

LOCOPUMP


Pneumatic Grease Pump

User and Maintenance Manual

Warranty information

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Manufacturer	DropsA SpA
Product	LOCOPUMP Pneumatic Control Pump
Year	2002
Certification	

1. INTRODUCTION

This manual refers to the *LOCOPUMP*, a pneumatic pump solution for progressive lubrication systems. You can find additional copies and newer revisions of this document from our website <http://www.dropsa.com>. Alternatively contact one of our sales offices.

Please read this manual carefully, as it contains important information on health and safety issues. A copy of this manual should remain with the user of the product.

2. GENERAL DESCRIPTION

The Locopump pneumatic control pump uses compressed air to adjust the lubricant delivery during its operations. Therefore, The Locopump is ideally suited for lubrication equipments installed on machines provided with compressed air systems.

The pump electric control valve will be 3 ways type (line-cylinder-drain).

Pumping lubricant: mineral grease with no abrasive materials.

Air control pressure: min. 3 bar (44.1 psi) – max. 6 bar (88.2 psi).

Reservoir filling: grease gun with valve UNI 7663 – shape “A” – 1/8” NPT.

Lubricant outlet: G 1/4” bsp.

Compressed air inlet: G 1/8” bsp compression cone seating 6 mm. (0.2 in.) tube.

Cartridge shaped filter positioned at the grease gun inlet.

Electromagnetic level control-switch.

Accessories: see table below, page 3.

3. PRODUCT – MACHINE IDENTIFICATION

The pump identification label is located on the front side of the pump reservoir and contains details of the operating parameters of the pump including input voltage.

4. TECHNICAL CHARACTERISTICS

TECHNICAL CHARACTERISTICS	
Fixed delivery (standard)	2 cm ³ (0.12 cu.in.) per stroke
Pump delivery (with regulation kit 3132585)	0,8 ÷ 2 cm ³ (0.05 ÷ 0.12 cu.in.) per stroke
Air pressure	3 ÷ 6 bar (44.1 ÷ 88.2 Psi)
Compression ratio	50 : 1
Grease grade at working temperature	NLGI 000 ÷ 2
Working temperature	+ 5 ÷ + 80 °C (41 ÷ 176 °F)
Permissible working humidity	90 % max.
Minimum level contact	Max. commutable 100V DC
	Max. commutable current 0.25 A
	Max. commutable power 8W (NO) – 3W (NC)
Storage temperature	- 20 ÷ + 50 °C (-4 ÷ 122 °F)
Noise	< 70 dB(A)

CAUTION: Operate the pump only with the voltage indicated on the product label and within the specific operating parameters.

