

PNEUMATIC PUMPS TROLLEY MOUNTED

User and maintenance manual

Original instructions

TABLE OF CONTENTS

1. INTRODUCTION
2. GENERAL DESCRIPTION
3. PRODUCT IDENTIFICATION
4. TECHNICAL CHARACTERISTICS
5. COMPONENTS
6. UNPACKING AND INSTALLING
7. OPERATING INSTRUCTIONS
8. TROUBLESHOOTING
9. MAINTENANCE PROCEDURE
10. DISPOSAL
11. ORDERING INFORMATION
12. DIMENSIONS
13. HANDLING AND TRANSPORTATION
14. CLEANING
15. TRAINING

C2217IE– WK 27/17

1. INTRODUCTION

This User and Maintenance Manual refer to Dropsa's "pneumatic pump trolley mounted".

E' possibile ottenere l'ultima versione richiedendola all'Ufficio Tecnico Commerciale, oppure consultando il nostro sito web <http://www.dropsa.com>.

Il presente manuale di uso e manutenzione contiene informazioni importanti per la salvaguardia della salute e della sicurezza del personale che intende utilizzare questo prodotto.

E' necessario leggere con attenzione questo manuale e conservarlo con cura affinché sia sempre disponibile agli operatori che intendono consultarlo.

2. GENERAL DESCRIPTION

Trolley mounted pneumatic pumps are particularly suited for the lubrication of male, ball and gate valves.

They can be easily transported to the area of use as they are installed on a trolley.

The trolleys are made in two versions to hold 5 kg and 25 kg barrels.

3. PRODUCT IDENTIFICATION

Machine identification label is located on the front side of the reservoir and contains product serial number, input voltage and details of the operating parameters.

4. TECHNICAL CHARACTERISTICS

The pump is made up of a series of components with the following characteristics:

GENERAL CHARACTERISTICS		
Empty weight	5kg version	27 Kg
	25kg version	34 Kg
HYDRAULIC CHARACTERISTICS		
Pumping system	Piston	
Compression Ratio	100/1	
Flow rate at 6 bar	400 gr*min	
Max. pressure	700 bar	
Pressure on sealant with follower plate set at 2 Bar	0.1 Kg/cm ²	
Air inlet connection	Quick couplings 1/4"	
Sealant outlet connection	Ø22 Button head coupler	
Sealed drums used	5kg (Ø190) - 25kg (Ø290)	
Operating temperature	- 5 ÷ + 50 °C	
Humidity	90 % Humidity rel.	
Permitted lubricants (1)	Sealant/Grease max NLGI3	
Operating temperatures	-20 ÷ +65 °C	
Noise	< 70 dB(A)	

