

Pump with hoist

400320 and 400332

Pneumatic-driven Pump

User and Maintenance Manual

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www.dropsa.com/contact or contact us sales@dropsa.com

1. INTRODUCTION

This manual refers to **Pump with Hoist 400320 and 400332 – Pneumatic-driven Pump**.

You can find newer revisions of this document from our Sales Offices, or from our website <http://www.dropsa.com>.

This user and maintenance manual contains important information on health and safety issues for the personnel.

It is recommended to attentively read this manual and carefully keep it in good condition so that it is always available to personnel requiring to consult it.

2. GENERAL DESCRIPTION

Pump with Hoist 400320 and 400332 consist of a *pneumatic-driven pump*, a *hoist* and a *follower plate*. **Pump with Hoist 400332** is also completed with an *electro-pneumatic inverter*.

These equipments are required in all working conditions where grease needs to be pressed under pressure.

With an air-pressure of 4 bar (58.8 psi), the piston presses grease with a total load of 75 kg ca. (165.3 lb ca.).

3. PRODUCT – MACHINE IDENTIFICATION

Machine identification label is located on the side of control panel and contains product serial number and details of the operating parameters.

4. TECHNICAL CHARACTERISTICS

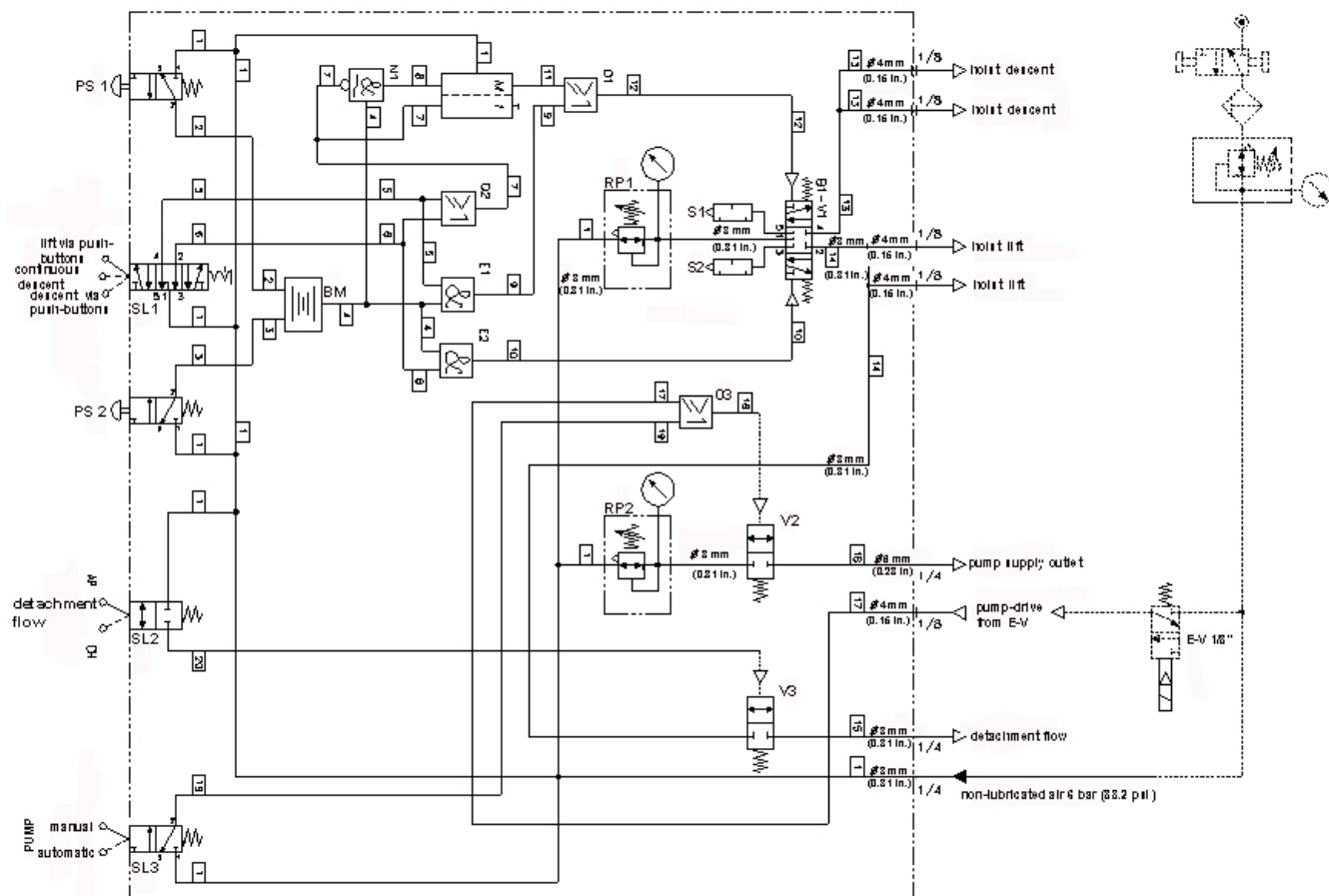
4.1 Pump technical characteristics

Use of air filtered at a pressure of 8 bar (117.6 psi) MAX
Pneumatic-driven pump ratio 50:1
Flowrate at pneumatic pressure of 5 bar (73.5 psi) , 360 rev/min ca. (free flow)
Lubricant: grease
Grade of thickness: MAX NLGI 2



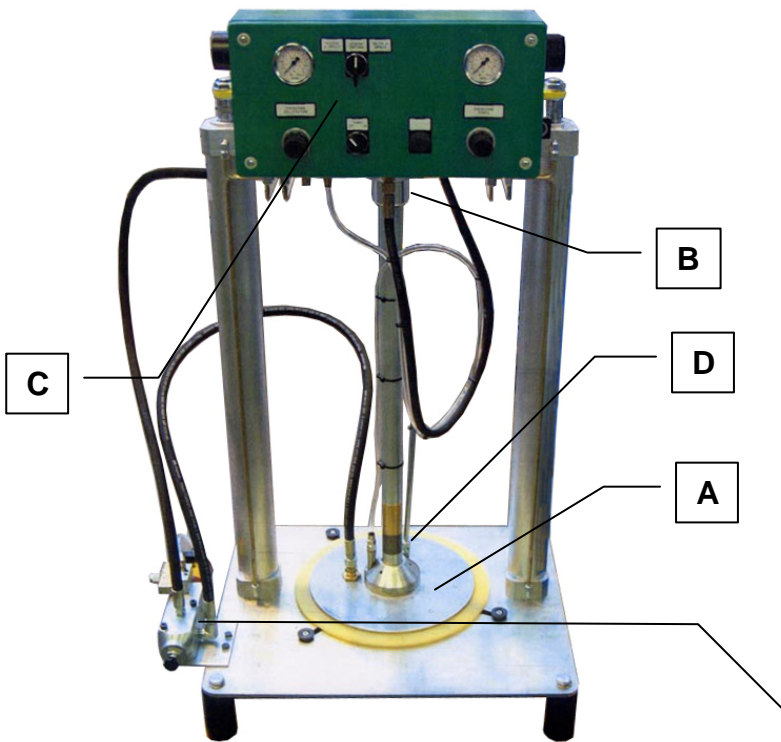
WARNING: Operate the machine only with the voltage indicated on the product label.

