

# InjectVaccination **AutoINJECTOR** by HIPRA



## INSTRUCTIONS FOR USE AND MAINTENANCE



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## 1. GENERAL DATA

### 1.1 GENERAL CONSIDERATIONS

The VALERY appliance available in two versions with either one or two pumping sections, has been designed and manufactured for intramuscular inoculation of drugs such as vaccines and other similar drugs in animals only. It cannot be used for any other kind of operation without **HIPRA'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 **HIPRA** recommends to carry out regular maintenance operations to keep the machine in the best conditions.

- ☞ A personnel training is important for maintenance and control over the operating procedures and all safety standards and rules specified in this manual.

### 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.

Consultation of the manual is made easy by a general index which permits to promptly locate the chapter in question

The index consists of 8 chapters numbered according to the logics of [ a,b... ] where “a” indicates the number of the general chapter, and “b” the subsection with specific subjects.

For the sake of clarify we have added a few safety symbols ext to some paragraphs in order to point out they are important and make it easy to locate them. Special attention shall be dedicated to these notes.

### 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:



**PROHIBIT**

This symbol indicates that some maneuvers and operations are strictly forbidden as they could jeopardize the operator's safety and the machine integrity  
Please read the note on the side carefully



**DANGER**

This symbol indicates important danger messages which are essential for the operator's safety and the machine integrity. Please read the note on the side carefully

## **Important!**

This warning intends to point out a note in the manual, which is particularly important for the use of the machine.

### **1.5 MANUFACTURER'S IDENTIFICATION DATA**

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 marks certifying machine conformity.

### **1.6 IDENTIFICATION PLATE**



Pict 1.1 Identification plate

## 1.7 HOW TO ORDER 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

## 1.8 GUARANTEE AND LIABILITY

### **Guarantee**

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 **HIPRA'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 **HIPRA**
- The guarantee does not include any wear parts of the equipment.

### **Responsibilities**

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

## 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 in safety devices and machine. By all means it will be necessary to immediately inform the person in charge of the appliance of the defect found.**



**Protection devices shall not be removed or made ineffective while the machine is being used.**



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



**All the cleaning and maintenance operations shall be carried out by authorized personnel only. Before starting to work, the appliance shall be cut off the pneumatic network.**



**The machine shall only be used for the medical inoculation in animals, as established by HIPRA**

Note: : Apply and have anyone comply with the safety rules. In the event of 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:

<b>Dangerous zone</b>	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.
<b>Exposed person:</b>	whoever is fully or partially inside a dangerous area.
<b>Operator:</b>	a person trained to the ordinary use of a machine for ex. startup, stop at the end of the working activity, elementary maintenance operations such as cleaning.
<b>Safety component</b> :	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.



## 2.4 USE OF THE APPLIANCE

The appliance shall be designed and manufactured to be held by a single operator.

## 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 of 69 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 USEFUL TO SAFETY (ENCLOSURE I DIR. 97/23/EC)

These instructions have been drawn up according to Enclosure I of EC- Directive 97/23, pos. 3.4. Before use the user shall make sure that no pressurized components (pipes, fittings, safety valve, pressure regulator, tank and equipment for drug inoculation), have suffered serious shocks and there is no corrosion. Before and after use the equipment shall be protected against all weathering agents. It shall be handled with care and a suitable packaging material shall be used for transportation whenever necessary.

The appliance shall be used within the max. project limits, which are specified on the data plate. Avoid submitting 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)

Warning: 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. It is forbidden to carry out any welds on the equipment or its components. We remind the user that he shall apply the laws in force in the destination country.



### 3 CHARACTERISTICS

#### 3.1 FOREWORD

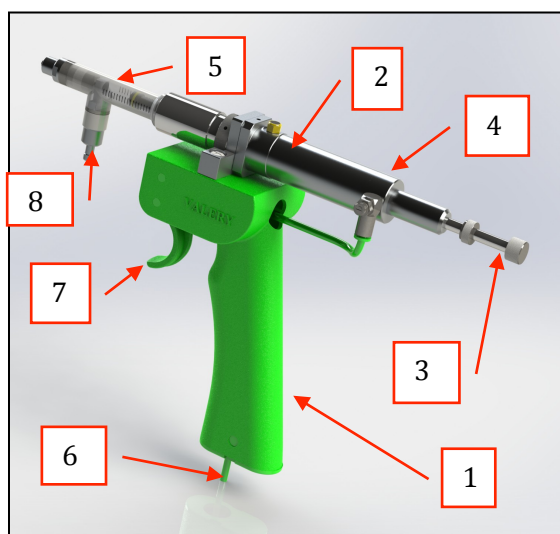
The purpose of this chapter is providing a general picture of the appliance characteristics. Reading this chapter is recommended to all those who shall use and maintain it: **OPERATORS AND SKILLED TECHNICIANS**

#### 3.2 GENERAL DESCRIPTION OF THE MACHINE

As illustrated in the following image, the appliance consists essentially of a handle, the operator's grip, as well as the base for a pneumatic distribution valve and for a fixed support. On this support two pneumatic cylinders are mounted to drive the plunger of a syringe at the free end of which there is the inoculation needle.

The following picture shows the main components of the equipment in the two versions with 1 or 2 plungers.

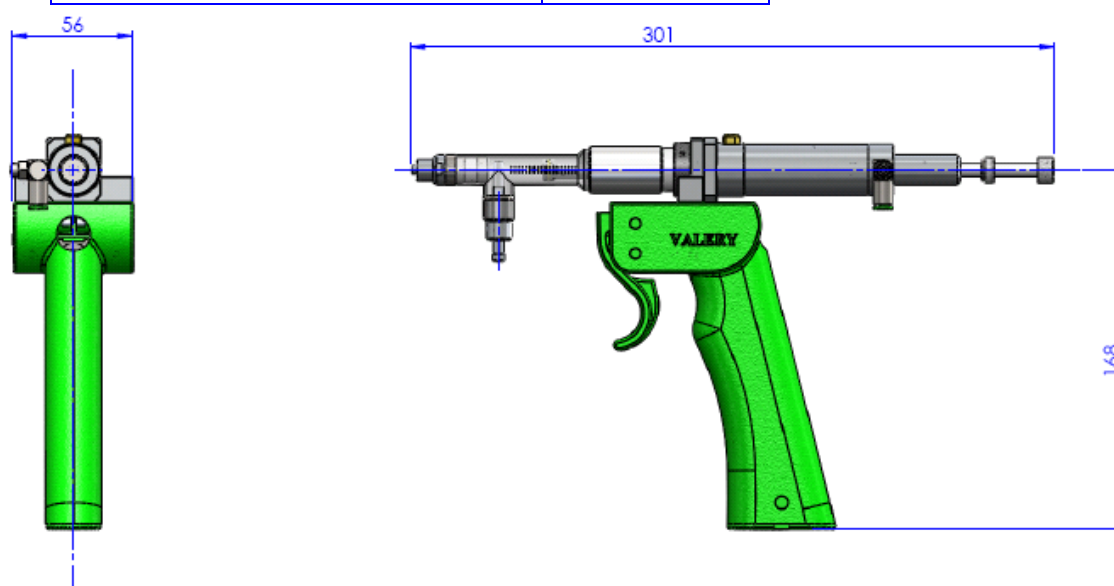
1	Handle
2	Base for a pneumatic distribution valve
3	Product regulator
4	Pneumatic cylinders
5	Syringe plunger
6	Pneumatic connecting tube
7	Control lever
8	Drug supply fitting
9	Bottle holder