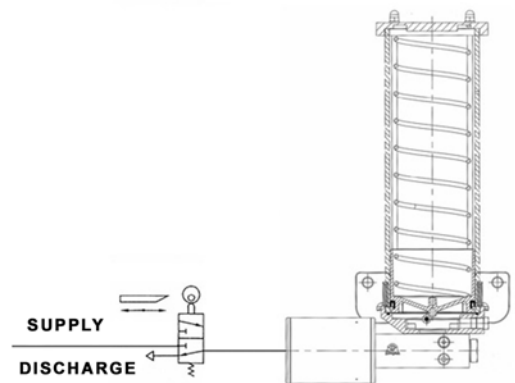
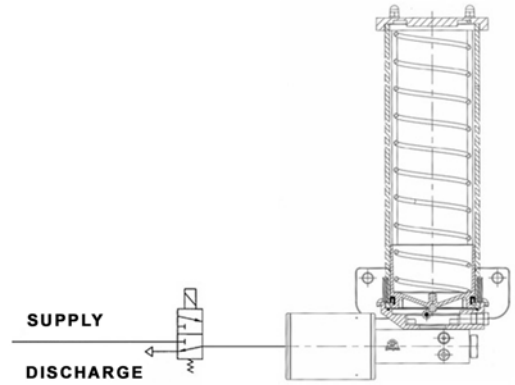
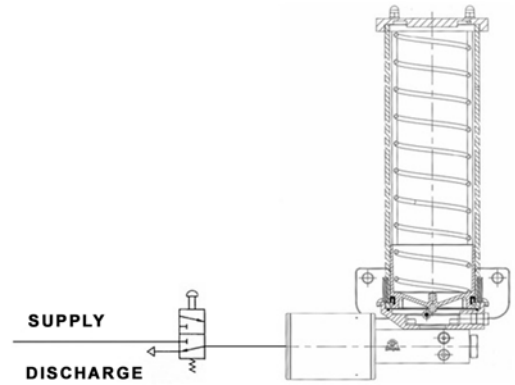
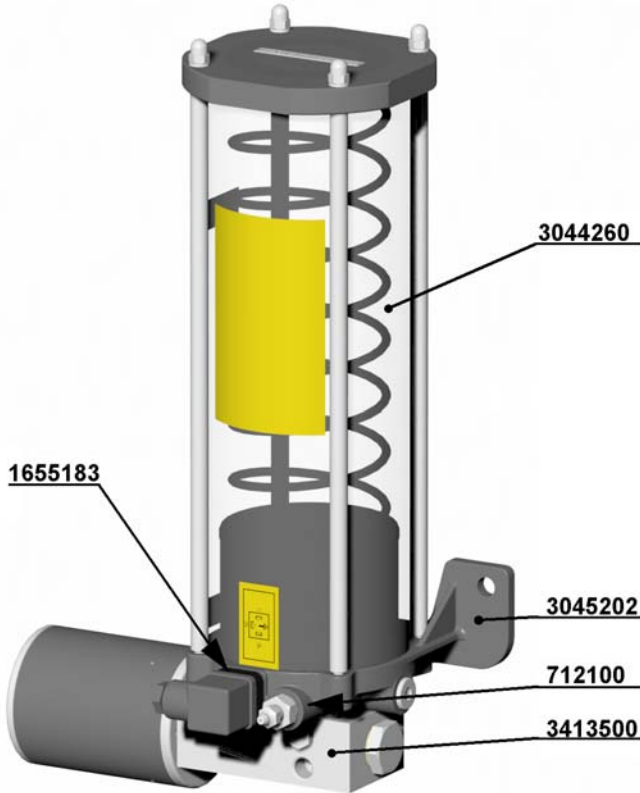
5. PUMP COMPONENTS

All the main pump components are fixed to the mounting bracket.

Oil Reservoir: constructed in transparent plastic and compatible with commercial lubricants.

Pump Assembly: constructed in steel and containing a non-return valve. At the working pressure of 300 bar (4410 Psi), the pump can deliver up to 2 cm³ (0.12 cu.in.) per stroke.

Electric Level Control-Switch: Provides remote low level sensing. The switch can be set to either operate normally open (N.O.) or normally close (N.C.). Standard configuration is N.C.



CODE	DESCRIPTION
3044260	Reservoir 2 Kg (4.4 lb.)
3045202	Mounting bracket
3413500	Pump body
1655183	Electric Level Control-Switch
712100	Re-filling filter

6. UNPACKING AND INSTALLING THE PUMP

WARNING: The unit can only be opened and repaired by authorized Dropsa personnel.

6.1 UNPACKING.

Once a suitable location has been found to install the unit remove the pump from the packaging. Check the pump has not been damaged during transportation or storage. No particular disposal procedures are necessary as packaging materials are no dangerous for health or environment. However, packaging should be disposed of in accordance with regulations that may be in force in your area or state.

