

Metering Technology



DOPAG
Metering and Dispensing Valves
for Low to High Viscosity Media



Hilger u. Kern / Dopag Group

DOPAG metering and dispensing valves

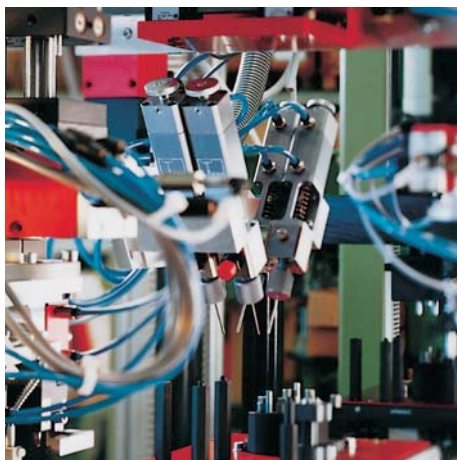
For precision material dispensing of single component media

DOPAG metering and dispensing valves are used in all parts of industry for processing low to high viscosity media.

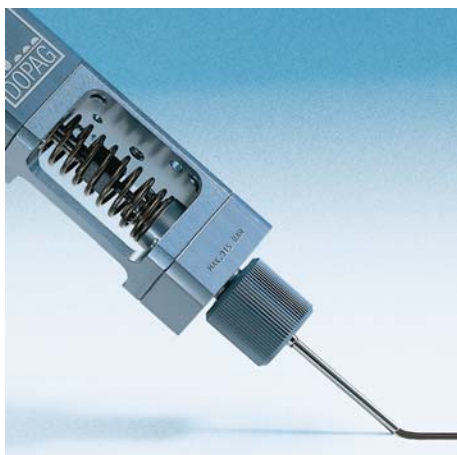
For these applications a high precision, reproducible flow rate is required.

These valves are available in a number of different ranges and in different sizes. This allows the user to select the most suitable valve for each individual application.

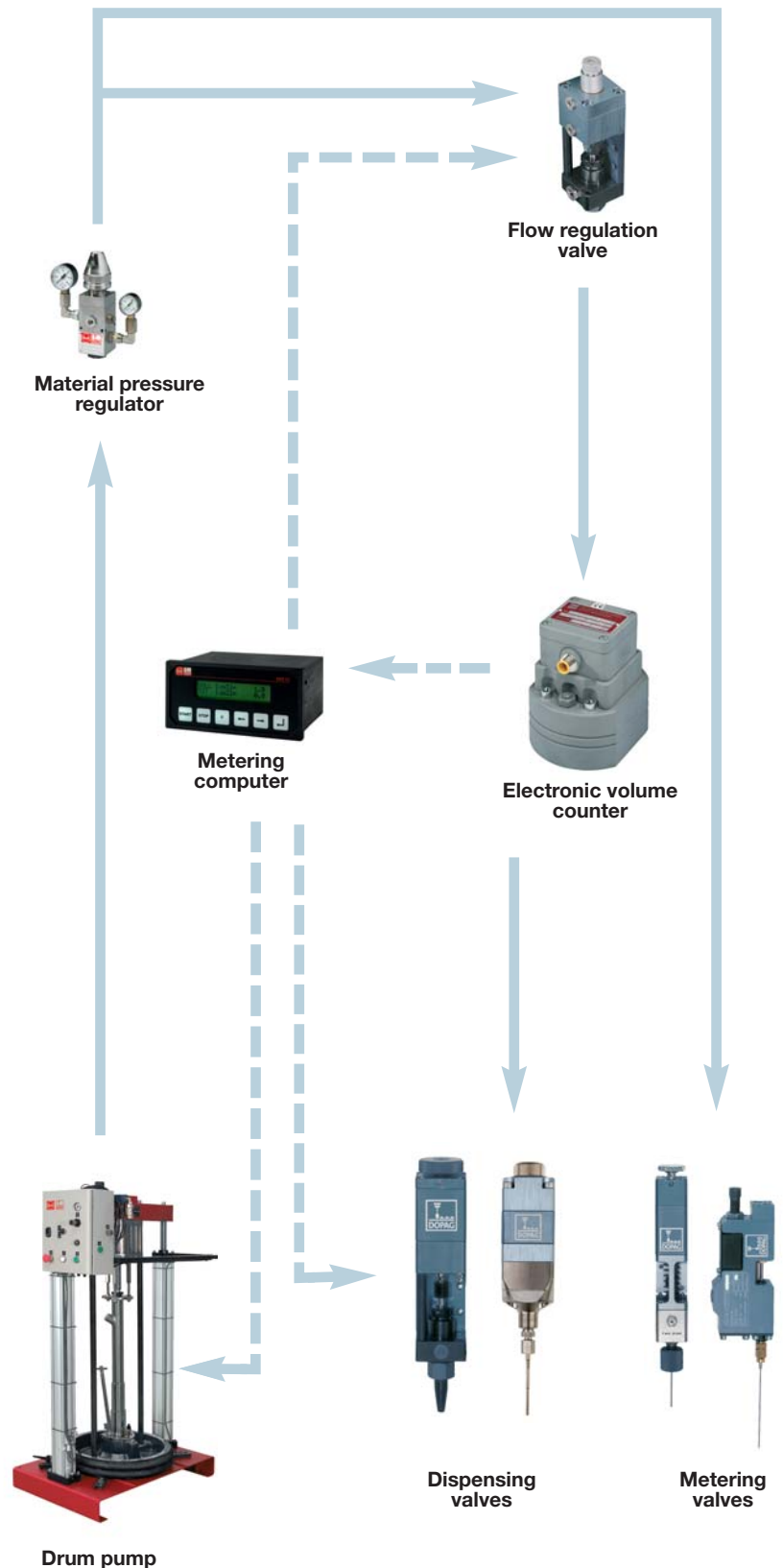
Such a large number of options together with elective materials of construction maximise the valve's possible uses.



