PNEUMATIC PUMPS

for grease, series 1524175 - 1524344

Operation and maintenance manual

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CE

Manual drafted in compliance with Directive EC 42/06

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1. INTRODUCTION

This operating and maintenance manual refers to the pumping system with part number 1524175.

The most recent version can be obtained by requesting it from the Sales Technical Office or online at http://www.dropsa.com.

This operation and maintenance manual contains important information for the health and safety protection of the personnel who intends to use this equipment.

This manual must be read carefully and kept so that it is always available to the operators who want to consult it.

2. GENERAL DESCRIPTION

Sturdy construction and highly reliable pump made up of a pneumatic motor and a pumping rod with steel piston. Comes with: grease gun, follower plate and barrel cover.
They can be used in all types of industries as lubrication pumps, reservoir filling pumps and decanting pumps. They come with hose and spray gun and are used to fill lubricators or small reservoirs.

3. IDENTIFYING THE MACHINE

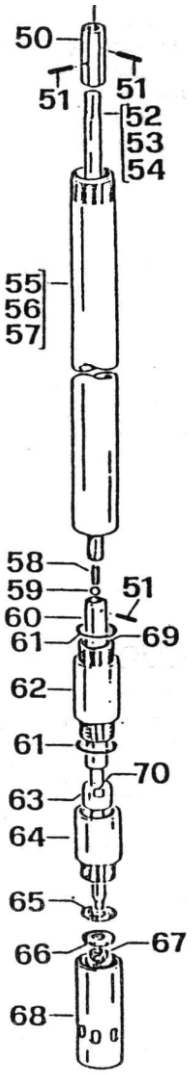
A label is located on the pump pneumatic motor and bears the product code.

4. TECHNICAL CHARACTERISTICS

Pump code	1524344
compression ratio	50:1
noise	75 dB
max grease output pressure	400 bar (5880 psi)
operating pressure	Min. 4 - Max. 8 bar (58 –117 psi)
flow rate	700 gr./min.
pumping rod length	480 mm (18/9 in.)
pumping rod external diameter	28 mm (1.1 in.)
drums	20 kg (44 lb)