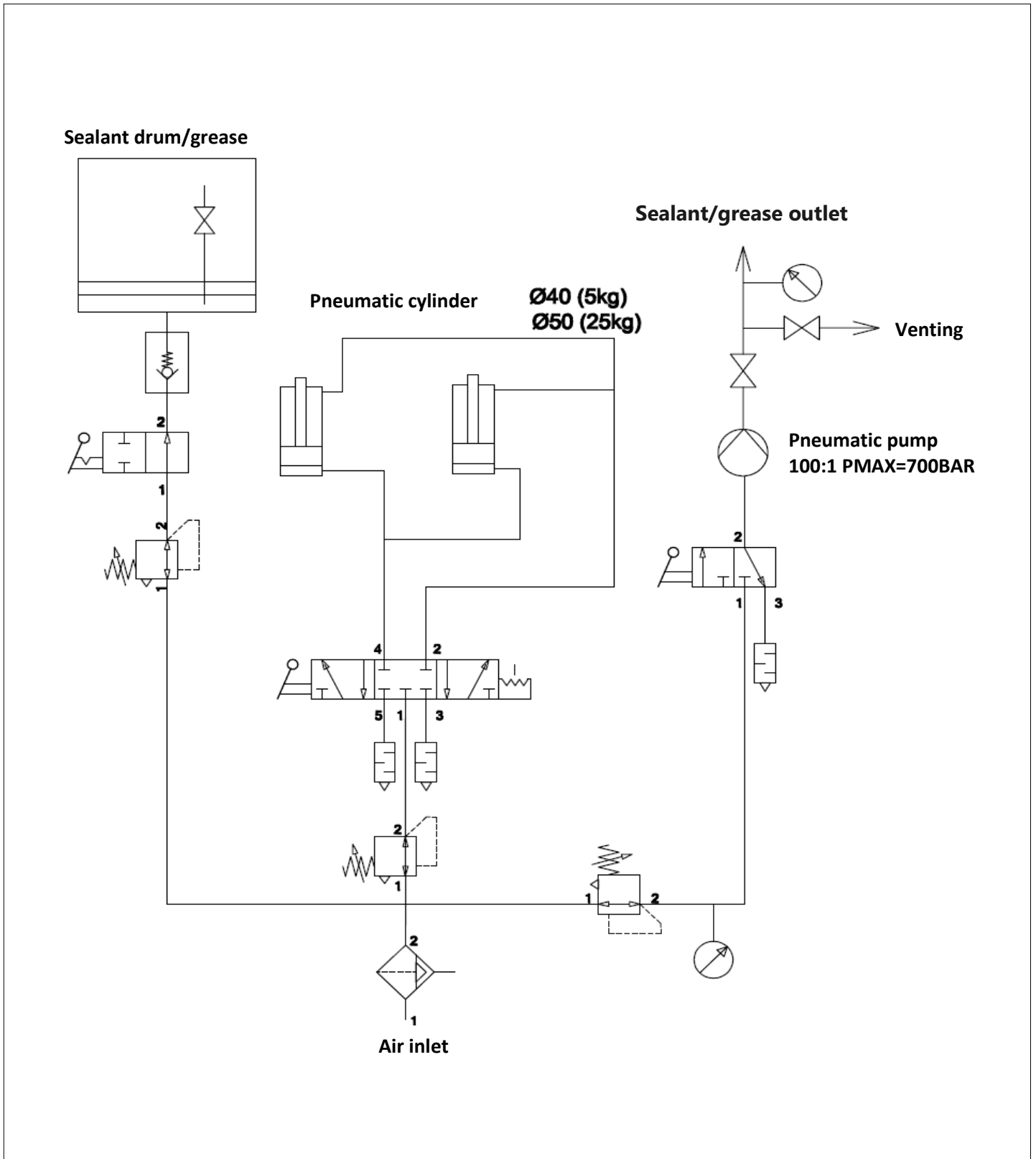
Note. The specifications refer to the temperature of use of +20°C (+68°F)

(1) If a different or special sealant product is used, please contact DropsA S.p.A. to ensure its suitability.

