PARTS, SYSTEMS AND AUTOMATIONS FOR FLUID DISPENSING

USE AND MAINTENANCE MANUAL

PRESSURE TANK PT

COD.: **DTVI_PT_2447**
REV.: **01**
DATE: **02/12/2025**

TRANSLATED FROM ORIGINAL
Read carefully before use!

EN

Summary

1 GENERAL INFORMATION

This manual contains information regarding the installation, use, maintenance, and end-of-life of the component and provides guidance for the most appropriate behavior for correct operation. This manual has been designed to be simple and as immediate as possible, with a division between chapters and sub-chapters that allows any desired information to be found quickly. Furthermore, the manual begins by giving a general description of the content, then an overview of the component, leading to safety, transport, installation and use aspects, and finally to end-of-life. In case of doubts about the interpretation or reading of this document, please contact the manufacturer.

DAV Tech disclaims all liability relating to improper use of the component. Comply with what is specified in this manual.

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

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

It is the responsibility of the end user to optimize the functionality of the component, always taking into consideration the purpose for which it was built.

This manual must be kept, together with the attached documentation, in good condition, readable and complete. Furthermore, it must be stored near the component or, in any case, in a place accessible and known to all personnel who use the component itself or who must carry out maintenance or inspection interventions. In the event that the manual deteriorates or is no longer complete, a copy must be requested from the manufacturer, indicating the manual code and 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 responsible for damage to the component caused by personnel who have not followed the instructions contained within the manual itself.

In case of doubts about the correct interpretation of the information contained in this manual, please contact the manufacturer.

WARRANTY

During the design phase, materials and components were carefully selected for implementation in the project and subjected to routine inspection prior to delivery. All elements, from fastening assemblies to control mechanisms, have been engineered and manufactured with an appropriate safety factor to withstand loads exceeding those encountered during normal operating conditions.

For additional notes regarding equipment warranty provisions, please refer to Section 7 of the "GENERAL CONDITIONS OF SALE AND WARRANTY" form issued during either the quotation or order confirmation phase.

1.1 Symbology

The following symbols are used to give greater impact to the importance of the concept to be conveyed.

ATTENTION!
Refers to a warning that could lead to minor damage (minor injuries, damage to the component requiring maintenance technician intervention).

DANGER!
Refers to an event of greater magnitude that could cause major damage (death, permanent injury, irreversible component breakage).

NOTE. Indicates relevant information or insight.

OBLIGATION. Indicates an activity that must be performed, related to both the component and the manual.

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

Furthermore, the list of symbols is integrated with that of personnel authorized to use the component and its function, together with other symbols used within the manual.

Operator
(Qualified) person capable of operating on the component, performing adjustment, cleaning, start-up or restoration operations. The operator is not authorized to perform maintenance.

Mechanical maintenance technician
Qualified technician capable of performing mechanical interventions, adjustments, maintenance and ordinary repairs described in this manual. Not authorized to perform work on electrical systems in the presence of voltage.

Electrical maintenance technician
Qualified technician capable of performing electrical interventions, adjustments, maintenance and ordinary repairs described in this manual. Capable of working in the presence of voltage on electrical panels and junction boxes. Not authorized to perform work on the mechanical side.

Manufacturer's technician
Qualified technician made available by the manufacturer to perform complex operations in particular situations, or in any case according to what has been agreed with the customer.

1.2 Reference standards

The regulations and directives referenced in this manual are as follows:

Directives

- 2014/68/EU – Pressure Equipment Directive

DANGER!

These tanks are designed to comply with the PED directive, article 4 paragraph 3 and **group 2 fluids**, which have a PV ratio ≤ 50. This means that fluids (or mixtures) that fall into the following categories:

- Unstable explosives, or explosives of divisions 1.1, 1.2, 1.3, 1.4 and 1.5;
- Flammable gases, categories 1 and 2;
- Oxidizing gases, category 1;
- Flammable liquids, categories 1 and 2;
- Flammable liquids of category 3, when the maximum allowable temperature is above the flash point;
- Self-reactive substances or mixtures of types A to F;
- Pyrophoric liquids, category 1;
- Substances and mixtures which, in contact with water, release flammable gases, categories 1, 2 and 3;
- Oxidizing liquids, categories 1, 2 and 3;
- Organic peroxides of types A to F;
- Acute oral toxicity, categories 1 and 2;
- Acute dermal toxicity, categories 1 and 2;
- Acute inhalation toxicity, categories 1, 2 and 3;
- Specific target organ toxicity -- single exposure, category 1.

And solids of the following categories:

- Flammable solids, categories 1 and 2;
- Pyrophoric solids, category 1;
- Oxidizing solids, categories 1, 2 and 3.

And all substances and mixtures whose maximum allowable temperature is above the flash point of the fluid have a different management parameter, namely the PV value **must be** ≤ 25. If one of the aforementioned fluids is used, the manufacturer must be informed.

Not complying with this warning invalidates the CE certification of the tank.