4.2 Control panel pneumatic diagram



POSITION	Q.ty	DESCRIPTION	CODE	COMPANY
M1	1	MEMORY	PLMA12	PARKER
N1	1	NOT ELEMENT	PLNC10	PARKER
E1-E2	2	AND ELEMENT	PLLA11	PARKER
N1	1	LOGIC BASE	PZUA12	PARKER
O1-O2-O3	3	OR ELEMENT	PLKA11	PARKER
O1/O2/O3 E1/E2	5	BRACKET	PZML199	PARKER
V1	1	VALVE	130 122 6001	AIR COMP
S1/S2	2	SILENCER 1/8"	0670.00.10	LEGRIS
RP1/RP2	2	PRESSURE REGULATOR 1/4"	R07-200-RNEG	NORGREN
SL2/SL3	2	SELECTOR BODY	PXBB1011	PARKER
SL1	1	SELECTOR HEAD 3 STEADY POSITION	ZB2BJ3	PARKER
SL1	1	BASE FOR FIXING PUSH-BUTTONS	ZB2BZ009	PARKER
SL1	2	SELECTOR BODY	PXBB2911	PARKER
PS1-PS2	2	PUSH-BUTTON GUARD	-	BF
MAN1-MAN2	2	MANOMETER 0-6 bar (0-88.2 psi)	9053042	WIKA
SL2/SL3	2	DETACHMENT FLOW and AUTO/MAN/ PUMP	ZB2BD2	PARKER
V2/V3	2	VALVE 2/2 1/4"	78800813	LEGRIS
BM	1	BIMANUAL	PXP-A11	PARKER
PS1-PS2	2	PUSH-BUTTON	ZB2BC2	PARKER
PS1-PS2	2	PUSH-BUTTON BODY	PXBB1011	PARKER

5. MACHINE COMPONENTS



The pneumatic-driven piston “A” inserted in drum not only makes easier pump “B” aspiration but also guarantees **total pumping down of a drum**.

Insert of piston in a full drum and its extraction from the empty drum are carried out by unit “A-B” through a lifting and pushing down movement, via control-drive of pneumatic cylinders, which constitute bracket vertical rods.

The unit can be hold by only one operator who operates control panel “C”.

Follower plate is completed with a discharge valve “D” for loading a new drum. This valve is manually controlled via a shaft.

Only for 400332

Electro-pneumatic inverter

It causes pressurization reversal in lines via an electro-valve controlled by an electric panel which is connected to the end of line pressure-switch.

6. UNPACKING AND INSTALLING THE MACHINE

6.1 UNPACKING

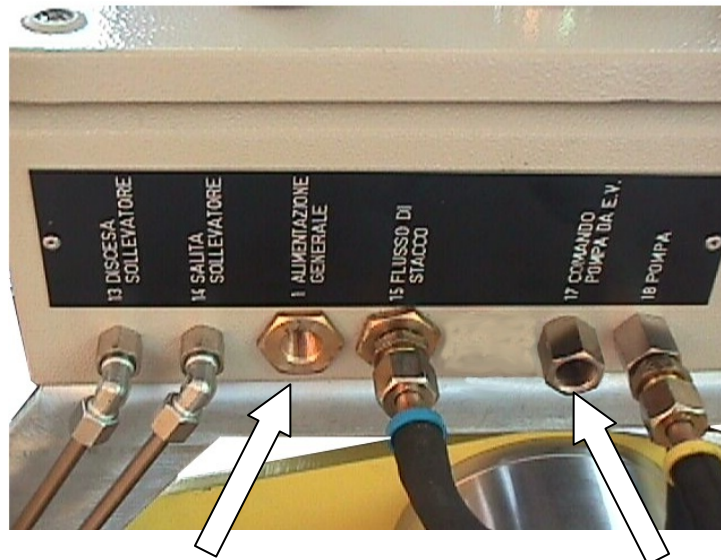
Once a suitable location has been found to install the machine, remove the unit from the packaging. Check the equipment has not been damaged during transportation or storage. No particular disposal procedures are necessary, however packing should be disposed of in accordance with regulations that may be in force in your area or state.

