

USE AND MAINTENANCE MANUAL

DAVR-CC CENTRIFUGAL SYSTEM



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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 appropriate behavior for correct operation. This manual has been designed to be simple and as immediate as possible, with a subdivision 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, to arrive at aspects of safety, transport, installation and use and finally the end of life. In case of doubts about the interpretation or reading of this document, please contact the manufacturer.



DAV Tech disclaims all responsibility 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 keeping in 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 personnel who must carry out checks or inspections. The manufacturer is not liable for damage to the component caused by personnel who have not followed the indications contained within the manual itself.

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

GUARANTEE

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 a major event that could cause significant damage (death, permanent injury, irreversible component failure).



NOTE. Indicates relevant information or elaboration.



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



Operator

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



Mechanical maintenance technician

Qualified technician capable of performing mechanical interventions, adjustment, maintenance and ordinary repair described in this manual. Not qualified to perform interventions on electrical systems in the presence of voltage.



Electrical maintenance technician

Qualified technician capable of performing electrical interventions, adjustment, maintenance and ordinary repair described in this manual. Capable of working in the presence of voltage on electrical cabinets and junction boxes. Not qualified to perform interventions 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 normative and directive references for this manual are as follows:

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 PARTLY COMPLETED MACHINERY

Component: DAVR CC
Model: Coaxial centrifugal dosing system
Year: 2024
Intended use: Dosing of a cylindrical bead without contact

COMPLIES WITH THE INCORPORATION PROVISIONS DICTATED BY DIRECTIVE 2006/42/EC

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

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

FURTHER DECLARES THAT:

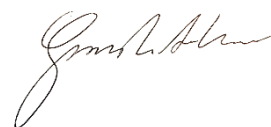
- We undertake to transmit, in response to an adequately motivated request from national authorities, relevant information on this partly completed machinery;
- The technical file has been constituted by Andrea Grazioli, via Ravizza, 30, Montecchio Maggiore (VI), IT.

This partly completed machinery cannot be used until the machinery on which it will be used is declared compliant with standard 2006/42/EC.

Montecchio Maggiore, 19 January 2024

The legal representative

Andrea Grazioli



1.4 Glossary

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

TERM	DEFINITION
Enable	Term that defines the act of preparing (enabling) an action. The action will be activated as soon as criteria are satisfied which, as a consequence, lead to the activation of the enabled action.
Activate	The action that is performed instantaneously upon command actuation.
Hold-to-run Commands	Commands that, used for manual operations, must be kept activated for the action to be completed. When the command is released, the action stops.
Two-hand Commands	Hold-to-run commands that require simultaneous actuation of two manual commands to perform an action.
PPE	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 subject to 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 controller used in command 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	Command station where machine control instruments are located.
P.I.	Possible Implementation, currently absent from the component described in this manual, but possible to add and implement.
Screen	Interface system between man and component. Screen images displayed on the operator panel that allow the user to receive and provide information to the management software.
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 Service and manufacturer contact details

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

The customer can avail themselves 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 component is based on a pneumatic and electrical power supply system. The electrical connection serves only to power the 3/2-way solenoid valve that passes air directly to the pneumatic motor which, in turn, transmits motion to the nozzle. The latter, performing very rapid rotation, manages to dose the product 360°, covering the desired surface, also based on the dosing distance. The fluid, instead, is brought inside by a volumetric valve DAV or PDP series, based on the type of use.

In other words, the function of this component is:

RADIAL DOSING OF LOW AND MEDIUM VISCOSITY FLUIDS (SEE TECHNICAL DETAILS)