Pict. 3.1 Main components

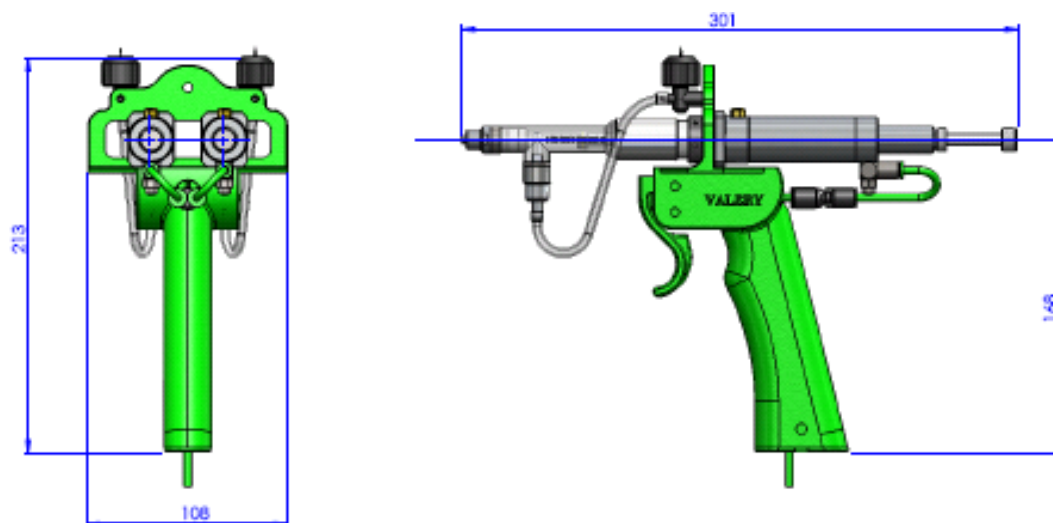
### 3.3 TECHNICAL FEATURES

<b>Weight</b>	0.4 kg
<b>Height (a)</b>	180 mm.
<b>Depth (b)</b>	56 mm.
<b>Width (c)</b>	301 mm
<b>Average operating pressures</b> for 0.5-1.0 ml distributors	4-6 bar
for 2ml distributors	5-6 bar



Pict. 3.2 Machine dimensions

<b>Weight</b>	0.5 kg
<b>Height (a)</b>	180 mm
<b>Depth (b)</b>	108 mm
<b>Width (c)</b>	301 mm
<b>Average operating pressures:</b> for 0.5-1.0 ml distributors	4-6 bar
for 2ml distributors	5-6 bar



Pict. 3.3 Machine dimensions

### 3.4 OPERATING PRINCIPLE

A pneumatic distribution valve is installed on the equipment. This valve will allow the movement of one or both plungers for inoculating drugs in animals.

This valve is driven by the trigger installed on the handle (the only control device of this piece of equipment).

## Important!

For its operation the equipment shall be connected with an outer pneumatic line.

## 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!**

HIPRA 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.

## 5 OPERATION AND USE

### 5.1 FOREWORD

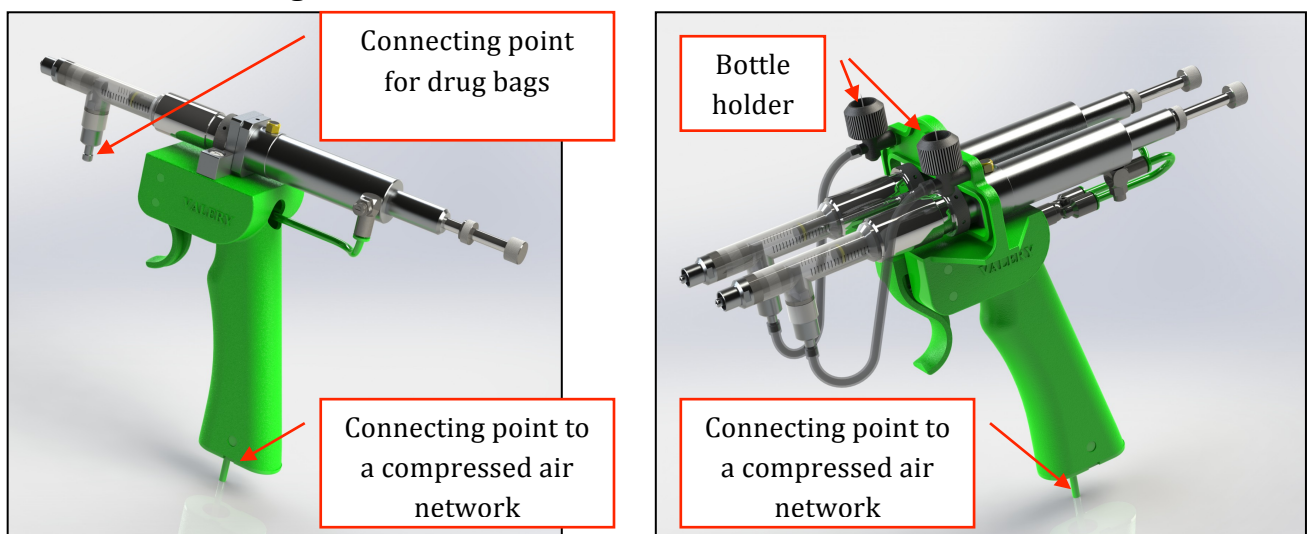
The purpose of this chapter is supplying all instructions and recommendations needed to use the appliance for inoculating treatments in animals. Reading this chapter is recommended to all those who shall use and maintain it: **OPERATORS AND SKILLED TECHNICIANS**

### 5.2 PRELIMINARY OPERATIONS



**Before starting the installation please check the following:**

- ~~Make~~ Make sure the appliance is perfectly clean
- Make sure the appliance protecting devices have been correctly installed
- Connect the high pressure tube to a compressed air network by inserting the tube in the specific connector (see Fig. 5.1)
- Connect the drug bags (see Fig. 5.1). The version equipped with bottle holders has no connector, but the bottle is inserted directly on its holder.
- Press the trigger several times until the circuit is full
- As to the version with two plungers, to make sure each plunger is correctly filled and therefore avoid useless product wasting we recommend you close alternately the air supply to each jack to ensure the starting level will be the same.