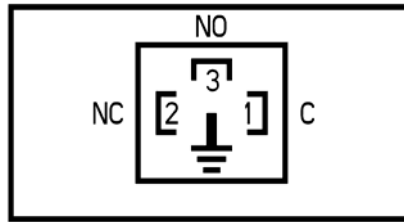
6.2 INSTALLING THE PUMP

Allow sufficient space of at least 100 mm around the pump for ease of maintenance. Install at a suitable level for refilling the oil reservoir. Do not install the pump neither in aggressive environments such as close to explosive materials, nor on vibrating shelves. Fix the pump using the two fixing holes and 10 mm screws, and apply flat washers under the screws. In order to fix the pump correctly, verify the inter axes dimensions (see the pictures in chapter 12).

6.3 ELECTRICAL WIRING.

Before carrying out any wiring, ensure that the correct power supply is available (see the picture below). Refer to the identification label on the Pump. In order to avoid dangers of electric shock it is important to remove all power before installation or maintenance.

Electrical connections must be carried out in accordance with prevailing standards and must guarantee adequate power and protection to the pump unit.



6.4 HYDRAULIC CONNECTIONS

Hydraulic connectors are placed on the front face of the pump body. The pump outlets are threaded as standard with 1/4" BSP threads.

6.5 SUPPLY CONNECTION

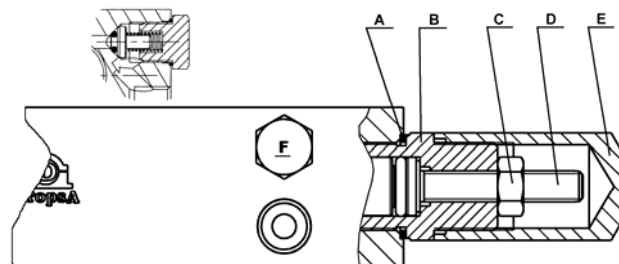
Use a fitting of 1/8" BSP to connect the pump. Dropsa double cone fitting can be used. Use an intercepting valve that allows supply interruption.

6.6 SETTING THE PUMP

Pressure setting: Compression ratio should be of 50:1. Adjust the delivery pressure according to the system operating parameters.

Delivery setting: The pump has a fixed delivery. For particular needs, the pump delivery adjustment kit 3132585 can be provided under specific request. The kit is showed in the picture below.

Install the kit using the gasket (A) provided with it, remove the tap (E) and screw the fitting (B) with a key 27. Loose the screw nut (C) with a key 13 so as to free the screw (D). Use the appropriate screwdriver cut either to tighten (decreasing the pump delivery) or loose (increasing the pump delivery). Once completed the adjustment, block the screw nut (C) and replace the cap (E).



N.B.: After completing the installation, ensure that all cables and tubing is protected against possible damage from moving parts within the installation environment.

7. PUMP OPERATION

7.1 COMMISSIONING THE PUMP

- The unit can only be opened and repaired by authorized Dropsa personnel.
- Do not use the pump submerged in fluids, in aggressive environments such as close to extremely hot substances, flammable or explosive material whether the supplier has not specifically prepared the pump for it.
- Always wear safety glasses and gloves when working with pneumatic and hydraulic systems.
- Do not use abrasive lubricants with gaskets NBR. In the event of doubts, contact the Dropsa technical centre that will provide all details on indicated lubricants.
- Do not ignore hazards for health and observe hygienic rules.
- Always use tubing suited for the specific working pressure.

Before using the pump, it is necessary to perform some preliminary checks:

- Check the integrity of the pump; ensure there is no physical damage.
- Fill the Oil reservoir with suitable lubricant (see instructions min/max on the reservoir).
- Check the pump working temperature and ensure there is no trapped air within tubing.
- Check electrical connections have been carried out correctly (CEI 64/8, IEC 364).
- Check level control panel connections and their operating status.

7.2 USING THE PUMP

- Check set data on the panel.
- Push the start button of the machine to which the pump is connected.
- Check pump commissioning.
- Ensure the machine is properly lubricated (in the event of doubts, contact the Dropsa technical centre to request the testing procedure).

8. TROUBLESHOOTING

The following table highlights some of the most common problems encountered when using the Locopump and how to resolve them.