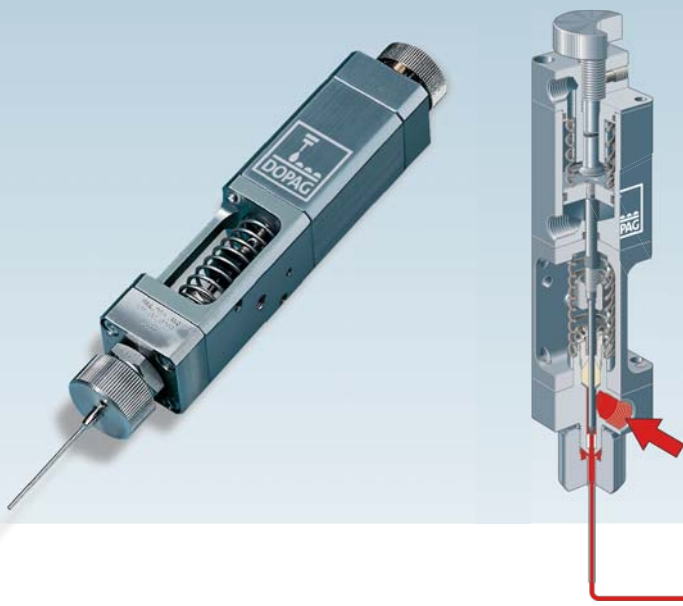
Automatic spot-greasing



Bead laying



Dispensing valves



Dispensing valves

Internal diameter: 1 - 16 mm

Dispensing valves are used for processing low to high viscosity media. Adjusting the position of the needle in relation to its seat can control the size of the outlet orifice, thus giving control of the flow rate of the material.

When fully closed, the needle seals against its seat and is sealed at the throat by an adjustable packing set.

The valve is constructed in two separate parts. This separation of the fluid section from the actuating air section means that it is not possible for any leaking material to flow into the actuating air cylinder, which might otherwise cause a malfunction of the valve.

Material passageways can be quickly flushed out if necessary.

