

VIP4Tools/Double Effect

LUBRICATION SYSTEM

User and Maintenance Manual

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1. INTRODUCTION

This user's and maintenance manual refers to VIP4Tools/Double Effect lubrication system.

This manual should be conserved in such a way that it remains undamaged over time and is readily available to personnel needing to consult it.

Further copies of this manual, updates or clarifications can be obtained by directly contacting the Technical Sales Office at Dropsa.

The manufacturer reserves the right to update the product and/or the user's and maintenance manual without the obligation to revise previous versions. It is however, possible to contact the Technical Sales Office for the latest revision in use, or to consult our web site at <http://www.dropsa.com>.

The use of the equipment referred to in this manual must be entrusted to qualified personnel with a basic knowledge of mechanics, hydraulics and electrical systems.

It is the responsibility of the installer to use tubing suitable for the system; the use of inadequate tubing can cause problems with the pump, injury to persons and create pollution.

Loosening of connections can cause serious safety problems; carry out a check before and after installation and, if necessary retighten them.

Never exceed the maximum working pressure values permitted for the panel and the components connected to it.

Before any maintenance or cleaning operation disconnect the power supply, close off the air supply and discharge the pressure from inside the equipment and the tubing connected to it.

Do not subject the panel, the connections, the tubing or parts under pressure to violent impacts; damaged tubing or connections are dangerous and should be immediately replaced.

After long periods of inactivity check air tightness of all parts subjected to pressure.

Personnel must use personal protection equipment, clothing and tools adequate for the location and the use of the panel both during its operation and during maintenance operations.

The panel, and any accessories mounted on it, should be carefully checked immediately on receipt and in the event of any discrepancy or complaint the Dropsa SpA Sales department should be contacted without delay.

Dropsa SpA declines to accept any responsibility for injuries to persons or damage to property in the event of the non-observance of the information presented in this manual.

Any modification to component parts of the system or the different destination of use of this system or its parts without prior written authorization from Dropsa SpA will absolve the latter from any responsibility for injury to persons and/or damage to property and will release them from all obligations arising from the guarantee.

2. GENERAL DESCRIPTION

The **VIP4Tools/Double Effect** panel is to be utilized for 'on mandrel' applications, without controls on the machine, for the lubrication of tooling and chains.

Designed for high performance at a low cost, it is distinguished by its compactness.

The system comprises a pneumatically controlled mini-pump and the mixer base. The mini-pumps have a fixed delivery (7,15 o 30 mm³/stroke).

A version with adjustable double effect pump and electronic for the control of the happened distribution of the lubricant is previewed. This version allows working without

The modular design of the system makes it extremely versatile; up to a maximum of **8** mixer bases can be installed.

3. IDENTIFICATION MACHINE

A yellow plate showing the product code and the basic characteristics is mounted on the front of the oil tank.

4. TECHNICAL SPECIFICATIONS

CHARACTERISTIC	VIP4Tools/Double Effect lubrication panel
Air supply pressure	5 ÷ 8 bar (73.5 ÷ 117.6 psi)
Working temperature	-5 °C ÷ +55 °C (+23 °F ÷ +131 °F)
Working humidity	90% max
Permitted lubricants	Mineral - synthetic
Oil viscosity at working temperature	32 - 320 cSt (150 ÷ 1480 SUS)
Conservation temperature	-20 °C ÷ +65 °C (-4 °F ÷ 149 °F)

SAMBA LEVEL	
Temperature	-10°C - +80°C (+14 °F ÷ +176 °F)
Maximum switching power	50 W 5 V
Maximum current	1 A
Maximum voltage	220 V AC