5. PUMP COMPONENTS

- **GREASE DIP PIPE**

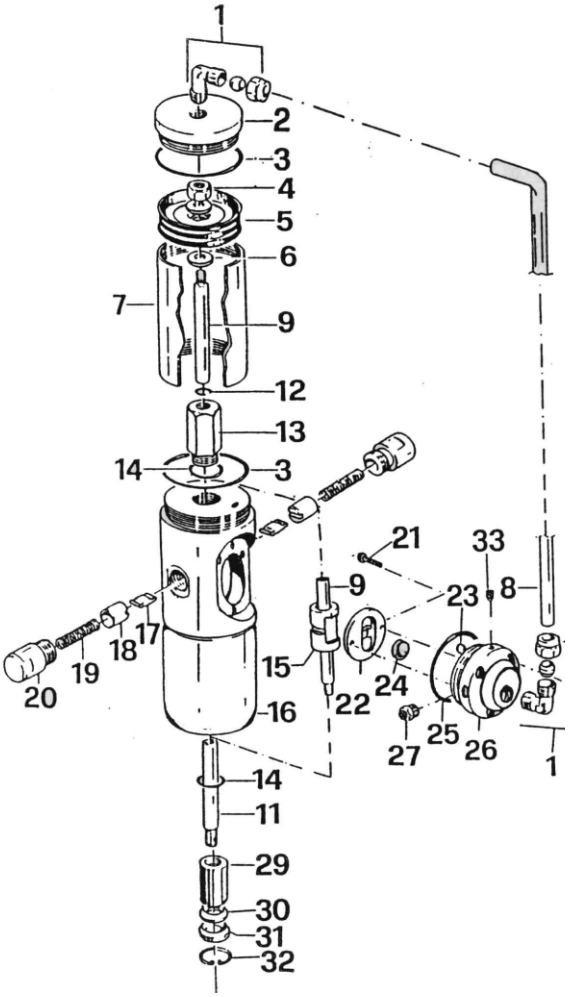


POS.	QTY.	DESCRIPTION
50	1	Conjunction nut
51	3	Spring pin Ø 4 mm. (0.15 in.)
52	1	Dragging rod 480 mm. (18.9 in.)
53	1	Dragging rod 740 mm. (29.1 in.)
54	1	Dragging rod 940 mm. (37 in.)
55	1	Extension 480 mm. (18.9 in.)
56	1	Extension 740 mm. (29.1 in.)
57	1	Extension 940 mm. (37 in.)
58	1	Pressure by-pass valve spring
59	1	Pressure by-pass valve sphere
60	1	Pumping piston
61	2	O-ring 3075
62	1	Cylinder
63	1	Valve
64	1	Valve body
65	1	Filter
66	1	Grease pusher washer
67	1	Nut
68	1	Dip pipe
69	1	O-ring 3056
70	1	O-ring 3037

DISASSEMBLY OF GREASE DIP PIPE

Lock the pumping element in a vice with soft metal jaws: the locking point must be the valve body (64). With a stud with a diameter of 10, unscrew the connector part of the dip pipe (68). Remove the pump from the vice, lock the dip pipe and unscrew it from the motor. Simultaneously using a number 10 Allen wrench, unscrew the nut (67). Remove the pumping element (52) or (53) or (54) depending on the pump model. Carefully clean all the parts.

- **MOTOR BODY**



POS.	QTY.	DESCRIPTION
1	2	Elbow 1/8 X 8
2	1	Cylinder plug Ø 65 mm. (2.5 in.)
3	2	O-ring 3225
4	1	M10 nut
5	1	Piston
6	2	Piston washer
7	1	Motor cylinder Ø 16 mm. (2.5 in.)
8	1	Recirculation pipe
9	1	Upper stem
11	1	Lower stem
12	1	O-ring 115
13	1	Upper stem guide
14	2	O-ring 3075
15	1	Exchanger body
16	1	Motor body
17	2	Inverter plate
18	2	Cylinder
19	2	Spring
20	2	Spring support plug
21	2	M 4 screw
22	1	Fork
23	1	O-ring 2018
24	1	Inverter plate
25	1	O-ring 2125
26	1	Exchanger body
27	1	Silencer
28	1	M 5 screw
29	1	Guide bushing
30	1	Gasket
31	1	Closing flange
32	1	Seeger Diam: 24mm
33	1	M5 grub screw

OVERHAULING THE MOTOR UNIT

After removing the pumping unit as described above, secure the motor body (16) in a vice and remove the two spring pins (51) using an appropriate awl. Undo the conjunction nut (59) and the complete dip pipe. Undo the screws (28) and the fittings (1) and remove the exchanger (26). Using a suitable pipe bender, unscrew the cylinder (7), locking it in place at the height of the part (2) and remove the cylinder. Remove the piston (5) unscrewing the nut (4). Check the state of wear of the cylinder and the piston. Remove the upper stem guide (13). Remove the two inverter units (20-19-18-17). Remove the stem (9-11-15). Check the state of wear and sliding of the part (15). Remove the Seeger ring (32) and slide out the parts 31-30-29-14. Check the state of wear. Check the exchanger unit. Undo the screws (21), remove the fork (22) and check the plate (24). WARNING! If disassembling the motor, we recommend replacing all the gaskets (see KIT). To reassemble the motor, carry out the operations described above in reverse.

