

# Series 129877

*Dust Seal Lubrication Stations*

## User and Maintenance Manual

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Manual drafted in compliance with EC Directive

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Dropsa products can be purchased from Dropsa branches and authorized distributors, visit [www.dropsa.com/contact](http://www.dropsa.com/contact) or contact us [dropsa@sales.com](mailto:dropsa@sales.com)

## 1. INTRODUCTION

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This manual refers to **Series 129877**. 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.

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

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**Stations 129877** area dust seal lubrication panels consisting in:

- Two LINE piston pumps; Individually controlled
- Two reservoirs. One for Process Oil and one for Lube Oil.
- Bypass
- Gauges
- Refilling filters
- Refilling solenoids
- Pressure Switches
- Ball Float valves
- Pressures Gauges
- Heaters
- Triple Level Switches ( Max, Low and Min )

## 3. PRODUCT - MACHINE IDENTIFICATION

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Product identification label is located on the front side of the station and contains part number, input voltage and details of the operating parameters.

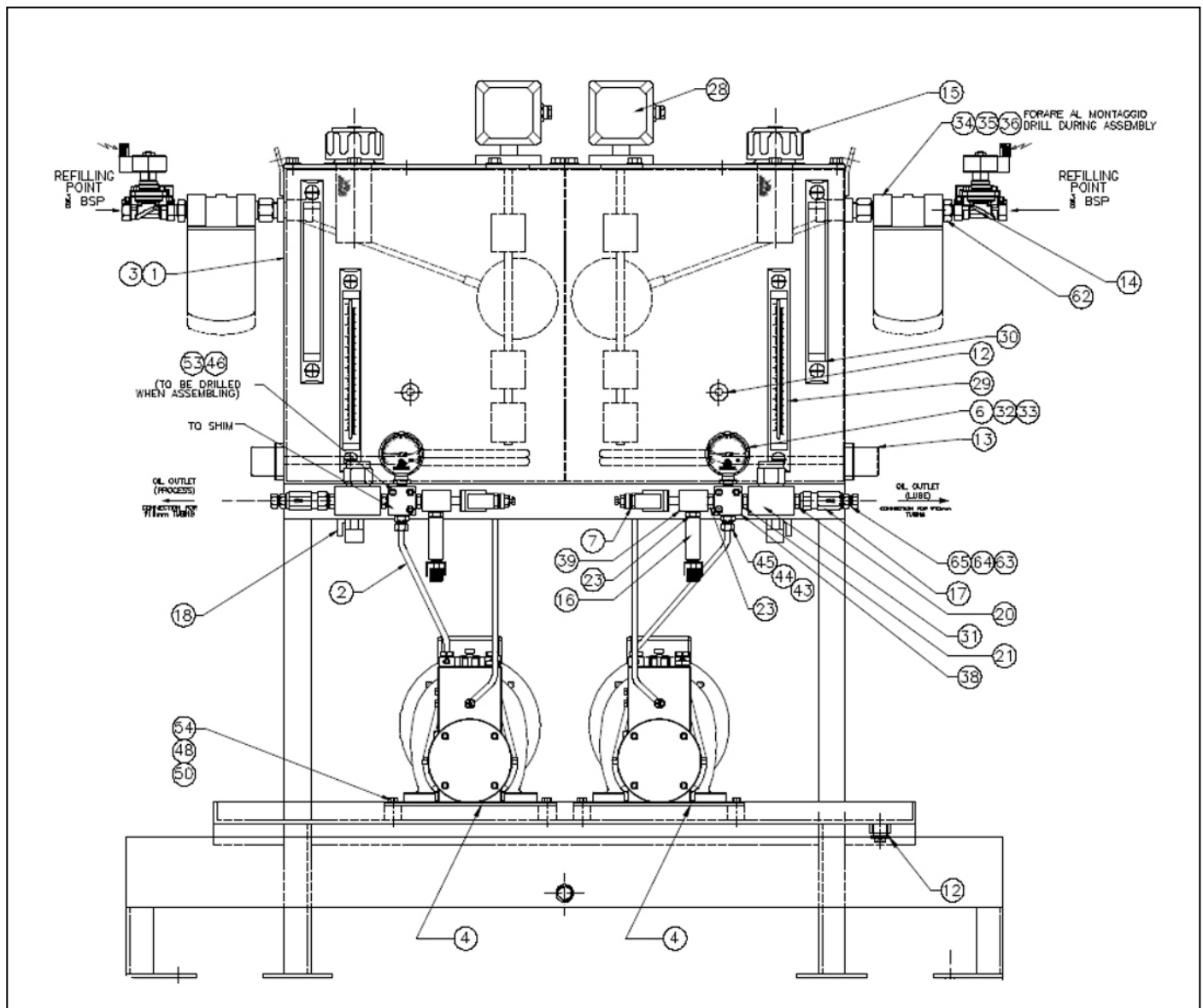
## 4. TECHNICAL SPECIFICATIONS

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TECHNICAL CHARACTERISTICS	
Working Temperature	-10°C ÷ +80°C (+50°F ÷ +176°F)
Lubricant	Mineral oil
Lubricant viscosity (at working temperature)	32÷1000 cSt (149.9÷4628 SUS)