6.2 INSTALLING THE EQUIPMENT

- Allow sufficient space for the installation, leaving minimum 100 mm (3.93 in.) around the machine.
- Do not install machine in aggressive or explosive/inflammable environments or on vibrating surfaces.
- Insert the follower plate carefully.
- To prevent shearing hazards, it is forbidden to stick your hands into the drum.
- Read carefully the instructions about inserting the drum and carry out the installing procedure according to this manual.

6.3 PNEUMATIC CONNECTIONS

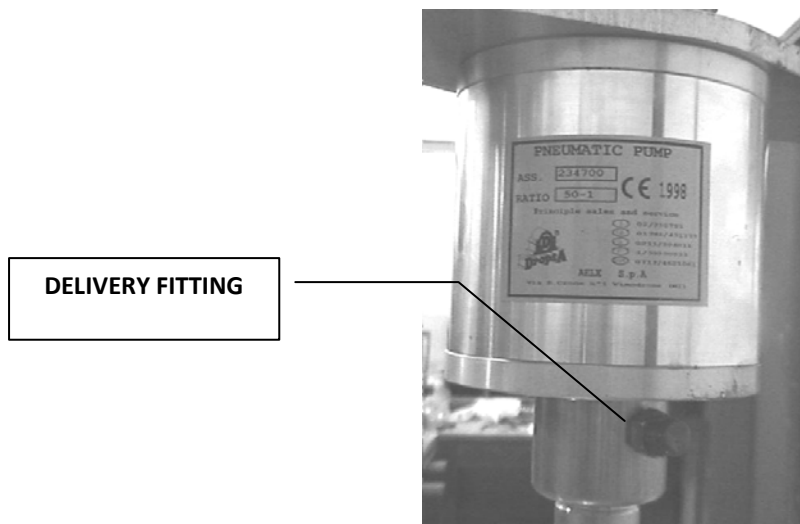
Pneumatic connections (1/4”) are located on the inferior side of the box.



ELECTROVALVE 2/2" – 1/4"
CONTROL FOR PUMP AUTOMATIC
OPERATION

CONTINUOUS SUPPLY
FILTERED AIR Pmax=10bar (147 psi)
Qmin=1400 NI/min

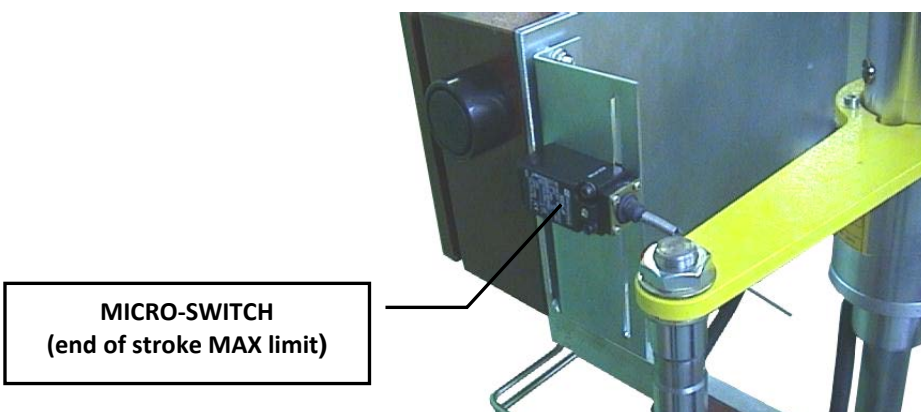
Delivery fitting must be connected to pump with flexible piping suitable for the system in pressure and in delivery.



DELIVERY FITTING

WARNING: When a unit interlocks precision delivery valves on assembly lines, pump feeding must be stopped by an electro-valve, as shown in pneumatic diagram.

When minimum level has been reached, PLC stops the pump, by means of the signal transmitted by a level micro-switch, thus preventing presence of air in the dosing system via air discharge. Hoist continuous pneumatic feeding allows an easy replacement of drum.



