

# USE AND MAINTENANCE MANUAL

## PP-50 PUMP



COD.: DTVI\_PP50\_2505  
REV.: 00  
DATE: 29/01/2025



**TRANSLATED FROM ORIGINAL**  
Read carefully before use!

**EN**

# Summary

- 1 GENERAL INFORMATION..... 1**
  - 1.1 SYMBOLOGY..... 2
  - 1.2 REFERENCE STANDARDS ..... 3
  - 1.3 DECLARATION OF INCORPORATION (ANNEX II B DIR. 2006/42/EC) ..... 4
  - 1.4 GLOSSARY..... 5
  - 1.5 SERVICE AND MANUFACTURER CONTACT DETAILS ..... 6
- 2 PRESENTATION AND OPERATION ..... 7**
  - 2.1 EXPLODED..... 11
  - 2.2 TECHNICAL DATA ..... 15
- 3 SAFETY ..... 17**
  - 3.1 MACHINE SAFETY DEVICES..... 19
  - 3.2 FREE USEFUL SPACES ..... 19
  - 3.3 RISK AREAS AND RESIDUAL RISK ..... 19
- 4 TRANSPORT AND HANDLING..... 20**
- 5 INSTALLATION ..... 21**
  - 5.1 POSITIONING ..... 21
  - 5.2 CONNECTIONS..... 21
    - 5.2.1 *Electric*..... 22
    - 5.2.2 *Pneumatic*..... 22
    - 5.2.3 *Fluidic* ..... 23
  - 5.3 COMMISSIONING..... 24
- 6 SOFTWARE..... 24**
- 7 PROCEDURE ..... 25**
  - 7.1 COMPRESSED AIR LUBRICATOR ADJUSTMENT (OPTIONAL) ..... 25
  - 7.2 FLUID RELEASE ADJUSTMENT ..... 26
  - 7.3 DRUM REPLACEMENT AND FIRST START ..... 27
- 8 MAINTENANCE ..... 31**
  - 8.1 PUMPING CONDENSATE EMPTYING ..... 33
  - 8.2 REPLACEMENT OF THE PRESSURE PLATE GASKET ..... 34
  - 8.3 FILTER CLEANING (IF ANY)..... 35
- 9 TROUBLESHOOTING..... 36**
- 10 END OF LIFE..... 37**

## 1 GENERAL INFORMATION

This manual contains information regarding the installation, use, maintenance and end of life of the component and provides indications for the most suitable behavior for correct operation. This manual has been designed to be simple and as straightforward as possible, with a subdivision into chapters and sub-chapters that allows you to find any information you need quickly. In addition, the manual begins by giving a general description of the contents, then an overview of the component, to arrive at aspects of safety, transport, installation and use and finally to the end of life. If you have any doubts about the interpretation or reading of this document, please contact the manufacturer.



DAV Tech declines any responsibility relating to improper use of the component. Observe the specifications in this manual.



Read this manual before handling the component or performing any action on it.



The manual is an essential safety requirement and must accompany the component throughout its life cycle.

It is the task of the end user to optimize the functionality of the component, always considering the purpose for which it was built.



You are asked to keep this manual, together with the attached documentation, in good condition, legible and complete. In addition, it must be stored in the vicinity of the component or, in any case, in a place accessible and known to all personnel who use the component itself or who must perform maintenance or inspection interventions. If the manual deteriorates or is no longer complete, a copy must be requested from the manufacturer, indicating the code of the manual and the revision.



The manual is intended for personnel who use the component (operators), who perform maintenance on it (maintenance technicians), and for personnel who must perform checks or inspections. The manufacturer is not liable for damage to the component caused by personnel who have not followed the instructions in the manual.

If you have any doubts about the correct interpretation of the information contained in this manual, please contact the manufacturer.

### GUARANTEE

During the design phase, a careful choice of materials and components to be used in the project was made and they were subjected to regular testing before delivery. All elements have been designed and manufactured with an adequate degree of safety, such as to be able to withstand stresses greater than those of normal use.

The warranty is valid for a period of 12 months from the date of commissioning and in any case no longer than 15 months from the date of delivery. Work carried out during the warranty period does not extend the warranty period in any way.

The manufacturer is not liable for defects due to normal wear and tear of parts which, by their nature, decay.

## 1.1 Symbology

Below are the symbols that are used to give a greater impact to the importance of the concept you want to give.



**ATTENTION!**

Refers to a warning that could lead to minor damage (minor injuries, damage to the component requiring maintenance work).



**DANGER!**

It refers to a major event that could cause major damage (death, permanent injury, irreversible breakage of the component).



NOTE. Indicate relevant information or insight.



OBLIGATION. It indicates a task that must be performed, related to both the component and the manual.



REFERENCE. Links to an external document that is important to view

In addition, the list of symbols is integrated with that of the personnel responsible for using the component and its function, together with other symbols used within the manual.



**Operator**

A (qualified) person capable of operating the component, adjusting, cleaning, starting or resetting the component. The operator is not authorized to perform maintenance.



**Mechanical maintenance technician**

Qualified technician able to carry out mechanical, adjustment, maintenance and routine repair work described in this manual. He is not authorized to carry out interventions on electrical systems in the presence of voltage.



**Electrical maintenance technician**

Qualified technician able to carry out electrical, adjustment, maintenance and routine repair work described in this manual. It can work in the presence of voltage on electrical cabinets and junction boxes. He is not authorized to carry out interventions on the mechanical side.



**Manufacturer's technician**

Qualified technician made available by the manufacturer to carry out operations of a complex nature in particular situations, or in any case as agreed with the customer.

## 1.2 Reference standards

The reference standards and directives of this manual are the following:

### Directives

- 2006/42/EC – Machinery Directive

### 1.3 Declaration of incorporation (Annex II B DIR. 2006/42/EC)

**Manufacturer's name:** DAV Tech Srl  
**Address:** Via G. Ravizza, 30, .36075, Montecchio Maggiore (VI)

**DECLARES THAT THE ALMOST MACHINE**

**Component:** PP-50  
**Model:** Piston pump  
**ID:**  
**Year:** 2025  
**Intended use:** Fluid supply to dosing systems

**COMPLIES WITH THE INCORPORATION PROVISIONS OF DIRECTIVE 2006/42/EC**

The technical documentation has been drawn up in accordance with Annex VII B, as required by the following:

- Machinery Directive 2006/42/EC of the European Parliament and Council of 17 May 2006

**IT ALSO DECLARES THAT:**

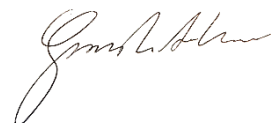
- Undertakings are undertaken to provide, in response to a properly substantiated request from the national authorities, relevant information on this partly completed machine;
- The technical file was prepared by Andrea Grazioli, via Ravizza, 30, Montecchio Maggiore (VI), IT.

**This quasi-machine cannot be used until the machinery on which it will be used is declared compliant with regulation 2006/42/EC.**

Montecchio Maggiore, 20 January 2025

**The legal representative**

**Andrea Grazioli**



## 1.4 Glossary

The following are the most used terms within this manual with their meanings.

TERM	DEFINITION
<b>Enable</b>	Term that defines the act of preparing (enabling) an action. The action will be triggered as soon as the criteria are met, which consequently leads to the activation of the enabled action.
<b>Active</b>	The action that is performed instantaneously when the control is activated.
<b>Human controls</b>	This defines those commands that, used for manual operations, must be kept activated for the action to be performed. When the command is released, the action stops.
<b>Two-hand controls</b>	Human-controlled controls that require two manual controls to be operated simultaneously to perform an action.
<b>P.P.E.</b>	Personal protective equipment. They include all the items necessary to ensure the protection of personnel from possible accidental damage (safety shoes, gloves, helmet, and more).
<b>Display</b>	It is used to display information. It can be in any shape and size, even touch screen.
<b>Manufacturer</b>	Natural or legal person who designed and manufactured the component covered by this manual.
<b>HP</b>	High Pressure. An acronym that indicates high pressure.
<b>Icon</b>	A small image that represents a command, a function or even a document or an operating program, which appears on a computer screen. When selected by the user, it initiates the function or program it symbolizes.
<b>Joystick</b>	Lever manipulator used in control panels.
<b>N.A.</b>	Not Applicable, i.e. it indicates that it is a field that does not apply to this manual and that it cannot be integrated into the component.
<b>Operator panel</b>	A control station where the machine control instruments are located
<b>P.I.</b>	Possible Implementation, i.e. it is currently absent from the component described in this manual, but it is possible to make an addition and implement it.
<b>Screen</b>	Interface system between man and component. Screenshots are the images displayed on the operator panel that allow the user to receive and provide information to the management software.
<b>Push-button panel</b>	Composition of buttons and selectors that allow you to act directly on the behavior of the component.
<b>Keyboard</b>	Keyboard only (stand-alone element) or in addition to a display (keys only, no selectors or other)
<b>Touch screen</b>	Touch screen that allows the user to interact with a graphic interface using their fingers or objects.

