

## USE AND MAINTENANCE MANUAL

### TWO-COMPONENT METERING VALVE DA 2K



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## 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;

### **Applicable essential health and safety requirements (EHSR) of Directive 2006/42/EC, set out in Annex I, paragraph:**

- 1.1.2: Principles of safety integration;
- 1.1.3: Materials and products;
- 1.1.5: Design of machinery to facilitate its handling;
- 1.3.4: Risks due to surfaces, edges or angles;
- 1.5.3: Energy supply other than electricity;
- 1.5.4: Errors of fitting;
- 1.5.8: Noise;
- 1.5.9: Vibrations;
- 1.6.3: Isolation of energy sources;
- 1.6.4: Operator intervention;
- 1.7.4: Instructions

### 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:** DA 2K Valve  
**Model:** Two-component dosing valve  
**Year:** 2024  
**Intended use:** Dispense two-component fluid of any viscosity

**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:**

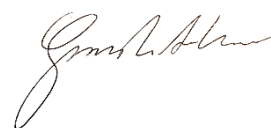
- The product has been designed and manufactured in compliance with the essential health and safety requirements of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and meets all applicable safety regulations set out in chapter 1.2 of this manual;
- Undertakings 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 May 2024

**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 learn more about the operation of the DA 2K valve, a pressure/time valve that must be controlled by a 5/2-way valve. Being a two-component pressure/time valve, it is necessary to support a volumetric system that allows the product to be correctly proportioned (such as GP pumps).

In other words, the function of this component is:

### DISPENSING OF VARIOUS TYPES OF TWO-COMPONENT FLUID

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

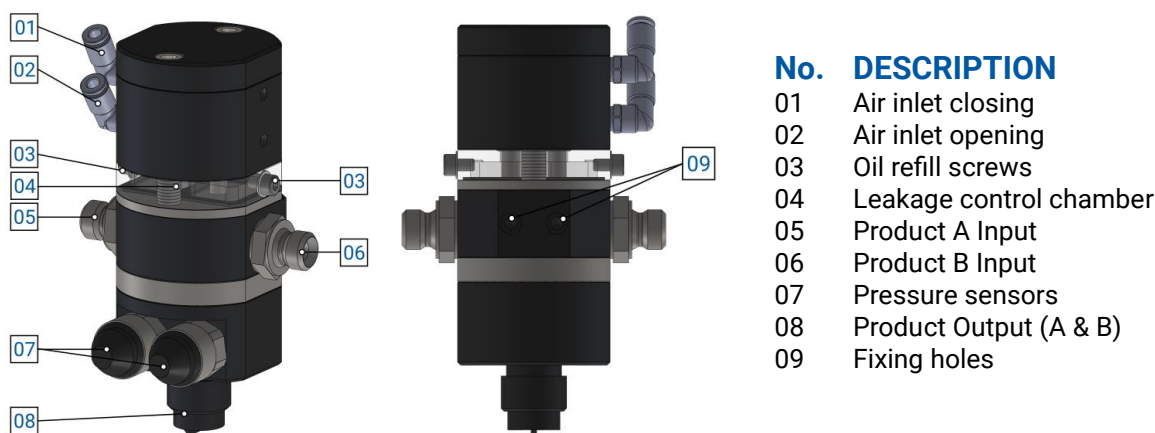


Figure 01 – Detail DA 2K

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 valve;
- 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 valve, it must be cleaned thoroughly to prevent residues from the previous processing from affecting the processing to be performed.

### SPECIAL VERSIONS

- It's possible to place an M6x1 calibrated insert to reduce the hardener valve section and increase the pressure. The insert diameter is custom-made. This is useful with hardener at very low viscosity.

## OPERATION

The valves cannot operate autonomously. To ensure that it dispenses product, they must be connected to a power source, which can be a tank, a pump or other, depending on the system and the customer's needs.

This type of valve, therefore, must be controlled by a 5/2-way valve, which manages both the closing and opening phases. Being a pressure/time valve, when the valve is open it delivers the two-component fluid according to the pressures that are set within the PLC or controller on the gear pumps (GP); Without this element, the valve would perform a non-volumetric dosage, therefore not precise. In addition, it can work with both a tank and a pressing plate pump.