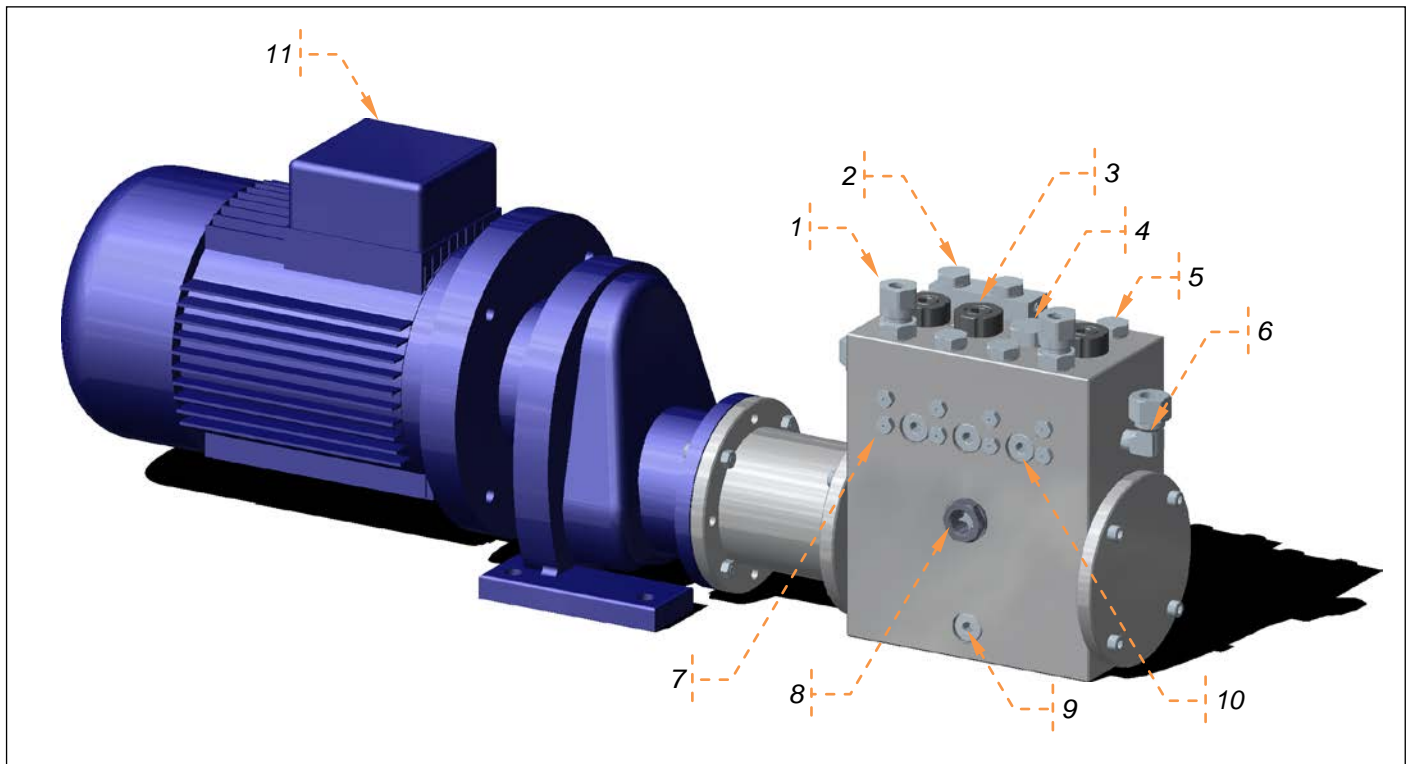
SYSTEM	
Double reservoir	Steel sheet, capacity 50 lt (11 gals)
Ratiomotor	1.5kW 627 RPM
Motor	400V/50 Hz 3PH 4 POLES
Oil delivery filter	10 µ
Electric contact	MINIMUM level, MAXIMUM reserve supply
By-pass valve	¼" G adjusted at: 340 bar (4998 psi)
Oil inlet	¾" BSP female
Oil filter	manual refill
Shut-off gate	½" F – ½" M
Level switch	NC-NC-NO
Pressure gauge	0 ÷ 600 bar (0 ÷ 8820 psi)

## 4.1 COMPONENTS AND DRAWING



ITEM	DESCRIPTION
Double reservoir	Steel sheet, capacity 50 lt (11 gals)
Ratiomotor	1.5kW 627 RPM
Motor	400V/50 Hz 3PH 4 POLES
Oil delivery filter	10 $\mu$
Electric contact	MINIMUM level, MAXIMUM reserve supply
By-pass valve	1/4" G adjusted at: 340 bar (4998 psi)
Oil inlet	3/4" BSP female
Oil filter	manual refill
Shut-off gate	1/2" F - 1/2" M
Level switch	NC-NC-NO
Pressure gauge	0 ÷ 600 bar (0 ÷ 8820 psi)

