# SprayVaccination TROLLEYFarm by HIPRA

## INSTRUCTIONS FOR USE AND MAINTENANCE







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### 1 GENERAL DATA

### **1.1** GENERAL CONSIDERATIONS

The appliance has been designed and manufactured to administer vaccines to farm animals and consists of a portable pump to be recharged by connecting it to the mains. The pump is connected with some tanks installed on a special mobile base on wheels and nebulizing nozzles. It cannot be used for any other kind of operations without **MANUFACTURER's expressed prior consent.** This appliance has been designed to guarantee the best results by stressing the fact that all the operating instructions and recommendations described herein shall be complied with. In order to obtain the best results **MANUFACTURER** recommends to carry out regular maintenance operations in order to keep the machine in the best conditions.

### 1.2 CONSULTING THE MANUAL

This manual has been organized in such a way as to allow the user to find the necessary information for the appliance use and maintenance easily and quickly. The user shall read the whole manual very carefully and make sure any information contained in it has been fully understood.

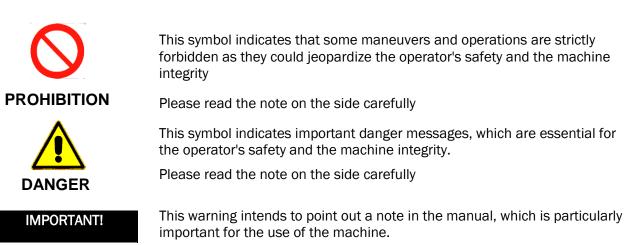
The secondary function of the manual consists in being a reference and consultation document to be used whenever it will be necessary to carry out an operation or follow a procedure. Therefore it shall be kept handy for the staff in charge of operation and maintenance to be consulted at any time.

### 1.3 MAIN REFERENCE LAWS AND STANDARDS

- MACHINE DIRECTIVE [2006/42/CE]
- UNI EN ISO 12100:2010 Safety of machinery
- UNI EN ISO 4414:2012 Pneumatic systems and components

### 1.4 MANUAL SYMBOLS

The following symbols will be used in the manual to point out specific instructions and important warnings:



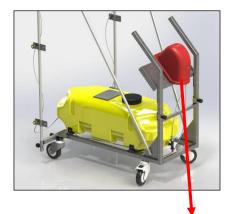




### 1.5 IDENTIFICATION PLATE

An identification plate on the machine (Fig.1.1) contains the following information:

- 1. Manufacturer's data
- 2 Machine model
- 3 Part number
- 4 Year of manufacture
- 5 Technical features
- 6 CE trade mark to certify the machine conformity with EC directive 2006/42.



	Year of manufacture	: 2012
30	Model	Pump SH
	Part number	
	Max pump pressure	6.9 bar
	Battery	12 V
	Max delivery rate	6 l/min
	Weight empty	35.00 Kg

Fig. 1.1: Identification plate (dependent of serial production)

### 1.6 ORDERING SPARE PARTS

Every inquiry or order for spare parts shall be faxed to HIPRA by specifying:

- Machine model
- Part number
- Code of the part to be ordered
- Quantity needed
- Shipping means
- Contact





### 1.7 GUARANTEE AND LIABILITY

The appliance is sent to the customer after passing the in-house tests and inspections demanded by the manufacturer in compliance with the current standards and laws. The manufacturer undertakes to guarantee the appliance described in this manual for 12 months from date of delivery. The manufacturer undertakes within such period to replace any defective parts or parts causing a malfunction provided that the machine has been used correctly in compliance with the instructions in the manual for use and maintenance.

The guarantee shall be null and void if:

- The appliance has been tampered with by an employee without MANUFACTURER's authorization
- Non -original spares have been used
- Bad maintenance or abnormal use of the machine
- Any spare parts replaced under guarantee shall be returned to MANUFACTURER.
- The guarantee does not include any wear parts of the equipment.

**MANUFACTURER** shall not be responsible for any operating troubles or general breakdown caused by the unauthorized use of the appliance or by interventions and/or modifications carried out by any third parties, not authorized by HIPRA.