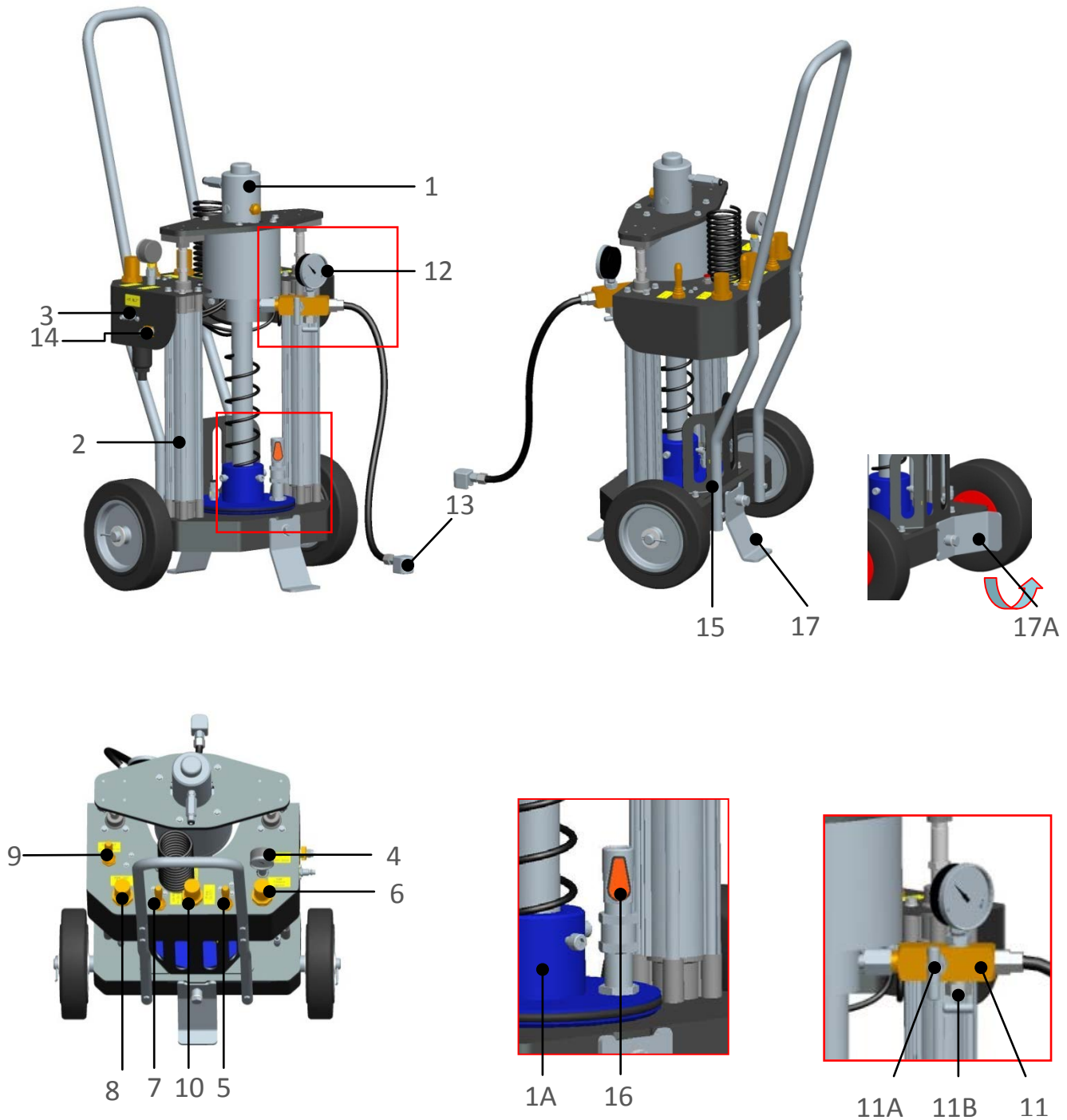


ATTENTION: pump maximum supply pressure 7 bar.

3.1 PNEUMATIC / HYDRAULIC DIAGRAM



4. COMPONENTS



1	Pneumatic pump	10	Pump Hoist Pressure Regulator
1A	Follower plate	11	Manifold valve of release pressure sealant line / grease
2	Lifter cylinder	11A	Sealant line valve block
3	Air inlet	11B	Sealant line vent valve
4	Air Inlet Pressure Gauge	12	Line sealing pressure gauge / grease
5	Pump On / Off Switch	13	Output sealant fitting/ grease
6	Pump Pressure regulator	14	Earthing Connection
7	Air Flow lifting ON / OFF	15	Sealant can holder
8	Pressure adjuster of lifting air flow	16	Air pressure vent valve sealant drum/ grease
9	Operation lift / lower cylinder	17/17A	Safety Backstop

5. UNPACKING AND INSTALLATION

5.1 UNPACKING

Once a suitable installation position has been identified, unpack the product and prepare for installation. It is important to inspect the product to ensure that there has been no damage during transportation. The packaging material used does not require any special disposal procedures. You should refer to your regional requirements.

5.2 INSTALLATION

No pump installation operations are required.

6. OPERATING INSTRUCTIONS

6.1 START-UP OF THE PUMP

Before using the product, a few preliminary checks must be performed:

- The unit can be opened and repaired only by specialized personnel.
- Using the pump submerged in fluids or in a particularly aggressive or explosive/flammable environment is prohibited unless it has been prepared ahead of time by the supplier for this purpose.
- Use gloves and eye protection as required by the sealant safety data sheet.
- DO NOT use lubricants that are aggressive to NBR gaskets. If you are unsure, contact the Dropsa SpA technical office.
- Never ignore health hazards and always follow sanitary regulations.
- Check the integrity of the pump.
- Ensure that all the selector switches (5-7-9) are in the “off” position and that the pressure regulators (6-8) are calibrated to the minimum.
- The presser cylinders pressure regulator (10) is precalibrated for normal use.
- Ensure that the flow valve (11A) on the manifold valve (11) is open and that the pressure release valve (11B) is closed.
- Connect the pump to the low pressure pneumatic circuit using the quick coupler (3).
- Ensure that the pump is at operating temperature.
- Connect and check the tightness of the outlet fitting (13).
- Connect the earthing cable (14).