## 1.5 Service and manufacturer contact details

For any reason relating to the use, maintenance or request of spare parts, the customer must contact the manufacturer (or the service center if present) directly, specifying the identification data of the component.

The customer can make use of the technical and commercial support of local agents or importers, who are in direct contact with the company DAV Tech Srl.

<b>Company name</b>	<b>DAV Tech Srl</b>
<b>Postal address</b>	Via Ravizza, 30, 37065, Montecchio Maggiore (VI) – (IT)
<b>Telephone</b>	+39 0444 574510
<b>Fax</b>	+39 0444 574324
<b>email</b>	<a href="mailto:davtech@davtech.it">davtech@davtech.it</a>
<b>Website</b>	<a href="http://www.davtech.it">www.davtech.it</a>



## 2 PRESENTATION AND OPERATION

In this manual we want to explain the operation of the PP-50 pneumatic pressure plate pump. This is a fully pneumatic component (apart from the level sensor, if present) that is used to push the fluid from its container to any dosing system. In addition, this is a pressure-time supply system, i.e. the exact volume of fluid coming out is not known.

In other words, the function of this component is:

### MEDIUM-HIGH VISCOSITY FLUID SUPPLY TO THE DOSING PLANT AT MEDIUM-HIGH PRESSURES

Intended use is the use described in the chapter below, while improper use is considered any other use that is not described in this manual, with products of different material and format from those for which it was built.

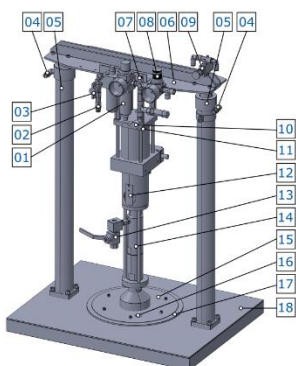


Figure 01 – Detail of the PP-50 40-15 pump

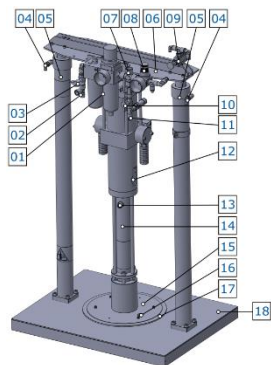


Figure 02 – Detail of the PP-50 30-40 pump

### No. DESCRIPTION

01	Pressure regulator with air filter and oiler
02	Fluid pumping air outlet
03	Fluidic two-way valve
04	Lift-and-slide piston inlet
05	Lift-and-slide piston
06	CE marking
07	Line air inlet
08	Piston pressure regulator
09	Piston Regulator Switch
10	Two-way valve for buffer
11	Pneumatic buffer outlet
12	Release Input
13	Fluid output
14	Fluidic pumping unit
15	Pressing plate
16	Pad insert
17	Membrane pressure plate
18	Support base

Before using a certain type of fluid, it is necessary to check that:

- The viscosity of the fluid is compatible with the characteristics of the pump;
- The characteristics of the fluid meet the desired requirements;
- The technical data sheet of the fluid provided by the manufacturer contains all the information regarding the product such as viscosity, applications, drying times and storage;
- The fluid storage time has not been exceeded;
- The fluid packages are tightly sealed.

If it is necessary to use several fluids with the same pump, it must be cleaned thoroughly to prevent residues from the previous process from affecting the work to be performed.

**VERSIONS**

This pump can be supplied in two versions, in which the pumping unit changes, namely:

- 40/15, in which there is a smaller pumping unit;
- 30/40, in which you have a larger pump.

The differences are in the compression ratio and in how fluid they can move with each stroke, i.e. the 40/15 pump allows you to have a compression ratio of 38:1 (i.e. each incoming pneumatic bar is converted into 38 outlet fluidic bars) and has a flow rate of 15cc/stroke; on the other hand, the second pumping unit allows for a compression ratio of 31:1 with a flow rate of 40cc/stroke.



Being present in two versions, this manual explains how the 30/40 version works, since the operation is the same. If there are any differences, they are pointed out in the specific chapter.

## OPERATION

This pump works like any piston pump. Its operation can be divided into two phases:

- **Rise**, in which the fluid in contact with the pressure plate is pushed inside the first fluid suction chamber through the spoon below, raising the non-return valve and the entire piston; in addition, the fluid already present in the delivery chamber is pushed outwards;
- **Descent**, in which the scoop lowers, the non-return valve blocks the passage of the fluid from inside the pump to the tank, while the passage ball rises and lets the fluid present in the suction chamber flow towards the delivery chamber, which pushes the fluid towards the outside of the pump itself.

This pump has an immediate operation, i.e. once the drum is inserted into position and the plate is on the surface of the fluid, just activate the pneumatic circuit and immediately there is a fluid outlet.

For working values, please refer to [chapter 2.2](#).

The pumps cannot operate autonomously. To have a complete dosing system, they must be connected to valves or other components that regulate the dosing of the fluid itself.

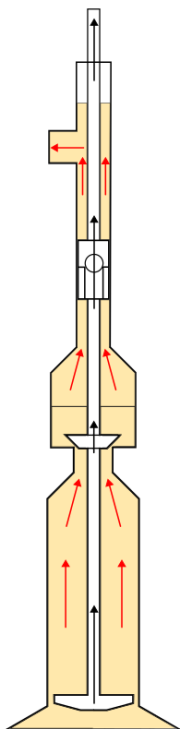


Figure 03 – PP-50 pump in the ascent phase

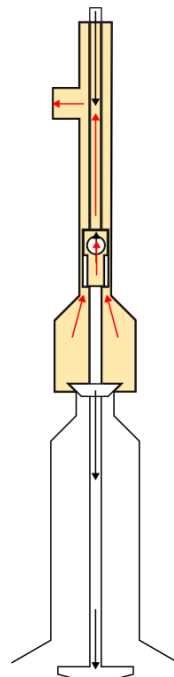


Figure 04 – PP-50 pump in the descent phase

The black arrows indicate the direction of the pump, while the red arrows indicate the direction of the fluid.

## USEFUL TIPS

- It is possible to have wheels placed under the support base of the pressure plate pump to facilitate the movement of the pump itself;
- It is possible to have product level sensors, which can be:
  - **Switch**, with which the system sends an end-of-product signal once the rod placed on the platter reaches a certain level;
  - **Ultrasonic**, with which the system sends the level of the product inside the drum in an analog way and, by setting the minimum levels to the software, the system itself sends notifications of the end of the product.
- At the end of each process, and for prolonged breaks, it is advisable to relieve the pressure of the component, therefore both pumping unit and the elevator (removing the product from under the plate). This is to prevent the product from separating, or the pump from remaining under pressure when not in use. In addition, if you change products, it is advisable to thoroughly clean the pumping circuit of the pump itself, so that the two products do not come into contact with each other.