For minimum working pressures, please refer to [Chapter 2.2](#).



### ATTENTION!

It is recommended to connect the valves to the sources indicated in this manual in [chapter 2.2](#). Connecting them to other sources or products with features not listed in this manual may break them. If you are unsure, contact the manufacturer.

The following is intended to explain how the DA 2K valves work.

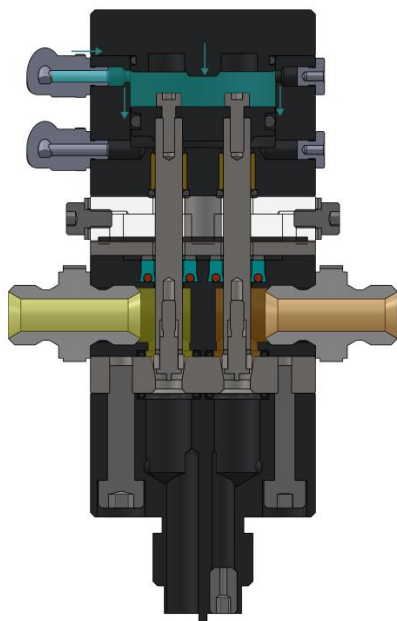


Figure 02 – Resting phase

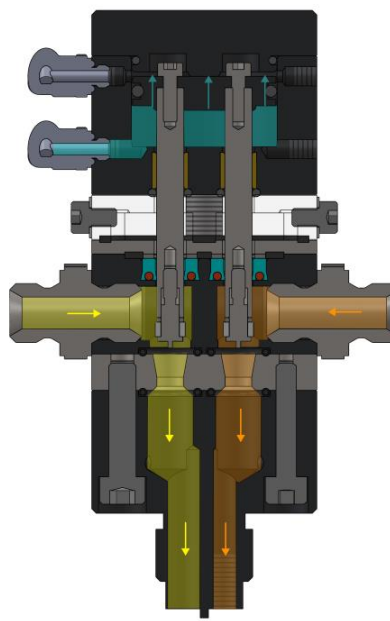


Figure 03 – Dosing phase

The fluid is pushed inside the valve through the two special inlets (fluid A in yellow and fluid B in orange). To prevent the fluids from escaping, there are two pins, one for each fluid, which are held in place by the pneumatic pressure exerted on a piston connected to the pins themselves. When the air inlet is changed and the piston is raised, the pins are raised accordingly, freeing the outlet area of both fluids at the same time, which advance towards the mixer, where they are then mixed and dosed.

So, in general, the toggle sequence is as follows:

- The fluids are ready to exit into their special chambers (Figure 02);
- The pins are closed due to the pneumatic pressure exerted on the piston that keeps them in stop, preventing the fluid from escaping;
- The valve opening command is given via PLC;
- The system gives the command to start dispensing to the volumetric system;
- The pins are opened, and the fluids begin to come out (Figure 03);
- Dosing is carried out for the expected time;
- When you want to stop dosing, remove the dosing command; then, the valve closes the pins and the volumetric dispensing, including the volumetric system, stops (Figure 02).

In summary, the valve can work in both continuous and intermittent use. Below we want to give advice for optimal use, to increase the life of the valve itself and reduce the need for any maintenance.