### **IMPORTANT!**



Before first installation connect the power supply clamps to the relevant battery poles making sure polarity is correct (red + black-) and make sure the equipment is thoroughly clean.





### 2 OPERATORS' SAFETY RULES

### 2.1 OPERATORS' SAFETY RULES

The below listed standards shall be read carefully and become an essential part of daily praxis in managing and maintaining the appliance in order to prevent accidents to people and/or damage to property.



Do not attempt to start the appliance until you have fully understood its operation.

Make sure the staff involved in the use, cleaning and maintenance of the appliance are well acquainted with all safety prescriptions.



Before using the appliance the operator shall check it to make sure there are no visible defects. By all means it will be necessary to immediately inform the person in charge of the appliance of the defect found.



Replace the parts that are out of order by others indicated by MANUFACTURER NEVER attempt to find any risky solutions.

For warnings concerning the battery please refer to the specific instruction leaflet.

Note: Apply and have anyone comply with the safety rules. In doubt check this manual before acting.

### 2.2 DEFINITION OF THE SAFETY TERMS

For what safety is concerned, the following terms will be used in this manual:

- **Dangerous zone** any zone inside and /or near the machine where the presence of an exposed person would imply a risk for the person's safety and health.
- **Exposed person:** anybody fully or partially inside a dangerous area.

**Operator:** a person trained to the ordinary use of a machine for ex. startup, stop at end of working activity, elementary maintenance operations such as cleaning.

**Safety component:** a component designed expressly by the manufacturer and marketed separately from the machine to be used for safety purposes. A safety component is such when the defective or non-operation of that component would jeopardize the safety of any exposed persons.

#### 2.3 INDIVIDUAL PROTECTION DEVICES

Before starting to work, the operator shall be acquainted with the characteristics of the appliance and shall have read this manual in full.

### **IMPORTANT!**

The employer shall supply Personal Protection Devices and inform the employees about their correct use and maintenance.





The P.P.D.s the operator shall use while operating, cleaning or carrying out maintenance on the machine are safety shoes, safety clothes, gloves and goggles/visor.



Follow all safety and handling instructions concerning chemical containers and their use. Wear strong shoes or boots with slip proof soles. Always wear protective clothes, eye protection and respiratory protection when you spray or handle any chemicals.

#### 2.4 USE OF THE APPLIANCE

The appliance has been designed and manufactured to be used by a single operator operating the pump directly.

#### 2.5 AERIAL NOISE AND VIBRATION

The appliance has been designed and manufactured to reduce the noise level to a minimum.

The acoustic pressure has been measured on an identical machine model and a sound energy < 70 dB(A) has been measured.

Vibration has not been measured in that it has been evaluated as neatly lower than risky levels.

#### 2.6 INFORMATION ABOUT PRESSURIZED EQUIPMENT SAFETY

Before use the operator shall make sure that all pressurized components (pump and tubes) have not been damaged seriously and there is no corrosion. Before and after use the equipment shall be protected against all weathering agents. It shall be handled with care for storage and shall be adequately packed for transportation if needed. It shall be used within the max. limits foreseen by the project as specified by the data plate.

Avoid to submit the appliance to any kind of vibration which might cause fatigue breakdown. Any tampering or improper use is strictly forbidden.

Do not approach the appliance of open flames or heat sources. Do not use the equipment in an environment with explosion or fire hazard. The equipment shall be used at a temperature of 0°C to 50 °C. Do not use any other types of fluids in the equipment, but air, (in particular corrosive, highly flammable and toxic products are forbidden)

### IMPORTANT!

The manufacturer's liability will cease in the event of modifications, tampering or operations, which could jeopardize safety and stability obtained after the final inspection and tests and the issue of the declaration of conformity.