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

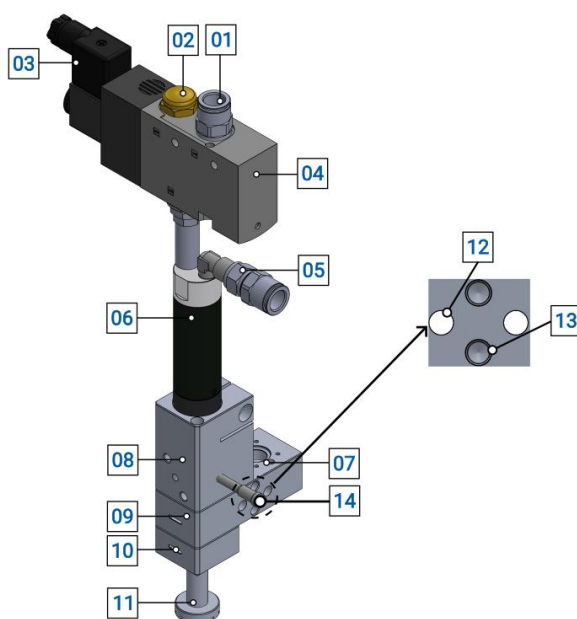


Figure 01 – Coaxial DAVR detail

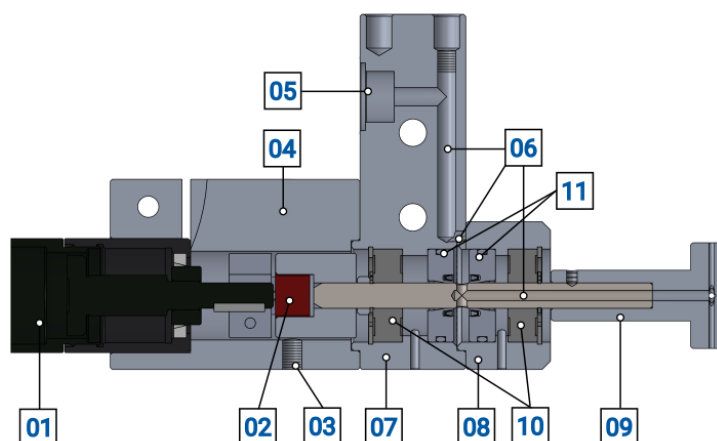
No.	DESCRIPTION
01	Solenoid valve air inlet
02	Solenoid valve exhaust
03	Electrical cable inlet
04	3/2-way solenoid valve
05	Motor air exhaust
06	Pneumatic motor
07	Fluid inlet to be dosed
08	Motor bracket
09	Upper chamber
10	Lower chamber
11	Product outlet nozzle
12	Mounting holes
13	Centering holes
14	Motor rotation sensor

Before using a particular type of fluid, it must be verified that:

- The viscosity of the fluid is compatible with the valve characteristics;
- The fluid characteristics satisfy 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.

In case it is necessary to use multiple fluids with the same valve, it must be cleaned thoroughly to prevent residues from the previous processing from affecting the processing to be performed.

OPERATION



No.	DESCRIPTION
01	Pneumatic motor
02	Elastic coupling
03	Motor revolution counter connection
04	Motor body
05	Dosing system connection
06	Fluid path
07	Upper case
08	Lower case
09	Centrifugal nozzle
10	Bearings
11	Rotating seals

Figure 02 – DAVRCC internal section

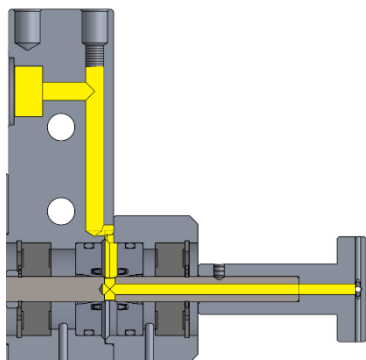
The component includes a 3/2-way solenoid valve that is connected directly to a control system (can be a PLC or controller) which is managed with a single air inlet and allows commanding a single state, i.e., when to open the valve to start the pneumatic command to the motor; therefore, this component operates single-acting.

Furthermore, the component has been designed to perform only one type of dosing, i.e., radial dosing. Based on the length of the transmission shaft and nozzle, it is possible to perform dosing even in areas that would normally be inaccessible.

Figure 03 represents the most complete case. For minimum working pressures, refer to [chapter 2.2](#).

The component cannot operate autonomously. For it to dispense product, it must be connected to a dosing system (based on usage, multiple types of valves or pumps are available) and the latter to a power source, which can be a tank, a pump or other, based on the system and customer needs.

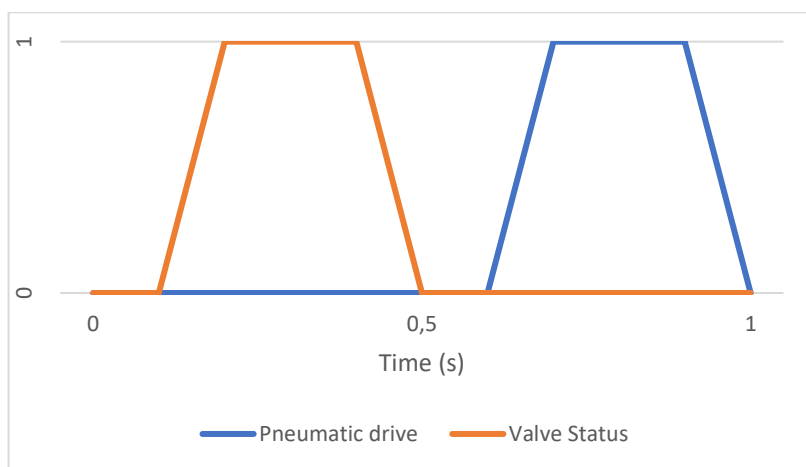
The following explains the operation through component section. Note that the fluid flow is indicated in yellow.