FLOW CONTROL BOARD (OPTIONAL)	
Output signal	PNP/NPN
Voltage	8 ÷ 28 VDC

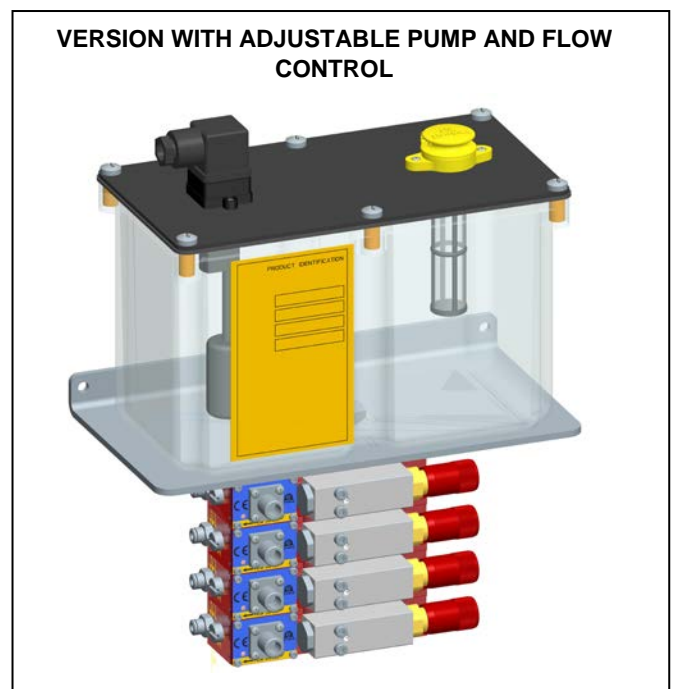
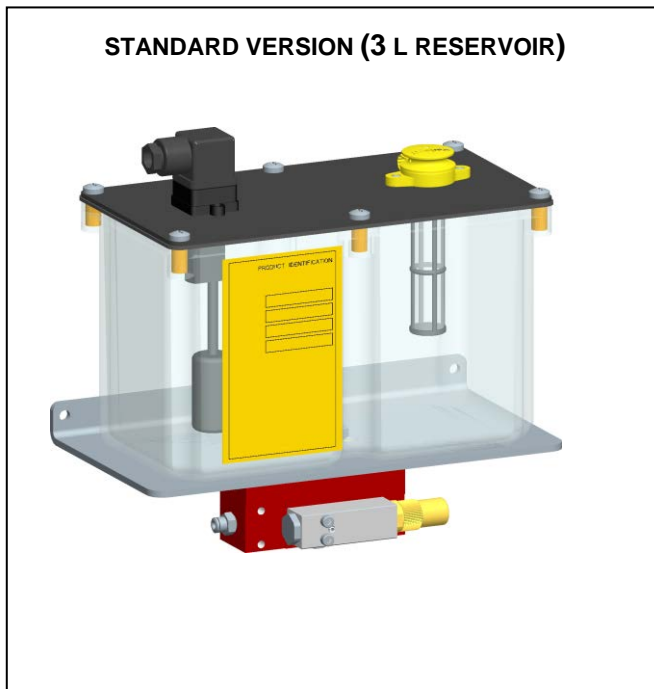
WARNING: DO NOT supply the machine with voltages or pressures other than those indicated on the specification plate.

5. DESCRIPTION OF COMPONENTS

Central VIP4Tools/Double Effect Unit

The central unit of the lubrication system is composed of the following items:

- a *Tank*, made of transparent plastic material, compatible with lubricants on the market.
- a modular *Subframe*
- a Samba type *Minimum level indicator*,
- Mini-pumps with fixed delivery



VERSIONE STANDARD (SERBATOIO 1L)



6. INSTALLATION

6.1 UNPACKING

Once a suitable location has been identified for the installation, open the package and remove the equipment. Check that the VIP4Tools/Double Effect has not sustained damage during transport and storage.

The packaging material does not require any special disposal precautions, not being in any way dangerous or polluting.

6.2 MOUNTING THE VIP4Tools/Double Effect PANEL

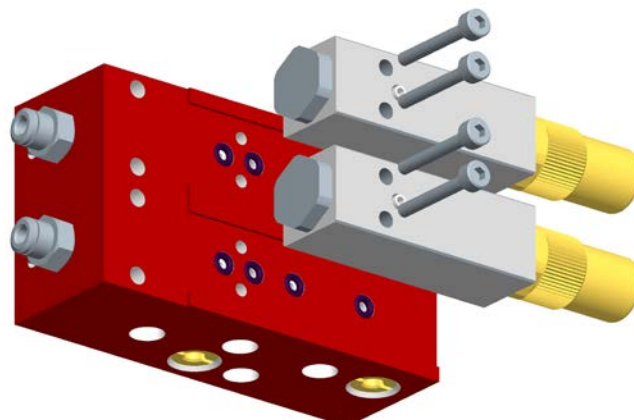
Provide adequate space for the installation, leaving a minimum room of 100 mm around the panel. Mount the VIP4Tools/Double Effect panel at shoulder height to avoid unnatural posture or the possibility of sustaining impacts. Do not install the VIP4Tools/Double Effect in particularly aggressive or explosive/flammable environments or on components subject to vibration.

