PNEUMATICALLY OPERATED PUMP

Type 201000

User and Maintenance Manual

Warranty information

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CE

1. INTRODUCTION

This manual refers to a **Pneumatically operated pump, series 201000**. 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 pneumatic pump is designed to be utilized in mineral oil and grease lubrication systems.

3. MACHINE IDENTIFICATION

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

4. TECHNICAL CHARACTERISTICS

TECHNICAL CHARACTERISTICS	
Lubricant outlet:	Rp ¼ BSPT tube seating Ø 8 mm (0.3 in)
Compressed air inlet:	G 1/8 BSPT tube seating Ø 6 mm (0.2 in)
Lubricant:	NLGI 00 or NLGI 2 grease according to the specific pump model (see chapter 11).
Working pressure:	from 2 to 8 bar (from 29.4 to 117.6 psi)
Working temperature:	-5 °C ÷ + 70 °C (23 °F ÷ 158 °F)
Operating humidity:	90 % rel.
Lubricant level control:	Min and Max with reed type magnetic contact
	Max. Voltage 220 V DC
	Max. Current 0,8 A
	Max. Power 20 W at 26 V AC
Level of continuous sound pressure	< 75 dB(A)
Standard compression ratio:	50:1 (see chapter 11)

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

5. PUMP COMPONENTS

The pump assembly comprises:

1. A **steel body** with an hardened and lapped piston.
2. The **pneumatic command assembly** consisting of an aluminium cylinder wherein a piston operates with an oil resistant rubber seal. A 3-way pneumatic control device: line-cylinder-exhaust is required.
3. A **double spring** ensuring the returning of the piston to its start position. The impulse time shall be sufficient to pressurise the system and the pause, between one cycle and the next, shall allow complete release. The expansion of the flexible tubing used in the system will reduce the potential delivery.

6. UNPACKING AND INSTALLING

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.

No pump assembly operations are envisaged.

1. Check carefully the integrity of the reservoir as any denting could impede pressure disk travelling and lubricant leakage.
2. Connect the pump to the compressed air system ensuring the maximum working pressure is not exceeded.
3. Fill the reservoir with lubricant avoiding presence of air under the pressure disk (it could impede the clutch of the pump).

6.3 ADJUSTING THE PUMP

The only parameter which can be modified is that of pressure; to modify the value, increase or decrease the control air pressure.

7. PUMP OPERATIONS

7.1 COMMISSIONING THE PUMP

- The unit must be utilised, opened and repaired ONLY by qualified personnel.
- The pump MUST NOT be utilized in particularly aggressive or explosive/inflammable environments if not prepared for this purpose beforehand by the supplier.
- For correct fixing verify the distance between centres shown in the diagram in chapter 12.
- Use gloves and safety glasses as required in the lubrication oil safety chart.
- DO NOT use lubricants incompatible with NBR gaskets and seals; if in doubt consult our Engineering Department, who will provide a chart with the details of recommended oils.
- DO NOT ignore health and safety regulations and observe all hygienic requirements.
- WARNING! All electrical components must be grounded. This refers both to electrical components and control devices. As regard to this ensure that the ground cable is correctly connected. For reasons of safety the ground cable must be approx.

100 mm longer than the phase cables. In the event of accidental detachment of the cable, the ground terminal must be the last to be removed.

N.B. Action to be taken prior to start up

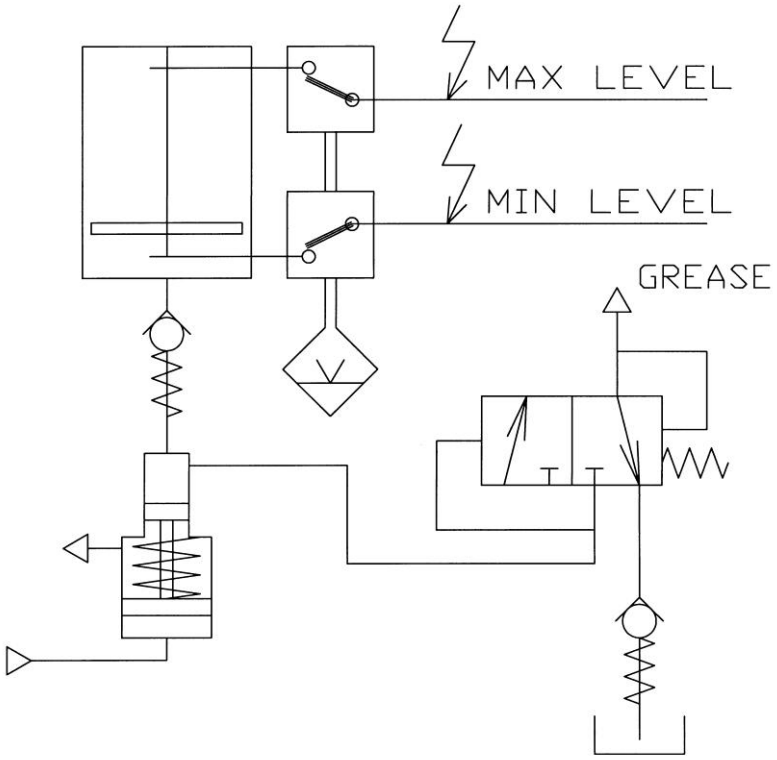
- Verify the integrity of the pump;
- Insert the pump ensuring there are no air bubbles in the grease.
- Ensure the pump is at working temperature and the tubing is free of air bubbles;
- Check the integrity of the supply line.
- Ensure that any electrical connections have been effected correctly (CEI 64/8, IEC 364);
- Check the connections of any level and solenoid valve to the control panel;