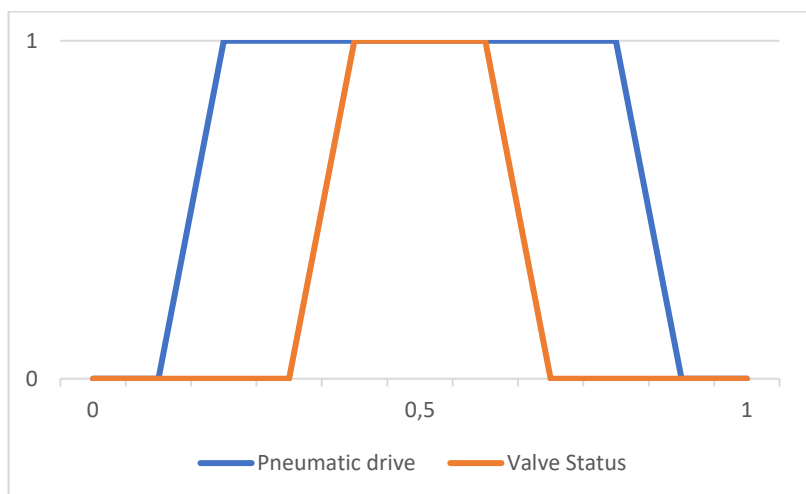
During the closing phase, i.e., while the solenoid valve receives no signal, the component does not allow air to pass inside it, preventing dosing of the fluid on the desired surface; meanwhile, the chamber remains full of fluid, which does not leak thanks to its viscosity.

For valve operation, there can be two scenarios:

- The valve activates before the motor, this serves to load the nozzle with fluid so that when it starts rotating, it can dose directly;
- The motor activates before the valve, which serves for certain types of fluids to have correct dosing.



In both cases, it can be noted that there is a delay between activation of the two components. This delay, ranging from 0.2s to 1s, depends on fluid viscosity, the valve used and the nozzle used (manufacturer advice should be sought for optimal use).



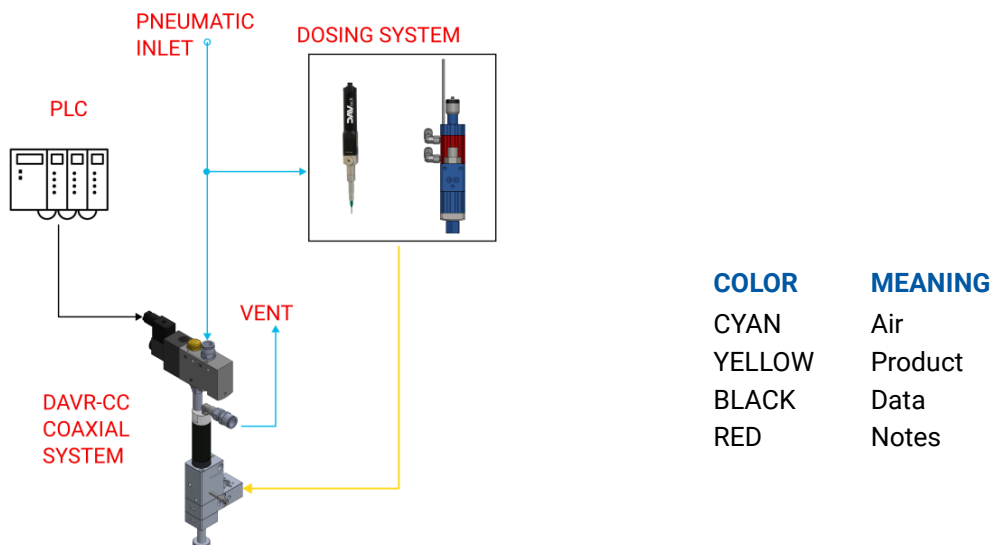


Figure 03 – Connection Example



ATTENTION!

The dosing system must be connected directly (via fittings) to the component without additional tubes; this is because they would affect the dosing of the component itself.

