Assembly instructions

Outlet valve

Type: Diaphragm outlet valve

Art. No.: 401.10.00, 401.10.20, 401.10.50, 401.10.70,

DOPAG AG • Langackerstrasse 25 • 6330 Cham • SWITZERLAND
Phone: +41 41 7855-757 • Email: info@dopag.ch • Web: www.dopag.com

1 Contents

2 General

2.1 Object of the assembly instructions

These assembly instructions are to ensure the intended and efficient use of the module. They contain the relevant information for the safety, construction, function, assembly, operating, servicing and disposal.

Ignoring the assembly instructions and the safety information can lead to dangers and restrictions for:

- life and limb of the operator;
- the machine and material assets of the operating company;
- efficient operation of the system.

NOTICE

The company DOPAG (hereafter called the manufacturer of the equipment) takes no responsibility for any damage resulting from not observing the assembly instructions.

The assembly instructions is part of this module. They must be made available to the operators at all times. The assembly instructions include behavior information which DOPAG as manufacturer of the module hands on to the final consumer, even if this module is part of a machine.

2.2 Target audience

These assembly instructions are intended for the users, who can be in charge of the assembly, operation, maintenance or disposal in their scope of work.

Maintenance and assembly personnel

Persons who assemble and service the modules must be skilled and:

- adequately trained to undertake the operations necessary.
- be familiar with and follow the relevant technical regulations and safety instructions.
- have read and understood the assembly instructions.

Skilled persons mean those whose training and experience have provided them with adequate knowledge in the fields of hydraulics, pneumatics, and material-handling technology, in addition to being familiar with the regulations applicable to occupational safety and accident prevention, directives and generally recognized rules on technology and standards, so that they can evaluate operational safety of the system.

2.3 Note on changes

Text, illustrations and data are commensurate with the technical status of the module at the time of these assembly instructions going to print. The company reserves the right to make changes in the interests of ongoing development.

2.4 Symbols and pictograms

The assembly instructions contain various symbols and pictograms. They convey warnings, handling instructions, information and directions to the operating and maintenance personnel.

Symbols and pictograms	Meaning
▶ D... • T...	**Directions for action** The triangle indicates actions that must be undertaken in sequence. The spot indicates the reaction to an action.
	**Warning signs, prohibition signs and mandatory signs.** Safety information, prohibitions, instructions and warnings are indicated by the appropriate ISO Safety Signs. They can be found in the operating instructions and on the module and it is essential that they are obeyed.
	**Pictograms** Buttons, switches, pressure gauges and functions are designated by pictographs in the operating instructions and on the module itself. The letters **A**, **B**, **C**... in the pictograms identify the components.
	**Advice for the user** Operator advice and tips for efficient operation of the module are indicated by lights and heavy print. Follow these instructions!

2.5 Safety information

There are four types of safety information : Danger, warning, caution, information. They contain: Type of danger, possible consequences and avoidance measures to be taken.

Signal word	Signification
DANGER	Signal word to indicate a danger with a high risk that could lead directly to death or serious physical injury.
WARNING	Signal words indicate a danger with a high risk that could lead directly to death or serious physical injury.
CAUTION	Signal words indicate a danger with a low risk that could lead directly to death or serious physical injury.
NOTICE	Signal word for a possible damaging situation, were the system or anything in the vicinity could be damaged.

3 Safety rules

3.1 Intended use

The outlet valve is partly completed machinery as defined in the directive 2006/42/EC. These products are exclusively intended for discharging viscous liquids, adhesives, greases, etc. The materials to be processed must be approved by DOPAG Customer Service. It has been designed according to the state of the art and according to the acknowledged safety rules. However, when using it, risks for life and limb of the user or a third person can remain or damage to the module or other material damage can occur.

- This module and its functions may only be used for the purposes of metering liquids.
- Releasing and cutting off the flow of liquid and paste-like media of up to approx. 10,000,000 mPa s, in accordance with the respective technical data.
- Metering is carried out using cannulas or outlet nozzles.
- The operation must occur within the specified environmental conditions.
- It is prohibited to meter materials that form explosive vapors. This module is not explosion-proof.
- Mixing and metering foodstuffs is prohibited. This module has not been designed for processing foodstuff. Toxic substances would contaminate foodstuff.
- The control function is part of the control unit of the superordinate machine and must be assessed by the manufacturer of the superordinate machine.
- The materials to be metered must be approved by DOPAG Customer Service. If the composition changes or if a different type of material is to be used, this must be clarified and approved by DOPAG Customer Service.

NOTICE

The use of material not approved by DOPAG Customer Service can damage the module. If for example seals cannot withstand the new composition, they will be destroyed. Information on your telephone contact can be obtained from *www.dopag.com*.

3.2 Foreseeable misuse

This module must not be used for:

- Metering reactive (mixed) material.
- Metering air, gas and water.
- Metering foodstuff.
- Metering powder or similar.

3.3 Product safety

The module conforms to acknowledged rules of engineering and technology and the relevant safety regulations. The correct operation of the module is required to avoid damage and accidents. Operating the machine incorrectly or subjecting it to abuse may imperil:

- life and limb of the operator;
- the module and material assets of the operating company;
- efficient operation of the module.

The module may only be operated if it is in perfect condition and if the assembly instructions are observed.

3.4 Responsibilities of the operating company

The following responsibilities are generally applicable to the user of the module:

- Observe the generally recognised rules that apply to occupational safety. Moreover, observe the basic regulations and rules on occupational safety and accident prevention applicable on site.
- The operating company is obliged to observe the regulations applicable to the use of equipment, especially those specified in EC Directive 2009/104/EC.
- The module may only be operated in a perfect and clean condition.
- It is forbidden to remove, change, bypass or override any kind of protection, safety or monitoring systems.
- Redesigning or modifying this module is prohibited.
- For repairs, contact DOPAG Customer Service (*7.1.1 DOPAG Customer Service*). Only genuine DOPAG spare parts may be used.
- Check the module at least once per shift for visible signs of damage and for correct functions.