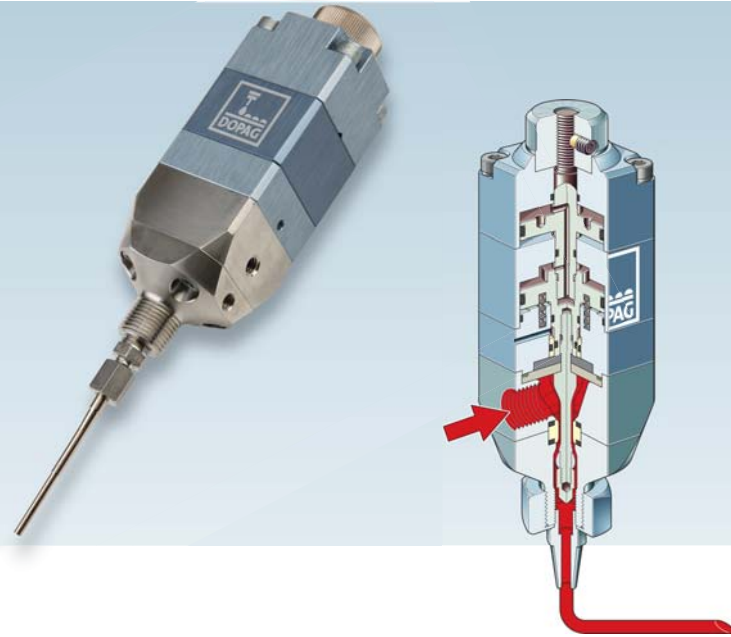
Product features

- Small material passageways
- Extremely high opening and closing forces
- Fitted with special adjustable packings
- Double acting pneumatic actuation
- Capable of withstanding high pressures
- Electric or pneumatic control

Options

- Solenoid valve plate
- Manual handle with trigger for pneumatic or electric operation

Membrane dispensing valves



Membrane dispensing valves

Internal diameter: 2 - 8 mm

Membrane dispensing valves are used for processing low to high viscosity media. They can be reactive, abrasive as well as chemically aggressive.

This low maintenance valve relies on a flexible diaphragm to seal the fluid passageways from the pneumatically driven actuating section of the valve, with only the valve head and membrane in contact with the media.

If necessary the fluid passageways can easily be flushed.

Product features

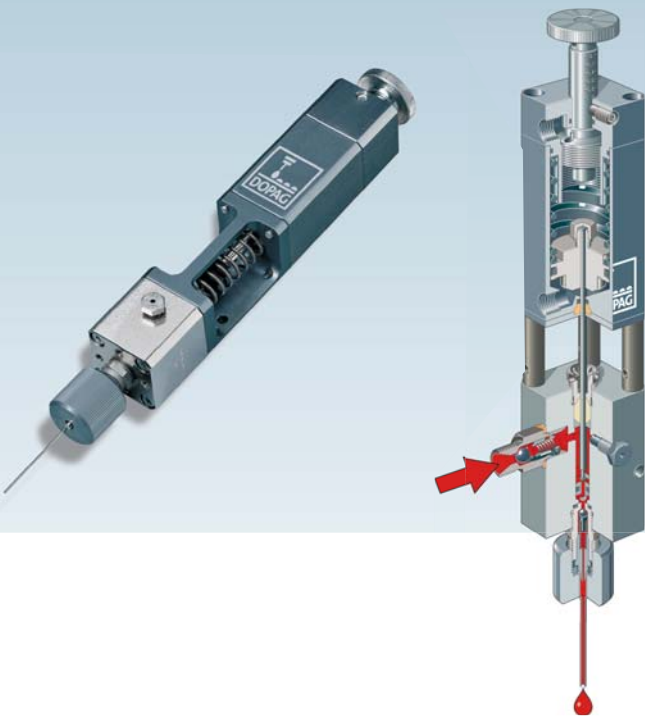
- Compact design
- Leakage free operation
- Material housing stainless steel
- Adjustable snuff back effect
- Valve seat tungsten carbide
- Adjustable needle stroke

Options

- Solenoid valve plate
- Manual handle with trigger for pneumatic or electric operation

Metering valves

Version needle metering valves



Needle metering valve

Metering volume: 0,001 - 3,0 cm³

Needle metering valves are used for processing low to high viscosity media.

The valve consists of two separated parts. This separation means that it is not possible for any leaking material to flow into the actuating air cylinder that might otherwise cause a malfunction of the valve.

The needle is sealed by means of an adjustable packing set.