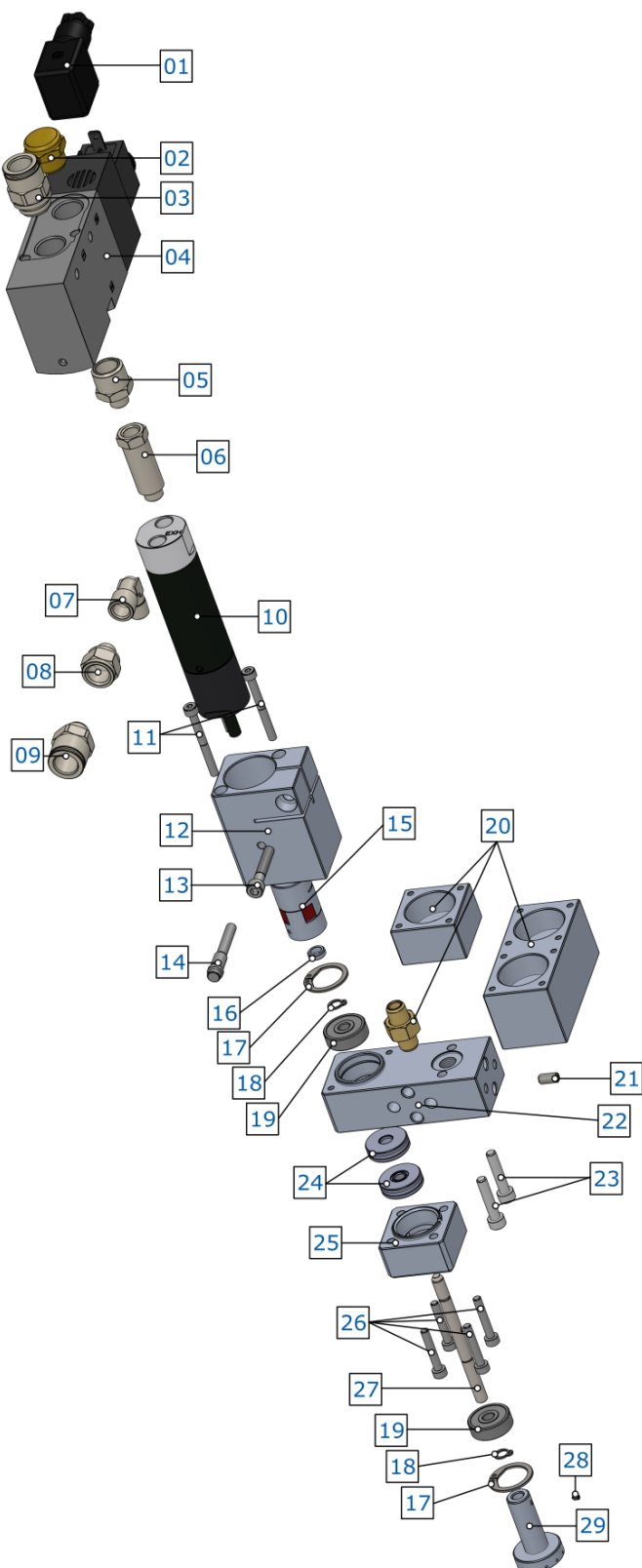


ATTENTION!

The air entering the valve must be filtered and without water (dried), otherwise it risks forming rust inside the motor and wearing it more rapidly. For better performance, it is also recommended to oil the inlet air.

2.1 Exploded view

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



No.	Description	Var.	Code	Variant details
01	VALVE ELECTRONIC CONNECTOR	-	VRF021	-
02	SILENCER	-	VRF015	-
03	QUICK COUPLER	-	VRF016	-
04	3/2 PNEUMATIC VALVE	-	VRF012	-
05	REDUCED NIPPLE	-	VRF014	-
06	M-F EXTENSION	-	VRF013	-
07	M-F CURVE	-	VRF017	-
08	REDUCTION	-	VRF019	-
09	QUICK COUPLER	-	VRF018	-
10	PNEUMATIC MOTOR	-	VRF004	-
11	ENGINE CASE FIXING SCREW	-	TCEI M4X40	-
12	ENGINE CASE	-	VRD003	-
13	ENGINE CASE PULLER SCREW	-	TCEI M5X30	-
14	SPEED SENSOR	-	VRF007	-
15	ELASTIC COUPLER	-	VRF008	-
16	SPACER	-	VRF020	-
17	SEEGER J DIN 472-22X1	-	VRF006	-
18	SEEGER DIN 471-6X0.7	-	VRF009	-
19	BEARING	-	VRF011	-
20	FEEDING SYSTEM ADAPTERS	-	-	-
-	-	20.a	VRCC-ADAPTOR-PCP	PCP FEEDING SYSTEM ADAPTER ^{(1) (2)}
-	-	20.b	VRCC-ADAPTOR-DAV100200	SINGLE SMALL DAV SYSTEM ADAPTER ⁽²⁾
-	-	20.c	VRCC-ADAPTOR-DAV300400	SINGLE MEDIUM DAV SYSTEM ADAPTER ⁽²⁾
-	-	20.d	VRCC-ADAPTOR-DOUBLE100200	DOUBLE SMALL DAV SYSTEM ADAPTER ⁽²⁾
-	-	20.e	VRCC-ADAPTOR-DOUBLE300400	DOUBLE MEDIUM DAV SYSTEM ADAPTER ⁽²⁾
21	CLOSING CAP	-	M5X10	-
22	UPPER CASE	-	VRD002	-
23	M5X25 ADAPTORS FIXING SCREWS	-	TCEI M5X25	-
24	LIP SEAL	-	VRF010	-
25	LOWER CASE	-	VRD001	-
26	LOWER CASE FIXING SCREWS	-	TCEI M4X25	-
27	DRIVE SHAFT	-	VRD005	-
28	NOZZLE EXTENDER FIXING CAP	-	M2.5X4	-
29	AXIAL CENTRIFUGAL NOZZLE	-	CUSTOM ⁽³⁾	-

1) With PCP adaptor, there's also the bracket to keep the PCP in position, which is composed of:

- a) Front PCP bracket
- b) Ø17mm rear PCP bracket for PCP-005, PCP-015 and PCP-050
- c) Ø19mm rear PCP bracket for PCP-150, PCP-500 and PCP-1000

If there are doubts regarding the PCP model used, please contact the manufacturer's technical office

- 2) For every adapter, there's also a three-pieces fitting to connect the valve (or pump) to the upper case.
- 3) Nozzle is customized based on the application, so the specific code varies depending on the machine (with extension or not). Feel free to ask to the manufacturer's technical office the correct code.