### **3** CHARACTERISTICS

### 3.1 FOREWORD

The purpose of this chapter is providing a general picture of the appliance characteristics. Reading this chapter is recommended to all those who shall use and maintain it: **OPERATORS AND SKILLED TECHNICIANS** 

### **3.2** GENERAL DESCRIPTION OF THE MACHINE

As illustrated in the picture below, the appliance consists essentially of a mobile trolley which permits to nebulize medicaments (vaccines) to farm animals. A tank is located on the top of this trolley. The tank has 50 liters' capacity. It is filled with the vaccine diluted in water. The liquid in the tank is kept moving by a rechargeable electric pump and sent to the nozzles, which nebulize it to the animals to be treated. The nozzles are mounted on two vertical telescopic rods. The trolley is mounted on wheels, which permit to displace it, and is equipped with a special handlebar.

The main components of the machine are listed below.

- Main body
- Vertical bars with nozzles
- Tank
- Pump
- Wheels
- Handlebar

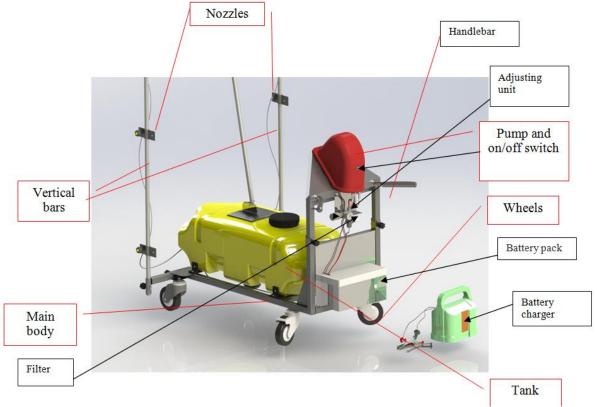


Fig. 3.1: Main components of the machine



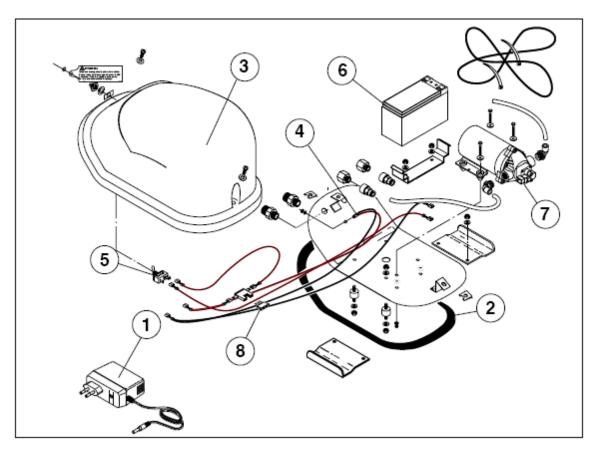


Below please find the detailed description of the main machine parts.

#### PUMP

The liquid is kept moving by a portable pump rechargeable by connecting it to the mains. The pump is fed by a 12 V battery. It permits to submit the fluid to a maximum displacement pressure of 6.9 bar.

The picture in the next page will indicate the main components of the appliance.



1	Battery charger	5	On/off switch
2	Support	6	Battery
3	Protection crankcase	7	Pump
4	Battery charger connecting plug	8	Fuse

Fig. 3.2 Main components of the pump



For warnings concerning the battery please refer to the specific instruction leaflet.

### TANK

The tank is located over the metal body and fixed to it with screws. The capacity of the tank is 50 liters and is filled with the drug (vaccine) diluted in water. The fluid contained in the tank is displaced by the above described pump. At the bottom of the tank a drain cock lets you drain the liquid not used while in operation.