3.5 Changes on the module

Changes on the module are basically prohibited. If changes become necessary, please observe the following points:

- Do not undertake changes, add-on or modification to the module without express approval by the manufacturer.
- All redesigning measures require written approval by the manufacturer.
- Only genuine DOPAG spare parts may be used. Safe operation is not guaranteed if parts other than the genuine parts are used.

3.6 Hazardous zones

The hazardous zone denotes the area on a module and/or in its vicinity in which there are dangers to personal health or safety. There are various danger zones around the module. All safety regulations given in the operating instructions and information signs on the module must be observed. Observe the safety regulations for the installation site.

Warning signs	Meaning
	**Particular sources of danger** Operating this module is safe. Even so, dangers can arise in various situations. • Under all situations when working on the equipment, whether installation, dismounting and re-assembly, commissioning, operation, relocation, adaptation, maintenance and cleaning, the safety information given in the assembly instructions are to be observed. • All service and maintenance work on the module must be only carried out after switching off the module. • In all cases observe local regulations applicable to safety and accident prevention.
	**Danger from electric power** Electricity is dangerous in many ways. • Work on power supply systems may only be performed by qualified electricians. • Check the system's electrical module regularly. Loose connections and burnt cables should be removed immediately or restored to their proper condition. • If work is necessary on live parts, a second person, who can turn off the main switch in an emergency, must assist. • Remove the mains plug.
	**Warning of hand injuries due to movable parts** Danger of crushing fingers or hands due to automatically driven parts of the module • Keep hands away from the danger area.
	**Danger from high pressure** Pneumatic and hydraulic systems are pressurised. • When dealing with the module, you must wear protective goggles and gloves. • Depressurize the module before beginning the repair works.

3.7 Warranty and liability

In principle, our general conditions of sale and supply are applicable. They will be available to the operating company no later than the date on which the contract is finalized. Claims under the warranty for personal and material damage are excluded if they are due to one or several of the following causes:

- Improper use of the module.
- Improper assembly, commissioning, operation and maintenance.
- Operating the module with faulty safety systems or protective systems that have been incorrectly fitted, or non-functional safety- and protection systems.
- Disregarding instructions on safety, transport, storage, assembly, commissioning, maintenance and disposal of the module.
- Unauthorized structural modification to the module.
- Poor monitoring of components subject to wear.
- Improperly executed repairs.
- Disasters caused by extraneous influences and force majeure.
- Use of spare parts which are not genuine DOPAG parts.
- Damage arising from normal wear and tear.

4 Structure and function

4.1 Function

Diaphragm discharge valves are used to discharge low to high-viscosity, filled and unfilled, abrasive and chemically aggressive 1-component media. The valve requires very little maintenance. A diaphragm separates the pneumatic system from the metering range. Only the valve head and the diaphragm come into contact with the media. The material path must be flushed if necessary.

The size of the opening cross section is regulated by the stroke adjustment of the valve rod.

1 Stroke adjustment
2 Control connection PO (Open)
3 Piston
4 Control connection PC (Close)
5 Diaphragm
6 Valve rod
7 Cannula connection (optional)
8 Outlet cannula (optional)
9 Material inlet MI