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REV.: 02
DATE: 17/04/2026

DAV TECH SRL

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2.2 Technical data

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

SPECIFICATIONS		
Description	UdM	Values
Model	\	DAVR COAXIAL CENTRIFUGAL
Drive	\	Single acting
Solenoid valve power supply	VDC	24
Solenoid valve power consumption	W	2
Minimum electrical cable section	mm	0.35
Maximum fluid pressure	bar	35
Minimum air pressure for operation	bar	5.5 ÷ 6.5
Minimum motor speed (nozzle Ø25)	rpm	10,000
Maximum motor activation time	sec	3
Motor/valve activation delay	sec	0.2 – 1
Pneumatic motor air outlet thread	\	1/8"
Air inlet tube	mm	12x10
Dosing system connection thread	\	1/8" GAS
Flow adjustment	\	N.A.
Maximum nozzle length ⁽²⁾	mm	50
Materials used in contact with fluid	\	Ergal
		Stainless Steel
		PTFE
		Viton



ATTENTION!

The motor must not remain active for more than the maximum time, otherwise it risks breaking or breaking other components.

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

Low, medium and high viscosity greases (NLGI 0 ÷ 2) ⁽¹⁾

(1) Some products may undergo a heating process to decrease their viscosity. This is included in the final machinery.

(2) For lengths greater than 50mm, the use of a support provided by the manufacturer is necessary.



ATTENTION!

To evaluate whether the specific grease is suitable for the customer's application, it is recommended to perform verification tests first, since there may be variables that compromise the system operation. It may also be that greases with higher viscosity than those indicated are suitable, but this should always be verified through tests.

USABLE VALVES

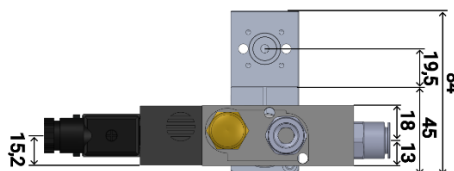
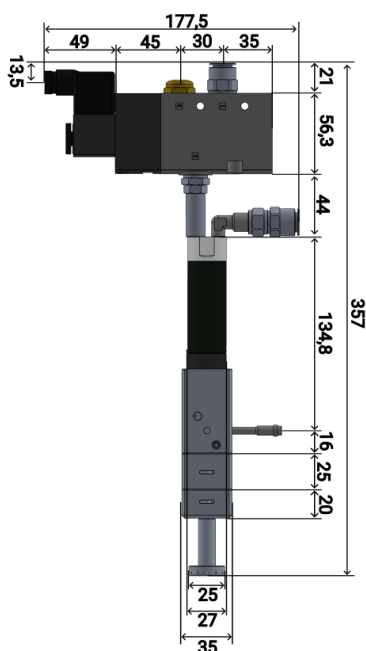
DAV Series

PCP Series

DIMENSIONAL AND WEIGHT CHARACTERISTICS

Description	UdM	Value
Component length (min ÷ max)	mm	~177.5 ⁽³⁾
Component depth (min ÷ max)	mm	84 ⁽³⁾
Component height (min ÷ max)	mm	~357 ⁽³⁾
Component weight	kg	1.5

Component



(3) Dimensions vary based on the configuration used (nozzle, type of air exhaust, position of motor revolution sensor).



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

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, read this manual carefully.



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 their assigned role and qualification.



FIRE/EXPLOSION HAZARD!

This component is not designed to work in ATEX environment.



DANGER!

Pay close attention during component maintenance, especially when dismounting components that have pressurized springs inside.



ATTENTION!

Modifications to the component to obtain performance different from that for which it was designed and built must not be performed, unless authorized 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 safety technical standards in force at the time of its construction.

3.1 Component safety devices

N.A.

3.2 Required free spaces

N.A.

3.3 Risk and residual risk zones

The component has the following residual risks:

- **Dangers due to electrical energy:** the passage of pressurized fluid generates static electricity which, if touched by personnel not properly insulated, can be dangerous;
- **Dangers due to inhalation of dangerous vapors:** The component is not designed to have isolation from any toxic and/or dangerous vapors; personnel operating with this device must keep this in mind during its use;
- **Fire danger due to vapors:** Personnel operating near this component must absolutely not have heat sources that could start a fire;
- **Risk due to pressurized fluid projection:** Due to incorrect component maintenance, it can lead to ejection of some parts of the same and consequent fluid ejection.

4 TRANSPORT AND HANDLING

Once the goods are received, it must be verified 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



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

This component has been designed as support for the operation of other components, i.e., it cannot function alone (given the absence of valves and/or dosing systems) but must be connected to an external feeder, so as to allow the feeder itself to perform a function that, alone, it could not perform, i.e., radial type dosing.

Since it has been designed as a support system, it provides a multiple mounting system, based on the position it must use; i.e., two mounting holes (No. 12 [ch. 2](#)) and two centering holes (No. 13 [ch. 2](#)) are provided on three sides of the upper chamber. Laterally there are two through holes Ø6.5mm, which must be fixed on a support provided with threads, while frontally there are two M6 threaded holes; the centering holes instead are two reamed holes 6H7.