7.2 USE

1. verify the settings made on the control panel (where fitted);
2. press the start button of the machine to which the pump is connected;
3. verify the starting of the pump;
4. verify the adequate lubrication of the machine (if doubt exists as to the correct functioning consult the Engineering Department of Dropsa SpA to request test procedures).

7.2.1 METHODS OF COMMANDING THE PUMP

It is possible to command the pump manually, by means of a simple valve, or automatically by means of a 3-way solenoid valve.



8. TROUBLESHOOTING

The following table highlights some of the most common problems encountered when using the Pneumatically operated pump 201000 series 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		
ANOMALY	**PROBABLE CAUSE**	**REMEDY**
The pump does not deliver lubricant.	• Tank empty.	• Fill the tank.
	• The tank has been filled with too hard grease.	• Empty the tank, clean with kerosene and refill with suitable grease.
	• delivery valve dirty or damaged.	• Unscrew the valve and clean with kerosene or, if necessary, replace with a new one.
	• Suction valve.	• In sequence, unscrew the cover and the upper part of the hexagonal nut. Clean or replace the cap and reassemble.
	• Piston seized.	• Replace the pump.
	• The presence of air under the pressure disk due to pump operating without lubricant.	• Refill the tank up to the max. line, remove the cover and push down the pressure disk until the air under the disk is eliminated.
	• Failure of the 3-way solenoid valve.	• Check the electrical connections. Check the coil and replace if necessary.
	• Operating air pressure too low.	• Check the pressure and adjust to the required value. If necessary, replace the regulator.

9. MAINTENANCE PROCEDURE

Locate the machine in conditions which facilitate easy access.
Utilize individual protection to avoid contact with the lubricant.

After having been subjected to stringent inspection by ourselves, the pump requires a minimum of maintenance.
Prior to any cleaning or maintenance operations, close off the power supply and exhaust the pressure from the pump and the tubing to which it is connected.
Do not subject the pump, the connections, the tubing or the parts under pressure to violent knocks; damaged tubing and connections are dangerous and should be replaced immediately.
After long periods out of service check the tightness of all the parts subjected to pressure.

It is recommended the use of pure lubricants and a periodical accurate cleaning of pump components.
The pump has been designed to require the minimum of maintenance.

1. Disconnect the air supply and the lubricant delivery tubing;
2. Empty the tank of lubricant;

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.

