on for up to 20 minutes after the vehicle has come to a full halt.

Sleep Mode
If the multifunction display does not receive any information for 20 minutes (signal from wheels turning or a button pressed), the screen goes off, showing only the time. When the vehicle starts or a button is pressed, it will start up again.

Measuring the wheel circumference
Method 1
Measures the diameter of the front wheel. Multiply the diameter by 3.14 and, if necessary, convert the measurement into mm by multiplying the figure obtained by 25.4. The measurement obtained is the size of the wheel circumference.

Method 2
On a smooth, flat surface, make a mark on the side of the tyre where it touches the ground. Move the vehicle forward until the tyre has made a complete turn, and the mark is back at the lowest point. Make a new mark on the ground at this point.
Measure the distance between the marks on the ground and, if necessary, convert the measurement into mm by multiplying the figure obtained by 25.4. The measurement obtained is the size of the wheel circumference.
To obtain a more precise measurement, the driver must remain on the vehicle while taking measurements.
WARRANTY TERMS AND CONDITIONS
(According to Law decree 23/2003 on the 10th of July, covering Warranties on Consumer Item Sales)

Warranty terms of the manufacturer GASGAS Motos, S.A.

The company GAS GAS MOTOS, S.A. (hereafter referred to as “GG”), with this present document guarantees the consumer, the purchaser of a vehicle manufactured by GG, that both the materials and the manufacturing are free of defects in accordance with the highest standards of quality. Consequently, GG with this document guarantees the consumer (hereafter referred to as the “purchaser”), in accordance with the conditions set out below, the repair, free of charge, of any defect in materials or that might result from faulty manufacture that is detected in a new motorcycle within the period covered by this Warranty and with no limit on the number of kilometres covered or hours of use.

Warranty Period

The period covered by this Warranty will begin on the day of delivery of the vehicle to the purchaser by a GG authorised dealer, or in the case of demonstration models, on the date in which the vehicle is used for the first time. The seller will be responsible for any unwarranted faults that become apparent within the period established in the Law decree 23/2003 on the 10th of July covering Warranties on Consumer Goods Sold from the time of delivery and in accordance with the Directive 1999/44/EC for other members of the European Community. For countries outside the European Community, the Warranty Period will be determined by the existing regulations in those countries. Nevertheless, should the fault appear during the first six months after the delivery of the motorcycle, it will be presumed that the said fault existed at the time of delivery; from the end of the sixth month onwards, the purchaser must demonstrate that the unwarranted fault existed at the moment of delivery. During the first six months subsequent to the delivery of the repaired vehicle, the seller will be responsible for any unwarranted faults arising out of the repair.

Any defects detected in the product must be brought to the attention of a GG authorised dealer within the Warranty Period. If the last day of this period is a Sunday or an official holiday, the Warranty period will be extended such that the last day of the period covered will be the first working day after the Sunday or official holiday.

Those claims under Warranty for defects not brought to the attention of a GG authorised dealer before the end of the Warranty Period will be excluded.
Obligation of the purchaser

GG will have the right to reject any claims under Warranty in the event that:

a) The purchaser has failed to submit the vehicle to any of the inspections and/or maintenance work required in the Users’ Manual, or has exceeded the date set for such inspections or maintenance work. Also excluded from guarantee are those faults that appeared prior to the dates established for an inspection or maintenance work where the latter was not carried out, or was carried out later than the date established.

b) An inspection, maintenance or repair has been performed on the vehicle by third parties not recognised or authorised by GG.

c) Any maintenance or repair has been carried out on the vehicle that violates the technical requirements, specifications and/or instructions indicated by the manufacturer.

d) Spare parts whose use has not been authorised by GG have been used during the course of maintenance work or repairs to the vehicle, or in the event that the vehicle has been used with fuels, lubricants or other liquids (including, amongst others, cleaning products) that have not been expressly mentioned in the specifications set out in the User’s Manual.

e) The vehicle has been altered or modified in any way or fitted with components other than those expressly authorised by GG as accepted components of the vehicle.

f) The vehicle has been stored or transported in a way that is not in accordance to the corresponding technical requirements.

g) The vehicle has been used for special purposes other than ordinary use, such as competition, races or record breaking attempts.

h) The vehicle has been directly or indirectly damaged as a result of a fall or an accident.

Warranty exclusions

The following items are not covered by this Warranty:

a) Worn parts, including, without any limitation, spark plugs, batteries, petrol filters, oil filter elements, (secondary) chains, engine output pinions, rear sprockets, air filters, brake discs, brake pads, clutch plates and discs, bulbs, fuses, carbon brushes, footrest rubbers, tyres, inner tubes, cables and other rubber components

b) Lubricants (for example, oil, grease, etc.) and working fluids (for example, battery liquid, coolant, etc.)

c) Inspection, adjustments and other maintenance tasks, as well as all kinds of cleaning work

d) Damage to the paint-work and consequent corrosion due to external causes, such as stones, salt, industrial fumes and other environmental impact, or inadequate cleaning with inappropriate products
e) Any damages caused as a result of the defects, as well as any expenses incurred either directly or indirectly as a consequence of the defects (for example, communication costs, accommodation expenses, car hire costs, public transport costs, breakdown truck fees, courier costs, etc.), as well as other financial losses (for example, those caused by the loss of the use of the vehicle, loss of income, time lost, etc.)

f) Any acoustic or aesthetic phenomenon that does not significantly affect the condition or use of the motorcycle (for example, small or hidden imperfections, noise or vibrations that are normal in use, etc.)

g) Phenomena that are the result of the ageing of the vehicle (for example, discolouring of painted or metallic coated surfaces).

Various

1.- GG shall have the prerogative to decide, at its own discretion, whether to repair or replace defective parts. Where parts are replaced, ownership of the parts removed shall pass to GG without any other consideration. The GG authorised dealer, to whom the making good of the defects has been entrusted, is not authorised to make any declarations that are binding on GG.

2.- In case of doubt regarding the existence of a defect, or a visual or material inspection is required, GG reserves the right to demand the return of the parts which are the object of a claim under Warranty, or to arrange an inspection of the defect by an expert from GG. Any additional obligations arising out of guarantees on parts replaced free of charge, or any other service rendered free of charge, are excluded from the effects of this present warranty. The Warranty on parts replaced within the Warranty Period will end at the expiry date for the Warranty Period of the product concerned.

3.- Should it prove to be the case that a defect can not be repaired, the purchaser guaranteed shall have the right to the cancellation of the contract (payment of compensation) or a partial refund of the purchase price (discount), instead of repairing the motorcycle.

4.- Any claims against Warranty by the purchaser under the terms of the sale contract with the corresponding authorised dealer shall not be affected by the terms of this present Warranty. Neither will this present Warranty affect those additional contractual rights acquired by the purchaser under the general commercial terms and conditions of the authorised dealer. However, such additional rights may only be exercised through claims against the authorised dealer.

5.- Should the purchaser resell the product within the Warranty Period, the duration and conditions of the present Warranty will remain unaltered, in such a way as that the rights to make claims under the present Warranty in accordance with the terms and conditions set out in this present document shall be transferred to the new owner of the motorcycle.