It is also possible to change the position of the pneumatic motor rotation sensor (No. 14 [ch. 2](#)) through the appropriate housings placed on 3 sides of the motor coupling chamber (No. 08 [ch. 2](#))



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 case 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 aims to explain the connection method to be used for the component. The following types of connections are provided:

- Electrical connection;
- Pneumatic connection;
- Fluidic connection.

5.2.1 Electric

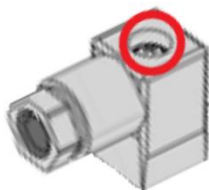
Authorized personnel	 PPE to wear     
Component status	Component installed
Supply Values	See chapter 2.2
Required Preparations	Two-pole electrical cable with correct power supply
Required Material	N.A.
Required Equipment	N.A.



The electrical connection is the customer's responsibility.

To perform the electrical connection, connect the electrical cable (which must comply with the specifications shown in [chapter 2.2](#)) to the appropriate socket, which is reached as follows:

01



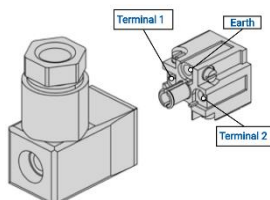
- Unscrew the screw that holds the electrical connection wire inlet locked. Make sure the screw comes out completely.



ATTENTION!

You must ensure that the screw comes out completely, otherwise it risks keeping the connection block locked. Also, pay attention to the presence of a gasket.

02



- Using a fine flat screwdriver, lift the connection block, exposing the connections as shown in the figure;
- Unscrew the cable locking ring;
- Insert the cable inside the block;
- Make the electrical connections.



Inside there is a coil, so terminal 1 and terminal 2 can be connected freely.

Once the above steps are completed, close everything and lock the cable through the appropriate lock.

5.2.2 Pneumatic

Authorized personnel	 PPE to wear					
Component status	Component installed and turned off					
Supply Values	See chapter 2.2					
Required Preparations	Functioning pneumatic air system					
Required Material	Tube Ø12x10 mm					
Required Equipment	-					



The pneumatic connection is the customer's responsibility.

To perform the pneumatic connection, connect an air tube to the 3/2 solenoid valve placed above the component (No.01, Figure 01, [ch. 2](#)) with the tube indicated in [ch. 2.2](#).

5.2.3 Fluidic

Authorized personnel	 PPE to wear					
Component status	Component installed and turned off					
Supply Values	See chapter 2.2					
Required Preparations	Dosing system to connect					
Required Material	Intermediate block or adaptation valves					
Required Equipment	Screws, mounting wrench					



The fluidic connection is the customer's responsibility.

To perform the fluidic connection, connect the volumetric valve to the component body through the appropriate housing (No. 07, Figure 01, [ch. 2](#)). To do this, there are two possible cases:

- Direct connection between valve and component;
- Connection through an intermediate block.

To perform these two procedures, refer to [ch. 7](#)

5.3 Commissioning

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

- Verify that connections have been connected correctly;
- Verify that the component is free of dirt or residues of various types;
- Verify that the dosing system is securely connected to the component;



ATTENTION!

If even one of the points 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 aims to explain the main configurations that can be used on the component that is the subject of this manual. Specifically, it aims to explain in detail:

- How to perform valve installation using reducers;
- How to perform valve installation using intermediate block;
- How to perform nozzle extension installation (for dosing greater than 100mm)
- How to perform the first start

7.1 Installation of dosing systems

This chapter aims to explain how to install any dosing system (compatible with the DAVRCC block, see [ch. 2.2](#)). There are various types of installation that can be used. For this reason, it is recommended to discuss your project with the manufacturer to have the ideal solution for your use.

VALVE WITH DIRECT CONNECTION

In this case, no additional components are necessary; rather, components must be removed from the valves (specific for DAV valves).

ATTENTION!



Although it is feasible to do this on DAV 100 or DAV 200 valves as well, it is not recommended since the mounting holes between valve and component are M2.5, which offers relative tightness and risk losing the thread. Nevertheless, it is recommended to ask the manufacturer for more information regarding the best mounting method.

- Remove the valve nozzle;
- Loosen the 4 valve mounting screws. They must not be removed from their seat, otherwise the valve could open;
- Remove the steel component from the valve;
- Insert an o-ring between the valve and the point where you want to mount it (No.07 [ch.2](#));
- Place the valve on its component seat;
- Tighten the 4 mounting screws.

ATTENTION!



They do not need to be tightened much. The body must be united, but if the screws are tightened too much, there is a risk of damaging the component thread, breaking it.

ATTENTION!



To have greater assembly stability, the valve must in turn be fixed to an external support, through appropriate fixings, which can be studied case by case.

DOSING SYSTEM WITH THREE-PIECE JOINT

In this case, it is necessary to use a reducer for the connection between dosing system and support. This reducer serves to support the system from any vibrations and keep it firmly in position. To perform assembly:

- Disassemble the three-piece joint;
- Insert one piece in the valve and the other component in the block (No.07 [ch.2](#)), taking care that the bolt-shaped component must screw into the component that has the thread;
- Join the two components and tighten the bolt.