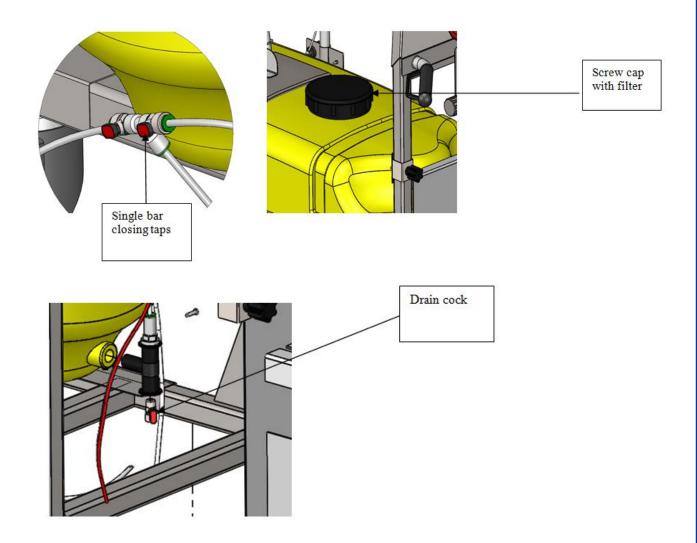


Fig. 3.3: Tank



Do not introduce any impurities or any liquids in the tank either than those described in this manual.

#### VERTICAL BARS WITH NOZZLES HOLDERS

The rear of the machine is characterized by the presence of two vertical bars consisting of telescopic aluminum bars consisting of screwed modules.

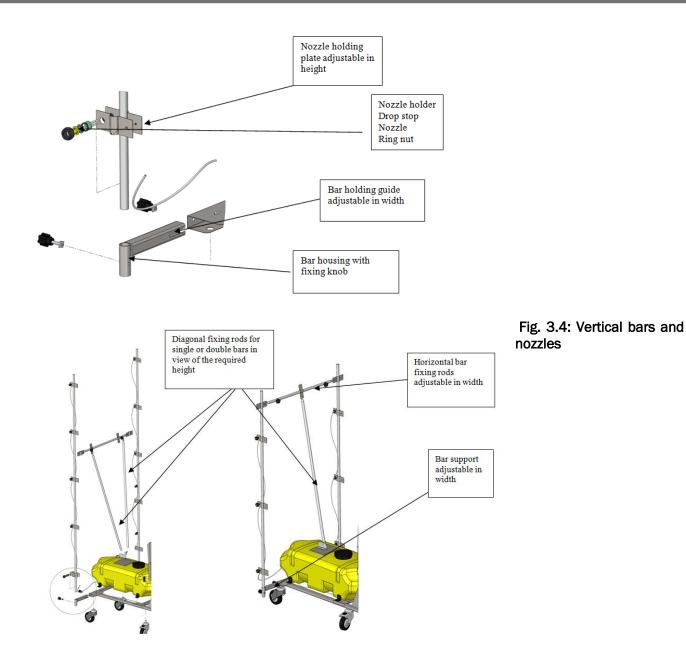
Plates carrying the nozzles are mounted on both vertical bars. The nozzles nebulize the product. The plates can slide along the relevant bar and can be fixed at the required height (in view of the type of breeding plant to be treated) by simply loosening the screw on each plate on the side opposite to the nozzle.

All nozzles are connected to one another and fed by a tube connected with the pump outlet. The tube is connected with the nozzles by means of a quick coupling.

The vertical bars can slide (from 60 to 120 cm width) to let the machine adapt to any kind of lane it shall be used in. The bars are inserted in a special cylindrical seat and fixed by screws. The cylindrical seat can slide inside a tube (which represents the rear of the machine body) to allow the sliding movement described before. The rods are fixed at the selected width by loosening and tightening a ring nut. At last diagonal stabilizing bars are provided for the structure as shown in the pictures below.







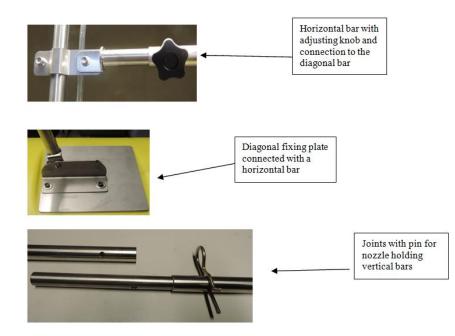
### NOZZLES

The nozzles are spread out with even distribution. They can either be metal or technopolymer with ceramic body. They should be oriented correctly in order to guarantee even distribution. Keep nozzles and the drop stop valve clean at all times.