In the event of doubts or problems not listen, do not dismantle the pump but contact a DropsA technical centre for assistance.

DIAGNOSTIC TABLE		
PROBLEM	PROBABLE CAUSE	SOLUTION
<p>The pump starts but does not deliver lubricant or delivers different quantities from the required discharge.</p>	<ul style="list-style-type: none"> ○ The reservoir has insufficient oil. ○ The control valve does not discharge. ○ Fittings may have become loose. 	<ul style="list-style-type: none"> ○ Fill the oil reservoir. Do not exceed the max. level. ○ Check the pump control valve 3 ways is normally discharging compressed air.
<p>The pump does not deliver lubricant at the set pressure or does not keep the working pressure.</p>	<ul style="list-style-type: none"> ○ Incorrect adjustment of the control inlet air pressure. ○ The check valve may be damaged or clogged. 	<ul style="list-style-type: none"> ○ Tighten any loose fittings on the pump or the lubrication system. ○ Adjust properly the air pressure within the established range of pressures considering the compression ratio. ○ Clean or change the valve (chapter 6.6 point F) which is comprised in the kit 3132671

9. MAINTENANCE PROCEDURE

To facilitate maintenance it is suggested that the pump be installed in an easily accessible location. Provide users with the necessary personal protective clothing to avoid any contact with lubricant. Once accurately set by Dropsa, the pump does not require any maintenance. It is recommended the use of pure lubricants and a periodical accurate cleaning of pump components. Dismantling has to be carried out as following:

1. There is a grease pushing spring. Before dismantling the reservoir, it has to be emptied of its content.
2. Discharge the supply pressure.
3. Disconnect fitting from the pump.
4. Unscrew fixing screws and then dismantle the reservoir keeping a lot of attention to the grease pushing spring (the spring could be charged. If so, remove the residual lubricant).
5. Remove the pump and the filters.
6. Unscrew the pump pneumatic cylinder keeping a lot of attention to the charge of the spring. After this, it is possible to slip off pumping group components.

In this way it is possible to free every pump component, remove and clean them. Before mounting, each component has to be washed in oil and lubricate.

The following routine operations should be performed:

Operation	Interval (in hours)
Check correct lubrication function of the pump	100
Lubricant level	200
Clean the suction and re-filling filters	400
Clean the bottom of the oil reservoir from any dirt or particle deposits	600

The unit does not require any special tooling to operate or maintain it. It is recommended that suitable protective clothing (including gloves and safety glasses) are worn when maintaining the unit in order to avoid hazards to equipment or persons.

Be sure that all electrical and pressurized hydraulic components are disconnected prior to any maintenance.

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 is also destroyed.