Only use the supplied mounting bracket with N° 2 holes for \varnothing 6 mm (0.23 in.) bolts.

6.3 MOUNTING THE MINI-PUMPS ON THE MIXER BASES (for replacement or augmenting)

The mini-pumps are mounted on the mixer bases utilizing two securing screws.

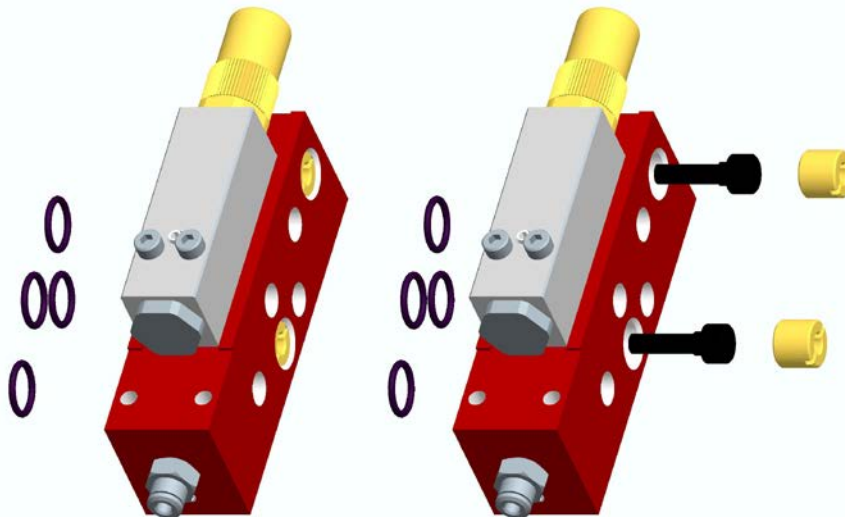
Particular attention should be paid to the correct positioning of the o-rings between the mini-pump and the mixer base (see diagram below).



6.4 MOUNTING OF THE MIXER ASSEMBLY ON THE VIP4TOOLS (for replacement or augmenting)

To install a new unit proceed as follows:

1. Empty the tank of oil.
2. Disconnect the air supply and unscrew the connections on the base.
3. Connect the new base tightening the two securing screws supplied, paying particular attention to the alignment and positioning of the seals.
4. Reattach the connections to the new base.



6.5 HYDRAULIC CONNECTIONS

The only connection to be undertaken is that of the individual pumps, provided with push-in connections, to the lubrication point. The tubing must be in \varnothing 4 mm (0.16 in.) nylon (obtainable from Dropsa).

6.6 PNEUMATIC CONNECTIONS

Connect the air input to the push-in connector utilizing \varnothing 6 mm (0.23 in.) nylon tubing both for the pump (it needs 2 push-in) and the mixer, and provide a stop valve to permit shutting off the supply.

6.7 ELECTRICAL CONNECTIONS

The only electrical connection required is that of the Samba level. (see **paragraph 4** Technical Specifications)
For the pump version with flow control board, use the connector M12 located on the manifold to connect to the board.

N.B.: After all connecting up has been completed ensure the tubing and cables are protected from impacts and are suitably secured.

7. INSTRUCTIONS FOR USE

7.1 STARTING THE VIP4Tools/Double Effect PANEL

Before using the VIP4Tools/Double Effect panel, it is necessary to carry out some preliminary checks:

- check the integrity of the equipment
- check that the electrical and pneumatic connections have been effected correctly
- vent the residual air from the pump using the vent screw, located at the center of the securing screws, until lubricant exits (retighten the vent screw without using excessive force).
- to facilitate the venting, regulate the pumps to maximum flow and operate for some cycles.

7.2 EXCLUDING LUBRICANT DELIVERY FROM AN INDIVIDUAL PUMP (PUMP VERSION WITH FIXED DELIVERY)

SPACER	FLOW (mm ³ / stroke)
3233188	30
3233191	15
3233193	7

8. MAINTENANCE

The pump has been designed and constructed so as to reduce maintenance to a minimum.

To simplify maintenance it is recommended that the equipment be mounted in an easily reached location (**see paragraph 6.2**).

Periodically check the tubing connections for leaks. Always maintain the equipment in a clean condition in order that any leaks will be immediately evident.

