

# POWER GARDEN MOTORIZED/ ELECTROSPRAYER

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**Rochä**



# TABLE OF CONTENTS

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CHAP1 INTRODUCTION P5

CHAP2 IDENTIFICATION OF MACHINE P7

CHAP3 WARRANTY CONDITIONS P9

CHAP4 DESCRIPTION P11

CHAP5 USAGE P15

CHAP6 THE PUMPS P17

CHAP7 THE CONTROL P21

CHAP8 MAINTENANCE P23

CHAP9 SAFETY STANDARDS P25

CHAP9 PROBLEMS AND SOLUTIONS P31

CHAP9 PROCEDURES TO BE FOLLOWED AFTER PROLONGED INACTIVITY P33

CHAP9 PERIODIC MAINTENANCE P37



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# INTRODUCTION

# CHAP1

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By acquiring a ROCHA product you have made exactly the right choice and you will soon notice the remarkable reliability and sturdiness of our product.

We hope that the work of this equipment totally lives up to your expectations.

This manual has the objective of helping to better understand the operation of your sprayer.

The tips and standards set out have the purpose of getting the most out of the potential of your machine so that you can use it safely and with the greatest efficiency.

**THIS MANUAL FORMS AN INTEGRAL PART OF THE MACHINE.**

**Name and Address of the Manufacturer:**

**Rochä**

PULVERIZADORES ROCHA, LDA

Rua 1º de Maio 38- Milheirós  
4471 - 909 MAIA  
Telef. 22 9601793/4  
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**Model**

**Modelo - POWER GARDEN 100L**

**Code**

**Cód.: 93002052**

**Series Number**

**Série: 0276**

**Bomba AR 403**

**Motor: HONDA 160**

**Ano: 2008**



**Year of Manufacture**

**Compliance Marking**

# IDENTIFICATION OF MACHINE

## CHAP2

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The identification label placed on the machine chassis contains information which is essential for a correct recognition of the equipment.

This data is vital when you are making a request for technical interventions or accessories.

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# WARRANTY CONDITIONS

# CHAP3

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The products commercialised by PULVERIZADORES ROCHA are duly tested and controlled so as to reduce to the minimum the probabilities of the occurrence of any anomalies.

All the equipment has a warranty for the period of two years as from its date of acquisition. The components or parts on which deficient manufacture and/or assembly is observed shall be replaced rapidly and free-of-charge.

However, the costs inherent in labour and travel shall be debited.

It is mandatory to send the parts or accessories which are the object of a complaint so they can be analysed by our Technical Department.

The occurrence of the facts set out below constitutes grounds for the immediate loss of the warranty:

- 1.** The use of equipment under abnormal working conditions or coupled to engines with power levels different from those recommended in the respective technical documentation.

- 2.** The replacement of any components or parts with others which are not original.
- 3.** The making of any alterations to the equipment structure.
- 4.** Any repairs carried out during the warranty period without the knowledge and authorization of PULVERIZADORES ROCHA.

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# DESCRIPTION

# CHAP4

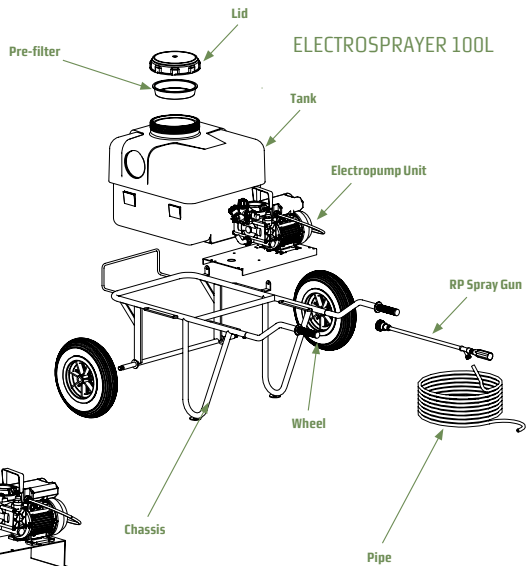
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ROCHA sprayers of the hobby line are equipped with medium-pressure semi-hydraulic membrane pumps and control units with a working pressure regulation valve with a BY-PASS.