6.2 OPERATING PRINCIPLE

- The follower plate (1A) built into the pump and inserted in the barrel makes suction easier for the pneumatic pump (1), as well as guaranteeing complete emptying of the barrel.
- Insertion of the follower plate in the full barrel and extraction of the same when the sealant/grease is depleted is achieved by raising and lowering the unit (1) through pneumatic cylinder controls (2) making up the structure stanchions.



ATTENTION: When introducing the follower plate into the barrel, inserting your hands is strictly prohibited.

6.3 OPERATING INSTRUCTIONS

6.3.1 Cart handling

- Before moving the pump, rotate the safety foot to the horizontal position (17A). To rotate the foot, push and rotate it simultaneously.
- Before carrying out any operation on the pump, return the safety foot (17) to the vertical position.

6.3.2 Installation of the sealant barrel

- Move the selector switch (9) to the “up” position, raise the pump (1) to a height sufficient for inserting the barrel and then return the selector switch to “off”.
- Open the air pressure vent valve (16) located on the follower plate.
- Arrange the barrel on the cart platform.
- Move the selector switch (9) to the “down” position, lower the pump to the edge of the barrel and then return the selector switch to “off”.
- Centre the barrel with the follower plate.
- Move the selector switch (9) to the “down” position and lower the pump until it is in contact with the grease level.
- Move the rear sheet (15) until it is in contact with the barrel wall. Secure the sheet with the appropriate screws.
- Move the selector switch (9) to the “off” position.
- Close the air pressure vent valve (16) located on the follower plate.

6.3.3 Sealant pumping

- Move the selector switch (9) to the “down” position.
- Move the selector switch (5) to the “pump on” position.
- Use the pressure regulator (6) to adjust the pressure for the use. This can be checked with the pressure gauge (12). Using the pressure gauge (4), ensure that the air pressure does not exceed 7 bar.
- In the event that the pump fails to engage or operates irregularly, try increasing the cylinders pressure using the pressure regulator (10).
- At the end of use, move the pump (5) and cylinders (9) selector switch to the “off” position.
- Release the residual pressure in the sealant/grease circuit by opening the pressure vent valve (11B) on the manifold valve. Once the pressure has been released, close the vent valve (11B).

6.3.4 Barrel replacement

- Before replacing the barrel, ensure that the pump (5) and cylinders (9) selector switch is in the “off” position.
- Move the raising air flow control selector switch (7) to the “on” position.
- Move the cylinders control selector switch (9) to the “up” position.
- If raising the plate proves to be difficult, increase the raising air flow using the regulator (8).
- Raise the pump (1) until the plate comes out of the barrel.
- Move the selector switch (9) to the “off” position.
- Replace the barrel.

7. PROBLEMS AND SOLUTIONS



ATTENTION: The unit may only be opened and repaired by authorised Dropsa personnel.

A diagnostics table is provided below that indicates the main anomalies, the probable causes and the possible solutions. If you were not able to solve the problem after consulting the diagnostics table, do not try to find the fault by disassembling machine parts but contact the Dropsa technical office and report the discovered anomalies, with a detailed description.

PROBLEM	POSSIBLE CAUSE	REMEDIAL ACTION
The pump runs but is not delivering	<p>The pneumatic pump does not work.</p> <p>The reservoir is empty</p> <p>The pump does not engage. Causes of the pump failing to engage:</p> <ul style="list-style-type: none"> • Air trapped between follower plate and sealant • Air is in the circuit • Not enough pressure of follower plate onto sealant 	<p>Check the pneumatic connection between the pump and the supply line. Ensure that there is line pressure. Check that the manifold valve tap is open.</p> <p>Replace the barrel.</p> <p>Lower the follower plate until it is in contact with the surface of the sealant/grease</p> <p>Activate the pump until completely bleeding out the air pockets Increase the cylinders pressure</p>
The pump will not generate enough pressure to inject sealant	<p>Pump pressure regulator is set too low</p> <p>Sealant is frozen</p> <p>Problem with the valve</p>	<p>Increase the pressure (up to a max of 7 bar)</p> <p>Replace sealant with a low temperature grade</p> <p>Refer to the valve operations manual</p>

8. MAINTENANCE PROCEDURE

The pump has been designed and built as to require minimal maintenance

- Periodically check the pipe joints to detect any leaks. Furthermore, always keep the pump clean to be able to quickly detect any leaks or defects.
- Check the suction at the bottom of the pump is clean after every 2000 hours of operation.