MICRO-SWITCH
(end of stroke MAX limit)

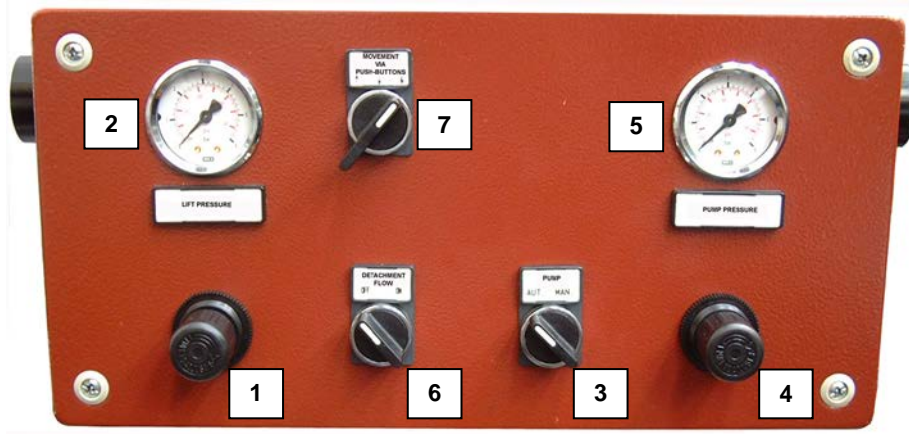
7. MACHINE OPERATIONS


Here follows the operations being carried out to correctly operate these pump hoists.



WARNING: The use of these machines must be entrusted by qualified personnel.

7.1 Control panel



POS.	DESCRIPTION	FUNCTION
1	Lift regulator	To regulate hoist lift
2	Manometer 6 bar (88.2 psi)	To control lift pressure
3	Selector	To select pump operation Automatic Manual
4	Pressure regulator	To adjust pump pressure
5	Manometer 6 bar (88.2 psi)	To control pump pressure
6	Selector	To actuate detachment flow
7	3-position selector	

7.2 Instruction for use

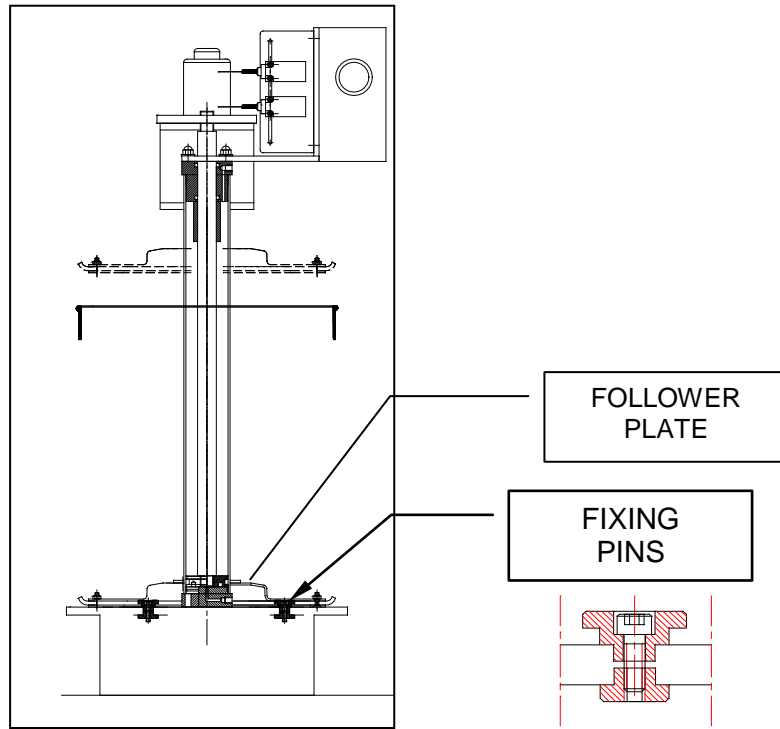
1. Connect the hoist pneumatically.
2. Act on *lift regulator* "1" and check air pressure on manometer "2" - initial pressure: 2.5 bar (36.75 psi) -.

