



MULTI-FUNCTION VALVE

Four functions in one valve

General

The Grundfos multi-function valve with two diaphragms for dosing pumps up to 60 l/h combines four functions – pressure loading, pressure relief, deaeration and drain. Directly mounted on the discharge valve of the pump, the multi-function valve simplifies the handling of the pump and ensures process reliability.

If the system has not enough backpressure, the multi-function valve maintains the backpressure at the level which is necessary for the pump. Moreover it protects the pressure-side dosing line system from too high pressure build-up. The pump can be deaerated and the pressure-side piping system can be drained via the multi-function valve.

Functionality

The multi-function valve has two diaphragms. Thus it can be used as a pressure loading valve for pressure build-up and as a pressure relief valve for pressure relief. It is directly mounted on the discharge side of the pump.

Before starting the dosing operation, the dosing head is deaerated by opening the pressure relief valve. If the backpressure which is necessary for an optimal functionality of the suction and discharge valves has been built up, the multi-function valve maintains the pressure constantly on the adjusted level. Optimal dosing is thus assured even in systems with pressure fluctuations or in systems without backpressure.

In case the pressure rises above the adjusted opening pressure, the multi-function valve opens and the dosing liquid can flow back into the dosing tank. The complete

pressure-side dosing line system is so protected from too high pressure build-up.

The entire pressure line can be drained by simply turning both handles of the multi-function valve.

The multi-function valve prevents unregulated flowing of the dosing liquid through the dosing lines (siphon effect), if the suction-side pressure is higher than or the same as the system pressure, but below the opening pressure of the multi-function valve.

Loading pressure is freely adjustable between 1 and 4 bar, relief pressure between 7 and 16 bar.

The multi-function valve can be used with all Grundfos dosing pumps (with plastic dosing heads) up to 50 l/h or 60 l/h, and 10 bar or 16 bar backpressure.

Customer's benefit

- **Easy commissioning:** One turn of the hand deaerates the dosing head easily and without any tools.
- **High process quality:** Optimal dosing even in systems without backpressure or with fluctuating backpressure.
- **High process reliability:** The pressure-side line system is protected against too high pressures.
- **Easy maintenance:** The entire pressure line can be drained via the overflow line.
- **Anti-siphon effect:** No unintentional emptying of the pressure line.
- **Free adjustment of pressure ranges:**
Loading pressure approx. 1 - 4 bar
Relief pressure approx. 7 - 16 bar

Technical data

Connections DN 8 (5/8")	DDI	DMX 221	DMH 25x	SMART Digital DDA	SMART Digital DDC, DDE
Capacity	≤ 60 l/h	≤ 50 l/h	≤ 50 l/h (≤ 16 bar)	≤ 30 l/h (≤ 16 bar)	≤ 15 l/h (≤ 10 bar)
Pressure relief	Preset pressure: 10 + 2 or 16 + 2 bar (free adjustment approx. 7 - 16 + 2 bar)				
Pressure loading	Preset pressure: 3 + 1 bar (free adjustment approx. 1 to 4 bar)				
Admissible temperature • Storage temperature • Ambient temperature	-10 to +50 °C 0 to +40 °C at 12 bar 0 to +20 °C at 16 bar				
Admissible temperature of the dosing liquid	Material	up to 12 bar	up to 16 bar		
	PVC	0 °C to +40 °C	0 °C to +20 °C		
	PP	0 °C to +40 °C	0 °C to +20 °C		
	PVDF	0 °C to +60 °C	0 °C to +20 °C		
Material • Body • Connections • Gasket	PVDF PVC, PP or PVDF FKM, EPDM or PTFE				

Selected installation examples



DDI 222



DMX 221



DDA