GREASE GUN COMPLETE WITH SINGLE JOINT
- OPERATING PRESSURE: 350 - 400 bar (5145 - 5880 psi)

- MAXIMUM PRESSURE 600 bar (8820 psi)

DRUM COVER IN PRESSED STEEL
- DIAMETER 330 mm (13 in.)
- INLET DIAMETER 28 mm (1.1 in.)
- COMPLETE WITH 3 FIXING STUDS
  TO THE DRUM AND A PUMP FIXING STUD

PIPE FOR GREASE R2T – ¼" FF
- LENGTH 1.5 M. FLEX.
- OPERATING PRESSURE 350 - 400 bar (5145 - 5880 psi)
- MAXIMUM PRESSURE 600 bar (8820 psi)
- BURSTING PRESSURE 1200 bar (17640 psi)

6. UNPACKING AND INSTALLING THE PUMP

Before shipment, the pump is carefully packed inside a cardboard box. During transport and storage of the pump, pay attention to the direction indicated on the box.
Upon receipt, check that the packaging is not damaged and store the pump in a dry place.

6.1 UNPACKING

Once the suitable location for installation has been identified, open the packing and remove the pump. Ensure that no damage occurred during transport and storage.
The packing material does not require special disposal precautions as it is in no way dangerous or pollutant.

6.2 PUMP ASSEMBLY

Provide suitable space for the installation. Mount the pump at labourer height in order to prevent abnormal posture or possible impact. Do not install the pump in particularly aggressive or explosive/flammable environments or on parts subject to vibration.

1. position the grease drum on the carriage after fixing the base of the carriage to the column using the sliding housing
2. insert the grease pusher disc into the drum and close the drum using the cover, sliding it on the column after having removed, if necessary, the handle
3. tighten the cover using the handles, centring the drum with respect to the cover
4. insert the pumping element of the pump into the centring holes on the cover and on the grease pusher disc
5. lock the pump into place on the cover using the specific handle
6. connect the grease output pipe in position
7. connect the air line and adjust the intake pressure using one of the following devices:
   - PRESSURE REDUCER necessary where the compressed air system does not have one. Suitable for non-continuous use;
   - PRESSURE REDUCER with CONDENSATION SEPARATOR, 50 micron filter, active carbon model, indispensable in all types of pumps for continuous use, more than 10 minutes, prevents condensation from forming that can cause the pump to lock up
   - PRESSURE REDUCER with CONDENSATION SEPARATOR and LUBRICATOR, 50 micron filter, active carbon model, suitable for fixed systems.
     Note: The field of adjustments goes from a minimum of 4 bar (58.8 psi) to a maximum of 8 bar (117.6 psi)

7. OPERATING INSTRUCTIONS

Once the pumps have been inserted in the drums and after connecting them to the pipes complete with distribution guns, they can be started up following the procedures described below.
This procedure requires simple operations which, in designing the machine and, more precisely, the grease and oil transport line, took into consideration the work execution methods that the operators carry out in the various phases of lubrication and greasing, oil top-off, etc.

- Opening the compressed air valve, the pump starts up and the entire oil/grease output pipe pressurises until reaching the set adjustment value. Once this value has been reached, the pump stops
- Acting on the oil/grease output gun, the product is delivered and the pressure in the circuit consequently decreases. The pump starts up until the set pressure value is restored.

8. PROBLEMS AND SOLUTIONS

TROUBLESHOOTING TABLE		
FAULT	CAUSE	SOLUTION
The pneumatic motor does not work.	• Problems with the air supply line.	• Check the air supply connections. Check the air handling unit.
	• Pumping rod locked	• Disconnect the rod and ensure that it slides freely, otherwise disassemble and clean it.
	• Internal breakage	• Disconnect the rod and ensure that the motor works, otherwise disassemble and clean it and replace any damaged parts. • Fill or replace the drum
The pneumatic motor woks but does not pump the product	• No lubricant in the drum	• Disassemble the rod and clean it internally.
	• The suction is clogged by impurities	• Disassemble the rod, clean it internally and replace the worn components.
The pump does not maintain pressure.	• Wear of valves or gaskets.	• Disassemble the rod, clean it internally and replace the worn components.
	• Wear of valves or gaskets.	