When necessary replace the oil filling filter P/N 3130139.

Periodically empty the pressure regulator condensate trap by rotating the small red valve located at its base.

The machine does not require any special tools for carrying out checks and/or maintenance tasks. It is recommended that suitable tools and personal protection clothing (gloves) are used in accordance with Legislative Decree 626/94 (Safety at Work legislation), and that they are in good condition (DPR 547/55) in order to avoid injury to persons and damage to the machine.

Ensure that electrical, pneumatic and hydraulic supplies are disconnected before undertaking any maintenance tasks.

9. DISPOSAL

During the maintenance of the machine, or in the event of its being scrapped, do not discard polluting components in the environment. Refer to local regulations for their correct disposal. At the time of final disposal of the machine it is necessary to destroy the identification plate and all other documentation.

10. ORDER INFORMATION

3 l RESERVOIR VERSIONS FIXING PUMP

N° Divider	Part No
1	3135251
2	3135252
3	3135253
4	3135254
5	3135255
6	3135256
7	3135257
8	3135258

1 l RESERVOIR VERSIONS WITH ADJUSTABLE PUMP AND CONTROL ELECTRONICS

N° Divider	Part No
1	3135431
2	3135432
3	3135433
4	3135434
5	3135435
6	3135436
7	3135437
8	3135438

COMPONENTS FOR STANDARD VERSIONS

PART NUMBER	DESCRIPTION
3130139	Filter, oil filling
1525059	Mixer Base
3103157	Pneumatic mini-pump with fixed delivery: with the pump must be ordered also the fixing screws. Part. num. 14067 - quantity 2
5717300	Tube, flexible Ø4 (0.16 in.)
6770072	3 l reservoir
3044337	1 l reservoir
1655583	Level, Samba

COMPONENTS FOR THE ELECTRONIC VERSION (DIFFERENT TO THE STANDARD VERSION)

PART NUMBER	DESCRIPTION
1525272	Mixing base Base di miscelazione
3103156	Pneumatic mini-pump with adjustable delivery

ACCESSORIES

PART NUMBER	DESCRIPTION
5717300	Tube, flexible Ø4 (0.16 in.)
5717301	Tube, flexible Ø 6 (0.23 in.)
1524486	Lubrication nozzle 2 mm (1,26 in)
1524487	Lubrication nozzle 48 mm (1,89 in.)
3132583	Spray tube with magnetic base L = 180 mm (7,08 inch.)
3132714	Spray tube with magnetic base L = 400 mm (15,74 inch.)
3226661	LRT 30 Oil for iron and aluminium –1lt pack