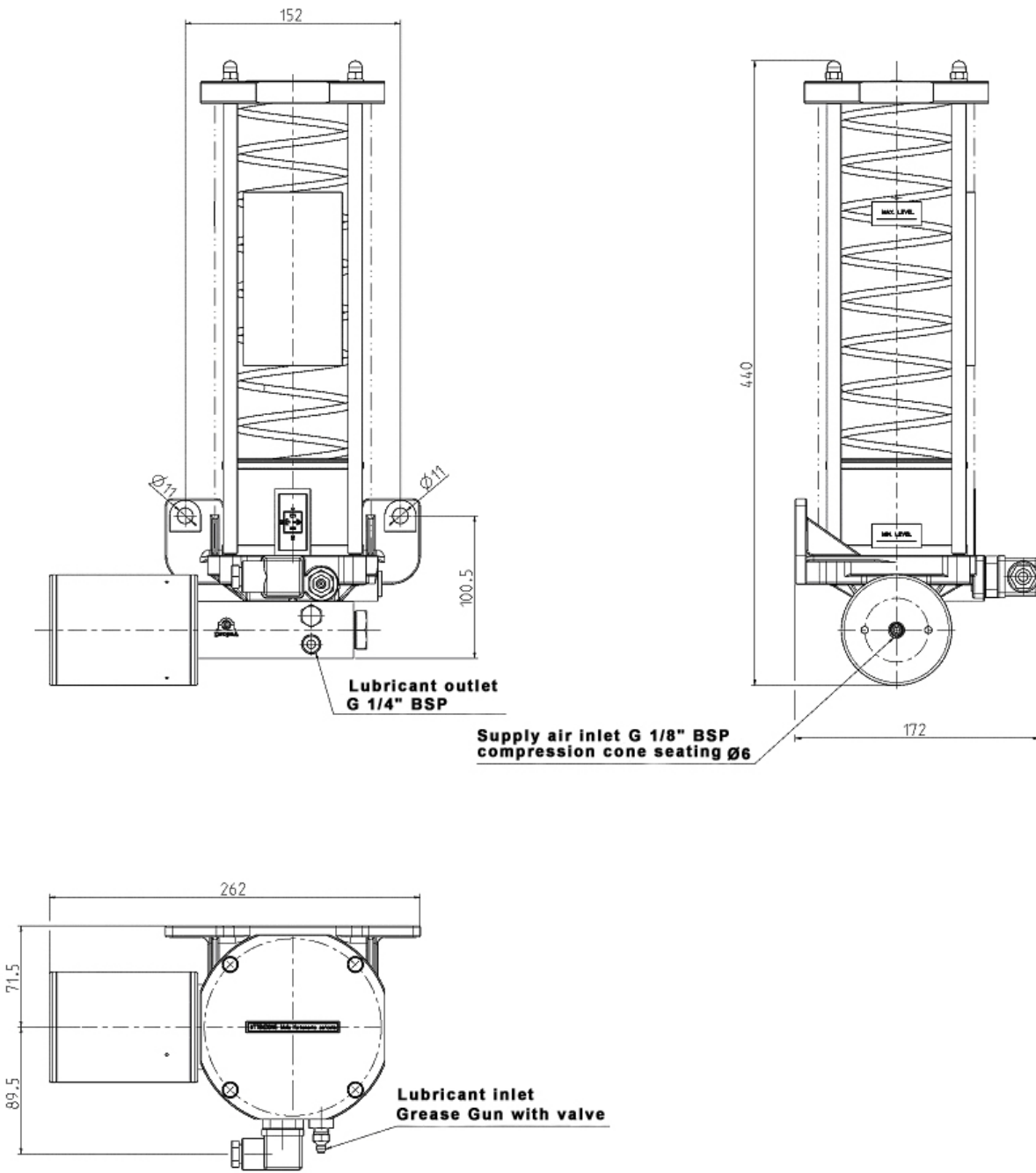
11. ORDERING INFORMATION

Ordering instructions

Code	Technical Characteristics
3413050	Pneumatic pump R=50:1 Reservoir 2 Kg (4.4 lb.)
3132671	Gasket replace kit
3132585	Pump delivery adjustment kit

12. DIMENSIONS

To facilitate maintenance allow 100 mm of access on all sides.



13. HANDLING AND TRANSPORTATION

Pumps are accurately packed and dispatched in cardboard containers. During transportation and storage always maintain the pump the right way up as indicated on the box.

On receipt check that the packaging has not been damaged and store the pump in a dry place.

14. OPERATING HAZARDS

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

Electrical Power

No maintenance must be performed on the unit without having detached and isolated the power supply and ensuring that it cannot be reconnected for the duration of the maintenance task. Always remember to ensure that equipment is properly earthed.

Flammable substances.

Mineral oils generally used in lubrication systems are not normally flammable. However, it is desirable to avoid contact with extremely hot substances or naked flames. Ensure that the machine that the lubrication system is installed onto contains the necessary fire extinguishing devices.