1.3 EU Declaration of Conformity

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

DECLARES UNDER ITS OWN RESPONSIBILITY THAT THE PRESSURE COMPONENT

Component: Tank PT
Model: PT-2; PT-5, PT-10, PT-16
Year: 2024
Intended use: Containment of fluid under pressure

COMPLIES WITH THE PROVISIONS LAID DOWN BY DIRECTIVE 2014/68/EU (PED), ARTICLE IV PARAGRAPH 3 GROUP II FLUIDS

	PT – 2	PT – 5	PT – 10	PT – 16
Maximum Pressure (bar)	5	5	5	3
Volume (l)	2	5	10	16
Fluid Group Category	II	II	II	II
Pressure X Volume	10	25	50	48
Temperature Range (°C)	10 ÷ 60	10 ÷ 60	10 ÷ 60	10 ÷ 60

The technical documentation has been prepared in accordance with the following:

- Pressure Equipment Directive 2014/68/EU of 15 May 2014

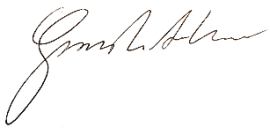
FURTHER DECLARES THAT:

- We undertake to transmit, in response to an adequately motivated request from national authorities, relevant information on this partly completed machinery;
- The technical file has been compiled by Andrea Grazioli, via Ravizza, 30, Montecchio Maggiore (VI), IT.

Montecchio Maggiore, 19 January 2024

The legal representative

Andrea Grazioli



1.4 Glossary

The following lists the terms most commonly used within this manual with their meaning.

TERM	DEFINITION
Enable	Term that defines the act of preparing (enabling) an action. The action will be activated as soon as criteria are met which, as a consequence, lead to the activation of the enabled action.
Activate	The action that is performed instantaneously when the command is operated.
Hold-to-run Commands	Commands that, used for manual operations, must be kept activated for the action to be performed. When the command is released, the action stops.
Two-hand Commands	Hold-to-run commands that require the simultaneous operation of two manual commands to perform an action.
P.P.E.	Personal Protective Equipment. Includes all objects necessary to ensure personnel protection from possible accidental damage (safety shoes, gloves, helmet, and others).
Display	Used to display information. Can be in any form and size, including touch screen.
Manufacturer	Natural or legal person who designed and manufactured the component that is the subject of this manual.
HP	High Pressure. Abbreviation indicating high pressure.
Icon	Small image that symbolically represents a command, function, or even a document or operating program, which appears on a computer screen. When selected by the user, it starts the function or program it symbolizes.
Joystick	Lever manipulator used in control panels.
N.A.	Not Applicable, indicating a field that does not apply to this particular manual and cannot be integrated into the component.
Operator Panel	Control station where machine control instruments are located.
P.I.	Possible Implementation, currently absent from the component described in this manual, but it is possible to make an addition and implement it.
Screen	Interface system between man and component. The images displayed on the operator panel that allow the user to receive and provide information to the management software are defined as screens.
Control Panel	Composition of buttons and selectors that allow direct action on component behavior.
Keyboard	Keyboard only (standalone element) or in addition to a display (keys only, no selectors or other).
Touch Screen	Touch screen that allows the user to interact with a graphical interface using fingers or special objects.

1.5 Technical Support and Manufacturer Contact

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

The customer can make use of commercial technical support from area agents or importers, who are in direct contact with DAV Tech Srl.

Company name	**DAV Tech Srl**
Postal address	Via Ravizza, 30, 37065, Montecchio Maggiore (VI) – (IT)
Telephone	+39 0444 574510
Fax	+39 0444 574324
email	davtech@davtech.it
Website	www.davtech.it

2 PRESENTATION AND OPERATION

This manual aims to provide an in-depth understanding of the PT component operation, which is a pressure tank that, based on the tank volume itself, has different maximum pressures. This type of tank can contain various types of fluids, as specified in Chapter 2.2. Furthermore, it is capable of directly containing the original container, bringing it under pressure, in case there are fluids that must not be in contact with the tank walls. Additionally, this type of tank is highly customizable, as reported below.

In other words, the function of this component is:

CONTAINMENT AND PRESSURIZATION OF LOW AND MEDIUM VISCOSITY FLUIDS

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

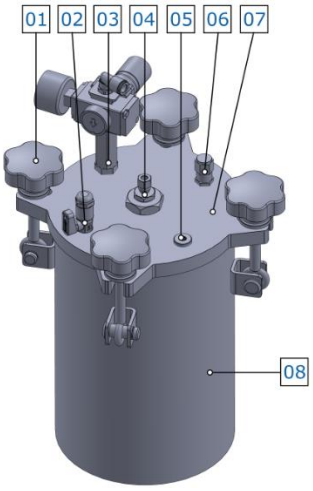


Figure 01 – Tank detail

No.	DESCRIPTION
01	Fixing brackets
02	Left slot
03	Top slot
04	Central slot
05	Bottom slot
06	Right slot
07	Cover
08	Main body

Before using a particular type of fluid, verify that:

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

If it is necessary to use multiple fluids with the same tank, thorough cleaning must be performed to prevent residues from the previous processing from affecting the processing to be performed.

SPECIAL VERSIONS

This tank is made in various versions, based on customer requirements, namely:

- LLS -- Indicates that a float level sensor is present;
- AN -- Indicates that anaerobic fluids can be inserted;
- CAP -- Indicates that a digital rod capacitive level sensor is present;
- ANALOG -- Indicates that an analog rod capacitive level sensor is present
- STIR -- Indicates that an agitator is present

PT-2 tanks can only be configured as LLS, AN, CAP and ANALOG, while PT-5, PT-10 and PT-16 tanks can be of any configuration.