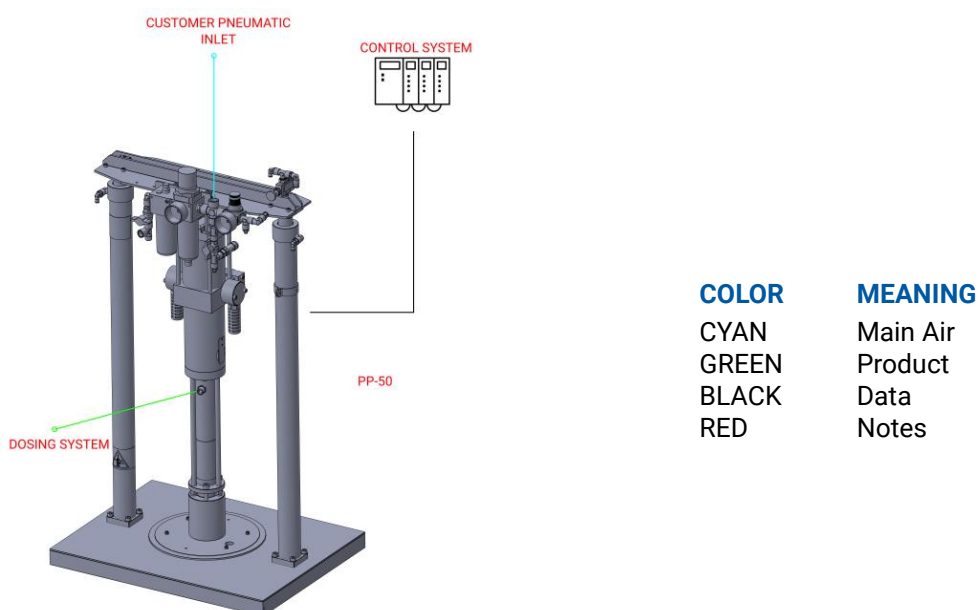
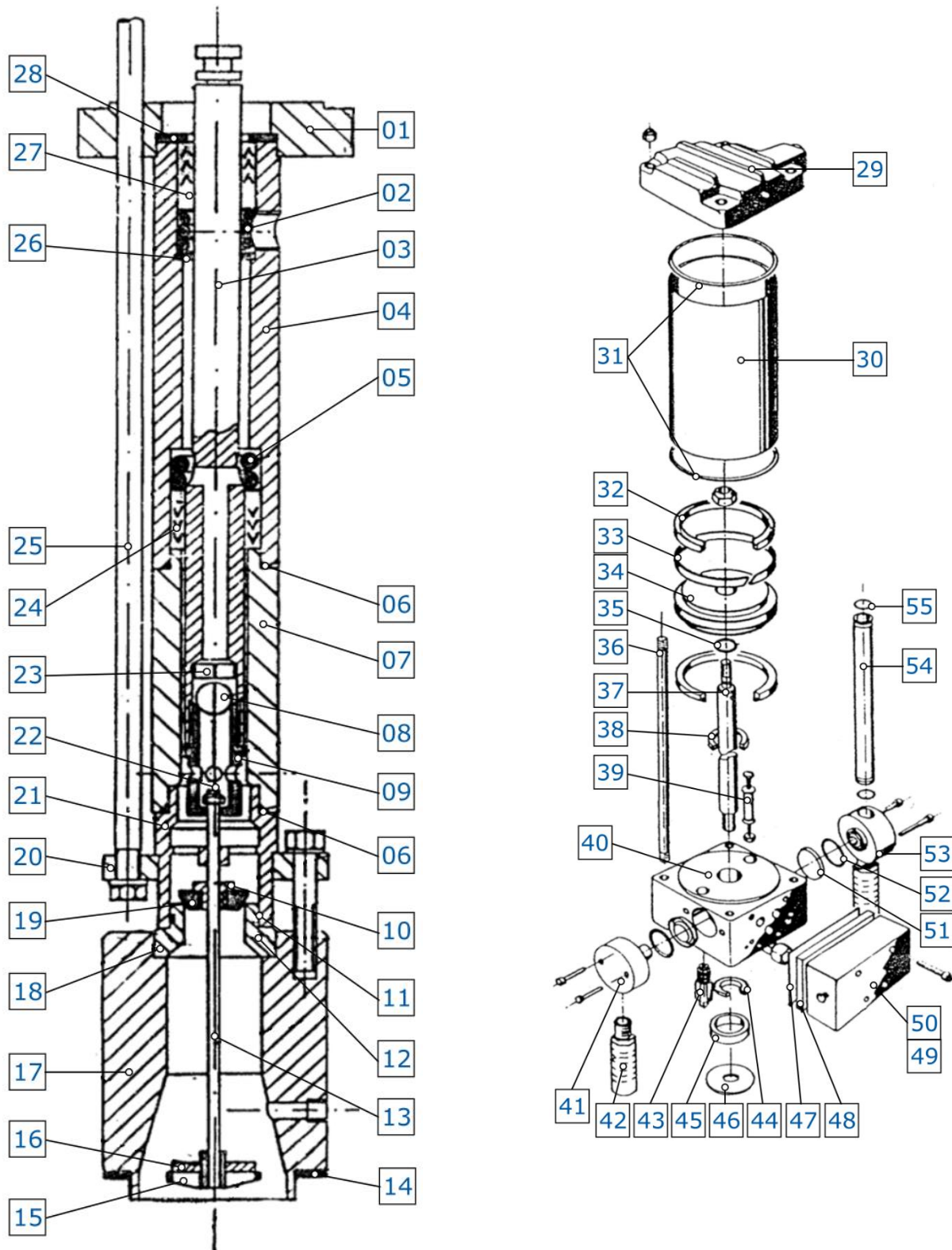


Figure 05 – Example of Pump Connection

## 2.1 Exploded

Below we want to give an exploded view of the components of the pumping unit with a 31:1 ratio (30/40), with the pumping unit on the left and the engine on the right. For the lift, only the part number is provided



COD.: DTVI\_PP50\_2505  
 REV.: 00  
 DATE: 29/01/2025

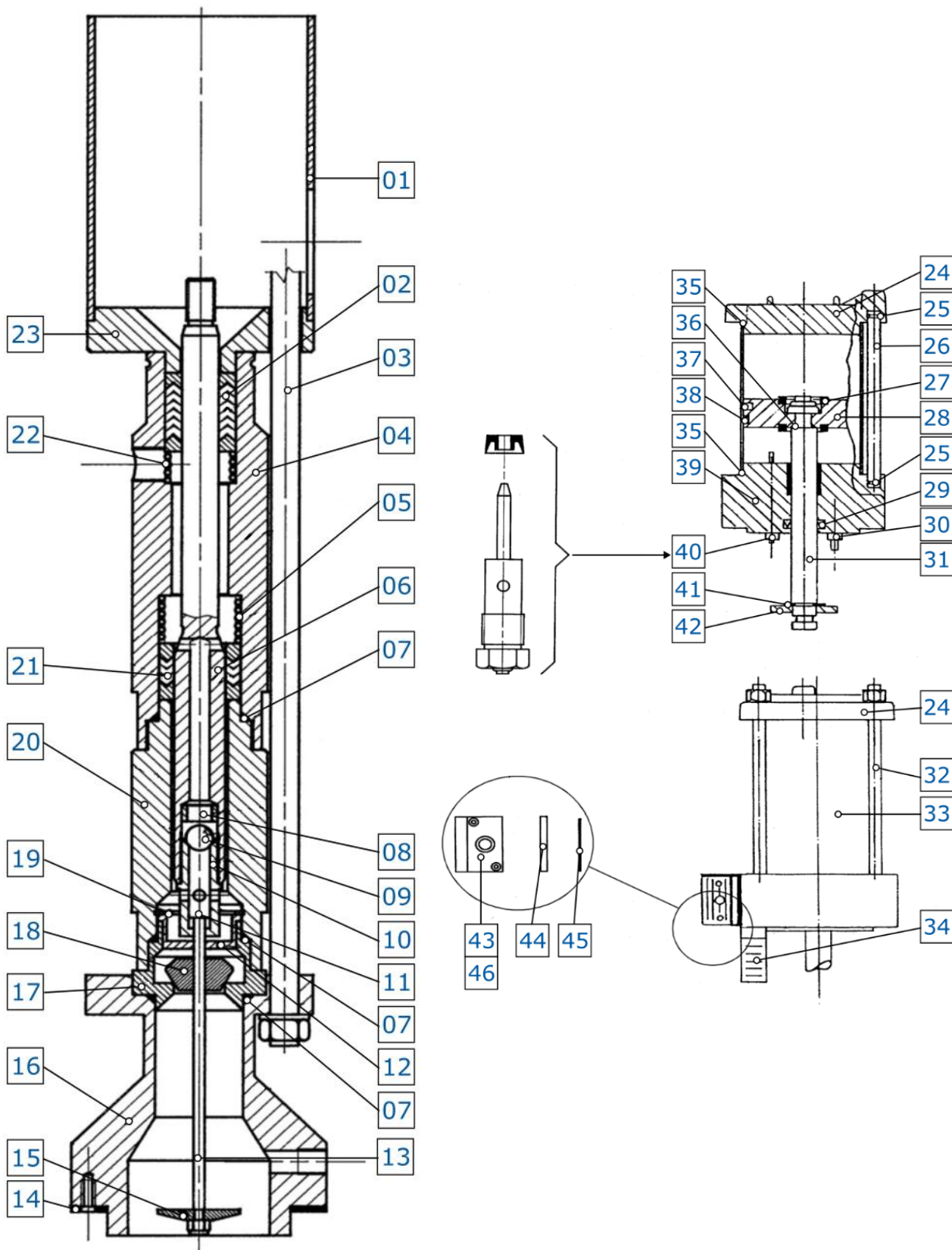
**DAV TECH SRL**  
 Any reproduction (total or partial) of this document not authorized by the manufacturer will be punished according to the law.