Pict. 5.1 Preliminary operations



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

### 5.3 INSTRUCTIONS FOR USE

1. Set the distance of the syringes in view of the size of the animals to be treated (for two-pumpig element models) To do so, use the key in the kit and loosen the locking ring nuts of the single distributors prizing the holes around them. Transfer them to the required position and lock the syringes (see pict. 5.2). Should it be necessary to reduce the room between distributors further, special conical plates are available to make the injectors convergent and reduce the distance between needles to a minimum.

The plates are set two by two and opposite to each other under the ring nut of each plunger. Disconnect syringe from jack before assembly.



Pict. 5.2: Adjustment of the syringe distance

The quantity of liquid to be injected is calibrated independently on each distributor by acting on the regulator at the back of the plungers. After setting the required quantity lock the regulator by turning the relevant ring nut until it comes against the dispenser, so that it cannot come loose during the application (see Fig. 5.3). **Some models are not equipped with such regulator and only allow to inject well defined drug quantities, which cannot be modified. Other models can be equipped with a regulator to calibrate a minimum quantity of 0.5 ml and a maximum quantity of 2 ml. To do so, tighten the regulator for minimum quantity to end of stroke and vice versa unscrew it for max quantity. In the latter case check the value on the scale which shall correspond to the plunger terminal reading visible in transparency.**



Locking ring nut

Plunger adjustment

Pict. 5.3: Adjusting the quantity of drug to be injected

2. Connect the high pressure tube supplied in the kit with a regular compressor or portable storage tank (see Pict.5.4). A lubricator at the air outlet is not essential. If a lubricator is used for the first time, it shall anyway be used every time afterwards. When the plungers are being manufactured, they are treated with a lubricant which ensure their correct operation for a very long period of time.

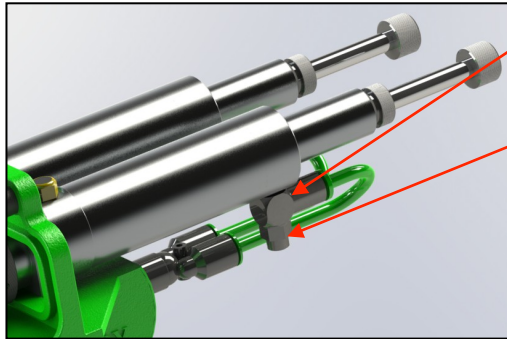


Connecting point to a compressed air network

Pict. 5.4: Compressed air connection



3. The operating pressure shall be adjusted as needed (see Pict 5.5) However we recommend you do not apply a pressure higher than 6 bar, in order to prevent the liquid from being sprayed out of the need too violently. The regulator located over each plunger makes it possible to control the return speed of the plunger. This would avoid too quick a return to cause a kickback and the loss of some product after each injection.

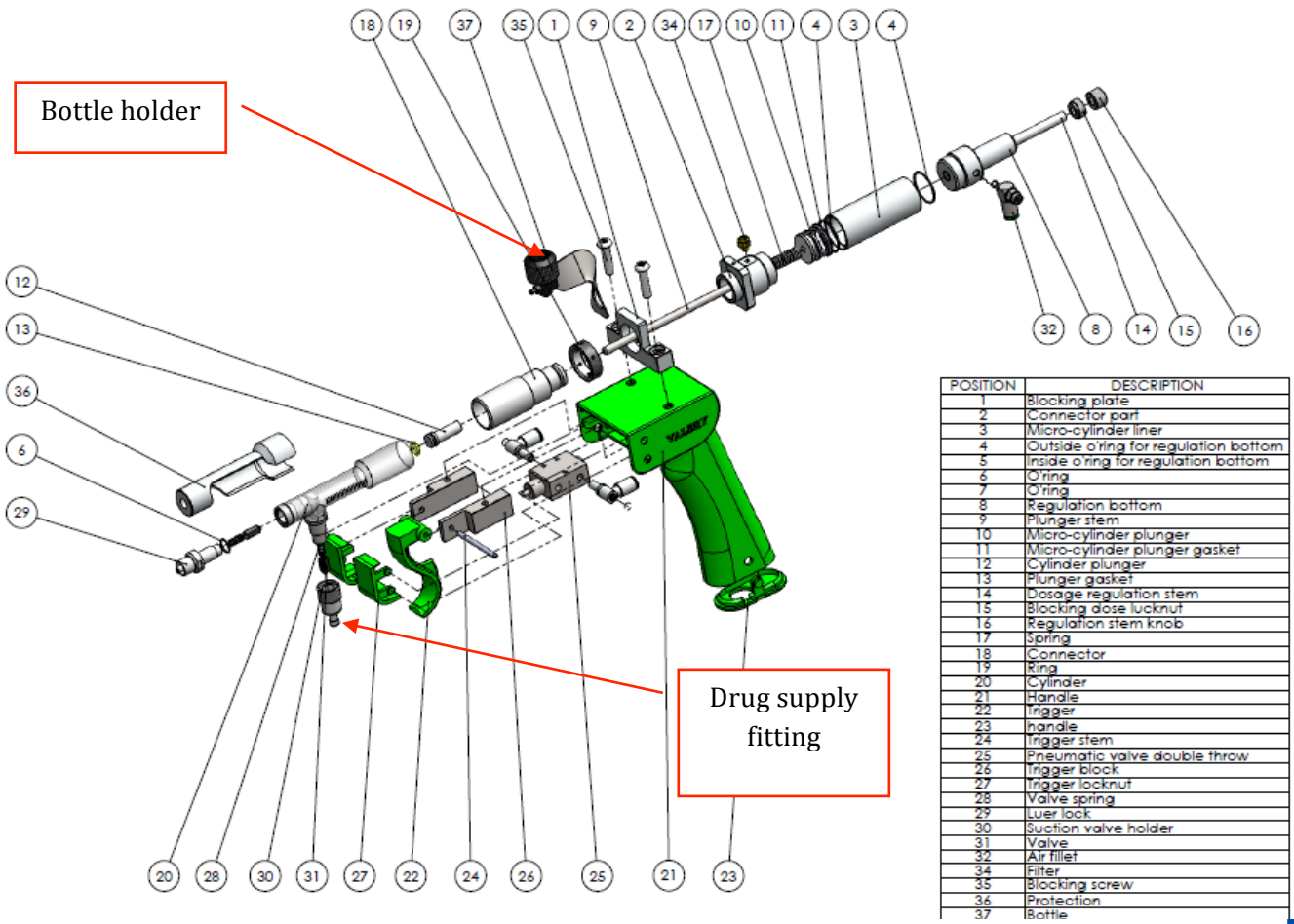


Locking ring nut

Adjustment of the return speed of the

Pict. 5.5: Opening and closing adjustment while filling the syringe

4. Connect the bag (or both bags for a two-plunger gun) with drugs to the quick coupling. Act on the trigger empty until the circuit is full. If necessary, close every plunger until full (see Pict.5.6).