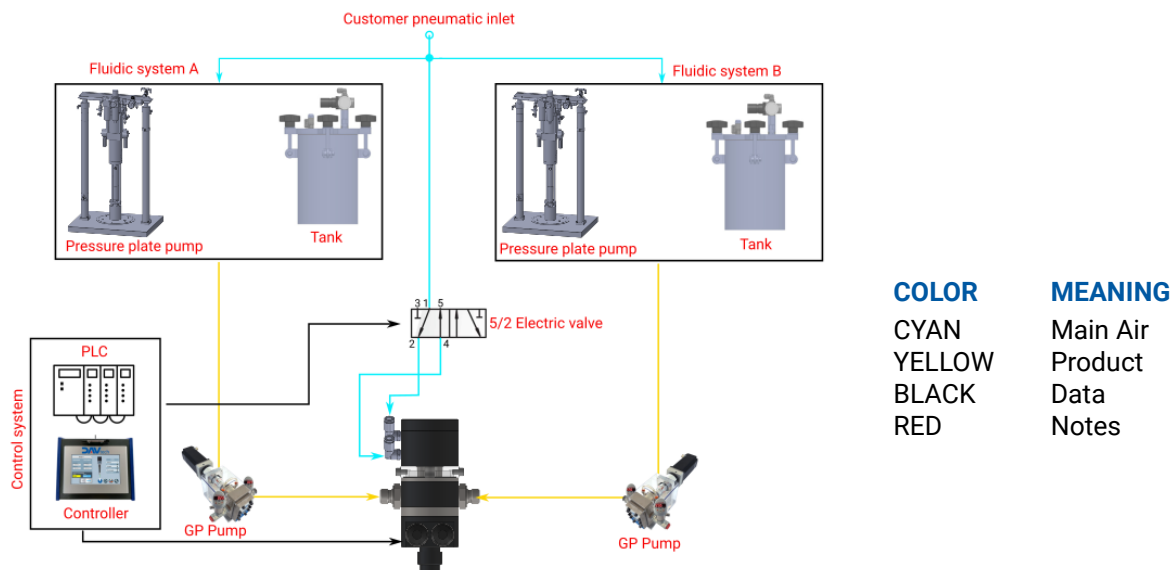


Figure 04 – Example of a DA 2K connection



The control system towards the valve is used only if there are sensors.