No.	Description	Var.	Code	Variant details
01	UPPER PUMP FLANGE	-	A515.71A	-
02	STUFFING SPRING	-	H203.03	-
03	PUMP STEM	-	T6154.00	-
04	UPPER PUMP BODY	-	A354.22	-
05	PISTON SPRING	-	H222.03	-
06	O-RING GASKET	-	L117.06	-
07	LOWER PUMP BODY	-	A355.22	-
08	BALL 9/16"	-	K802.03	-
09	STEM VALVE BODY	-	(1)	-
10	VALVE BUSHING	-	A614.07	-
11	OR GASKET	-	L116.06	-
12	VALVE SEAT	-	A613.03	-
13	ROD	-	T6171.00A (1)	-
14	DISC SEAL	-	G733.07	-
15	SPOON	-	A616.03	-
16	DISC SPOON	-	A617.03	-
17	PLATTER ATTACHMENT	-	A619.22	-
18	OR GASKET	-	L154.06	-
19	VALVE	-	A615.03	-
20	LOWER PUMP FLANGE	-	A618.62	-
21	FOOT PUMP	-	A611.03	-
22	4X19 PLUG	-	(1)	-
23	STEM VALVE RETAINER	-	A156.03	-
24	PISTON PACK	-	T941.00F	-
25	STRAP	-	H157.62A	-
26	SPRING WASHER	-	A476.03	-
27	STUFFING PACK	-	T920.00E	-
28	STUFFING RING	-	A477.01	-
29	ENGINE COVER	-	T6173.00	-
30	ENGINE CYLINDER	-	D609.12	-
31	SEAL	-	L106.06	-
32	SEAL	-	L405.06	-
33	SLIDING BAND	-	L806.08	-
34	ENGINE PISTON	-	A133.01	-
35	SEAL	-	L115.06	-
36	-	-	-	-
37	ENGINE STEM	-	D412.12	-
38	DESCENT SHOCK	-	G908.06	-
39	TOP PROBE	-	T706.00	-
40	MOTOR BASE	-	T618.00E	-
41	FLANGE FULL BOTTOM UNLOADER	-	T6031.00AE	-
42	SILENCER	-	H514.07	-
43	LOWER PROBE	-	T707.00	-
44	SEAL	-	L404.06	-
45	CLIMBING SHOCK	-	G909.06	-
46	DISC REVERSAL	-	A137.62	-
47	2 AP VALVE SEAL	-	G736.06	-
48	2 AP VALVE BASE	-	A819.71	-
49	REVERSING VALVE	-	P496.00E	-
50	VALVE GASKET SERIES	-	-	-
51	SEAL	-	L414.06	-
52	SEAL	-	L116.06	-
53	UPPER UNLOADER FLANGE	-	A146.71A	-
54	AIR DUCT	-	A233.12	-
55	SEAL	-	L118.06	-
-	PUMPING PUMP GASKET KIT	-	T966.00	Includes No. 10, 11, 6, 18, 27, 24
-	ENGINE GASKET KIT	-	T9032.00	Includes No. 47, 38, 45, 31, 35, 52, 55, 44, 32, 51, 33, 39, 43
-	PUMPING UNIT 30/40	-	PUMP-PP3040	-
-	DIMENSIONED MEMBRANE	-	MEMBRANE-PP2550	-
-	COMPLETE PLATE WITH MEMBRANE	-	FOLLOWERPLATE-PP2550	-
-	BUFFER ROD	-	T6109.00A	-
-	AIR BLOW ROD ASSEMBLY	-	T6109.00	-
-	LUBRICANT 250ml	-	Z101.00	-
-	LUBRICANT 1000ml	-	Z102.00	-
-	RELEASE AGENT (250 ml)	-	Z110.00A	-
-	RELEASE AGENT (1000 ml)	-	Z110.00	-

(1) Code NO.13 also includes codes 09 and 22

Below we want to give an exploded view of the components of the pumping unit with a ratio of 38:1 (40/15) with the pumping unit on the left and the engine on the right. For the lift, only the part number is provided.



No.	Description	Var.	Code	Variant details
01	PUMP MOTOR SPACER	-	A359.71A	-
02	STUFFING PACK	-	T918.00E	-
03	STRAP	-	H163.62B	-
04	UPPER PUMP BODY	-	A658.22	-
05	SPRING	-	H203.03	-
06	PUMP STEM	-	T6157.00	-
07	OR GASKET	-	L116.06	-
08	STEM VALVE RETAINER	-	A170.03	-
09	STEM VALVE BODY	-	A709.03	-
10	PIN	-	K007.03	-
11	SUCTION VALVE STOP	-	A711.03	-
12	ROD	-	T6171.00C	-
13	DISC SEAL	-	G733.07	-
14	SPOON	-	A716.03	-
15	PRESSURE PLATE ATTACHMENT	-	A715.71	-
16	FOOT PUMP	-	A710.03	-
17	INTAKE VALVE	-	A712.03	-
18	JK 30 RING	-	K601.22	-
19	3/8" BALL	-	K801.03	-
20	LOWER PUMP BODY	-	A659.22	-
21	PISTON PACK	-	T917.00E	-
22	STUFFING SPRING	-	H204.03	-
23	FLANGE PUMP	-	A661.12A	-
24	UPPER MOTOR FLANGE	-	F132.91C	-
25	OR GASKET	-	L109.06	-
26	MOTOR FEED PIPE	-	A408.12	-
27	SHOCK ABSORBER	-	G903.06	-
28	ENGINE PISTON	-	A164.01	-
29	SEAL	-	L403.06	-
30	LOWER PROBE M80	-	T703.00	-
31	ENGINE STEM	-	D404.12	-
32	STRAP	-	H177.62A	-
33	ENGINE CYLINDER	-	D608.81	-
34	SILENCER	-	H505.07	-
35	OR GASKET	-	L108.06	-
36	OR GASKET	-	L110.06	-
37	SEAL	-	L413.06	-
38	SLIDING BAND	-	L802.08	-
39	MOTOR BASE	-	T616.00CA	-
40	UPPER PROBE M80	-	T702.00	-
41	RETAINER RING	-	K606.02	-
42	DISC REVERSAL	-	A160.01A	-
43	P-REVERSING VALVE	-	P498.00	-
44	VALVE BASE	-	A818.71	-
45	VALVE SEAL	-	G735.06	-
46	VALVE GASKET SERIES	-	T6094.00	-
-	PUMPING PUMP GASKET KIT	-	T9A2.00	Includes No. 02-07-21
-	ENGINE GASKET KIT	-	T910.00	Includes No. 25-27-29-30-35-36-37-38-40
-	PUMPING UNIT 40-15	-	PUMP-PP4015	-
-	DIMENSIONED MEMBRANE	-	MEMBRANE-PP2550	-
-	COMPLETE PLATE WITH MEMBRANE	-	FOLLOWERPLATE-PP2550	-
-	LUBRICANT 250ml	-	Z101.00	-
-	LUBRICANT 1000ml	-	Z102.00	-
-	RELEASE AGENT (250 ml)	-	Z110.00A	-
-	RELEASE AGENT (1000 ml)	-	Z110.00	-



## 2.2 Technical data

All the technical characteristics concerning the component of this manual are indicated below.