The product does not necessitate any special tool for operation and maintenance. When working with the pump it is nonetheless recommended that personal health and safety equipment is used as is normal for any operation in an industrial or similar workplace.



WARNING: Before carrying out any maintenance operation, ensure that power and pneumatic system are disconnected.

In case of doubts and/or problems that cannot be solved, do not try to discover the reason by disassembling machine parts, but contact the DROPSA S.p.A technical office.

9. DISPOSAL

During maintenance or disposal of the machine care should be taken to properly dispose of environmentally sensitive items such as oils or other lubricants. Refer to local regulations in force in your area. When disposing of this unit, it is important to ensure that the identification label and all the other relative documents are also destroyed.

10. ORDERING INFORMATION

10.1 VERSIONS

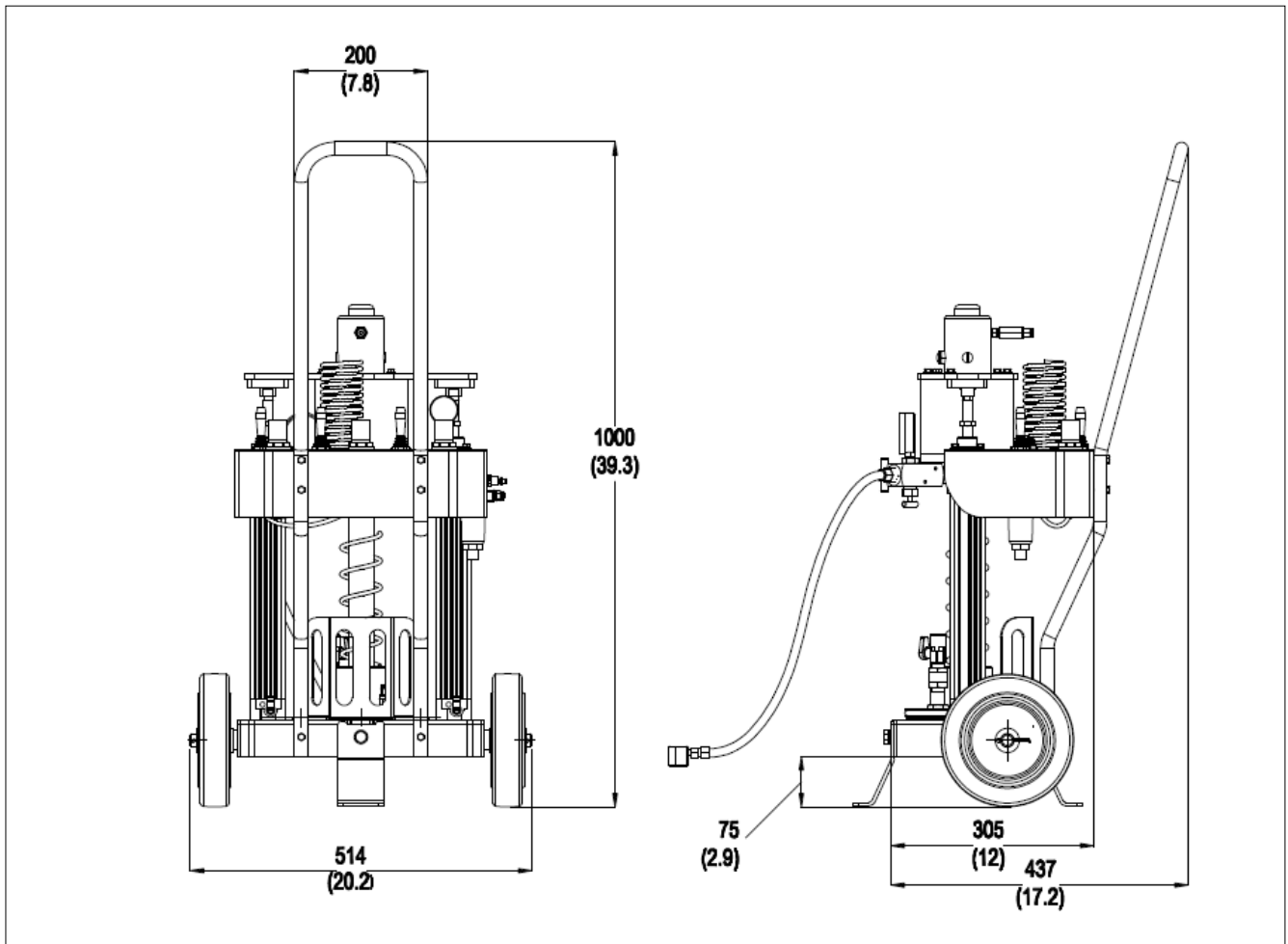
DESCRIPTION	PART NUMBER
5kg Trolley pump	0400605
25kg Trolley pump	0400606