Product features

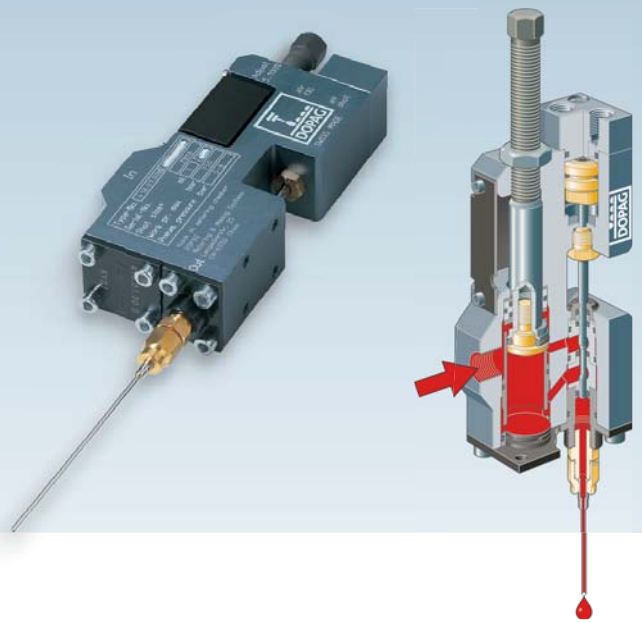
- Metering volume infinitely adjustable
- High-precision, reproducible dosage
- Pneumatic control

Options

- Solenoid valve plate
- Wetted parts made of stainless steel
- Valve seat and needle made of tungsten carbide for processing abrasive media
- Stroke detection
- Manual handle with trigger for pneumatic or electric operation
- Universal holder for adjusting the valve in height and depth

Metering valves

Version chamber metering valves



Cartridge chamber metering valves

Metering volume: 0,025 - 10 cm³

Cartridge: 0,25 / 1,0 / 10 cm³

The cartridge chamber metering valve is a new generation of precision metering valves based on a completely new principle.

The metering chamber is an exchangeable cartridge contained within an aluminium valve body.

There are cartridges available with a defined volume of 0,25, 1,00 and 10,00 cm³. The volumetric output is infinitely adjustable between its limits.

Speed of metering depends on the material viscosity and the material pressure.

Adjusting the metering volume can be achieved easily by simply changing the metering cartridge.

Product features

- Metering volume infinitely adjustable
- Valve body made of aluminium
- Capable of withstanding high pressure
- Snuff back effect
- Pneumatic control

Options

- Solenoid valve plate
- Double initiator receptacle:
Monitoring the stroke needle position



Chamber metering valve

Metering volume: 0,050 - 100 cm³

The chamber metering valve is constructed with a metering chamber, whose size is adjusted to the metering volume.

Standard sizes in different optional types allow a shot size from 0,050 up to 100,00 cm³.

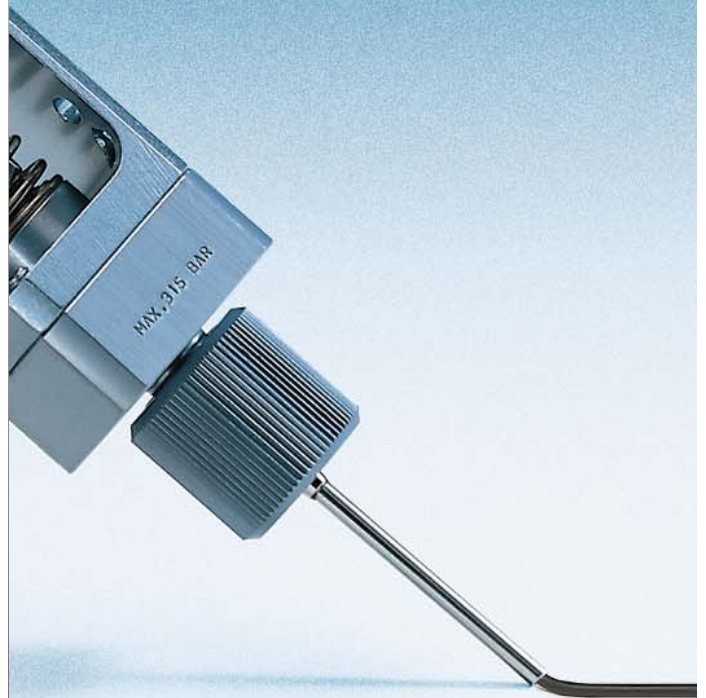
Speed of metering depends on the material viscosity and the material pressure.