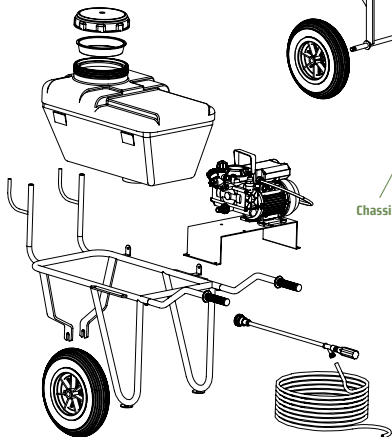
These pumps are activated by means of the connection to the engine by way of an oil bath gearbox.

The engines coupled to this equipment can be electric (monophase and triphase) or explosion (two or four strokes).

## ELECTROSPRAYER 100L



## ELECTROSPRAYER 65L E



Four-stroke explosion engines with lubrication by oil sump (SAE 15 W/40 or other equivalent) operate with 95 lead-free petrol.

The chassis is built of reinforced steel with thermosettable paintwork in polyester resin.

The main tank is rotomolded out of high-density polyethylene.

Two-stroke explosion engines work with a mixture of petrol and oil (5%). They are applicable in all uses where power falling between 1 and 2 hp at 5000 rpm is necessary.

Built in sound, careful fashion, they do not require major maintenance and can be submitted to continuous use, even at the maximum power



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# USAGE

# CHAP5

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## **COLD START - EXPLOSION ENGINES**

1. Open the petrol passage.
2. Put the current switch in the “ON” position.
3. Raise the acceleration lever 1/3.
4. Close the air lever (CHOKE).
5. Should the engine be equipped with a reversible start, pull the throttle lever cord slowly until meeting resistance and only after harder until the engine starts working.

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6. In the event of an engine without a reversible start, wrap the cord in the sheave, pull slowly until meeting resistance and only then pull firmly.
  7. When the engine has been working for around 30 seconds, put the lever (CHOKE) back in the initial position.
  8. Regulate the acceleration of the engine so as to produce the force required to withstand pump operation.

### **STOPPAGE OF THE ENGINE**

Decelerate to the minimum regime, close the petrol and disconnect using the short-circuit button (STOP).

If the engine goes into prolonged inactivity, you should close off the petrol and leave the engine running until the petrol has been eliminated from the circuit.



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# THE PUMPS

# CHAP6

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The semi-hydraulic membrane pumps which equip the motopump and electropump units are added by way of an engine (electrical or explosion) and connected by way of a gearbox.

The gearbox works in a SAE 90 oilbath or with the 15w40 pump oil. This oil shall be changed every 100 hours.

There are various models with debits falling between 13 and 90 litres per minute.

The maximum working pressures vary between 20 and 50 bar.

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**IT IS EXPRESSLY FORBIDDEN TO USE THE PUMP WITH THE FOLLOWING PRODUCTS:**

1. Liquids with temperatures of over 40°.
2. Inflammable liquids of any type.
3. Liquids containing solid or granulated products.
4. Food liquids for animals and people.
5. Gases of any kind.
6. Mixtures of incompatible chemicals.
7. Fuels or lubricants of any kind.
8. Liquid manures with dense floccs.
9. Solvents or dilutants of any kind.
10. Varnishes of any kind or type.



**TAKE CARE!**

The pumps cannot work without water.

They should not be exposed to very low temperatures as there is the possibility of the formation of ice in their interior, leading to serious damages.

They shall be cleaned after use, it sufficing to this end to put them in operation with clean water for a few minutes.

The pump oil (SAE 15W / 40) shall be changed every 500 working hours and its level controlled on a regular basis.



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# THE CONTROL

# CHAP7

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## **MAINTENANCE**

The pressure distribution and regulation controls are the “brain of the sprayer” as they control all its operation.

This is why they should always be in an optimum state of repair and maintenance.

To this end we should carry out the following operations:

- 1.** Dismantle and lubricate with neutral lubricating grease all the mobile elements, O-rings and sealants at the end of each campaign.

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2. Verify whether the pressure indicating manometer is in perfect conditions (only in some models).
  3. Annually control the wear and tear of the pad (valve) and the return housing unit.

### **OPERATION**

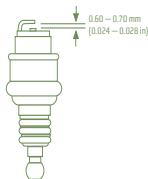
1. Before getting the engine running, rotate the control handle to the BY-PASS position, leaving the pump to work for a few seconds.
2. Then get the engine running and turn the handle to the PRESS position.
3. Rotate the pressure regulation handle until achieving the pressure desired.
4. Open the outlet valve to the sector(s) or to the drawbar handle.