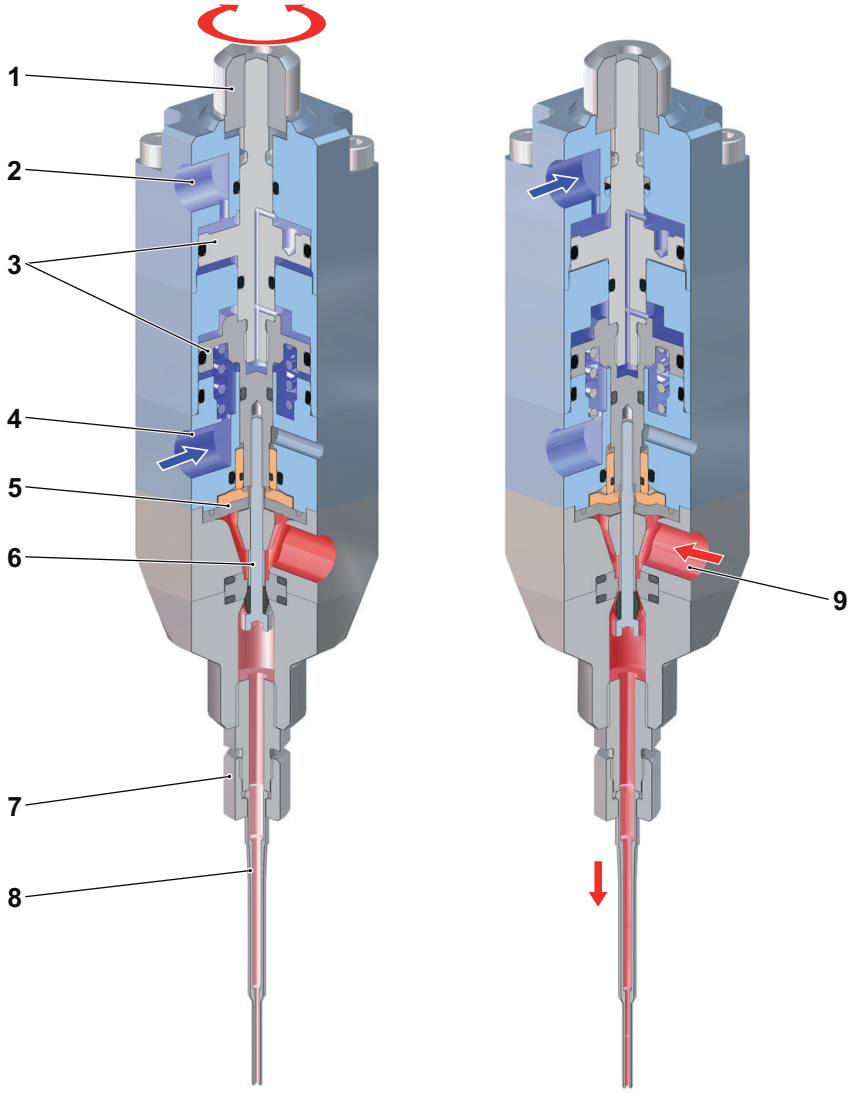


Fig. 4-1 Function

4.2 Structure

In these assembly instructions, additional options are described which are possibly not contained in the assembly supplied to you. These assembly instructions cover all possible versions and variants of this line of products.

1 Stroke adjustment (opening cross section)
2 Control connection PO (Open)
3 Valve piston
4 Compression spring
5 Control connection PC (Close)
6 Valve rod
7 Material inlet MI
8 Valve seat
9 Cannula connection (optional)
10 Outlet cannula (optional)
11 Locking screw
12 Type plate

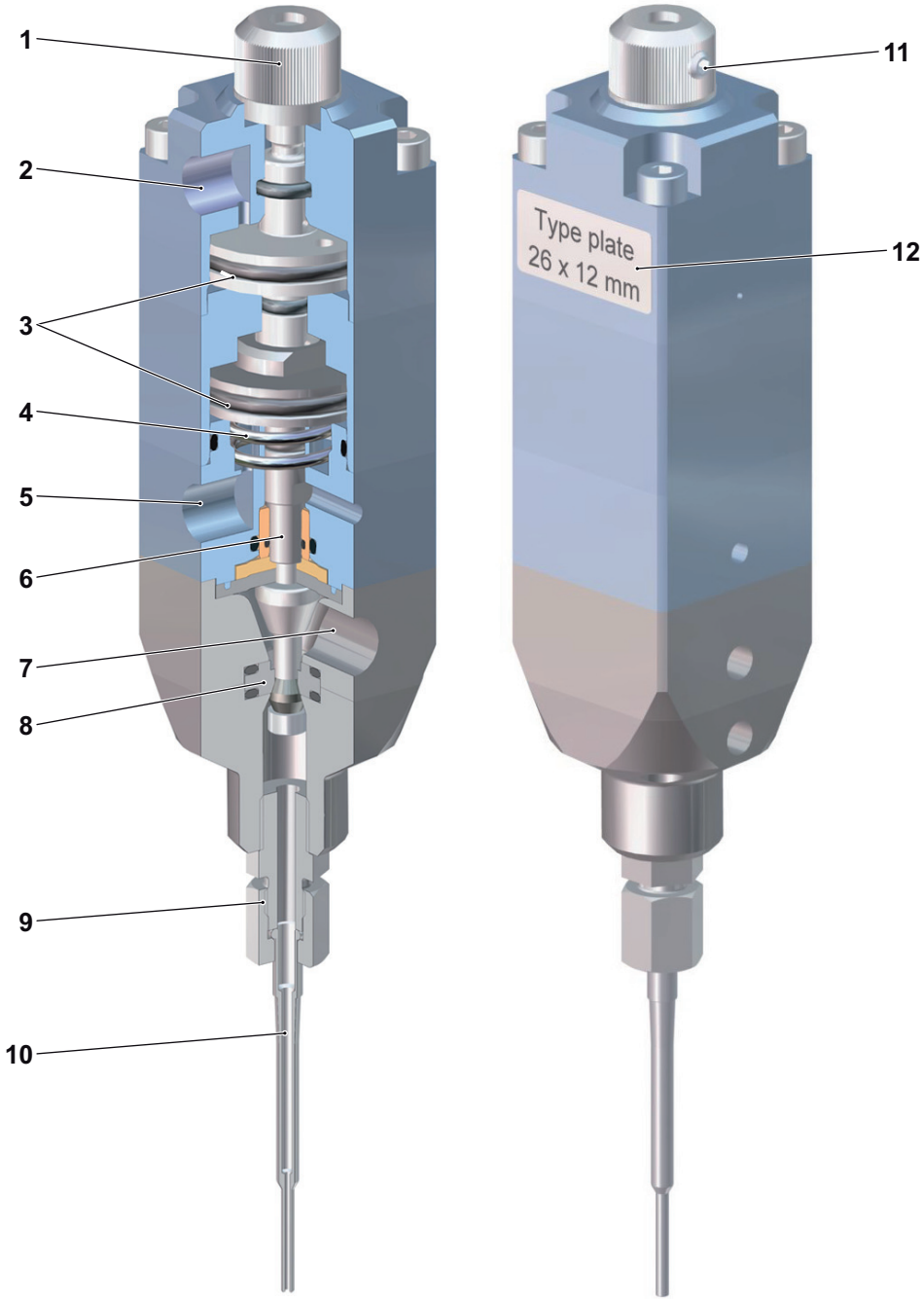


Fig. 4-2 Structure

4.3 Technical data

Dimensions

For the dimensions of the assembly, refer to the dimension sheet of the assembly.