If necessary, after use, put them in a mild descaling solution bath.

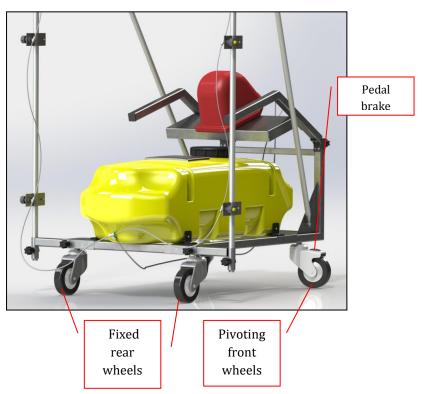






#### WHEELS

Four wheels on the body let the trolley move according to the operator's wishes. The front wheels in the electric pump area are mobile and can pivot in order to guarantee the control over the machine direction. The front wheels are also equipped with a pedal brake under the operator's control. The rear wheels in the area of the vertical supply bars are fixed.







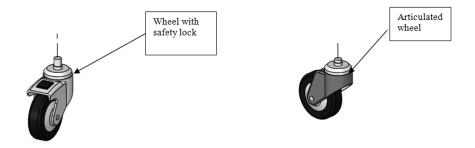


Fig. 3.5: Wheels

### HANDLEBAR

The operator's manual handlebar is located at the front on pump side. On both sides where the handlebar is connected with the machine body, a hinge permits to fold the handlebar over the tank in order to limit the room occupied by the machine and make it easier to carry and handle it.

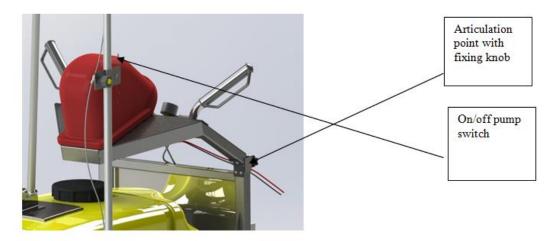
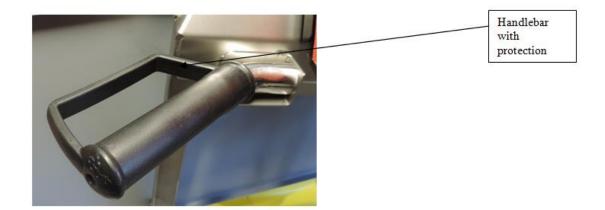
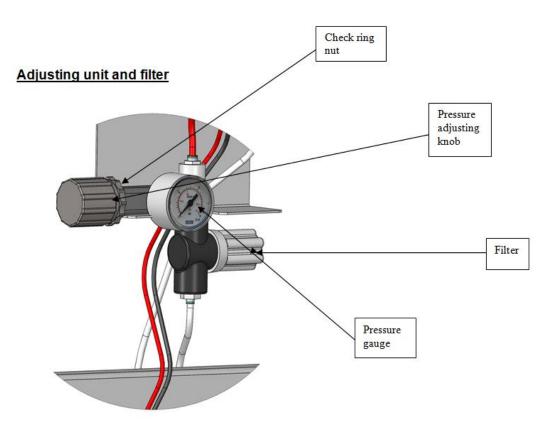


Fig. 3.6: Handlebar









The adjusting unit allows calibrating in a fixed constant manner the operating pressure of the pump. By acting clockwise or counterclockwise the nozzle output pressure either increases or decreases and its value can be checked on the front pressure gauge. An outlet pipe returns the excess of liquid to the tank. The best operating pressure shall not exceed 6 bar or fall below 4 bar.

The filter is integral with the adjusting unit. It shall be periodically monitored and kept clean in order to remove any impurities which might clog the nozzles.

### **3.3** TECHNICAL FEATURES

Weight empty	35.00 kg
Height	260 mm.
Depth	390 mm.
Width	230 mm.
Pump pressure (max)	6.9 bar
Battery	12 V
Max. flow rate	26 l/min*
Power supply	220
Frequency	50 z





### 3.4 OPERATING PRINCIPLE

The appliance consists of a portable pump operated by a 12 V battery. The pump can be recharged by a special battery charging device to be connected with the mains.