SPECIFICATIONS		
Description	UdM	Values
<b>General</b>		
Model	\	PP-50
Activation	\	Double Acting
Materials in contact with the fluid	\	Carbon Steel
	\	NBR membrane on the pressure plate (other materials on request)
<b>Pneumatic</b>		
Pressure Ratio (30-40)	\	31:1
Pressure Ratio (40-15)	\	38:1
Working pressure	bar	2 ÷ 8
Maximum operating pressure (R = 31:1)	bar	240
Maximum operating pressure (R = 38:1)	bar	300
Flow rate at 60 cycles/min (30-40)	l/min	2.3
Flow rate at 60 cycles/min (40-15)	l/min	0.9
Noise level at 40 cycles/min at 6 bar (30-40)	dB(A)	76.5
Noise level at 40 cycles/min at 6 bar (40-15)	dB(A)	72
Pneumatic Tube Size (30-40)	"	G 1/2" F
Pneumatic Tube Size (40-15)	"	G 3/8" F
Fluidic outlet size	"	G 1/4" M

ENVIRONMENTAL CHARACTERISTICS		
Description	UdM	Values
Working Ambient Temperature	°C	5 ÷ 45
Storage Ambient Temperature	°C	-20 ÷ 55
Permissible non-condensing humidity	%	5 ÷ 90

### USABLE FLUIDS

Medium-high viscosity products



**DANGER!**

Depending on the working pressure of the component, it is recommended to use a certain type of hose, i.e. at high pressures it is recommended to use armored hoses.

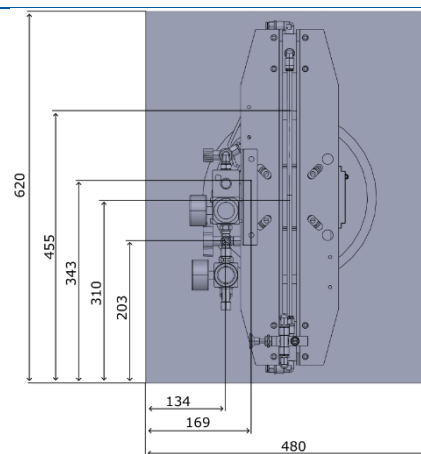
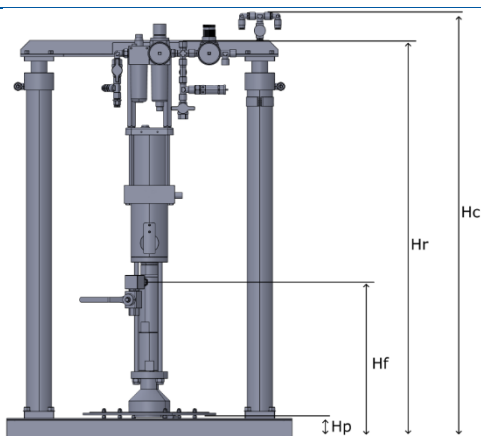
## DIMENSIONAL AND WEIGHT CHARACTERISTICS PP-50 40-15

Description	UdM	Value
Component height min ÷ max (H <sub>c</sub> )	mm	1140 ÷ 1740
Air inlet connection height min ÷ max (H <sub>r</sub> )	mm	1030 ÷ 1610
Fluidic inlet height min ÷ max (H <sub>f</sub> )	mm	490 ÷ 1090
Pressure plate height min ÷ max (H <sub>p</sub> )	mm	150 ÷ 780
Component weight	kg	~ 60

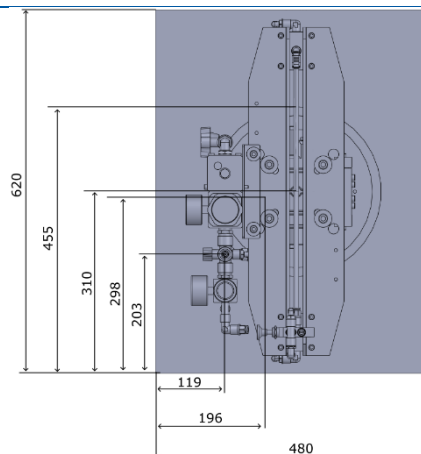
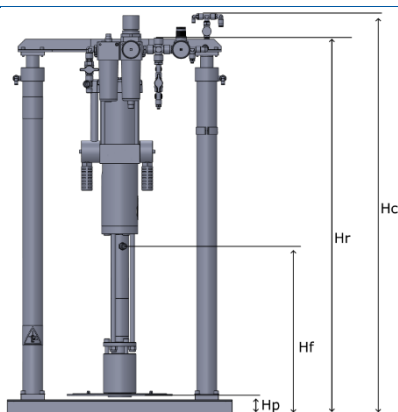
## DIMENSIONAL AND WEIGHT CHARACTERISTICS PP-50 30-40

Description	UdM	Value
Component height min ÷ max (H <sub>c</sub> )	mm	1270 ÷ 1900
Air inlet connection height min ÷ max (H <sub>r</sub> )	mm	1170 ÷ 1780
Fluidic inlet height min ÷ max (H <sub>f</sub> )	mm	570 ÷ 720
Pressure plate height min ÷ max (H <sub>p</sub> )	mm	150 ÷ 790
Component weight	kg	~ 60

### Component PP-50 40-15



### PP-50 30-40



You can request the 3D of the component in the desired version from the manufacturer without any obligation.

COD.: DTVI\_PP50\_2505  
REV.: 00  
DATE: 29/01/2025

DAV TECH SRL

Any reproduction (total or partial) of this document not authorized by the manufacturer will be punished according to the law.



## 3 SAFETY

The following is a list of warnings regarding the component covered by this manual. Please read carefully before proceeding to the next chapters.



**DANGER!**

Before operating the component or performing any action on it, read this manual carefully.



**DANGER!**

Do not use the component while under the influence of drugs or other substances that may impair attention and reaction ability.



**DANGER!**

Operators must only perform operations or interventions that are within the competence of the role and qualification assigned.



**FIRE/EXPLOSION HAZARD!**

This component is not designed to work in an ATEX environment.



**DANGER!**

Be very careful when servicing the component, especially when disassembling components that have pressure springs inside.



**DANGER!**

Do not use fluids that react in contact with the materials indicated in [chapter 2.2](#)



**DANGER!**

Never exceed the maximum pump pressure given in [chapter 2.2](#)



**DANGER!**

If fluids are used at high temperatures, the pump can reach temperatures that can cause burns if touched.



**DANGER!**

Do not use chlorinated and halogenated solvents (e.g., Trichloroethane and Methylene Chloride) with equipment that contains aluminum or galvanized and galvanized parts, as they can react chemically and cause an explosion.



**ATTENTION!**

Modifications to the component must not be made to achieve performance other than that for which it was designed and built, unless authorized by the manufacturer.

**ATTENTION!**

Avoid introducing foreign bodies, even small ones, into the pneumatic system, which could cause the system to malfunction and compromise the safety of the machine.

**ATTENTION!**

Check the chemical compatibility of the materials with which the pump is made with those of the fluid in use

**ATTENTION!**

Make sure the pipes are in good condition and not worn



The component may only be used by trained and authorized operators and for the sole purpose for which it was designed and manufactured.



The component is manufactured in compliance with the technical safety standards in force at the time of its construction.