Compressed air

Compressed air	
Operating pressure [bar]	5-8 bar
Condition of the compressed air	Filtered, oiled (cat. 3)

General

Technical data	
Max. permitted material temperature	80°C
Type	Back suction effect
Compressed-air connection (PC; PO)	G1/8
Working pressure	160 bar
Maximum pressure	200 bar

Clear width

Article No.	LW
401.10.00	8 mm
401.10.20	4 mm
401.10.50	8 mm
401.10.70	2 mm

Material viscosity

Article No.	
401.10.00	20’000 - 2 million mPa s
401.10.20	10’000 - 1 million mPa s
401.10.50	20’000 - 2 million mPa s
401.10.70	10’000 - 1 million mPa s

Connections

Article No.	Material inlet (MI)	Material outlet (MO)
401.10.00	G3/8	G1/4 internal / G1/2 external
401.10.20	G1/4	G1/8 internal / G3/8 external
401.10.50	G3/8	Flange
401.10.70	G1/8	G1/8 internal / G3/8 external

max. flow

Article No.	1 million mPa s	500'000 mPa s	100'000 mPa s	20'000 mPa s
401.10.00	1.5 l/min	3.1 l/min	10 l/min	10 l/min
401.10.20	0.3 l/min	0.6 l/min	3.15 l/min	4 l/min
401.10.50	1.5 l/min	3.1 l/min	10 l/min	10 l/min
401.10.70	0.04 l/min	0.07 l/min	0.37 l/min	1.86 l/min

Mechanical stability

All components being subjected to increased wear are made of materials and treated by procedures listed in a defined list.

Article No.	wear resistant	no specific stability	increases mechanical stability
401.10.00	x		
401.10.20	x		
401.10.50	x		
401.10.70	x		

Chemical stability of metals and non-metals

All components being subjected to increased wear are made of materials and treated by procedures listed in a defined list.

Article No.	Metals		Non-metals	
	no spec. Stability	rust-proof	no spec. Stability	Increased chemical stability
401.10.00	x		x	
401.10.20	x		x	
401.10.50	x		x	
401.10.70	x		x	

Weight

Article No.	Weight
401.10.00	approx. 2.2 kg
401.10.20	approx. 0.7 kg
401.10.50	approx. 2.1 kg
401.10.70	approx. 0.7 kg

4.3.1 Environmental conditions

Operation

Operation (without material)	
Air temperature	+ 5 to + 40 °C
Relative air humidity	30 to 70%, no condensation

Transport and storage

Transport and storage (without material)	
Air temperature	- 25 to + 55 °C
Relative air humidity	30 to 80%, no condensation

4.3.2 Emissions

Emissions	
Emission sound pressure level at work-place LpA according to ISO 4871	< 75 dB

5 Options

In these assembly instructions, additional options are described which are possibly not contained in the assembly supplied to you. These assembly instructions cover all possible versions and variants of this line of products.

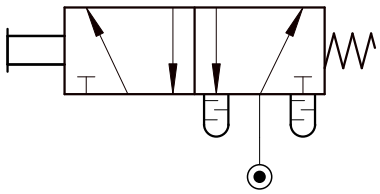
5.1 Pneumatic handle 401.03.50

When the pneumatic handle is actuated, it switches a 5/2-way valve and triggers the material delivery.

Technical data

Operating pressure	5-8 bar
Compressed air quality	oiled or unoiled
Compressed air nominal diameter	Ø 2 mm
Compressed air connection	M5
Weight	0.34 kg

Functional diagram



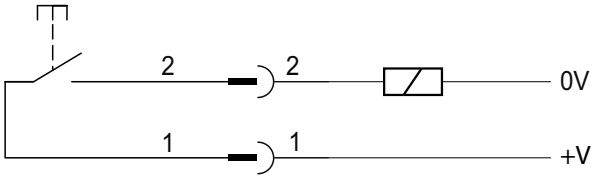
5.2 Electric handle 401.03.60

The handle with electric signal generator may be used together with the solenoid valve plate version.

Technical data

Power supply	max. 48 V
Switching power	10 VA
Weight	0.31 kg

Functional diagram



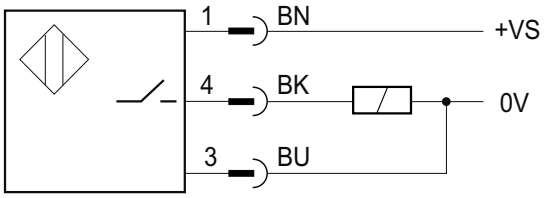
5.3 Handle with initiator 401.03.66

The signal may be processed by an overlaid control unit.

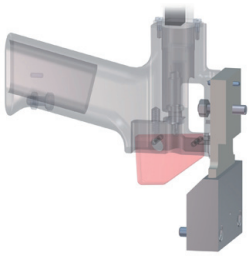
Technical data

Output circuit	PNP
Switching function	N/O contact
Power supply	10-30 V DC
Output current max.	200 mA
Weight	0.31 kg

Functional diagram

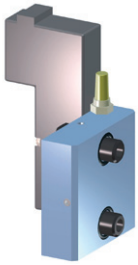


5.4 Gun holder 400.09.02



Holder for placing the outlet valve during production breaks. The gun holder consists of the holder and the adaptor plate for the installation on the outlet valve.

5.5 Magnetic valve plate



The solenoid valve plate enables to use the valve with a robot or an electric handle.

