

Pinch valve for heavy-duty applications

FESTO



Top performance,
long service life

Extremely low wear!

Highlights

- Full flow
- High process reliability and precision
- Outstanding materials
- Durable and robust
- For low and high temperatures

The heavy-duty pinch valve is ideal for use with abrasive or corrosive fluids, pastes, pulps, powders, or media with a high solids content. Its high performance, extremely low wear, and long service life in open and close mode as well as in proportional control applications make it very suitable for use in mineral processing, in the cement and construction industry, in iron and steel production, in metallurgy and foundries, or in aluminium production.

Reliable open and close operation

With the pinch valve you avoid leakages, load losses in the process, blockages and wear. The outstanding sleeve technology ensures a completely tight seal and avoids bidirectional load losses, blockages and obstructions. The ease of maintenance also makes the pinch valve the best choice for abrasive media.

Once set – always precise!

Just set the parameters and the pinch valve regulates abrasive fluids reliably and very precisely. It is so robust that, once commissioned, no further calibration is required.

Self-cleaning

The pinch valve guarantees a 100% tight shut-off even if solids have built up on the sleeve wall. When compressed, any crystallised particles flake off the sleeve surface.

Full flow, low abrasion: open and close operation

The technical characteristics of the pinch valve with the elastomer sleeve ensure extremely high process reliability. In the open position, the valve allows a full flow. During closing, two pressure bars squeeze the valve shut in the centre line so the valve is tightly sealed. As well as a full flow, the pinch valve enables high process reliability and prevents leaks as well as blockages or obstructions. In addition, the centralised closure ensures flow turbulence and, last but not least, better control characteristics.

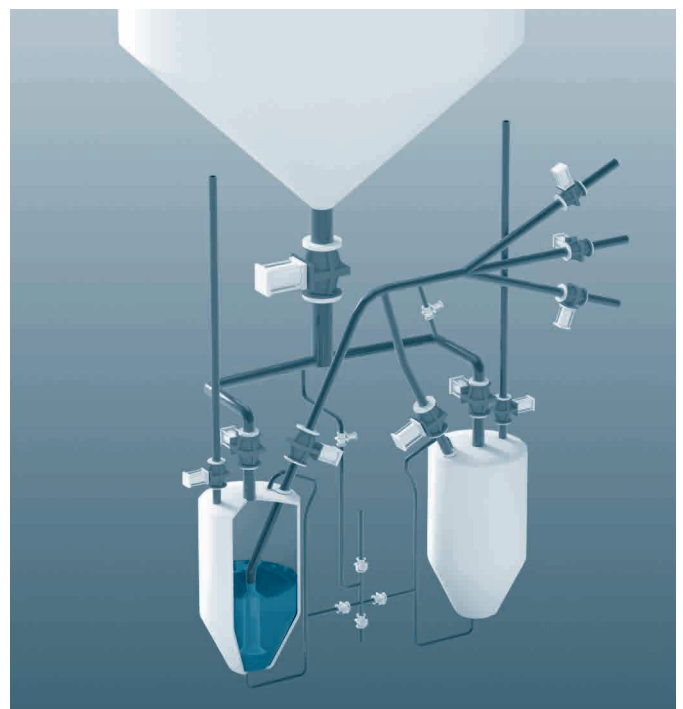
No abrasion

Unlike metal components, the rubber sleeve is naturally wear resistant. When abrasive particles hit the sleeve's rubber surface, the rubber immediately bounces them back. The positive result is that the sleeve is extremely low wearing, has a long service life, and prevents leaks.