### 3.1 Machine safety devices

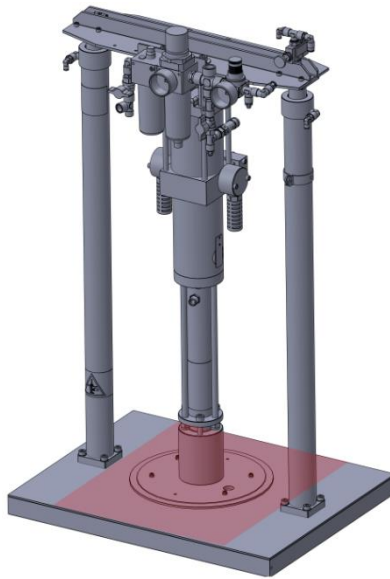
N.A.

### 3.2 Free useful spaces

N.A.

### 3.3 Risk areas and residual risk

In this component there are risk areas, i.e. the part below the pump, as shown in the figure.



**ATTENTION!**

Risk of crushing! Never operate under the pump while it is pressurized.



**ATTENTION!**

Toxic gas danger! Always use PPE to protect against gases and any residues of toxic and/or corrosive fluids

## 4 TRANSPORT AND HANDLING

Once you have received the goods, you must check that the packaging is intact and that there is an exact correspondence with the material ordered.



**ATTENTION!**

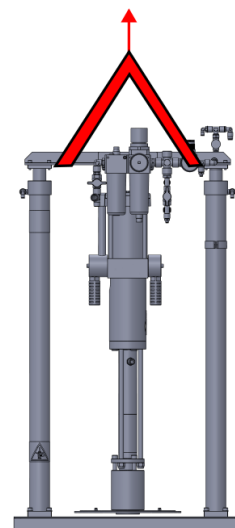
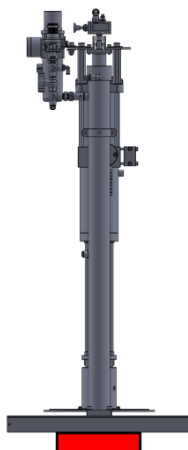
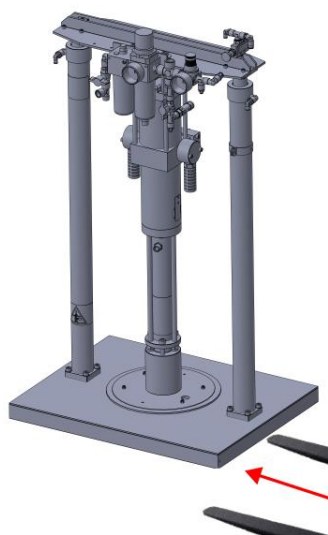
The original configuration of the component must not be changed. The manufacturer is not liable for damage caused by inappropriate use of the component.



**ATTENTION!**

If the packaging is not intact, contact the manufacturer immediately, also sending photos of the condition of the packaging. Do not open it until you have notified the manufacturer.

**PP-50 COMPONENT**



Description	U.d.M.	Value
Machinery mass	kg	~ 60



It can be lifted either by forklift or by lifting strap. Check the best method, according to your means.



**ATTENTION!**

Before lifting by means of straps, make sure that the moving part of the lift is anchored to the fixed part by means of the tie rods and their nuts. If this is not the case, avoid lifting it with straps



**ATTENTION!**

If lifting by means of belts, only the steel part of the component should be taken, the pneumatic unit should not be taken as well.

## 5 INSTALLATION



The installation of the component is carried out by the customer. If necessary, you can contact the manufacturer to have a specialist technician help you.

This component can be installed in two ways:

- If wheels are present, it is possible to move the component to the predefined working position and then lock them using special levers;
- If there are no wheels, it must be brought to the work area by means of a lift or forklift, and then placed on the floor



It is recommended that you perform a component check before beginning the installation. If it is evidently damaged, please contact the manufacturer.



### ATTENTION!

Please remove the packaging with the utmost care. If damage is caused to the component, the manufacturer is not liable.



Dispose of the packaging correctly, considering the different nature of the components and following the regulations in force in the country.

### 5.1 Positioning



To have an optimal power supply, it is recommended to put the pump as close as possible to the work area. The greater the distance from the work area, the greater the pressure drop caused by the distance itself.

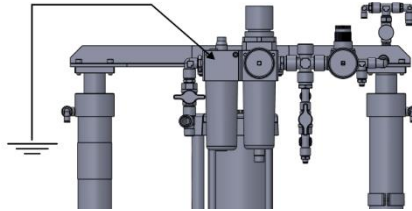
### 5.2 Connections

In this chapter, we want to explain the connection method that must be used for the component. The following types of connection are provided:

- Electrical connection
- Pneumatic connection;
- Fluid connection

## 5.2.1 Electric

This component can accommodate an end-of-product level sensor and an interface system with other components of the manufacturer (for example, SDS-1000). Check the electrical connections to the control system.



It is recommended that the component be grounded to prevent a build-up of electrical charges.

## 5.2.2 Pneumatic

<b>Authorized personnel</b>		<b>PPE to wear</b>					
Component status	Component placed in the work zone						
Power Values	See <a href="#">chapter 2.2</a>						
Necessary preparations	Working pneumatic air system						
Materials needed							
Equipment needed							



The pneumatic connection is the responsibility of the customer.

To connect the pneumatic system of the component, it is necessary to have a Ø8X6mm hose and connect it to the pressure reducer located on the cover of the component. To connect it, simply apply a little pressure by pushing the hose inside the hole until you hear a connection confirmation sound. If it is not equipped with a direct connection of the Ø8X6 hose, a fitting must be used as per [chapter 2.2](#)



It is recommended, if it is not already present, to insert a two-way valve at the pneumatic inlet, so that all the air flow of the component can be blocked, if necessary.



### ATTENTION!

There is a risk of the hose disconnecting from its connection area if it is not properly inserted. Before turning on the air, perform a leak test of the hose by trying to pull slightly.



## 5.2.3 Fluidic

Authorized personnel		PPE to wear	
Component status	Component placed in the work zone		
Power Values	See <a href="#">chapter 2.2</a>		
Necessary preparations	N.A.		
Materials needed	N.A.		
Equipment needed	N.A.		

The fluidic connection is the responsibility of the customer.

This component has a direct connection of the fluidic supply hose according to the dimensions given in [chapter 2.2](#).

**ATTENTION!**  
The tube must not be tightened too much otherwise there is a risk of breaking it or choking it too much, affecting the quality of the dosage

It is advisable to use a grease filter if you have grease that risks having impurities inside, to get a clean fluid to the dosing system, thus avoiding problems for the dosing system itself.

## 5.3 Commissioning

The commissioning of the component is carried out once the positioning and connection of the connections has been completed. Before commissioning the component, the following checks must be carried out:

- Check that the connections have been connected correctly;
- Check that the component is free of dirt or residues of various kinds;
- Check that the sealing knobs are secure in place;
- Check that the vent valve is closed;



**ATTENTION!**

Since the component is tested with oil, it is recommended to perform purge cycles by placing a fluid tank, plugging the outlet to the metering system and opening the purge valve.



**ATTENTION!**

If even one of the above points does not comply, commissioning must not be carried out. Commissioning should only be carried out when all points have been successfully completed.

## 6 SOFTWARE

N.A.

## 7 PROCEDURE

In this chapter we want to explain the main configurations that can be used on the component covered by this manual. In particular, we want to explain in detail:

- Compressed air lubricator adjustment (optional);
- Fluid release adjustment
- How to replace the drum (pump with support);

### 7.1 Compressed air lubricator adjustment (optional)

This procedure is to explain how to fill the oil used in the pneumatic circuit.



**ATTENTION!**

It is not necessary to use oil in the pneumatic circuit, as there are no applications at very high frequencies. However, if you decide to use it anyway, you must check that there is always fluid in the oiler, otherwise the engine may run incorrectly.

The oiler is located next to the air reducing filter that goes towards the pumping unit (No.03 Figure 01 [chapter 2](#)). The recommended type of lubricant is the original TECNI-LUBE liquid (the code is given in [chapter 2.1](#) in the exploded view table as "lubricant"). In the absence of this, a liquid with the following characteristics can be used:

- Viscosity 2°÷4° Engler at 50°C;
- Aniline point 98° ÷ 105°;
- Acidity index 0.2.