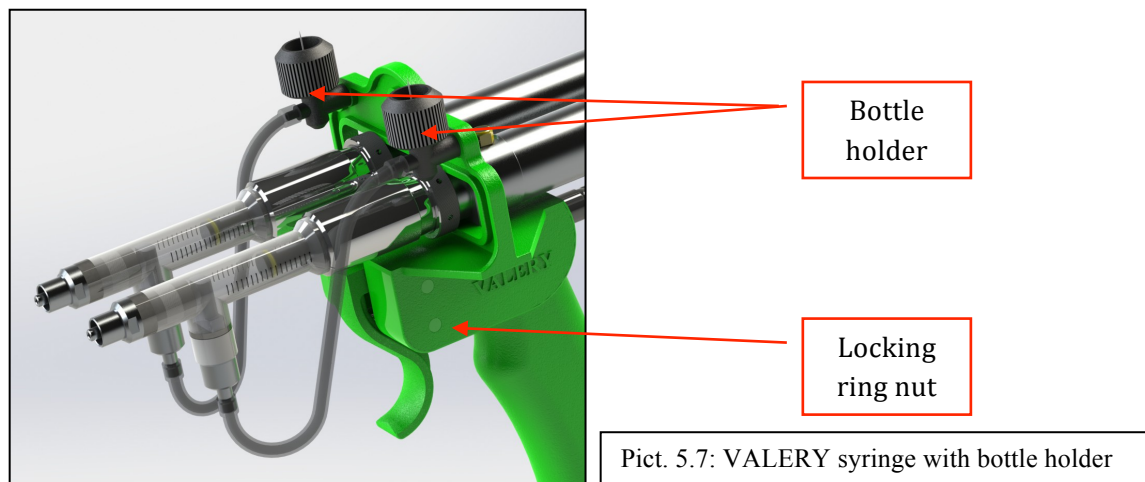


Pict. 5.6: Defluxors empty

**NOTE.** The two-plunger version permits to use VALERY guns with drug bottles or bags without distinction.

If drug bags are used, the contents of the previous paragraph would apply. Should the equipment work with bottles, you should:

- prepare the bottles as specified in the instructions for use
- insert the bottles on the needles in the bottle holders
- act on the trigger empty until the circuit is full. Close each plunger if necessary until completely full.



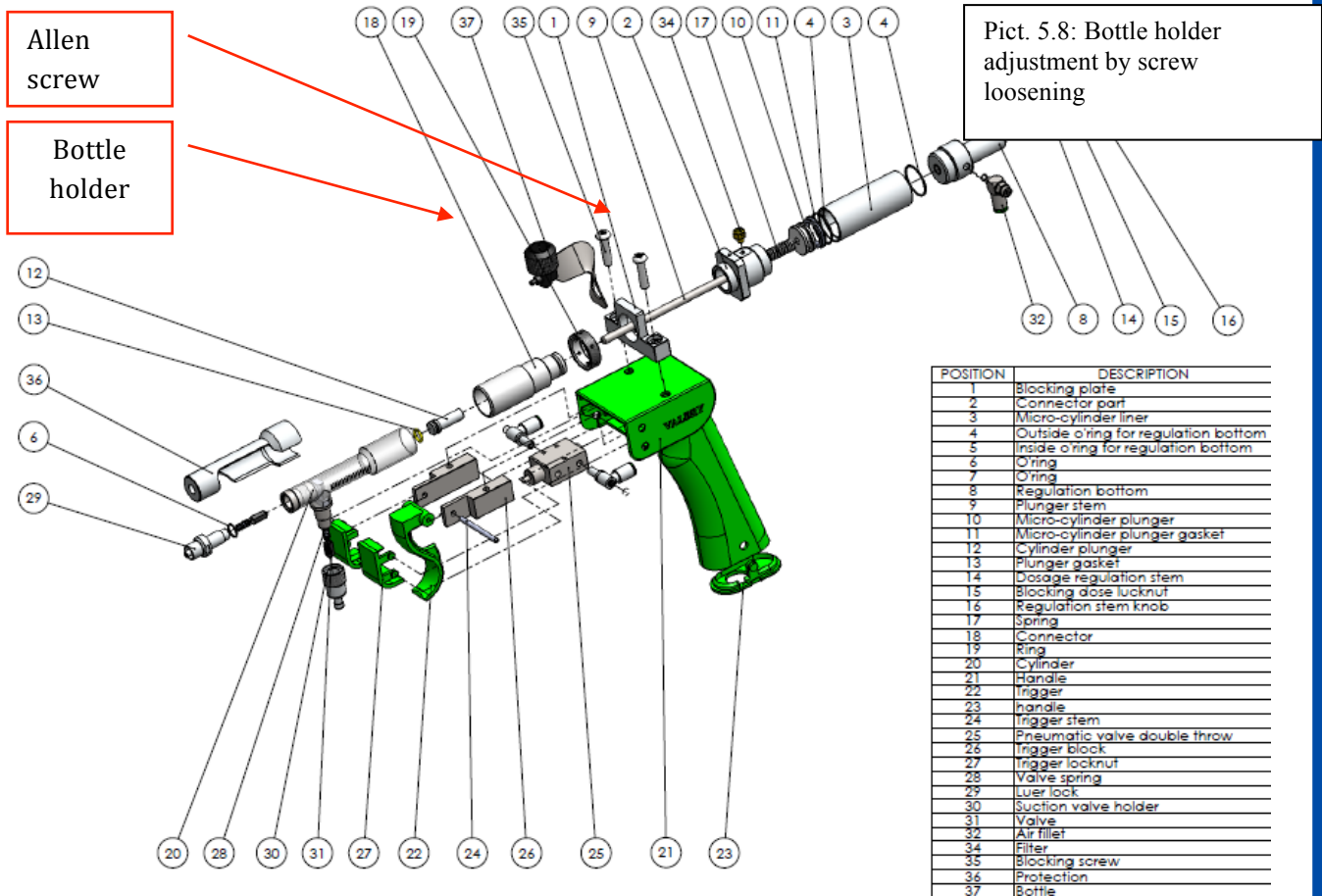
**NOTE:** In order to optimize the processes by using bottles with bottle holder or drug bags directly connected with the plungers, they can be rotated of 180°C just by loosening the locking ring nuts as shown in the figure. Should you not wish to use the bottle holder, the same can be removed to leave more room by connecting the syringe with the suction tube/s provided.

We recommend the tubes be inserted in the handle to reduce space requirements and connect them with the bottles in the bottle holders supplied with the appliance and to be fixed to your forearm.

#### 5.4 BOTTLE HOLDER ADJUSTMENT

Use the Allen wrench shown in Pict 5.8 to loosen the fixing ring nut screw. Adjust the bottle holder position. Tighten the fixing ring nut screw.