ATTENTION!



To have greater assembly stability, the valve must in turn be fixed to an external support, through appropriate fixings, which can be studied case by case.

ATTENTION!



This method involves threading the fluid inlet connection of the centrifugal body. This procedure is very risky since it risks releasing chips inside the system which, if not removed, break the entire centrifugal system. It is recommended to proceed with the third system.

DOSING SYSTEM WITH INTERMEDIATE BLOCK

There can be various cases where you want to use an intermediate block, and it can be both in the case where a single valve is present or in the case where a double valve or any other dosing system is present. Below are the instructions for mounting the intermediate block:

- Insert an o-ring on the block support (No.07 [ch.2](#));
- Position the block on the support;
- Insert the screws from below so that, by moving the block a little, they enter the appropriate housings;
- Tighten them until they reach the stop;

From the block, dosing systems can be screwed with the three-piece joint, based on the best application for the customer.



In case a PCP volumetric pump is installed, it must be taken into consideration that there is also an additional block that serves to support the valve itself and that attaches to the DAVRCC block.

7.2 Nozzle Holder Installation

The nozzle support is used when a nozzle longer than 50mm is needed, otherwise the nozzle itself starts to vibrate, leading to imprecise dosing. To mount the support:

- If mounted, remove the nozzle;
- Remove the 4 screws that hold the lower chamber (No.10 [ch. 2](#)) without removing the chamber itself;
- Insert the support on the nozzle;



ATTENTION!

Inside the support there are bearings to keep the nozzle itself in position; therefore, insertion of the nozzle in the support may be slightly difficult.

- Insert the assembly (nozzle + support) on the transmission shaft (No.21 [ch.2.1](#));
- Fix the nozzle through the appropriate set screw;
- Fix the support with the 4 screws on the lower chamber.



ATTENTION!

Longer screws (35mm) must be used to reach the stop, otherwise you cannot fix the block in position.

7.3 Rotation Sensor Installation

To perform sensor installation, or to change sensor position, you must:

- Check the coupling position by looking through the sensor mounting holes;
- If the coupling is full, i.e., the coupling is close to the sensor hole, then screw in the sensor and, when it reaches the stop, unscrew it for about 1/2 turn, so as to keep it at a certain distance from the coupling. If it does not read values, screw it in very slowly;
- If the coupling is empty, i.e., it is more distant from the hole, then turn the nozzle until you see the coupling full and follow the point above.



ATTENTION!

If the sensor is screwed in with the coupling on the machined side, there is a risk that the sensor itself will be in the middle of the coupling path during rotation, breaking the entire assembly and the sensor itself. Pay close attention during the sensor installation phase.

7.4 First start-up

This procedure must be followed every time the centrifugal block is overhauled, or when it arrives without fluid inside.

- Connect the dosing system;
- Perform dosing **WITHOUT ACTIVATING** the centrifugal system until fluid comes out of the nozzle;
- Clean the nozzle from residues and activate the centrifugal system.

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 ⁽¹⁾	Chapter
	Leakage control	Every machine start or end of work	8.1
	Pneumatic and fluidic system control	Every machine start or end of work	\
	Perform superficial cleaning of the dosing system	Every machine start or end of work	\
	Nozzle replacement/cleaning	When necessary	8.2
	Component overhaul	Every 200,000 cycles ⁽²⁾	8.3

- (1) This data may vary based on the type of fluid used and the usage cycle of the dosing system itself
- (2) In case leakages are present, component overhaul must be performed quickly. Times anyway depend on application to application, ask the manufacturer to have an estimate for your specific case



ATTENTION!

For dosing system cleaning, use only soft brushes or cotton cloths.

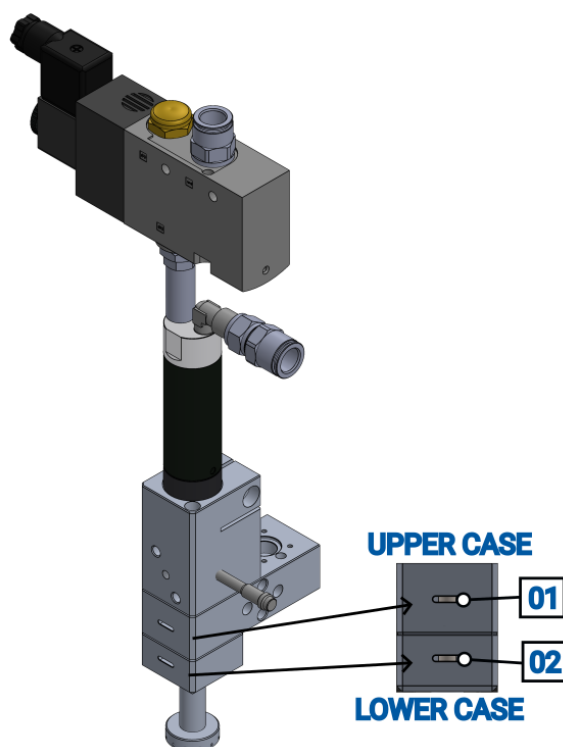
8.1 Leakage control

Assigned	Periodicity	Materials and equipment
	Every component start-up or end of work	N.A.

