HAND PUMPS

Series 3415 for grease
Series 3416 for oil

User and Maintenance Manual

TABLE OF CONTENTS

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1. INTRODUCTION

This manual refers to the *Hand Pumps Series 3415 and 3416 for Serial 26 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

Hand Pumps Series 3415 and 3416 have been designed to be used with *Serial 26*.
Pumps of sturdy construction and reliability; steel body, hardened and lapped double acting steel piston with pressure gauge and by-pass valve.
Series 3415 for grease is completed with follower plate, with or without spring and re-filling valve. The level indicating rod is hooked to the following plate, therefore the height dimensions change from minimum (empty reservoir) to maximum (full reservoir).

3. PRODUCT – MACHINE IDENTIFICATION

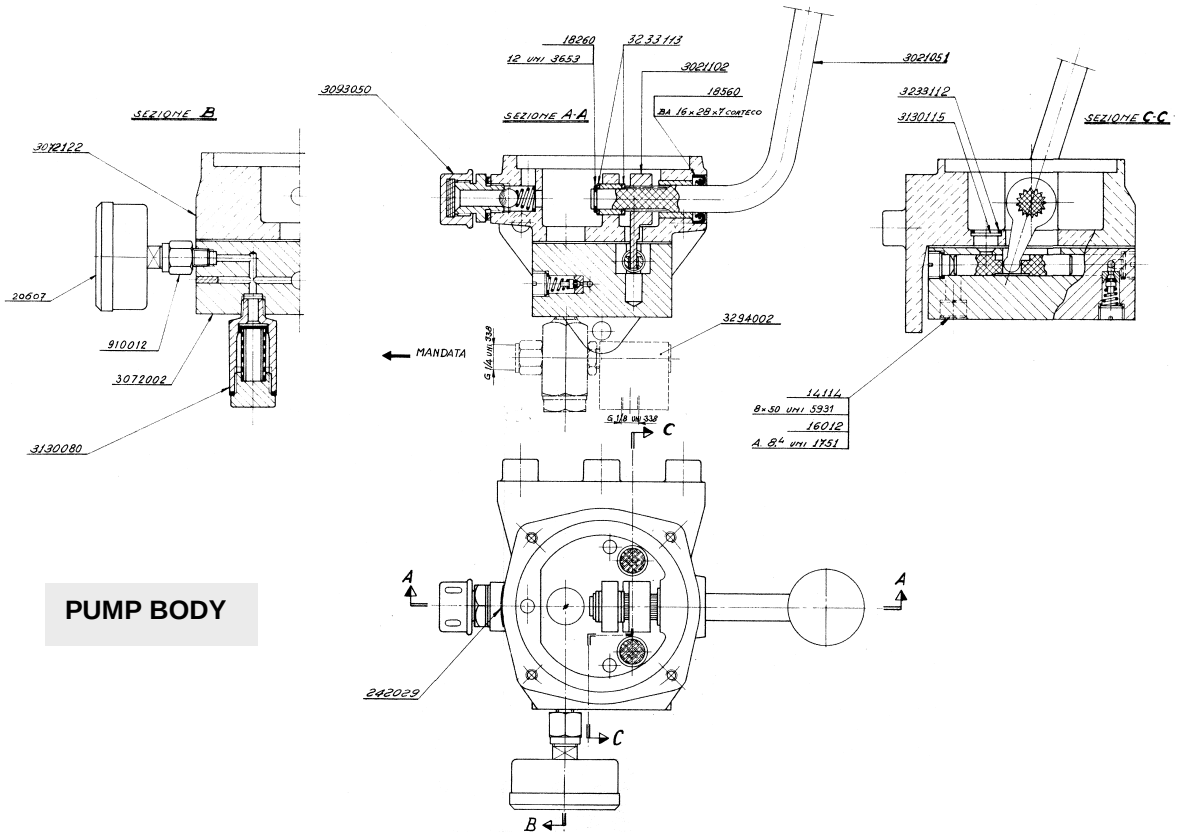
Pump identification label is located on the front side of the grease operating pump and contains pump serial number and details of its operating parameters.