**5.5** To make it easier to insert the bottle in the bottle holder, we recommend you prick the rubber cap with a needle first, after removing the protective metal ring nut.

**5.6** The suction tube being used instead of the bottle holder shall go through the handle and come out of the hole at the base where part 23 is located. The tube is connected with the bottle/s by using the defluxors supplied in the kit by opening the counterpressure compensation valves.

## 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.

### 6.2 CLEANING



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



Take the utmost care when carrying out this operation in order to avoid accidental pricks.

The parts that require an accurate cleaning are the following:

- The syringe body, consisting of a stainless steel plunger, a graduated glass cylinder, a liquid input and output valve and needle.
- The connecting joint between syringe body and distributor with relevant tightening ring nut.

#### Important!

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

#### Important!

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

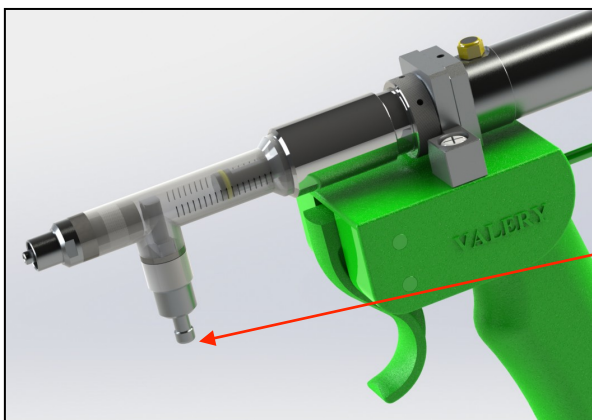


The pneumatic jacks shall never be washed. If necessary use a damp cloth for outer cleaning only.

After use disassemble the appliance by following the procedure below:

1. Detach the tubes from the vaccine or drug bags or bottle and insert them in a container. which should have been filled with degreaser, for a first prompt cleaning of the circuit by acting on the trigger repeatedly (Pict. 6.1).

2.



Drug supply fitting

Pict. 6.1: Drug supply fitting

Detach the air circuit from the compressor (or portable tank) by pressing the connecting joint ring. Physically detach the tube from the compressed air network or from the portable tank by acting on the relevant quick coupling (Pict. 6.2).

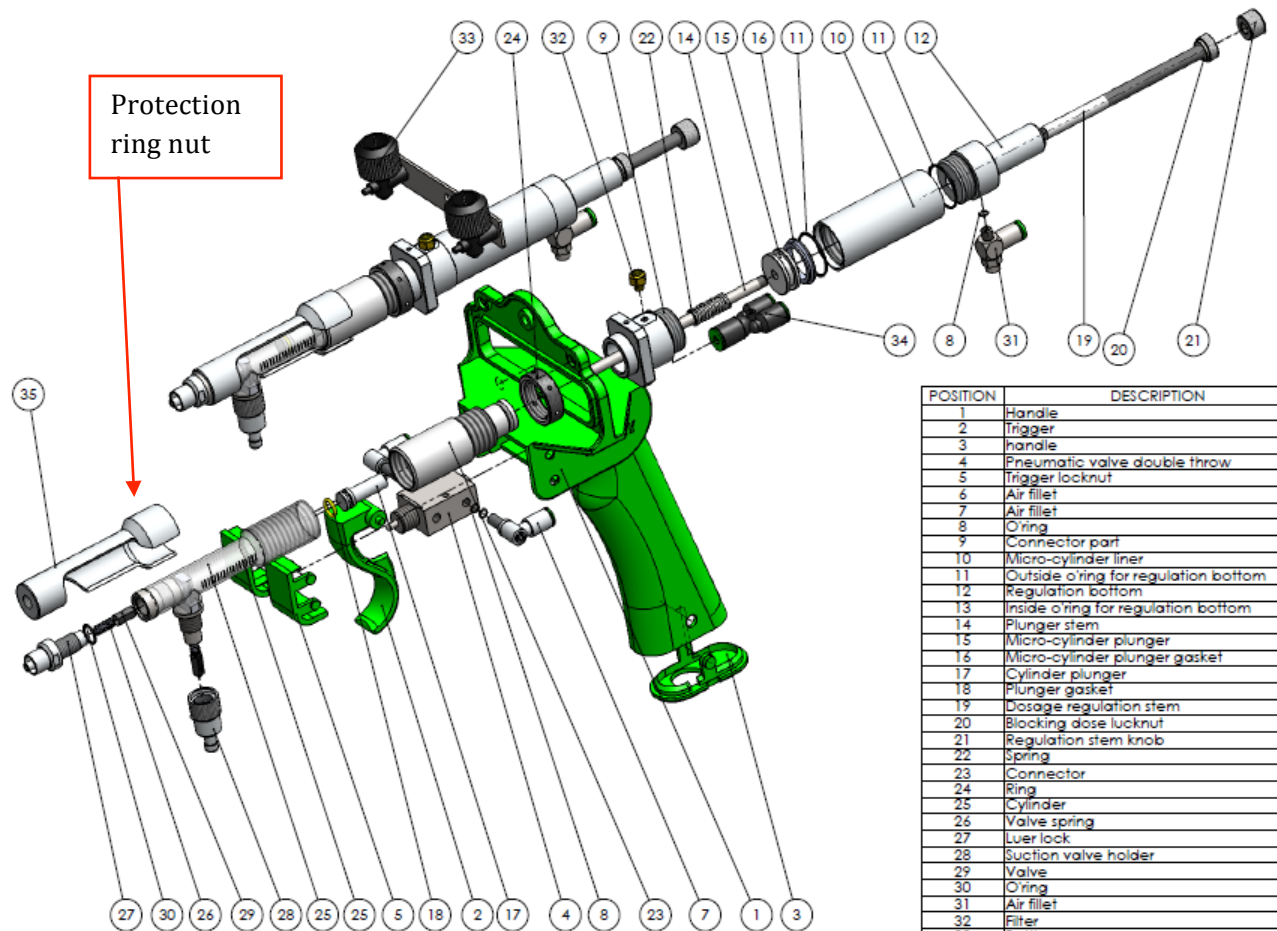


Connecting point to a compressed air network

Pict. 6.2: Compressed air connection

3. Unscrew the plunger locking ring nut off the Valery gun by turning the ring nut (Pict. 7.3). Remove the locking ring nut off the syringe body. Clean it. Tighten the ring nut again.