**ATTENTION!**

Using the wrong lubricant can lead to engine damage

To be able to insert the lubricant, or to top it up, you can proceed in one of the following methods:

- Remove the pneumatic air that goes towards the pumping unit, acting on the appropriate knob located on the reducer filter which is just before the oiler;
- Unscrew the oiler;
- Insert or top up the container;
- Close the oiler and re-enable the pneumatic air of the pumping unit.

Or:

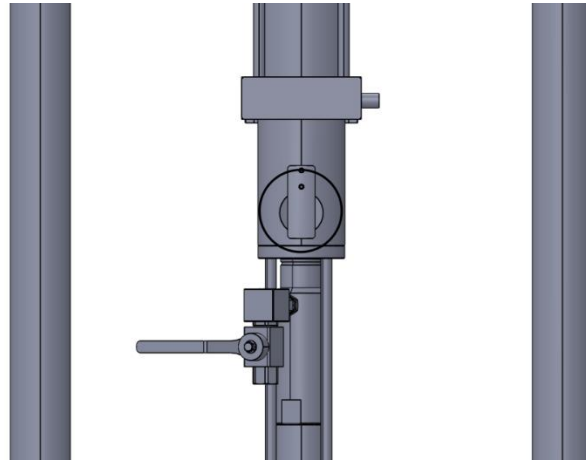
- Remove the pneumatic air that goes towards the pumping unit, acting on the appropriate knob located on the reducer filter which is just before the oiler;
- Unscrew the appropriate screw on the oiler head;
- Insert the product, taking care not to close the hole completely, otherwise the air will not escape;
- Put the screw back in its position and give air back to the system.



It is highly recommended to perform this procedure while the pump is not in use.

## 7.2 Fluid release adjustment

This procedure is to be used when using fluids that tend to cross-link in contact with air (such as silicones). This lubricant is used to prevent the fluid from cross-linking inside the pumping unit, also keeping it lubricated. For this type of lubricant, Mesamoll, a separator oil for pump pistons, must be used. To apply it, one drop must be put every approximately 30-40 cycles of the pump (exchanges). The release agent code can be found in [chapter 2.1](#) in the exploded view table with the description "release agent".



### 7.3 Drum replacement and first start

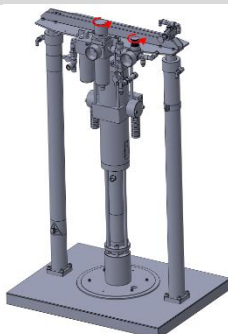
This procedure is to be applied if you need to replace an exhausted keg, i.e. a keg that has already been inserted under the pressing plate and that must be replaced by a new keg because it is used up.

**ATTENTION!**



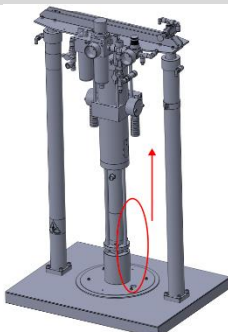
The basic image of the following procedure is always the same, it is only used to indicate where the components that are written in the description are located. You should not rely on images, but on text.

**01**



Bring the pressure gauges, both pumping unit and the elevator, to 0 bar. The first is used to ensure that the pumping unit does not work during the drum change (and therefore does not bring air inside the dosing plant, as well as preserving the seals), while the second is used to be able to work on the elevator gradually.

**02**



Unscrew and remove the pad from the plate, to allow air to enter between the plate and the product and avoid vacuum-sealing the inside of the drum.



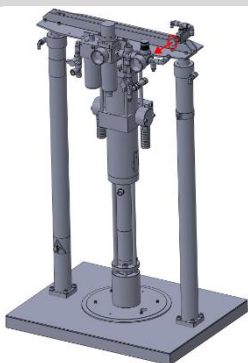
In this image the swab is not shown, but the position of the swab itself is as indicated

**ATTENTION!**



Before proceeding, make sure that the drum holding straps are well hooked, to hold the drum in place while the platter is removed.

03

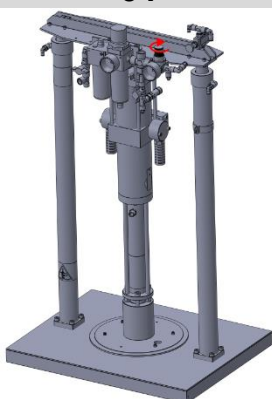


Pull the piston regulator so that the pump is raised.



You still must put pressure back on the circuit, so it is normal that there are no reactions immediately

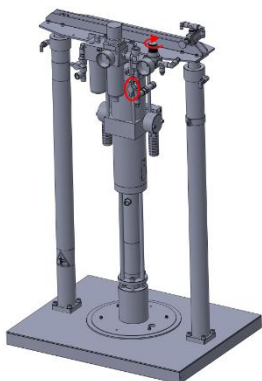
04



Turn the knob until you reach 1 bar of pressure and wait 60 seconds. In case there is no movement by the pump (very viscous or sticky fluid), increase by another bar.

04.A

### IN THE EVENT THAT THE PLATE DOES NOT DETACH AT 2 BAR AND YOU HAVE A PNEUMATIC BUFFER

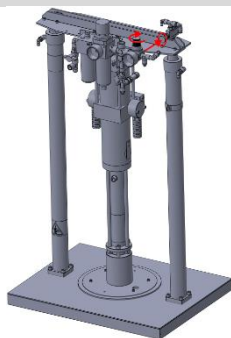


Bring the pressure of the lifter pressure gauge to 0 bar and connect the pneumatic buffer to the platter. Once connected, bring the pressure of the lifter pressure gauge to 4 bar and open and close the two-way valve that allows the air to reach the buffer repeatedly.

05

Once the platter is removed from the barrel, remove the straps and remove the original keg from its position, placing the new keg in its place using the centering devices positioned on the platter. Once the new drum is in place, remove the pad from the plate.

## 06



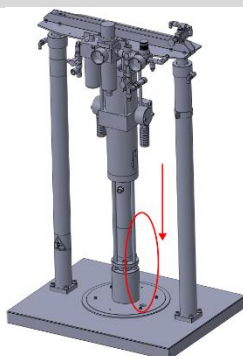
Bring the pressure of the elevators to 2 bar and press the piston regulator button, to start the descent of the pump. As the pump drops, check that the drum is centered with the pump. If the deck has difficulty going down, increase the pressure to 4 bar.

### DANGER!



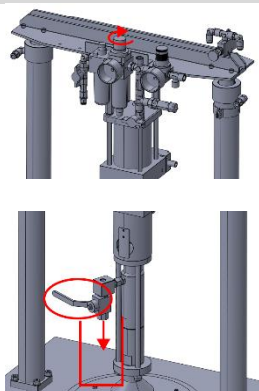
The pump is not equipped with force sensors or reading for the presence of obstacles under the plate; Therefore, limbs or other parts of the body must not be inserted during the descent phase of the pump, otherwise there is an assured risk of crushing or truncating that part of the body.

## 07



As soon as the platter is almost in contact with the fluid, close the hole with the pad WITHOUT PNEUMATIC OUTLET.

## 08



Place a container (which can be a plastic bag or a rigid container) under the purge valve that can hold the fluid you are using. Once done, open the two-way purge valve and gradually increase the pneumatic pressure of the pump. Let it drain until the outgoing fluid itself is homogeneous and continuous for a few seconds (so there are no more air bubbles in the circuit caused by the drum change). Once done, close the two-way valve and remove the purged fluid container.



### ATTENTION!

Pay attention to the vapors emanating from the fluid outlet itself

**09**



Bring the pressure of the pumping unit pressure gauge to the working pressure. Attach the straps to the barrel so that it cannot move from the position.



**ATTENTION!**

If fluid is leaking from the sides of the platter, decrease the pressure of the pump elevator pressure gauge.



## 8 MAINTENANCE

Maintenance interventions are all those activities that must be performed on the component which, if carried out correctly, allows it to have a longer life. In general, maintenance is divided into two groups:

- **Ordinary maintenance**, which are interventions on a regular basis or that can be carried out by the customer's staff, are the most important activities as they allow the component to be kept in good working condition;



**ATTENTION!**

Ordinary maintenance must be carried out in the manner and timing indicated in the following chapters.