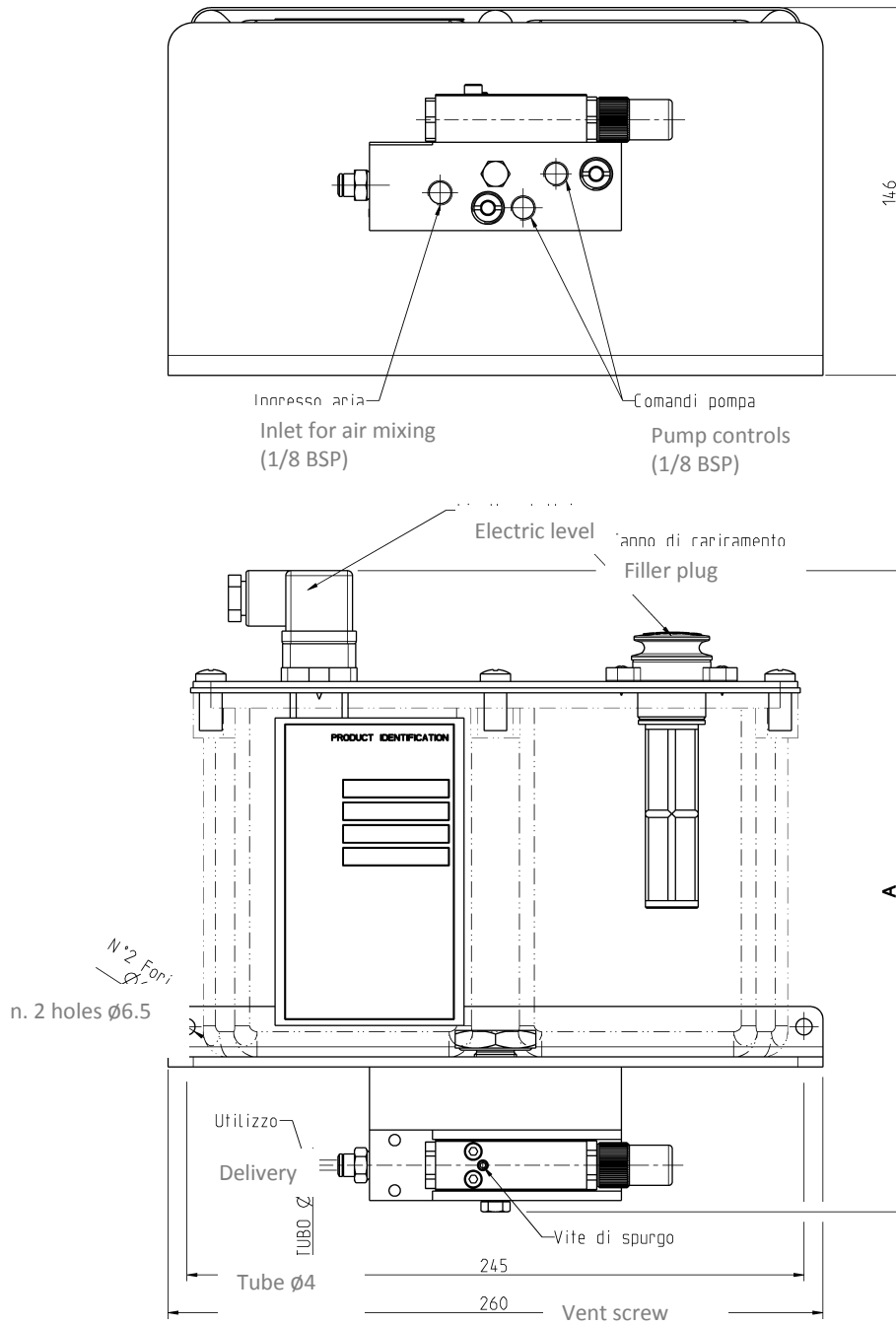
APPROXIMATE CONSUMPTION FOR LRT OILS (3226661) USAGE

Grams per lubrication nozzle in 8 hours operating time

	ALUMINIUM LEADED BRASS	LEADED STEEL SOFT STEEL	ALLOY STEEL STAINLESS STEEL	REFRACTORY AND TITANIUM ALLOYS
Saw cutting Turning Shearing Cutting off	35-40	30	30	30-60
Boring Drilling Milling Slotting	30-40	30	60	70
Threading Tapping Planing Shaving	60	70	80	90
Threading blind tapping	60	70	80	90-100
Moulding and standard drawing	60	70	80-90	90-100
Broaching Toothing Bending	70	80	90	100/110

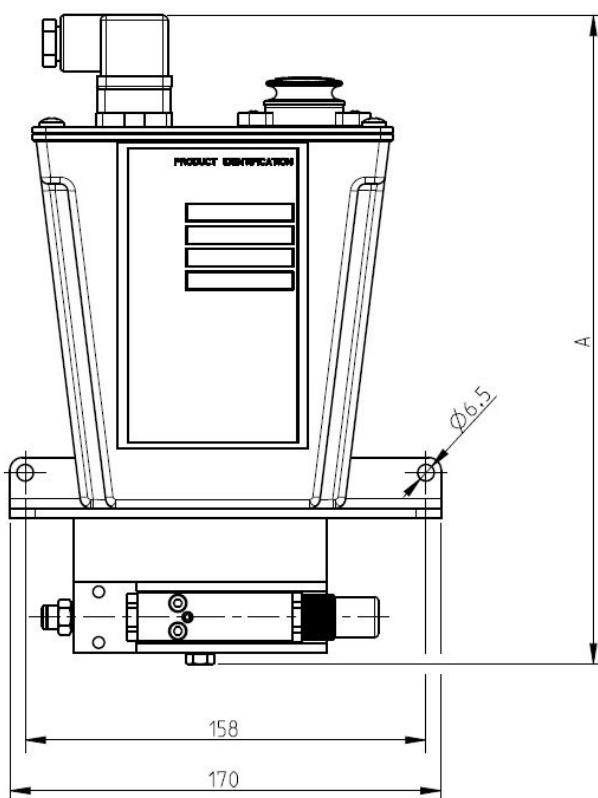
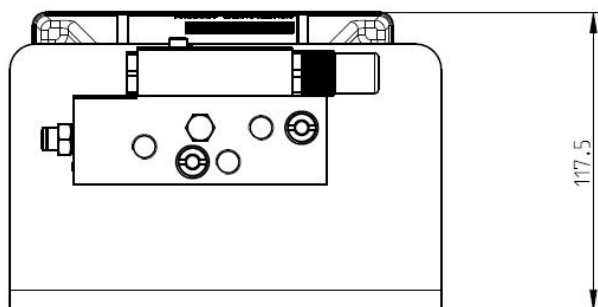
11. DIMENSIONS