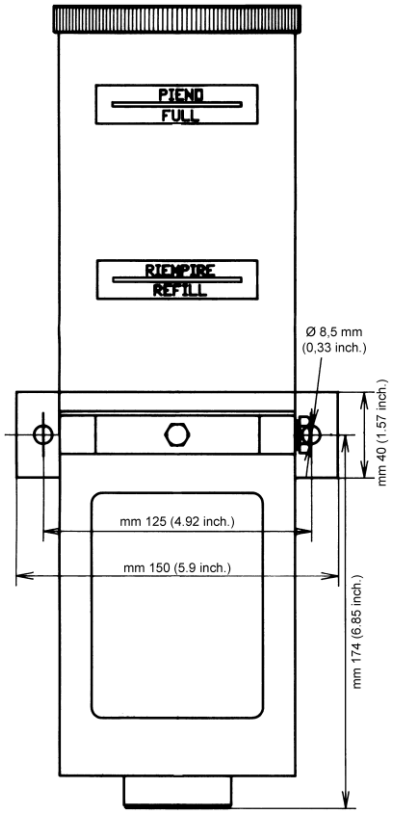
11. ORDERING INFORMATION

Instructions for ordering

AVILABLE VERSIONS										
pump part N°	**reser voir Kg/Lt**	**system**	**max**	**del. per stroke cm≥**	**Command air pressare - bar**		**Comp ratio**	**Overall dimensions**		**NOTE**
					min	**max**		**height mm**	**mm**	
201610	2	26	Grease NLGI 00	8	2	8	50:1	565	115	with min & max elect. level
201618	2	26	Grease NLGI 2	8	2	8	50:1	565	115	with min & max elect. level
201622	2	26	Grease NLGI 2	8	2	8	50:1	620	160	with min elect. level
201670	2	26	Grease NLGI 00	8	2	8	50:1	383	160	without min & max elect. level
201671	4	26	Grease NLGI 00	8	2	8	50:1	560	160	with min & max elect. level
201672	4	26	Oil 15/1000 cst	8	2	8	50:1	560	160	with min & max elect. level
201686	1.5	26	Grease NLGI 00	8	2	8	50:1	420	160	with min & max elect. level
201620	2	26	Oil 15/1000 cst	8	2	8	50:1	565	115	with min & max elect. level
201253	1	03/04/06/33	Grease NLGI 00	35	2	10	10:1	395	110	without min & max elect. level
201259	1	03/04/06/33	Grease NLGI 00	35	2	10	10:1	495	163	in sealed housing
201600	4	04/06/26/33	Grease NLGI 00	35	2	10	10:1	540	163	with min & max elect. level
201615	4	04/06/26/33	Oil 15/1000 cst	35	2	10	10:1	540	163	with min & max elect. level
201605	2	04/06/26/33	Oil 15/1000 cst	35	2	10	10:1	555	115	with min & max elect. level
201625	2	04/06/26/33	Grease NLGI 00	35	2	10	10:1	555	115	with min & max elect. level
201690	2	33	Grease NLGI 0	35	2	10	10:1	590	115	with min level

12. DIMENSIONS

You can see overall height and diameter in the chapter 11



13. HANDLING AND TRASPORTING

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.

Handling can be effected by one person.

! The machine components can withstand temperatures, during storage, from -20°C to +50°C (-4°F to +50°F) ; however, in order to avoid damage, starting of the machine should occur at a minimum temperature

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.

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 - 06/42).

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

- it is possible to encounter squirts of oil during maintenance operations (for this reason appropriate protective clothing must be worn);
- contact with oil -> see the requirements for the use of suitable personal protective clothing;
- protection against direct and indirect contact must be provided by the user;
- given the purpose of the pump it must always be functioning; for this reason it is necessary to pay attention to the electrical connections which, in the case of a power failure, the customer's machine is restarted only by means of a reset, while the lubrication pump is able to restart automatically.
- **During the disassembly of the pneumatic motor there exists the danger from the preloaded spring; take particular precautions against this risk.**
- use of unsuitable lubricant -> the characteristics of the fluid are shown on the pump and in the manual (**in case of doubt contact the Eng. Dept of Dropsa Spa**);

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INADMISSIBLE 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

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 out 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 states 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 made in writing and approved by Dropsa.

17. DECLARATION OF COMPLIANCE WITH STANDARDS

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AN ISO 9001 APPROVED COMPANY

DICHIARAZIONE CE DI CONFORMITÁ/DECLARATION OF COMPLIANCE WITH STANDARDS/ DECLARATION DE CONFORMITE/ KONFORMITÄTSERKLÄRUNG DES STANDARDS /DECLARACIÓN DE CONFORMIDAD/ DECLARAÇÃO DE CONFORMIDADE

La società Dropsa S.p.A., con sede legale in Milano, Via Besana,5/ Dropsa S.p.A., registered office in Milan, Via Besana,5 / Dropsa S.p.A. au Siège Social à Milan, Via Besana,5/ Dropsa S.p.A., Sitz in Milano, Via Besana 5/ La sociedad Dropsa S.p.a., con sede legal en Milán, Via Besana,5/ A Dropsa S.p.A, com sede em Milão, via Besana, nº 5

DICHIARA /CERTIFIES / CERTIFIE/ ZERTIFIZIERT, DASS/ DECLARA/ CERTIFICA:

che la macchina denominata/that the machine named / que la machine dénommée/ Die Maschine mit der Bezeichnung/ que la máquina denominada/ que o equipamento denominado

POMPA A COMANDO PNEUMATICO serie 201000

è conforme alle condizioni previste dalle Direttive CEE /has been constructed in conformity with the Directives Of The Council Of The European Community on the standardization of the legislations of member states/ a été construite en conformité avec les Directives Du Conseil Des Communautes Europeennes/ Entsprechend den Richtlinien des Rates Der Europäischen Union, für die Standarisierung der Legislative der Mitgliederstaaten, konstruiert wurde/ cumple con las condiciones establecidas por las directivas comunitarias/ foi construído em conformidade com as diretivas do Conselho das Comunidades Europeias:

- 2006/42 Direttiva macchine /Machinery Directive / 2006/42 Directive machines / Maschinenrichtlinien/ Maquinaria 2006/42/CEE /Directiva 2006/42 Máquinas;

Vimodrone (MI), June 2011

Technical Director:
Maurizio Greco
.....

Legal representative
Milena Gavazzi
.....

CE

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