- **Extraordinary maintenance**, i.e. all those interventions that are not regularly carried out or that have not been planned, or interventions that cannot be carried out by the Customer. They can also arise from the lack of routine maintenance.



**ATTENTION!**

Extraordinary maintenance work must be carried out together with the manufacturer's specialized technicians.

Regarding attendance, it must be considered that:

- **When necessary**: Operation to be carried out when the need to be carried out is seen;
- **Each component start or job end**: Indicates a daily period, in general. This can imply every 24 hours (i.e. at the beginning of the shift of every day, or the end of the shift of every day), or even more frequently, depending on the application;
- **Long pause**: Indicates a period approximately greater than an hour;
- **Each drum change**: Indicates each time the fuel system (tank, drum, cartridge or other) is changed;
- **Each mixer disassembly**: Indicates that each time the mixer is replaced, a certain operation must be performed;
- **Weekly**: Indicates a period equal to seven calendar days;
- **Monthly**: Indicates a period equal to one calendar month;
- **Semi-annual**: Indicates a period equal to six calendar months;
- **Yearly**: Indicates a period equal to one calendar year.



**ATTENTION!**

The times given below are indicative as they depend on how the component is used. Follow the variations suggested by the technicians.

Assigned	Description	Frequency	Chapter
	Perform a surface cleaning of the component	Each component start or end of work	\
	Perform a leak check from the fluidic system	Each component start or end of work	\
	Perform a leak check from the pneumatic system	Each component start or end of work	\
	Perform a leak check of the platter gasket (if present)	Each component start or end of work	\
	Put a little release agent for the pump ( <a href="#">chapter 7.2</a> )	Each component start or end of work	\
	Checking and possibly topping up the pneumatic lubricant ( <a href="#">Chapter 7.1</a> )	When needed	\
	Cleaning the water pumping unit reducer filter	Weekly	8.1
	Replacing the pressure plate gasket (if fitted)	Annual	8.2
	Cleaning the filter	Semiannual	8.3



It is advisable to keep a table with all the maintenance performed for each tank



**ATTENTION!**

Do not use aggressive products to clean the component, or products that may react with the tank materials or the fluid you are using.



**ATTENTION!**

For long work interruptions (more than a few hours), it is advisable to remove the air from the pumping circuit, even if the pump is switched off. This is because some types of grease under pressure tend to separate, causing the system to malfunction and a non-compliant product dosage.

## 8.1 Pumping condensate emptying

Assigned	Periodicity	Materials and equipment
	Weekly	Normal cleaning equipment

PPE to wear

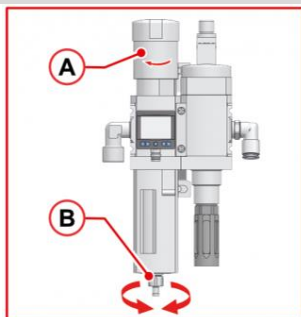


**ATTENTION!**

Before proceeding, the machinery must be made safe by following the extraordinary shutdown procedure, reported in [chapter 7.4](#)

**01**

**REDUCER FILTER**



- Turn the pressure regulator (A) counterclockwise to drain the system;
- Turn the knob (B) to open the drain valve to drain the condensate;
- Close the drain valve;
- Set the working pressure.

## 8.2 Replacement of the pressure plate gasket

Assigned	Periodicity	Materials and equipment
	Annual	N.A.

PPE to wear



The pressing plate gasket must be replaced when air (or product) begins to draw from the edges of the drum, making the function of the pressing plate itself ineffective. To replace it, the drum change procedure ([chapter 7.1](#)) must be followed until the drum is replaced with a new one. Before inserting the new barrel, you must:

- Unscrew the screws that hold the plate pressing on the structure. They are central screws that hold the entire structure of the platter attached to the pump;
- If present, unscrew the screws that hold the two sides of the platter in place. They are generally bolted screws and are located on the outside of the plate itself;
- Replace the platter gasket with an identical one;
- Assemble the platter following the reverse disassembly procedure.



**ATTENTION!**

You must be sure that the material with which the gasket of the platter you are going to use is the same as the one you were using, especially if you are using dangerous fluids.



**ATTENTION!**

Before fitting the new gasket, check that the diameter of the new gasket and the position of the holes are identical to the one you are going to replace.

## 8.3 Filter cleaning (if any)

Assigned	Periodicity	Materials and equipment
	Semiannual	N.A.

PPE to wear



### 01

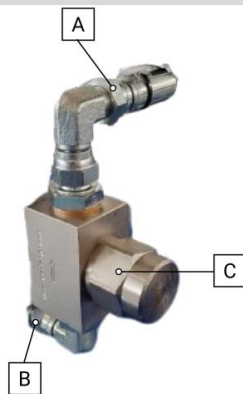
#### DISASSEMBLY



- Turn the pneumatic pressure reducer knob counterclockwise to remove the pneumatic pressure;
- Let the fluidic system work until the fluid coming out of the valve has a low pressure (if a pressure gauge is present, it must be below 1 bar)
- Remove the filter from its housing by acting on the ring nuts (A) and (B) shown in the figure;
- Put the filter on a vice and, with a special wrench, unscrew the component (C);
- Paying attention to the spring inside it, remove the component and take the net;
- Clean the screen with a special cleaner (ask your product supplier for more information);

### 02

#### ASSEMBLY



- Put the components back in place;
- Close the component (C) with the appropriate key and make sure that it is closed properly;
- Put the component back in the same direction as you removed it on the fluidic circuit. If in doubt, follow the arrow on the component, which follows the flow of the fluid;
- Secure the component using special ferrules (A) and (B);
- Once the reassembly is complete, turn the knob of the pneumatic pressure reducer until the working pressure is reached.

#### ATTENTION!



Once the component has been reassembled, perform some purges with the dosing valve, as air has accumulated inside the fluidic system. Once the metering valve has no air bubbles inside it and performs a continuous, linear metering, resume normal work activities

## 9 TROUBLESHOOTING

This chapter deals with the most common problems that may arise when using the component of this manual.



**ATTENTION!**

Once the operator has found a problem or assumes that there is a problem, they must call the technician in charge of maintenance. Maintenance should always be performed by a specialized and qualified technician.

DEFECT	CAUSE	SOLUTION
<b>Pump motor runs but does not come out product</b>	Air bubbles in the pump system or in the product drum	Open the vent valve and let the air out Check if the pressing plate is in contact with the product
	Fluidic or pneumatic circuit leaks	Presence of impurities on the valves Check all connections
	Pneumatic pressure gauge misadjusted	Bring it to an optimal setting for your system
	Foreign body blocks the pump operating mechanism	Contact the manufacturer
<b>Contamination of output grease</b>	Chips or various particles prevent the pump from working properly	Disassemble the pump, clean it and reassemble it on the drum, checking that the grease does not contain any foreign parts.
	The barrel of the product contains impurities	Install a grease filter at the pump outlet
<b>The equipment does not start</b>	Absence of air in the system	Check the line connection and the air shut-off valve
		Check the air handler
<b>Pump flow rate decreases during operation until it ceases</b>	Occlusion on the discharge line	Remove occlusion
	Ice formation in the pump exhaust air ducts	Remove ice from the air outlet
<b>The equipment remains in operation even with the line shut-off valve closed</b>	Leaking from seals	Check the leak of the dispense valve and the vent valve
		Presence of impurities on the valve seats or wear of the sleeve

## 10 END OF LIFE

End-of-life refers to all those activities that put the component out of service. End-of-life activities can be:

- **Storage**, i.e. when the component is placed inside the warehouse for an unspecified period waiting for a third party to buy the component;
- **Dismantling**, i.e. when the component has reached the end of work period, whether it is due to age, obsolescence or faults that cannot be repaired, or that it is possible to repair but it is worth buying a new component.

If installation is not planned soon, the component can remain packaged and must be stored in a sheltered and preferably closed place. The ambient temperatures to be observed are given in [chapter 2.2](#).

On the other hand, for the dismantling and consequent scrapping of the component or its parts, the different nature of the various components must be considered, and a differentiated scrapping must be carried out. We recommend that you commission specialist companies for this purpose and must always observe the applicable laws on waste disposal.