## 4.2 LINE PUMP MANUAL



ITEM	DESCRIPTION
1	Ring Straight Connector for output flow G ¼
2	Bridge Union to combine output flows
3	Pumping Element 299654
4	Pumping spare plug
5	Outlet exclusion plug
6	90° Ring Connector for G ¼ suction
7	Screw to bleed air
8	Oil inspection relief
9	Oil drainage plug
10	Closing plug for separating suction oil
11	Geared motor from 50 to 1000 RPM

TECHNICAL FEATURES OF LINE PUMP	
Pump type	Eccentric driven piston pump with spring return
Pumping outlet connection	G 1/4 UNI – ISO 228/1
Reservoir inlet connection	G 1/4 UNI – ISO 228/1
RPM	50 ÷ 1000
Rotation direction	bidirectional
Working temperature	+5°C ÷ +40°C
Pumping delivery	stroke tot. 8mm utile 6,5mm 0,177cm <sup>3</sup> /rev (adjustable)
Outlet pressure	552bar (constant) 690bar (intermittent)
Inlet pressure	0,1bar ÷ 3,44bar
Lubricant	10,5cSt ÷ 462cSt
Storage temperature	-30°C ÷ +80°C
Max relative humidity without working condensation	90%
Sound pressure level	< 70 db (A)
Weight	9Kg (without geared motor)

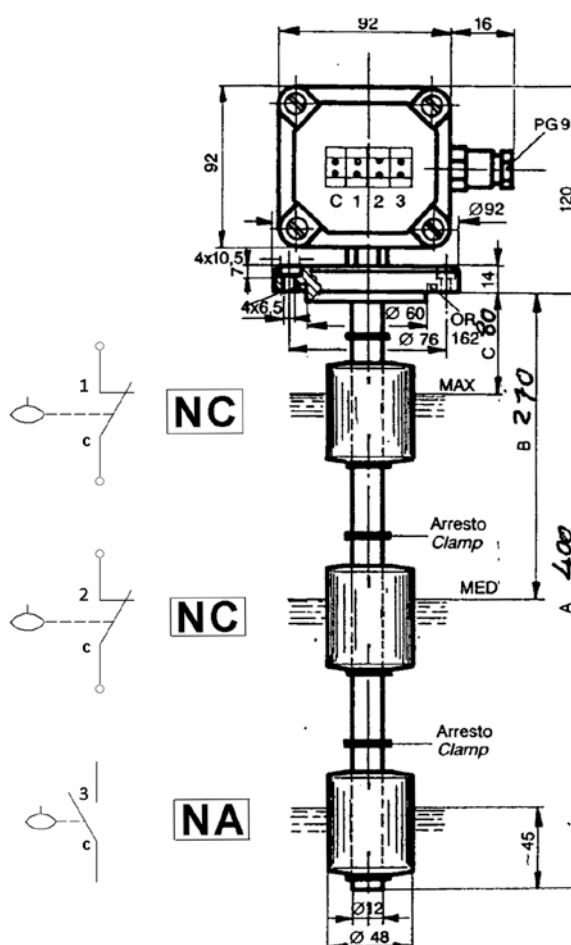
### 4.3 Pressure switch Datasheet

Electro-hydraulic pressure switches are devices which close or open electrical contacts when pressurized (DIN ISO 1219-1). They are usually used for all applications where an electrical signal should be triggered whenever the set pressure is achieved or exceeded. This signal may be utilized to start a following operation cycle (operation of a solenoid actuated directional valve) or to stop an operation cycle (cut-off of the pump drive, idle position of a solenoid actuated directional valve).