ATTENTION!
For the codes present in the exploded view, it must be considered that if it is part of a single special code, namely among those indicated above, it is specified in the description; otherwise, the code used for the tank family is indicated with the liter value of the tank (for example, PT-10 codes are used for all special models of the PT-10).

Furthermore, it is possible that this type of tank is equipped with a stainless steel suction tube with a non-return valve placed at the bottom of the tube itself.

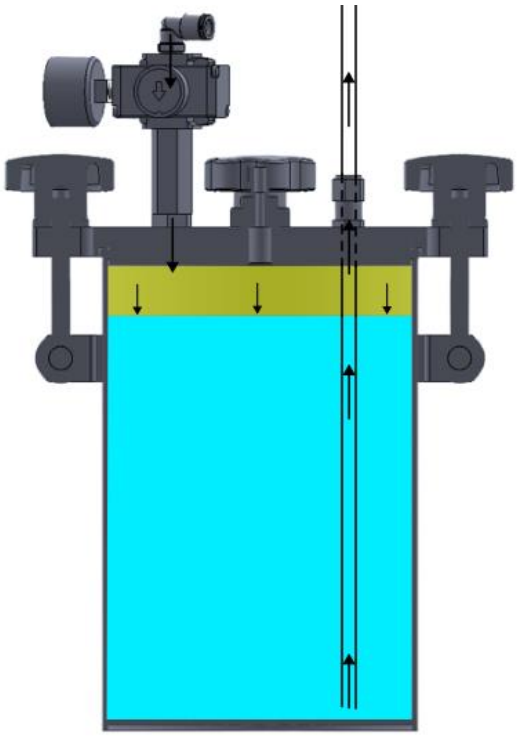
OPERATION

This tank has been designed to withstand low pressures, based on the model, as indicated in Chapter 2.2. These pressures serve to push the fluid inside the tube that leads to the dosing system which, based on the tank type, can be either through a tube inserted inside the customer's container or through direct exchange with a tube inserted on the cover, which passes inside the tank and reaches the bottom of the tank itself. Thanks to the pressure exerted from above, the fluid enters inside the tube and reaches the dosing system in a constant and continuous manner, so as to guarantee a continuous fluid supply. The particularity of this component is that the pressure is regulated by a pneumatic pressure regulator at the inlet, with possible level sensors to communicate to the control system the fluid status (based on the sensor type).

For working values, refer to Chapter 2.2.

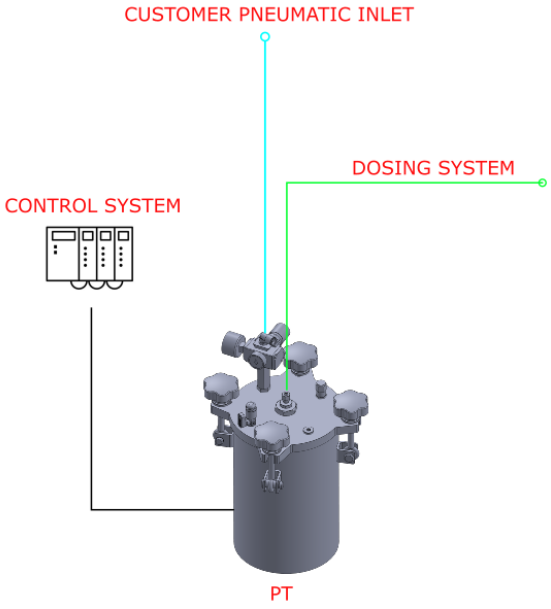
The tanks cannot operate autonomously. To have a complete dosing system, they must be connected to valves or other components that regulate the fluid dosing itself.

The following provides a graphical representation of the operation of the generic PT tank. Some tanks, as mentioned, contain the original fluid container and cannot have the fluid in direct contact with the tank walls. The operation is the same, only the tube enters directly inside the container and the container itself is pressurized.



USEFUL TIPS

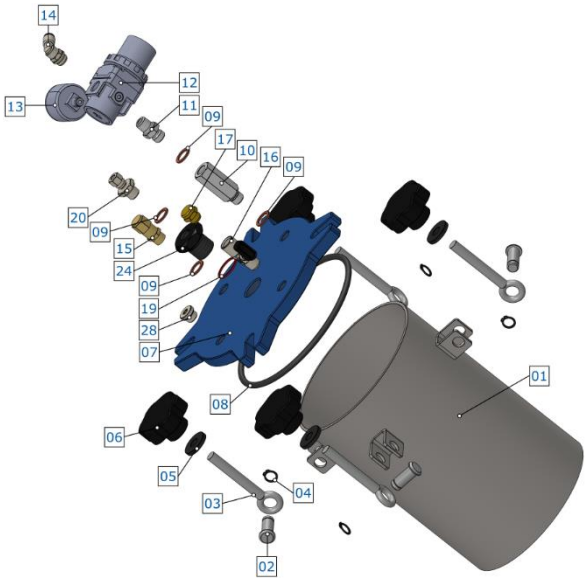
- It is recommended to cut the suction tube at 45° at the bottom, to prevent the tube from sticking to the bottom itself.