Product features

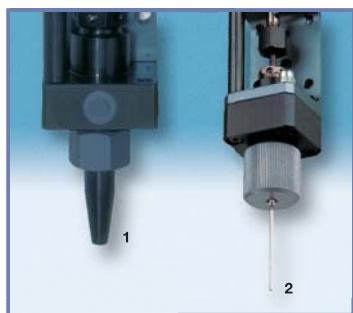
- Valve body made of aluminium
- High maximum working pressure
- Snuff back effect
- Pneumatic control

Options

- Solenoid valve plate
- Stainless steel version
- Fine adjustment
- Initiator receptacle:
Monitoring the metering piston position
- Manual handle with trigger for pneumatic or electric operation



Technical data



Nozzle (1) is suitable for higher flow rates.
Hollow needle (2) is suitable for lower flow rates.



Optional valve handle for pneumatic (3) or electric (4) valve operation.

Dispensing valves



Internal diameter Ø	Working pressure bar	Max. working pressure bar	Weight approx. kg	Wetted parts made of			Options			
				steel/aluminium	stainless steel	needle seat tungsten carbide	hollow needles	nozzle	handle	solenoid valve plate
1,0 mm	250	315	0,20	-	●	-	○	-	○	○
2,0 mm	250	315	0,50/0,70	●	○	○	○	-	○	○
2,5 mm	250	315	0,50	●	-	-	○	-	○	○
4,0 mm	40	60	0,40	●	-	-	-	●	○	-
6,0 mm	250	315	1,50	●	○	○	-	●	○	○
12,0 mm	100	315	1,60	●	○	○	-	●	○	○
12,0 mm	250	315	2,80	●	-	○	-	-	○	○
12,0 mm	250	315	2,70	●	○	-	-	●	-	○
13,0 mm	200	315	1,20	●	-	-	-	-	○	○
16,0 mm	60	315	3,20	●	-	-	-	●	○	○



Membrane dispensing valves

Internal diameter Ø	Working pressure bar	Max. working pressure bar	Weight approx. kg	Wetted parts made of			Options				
				steel/aluminium	stainless steel	needle seat tungsten carbide	hollow needles	nozzle	needle or nozzle connection	handle	solenoid valve plate
2,0 mm	160	200	0,45	-	○	●	○	○	○	○	○
4,0 mm	160	200	0,70	-	○	●	○	○	○	○	○
8,0 mm	160	200	2,20	-	○	●	○	○	○	○	○

Key to symbols:

● standard

○ optional

- not available



Needle metering valves

Metering volume/shot cm ³	Material input pressure in bar		Weight approx. kg	Wetted parts made of		Options						
	minimum	maximum		steel/aluminium	stainless steel	hollow needles	needle connection	stroke detection	fine tuning	solenoid valve plate	handle	spray adapter
0,001 - 0,01	3	20	0,25	●	○	○	●	-	●	○	○	-
0,005 - 0,10	3	20	0,80	●	○	○	●	-	●	○	○	○
0,008 - 0,18	3	20	0,80	●	○	○	●	-	●	○	○	○
0,020 - 0,40	3	20	1,40	●	○	○	●	○	●	○	○	-
0,050 - 1,00	3	20	1,40	●	○	○	●	○	●	○	○	-
0,100 - 3,00	3	20	1,40	●	○	○	●	○	●	○	○	-



Chamber metering valves series 415

Metering volume/shot cm ³	Material input pressure in bar		Weight approx. kg (standard)	Wetted parts made of		Options					
	minimum	maximum		steel/aluminium	stainless steel	hollow needles	needle connection	initiator receptacle	fine tuning	measuring stick	handle
0,050 - 0,50	15	150	0,50	●	○	○	○	○	-	-	○
0,100 - 3,00	15	150	0,60	●	○	○	○	○	-	-	○
0,500 - 12,00	15	150	1,95	●	○	○	○	○	○	○	○
5,000 - 100,00	15	150	4,10	●	○	○	○	○	○	○	○



Cartridge chamber metering valve series 418

Metering volume/shot cm ³	Material input pressure in bar		Weight approx. kg (standard)	Wetted parts made of		Options						
	minimum	maximum		steel/aluminium	stainless steel	hollow needles	needle connection	initiator receptacle	fine tuning	solenoid valve plate	handle	replacement cartridge
0,025 - 0,25	40	100	1,00	●	-	○	○	○	●	○	○	○
0,050 - 1,00	20	150	1,00	●	-	○	○	○	●	○	○	○
0,500 - 10,00	6	150	1,00	●	-	○	○	○	●	○	○	○

Key to symbols:

● standard

○ optional

- not available

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