Pneumatic & Hydraulic Pressure

Before any maintenance or connection task, ensure that all pressure has been properly bled from the system. Residual pneumatic or hydraulic pressure can cause the release of undesired spurts of liquid, which may hit the operator. Always wear safety glasses and glove when working with pneumatic and hydraulic systems.

Noise and Vibration

The Locopump pump does not produce excessive vibration or 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 two kind of checking lists:

- The list of hazards (according to the EN 1050 as it refers to EN 292).
- Enforcement of the essential safety requests (machine Directive – annex 1, part 1).

Residual but acceptable hazards are described below:

- During maintenance operations, spurts of lubricant at low pressure could occur. (Said operations have to be carried out using the proper health and safety regulations).
- Contact with lubricant. See dispositions for proper health and safety regulations.
- Pre-loaded springs positioned inside the control cylinder and reservoir.
- Use of incompatible/non-permissible fluids. Compatible lubricant characteristics has been shown in this manual and can be found on the label stick onto the machine. In the event of doubts, contact the Dropsa technical centre.
- Electrical and hydraulic protection should be provided by users.
- Monitor electric contacts to ensure the pump is working during machine operations. In case of short-circuits the machine can be reset and restart by user whilst the lubrication pump restarts automatically.
- Do not use alcohol for machine cleaning.

Examples of incompatible/non-permissible Fluids.

Fluid	Danger
Lubricants containing abrasive components.	Premature wear of pump
Lubricants containing silicon.	Pump failure
Petrol, Solvents, flammable liquids	Fire, explosion, seal damage.
Corrosive products	Pump damage, danger to persons.
Water	Pump oxidization
Food Products	Contamination of product

16. WARRANTY INFORMATION

All products manufactured and marketed by Dropsa are warranted to be free of defects in material or workmanship for a period of at least 12 months from date of delivery. Extended warranty coverage applies as follows:

Complete system installation by Dropsa: 24 Months

All other components: 12 months from date of installation; if installed 6 months or more after ship date, warranty shall be maximum of 18 months from ship date.

If a fault develops, notify us giving a complete description of the alleged malfunction. Include the part number(s), test record number where available (format xxxxxx-xxxxxx), date of delivery and installation and operating conditions of subject product(s). We will subsequently review this information and, at our option, supply you with either servicing data or shipping instruction and returned materials authorization (RMA) which will have instructions on how to prepare the product for return. Upon prepaid receipt of subject product to an authorized Dropsa Sales & Service location, we will then either repair or replace such product(s), at our option, and if determined to be a warranted defect, we will perform such necessary product repairs or replace such product(s) at our expense.

Dropsa reserves the right to charge an administration fee if the product(s) returned are found to be not defective.

This limited warranty does not cover any products, damages or injuries resulting from misuse, neglect, normal expected wear, chemically caused corrosion, improper installation or operation contrary to factory recommendation. Nor does it cover equipment that has been modified, tampered with or altered without authorization.

Consumables and perishable products are excluded from this or any other warranty.

No other extended liabilities are stated or implied and this warranty in no event covers incidental or consequential damages, injuries or costs resulting from any such defective product(s).

The use of Dropsa product(s) implies the acceptance of our warranty conditions. Modifications to our standard warranty must be in writing and approved by Dropsa.

17. DECLARATION OF COMPLIANCE WITH CE STANDARDS

Manufacturer:

DROPSA SpA

Via B. Croce, 1 - 20090 Vimodrone (MI)

Address

02 - 250.791

Telephone

Certifies that:

The Machine: LOCOPUMP PNEUMATIC PUMP 36003XX

- Has been manufacturer in conformance with the European Community Directive relating to the harmonised standards of the member states relating to machine safety, EMC (89/336/CEE) and BT (73/23/CEE) and subsequent revisions of the aforementioned standards

TECHNICAL DIRECTOR

Walter Divisi

Name

DROPSA SpA - Vimodrone (Mi) - Italy

Company


Signature

January 2002

Date

18. DROPSA LOCATIONS



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