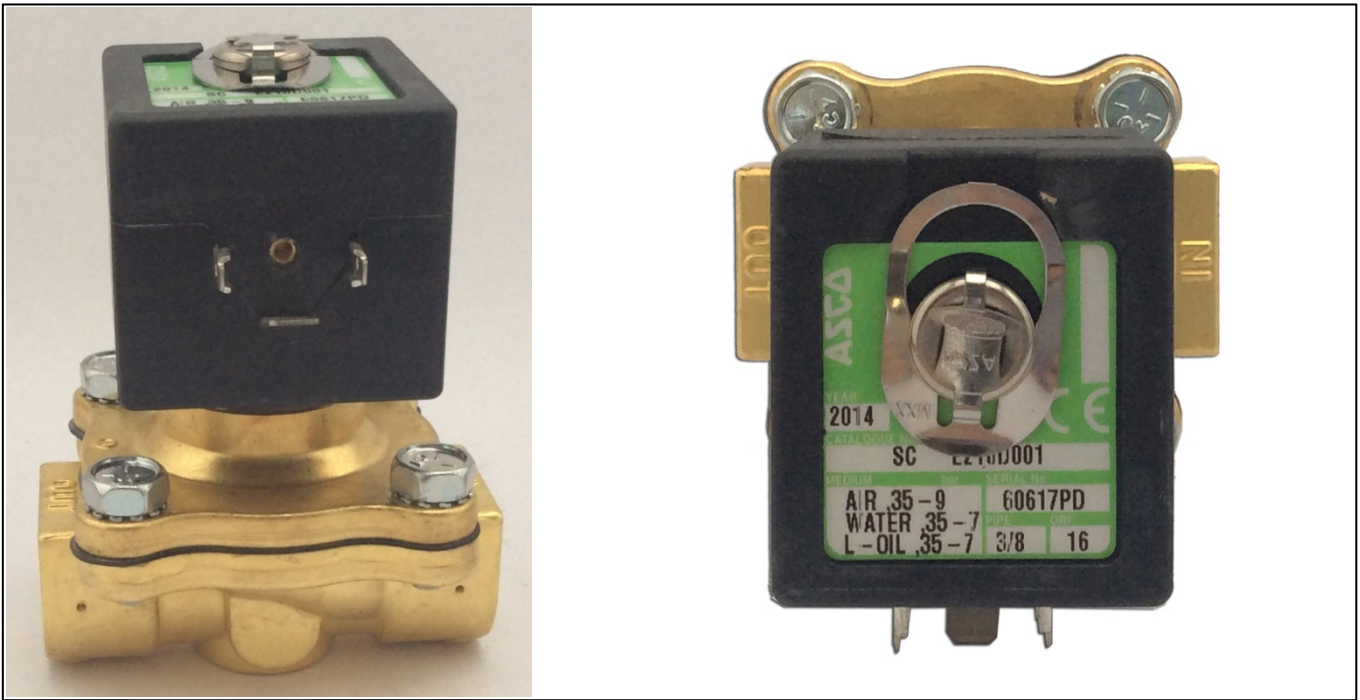


### 4.4 Level switch Datasheet

TECHNICAL DATA	
Level max lenght	A= 2500 mm
Distance min. B-C-D	80 mm
Power commutated in DC	60 W
Power commutated in AC	60 VA
Intensity of current	0.8 A (resistive)
Voltage	220 V - 50 Hz
Breckdown voltage	300 V
Open contacts capacity	0,6 pF
Temperature range	-10 +80 ° C
Insulation resistance	10 <sup>10</sup> OHM
Fluid specific weight	≥ 0.7
Maximum pressure	10 Bar
Fluid viscosity	Max 150 cSt



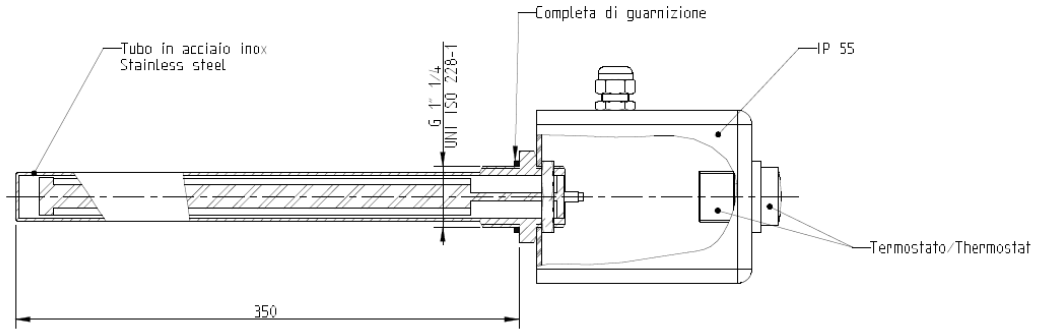
#### 4.5 Refilling Solenoid Datasheet



#### 4.6 Refilling Filter Datasheet



## 4.7 Heaters Datasheet



TECHNICAL DATA	
Capacity	0.5 kW
Specific capacity	0.7 W/cm <sup>2</sup>
Voltage	2030V - 50 Hz 1Ph
Thermostat	Adjustable range 0+120 °C
Fluid to warm	Lubrication oil
Protection degree	IP 55
Elem. heating material	--

## 6. RECOMMENDED SPARES

Part Number	Description	Critical	Recommended
299654	Pumping Element for line pump	2	
3292042	Pressure gauge 0 - 600 bar	2	
3130487	Refilling line filter Spare bowl element	2	
3155254	24 V DC refilling solenoid valve		1
3155255	110 V AC refilling solenoid valve		1
3155256	220 V AC refilling solenoid valve		1
3178048	110 V AC heating element		1
3178029	220 V AC heating element		1
3291141	Pressure switch 200- 700 bar adjustable		1
3096177	Bypass 1/4 BSP 20-700 bar adjustable		1
1524710	Triple oil level switch		1
1113255	Pressure line filter		2



## 7. UNPACKING AND INSTALLING THE MACHINE

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### 7.1 UNPACKING

Once a suitable location has been found to install the unit, remove the station from the packaging. Check the equipment 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.