It is recommended to place a silencer at inlet 3 and 5 of the solenoid valve

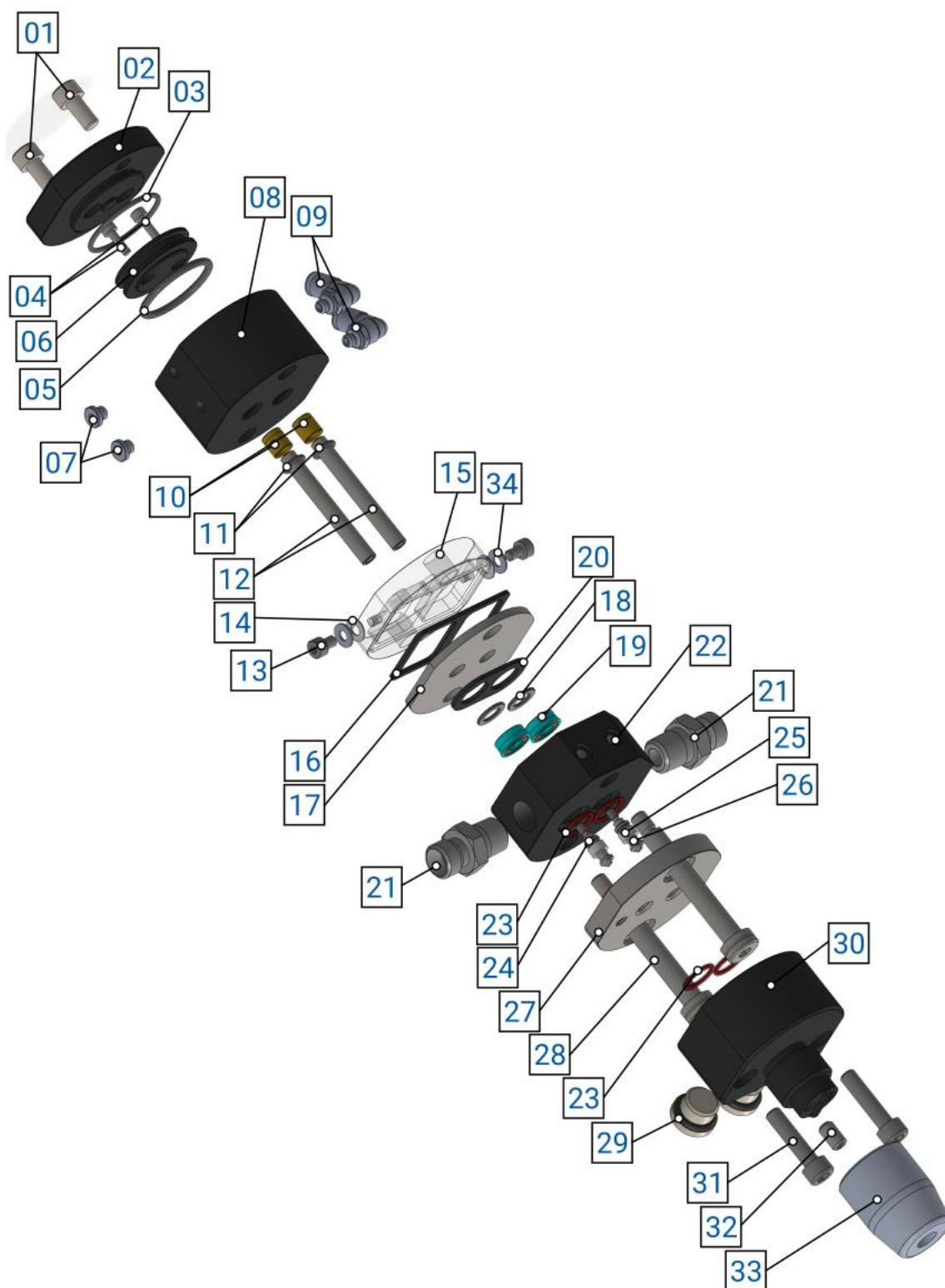


**ATTENTION!**

The air entering the valve must be filtered and without water (dried), otherwise it risks forming oxide inside the component and wearing it out more quickly.

## 2.1 Exploded

The following is a list of the main valve components with spare part numbers.



No.	Description	Var.	Code	Variant details
01	TCEI M6X12 INOX	-	2KF015	Tightening torque: 10 Nm
02	PNEUMATIC CHAMBER COVER	-	2KD005	-
03	FKM O-RING COVER	-	2KF028	-
04	TCEI M3X10 INOX	-	2KF014	-
05	O-RING PISTON FKM	-	2KF027	-
06	PISTON VALVE	-	2KD006	-
07	HEX HEAD CYLINDER CAP M5	-	2KF031	-
08	PNEUMATIC CYLINDER	-	2KD009	-
09	M5 90° PNEUMATIC COUPLINGS	-	2KF011	-
10	BUSH	-	2KF018	-
11	O-RING PIN FKM	-	2KF026	-
12	PIN	-	2KD007	-
13	M4x6 SCREW	-	2KF030	Tightening torque: 0.55 Nm
14	PTFE M4 WASHER	-	2KF029	-
15	OIL CHAMBER	-	2KD010	-
16	OIL CHAMBER SEAL	-	2KF024	-
17	OIL CHAMBER CLOSING PLATE	-	2KD004	-
18	LIP SEAL WASHER	-	2KF022	-
19	LIP SEAL	-	2KF021	-
20	FLUID INLET SEAL	-	2KF023	-
21	FLUID INLET FITTING 1/4"	-	2KF013	-
22	FLUID INLET BODY	-	2KD001	-
23	FKM ENCAPSULATED O-RING	-	2KF025	-
24	PIN WASHER	-	2KF016	-
25	BUSH UHMW-PP	-	2KF017	-
26	PIN SCREW	-	2KD008	-
27	PIN PLATE	-	2KD002	-
28	M8X50 BALANCED SCREW	-	2KF019	Tightening torque: 12 Nm
29	STAINLESS STEEL CAPS	-	2KF012	-
30	MANIFOLD	-	2KD003	-
31	SCREW TCEI M6X25 INOX	-	2KF020	Tightening torque: 10 Nm
32	NUT REDUCTION HARDENING 1.5	-	2KD033	-
33	MIXER CLOSURE	-	2KD032	-
34	WASHER M4	-	2KF034	-
\	GASKET KIT DA 2K	-	GASKETKIT-DA2K	-