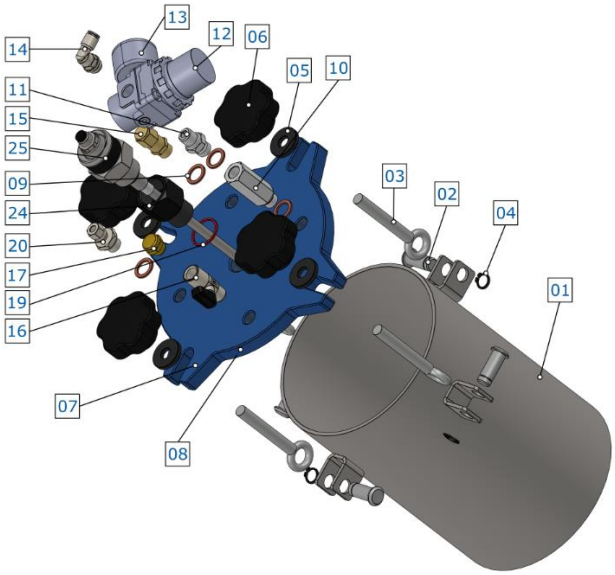
COLOR	MEANING
CYAN	Main air
GREEN	Product
BLACK	Data
RED	Notes

2.1 Exploded view

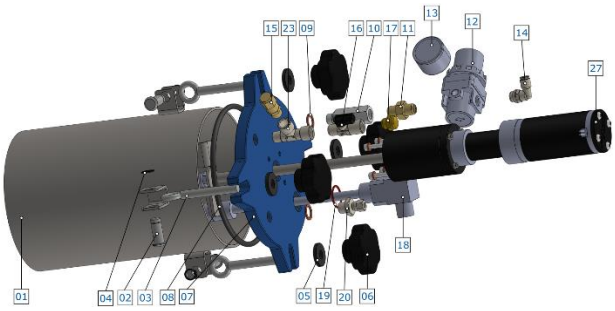
The following provides a list of the main valve components with spare part codes.