### 7.2 LUBRICATION SYSTEMS INSTALLATION: RECOMMENDATION AND GENERAL REGULATION

Lubrication systems must be installed by qualified personnel. Installation must comply with the regulations regarding hydraulic systems.

#### 7.2.1 INSTALLING THE EQUIPMENT

Unit must be installed on proper bracket or base-plate. Dosing or distribution elements must be assembled on plates to facilitate possible interventions. Use anti-vibrating bearings on machines or vibrating surfaces. When working temperature is over +100°C (+212°F), piping, distributors and valves must be shielded with proper covering. In dangerous areas or when frequent maintenance interventions must be carried out, dosing elements, valves and distributors, in some cases even piping, must be shielded by metal-sheet housing or U-drawn.

#### 7.2.2 PIPING

With external diameter up to 16 mm (0.62 in.), piping made of copper or coppered or drawn steel with double-cone or O-ring fittings, can be used. When external diameter is over 16 mm (0.62 in.), drawn steel piping with O-ring fittings or heavy steel piping with steel cone-threaded fittings, series ASA 3000 lbs must be used. As a rule, in order to avoid presence of metal particles in dosing valves, which could compromise valves well-functioning, piping must not be welded. Therefore, during installation, it is very important to carefully check piping is internally clean. Piping heat-bending must be avoided. When installing large-diameter piping (where welding is necessary), after welding, piping must be pickled in accordance with the regulations in use. To ensure stability, bracketing and clamping must be carried out.

#### 7.2.3 PIPING FILLING

When the equipment has been assembled, piping must be carefully filled to avoid air-bubbles which could provoke system malfunctioning.

Check piping ends and threads have no burrs and both piping and accessories are clean. This precaution is necessary to prevent impurities and metal particles which, mixed with lubricant, could provoke system malfunctioning and damage to lubrication members. System must be filled with lubricant, section by section, disconnecting the ends at each section of line. Lubricant must be pumped until it flows out from the filled section compact and regular. For this kind of refilling procedure, use pumps designed for this purpose: Pneumatic Pumps Series 400200 or 234700 (You can find them in our catalogue "Dual Line – System 02"). These pumps are also necessary to fill electro-pump reservoirs.

#### 7.3.4 LUBRICANT CHARACTERISTICS

Lubricant must be supplied by the User and chosen in accordance with the reliable firm or by consulting our lubricant table indicating lubricants different for types and trademarks.

#### 7.3.5 TESTING PROCEDURE

When specified, machine testing procedure can be carried out by our qualified personnel at client in presence of an officer who will sign the test report as acceptance. Warranty starts from this date.

### 7.3 GENERAL INFORMATION ON ASSEMBLING LUBRICATION SYSTEMS

#### 7.3.1 ASSEMBLING

The assembly of the the lubrication system does not require any special sequence of operations. First, pump unit must be mounted and then dosing valves must be installed the nearest to lubrication points. Subsequently, rigid and flexible piping must be connected (line 1 and line 2 as in the diagram of the system). In the end, hydraulic and electric connections must be carried out.

#### 7.3.2 EQUIPMENT AND SPECIAL TOOLS

Lubrication system installation does not require any special tool or equipment.

### 7.4 INSTALLING THE MACHINE

When using a hoist trolley or a crane, it is necessary to observe the following precautions:

- Lift the load enough to verify if it is balanced;