## 2.2 Technical data

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

SPECIFICATIONS		
Description	UdM	Values
Model	\	DA 2K
Activation	\	Double
Maximum fluid pressure	bar	150
Maximum flow	cm <sup>3</sup> /s	300
Air pressure for the drive	bar	5 ÷ 7
Air inlet thread	\	M5
Air inlet hose	mm	Ø4x2.5
Fluid inlet thread	\	1/4 GAS
Materials used in contact with the fluid	\	Stainless steel
		Ergal
		UHMW-PP
		Nickel-plated and Teflon-coated brass

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		
Miscellaneous high and low viscosity products (contact manufacturer for more information)		

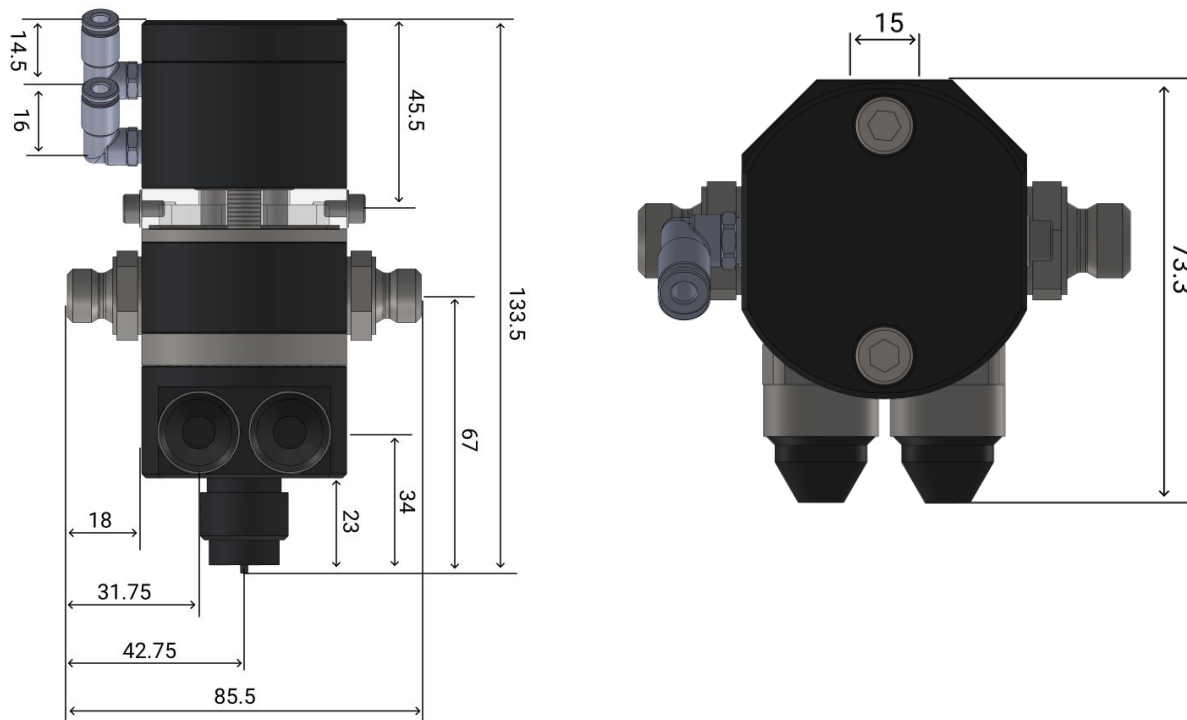


The valve can use flammable and explosive fluids

## DIMENSIONAL AND WEIGHT CHARACTERISTICS

Description	UdM	Value
Component length (min ÷ max)	mm	133.5
Component depth (min ÷ max)	mm	85.5
Component height (min ÷ max)	mm	73.5
Component weight	kg	0.87

## Component



If you are using a transducer, consider the cable clutter.



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



## 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.



### **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.



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

N.A.