3. Rotate selector "7" in position "A"



POS. "A"

4. Lift the **follower plate** via **bimanual push-button panel**.

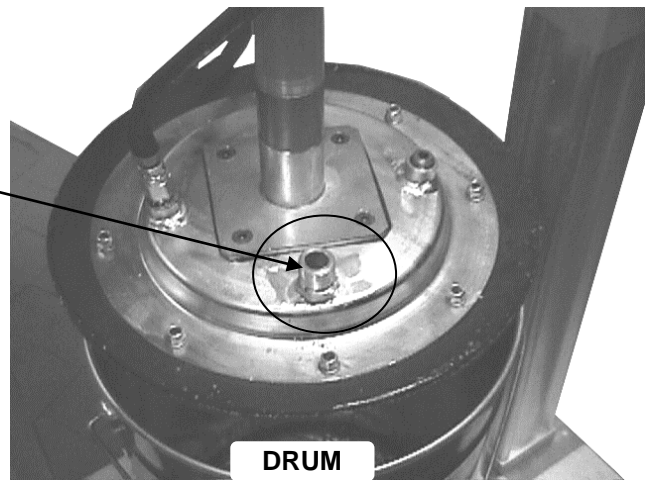


- Place the drum and fix it carefully using the provided pins. When using different-shaped drums, it is customer's care to act on pins to properly fix the barrel.



WARNING: It is recommended to check drum for crushes, which could prevent the follower plate from descending into the barrel.

- Before placing a new drum, remove the discharge valve.



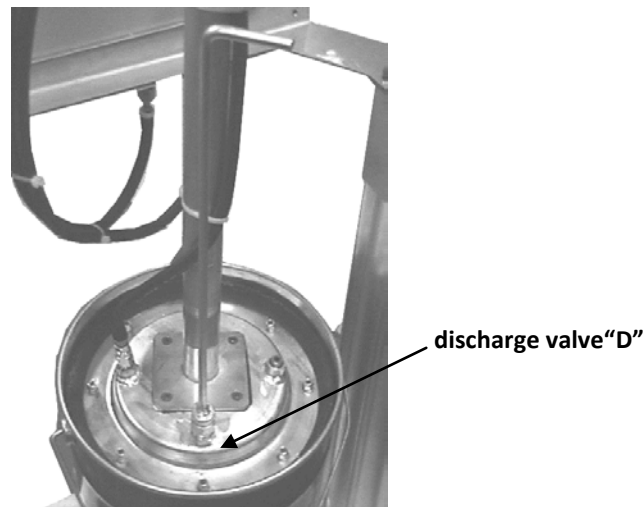
WARNING: when using a pump hoist for the first time, it is recommended to lubricate follower plate gaskets.

- Rotate selector "7" in position "C"



POS. "C"

- Operate bimanual buttons to push follower plate into the drum. The movement is impulsive. Push bimanual buttons until air is completely discharged from the system. Then, close valve "D" by screwing it in its housing.



- Rotate selector "7" in position "B"



POS. "B"

- Operate the bimanual to start follower plate operation in continuous.



NOTICE: Check that hoist pressure is suitable for grease grade of thickness:

- ⇒ With soft greases (NLGI=0), in order to prevent leakage from follower plate gaskets, 2 bar (29.4 psi) pressure is needed.
- ⇒ With thick greases (NLGI=2), to facilitate pump priming, 3 ÷ 3.5 bar (44.1÷51.45 psi) pressure is needed.

- Rotate selector "3" on **MAN. (MANUAL)**.
- Operate on regulator "4" to supply pressure to operate the pump. Regulate pressure verifying the value on manometer "5" up to the desired pressure ($P \cong 2$ bar (29.4 psi)).



WARNING: Do not exceed the maximum operating pneumatic pressure of 3.5 bar (51.45 psi)

- Rotate selector "3" on **AUT. (AUTOMATIC)**.