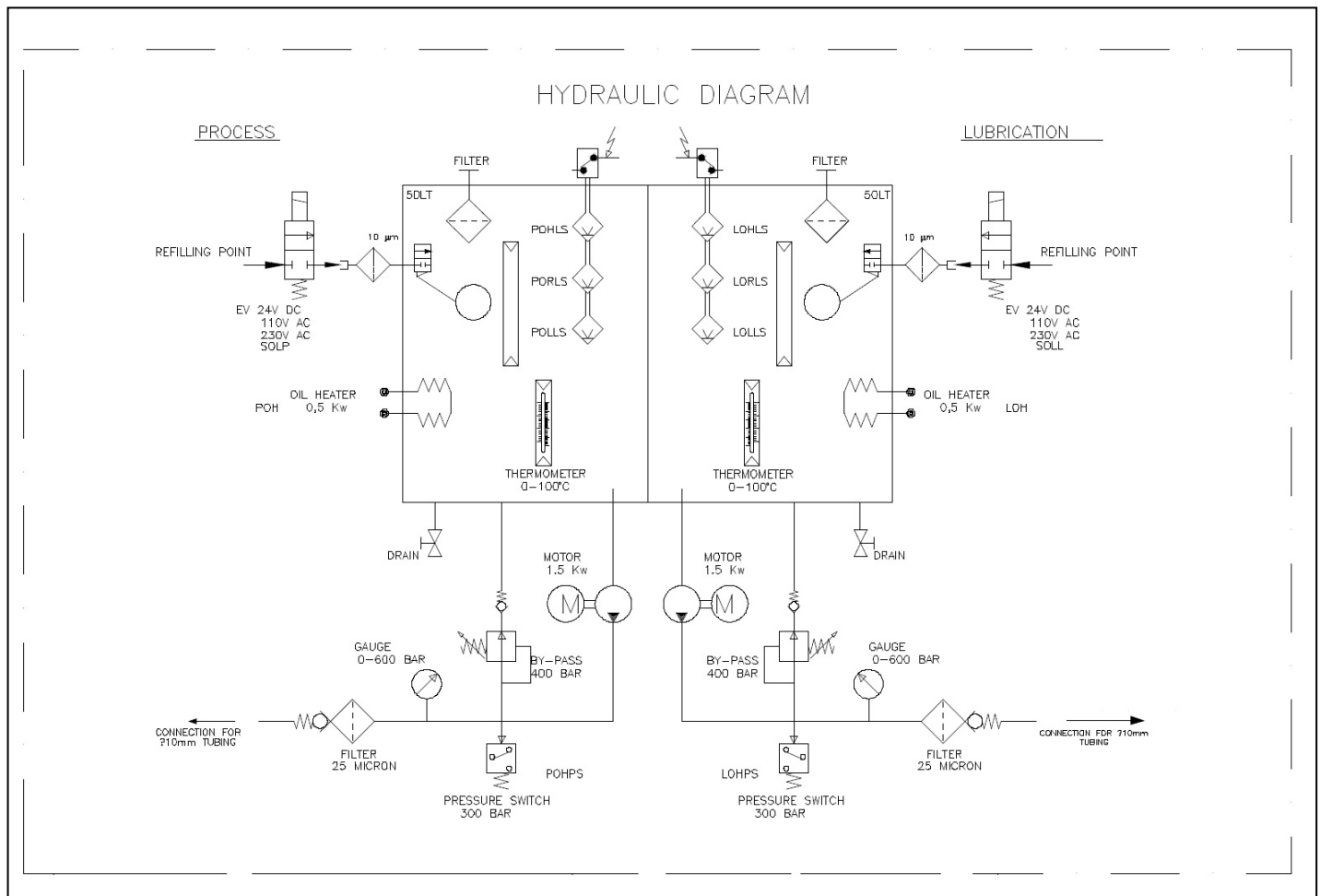


- Make sure there are no obstacles, subsidences or dangerous liquids (oil, acids) along the way.

Furthermore:

- Locate the station in an easy and reachable location.
- Do not install the machine in aggressive or explosive/inflammable environment or on vibrating surfaces.
- Location area must be large enough to allow personnel operation in accordance with safety regulation.
- For correct machine functioning, storage room must be supplied with proper electric connections.
- The User is responsible for equipping storage area in accordance with safety regulation.
- The User must also provide proper lighting in accordance with the state regulation and the Community Directives.
- In order to support the heavy equipment, flooring must be levelled, plane-surfaced, concrete industrial-type.

## 7.5 HYDRAULIC CONNECTIONS



**WARNING:** When all the connection are fitted, make sure that piping is safe from possible impacts and carefully fixed.

## 8. MACHINE OPERATIONS

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Once the hydraulic and electric connections have been carried out, refill the reservoirs and start the system.

**WARNING!**

- *Lubricant must be impurity-free and viscosity must respect machine technical and functional characteristics (see ch.4).*



## 8. TROUBLESHOOTING



**WARNING: The equipment can be opened and repaired by Dropsa personnel only**

The following diagnostic table indicates the main anomalies which may be encountered, the probable causes and possible solutions.

If doubt exists or you cannot solve the problem, do not attempt to search for the trouble by disassembling parts of the machine but contact the **Eng. Dept. of DROPSA S.p.A.**

ANOMALY	PROBABLE CAUSE	SOLUTION
<b>One of the pumps does not deliver lubricant</b>	Empty reservoir	Refill the reservoir
	Wear of pump	Check pump and replace it, if necessary
	Motor does not rotate	Check power supply and direction of rotation (as indicated by the arrow)
	Lubricant leakage	Check piping and fittings. Tighten fittings, if necessary. Replace broken piping
	By-pass valve not calibrated	Adjust by-pass valve (see ch.4)

## 9. MAINTENANCE PROCEDURE

*This unit 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, glasses) and clothing (626/94 and DPR 547/55) to avoid injury to persons or damage to machine parts.*

The equipment has been designed and constructed to require a minimum of maintenance. Anyway, it is advised:

- Periodically to check the pipe joints to detect possible leaks.