## 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.

## 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.

The valve has been designed to be used in the following cases:

- I work independently using a robot for handling;
- Manual work using a special handle;



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

### 5.1 Positioning







The valve is equipped with two through holes (number 09, figure 01, [chapter 2](#)) to have perfect centering both during installation and after maintenance. It is also advisable to attach it well to the support, as the vibrations that are caused by the machinery in operation could take the valve off-center, losing the precision of the dispensing point.

### 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;

## 5.2.1 Electric







Authorized personnel		PPE to wear					
Machine status	PLC installed, with outgoing communication cable						
Power Values	See <a href="#">chapter 2.2</a>						
Necessary preparations	Electrical cable with correct power supply						
Materials needed	N.A.						
Equipment needed	N.A.						



The electricity connection is at the expense of the customer.

To make the electrical connection, the pressure sensors (if present) must be connected to the appropriate connector, paying attention to the direction with which it is connected. Typically, this type of connector is purpose-built to prevent it from being connected incorrectly.

## 5.2.2 Pneumatic

Authorized personnel		PPE to wear					
Machine status	Machine installed and turned off						
Power Values	See <a href="#">chapter 2.2</a>						
Necessary preparations	Working pneumatic air system						
Materials needed	Fixing screws (for centering holes)						
Equipment needed	Wrench or screwdriver						



The pneumatic connection is the responsibility of the customer.

Before assembling the valve, it is recommended to calibrate it, to perform it precisely and once performed, you can proceed with the assembly and possible fixing by screws passing through the centering holes. For connections, it is recommended to connect the pneumatic hose first (or both in the case of double-acting work) and then proceed with the connection of the product hose (using the data given in [chapter 2.2](#)).

## 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;

**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. We want to explain in detail:

- How to mount the pressure sensor;

### 7.1 Mounting pressure sensor

**ATTENTION!**

Remove the air from the circuit and clear the valve of fluid residue before proceeding. As soon as you remove the caps, the fluid is free to exit from those points as well.

To perform the mounting of the pressure sensor on this valve, the following steps must be followed:

- Remove the fluidic pressure of the system;
- Remove the sealing plugs that are fitted to the valve;
- Take the pressure sensors;
- Assemble them in place of the caps, using a lowered 19 wrench to secure them.

## 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;
- **Every machine 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 test function of the valve	Every machine start-up or end of work	\
	Perform a surface cleaning of the valve	Every machine start-up or end of work	\
	Oil presence and transparency check on the leakage control chamber (No. 04 <a href="#">chap. 2</a> )	Every machine start-up or end of work	\
	Put a bit of grease on the outlet nozzle	Every end of work	\
	Cleaning and/or manifold replacement	Semiannual	8.1
	Disassembly and reassembly of the valve	Annual	8.3



### ATTENTION!


Apply the grease tip at the end of the work and at every prolonged pause in the system, so as to preserve the fluid inside the system and the functionality of the valve itself



### ATTENTION!

Only use soft brushes or cotton cloths to clean the valve.

## 8.1 Cleaning and/or manifold replacement

Assigned	Periodicity	Materials and equipment
	Annual	<ul style="list-style-type: none"> <li>Allen key No.5;</li> </ul>

PPE to wear



### ATTENTION!

Before performing this procedure, you must relieve pressure from the system and disconnect the air connection.

01



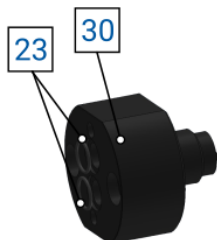
Remove the pressure sensors (or caps if no pressure sensors are present)

02



Remove the screws (31) with an Allen key of 5.

03




Remove the manifold O-rings (23).

Proceed with cleaning and/or replacing the manifold (or manifold O-rings). Once finished, reassemble the components following the instructions above in reverse order.



## 8.2 Valve overhaul

Assigned	Periodicity	Materials and equipment
	Annual	<ul style="list-style-type: none"> <li>Allen key of 5 and 3;</li> <li>Allen key with center cut for pin head</li> </ul>

PPE to wear



### ATTENTION!

Before performing this procedure, you must relieve pressure from the system and disconnect the air connection.