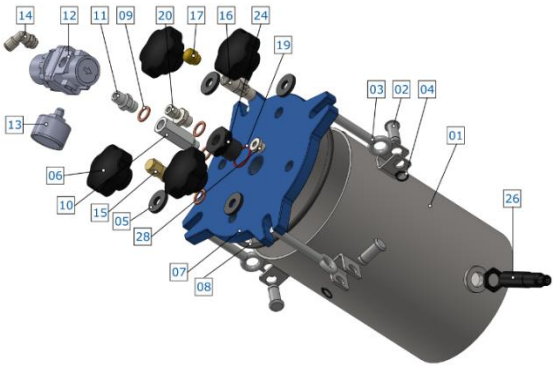
PT-5



PT-5LLS-CAP, PT-5LLS



PT-5LLS-STIR



PT-5LLS-AN

No.	Description	Var.	Code	Variant details
01	CYLINDRICAL ASSEMBLY	-	-	-
-	-	01.a	200012124D	PT-2 cylinder assembly
-	-	01.b	200022124D	PT2-LLS-AN cylinder assembly
-	-	01.c	200032124D	PT-5 cylinder assembly
-	-	01.d	200042124D	PT-5-LLS-AN cylinder assembly
-	-	01.e	200052124D	PT-10 cylinder assembly
-	-	01.f	200062124D	PT-16 cylinder assembly
02	PIN WITH HEAD Ø12x30mm	-	2235PKS12	-
03	EYELET FOR RIGHT TENSIONER M10	-	01351610	-
04	SEEGER DIN 471 -- 12X1	-	47112	-
05	TURNED WASHER	-	-	-
-	-	05.a	012037000010	Turned washer 10.5 x 22 x 4 mm for PT-2
-	-	05.b	012039000010	Turned washer 10.5 x 28 x 4 mm for PT-5, PT-10 and PT-16
06	6-LOBE KNOB	-	-	-
-	-	06.a	6114035	6-lobe knob VB/40/FP M10 for PT-2
-	-	06.b	6113070	6-lobe knob VB/60 M10
07	COVER	-	-	-
-	-	07.a	170222012124D	PT2 cover
-	-	07.b	170222022124D	PT5 cover
-	-	07.c	Item no. 350012124D	PT5-STIR cover
-	-	07.d	170222032124D	PT10 cover
-	-	07.e	Item no. 350022124D	PT10-STIR cover
-	-	07.f	170222042124D	PT16 cover
-	-	07.g	Item no. 350032124D	PT16-STIR cover
08	O-RING NB70	-	-	-
-	-	08.a	PT-2-GASKET	o-rings NB70 120 x 6 mm for PT-2
-	-	08.b	PT-5-GASKET	o-rings NB70 159 x 6 mm for PT-5
-	-	08.c	PT-10-GASKET	o-rings NB70 198 x 6 mm for PT-10
-	-	08.d	PT-16-GASKET	o-rings NB70 247 x 6 mm for PT-16
09	COPPER WASHER 1/4GAS	-	RR1_4	-
10	EXTENSION M-F 55mm 1/4" GAS	-	APMFG0455	-
11	NIPPLE M -- M	-	-	-
-	-	11.a	ANGK0404	Cylindrical M - Tapered M nipple 1/4"G for PT-2
-	-	11.b	02060 00 002	Swivel nipple 3 pieces M-M 1/4"G for STIR versions PT-5, PT-10 and PT-16
12	PRESSURE REGULATOR 1/4" GAS	-	AR20-F02-A	-
13	GAUGE 1/8" GAS 0-6 bar	-	9083715	-
14	QUICK COUPLING Ø6 1/4" GAS 90°	-	MA16 06 14	-
15	SAFETY VALVE	-	-	-
-	-	15.a	VS1405PED4	Safety valve 5 bar 1/4"G for PT-2, PT-5 and PT-10
-	-	15.b	VS1403PED4	Safety valve 3 bar 1/4"G for PT-16
16	TAPERED M. -- CYLINDRICAL F. COCK 1/4" GAS	-	06310 00 003	-
17	SILENCER 1/4" GAS	-	07020 00 003	-
18	FLOAT LEVEL SWITCH	-	-	-
-	-	18.b	LLS-PT2	Float level switch 180 mm for PT-2LLS
-	-	18.c	LLS-PT5	Float level switch 230 mm for PT-5LLS and PT-5LLS-STIR
-	-	18.d	LLS-PT10	Float level switch 270 mm for PT-10LLS and PT-10LLS-STIR
-	-	18.e	LLS-PT16	Float level switch 330 mm for PT-16LLS and PT-16LLS-STIR
19	PAPER GASKET 24x27x1.5	-	221004	-
20	BULLET COUPLING M Ø6 1/4" GAS	-	B20004	-
21	BULLET COUPLING M Ø8 1/4" GAS	-	B20005	Supplied as integration in case of Ø6mm replacement
22	LEVEL SWITCH	-	-	-
-	-	22.b	LEVELCAPACITIVE-PT2	Digital rod capacitive sensor 185 mm for PT-2LLS-CAP
-	-	22.c	LEVELANALOG-PT2	Analog rod capacitive sensor 185 mm for PT-2LLS_ANALOG
-	-	22.d	LEVELCAPACITIVE-PT5	Digital rod capacitive sensor 235 mm for PT-5LLS-CAP
-	-	22.e	LEVELANALOG-PT5	Analog rod capacitive sensor 235 mm for PT-5LLS-ANALOG
-	-	22.g	LEVELCAPACITIVE-PT10	Digital rod capacitive sensor 275 mm for PT-10LLS-CAP
-	-	22.h	LEVELANALOG-PT10	Analog rod capacitive sensor 275 mm for PT-10LLS-ANALOG
-	-	22.j	LEVELCAPACITIVE-PT16	Digital rod capacitive sensor 335 mm for PT-16LLS-CAP
-	-	22.k	LEVELANALOG-PT16	Analog rod capacitive sensor 335 mm for PT-16LLS-ANALOG
23	T FITTING	-	RA25 14 14	T fitting M-F-F 1/4"G for PT-5LLS-STIR, PT-10LLS-STIR and PT-16LLS-STIR
24	ADAPTER BUSHING ^(1)^	-	-	-
-	-	24.a	081021012124D	Adapter bushing 1_4G for bullet coupling (central hole)
-	-	24.b	240920010000	Adapter bushing 3_4G for capacitive level switches (DIG or ANALOG)
25	ROD CAPACITIVE SENSOR ^(1)^	-	See note 1	-
26	CAPACITIVE SENSOR	-	LLS-AN	M18 PNP NO capacitive sensor for PT-2LLS-AN and PT-5LLS-AN
27	MIXER	-	-	-
-	-	27.a	STIRRER-PT5	Mixer for PT5 tank
-	-	27.b	STIRRER-PT10	Mixer for PT10 tank
-	-	27.c	STIRRER-PT16	Mixer for PT16 tank
28	MALE PLUG 1/4" GAS FOR PT-2	-	RA46 00 14	-

(1) This component is installed in replacement of component No.18, float level switch, upon request. To install it, the adapter bushing and the respective rod sensor are needed, which can be capacitive or analog, of the relative length for the various tank types (see point 21 for the various lengths and codes).

2.2 Technical data

The following indicates all technical characteristics regarding the component of this manual.

TECHNICAL CHARACTERISTICS		
Description	**UdM**	**Values**
General		
Model	\	PT
Materials in contact with fluid	\	Stainless steel
Pneumatic		
Design pressure (PT-2, PT-5, PT-10)	bar	5
Allowable operating pressure (PT-2, PT-5, PT-10)	bar	0 ÷ 5
Design pressure (PT-16)	bar	3
Allowable operating pressure (PT-16)	bar	0 ÷ 3
Safety valve setting pressure (PT-2, PT-5, PT-10)	bar	5
Safety valve setting pressure (PT-16)	bar	3
Temperature		
Minimum operating temperature	°C	5
Maximum operating temperature	°C	60
Volume		
Maximum volume PT-2 (1)	l	2
Maximum volume PT-5 (1)	l	5
Maximum Volume PT-10 (1)	l	10
Maximum Volume PT-16 (1)	l	16

(1) The maximum volume refers to the total space inside the tank. Internal accessories (agitator, level sensor and others) must be subtracted from this.

ENVIRONMENTAL CHARACTERISTICS		
Description	**UdM**	**Values**
Working Ambient Temperature	°C	5 ÷ 60
Storage Ambient Temperature	°C	-20 ÷ 55
Permissible non-condensing humidity	%	5 ÷ 90

USABLE FLUIDS
Various low -- medium viscosity products (20,000 mPas maximum) (contact the manufacturer for more information)

DANGER!