For warnings concerning the battery please refer to the specific instruction leaflet.

### 4 STORAGE AND TRANSPORTATION

4.1 HOISTING AND TRANSPORTATION



To prevent some parts of the appliance from causing injuries or breaking by falling, make sure there are no obstacles during transportation.

### IMPORTANT!

MANUFACTURER shall not be liable for any possible damages caused to the equipment during transportation.

#### 4.2 STORAGE

In the event of a long storage time, shelter the appliance against rain and wind, and possibly store it in a dry place.

Protect it against dust and outer agents.

The appliance may be seriously damaged if kept in an environment at critical temperature. Do not expose the appliance to any temperatures lower than 0°C or higher than +50°C.

### **IMPORTANT!**

Always make sure the unit is off and drained of the liquid being used.





### 5 OPERATION AND APPLICATION

### 5.1 FOREWORD

The purpose of this chapter is supplying all the instructions necessary to use the piece of equipment. Reading this chapter is recommended to all those who shall use and maintain it: **OPERATORS AND SKILLED TECHNICIANS alike.** 



### Before starting the operations to install the appliance, make sure it is perfectly clean.

### 5.2 BATTERY CHARGER

The battery charger supplied in the kit has a small preset selector switch for power supply while recharging with 13.8 V. The battery charger is automatic. Plug in with a suitable supply voltage of 220V 50Hz. Insert the male charger plug in the female takeoff of the pump kit located at the front below the two inlets and outlet fluid connections.

After inserting the plug on the battery charger a green led comes on. The battery is being charged. When the green led goes off the battery charging session is over.

If the led does not come on, the battery may be defective, damaged or needs to be replaced. If the led comes on and goes off at once, the battery has already been charged.

No need to remove the protective crankcase to recharge the battery.

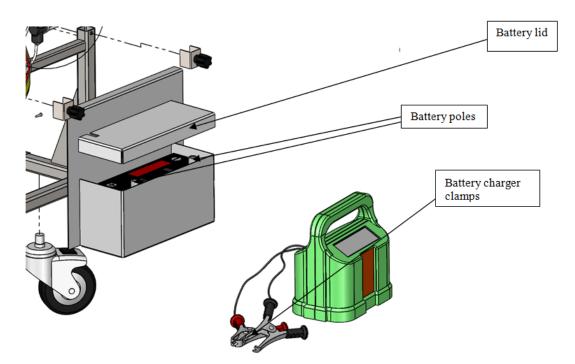


Fig. 5.1: Plug and battery charger for the pump

### 5.3 BATTERY

Lead battery, 12 Volt 7.2 Ah. The battery is delivered fully charged.

However we recommend you check it by connecting the battery charger.

When the led goes off it means the battery is fully charged. If the kit is not being used for more than six months, we recommend you charge the battery anyway, independently from its use.





Warning: if the battery discharges completely it shall be replaced because it will no longer be possible to recharge it.

In the event of any replacement, use original spares only. A flat battery shall be disposed of through the authorized collection centers. Batteries are dangerous waste therefore cannot be abandoned or disposed of in common bins.

If you replace your battery, check wire connection: red wire to the positive pole (+), black wire negative pole (-). A wrong connection would jeopardize the pump operation.

In the event of an accidental contact of the liquid with the battery pack, remove and dry the battery, the terminals and supporting bracket with a cloth.

For warnings concerning the battery please refer to the specific instruction leaflet.

### 5.4 PUMP

The pump is characterized by a max. delivery rate of 6 l/min and a maximum pressure of 6.9 bar. The pump is equipped with an adjustable pressure switch calibrated at 6.9 bar. We recommend you do not tamper with the pressure switch calibration. The pressure switch permits to stop the pump operation whenever supply is being interrupted.

