ProMinent[®] Multifunctional Valve



General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. It is aimed equally at both men and women. We kindly ask female readers for their understanding in this simplification of the text.

Supplementary information

Please read the supplementary information in its entirety.

Information



This provides important information relating to the correct operation of the unit or is intended to make your work easier.

Safety Information

The safety notes include detailed descriptions of the hazardous situation.

The following symbols are used to highlight instructions, links, lists, results and other elements in this document:

More symbols

Symbol	Description
1.	Action, step by step
⇔	Outcome of an action
Ŕ	Links to elements or sections of these instructions or other applicable documents
-	List without set order
[Taster]	Display element (e.g. indicators)
	Operating element (e.g. button, switch)
ʻDisplay /GUI'	Screen elements (e.g. buttons, assignment of function keys)
CODE	Presentation of software elements and/or texts

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1 Construction

The functions of the multifunctional valve are each provided by a spring-loaded diaphragm. A relief mechanism is provided for the back pressure function as well as for the overpressure function.



Fig. 1: The diagram shows an example of a size I multifunctional valve

1. Black rotary dial

2. Red rotary dial

2 Functional description

Functions

NOTICE!

Not suitable as a shut-off device

Multifunctional valves are not suitable for use as absolutely leak-tight shut-off devices.

Fit an additional shut-off device on the suction side of the pump if absolutely no feed chemical is permitted to reach the point of injection.

Generation of a defined back pressure when metering against a free outlet. This function is stopped by turning the black rotary dial clockwise.

Prevention of siphoning from the storage tank in the event of negative pressure at the point of injection. This function is stopped by turning the black rotary dial clockwise.



Fig. 2: Priming aid when commissioning the pump against pressure

- 1. Black rotary dial
- 2. Red rotary dial

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Priming aid when commissioning the pump against pressure. It is not necessary to loosen the discharge line. The priming aid is provided by turning the red rotary dial (2).

Bleeding the metering line when the system is idle (e.g. during a repair). This is done by turning the red rotary dial (2).

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Install a non-return value at the point of injection, as the entire contents of the system can flow back through the bypass if the relief value is actuated.

The relief valve is used to protect the system against impermissible overpressure caused by the metering pump. Return via a bypass line. This function is performed automatically.

3 Intended use

Protection of the metering line against impermissible overpressure, generated by the metering pump when a stopcock in the metering line is closed.

Do not use the multifunctional valve to protect the metering line against impermissible overpressure if the overpressure is caused by a factor other than the pressure generated by the metering pump.

Do not use the multifunctional valve as a shutoff device.

4 Assembly / installation

Mechanical/hydraulic installation instructions

NOTICE!

Install a non-return valve at the point of injection, as the entire contents of the system can flow back through the bypass if the relief valve is actuated.

Make sure that the bypass line is always connected, as operating the multifunctional valve close to the overpressure function can cause minimal overflows into the bypass line.

- **1.** The multifunctional valve is screwed directly onto the pump's pressure connector. The multifunctional valve can be turned in any direction.
- 2. Attach the metering hose on the outflow side using the connecting kit (Size I and II) or the metering line using the GF threaded connector (Size III).

Size I and II

3. An O-ring is not inserted into the outflow O-ring nut by the factory. Depending on the specific application, one of the accompanying, individually packed and labelled EPDM or FPM O-rings must be installed.

Size III

4. An O-ring is not inserted into the outflow O-ring nut or adapter O-ring nut by the factory.

> Depending on the specific application, 2 out of 4 of the accompanying, individually packed and labelled EPDM or FPM O-rings must be installed.

The 13x2 O-rings are for use in the outflow slot and the 13x2.5 O-rings are for use in the slot on the adapter

5. Lead the bypass line back into the storage tank. Fix it in place with a hose nozzle and a union nut.

5 Operation

NOTICE!

Install a non-return valve at the point of injection, as the entire contents of the system can flow back through the bypass if the relief valve is actuated.

Make sure that the bypass line is always connected, as operating the multifunctional valve close to the overpressure function can cause minimal overflows into the bypass line.

Depressurising the discharge line

Unscrewing the red rotary dial (2) and the black rotary dial (1) clockwise opens the path from the discharge line to the bypass. If only the red rotary dial (2) is unscrewed, the pressure in the line falls to approx. 1.5 bar.

Keep the two rotary dials unscrewed until no more liquid escapes at the bypass opening and/or no liquid flows back into the storage tank. The metering line is now depressurised. Once the two rotary dials have been released, they automatically return to their starting position.

Operating and adjusting the priming aid

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The discharge line is partially depressurised during this and liquid can escape at the bypass.

Turning the red rotary dial (2) clockwise opens the path to the bypass. The medium flows back into the storage tank.

Now set the ProMinent metering pump to "Priming", referring to the operating instructions for the metering pump, until liquid becomes visible in the bypass line. The metering pump has primed and can now be started up. When the red rotary dial (2) has been released, it automatically returns to its starting position.

6 Technical data / Ordering information

Wetted materials

- Valve body: PVDF
- Diaphragms: PTFE-coated
- Seals: Viton[®] or EPDM
- Adapter for Size III: PVC

Туре	Order No.	Relief opening pres- sure*	Connector size	Bypass connector
Size I	792011	16 bar	6-12 mm	6/4 mm
Size I	791715	10 bar	6-12 mm	6/4 mm
Size I	1005745	6 bar	6-12 mm	6/4 mm
Size II	792203	10 bar	6-12 mm	12/9 mm
Size II	740427	6 bar	6-12 mm	12/9 mm
Size III	792215	10 bar	DN 10	12/9 mm
Size III with support	1027652	16 bar	DN 10	12/9 mm

* The relief opening pressure indicated here is the pressure at which the multifunctional valve begins to open. The pressure can be up to 50% higher until the multifunctional valve is fully open, depending on the pump type.

Permissible temperatures

Permissible storage and transport temperature: -10 °C ... +50 °C

Technical data / Ordering information

Permissible ambient temperature: -10 °C ... +45 °C

Size I and II

Liquid end	Materials	Max. medium tempera- ture, long-term at max. operating pressure	Max. medium temperature, long-term at max. 2 bar* oper- ating pressure
PV	PVDF	50 °C	120 °C

*) This may be exceeded for a short period of max. 15 minutes e.g. for hot rinsing.

Size III

Liquid end	Materials	Max. medium tempera- ture, long-term at max. operating pressure	Max. medium temperature, long-term at max. 2 bar* oper- ating pressure
PV	PVDF	40 °C**	120 °C

*) This may be exceeded for a short period of max. 15 minutes e.g. for hot rinsing.

 **) Downgrading of medium temperature, as the adapter G $3\!4^{\circ}$ on the discharge side is made of PVC-U

Material Specifications

Component	Material
Valve body	PVDF
Diaphragm	PTFE-coated
Seals	EPDM or FPM-B

Technical data / Ordering information

Applications

Size I	CONCEPT, Pneumados and Beta® 4: all types
	gamma/ L: Type 1000, 1601, 1602, 1005, 0708, 0413, 0220 and 1605
Size II	all types as given for size I
	Beta [®] 5: Type 1008, 0713, 0420 and 0232
	gamma/ L: Type 1008, 0713, 0420 and 0232
	gamma/ X: Type 1601, 1602, 0708, 0414, 0220
	gamma/ X: Type 1009, 0715, 0424, 0245
Size III	Sigma/ 1 with DN 10 connecting thread

Directives / standards adhered to

DIN EN ISO 12266 T1 DIN EN ISO 16138 DIN 8063 T5



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