PPE to wear



To perform leakage control, i.e., if there is product coming out of areas where it should not, check the two slots placed on the upper chamber and on the lower chamber, as in the figure. In case leakages are found, even of small entity, the mechanical supervisor must be called to perform component overhaul.



8.2 Nozzle replacement/cleaning

Assigned	Periodicity	Materials and equipment
	When needed	N.A.

PPE to wear

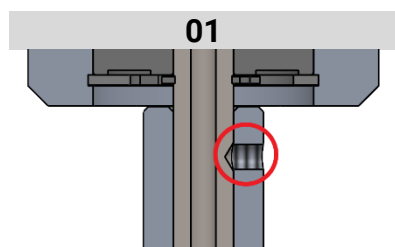


This procedure serves to explain to technicians how to perform nozzle replacement of the component that is the subject of this manual.



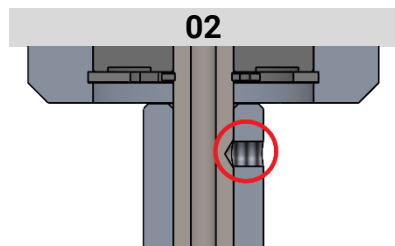
ATTENTION!

Remove air and fluidic power supply to the component during execution of this procedure



NOZZLE WITHOUT SUPPORT

- Remove the nozzle fixing set screw;
- Extract the nozzle from its seat and perform the necessary maintenance (cleaning and/or nozzle change);
- Insert the nozzle in its seat;
- Tighten the fixing set screw.



NOZZLE WITH SUPPORT

- Remove the 4 screws that keep the support locked to the lower case;
- Lower the extension slightly so as to see the nozzle locking set screw;
- Remove the nozzle fixing set screw;
- Extract the nozzle from its seat and perform the necessary maintenance (cleaning and/or nozzle change);
- Insert the support in the nozzle;
- Insert the assembly in the transmission shaft;
- Tighten the fixing set screw;
- Lock the support by inserting the 4 fixing screws to the lower case.

8.3 Component overhaul

Assigned	Periodicity	Materials and equipment
	Every 200,000 cycles	- Professional cleaner - Loctite 638 – Cylindrical Coupling Blocking - Pneusynth 550 HP - Copper hammer

PPE to wear



This procedure serves to explain to technicians how to perform component overhaul, which can be for cycle number expiration or for leakages of one of the two bodies (upper or lower).

due to leakage of one of the two bodies (upper or lower).



ATTENTION!

Remove air and fluidic power supply to the component during execution of this procedure

01

- Remove the dosing system, based on the mounting method used (see [ch. 7.1](#));
- Remove the two screws that keep the upper chamber locked (No.09 [ch. 2](#))



To remove the two screws above, you must go to the motor coupling chamber (No.08 [ch. 2](#)) and unscrew them from the motor side

N.A.

- Extract the motor block up to the coupling connected to the motor itself;
- Unscrew the elastic coupling from the transmission shaft side;
- Extract the spacer (No.14 [ch. 2.1](#)) and remove the upper seeger (No.16 [ch.2.1](#));
- Extract the transmission shaft from the nozzle side;
- Remove the 4 screws that keep the lower chamber locked (No.10 [ch. 2](#));
- Separate the lower chamber from the upper one;
- Verify seal integrity and, if necessary, replace them;
- Verify that there are no signs on the transmission shaft near the central hole;
- Reassemble the component following the above points in reverse order.



ATTENTION!

If there have been leakages, it is possible that part of the fluid has also reached the component bearings. It is recommended to check the condition of these as well and, if necessary, replace them.

9 TROUBLESHOOTING

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



ATTENTION!

Once the operator has found a problem or supposes 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
Little or no fluid	Dosing system malfunction	Consult the dosing system manual
	Fluid solidified in the dispensing section	Perform component overhaul
Nozzle does not rotate or rotates slowly		Contact the manufacturer
	Motor inlet pressure too low	Bring inlet pressure as per specification (ch. 2.2)
	Solenoid valve not working	Check connections
Fluid leakage from upper block	Possible product leakage to bearings	Replace bearings
	Valve – block connection unstable	Check connection between valve and upper block
Component moves during dosing	Mounting screws not properly tightened	Check that screws have been positioned correctly and fixed correctly
Nozzle moves during dosing	Nozzle body too long	Contact manufacturer for nozzle support
	Nozzle not fixed correctly	Fix screws correctly
Failed motor revolution detection	Sensor malfunction	Adjust sensor
		Replace sensor

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**, meaning when the component is temporarily placed in the warehouse for future use;
- **Stocking**, meaning when the component is placed in the warehouse for an unspecified period waiting for a third party to buy the component;
- **Dismantling**, meaning when the component has reached the end of working period, whether due to age, obsolescence or failures that cannot be repaired, or that can be repaired but it is more convenient 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 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.