11.1 VIP 3 LITER



Number of elements	Height A		Weight	
	(mm)	(in)	(Kg)	(lb)
1	255	10	3,5	7,7
2	283	11,14	4	8,8
3	311	12,24	4,5	9,9
4	339	13,35	5	11
5	367	14,45	5,5	12,1
6	395	15,55	6	13,2
7	423	16,66	6,5	14,3
8	451	17,76	7	15,4

11.2 VIP 1 LITRO



Numero elementi	A		Pesi	
	(mm)	(in)	(Kg)	(lb)
1	255	10	2	4.4
2	283	11,14	2.5	5.5
3	311	12,24	3	6.6
4	339	13,35	3.5	7.7
5	367	14,45	4	8.8
6	395	15,55	4.5	9.9
7	423	16,66	5	11
8	451	17,76	5.5	12.1

12. HANDLING AND TRANSPORT

Prior to dispatch VIP4Tools/DoubleEffect lubrication panels are carefully packed in a cardboard carton. During transportation and storage maintain the equipment the right way up as indicated on the carton. On receipt, check that the packaging is not damaged and store the equipment in a dry place.

13. PRECAUTIONS IN USE

It is necessary to carefully read the warnings and the risks involved in using the lubrication panel. The operator must understand the functioning of the unit by studying the user's manual.

Electric currents

No intervention must be attempted on the equipment without first having disconnected the electrical power supply (electric level) and ensuring that it cannot be reconnected during the intervention.

All installed equipment, electrical, electronic, tank and base structure, must be connected to the ground line. **(see paragraph 6.7).**

Flammability

The oil employed in the lubrication circuit is not normally flammable. It is nonetheless indispensable to take every precaution against the oil coming into contact with very hot parts or open flames.

Pressure

Prior to any intervention on the equipment ensure that pressure is released from all branches of the lubrication circuit. Failure to do this could result in oil being discharged under pressure where connections or components are disassembled **(see paragraph 6.6).**

Noise

The VIP4Tools/DoubleEffect lubrication panel does not emit excessive noise, remaining below 70 dB(A).

WARNING: before carrying out the replacement of the mini-pumps, empty the tank of lubricant.

AIR CHARACTERISTICS

Characteristic	Requirement
Pressure at point of connection	Min. 6 Bar (88.2 psi)
Max. quantity of particles in suspension	15 mg/Nmc
Max. diameter of particles	0.05
Dew point	2° C (35.6 °F)
Max. quantity of oil in suspension	5 mg/Nmc

Whenever not utilizing natural base oils compatible with existing health regulations, it is necessary to adjust the mixer pressure so as to avoid the formation and dispersion of oil mist into the environment.

The mixing pressure is indicatively between 1 bar (14.7 psi) and 2.5 bar (36.7 psi).

14. CONTRAINDICATIONS

The VIP4Tools/Double Effect panel does not have any particular contraindications except for the following points:

- The operator coming into contact with fluid due to breakage/opening of supply tubing.
- The operator must be furnished with suitable personal protection clothing/equipment (part VIII – 626 [Safety at Work legislation]).
- Abnormal posture.
- Take note of the indications shown in **paragraph 6.2.**
- Contact with oil during filling/maintenance.
- The operator must be furnished with suitable personal protection clothing/equipment (part VIII – 626 [Safety at Work legislation]).
- Use of unsuitable lubricants.

Main inadmissible fluids.

Fluid	Danger
Lubricants with abrasive additives	High wear rate of contacted parts
Lubricants with silicon based additives	Seizure of the pump
Petrol – solvents – flammable liquids	Fire – explosion – damage to seals
Corrosive products	Corrosion of the pump– injury to persons
Water	Oxidation of the pump
Food substances	Contamination of the substances themselves