9. MAINTENANCE

The pump has been designed and built in a way to require minimum maintenance.
In order to simplify maintenance, we recommend installing it in a position that is easy to reach **(see section 6.2)**.
Periodically check the joints of the lines for any leaks. Moreover, always keep the pump clean in order to quickly detect any leaks.
The pump does not require special tools for any check and/or maintenance operations. We recommend using tools and personal protection equipment (gloves) suitable for use with reference to Legislative Decree 81/08, and in good condition in order to prevent damage to personnel or parts of the machine.

10. DISPOSAL

During maintenance on the pump, or in the event of its demolition, do not dispose of contaminated parts into the environment. See local regulations for their correct disposal. Upon demolition of the machine, the identification label and any other document must be destroyed.

11. ORDERING INFORMATION AND DIMENSIONS

Kit code	Description
1524175	Kit for 20 kg. (44 lb) drum made up of: pump-drum cover-gun-1.5 m (59 in.) hose (59 in.)

Spare parts code	Description
1524344	50:1 ratio pneumatic pump
3132485	Dip pipe kit (figure on page 3 positions: 50 - 70)
3132486	Dip pipe kit gaskets
3132487	Motor body kit (made up of the positions: 1,2,4-11,15-22,24,26-29,31,33 of the figure on page 4)
3132488	Motor gaskets kit (made up of the positions: 3,12,14,23,25,30,32 of the figure on page 4)

Gross weight of Kit 1524175: 8.2 Kg (18 lb)

12. HANDLING AND TRANSPORT

Before shipment, the pumps are carefully packed inside a cardboard box. During transport and storage, pay attention to the direction indicated on the box.
Upon receipt, check that the packaging is not damaged and store the equipment in a dry place.
Given the low weight of the pump, handling it does not require the use of hoisting equipment.

13. PRECAUTIONS FOR USE

The warnings and risks that using the pump implies must be carefully read. The user must be familiar with operation through the Operating Manual.

Flammability

The lubricant used in the lubrication circuits is a fluid that is not normally flammable. In any case, all possible measures must be taken to prevent it coming into contact with very hot parts or naked flames.

Pressure

Before any operation, check for the absence of any residual pressure in all branches of the system, that could cause spurts of lubricant in the event that fittings or components are disassembled.

Pressure regulators:

1. fitted with escape valves
2. the filters reservoir is protected against any explosions

Do not tamper with the hydraulic-pneumatic circuit during the operating phases and in any case when there is pressure in the pump. In the event that operations on the pressurised pump should become necessary, if it locks up, you must proceed as follows:

a. close compressed air distribution
b. operate on the delivery gun lever to verify the presence of residual pressure, discharging it
c. operate on the pump as indicated in the maintenance instructions

RECOMMENDATIONS:

During the maintenance phases and in any case during operations, the operators should use personal protection equipment such as gloves, eye protection and protective clothing.

WARNING: USING THE PUMP TO TRANSFER AND TRANSPORT FLAMMABLE AND CORROSIVE LIQUIDS IS PROHIBITED.

The noise produced by operation of the pump detected in accordance with the provisions of machine directive 89/392 EEC is 75 dB since the pump is fitted with a dissipative silencer installed on the compressed air discharge. Periodically check the efficiency of the silencer.

14. CONTRAINDICATIONS OF USE

The pump does not have any particular contraindications except for the following points:

- Contact of the operator with fluid due to breakage/opening of adduction piping.

The operator must have suitable PPE (**Legislative Decree 81/08**).

- Inappropriate posture.

Follow the instructions indicated in **section 6.2.**

- Contact with lubricant during top-up/maintenance.

The operator must have suitable PPE (**Legislative Decree 81/08**).

- Use of unsuitable lubricant.

Main prohibited fluids.

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Fluids	Hazards
Lubricants with abrasive additives	High wear of the contaminated parts
Lubricant with silicon additives	Damage to the gaskets
Petrol, solvents, flammable liquids	Fire, explosion, damage to the gaskets
Corrosive products	Corrosion of the pump, damage to personnel
Food substances	Contamination of the same