Furthermore, the following general maintenance procedure must be followed:

<b>Pumps</b>	Refill the reservoirs always with the same impurity-free oil using the special oil filters.
<b>Delivery filters</b>	Every 1-2 months disassemble the filters to check for the presence of impurities. If necessary, clean them with diesel oil or petrol and compressed-air or simply replace filter cartridge.
<b>Flexible pipes</b>	Check for wear. Bear in mind that if flexible pipes are assembled without torsions or excessive bending guarantees life of unit.
<b>Fittings</b>	Check fittings are carefully tighten and there are no leakages.
<b>Pressure gauge</b>	Check working pressure is regular.
<b>By-pass valve</b>	Check valve calibration every 1-2 months. Wrong calibrations could provoke system malfunctioning and damages to machine parts.

## 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.

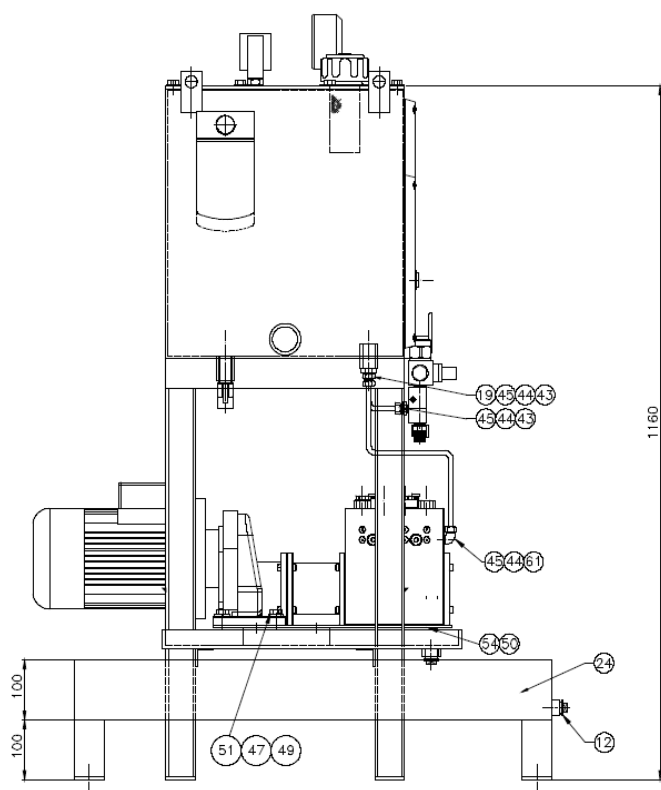
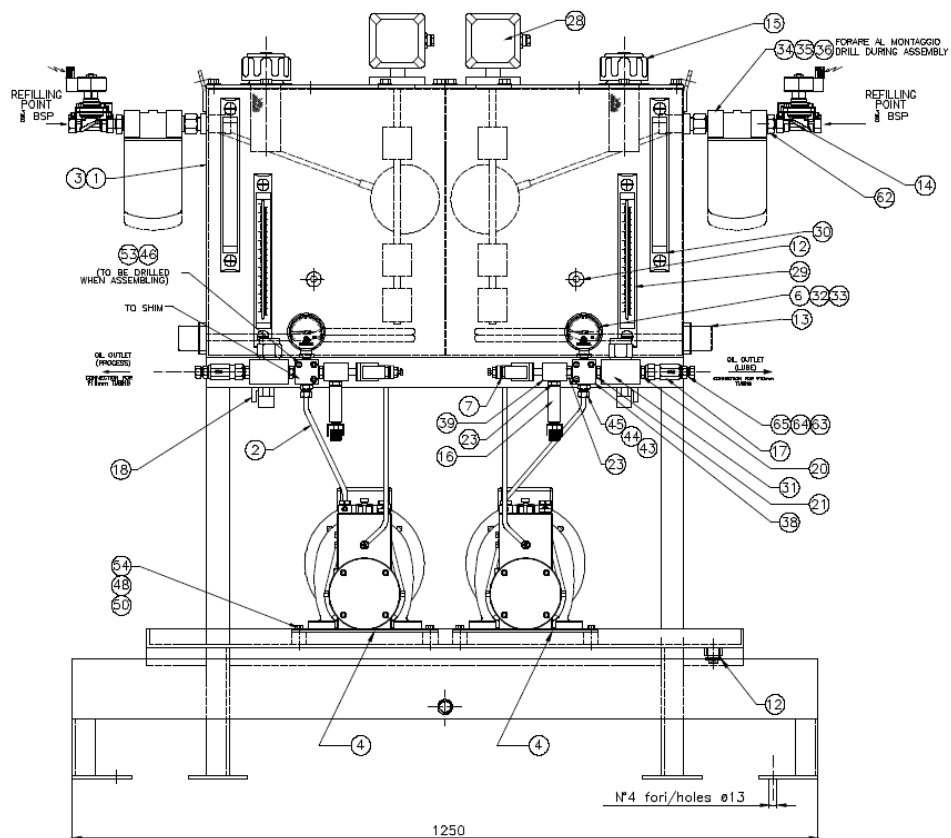
When disposing of this unit, it is important to ensure that the identification label and all the other relative documents are also destroyed.