## DISASSEMBLY

01



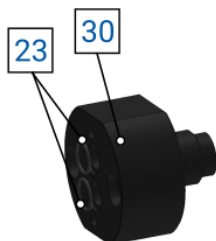
Remove pressure sensors (if any)

02



Remove the screws (31) with an Allen key of 5.

03



Remove the manifold o-rings (23).

**04**



Remove the calibrated screws holding the valve body (28). The screws must be unscrewed alternately and equally (maximum 1/4 turn at a time).



**ATTENTION!**

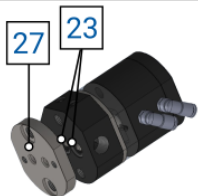
Once these are removed, the valve body is free to move. Keep it on a flat surface with its head firmly resting.



**ATTENTION!**

From this moment on, the oil contained inside the chambers is also free to escape, since there is no longer any pressure in the chamber. Be careful not to drop it by accident.

**05**



Remove the pin plate (27) and replace the O-rings immediately below (23)

**06**



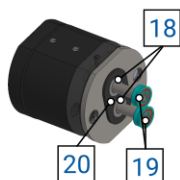
Remove the two pin screws (26) with bushing and washer.

**07**



Remove the fluid inlet body (22) without removing the fittings (21)

**08**



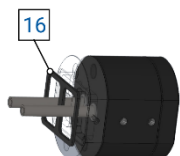
Remove the lip seals (19), fluid inlet gasket (20), and washer (18).

**09**



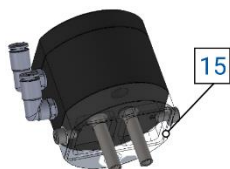
Remove the oil chamber closing plate (17)

**10**



Remove the oil chamber gasket (16)

**11**



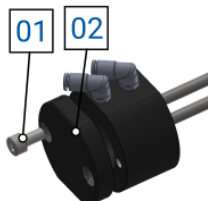
Remove the oil chamber (15)



**ATTENTION!**

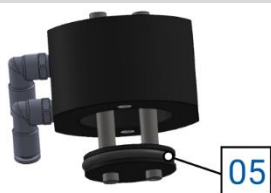
If it has not already been removed, this component has oil in it. Remove the oil by removing the two screws on the side of the component (13).

**12**

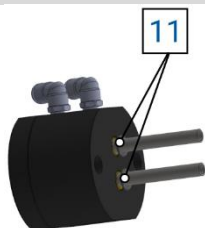


Remove the valve head closing screws (01) and remove the air chamber cover (02)

**13**



Remove the pin body and remove the O-ring (05).

**14**

Remove the O-rings (11).

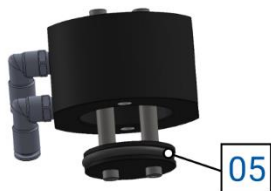


**ATTENTION!**

Each gasket that is replaced must be greased well with petroleum jelly grease or generic grease.

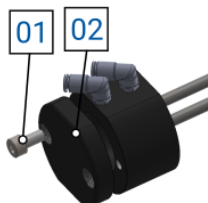
**MOUNTING**

**01**



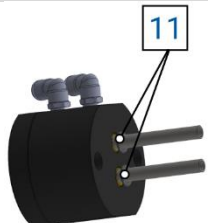
Insert the O-ring (05) into its housing and push the needle body inside the pneumatic body

**02**



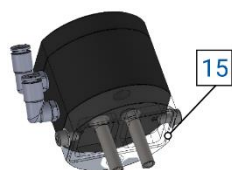
Put on the air chamber cover (02) and lock it using the screws provided (01)

**03**



Insert the O-rings (11) and make sure they are in place. If you can't keep them in place, use grease to hold them in place.

**04**



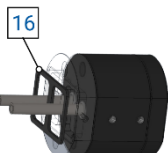
Position the oil chamber (15)



**ATTENTION!**

If oil is present, be careful not to tip the valve over until assembly is complete.

**05**



Position the oil chamber gasket (16)



**ATTENTION!**

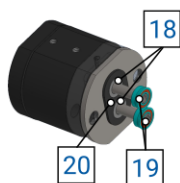
Do not lubricate this component

06



Position the oil chamber closing plate (17).