Double syringe:



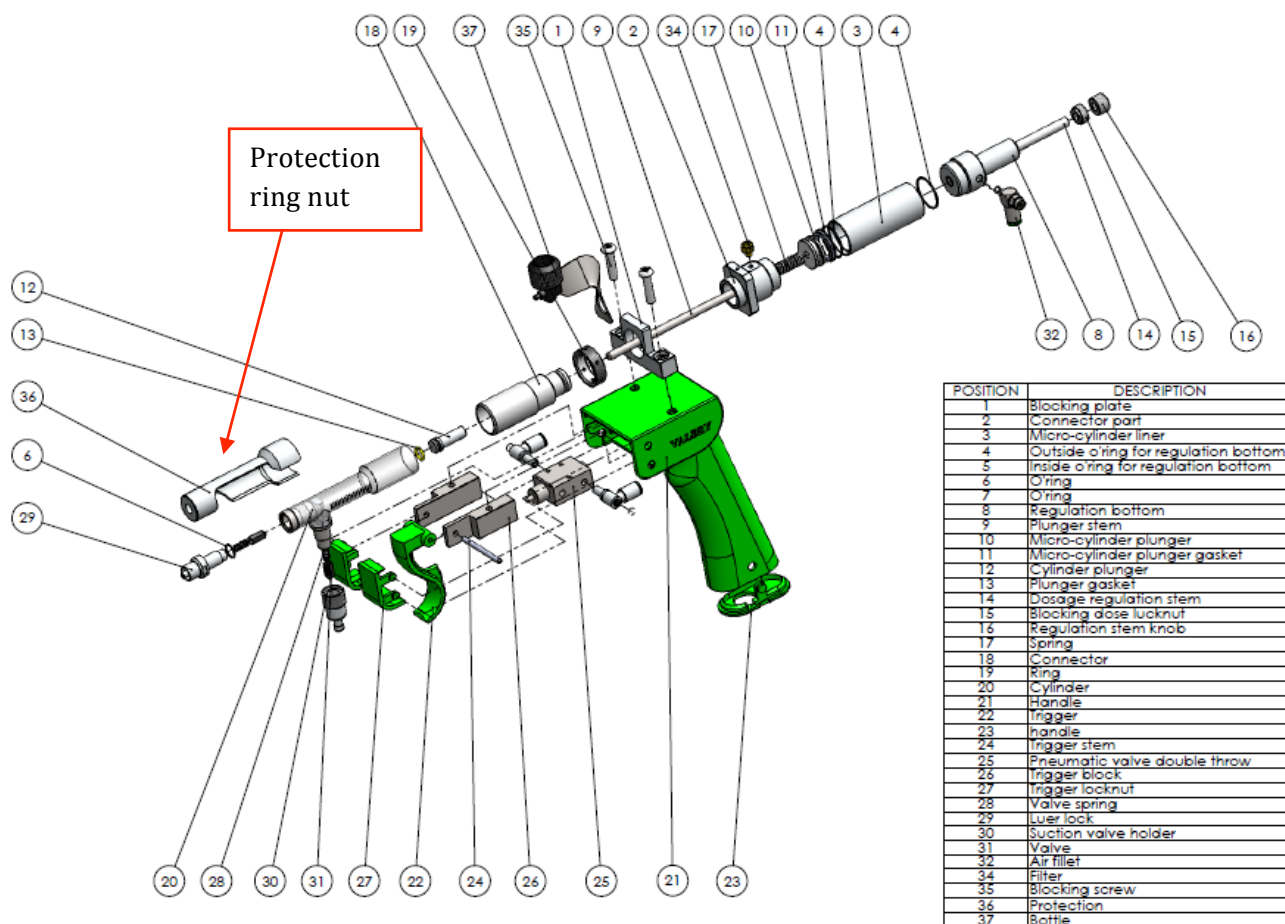
Protection ring nut

POSITION	DESCRIPTION
1	Handle
2	Trigger
3	handle
4	Pneumatic valve double throw
5	Trigger locknut
6	Air fillet
7	Air fillet
8	O'ring
9	Connector part
10	Micro-cylinder liner
11	Outside o'ring for regulation bottom
12	Regulation bottom
13	inside o'ring for regulation bottom
14	Plunger stem
15	Micro-cylinder plunger
16	Micro-cylinder plunger gasket
17	Cylinder plunger
18	Plunger gasket
19	Dosage regulation stem
20	Blocking dose locknut
21	Regulation stem knob
22	Spring
23	Connector
24	Ring
25	Cylinder
26	Valve spring
27	Luer lock
28	Suction valve holder
29	Valve
30	O'ring
31	Air fillet
32	Filter
33	Bottle
34	Air junction
35	Protection

Pict. 7.3: Needle fixing system.

**WARNING:** the protection ring nuts shall always be mounted in order to make sure the syringe will not suffer any shocks.

Single syringe:



Pict. 7,3 Syringe body protection system

## 6.2 BIOLOGICAL SAFETY AND WASHING

Clean carefully after every cycle, taking care to rinse the whole circuit with a detergent and then with demineralized water. To make sure that the system is completely empty and clean, you can remove the front of the plunger unit periodically. This part supports the whole valve unit, and by removing it you can also access (and remove) the chamber the vaccine solution is sucked in. The ring/s shall be lubricated periodically with Vaseline grease or oil.

The gaskets supplied in the spare kit shall be replaced when after a long period of use a product leakage appears behind the plunger.

To ensure the biological safety of the instrument, sanitize it by using suitable disinfectants (specific disinfectants for veterinary equipment)

Rinse with water and dry with an air jet or a clean soft cloth.

The inner circuit shall be rinsed with distilled or demineralized water in order to remove any traces of disinfectant which might jeopardize the effectiveness of the vaccine.

## 7 - EXTRAORDINARY MAINTENANCE

### 7.1 GENERAL DATA

This chapter is a guide to solve the problems which may arise during the appliance operation. It is intended for **SKILLED TECHNICIANS**



**Take the utmost care when carrying out this operation in order to avoid accidental pricks.**



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

\* ) Should you experience any difficulties in product suction, disassemble the valve body in order to make sure there are no foreign bodies in it which can prevent it from closing and therefore from working properly. In this case replace the inner valve components.

\* ) Should the plunger not recover its stroke correctly, make sure it slides properly, either by replacing the seal or by treating it with the specific lubricants as specified in the previous paragraphs.

\* ) Should you experience a small product leakage after every injection and while refilling the next dose, act on the plunger speed regulator in order to slow down the plunger return time, until the problem is solved.

\* ) To make sure the pneumatic components work and slide correctly, add a few drops of specific lubricant to the air circuit.

## 7.2 PLUNGER LUBRICATION

The plunger is equipped with a silicon seal sliding inside the graduated transparent cylinder. This component is subject to wear and we recommend it is always kept in good efficiency conditions.

To make sure it slides properly and wear is limited, we recommend you use Vaseline grease or oil to lubricate the plunger.



If cleaning and lubrication are not performed, the silicon seal may be damaged and not slide inside the graduated cylinder.



Disassembly and reassembly shall be carried out in the correct order.



For the 0.5 ml version both seals shall be replaced by taking care you replace them in the correct order as they have a different gauge.

## 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, 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 proceed by following the general disassembling procedure below :

- 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.