## 11. ORDERING INFORMATION

The following table shows the various range of stations DropsA currently offers. Flow rates are dependent on type of mixer. Colours and voltages are user defined.

Pump flow rate 309918010000112DA2 (ITEM 26)	Pump flow rate 309918011100112DA2 (ITEM 27)	Solenoid valve	Heaters	Frame and motors colors	Pumping ø6 (spare parts)	PART N°
3.2 L/h (Lube)	19.1 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 8004		<b>0129877</b>
3.2 L/h (Lube)	19.1 L/h (Process)				0299654 (n°2)	<b>0129877S</b>
2.16 L/h (Lube)	14.76 L/h (Process)				<b>0129878</b>	
3.2 L/h (Lube)	19.1 L/h (Process)	3155256 - 230V			<b>0129885</b>	
3.2 L/h (Lube)	18.8 L/h (Process)	3155254 - 24V DC			RAL 6021	<b>0129894</b>
1.1 L/h (Lube)	10 L/h (Process)	3155254 - 24V DC			RAL 6011	<b>0129895</b>
1.3 L/h (Lube)	13.2 L/h (Process)	3155255 - 110 V	3178048 - 110V	RAL 1013		<b>0129898</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 5017		<b>0129899</b>
3.2 L/h (Lube)	18.8 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 5017		<b>0129900</b>
3.2 L/h (Lube)	18.8 L/h (Process)	3155254 - 24V DC	3178048 - 110V	RAL 8004		<b>0129905</b>
2.16 L/h (Lube)	14.76 L/h (Process)	3155254 - 24V DC				<b>0129001</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155256 - 230V	3178029 - 230V	RAL 5017		<b>0129002</b>
3.2 L/h (Lube)	18.8 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 8004	0299654 (n°2)	<b>0129012</b>
3.2 L/h (Lube)	19.1 L/h (Process)	3155254 - 24V DC		RAL 8001		<b>0129013</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155255 - 110V	3178048 - 110V	RAL 6024		<b>0129017</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 8004	0299654 (n°2)	<b>0129019</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155254 - 24V DC		RAL 8001		<b>0129024</b>
2.13 L/h (Lube)	21.3 L/h (Process)	3155256 - 230V		RAL 5017		<b>0129027</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155254 - 24V	3178048 - 110V	RAL 6032		<b>0129028</b>
2.13 L/h (Lube)	14.64 L/h (Process)	3155255 - 110V		RAL 5010		<b>0129029</b>
3.2 L/h (Lube)	18.8 L/h (Process)	3155254 - 24V DC		RAL 8004	0299654 (n°2)	<b>0129030</b>
3.2 L/h (Lube)	19.1 L/h (Process)	3155254 - 24V DC	3178029 - 230V	RAL 8001	0299654 (n°2)	<b>0129031</b>
3.2 L/h (Lube)	18.8 L/h (Process)			RAL 6032		<b>0129033</b>
2.13 l/h (Lube)	21.3 L/h (Process)	3155255 - 110V AC	3178048-110V	RAL 5015		<b>0129908</b>
3.2 L/h (Lube)	19.1 L/h (Process)	3155254 - 24V DC		RAL 6011		<b>0129904</b>

## 12. DIMENSIONS



### 13. HANDLING AND TRASPORTATION

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Prior to shipping, the unit is accurately packed and dispatched in a cardboard container. During transportation and storage always maintain the unit right way up as indicated on the box. On receipt, check that the packaging has not been damaged and store the unit in a dry place.

**For handling the equipment, use only the special eyebolts (see drawing ch. 12).**

### 14. PRECAUTIONS

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**It is necessary to read carefully about the instructions and the risks involved in the use of lubrication system. The operator must know system operation through the user manual.**

#### Power supply

Before any type of intervention, machine must be unplugged from power supply. Make sure that no one can start-up the system again during the intervention. All electric and electronic equipment installed, reservoirs and basic components must be grounded.

#### Flammability

Lubricant generally used in lubrication systems is not normally flammable. However, it is advised to avoid contact with extremely hot substances or naked flames. As a rule, place extinguishers near lubrication equipment to use in case of fire.

#### Pressure

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

#### Noise

The equipment does not produce excessive noise, less than 70 dB(A) .

### 15. OPERATING HAZARDS

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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).

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

- Contact with oil caused by piping breaking/opening or during refilling/maintenance -> see the requirements for the use of suitable personal protective clothing. Protection against direct and indirect contact must be provided by the user;
- Use of unsuitable lubricant -> the characteristics of the fluid are shown on machine and in the manual (**in case of doubt contact Eng. Dept of Dropsa SpA**).

INCOMPATIBLE 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