7.3 DRUM CHANGING

When the minimum level is reached, in order to stop system air inflow, electro-valve stops pump operating. Anyway, the hoist unit is still supplied.

Operate selector "6" to activate **detachment flow** by introducing air in drum, in order to facilitate follower plate extraction. Then, refer to points 4, 5, 6 in paragraph 7.2.

8. TROUBLESHOOTING

For any anomaly encountered, please contact the **Dropsa S.p.A. Eng. Dept.**

9. MAINTENANCE PROCEDURE

Machines does not require any special tool for checking or maintenance tasks. However, it is recommended the use only of appropriate and in good conditions tooling, protective devices (gloves) and clothing to avoid injury to persons or damage to machine parts.

To facilitate maintenance, it is suggested to install the unit in an easily accessible location (see paragraph 6.2).

- Periodically check piping joints to detect possible leaks.
- Keep machine unit clear to readily detect possible leakage.



WARNING!

Prior to any maintenance and cleaning task, close the air compressed supply and discharge pressure from the unit and the connected piping.

10. DISPOSAL

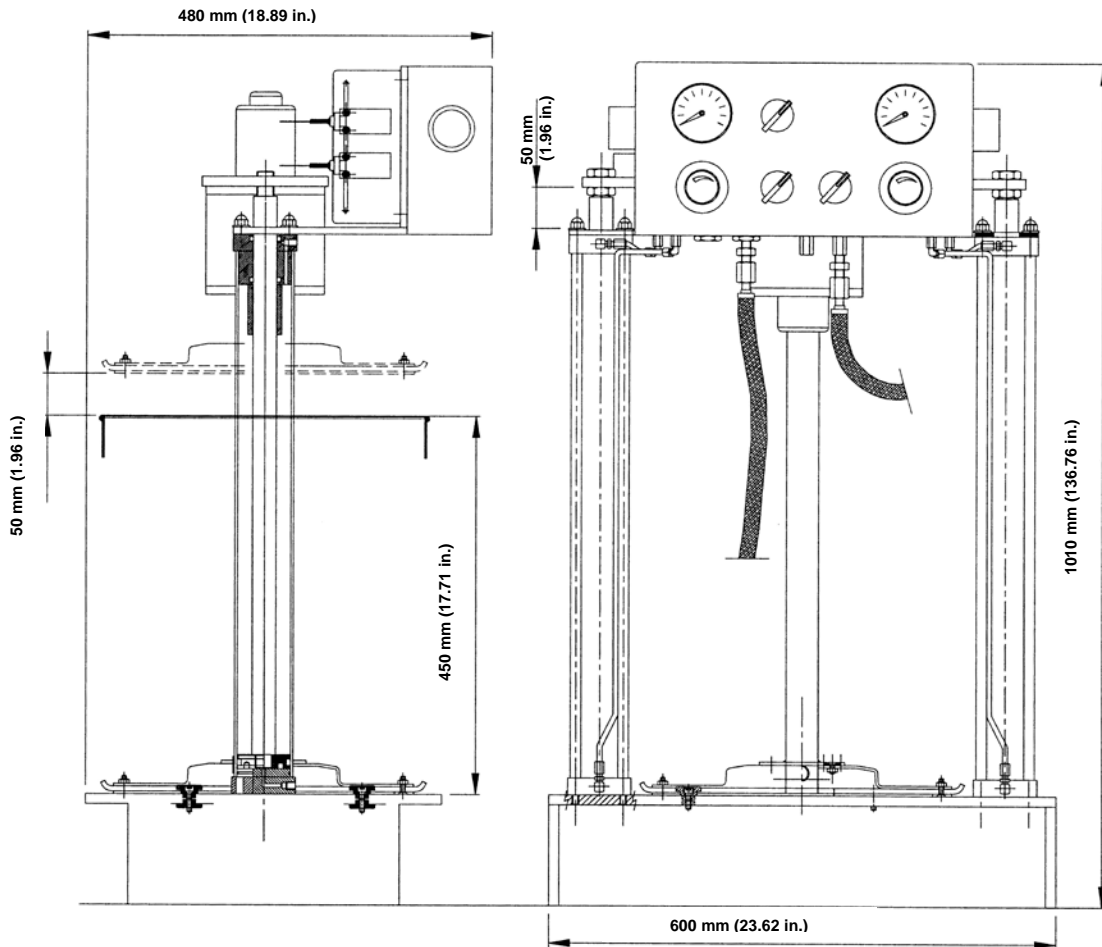
During maintenance or disposal of the machine care should be taken to properly dispose of environmentally sensitive items such as oils or other lubricants. Refer to local regulations in force in your area.