10.2. SPARE PARTS

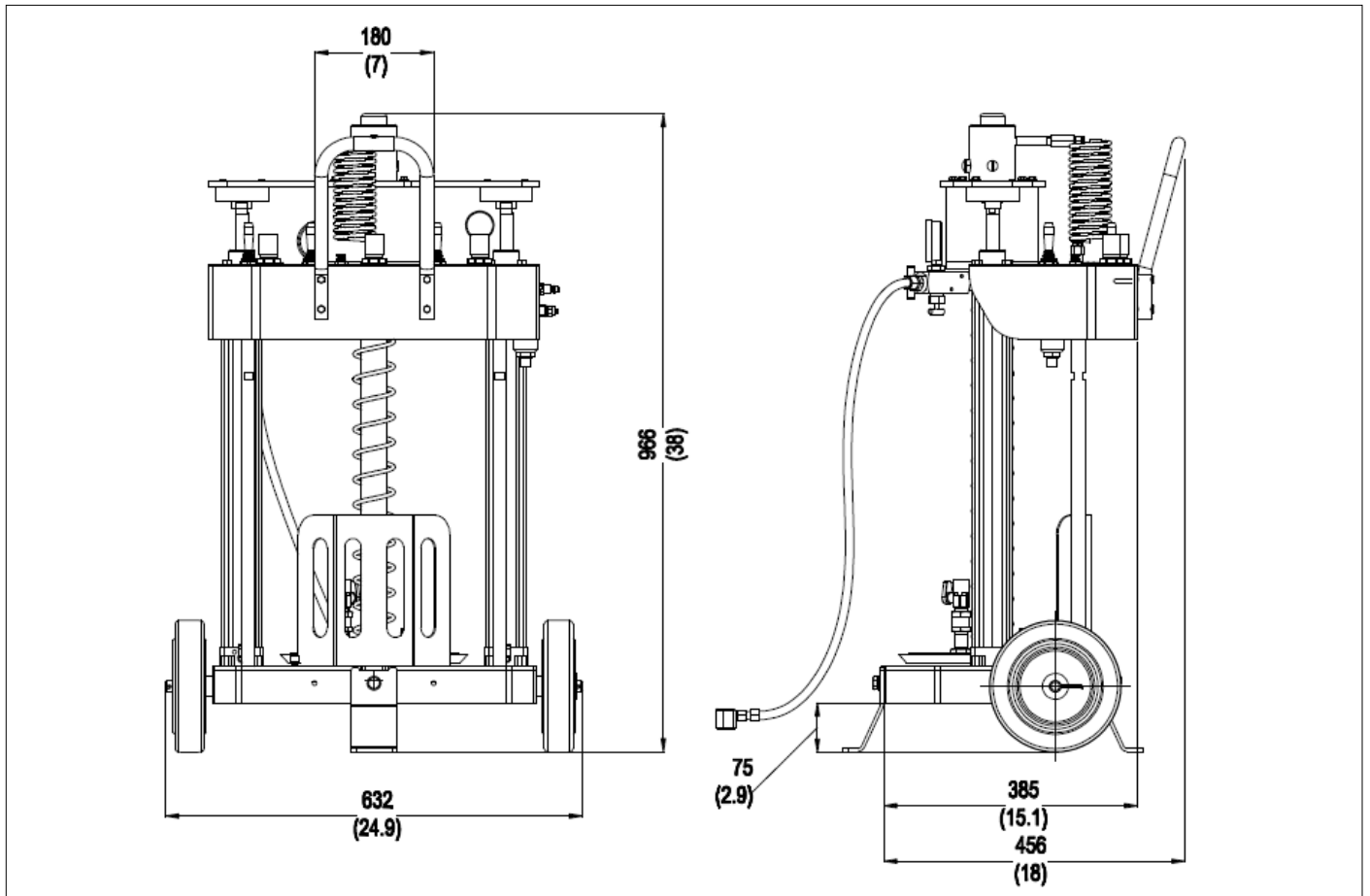
DESCRIPTION	PART NUMBER	
100:1 pneumatic pump	5kg version	0234714
	25kg version	0234712
Lift cylinder	5kg version	3113178
	25kg version	3113176
Follower plate	5kg version	1141638
	25kg version	0234712
0-1000 bar Pressure gauge		3292078
0-10 bar Pressure gauge		3292170
Manifold valve		3096204
High pressure line 800 bar		0107056
Wheel	5kg version	1140171
	25kg version	1140170