### 8.4 INSTRUCTIONS FOR SUITABLE WASTE TREATMENT

A correct handling of special waste requires the following:

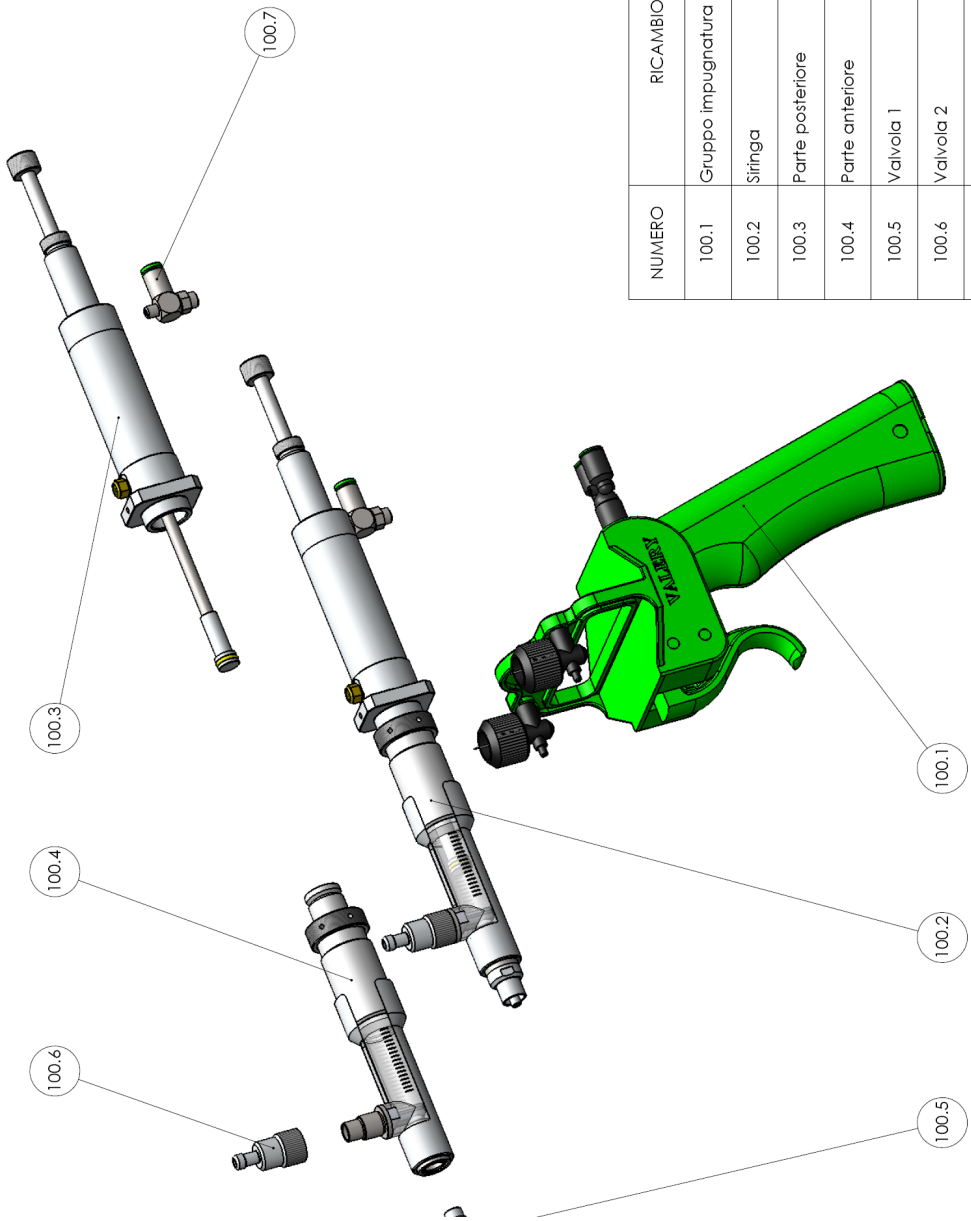
- Store in suitable places by avoiding to mix dangerous and non-dangerous waste.
- Make sure transportation and recovery/disposal of the parts are carried out by authorized carriers and consignees.