07



Put on the fluid inlet gasket (20), then the washer (18) and finally the lip seals (19).



### ATTENTION!

Check the direction of insertion (the lip seal gasket must be opposite to the oil seal of the fluid inlet) and not to cut the inner lip of the seal itself.

07



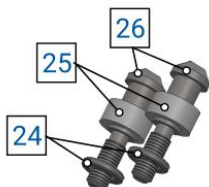
Insert the fluid inlet body (22) with the fittings attached.



### ATTENTION!

The flared part must face the seals and the valve fixing holes must be opposite the logo applied to the valve.

08



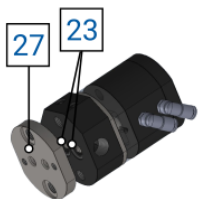
Insert the washer (24) and the bushing (25) into the needle screw (26).

09



Screw the newly assembled pin tips inside the pins themselves. To do this, use a special Allen key, with a central cut. Get to the stop and then make another 1/2 turn, to compress the bushings.

## 10



Place the o-rings (23) and the pin plate (27).

### ATTENTION!



Looking at the plate, you can see that there are two counterbores on one side and that one of the 4 central holes is slightly off-axis. The counterbores must be opposite to the valve body and, having the logo facing you, the off-axis hole must be on the left.

## 11



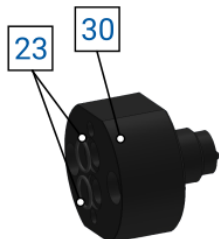
Insert the calibrated screws holding the valve body (28). Once these screws are pulled, the valve body is sealed, and you can also move without fear of oil leaking out of the valve.



### ATTENTION!

Tighten the screws so that they go down even, then screw them alternately (maximum 1/4 turn per screw).

## 12



Insert the O-rings (23) into the manifold (30) you want to use.

## 13



Insert the screws (31) with an Allen key of 5.

## 14



Insert the pressure sensors (or caps if there are no pressure sensors)

**15**


To top up the oil, remove the chamber closing screws (13), insert petroleum jelly oil or equivalent, as long as it is transparent, fill one chamber to 3/4 and close it with the screw and washer (14) and then make the other chamber in the same way.



## 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>Fluid does not exit or comes out slowly</b>	The valve does not receive the command	Check the valve control (solenoid valve). Perform a manual test
	Fluid pressure is too low or no pressure	Check the pressure of the fluid supply unit and increase it if necessary
	The nozzle is clogged	Unscrew and clean the nozzle
	The filter is dirty (if any)	Wash or replace the filter
	A tube is kinked	Check the condition of the fluid supply hoses
	Insufficient operating pressure	Check the actuation pressure ( <a href="#">chap. 2.2</a> )
	Fluid residues present in the system	Disassemble and clean any solid particles
<b>The oil inside the control chamber is not transparent</b>	Damaged lip seal	Replace the lip seal
	Damaged pin	Replace the pin
<b>Oil sealing chamber leaks oil</b>	Ruined oil separator seal	Replace the oil separator seal
	Damaged thread	Replace the chamber
	Worn Teflon washer	Replace the washer
<b>Nozzle drips even if valve is not piloted</b>	Dirt in the nozzle	Clean or replace the nozzle
	Damaged gasket	Replace the gasket
	Worn bushing	Tighten the bushing(s) more
	O-ring between manifold and plate damaged	Replace O-rings
<b>Valve opens late</b>	Insufficient operating pressure	Check the actuation pressure ( <a href="#">chap. 2.2</a> )
	O-Ring on Damaged Air Piston	Replace O-Ring on Pneumatic Piston
<b>The valve does not switch position</b>	Damaged valve piston seal	Replace the gasket
	Leakage from pneumatic cylinder caps	Arrange the caps
<b>Fluid comes out from the sensor connection</b>	Sensors (or caps) are not inserted correctly	Fix the sensors (or caps)
<b>Fluid in the manifold screw thread</b>	Worn out o-rings	Replace O-rings

## 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.