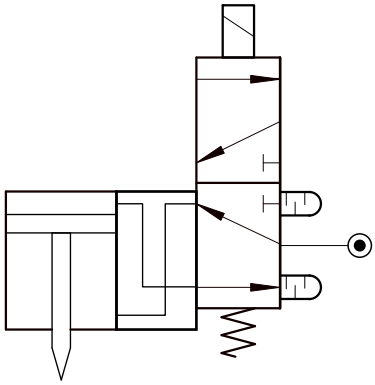
Technical data

Air connection	Valve battery
Compressed air	1.5-7 bar
Power supply	24 V DC
Condition of the compressed air	oiled or unoiled
Nominal flow rate at 6 bar	up to 150 Nl/min
Electrical connection	Plug
Power consumption	1.8 W
Power consumption	87.5 mA
Type	5/2-way valve, monostable

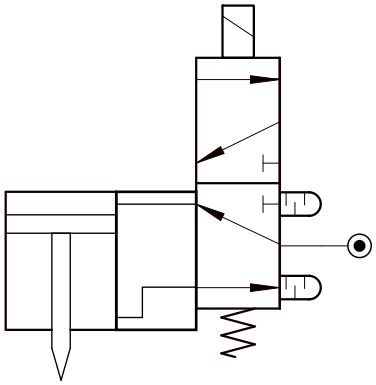
Types

Type	**401.03.40**	**401.03.47**	**401.10.40**
Hole pitch (G1/8 connection)	32 mm	32 mm	48 mm
Connection	upper	lower	lower
Weight	0.23 kg	0.24 kg	0.14 kg

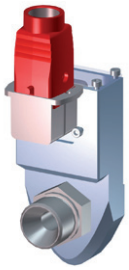
Functional diagram
401.03.47
401.10.40



Functional diagram
401.03.40



5.6 Valve heater with connector



Equipment for heating the material delivering parts. The heater is assembled at the valve head. The type with connector causes a strain relief of the connecting cable.

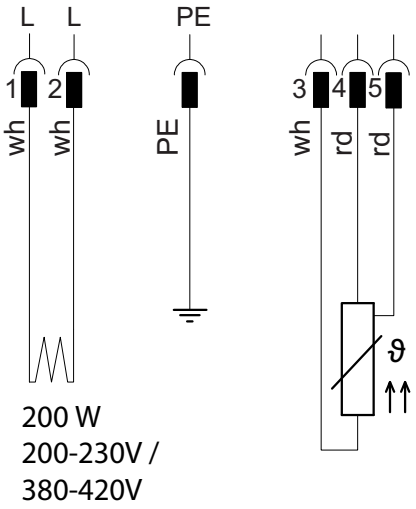
Type

Type	400.06.96	400.09.21	400.09.22
Operating voltage 200 - 230 V	x	-	-
Operating voltage 380 - 420 V	-	x	x
Connection nipple	G 3/8 internal - G 3/8 internal	G 3/8 internal - G 3/8 internal	G 3/8 internal - G 3/4 external

Technical data

Power	200 +/- 10% W
Connection	Plug

Functional diagram
400.06.96
400.09.21
400.09.22



5.7 Valve heater

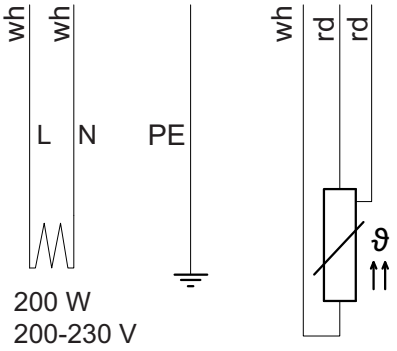
Equipment for heating the material delivering parts. The heater is assembled at the valve head.

Type	400.06.94	400.06.95	400.08.25
2-pole cable connection	x	-	x
2-pole cable connection with litz	-	x	-
UL certified	-	-	x
Connection nipple	G 3/8 internal	G 1/4 internal	G 1/4 internal

Technical data

Power	200 +/- 10% W
Power supply	200-230 V

Functional diagram
400.06.94
400.06.95
400.08.25



5.8 Nozzle

Nozzle

Nozzle for precise material discharge. Suitable for discharge head with external thread G1/2. The version with grease nipple may be flushed with grease.

Installation via optional spigot nut G1/2 (Article No. 403.03.13) and sealing washer (Article No. 403.03.14).

Article	Article No.	Version
Nozzle, Ø 4 internal	400.06.30	LW8
Stainless nozzle, Ø 4 internal	400.03.25	LW8
Nozzle, Ø 9/5.5 internal	401.10.18	LW8
Nozzle for Teflon insert, Ø 8.1 internal	400.06.22	LW8
Nozzle with grease nipple hole, Ø 4 internal	401.13.13	LW8

Nozzle with spigot nut and sealing washer

Nozzle for precise material discharge. The nozzle is supplied with spigot nut G3/8 and sealing washer.

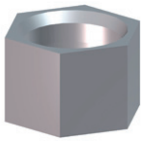
Article	Article No.	Version
Outlet nozzle Ø3.5 internal	401.10.60	LW2, LW4
Outlet nozzle 8 mm delta (sp. outlet opening)	401.10.61	LW2, LW4

Nozzle with G1/8 connection thread

Nozzle for precise material discharge. Suitable for discharge head with internal thread G1/8.

Article	Article No.	Version
Nozzle (Ø 5/2.4 internal, L = 42 mm)	401.10.69	LW2
Nozzle (Ø 5/2.4 internal, L = 92 mm)	401.10.67	WL2, LW4

5.9 Spigot nut 400.03.13



Spigot nut with internal thread G1/2 for fastening of a nozzle on the outlet head. Suitable for outlet valve LW8.

5.10 Sealing washer 400.03.14

Sealing washer for use with optional spigot nut (Article No. 400.03.13). Suitable for outlet valve LW8.

5.11 Luer-Lock Adapter 1/8 (133442)

Special adapter for fastening of disposable Luer-Lock needles on the outlet head. Suitable for discharge head with internal thread G1/8.