These tanks are designed to remain below the limit imposed by the PED directive, article 4 paragraph 3, fluid group 2. If fluids indicated in group 1 of the directive are used, the allowable operating pressure value must be lowered using a safety valve such that the Pressure * Volume product is less than 25 (for example, the PT-16 can hold a maximum of 1.5 bar inside).

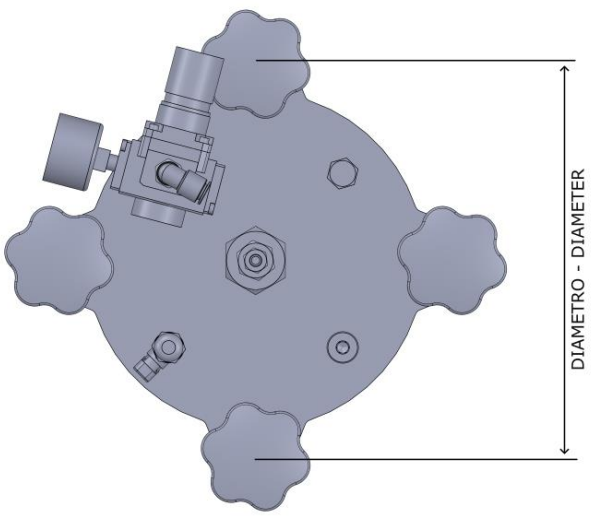
DIMENSIONAL AND WEIGHT CHARACTERISTICS PT-2		
Description	**UdM**	**Value**
Component diameter (min ÷ max)	Mm	19.2
Component height (min ÷ max)	Mm	22
Component weight	Kg	4.3

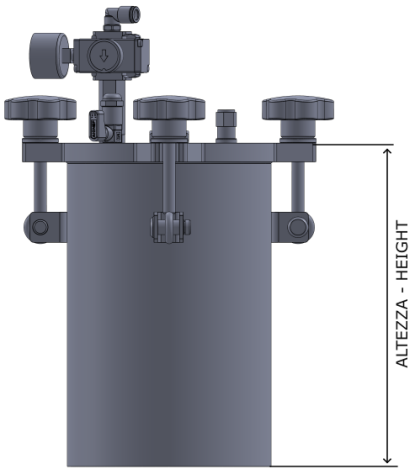
DIMENSIONAL AND WEIGHT CHARACTERISTICS PT-5		
Description	**UdM**	**Value**
Component diameter (min ÷ max)	Mm	24.2
Component height (min ÷ max)	Mm	26.7
Component weight	Kg	6.5

DIMENSIONAL AND WEIGHT CHARACTERISTICS PT-10		
Description	**UdM**	**Value**
Component diameter (min ÷ max)	Mm	27
Component height (min ÷ max)	Mm	31.4
Component weight	Kg	9

DIMENSIONAL AND WEIGHT CHARACTERISTICS PT-16		
Description	**UdM**	**Value**
Component diameter (min ÷ max)	Mm	32
Component height (min ÷ max)	Mm	38.2
Component weight	Kg	13

Component





It is possible to request the 3D model of the component in the desired version from the manufacturer without any obligation.

3 SAFETY

The following presents the list of warnings regarding the component that is the subject of this manual. Please read carefully before proceeding with the next chapters.

DANGER!
Before putting the component into operation or performing any action on it, carefully read this manual.

DANGER!
Do not use the component under the influence of drugs or other substances that may alter attention and reaction capacity.

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

FIRE/EXPLOSION HAZARD!
This component is not designed to work in ATEX environments.

DANGER!
Pay close attention during the component maintenance phase, especially when disassembling components that have pressurized springs inside.

DANGER!
Do not use fluids that react in contact with the materials indicated in Chapter 2.2

ATTENTION!
No modifications to the component must be made in order to obtain performance different from that for which it was designed and built, unless authorized by the manufacturer. Before putting the tank back into operation after undergoing modifications, it is recommended to have it inspected and tested by the manufacturer.

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

The component can only be used by trained and authorized operators and only for the purpose for which it was designed and built.

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

3.1 Component safety devices

This component has a safety valve that activates in case the internal pressure of the component itself exceeds that of the valve, generally designed to respect the pressure limits indicated in Chapter 2.2.

DANGER!
These tanks are designed to remain below the limit imposed by the PED directive, article 4 paragraph 3, fluid group 2. If fluids indicated in group 1 of the directive are used, the allowable operating pressure value must be lowered using a safety valve such that the Pressure * Volume product is less than 25 (for example, the PT-16 can hold a maximum of 1.5 bar inside).

3.2 Useful free spaces

N.A.

3.3 Risk zones and residual risk

N.A.

4 TRANSPORT AND HANDLING

Once the goods are received, verify that the packaging is intact and that there is an exact correspondence with the ordered material.

ATTENTION!
The original configuration of the component must not be modified. The manufacturer is not responsible for damage caused by inappropriate use of the component.

ATTENTION!
If the packaging is not intact, immediately contact the manufacturer, also sending photos of the packaging condition. Do not open it before notifying the manufacturer.

5 INSTALLATION

Component installation is performed by the customer. If necessary, they can contact the manufacturer to have a specialized technician assist them.

The tank is not equipped with particular locking methods; however, it is recommended to place it on a plane parallel to the ground and with the entire base of the tank itself resting on that plane. If possible, it is recommended to place it inside a specially designed container, so that the upper part of the tank is free for maintenance and refilling interventions, while the lower part remains locked. It must be considered that the tank does not produce mechanical stresses, even if equipped with an agitator; however, it is still recommended to provide a safe area on which to install it.

