









Double-chamber, Polymeric Back-flushing Valve

Description

DOROT 51P/52P Series offer a robust, versatile back-flushing valve design for efficient filtration in agricultural applications. Constructed from corrosion-resistant, reinforced nylon, it combines lightweight durability and reliable performance in harsh field-conditions. The valves feature a double-chamber configuration with direct diaphragm sealing for precise flow control, low head loss and efficient back-flushing, with minimal water loss. Compact construction, multiple pressure and connection options plus inline maintenance capability, make DOROT 51P/52P series an ideal solution for sand media and disc filtration systems.

Features and Benefits

Durable materials	Ensures long-lasting performance in harsh water conditions, including seawater and aggressive media			
Direct diaphragm sealing with low head loss Provides efficient back-flushing, precise flow control and energy saving				
Compact, lightweight design Simplifies handling and installation, while reducing structural support requirements				
Easily accessible components	No special tools needed, saves time and lowers costs by reducing both labor and downtime			
Flexible pressure & connection options	Adapts to a variety of systems with wide pressure range models and customizable inlet/outlet configurations			
Compatible with filtration systems	Optimized for sand media and disc filtration, enhancing system efficiency			

△ **DOROT** 51P/52P





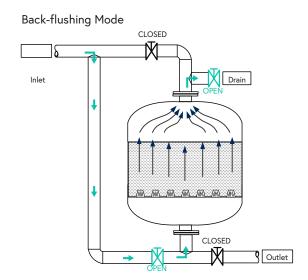
Filtration Mode

General Back-flushing Operation

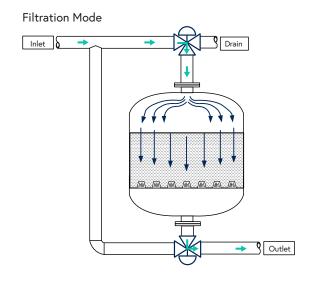
Effective filtration is critical for maintaining the performance and longevity of water systems in agricultural, industrial and municipal applications. Regardless of filter type, (disc, screen, media, or sand separators), regular and efficient cleaning of the filtration element is essential to remove accumulated dirt and debris. Back-flushing is the preferred method for automated filter cleaning. It involves reversing the flow through the filter element with relatively clean water; flushing contaminants out through a dedicated drain line.

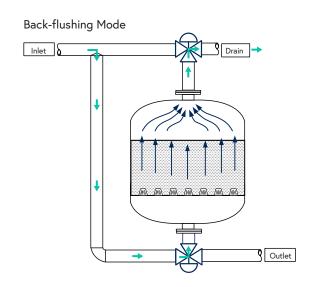
DOROT 51P/52P Series valves are specifically engineered to simplify and optimize the back-flushing process. These 3-way hydraulic diaphragm valves enable precise, reliable switching between filtration and back-flushing modes; reducing the number of valves needed per filter and allowing seamless automation with minimal power consumption. Traditional back-flushing systems require multiple synchronized valves per filter, making them complex and costly to automate.

lδ CLOSED Drain Inlet



DOROT 51/52P simplifies the process, by combining all switching functions into a single valve, reducing components and enabling low-power or fully hydraulic operation.









Operation

DOROT 51P/52P series are 3-way, double-chamber hydraulic control valves operated by a pressure command.

Includes three ports:

- Inlet (from water source)
- Outlet (to filter)
- · Drain (to waste)

In filtration mode, the valve connects the inlet and outlet, allowing water to flow through the filter.

During the back-flushing cycle, a control pressure is applied to the upper chamber, shifting the valve to close the inlet and open the drain—redirecting flow from the filter to the drain.

Once the cycle ends, the control pressure is released, and the valve automatically returns to filtration mode.

	Filtration Mode Control chamber de-pressurized	Back-flushing Mode Control chamber pressurized
DOROT 51P Straight-flow	Vented control chamber Inlet To filters	Pressurized control chamber From filters To drain
DOROT 52P Angle-flow	Vented control chamber To filters	Pressurized control chamber Vented control chamber To drain From filters

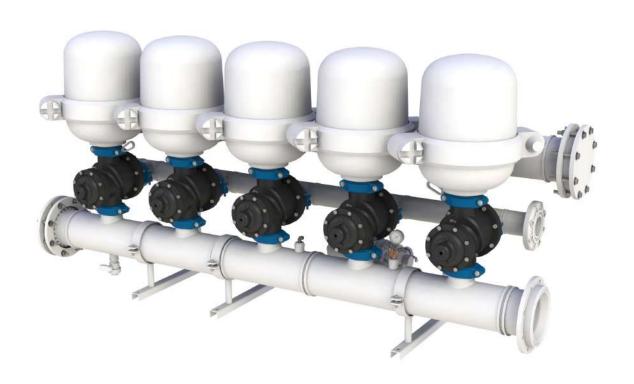




> Typical Applications

Disc filtration system

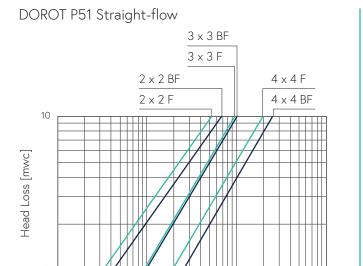




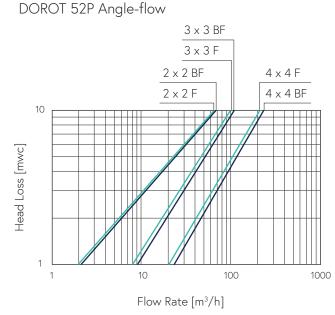
△ **DOROT** 51P/52P



Head Loss Chart



Flow Rate [m³/h]



F - Filtering
BF - Back-flushing

Hydraulic Performance

Size		2 × 2	3 x 3	4 x 4	
DOROT 51P Straight-flow					
Flow rate factor at filtering	Kv (metric)	56	95	195	
	Cv (US)	65	110	226	
Flow rate factor at flushing	Kv (metric)	69	125	255	
	Cv (US)	80	145	296	
DOROT 52P Angle-flow					
Flow rate factor at filtering	Kv (metric)	61	115	230	
	Cv (US)	70	133	267	
	Kv (metric)	55	105	210	
Flow rate factor at flushing	Cv (US)	63	122	244	

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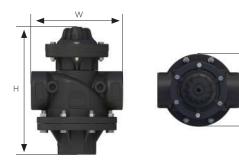
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Dimensions and Weight

Size	Connections	Dimensions					Weight		Max. Flow	
		Н		W		D				
		mm	inch	mm	inch	mm	inch	kg	lbs	m/h
2" (50mm)	BSP/NPT/VIC	274	10.8	180	7.1	160	6.3	2.8	6.2	30
3" (75mm)	VIC	378	14.9	287	11.3	192	7.6	5.5	12.1	50
4" (100mm)	VIC	316	12.4	187	7.4	260	10.2	9.9	21.8	100

All product weights are approximate, due to the differences in flange standards, materials and variable accessories.



Parts List and Specifications

No.	Part	Material
1	Bonnet Assembly	Reinforced Nylon
2	Spring	Stainless Steel 304
3	Diaphragm	NBR
4	Shaft Assembly	Stainless Steel 304
5	Piston Disk	Reinforced Nylon
6	Actuator Body Assembly	Reinforced Nylon
7	Body Assembly	Reinforced Nylon
8	Adaptor Assembly	Reinforced Nylon
	O-rings	EPDM
	Bolts & Nuts	Stainless Steel 304

Additional materials available upon request.