Luer Lock precision metering needles made of stainless steel

Disposable needle ø 0.58 mm	(pink)	27.06.160
Disposable needle ø 0.84 mm	(green)	27.06.161
Disposable needle ø 1.60 mm	(olive)	27.06.162
Disposable needle ø 2.00 mm	(bright green)	27.06.164

Conical Luer Lock metering needles

Disposable needle ø 1.00 mm	(gray)	27.06.163

For further versions please contact DOPAG Customer Service (*7.1.1 DOPAG Customer Service*).

5.12 Outlet cannulas

Cannulas are used for 1-component media. Cannulas enable precise material metering for applications with continuous or shotwise material discharge.

Dimensions

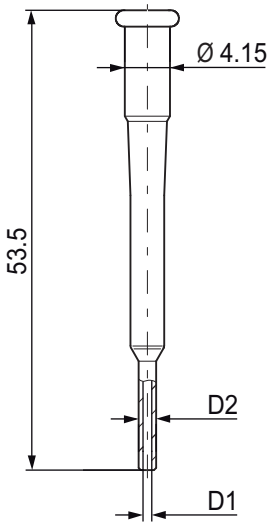


Fig. 5-1 Cannula dimensions

Article No.	D1 [mm]	D2 [mm]
400.70.05	0.55	1.35
400.70.08	0.80	1.60
400.70.10	1.00	1.80
400.70.13	1.30	2.10
400.70.15	1.50	2.30
400.70.18	1.80	2.60
400.70.24	2.40	3.20

Cannulas are also available as set (Art. No. 400.70.00).
One set contains a cannula with a nominal diameter of Ø 0.55 mm to Ø 2.40 mm each.

For further versions please contact DOPAG Customer Service (*7.1.1 DOPAG Customer Service*).

5.13 Cannula connection 410.18.11

The cannula connection enables the use of cannulas in versions with material outlet G1/8". Cannulas can be ordered separately.
Cannulas are available from Ø 0.55 mm - Ø 2.4 mm.

5.14 Rust-proof cannula connection 410.18.13

The cannula connection enables the use of cannulas in versions with material outlet G1/8". Cannulas can be ordered separately. Cannulas are available from Ø 0.55 mm - Ø 2.4 mm.

6 Assembly

6.1 Transport

The module is packaged and delivered by the manufacturer in a proper manner. It is protected for transportation and against weather conditions, and provided with suitable packaging materials.

Transport the module to final destination as packaged and only remove package before first use. The packaging protects the module.

6.2 Removing packaging

Disposal

All packaging must be disposed of with care. Packaging material must be disposed of in the correct manner (*9 Disposal*).

Warranty conditions

Check the module for transport damage and integrity. If damage is ascertained, then the conditions of guarantee must be observed. These are described in the sales documents.

6.3 Installation

The module has been designed for the operation in spaces that are protected from atmospheric influences. Operation and storage in an environment or containing aggressive substances or too high humidity or outdoors will result in corrosion damage, for which the manufacturer accepts no responsibility.

6.4 Connection

Outlet valve

1 PC - control air (Close)
2 PO - control air (Open)
3 MI - material inlet
4 MO - material outlet

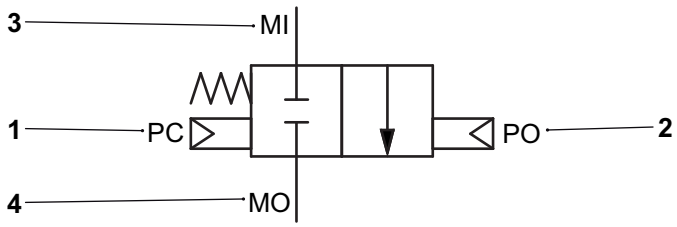


Fig. 6-1 Connection diagram

- Mind material inlet
- The installation position can be selected arbitrarily and has no influence on the function

6.5 Installing the nozzle

For production purposes, install an outlet cannula, nozzle or disposable needle on the outlet valve.

1 Valve head
2 Cannula connection
3 Outlet cannula
4 Spigot nut
5 Sealing washer
6 Nozzle
7 Nozzle with G1/8 connection thread

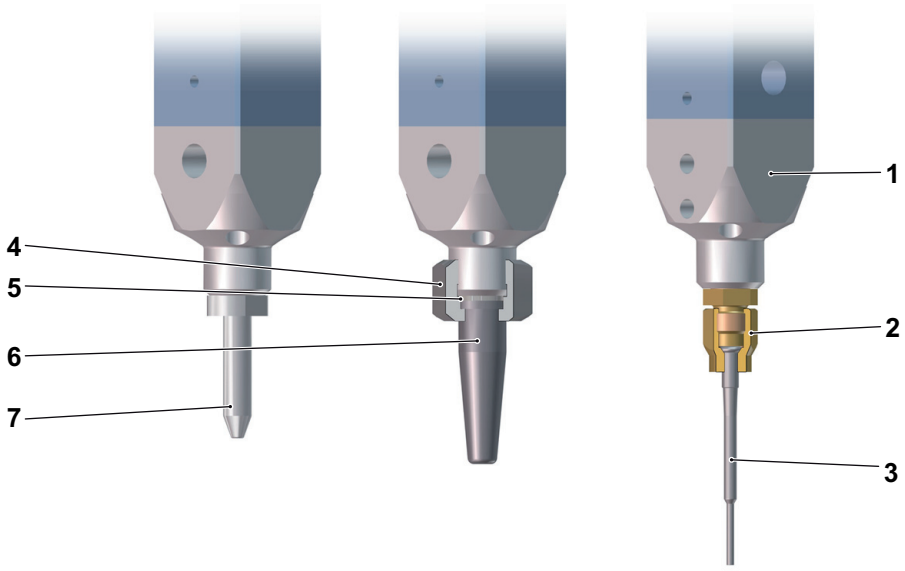


Fig. 6-2 Installing the nozzle

Please note that the material in the material outlet (nozzle/cannula/disposable needle) could harden in case of long inactive periods. Disassemble and clean the material outlet before inactive periods or replace it before resuming production.