It is recommended to perform a component check before starting installation. If it shows obvious damage, please contact the manufacturer.

ATTENTION!
Please remove the packaging with maximum care. In the event that damage is caused to the component, the manufacturer is not responsible.

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

5.1 Positioning

N.A.

5.2 Connections

This chapter explains the connection method to be used for the component. The following types of connections are provided:

- Electrical connection;
- Pneumatic connection;
- Fluid connection

5.2.1 Electrical

For the various electrical connections of the components, the respective manual of what has been chosen must be consulted, based on the accessories that have been decided to mount or that have been mounted.

It is recommended to perform component grounding to avoid accumulation of electrical charges.

5.2.2 Pneumatic

Authorized personnel		**PPE to wear**					
Component State	Component placed in the work zone						
Supply Values	See chapter 2.2						
Required Preparations	Functioning air pneumatic system						
Required Material							
Required Equipment							

Pneumatic connection is the customer's responsibility.

For the component pneumatic system connection, it is necessary to have a Ø6X4mm tube and connect it to the pressure reducer placed on the component cover. To connect it, simply apply some pressure by pushing the tube inside the hole until hearing a connection confirmation sound.

ATTENTION!
There is a risk of tube disconnection from its connection area if it is not inserted properly. Before activating air, perform a tube seal test by pulling lightly.

5.2.3 Fluidic

Authorized personnel		**PPE to wear**					
Component State	Component placed in the work zone						
Supply Values	See chapter 2.2						
Required Preparations	N.A.						
Required Material	N.A.						
Required Equipment	N.A.						

Fluid connection is the customer's responsibility

Generally the fluid tube can be either Ø6X4 or Ø8X6, based on applications and the type of fluid to be worked with. This tube enters through an appropriate fitting and must reach almost to the bottom of the tank. Once inserted, the fitting that clamps the tube and keeps it locked in position must be screwed. If inserting a new tube, first unscrew the block that holds the tube in position, remove the old tube, insert the new tube being careful that it stays a few centimeters from the tank bottom, cut the measurement at 45° so that the tube has even more difficulty adhering, insert the tube and screw the block, so that the tube stays in position.

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

5.3 Commissioning

Component commissioning is performed once positioning and connection operations are completed. Before performing component commissioning, the following checks must be performed:

- Verify that connections have been made correctly;
- Verify that the component is free of dirt or residues of various types;
- Verify that the holding knobs are secure in position;
- Verify that the vent valve is closed;

ATTENTION!
If even just one of the points listed above is not compliant, commissioning must not proceed. Commissioning must only proceed when all points have been completed successfully.

6 SOFTWARE

N.A.

7 PROCEDURE

This chapter explains the main configurations that can be used on the component that is the subject of this manual. In particular, it explains in detail:

- How to perform tank refilling;
- How to perform container replacement inside the tank (anaerobic fluids);
- How to perform suction tube replacement.

7.1 Tank refilling

This procedure serves to fill the tank when the fluid inside reaches the minimum level, generally signaled by a dedicated sensor that sends a signal to the control system. When this event occurs, the following steps must be performed:

1. Remove pressure from the tank by turning the pressure regulator knob counterclockwise;
2. Open the vent valve, so as to discharge the residual air present inside the tank

ATTENTION!
If using products that are toxic or emit harmful gases, this operation must be performed with appropriate PPE.

3. Unscrew the four brackets and place them on the tank body (it is not necessary to remove the brackets from the screw, just loosen them enough to be able to move the screw);
4. Remove the cover and place it on a clean surface, avoiding that the internal part of the cover itself gets dirty;
5. Perform tank refilling;
6. Once refilling is completed, put the cover back in place, possibly in the same position where it was removed;
7. Put the brackets back in position and screw them so as to lock the cover in position. It is recommended to screw them in a cross pattern;
8. Close the vent valve, so as to prevent incoming air from escaping directly;
9. Turn the pressure reducer clockwise gradually and verify that there are no leaks. If positive, proceed and bring the reducer to working pressure.

ATTENTION!
If an agitator or rod level sensor is present, pay attention during the cover removal and repositioning phase. The cover must be lifted the necessary length so that these components are not damaged.

7.2 Container replacement in tank

This procedure is to be followed when using a fluid that cannot come into contact with the material of which the tank is composed. In this case, the procedure to follow is different from the previous one, because attention must also be paid to the container inside the tank, namely:

1. Remove pressure from the tank by turning the pressure regulator knob counterclockwise;
2. Open the vent valve, so as to discharge the residual air present inside the tank

ATTENTION!
If using products that are toxic or emit harmful gases, this operation must be performed with appropriate PPE.

3. Unscrew the four brackets and place them on the tank body (it is not necessary to remove the brackets from the screw, just loosen them enough to be able to move the screw);
4. Remove the cover keeping it lifted just enough to let the tube that enters the fluid container exit;
5. Remove the old container and insert the new one;

ATTENTION!
This operation must be performed in the shortest possible time, since there is no non-return valve in the fluid tube; therefore, the fluid tends to fall by gravity.

ATTENTION!
Care must be taken not to dirty the tank with the fluid, otherwise there is a risk of damaging it irreparably.