11. DIMENSIONS

11.1 - 5 kg pneumatic pump trolley mounted



11.2 - 25 pneumatic pump trolley mounted



12. HANDLING AND TRANSPORT

Before shipping, the units are carefully packed inside cardboard boxes. When transporting and storing the equipment, pay attention to the direction indicated on the boxes themselves.

Upon receipt, check that the package has not been damaged and store the equipment in a dry location.

Manual handling must be carried out by at least two people.



Lift the equipment bearing in mind the direction indicated on the box.

During storage, the machine components can withstand temperatures from

-20 to +65°C. However, in order to prevent damage, start-up must take place when the machine has reached a temperature of +5 °C (23°F).

13. OPERATING HAZARDS

It is necessary to carefully read about the instructions and the risks involved in the use of sealant injection equipment.

The operator must understand its operation and clearly understand the hazards connected to pumping pressurised sealant.

Therefore we recommend the following:

- Check the chemical compatibility of the material with which the pump is built with the sealant to be pumped (See chap. 4). An incorrect selection could cause, in addition to damaging the pumps and pipes, serious risks for people (spillage of irritating products that are harmful to health) and for the environment.
- Never exceed the maximum operating pressure permitted for the pump and the components connected to it. In the case of doubt, refer to the data specified on the pump label.
- Only use original spare parts.
- If components must be replaced with others, make sure they are suitable for operating at the pump's maximum operating pressure.



WARNING!

Never try to stop or deviate any leaks with your hands or other body parts.

Note: Personnel must use protective devices, garments and tools in compliance with current standards with regard to the location and the use of the pump both during work as well as during maintenance operations.



ATTENTION: The warnings about the risks involved in using a pump for lubricants must be read. The user must understand its operation using the user and maintenance manual.

Flammability

The lubricant generally used in lubrication systems is not normally flammable. However, it is advised to avoid contact with extremely hot substances or naked flames.

Pressure

Before each operation, make sure there is no residual pressure in every branch of the lubrication circuit that could cause oil to spray when disassembling fittings or components.

After long periods of inactivity, check the seal of all the parts subject to pressure.

Do not subject the fittings, pipes and pressurised parts to violent impacts.

Damaged flexible pipes or fittings are DANGEROUS and must be replaced.

Only original spare parts should be used.

Noise

Under normal operating conditions, noise emission does not exceed 70 dB "A" at a distance of 1 metre (39.3 inches) from the pump.



NOTE:

The pump has been designed to operate with Sealant.

Always use sealants compatible with NBR (Buna) Rubber seals.

Any residual sealants found on new units is residual sealant during the testing and assembly of the pump.

A comparison table is provided between the classification of NLGI lubricants (National Lubricating Grease Institute) and the ASTM classification (American Society for Testing and Materials) for greases for the values that concern the pump.

For further information about the technical specifications and the safety measures to adopt, refer to the product safety sheet (Directive 93/112/EEC) relative to the type of lubricant selected and supplied by the manufacturer.

Greases	
NLGI	ASTM
000	445 – 475
00	400 – 430
0	355 – 385
1	310 – 340
2	265 – 295
3	220 - 250

14. CLEANING

It is necessary to remove periodically dust from pump avoiding the spread in the air. For this operation refers to Safety Officer.

15. TRAINING

Personnel assigned to installation, electrical connections and ordinary and special maintenance of the pump, must have at least 8 hours of specific training by an appropriate organism on equipment for explosive atmospheres caused by the inflammable gases and combustible dusts.