We point out that the pump shall not work intermittently while using the pump. Therefore the combined nozzle or lance shall guarantee a counter pressure always below pressure switch calibration.

When the kit use is over, wash the installation thoroughly several times with water to prevent any residues of chemical product from remaining in the pump and jeopardizing the future operation of the pump.

5.5 SWITCHING THE PUMP ON / OFF

Take switch lever to ON to switch pump on. When your work is finish always take switch back to OFF.

### **IMPORTANT!**

Always make sure the unit is off and drained of the liquid being used.

For warnings concerning the battery please refer to the specific instruction leaflet.

### 5.6 RECOMMENDATIONS FOR USING NOZZLES

A different type of nozzle is recommended depending on the vaccination product and illness destined for.

NOZZLE COLOUR	MODEL	PRESS. BAR	DROP MICRON	RECOMMENDED USE
GREEN	CONE	6	146	IB
GALLN	CONL	5	151	IB
ORANGE	CONE	6	122	IB
ORANGE	CONE	5	127	IB
YELLOW	CONE	6	167	Newcastle
TELLOW	CONL	5	173	Newcastle
		6	188	Coccidiosis
BLUE	CONE	0	100	Pneumovirus
DEUE	OUNL	5	195	Coccidiosis
		5	190	Pneumovirus





Example: If we want to vaccinate against IB, we can use a green cone nozzle at 6 bars of pressure, so we will get a droplet size of 146 microns or we can apply 5 bars of pressure, obtaining then a droplet size of 151 microns.

## **IMPORTANT!** Droplet size used during vaccination is essential to assure good vaccines results. It is recommended to follow up HIPRA's instructions.

### 5.7 MACHINE ADJUSTMENT AND OPERATION

BELOW PLEASE FIND THE LIST OF THE MAIN OPERATIONS NEEDED TO USE THE MACHINE:

- 1. Adjust height and distance of the nozzles on the vertical bars. the height of the vertical bars, can be adjusted by loosening and tightening the fixing screw in the cylindrical seat connected with the machine body. the nozzle distance is adjusted by loosening the fixing screw on the single nozzle plate. the plate is now free to slide along the vertical supporting bar. in order to lock it in the required position the screw shall be tightened again. reference picture 3.4.
- 2. Adjust the distance between the two vertical bars holding the nozzles based on the operation requirements. To adjust the distance loosen the ring nut tightening the bar holder and the machine body tube. After loosening the ring nut, the bar holder is free to slide within the tube. After choosing the required width fix in place the configuration you have obtained by tightening the ring nut. Reference picture 3.4.
- 3. Fill the tank with vaccine diluted in water according to the requirements of the treatment to administer. Reference picture 3.3.
- 4. Switch pump as shown above and start nebulizing product by walking along the area with the animals to be treated- Handle machine by holding drawbar on pump side and directing machine through its wheels. Reference pictures 3.2 3.5 3.6.
- 5. Once treatment is over, empty tank from drain cock at the front. Reference picture 3.3.





### 6 ORDINARY MAINTENANCE CLEANING

### 6.1 Foreword

This chapter is dedicated to the OPERATOR and to the SKILLED MAINTENANCE TECHNICIAN.

IMPORTANT!

The appliance shall be cleaned after every application.





Wear suitable Personal Protection devices such as gloves, overall, goggles.

The parts demanding accurate cleaning are the following:

> Pump

IMPORTANT!

For correct cleaning we recommend you use products such as hot water and noncaustic degreasers, in order to avoid useless harmful aggressions to the components.

**IMPORTANT!** 

Wash and dry the appliance thoroughly before reassembling all the parts.



Follow the rinsing instructions provided by the producer of the chemical being used. Lack of compliance might injure people and damage the environment.



To avoid damaging the environment the system shall be rinsed, purged and the pressure shall be released before storing it where it might freeze.



For warnings concerning the battery please refer to the specific instruction leaflet.

### 6.3 RINSING THE PUMP

After each use, the pump shall be rinsed with clear water. To carry out this cleaning operation, activate the pump by filling it with water for a few minutes. Once the cleaning operation is over, switch appliance off as shown in previous paragraphs.