6. Once the container is replaced, put the cover back in place, possibly in the same position where it was removed;
7. Put the brackets back in position and screw them so as to lock the cover in position. It is recommended to screw them in a cross pattern;
8. Close the vent valve, so as to prevent incoming air from escaping directly;
9. Turn the pressure reducer clockwise gradually and verify that there are no leaks. If positive, proceed and bring the reducer to working pressure.

7.3 Suction tube replacement

This procedure serves when the suction tube inside the tanks must be changed. To do this:

1. Loosen the screw that holds the suction tube in position;
2. Remove the old suction tube;
3. Insert the new tube and take the correct measurement, leaving 5 centimeters of distance between the end of the tube and the tank bottom;
4. Cut the tube at 45°, so that the tube does not stick to the tank;
5. Insert the new tube in its position and tighten the screw, so that the suction tube remains in position..

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

8 MAINTENANCE

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

- **Ordinary maintenance**, which are interventions at regular intervals or that can be performed by the customer's personnel, are the most important activities as they allow the component to be maintained in good working conditions;

ATTENTION!
Ordinary maintenance interventions must be performed with the methods and timing indicated in the following chapters.

- **Extraordinary maintenance**, i.e., all those interventions that are not at regular intervals or that have not been foreseen, or interventions that cannot be performed by the customer. They can also arise from the lack of ordinary maintenance interventions.

ATTENTION!
Extraordinary maintenance interventions must be performed together with the manufacturer's specialized technicians.

Regarding frequency, it must be considered that:

- **When necessary:** Operation to be performed when the need to perform it is seen;
- **Every machine start or end of work:** Indicates a daily time period, in general. This can imply every 24 hours (therefore at the beginning of shift every day, or end of shift every day), or even more frequently, based on applications;
- **Long pause:** Indicates a time period greater than approximately one hour;
- **Every drum change:** Indicates every time the supply system is changed (tank, drum, cartridge or other);
- **Every mixer disassembly:** Indicates that every time the mixer is replaced, a specific operation must be performed;
- **Weekly:** Indicates a time span equal to seven calendar days;
- **Monthly:** Indicates a time span equal to one calendar month;
- **Semi-annual:** Indicates a time span equal to six calendar months;
- **Annual:** Indicates a time span equal to one calendar year.

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

Assigned	Description	Frequency	Chapter
	Perform superficial valve cleaning	Every component start-up or end of work	\
	Perform fluid system leak check	Every component start-up or end of work	\
	Perform pneumatic system leak check	Every component start-up or end of work	\
	Perform cover seal tightness check	Every component start-up or end of work	\
	Safety valve check	Quarterly	\
	Cover gasket replacement	When necessary	\

It is recommended to keep a table with all maintenance performed for each tank.

ATTENTION!
For component cleaning do not use aggressive products or those that can react either with tank materials or with the fluid being used.

For safety valve checking, the pressure inside the tank must be brought slightly above that indicated in Chapter 2.2 and the safety valve should be heard venting; afterwards, the pressure inside the tank can be returned to working pressure.

For gasket replacement, follow the following table, based on the component purchased:

- PT2 -> PT-2-GASKET;
- PT-5 -> PT-5-GASKET;
- PT-10 -> PT-10-GASKET;
- PT-16 -> PT-16-GASKET.

Furthermore, all gaskets are in NBR, unless different agreements with the manufacturer. In this case, contact the manufacturer directly..

9 TROUBLESHOOTING

This chapter addresses the most common problems that could arise when using the component of this manual.

ATTENTION!
Once the operator has found a problem or suspects there is a problem, they must call the technician responsible for maintenance. Maintenance must always be performed by a specialized and qualified technician.

DEFECT	CAUSE	SOLUTION
Air leaks from the cover perimeter	Brackets tightened incorrectly	Remove pressure from component and tighten brackets more
	Worn gasket	Replace gasket
	Wrong gasket	Replace gasket
Air leaks from one of the accessories	Accessory fixed incorrectly	Remove pressure from component and, requesting from manufacturer, tighten accessory
Cracks on tank and/or cover	Improper use and/or defective component	Remove pressure from component and contact manufacturer
Weld failure	Excessive stress	Remove pressure from component and contact manufacturer
Level sensor detects end of product too early	Sensor calibrated incorrectly	Perform sensor calibration
Tube has been inserted inside tank but little fluid reaches dosing system	Pressure set too low	Increase pressure, staying within range indicated in Chapter 2.2
	Tube too constricted	Loosen grip on fluid supply tube
Fluid leaks from fitting	Tube broke because it was tightened too much	Change supply tube
Fluid leaks from tank bottom	Welds do not hold / are defective / Excessive stress	Remove pressure from component and contact manufacturer

10 END OF LIFE

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

- **Storage**, i.e. when the component is temporarily placed inside the warehouse for future use;
- **Stockpiling**, 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 its working period, whether due to age, obsolescence or failures that cannot be repaired, or that can be repaired but it is better to buy a new component.

If installation is not planned in the short term, the component can remain packaged and must be stored in a sheltered and preferably closed place. The ambient temperatures to be respected are shown in Chapter 2.2.

Instead, for the dismantling and consequent scrapping of the component or its parts, the different nature of the various components must be taken into account and differentiated scrapping must be performed. It is recommended to entrust specialized companies for this purpose and the laws in force regarding waste disposal must always be observed.