# MAINTENANCE

# CHAP8

## 2-STROKE ENGINES

Every 30 hours operation:



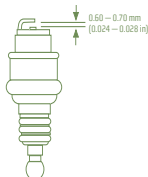
**SPARK PLUG** - Dismantle and proceed with its cleaning, controlling the distance between the electrodes which shall fall between 0.6/0.7 mm.

**FILTRO DE AIRE** - With metallic or spongy filtering element, dismantle and wash with petrol.

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## 4-STROKE ENGINES

Every 30 hours operation:



**SPARK PLUG** - Dismantle and proceed with its cleaning, controlling the distance between the electrodes which shall fall between 0.6/0.7 mm.

**AIR FILTER** - With metallic or spongy filtering element, dismantle and wash with petrol.

**AIR FILTER** - With paper filtering element, replace every 50 hours

**ENGINE OIL** - Check the level with each use. Replace after the first 20 hours and then every 100 hours.



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# SAFETY STANDARDS

# CHAP9

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The indications set out below do not avoid all the danger which can be encountered with the use of the engine. They should be completed using the common sense and experience of those who operate the machine.

**KNOWLEDGE OF THE MACHINE.**

Read all the usage and maintenance instructions carefully and check the good state of the safety devices.

**CHECK WHO IS IN THE VICINITY.**

Foresee dangerous situations and indicate manoeuvres sufficiently in advance. Do not let children approach when the machine is running.

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**CLOTHING.**

Do not wear clothes which are baggy or long.

**THE EXHAUST GASES ARE HARMFUL.**

In the event of working in closed places, it should be verified that the ventilation conditions are appropriate. In the event of units assembled at fixed premises, solutions shall be found so that air renewal occurs.

**THE PETROL AND OIL ARE HARMFUL.**

Place these products in a ventilated place and out of the reach of children. Wash the contact places with soap and water. In the event of ingestion, consult a doctor.

**TAKE CARE WITH THE HIGH-VOLTAGE CURRENT.**

Don't touch the cable or the spark plug cap when the engine is running.

**TAKE CARE WITH THE HOT PARTS.**

The exhaust pipe, the cylinder and the sump may cause burns.

**EAR PROTECTION.**

Use ear plugs or protectors in any cases involving long exposure to engine noise.

**FUEL SUPPLY**

Do not store, spill or use petrol near flames or equipment such as ovens, heaters or other apparatus which cause sparks. Do not put the engine running if you notice the smell of petrol or there is some other circumstance which may be the cause of an explosion.

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### **HAND PROTECTION.**

Protect your hands with gloves as some pointed or sharp parts may cause accidents.

### **RESPECT FOR THE ENVIRONMENT.**

Do not burn nor emit into the atmosphere oils, fuels and filters. They shall be delivered to an appropriate collection centre.

### **WEATHER CONDITIONS**

The success of a treatment largely depends on the weather conditions before, during and after the application.

1. A high wind speed increases the drifting risks and loss of the product applied.
2. The wind speed acceptable for phytosanitary treatments is 6 m/s.

### **APPLICATION PERIODS**

The most favourable conditions for treatments occur during the morning. The poor wind speed and the high humidity index are ideal conditions for using minimum doses of the product.

**TAKE CARE!**

Users who are concerned with economy, efficiency and profitability always check their sprayer prior to the start of the treatment station.

The replacement of any parts represents a minor expense compared with the cost of the products which are going to be applied.

For this reason, it is preferable to carry out the replacement of the parts at the start of the campaign rather than during the work!

Read the labels and respective indications carefully.

**USE OF THE PRODUCTS**

1. Place the products out of the reach of the people and animals.
2. Do not mix the products whose compatibility is not recognised by their supplier.
3. Always use protection equipment such as gloves, masks, goggles etc.
4. Do not eat, smoke or drink during the treatments.

5. Respect the safety distance from residential and public centres, tanks or water courses.
6. At the end of the treatments, it is important to see to the washing in clean water of the exterior and interior of the sprayer, as well as of all the clothing used in the treatments.
7. Wash the recipients of the phytodrugs and once properly washed, deliver them to a collection centre.

### **SAFETY STICKERS**

The machine shall be used with the greatest care. Stickers were placed which warn of the main dangers faced by the operator in the use of the equipment.

The stickers form an integral part of the equipment and should any of them disappear or become illegible, contact the dealer to see to their replacement.