### 7 - EXTRAORDINARY MAINTENANCE

### 7.1 GENERAL DATA



During the operations described in this chapter, wear an overall, gloves and protective goggles to avoid any splashes, which may cause serious eye injury.



In the event of a breakdown or of extraordinary maintenance interventions to be carried out on the appliance, please contact a skilled technician directly. Do not adopt any risky hazardous solutions or chancy interventions on the appliance if you do not know how to proceed.



Do not replace any broken parts of the appliances by any components either than the ones supplied by the appliance manufacturer.

### 8 DEMOLITION AND DISPOSAL

### 8.1 DEMOLITION AND DISPOSAL

At the end of the actual life cycle of the appliance, the user shall dispose of the machine in compliance with the current standards in force. First of all they shall drain all lubricants, clean all parts and separate the machine components. After disassembling the machine the different materials shall be separated for disposal according to the standards in force in the country in which the appliance shall be disposed of. The machine contains no hazardous matters or components, which may undergo special removal procedures.

To dismantle the machine proceeds by following the general disassembling procedure below:

- Switch machine off
- Unplug electrical parts
- Detach mechanical parts



WARNING: WARNING: when you handle waste, you shall wear the appropriate personal protection devices.

### 8.2 MACHINE DISPOSAL

Waste from machine demolition shall be disposed of by avoiding to pollute ground, air and water. Anyway all laws in force on the matter shall be complied with.

We wish to remind you that by waste we intend any matter or object the owner of which decides to or must dispose of (L.D 152/2006).

Waste from machine demolition may be classified as special waste.

### 8.3 DEMOLITION MATERIALS

Non-dangerous special waste which can be recovered according to L.D. 152/2006. For what disposal is concerned, please bear in mind that the machine component materials are not dangerous.

### <u>WARNING</u>

Disposal shall take place according to the regulations in force in the country of disposal.

Keep polluting materials such as oils and solvents in metal bins only.





Consumables: Disposal of consumables shall take place according to the following rules:

Batteries: The batteries shall be changed by a maintenance electrician.

Used batteries shall not be disposed of with common waster, but shall be delivered to the specific disposal centers.

### 8.4 INSTRUCTIONS FOR SUITABLE WASTE TREATMENT

A correct handling of special waste requires the following:

- Store in suitable places by avoiding to mix dangerous and non-dangerous waste.
- Make sure transportation and recovery/disposal of the parts are carried out by authorized carriers and consignees.

You can transport your own waste to the authorized collection centers exclusively if you are registered in the local Environmental Handler Book (Albo Gestori Ambientali).



To dispose of vaccine bags and bottles follow the instructions on the packaging.

### 8.5 TREATMENT OF ELECTRICAL AND ELECTRONIC APPLIANCES AS WASTE (RAEE)

Law Decree July 25, 2005 nr.151 has imposed the European directives in terms of disposal of waste from electric and electronic appliances (RAEE) (Directive 2002/95/EC and 2003/108/EC).

Procedures and measures: In particular the decree sets procedures and measures aimed at:

a) Preventing production of EEAW;

b) Promoting reutilization, recycling and other forms of recovery of EEAW, in order to reduce the quantities to be disposed of;

c) Improving the intervention of the subjects participating in the life cycle of these appliances under the environmental standpoint (such as manufacturers, distributors, consumers and the operators directly involved in EEAW treatment);

d) Reducing the use of dangerous matters in electrical and electronic appliances.

The decree imposes to limit and remove a few substances existing in EEAW: lead, quicksilver, cadmium, hexavalent chrome, diphenyl polybromurates and diphenyl-ether polybromurate.

The machine has been designed and made in conformity with this directive. Follow the instructions given below.

This symbol, which represents a barred rubbish bin on wheels, shows that the electrical and electronic appliances of the machine shall be collected and disposed of separately.

The user of the machine can contact the town collection centers or demand collection by the retailer in order to dispose of it correctly.





### LIST OF SPARE PARTS