6.6 Setting the diaphragm outlet valve

The size of the opening cross section is regulated by the stroke adjustment of the valve needle. The stroke adjustment can be secured with the locking screw.

1 Stroke adjustment

2 Locking screw

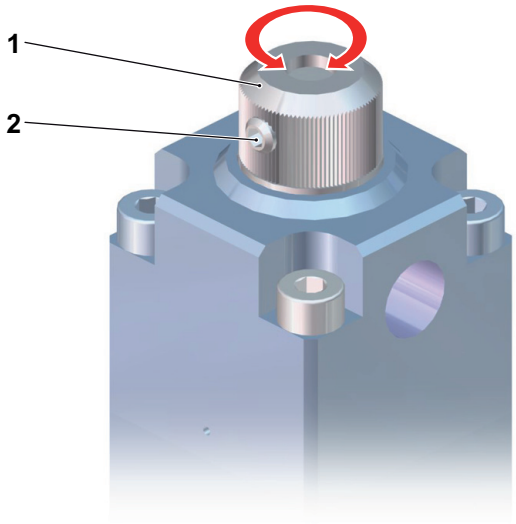


Fig. 6-3 Setting the diaphragm outlet valve

Setting

- ▶ Loosen the locking screw.
- ▶ Adjust the valve stroke.
- ▶ Tighten the locking screw.

The size of the opening cross section must be determined when making the settings for the superordinate module (system).

6.7 De-aerating the outlet valve

The outlet valve must be de-aerated during of commissioning and after carrying out works on the superordinate system as well as each time after loosening the bolt connections of material delivery components. Air in the system causes metering errors.

WARNING

Danger from spray!

The material is released under high pressure and due to air cavities spraying may occur.

When venting always wear eye protection and protective gloves! Observe the material manufacturer's safety information.

De-aerating the outlet valve:

The discharge opening (hose or outlet valve) must be set to the highest possible point. The air can rise upwards and escape. Depending on material viscosity, this procedure may take some time.

▶ Open the outlet valve and wait until material free from air bubbles starts coming out.

7 Maintenance

7.1 General

Maintenance work must be undertaken by properly trained service staff (*2.2 Target audience*).

DANGER

Danger arising from service work!

If you undertake service work without having received the necessary training, the safety of the assembly is no longer guaranteed. The outcome could be serious physical injury or death.

Observe all safety instructions and leave maintenance to trained staff.

DANGER

Danger from high pressure!

When carrying out maintenance work on systems that have not been switched off or depressurized, there is danger of serious injuries or death.

Carry out the maintenance work only on systems that have been switched off and disconnected from the compressed air supply. Release the material pressure in the system before carrying out maintenance work. No residual pressure may exist.

7.1.1 DOPAG Customer Service

Note the customer service center responsible for your area. For current addresses, go to ***www.dopag.com***.

7.1.2 DOPAG Spare parts

DOPAG spare parts can be found in the spare parts list. For further information, see the spare parts drawing.

DANGER

It is dangerous to use incorrect spare parts!

Using spare parts that have not been tested and approved by DOPAG means that the safety of the assembly is not guaranteed. This may cause personal injuries.

Use only DOPAG spare parts.

For DOPAG Customer Service being able to deal with your order, please give the following order details:

Order details	Example
Serial number	16885
Description	Set of seals
DOPAG No.	418.00.02.01
Number of items	1

Storing the key spare parts and parts subject to wear at the installation site is an important prerequisite for ongoing operation and service-readiness of the system or of the module supplied. If you have any question concerning the recommended spare parts, please contact DOPAG Customer Service.

7.1.3 Operating material and Lubricants

DOPAG recommends the following operating materials and lubricants:

Pneumatic and Hydraulic oils

Manufacturer	Pneumatic oils Temperature range 0 – 30°C Viscosity ISO-VG22	Hydraulic oils Temperature range 0 – 30°C Viscosity ISO-VG46
ARAL	Vitam GF 22	Vitam GF 46
BP	Energol HLP-HM 22	
ESSO	Nuto H 22	Nuto H 46
MOBIL		DTE 15M
SHELL	Tellus 22	Tellus 46
TEXACO	Rando HD 32	Rando HD 46

Sealing fluid

For filling the seal chambers, DOPAG recommends Mesamoll® sealing fluid.

Greases

DOPAG recommends commercially available Vaseline. Use a grease gun for greasing the grease nipples (not delivered with the machine).

7.2 Maintenance of the module

7.2.1 Maintenance schedule

To ensure a trouble-free operation, the following service intervals must be observed for various components:

Maintenance task	Interval
Visual inspection	daily
Cleaning	daily

7.2.2 Visual inspection

The following points should be checked:

- Are all safety systems available and fully functional?
- Are the whole assembly instructions of the module available?
- Are all safety and danger warnings as well as signs available and clearly legible?
- Are all the connecting couplings tight?

7.2.3 Cleaning

The module should be cleaned daily and immediately if it is contaminated with material. Dried material is very difficult to remove and requires a great effort.

DANGER

Danger of explosion when using solvents!

When using solvents based on halogenated hydrocarbons, such as trichlorethane, chemical reactions can arise on aluminium and on galvanised parts. The parts can oxidise and be destroyed as a result. In extreme cases, the reaction can occur in an explosive manner.

Do not use any solvents based on halogenated hydrocarbons.

NOTICE

Under no circumstances should the system be sprayed with water. Determine which cleaning agent to use from the material used, and clean the system as environmentally friendly and with as much care as possible.