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

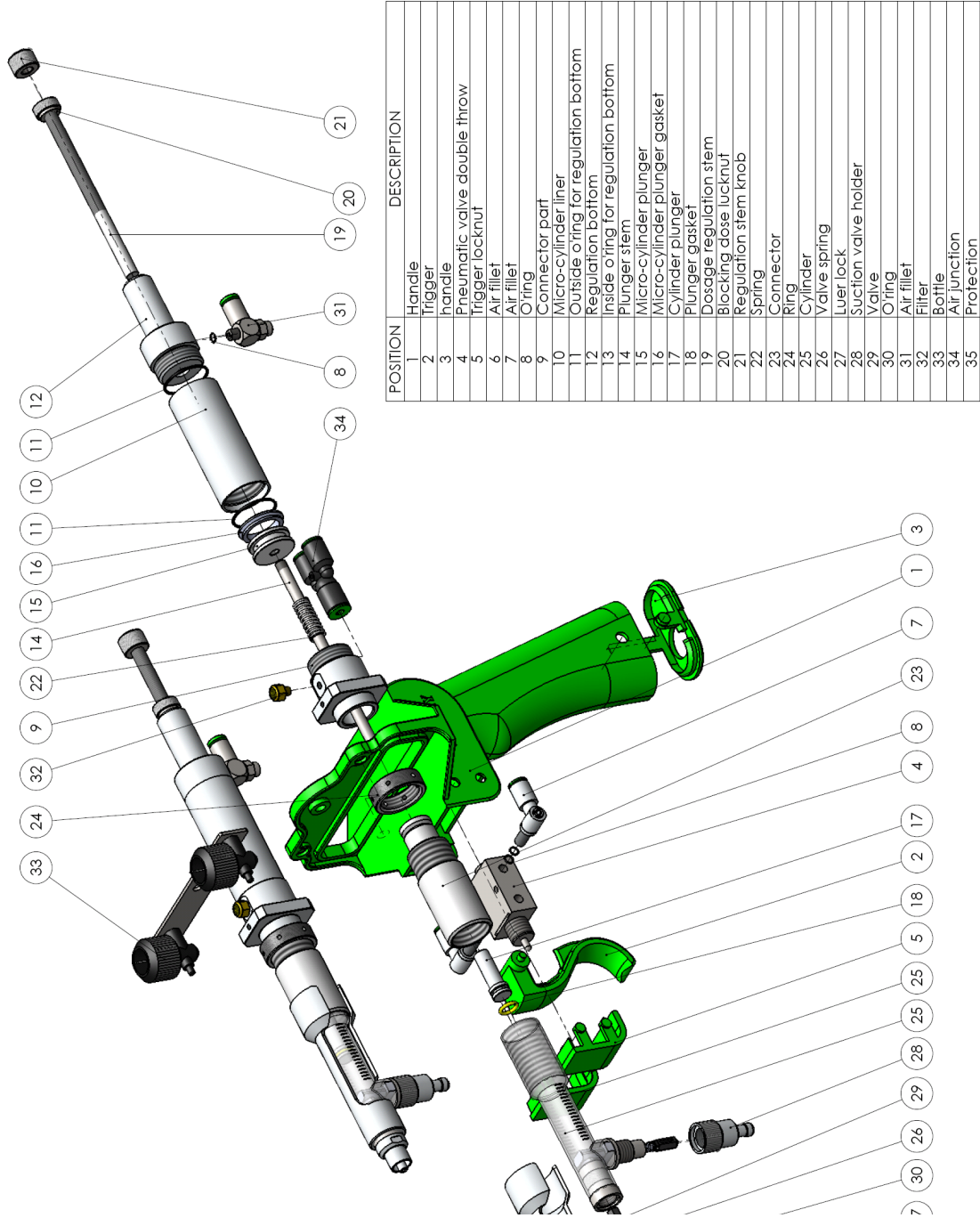


# LIST OF SPARE PARTS

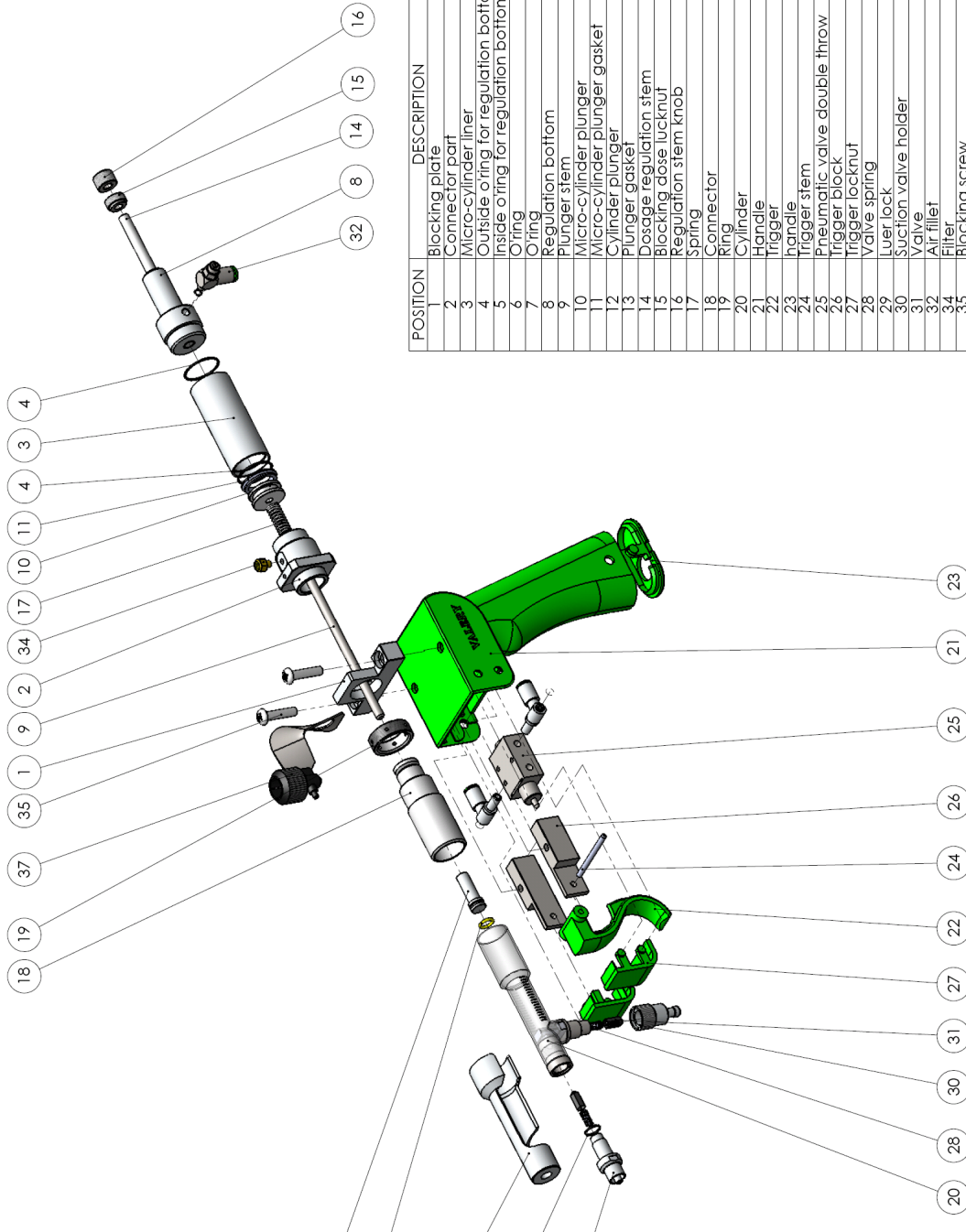


NUMERO	RICAMBIO
100.1	Gruppo impugnatura
100.2	Siringa
100.3	Parte posteriore
100.4	Parte anteriore
100.5	Valvola 1
100.6	Valvola 2
100.7	Regolatore di pressione





POSITION	DESCRIPTION
1	Handle
2	Trigger
3	handle
4	Pneumatic valve double throw
5	Trigger locknut
6	Air filllet
7	Air filllet
8	O ring
9	Connector part
10	Micro-cylinder liner
11	Outside o ring for regulation bottom
12	Regulation bottom
13	Inside o ring for regulation bottom
14	Plunger stem
15	Micro-cylinder plunger
16	Micro-cylinder plunger gasket
17	Cylinder plunger
18	Plunger gasket
19	Dosage regulation stem
20	Blocking dose locknut
21	Regulation stem knob
22	Spring
23	Connector
24	Ring
25	Cylinder
26	Valve spring
27	Luer lock
28	Suction valve holder
29	Valve
30	O ring
31	Air filllet
32	Filter
33	Bottle
34	Air junction
35	Protection



POSITION	DESCRIPTION
1	Blocking plate
2	Connector part
3	Micro-cylinder liner
4	Outside o-ring for regulation bottom
5	Inside o-ring for regulation bottom
6	O-ring
7	O-ring
8	Regulation bottom
9	Plunger stem
10	Micro-cylinder plunger
11	Micro-cylinder plunger gasket
12	Cylinder plunger
13	Plunger gasket
14	Dosage regulation stem
15	Blocking dose locknut
16	Regulation stem knob
17	Spring
18	Connector
19	Ring
20	Cylinder
21	Handle
22	Trigger
23	handle
24	Trigger stem
25	Pneumatic valve double throw
26	Trigger block
27	Trigger locknut
28	Valve spring
29	Luer lock
30	Suction valve holder
31	Valve
32	Air filllet
34	Filter
35	Blocking screw
36	Protection
37	Bottle