Dust Filter Valves

Speed saves energy - innovative filter valves

- High corrosion resistance
- Integrated silencer
- One-piece diaphragm TPE
- Twist-on®
- Long lifetime
- Engineering GREAT Solutions
IMI Precision Engineering is a world-leader in fluid and motion control. Building close, collaborative relationships with our customers, we gain a deep understanding of their engineering needs and then mobilise our resources and expertise to deliver distinctive products and solutions. Wherever precision, speed and engineering reliability are essential, our global footprint, problem-solving capability and portfolio of high performance products enables us to deliver GREAT solutions which help customers tackle the world’s most demanding engineering challenges.

> **Reliability**
We deliver and support our high quality products through our global service network.

> **High performance products**
Calling on a world-class portfolio of fluid and motion control products including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. We can supply these singly, or combined in powerful customised solutions to improve performance and productivity.

> **Partnership & Problem Solving**
We get closer to our customers to understand their exact challenges.
Dust collector valves

A number of technologies to clean dust filters effectively and inexpensively are available. One of the most efficient is the air-blasting technique. The basic principle is straightforward. A short, intense pulse of air blasts into the soiled filter element. Dust and loose dirt from the filter fall to the ground and can be removed from there. Following the short cleaning cycle the filter is ready and the filter system can again operate at full capacity.

Filter valves for air-blasting have been developed to allow efficient and inexpensive cleaning. Top priorities in the developers’ requirements specification were to optimise the filter cleaning, reduce air consumption and prolong the valves’ service life. To achieve optimum cleaning with the compressed air pulse, the pressure in the filter has to reach the set point very quickly. This means that the valves must open fully within a few milliseconds.

Compared with the previous models, this filter valve series has extremely fast opening times, which are essential for effective, intensive cleaning. The closing mechanism is just as fast as the opening mechanism. This determines the economical operation of a valve. The air pulse must return to zero as quickly as possible, as any minor delay will only consume air and cost money.

**Product highlights:**
- High grade materials
- Solenoid exchangeable without tools (Twist-on®)
- CE-Mark
- Optimized strength
- Designed with newest CAD-Technologies
- High flow rate
- One-piece diaphragm
- Usable from -40 °C ... +140 °C
- High corrosion resistance (optional)
- Explosion proof up to hazardous area 1/21 and temperature class T4/ T5
- Usable for low pressure and vacuum applications
- Integrated silencer
- Frost proof solenoid system
- International registrations like Gost-R or CRN available

**Measurement protocols:**

*(Example)*

<table>
<thead>
<tr>
<th>Type:</th>
<th>8296600.8171.02400</th>
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<tbody>
<tr>
<td>Port Size:</td>
<td>G 1 1/2</td>
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<tr>
<td>Tank volume:</td>
<td>32 dm³</td>
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<tr>
<td>Reservoir pressure:</td>
<td>6 bar</td>
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<tr>
<td>Electrical pulse:</td>
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<tr>
<td>Pulse length:</td>
<td>165 ms</td>
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<tr>
<td>Max. pressure:</td>
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<tr>
<td>Pressure quotient:</td>
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<tr>
<td>Reservoir pressure drop:</td>
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<tr>
<td>Volume / Impulse:</td>
<td>85.3 Ndm³</td>
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<tr>
<td>Pressure rise time 10-90:</td>
<td>13 ms</td>
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<td>Opening time:</td>
<td>38.5 ms</td>
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<td>Closing time:</td>
<td>133.7 ms</td>
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</tbody>
</table>

![Graph showing tank and valve outlet pressures over time](image-url)
Options & Variants

**Solenoids**
- Twist-on®
- Solenoid 3000
- Ex-Solenoid

**Diaphragms**
- Standard
- Temperature
- Low pressure

**Connections**
- Flange version
- Flange version
- Tank assembly

**Bodies**
- Aluminium
- Stainless steel
- Special coating
Applications

- Environment
- Lime Industry
- Pharmaceutical Industry

- Primary industry
- Coal mining
- Chemical Working Industry
High pressure Air Pulse

The design of the housing geometry, the control holes and especially the diaphragm seal is impressive. Kv value is a determining factor of the flow rate and is considerably higher in this valve series. The Kv value of the G 1½ valve, for example, is approximately 30% higher than that of comparable standard models. Pressure-rise time is crucial in ensuring effective cleaning; the pulse of the valve reaches its maximum after a few milliseconds, letting the valve open around 25% faster than conventional dust filter valves. Reduced pressure rise times and an improved flow rate result in considerably stronger air pulses. This often allows the required operating pressure to be reduced, leading to not insignificant savings in operating costs.

In addition to the flow coefficient value in Kv and the pressure rise time, the pressure loss in the valve determines the quality and efficiency of a filter valve. The lower the pressure difference between the valve outlet and the pressure of the internal tank when the valve is 100% open, the lower the operating pressure can be. This has a positive effect on the energy balance of the equipment. Here, customers again feel the direct benefits of the use of modern simulation technologies. The pressure drop across the valve can be decreased by approximately 15%. All the valves in the series are equipped with a silencer.

<table>
<thead>
<tr>
<th>Picture</th>
<th>Mounting</th>
<th>Port size</th>
<th>Nominal diameter (mm)</th>
<th>Pilot operated</th>
<th>Solenoid operated</th>
<th>Material</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>20 25 40 50 65 80</td>
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<tr>
<td>Single valve</td>
<td>G 3/4 - G 3</td>
<td>• • • • • •</td>
<td>82900</td>
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<td>Single valve</td>
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<td>83320</td>
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<tr>
<td>Single valve</td>
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<td>Special number</td>
<td>Special number</td>
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<td>Flange version</td>
<td>DN 25 + DN 40 + DN 65</td>
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<td>82900 Option 54</td>
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<td>Single valve</td>
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<td>Filter cleaning system</td>
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<td>Aluminium</td>
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</table>

<table>
<thead>
<tr>
<th>Picture</th>
<th>Description</th>
<th>Measuring range</th>
<th>Series</th>
<th>Material</th>
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<tbody>
<tr>
<td></td>
<td>Pneumatic Controller (Control of max. 20 dust filter valves)</td>
<td>2 - 8 bar</td>
<td>82870</td>
<td>Grey cast iron</td>
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</tbody>
</table>
Overview

- System for Dust Collector
- With integrated filter valves
- For air
- Fluid temperature -40 °C ... +140 °C
- Operating pressure 0.4 ... 8 bar
- Aluminium / PA66
- "A" variable from 70 ... 800 mm
- "L" maximum length 2,000 mm