8 Spare parts

The needle outlet valve must be checked on a regular basis. Replace all seals and parts with signs of wear. The frequency required for inspection depends on the operation and on the material used.

The seal set includes all seals required for the assembly. The spare parts include the seal set and wear parts as well as parts which are not worth cleaning.

Only DOPAG authorized persons are entitled to carry out an inspection. Please contact DOPAG Customer Service (*7.1.1 DOPAG Customer Service*).

Scope of delivery

1 Seals complete
2 Compression spring
3 Telescopic socket
4 Rubber ring
5 Diaphragm
6 Valve seat
7 Valve plunger
8 Lock nut
9 Set screw
10 Tube

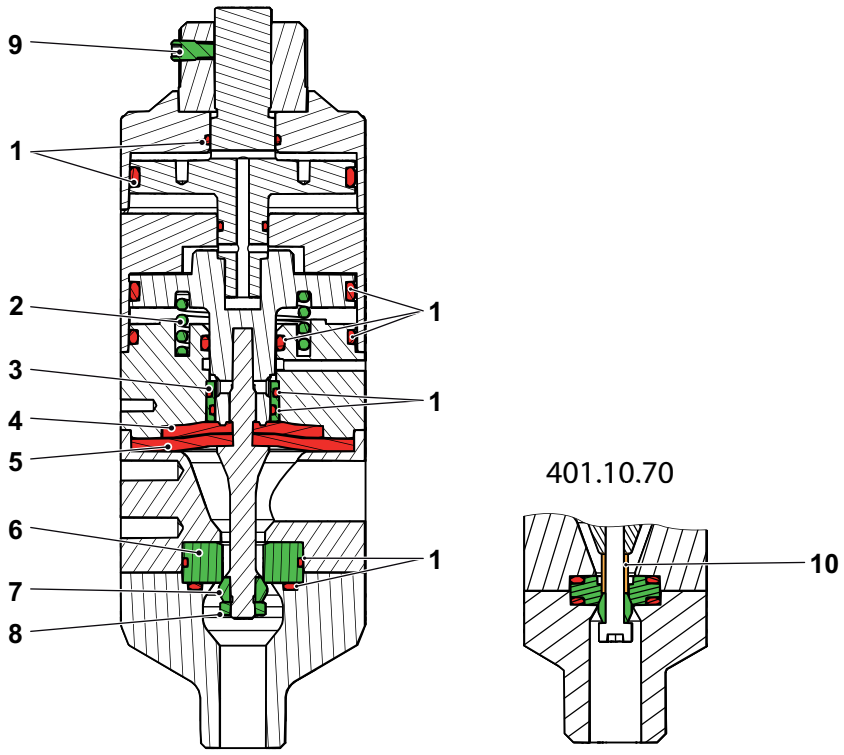


Fig. 8-1 Seal set - spare parts

Type	Seal set	Spare parts
Seals complete	x	x
Compression spring	-	x
Telescopic socket	-	x
Rubber ring	x	x
Diaphragm	x	x
Valve seat	-	x
Valve plunger	-	x

Type	Seal set	Spare parts
Lock nut	-	x
Set screw	-	x
Tube *	-	x

*) Tube exclusively for Article No. 401.10.70

Seal set
Spare parts kit

Item number	Seal set	Spare parts kit
401.10.00	401.10.00.01	401.10.00.02
401.10.20	401.10.20.01	401.10.20.02
401.10.50	401.10.50.01	401.10.50.02
401.10.70	401.10.70.01	401.10.70.02

9 Disposal

9.1 Principle

Exercise caution when handling raw materials present in this module. Check the reusability value of materials and components prior to disposing of them. Recycle as much as possible.

Careless or incorrect disposal can result in unforeseen consequences. Be concerned about yourself and us, our future generations, nature, the environment and the economy. Materials and components should be disposed of in a manner that is proven to be un-detrimental to humans, nature and the environment. Note the details provided by the manufacturer and legislation and regulations.

9.2 Materials, packaging and system parts

Dispose of elements and system parts separately according to type of material:

- Aluminum from scrap steel
- Copper and non-ferrous heavy metal in electrical parts and conductors
- Batteries
- Plastics
- Organic substances, such as timber

Recycle as much as possible.

10 EC Declaration of incorporation (as per directive 2006/42/EC)

We, the manufacturer of the partly completed machinery, declare that:

- the following partly completed machinery complies with the essential requirements of the directive 2006/42/EC stated below
- the relevant technical documentation has been compiled according to Annex VII, part B
- this relevant technical documentation will be presented in paper or digital (pdf) format in accordance with Annex VII, part B and in response to a duly reasoned request by the competent national authorities

This partly completed machinery may only be commissioned after assertion that the machine in which it is due to be installed, complies with the provisions of the directive 2006/42/EC.

Manufacturer:

DOPAG Dosiertechnik und Pneumatik AG
Langackerstrasse 25
CH-6330 Cham

Authorized person for the compilation of the technical documentation:

DOPAG Dosiertechnik und Pneumatik AG, Urs Lüthi
Langackerstrasse 25
CH-6330 Cham

Type description: Outlet valve

Serial No./Item No.: 401.10.00, 401.10.20, 401.10.50, 401.10.70

Directives:

Description	Date
2006/42/EC	09.06.2006
2014/30/EU	20.04.2016
2014/35/EU	20.04.2016
2014/68/EU	19.07.2016

Standards:

Description	Date
DIN EN 82079-1	06/2013
DIN EN ISO 13857	06/2008
DIN EN ISO 4414	04/2011
DIN EN ISO 12100	03/2011

Place and date: Cham, 02/17

Technical Director: Urs Lüthi

www.dopag.com

DOPAG Dosiertechnik
und Pneumatik AG
Langackerstrasse 25
6330 Cham • Switzerland

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