## MANDATORY SIGNS



READING  
THE USER MANUAL  
IS MANDATORY



BODY  
PROTECTION  
MANDATORY



HAND  
PROTECTION  
MANDATORY



HAND  
WASHING  
MANDATORY

C30730071



EAR  
PROTECTION  
MANDATORY



PROTECTION OF  
RESPIRATORY PASSAGES  
MANDATORY

## PROHIBITION SIGNS



NOT DRINKING  
WATER



NO  
THOROUGHFARE



NO SMOKING



NO ENTERING  
THE TANK

C30730071



NO REPAIRING,  
CLEANING OR LUBRICATING  
THIS MACHINE  
IN OPERATION



PROHIBICIÓN DE  
RETIRAR LAS  
PROTECCIONES DE LA  
MÁQUINA

## DANGER SIGNS



VARIOUS HAZARDS



MAXIMUM PRESSURE  
OF CIRCUIT - 50-40-30

S0248 40248 20248

# PROBLEMS AND SOLUTIONS

## CHAP10

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### **THE ENGINE DOESN'T START**

1. Check fuel.
2. Check the oil (4-stroke engine).
3. Check the opening of the fuel tap.
4. Check whether the vat or nozzle in the interior are dirty.
5. Remove the spark plug and check whether the current reaches the electrodes.
6. Place the current switch in the “ON” position.

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**THE ENGINE DOES NOT DEVELOP THE NECESSARY POWER**

1. Dirty air filter .
2. Carbon film in exhaust outlet.
3. Crankshaft retainers worn.
4. Cylinder and segments worn.
5. Incorrect petrol/oil mixture (excess oil).
6. Spark plug has dirt on the electrodes or needs to be replaced.

**THE ENGINE MAKES A LOT OF SMOKE.**

1. Incorrect petrol/oil mixture (excess oil).
2. Dirty air filter.



# PROCEDURES TO BE FOLLOWED AFTER PROLONGED INACTIVITY

## CHAP11

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### **WINTER STORAGE**

When the treatment period ends, the equipment, once properly cleaned and lubricated, shall be prepared for the winter.

Storage shall be carried out at a dry, aerated place.

Should there be the risk of sudden falls in temperature (less than 0° C), we should place anti-freeze liquid mixed with water in the proportion recommended by the supplier with a total quantity of 15 or 20 litres, connecting the engine for a few minutes, making the mixture circulate until filling the pump and the respective piping.

When putting the equipment back in operation at the treatment time, turn manually or with the aid of a tool the mobile parts, as well as the levers of the pressure regulation and distribution control.

This interval between treatment times is the time for carrying out routine maintenance or the major mechanical interventions.

### **CLEANING AFTER EACH USE OF THE EQUIPMENT**

The phytodrug solutions may be dangerous and cause damage to the sprayer components so we should carry out the cleaning immediately after ending the application.

To this end we should adopt the following steps:

1. Dilute the remains of the product which are in the interior of the tank, with at least 5 times more quantity of water.
2. Then spray this spray liquid onto the area treated previously, reducing the working pressure to this end and increasing the treatment speed so as not to overdo product concentration.
3. Clean the equipment via the exterior and interior with abundant water and detergent, keeping the engine at low rotation until the water has rinsed all the important components such as the pump, the control unit and the piping.

4. Dismantle the inlet filter, the line filters, the heads of the jets and clean them properly with water and detergent.
5. Dump all the waste deriving from the cleaning in a specific site for the receipt thereof or, alternatively, at the site treated previously, far from water lines and circulation areas for animals and people.
6. Assemble and keep the equipment with the main tank cover open.



**TAKE CARE!**

**The spray liquid waste deposited inside the sprayer for long spaces of time shall cause corrosion to the components and require very expensive interventions.**



# PERIODIC MAINTENANCE

## CHAP12

### OPERATIONS CARRIED OUT BY THE OPERATOR

OPERATION	DAILY	WEEKLY	MONTHLY	ANNUAL
Control engine oil level				
Pump oil level				
Control pressure of compensator				
Verify tightening of screws				
Treat corrosion points				
Cleaning of filters and tank				

### OPERATIONS CARRIED OUT ANNUALLY BY SPECIALIZED TECHNICIANS

- Verification of membranes and sealants
- Change in oil annually or 500 hours
- Control and lubrication of the control unit
- Control and checking of the piping