When disposing of this unit, it is important to ensure that the identification label and all the other relative documents are also destroyed.

11. ORDERING INFORMATION

Serial n°	Description
400320	Pump Hoist - Pneumatic-driven Pump for 20 kg (44.09 lb) drums
400332	Pump Hoist - Pneumatic-driven Pump for 50 kg (110.23 lb) drums

12. DIMENSIONS



13. HANDLING AND TRANSPORTATION

Prior to shipping, machine is carefully packed in a cardboard packing. During transportation and storage, pay attention to the side on the cardboard packing. On receipt, check that the packing is not damaged. Then, storage the equipment in a dry location. Lift the equipment observing the right way up shown on the cardboard packing.

14. OPERATING HAZARDS

It is necessary to read and understand the possible hazards and risks involved when using lubrication equipments. The operator must fully understand the hazards explained in this manual.

We recommend:

- To verify chemical compatibility between the material of unit and the lubricant you want to use (see ch.4). A wrong choice could cause damages to the equipment, as well as hazards to the environment and persons (leakage of products irritating and injurious to health).
- Not to exceed pressure maximum level. If any doubt, refer to machine identification yellow label.
- Use of original spare parts. For ordering information, please contact **Dropsa S.p.A. Eng. Dept.**
- When replacing components, be sure to use parts compatible with machine maximum working pressure.



WARNINGS!

- Do not attempt to stop or divert possible leakages with your hands or with other parts of your body.
- Personnel must use personal protection equipment, clothing and devices adequate for the location and the use of the equipment, both during operation and maintenance procedures.

Inflammability

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

Pressure

Prior to any intervention, it is recommended to discharge air from the system.
After long periods of inactivity check the tightness of all parts subjected to pressure.
Do not subject connections, piping or parts in pressure to violent impacts.
Damaged piping or connections are DANGEROUS and must be immediately replaced.

Noise

During normal operating conditions machine does not produce excessive noise less than 70 dB(A).

15. PRECAUTIONS

Verification of compliance with essential safety requirements and Machine Directive dispositions has been carried out filling in checking lists provided and contained in the *technical file*.

Dropsa used the following checking lists:

- List of hazards (according to the EN 1050 as it refers to EN 292);
- Enforcement of the essential safety requests (Machine Directive);

The following is a list of dangers which have not been fully eliminated but which are considered acceptable:

- Operator's contact with lubricant:
 - in case of breaking/opening of piping/connections;
 - when replacing the drum;
 - during maintenance procedures.

The operator must be provided with suitable personal protective clothing (tit. VIII – 626). Protection against direct and indirect contact must be provided by the user. Lubricant characteristics are shown on the machine and in this manual (**in case of doubt contact Dropsa S.p.A. Eng. Dept.**).

- Unnatural posture.
Follow the indications in paragraph 6.2.
- Use of incompatible lubricant. Main incompatible fluids:

INCOMPATIBLE FLUIDS	
Fluid	Danger
Lubricants containing abrasive components	Premature wear of pump
Lubricants containing silicon	Pump failure
Petrol – solvents – inflammable liquids	Fire – explosion – seal damage
Corrosive products	Pump damage - danger to persons
Water	Pump oxidization
Food Products	Contamination of the product