4. TECHNICAL SPECIFICATIONS

Series	3415	3416
Lubricant	grease	oil
MAX pressure	150 bar (15 Mpa – 2205 psi)	130 bar (13 Mpa – 1911 psi)
Flowrate	3.4 cm^3 (0.2 cu.in.) for each up/down stroke of the hand control lever	
Pressure gauge	Scale 0 ÷ 250 bar (0 ÷ 25 Mpa – 0÷ 3675 psi)	
Lubricant outlet	G 1/4” BSP	
Re-filling valve	G 1/2” BSP	

5. PUMP COMPONENTS

- **Pump body**;
- **Hand control lever**;
- **Reservoir**;
- **Pressure gauge**;
- **By-pass valve**.



PUMP BODY

6. UNPACKING AND INSTALLING THE PUMP

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, however packing 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 for the installation, leaving minimum 100 mm (3.9 in.) around the unit.
- In order to avoid unnatural posture for personnel install the machine in a comfortable and easy-to-reach location.
- Do not install the unit in aggressive/explosive/inflammable environments or on vibrating surfaces.
- For the fixing use only the bracket arranged with n°3 holes Ø10.5 mm (0.4 in.).

6.3 HYDRAULI CONNECTIONS

Connect the system to pump outlet thread ¼ BSP.

WARNING: At the end of all the connecting operations, make sure that pipes and wires are safe from impacts and carefully fixed.

7. INSTRUCTIONS FOR USE

7.1 PRELIMINARY CHECKS

- Verify the unit is undamaged.
- Check that the hydraulic connections has been carefully carried out.
- Refill the reservoir with impurity-free lubricant.

7.2 PUMP OPERATION

Operating the pump is very easy: to deliver lubricant simply pull and push completely the hand control lever and then release. We recommend to carry out some lubrication cycles to discharge air from the system.

8. TROUBLESHOOTING

ANOMALY	CAUSE	SOLUTION
Pump does not deliver lubricant.	Pump intakes air because the reservoir is empty	Refill the reservoir and discharge air form the system.
Pump does not deliver the proper quantity of lubricant.	Loose fittings	Tighten the fittings. Be sure there are no leaks.
	Obstructed filter.	Clean or replace the filter
	Incompatible lubricant	Verify lubricant thickness/viscosity and replace it, if necessary.
Pump does not deliver lubricant at the proper pressure	Pompa deteriorata	Sostituire pompa
	By-pass valve not regulated properly	Regulate the pressure valve (3294002)

9. MAINTENANCE PROCEDURE

The machine 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 hazards to equipment or persons.

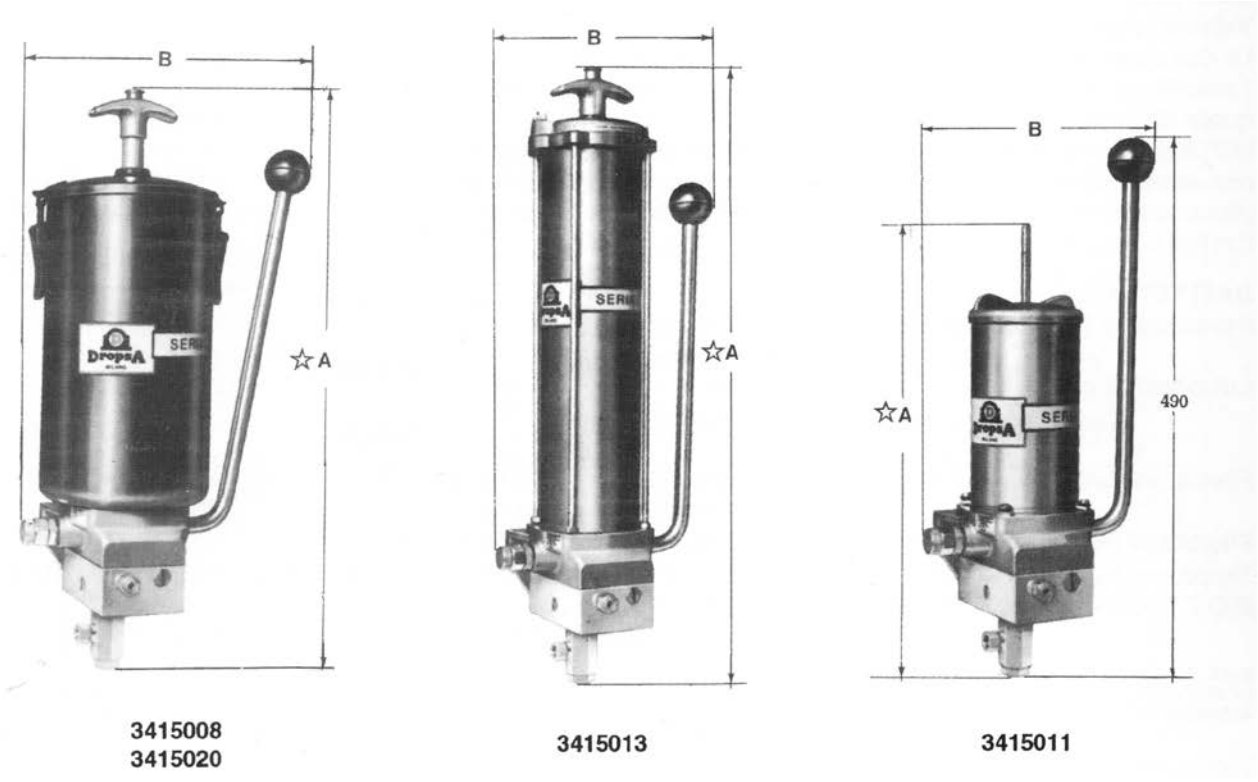
The machine has been designed and manufactured to require the minimum maintenance:

- ❑ Keep the unit clean and periodically check the pipe joints to detect possible leaks.

10. DISPOSAL

During maintenance or disposal of the machine care should be taken to properly dispose of environmentally sensitive items. 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 AND DIMENTIONS



11.1 HAND PUMP FOR GREASE *SERIES 3415*

Part n°	Reservoir capacity Kg (lbs)	Grease grade	Length A mm (in.)	Width B mm (in.)	Depth mm (in.)	Weight Kg (lbs)	Features
3415008	5 (11)	NLGI 1	550/800* (21.6/31.5)*	275 (14.8)	285 (11.2)	12 (26.5)	Reservoir with follower plate
3415020		NLGI 0				11.5 (25.4)	Reservoir with special follower plate for soft grease
3415013	2 (4.4)	NLGI 2	600/910* (23.6/35.9)*	218 (8.6)		8.6 (19)	Reservoir with follower plate and spring
3415011	1 (2.2)	NLGI 1	405/530* (16/20.9)*	205 (8)		6.2 (13.6)	Reservoir with follower plate
3415012		NLGI 2		218 (8.6)		6.5 (14.3)	Reservoir with follower plate and spring

*** These measures refers to empty reservoir / full reservoir**

11.2 HAND PUMP FOR OIL *SERIES 3416*

Part n°	Reservoir capacity lt (gals)	Oil viscosity	Length A mm (in.)	Width B mm (in.)	Depth mm (in.)	Weight Kg (lbs)	Features
3416005	5 (1.1)	MAX 1000 cSt (4628 SUS)	452 (17.8)	262 (10.3)	285(11.2)	7.8 (17.2)	With minimum level indicator
3416006	2 (0.44)		487 (19.2)	205 (8)		6 (13.2)	
3416009	1 (0.22)		352 (13.9)			5.8 (12.8)	Without minimum level indicator

12. HANDLING AND TRANSPORTATION

Prior to shipping, pumps are packed and 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.
Given the low weight and the small dimensions, the pump may be handled without any special lifting apparatus.

13. 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 implied in pumping grease under pressure.

Flammability

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

Pressure

Prior to any intervention, check the absence of residual pressure in any branch of the lubricant circuit as it may cause oil sprays when disassembling components or fittings.

Spring

Be careful! Pre-loaded spring in the reservoir.

14. PRECAUTIONS

No particular operating hazards characterize these pumps, except for the following precautions:

- **Operator's contact with lubricant** in case of piping breaking/opening or during refill/maintenance. -> Protection against direct and indirect contact with the fluid must be provided by the user: the operator must be provided with suitable individual protective clothing and devices.
- **Use of incompatible lubricant** -> Main incompatible fluids:

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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