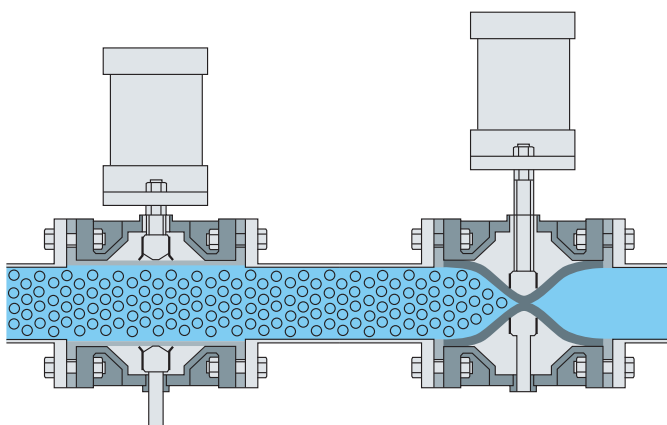
Sample application: pneumatic conveyor system for blow pots in cement preparation

When transporting cement, the material is filled into a blow pot. When it is full, it is pressurised with compressed air. Then the outlet valve is opened and the material is blown out. The blow line can also be fitted with diverter valves to direct the medium to alternative locations.

The challenges here are very fast cycle times, but also valve leakages and blockages. The pinch valves from Festo are ideal for the blow pot outlet valve, the blow pot ventilation valve, and the blow pot filling valve.



Pinch valves are perfect for the parts of the cement conveying process shown here.



In the open position, the valve is at full bore with no flow restrictions thus making the valve an integral part of the pipeline. During closing, two pinch bars squeeze the sleeve shut on the centerline.

Technical data	
Size range [mm]	50 ... 150
Pressure range [bar]	1 ... 10
Temperature range [°C]	NR -40 ... +75 SBRT -40 ... +110
Sleeve/seat	NR (natural rubber), SBRT (styrene butadiene)
Actuator and accessories	Pneumatic actuator/ quick exhaust valve
Body material	Cast iron or structural steel (S355)

What to expect: easy parameterisation – precise control – reliable operation

The pinch valve is the best choice for anyone who wants to reliably control fluids containing abrasive particles.

Reliable: integrated displacement encoder and positioner

Once adjusted, the parameters don't change. As the displacement encoder and positioner are integrated, the pinch valve doesn't need the same readjustment as external mechanical displacement encoders after initial commissioning. Parameterisation is very easy. In operation, the robust, durable valve is ideal for the very precise regulation of fluids.

As already described, the pinch valve is also self-cleaning, so abrasion and blockages are minimised.

Reliable and attractively priced

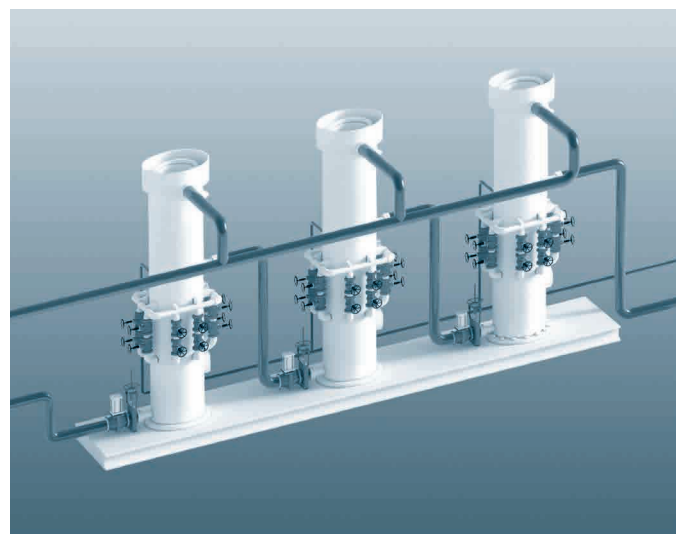
The ease of handling, robustness, and minimal abrasion of the modular pinch valve make it much more reliable and less expensive than conventional flap-based solutions where metal comes into contact with the fluids.

Sample application: fluid minerals in flotation cells

Transporting minerals in flotation cells is one of the central processes when extracting minerals. Controlling fill levels is particularly important here, whether for metals, building materials, industrial or energy minerals like salt and carbon. The integrated displacement encoder and positioner make the fill level much more precise than with single-acting actuators and mechanical position measurement systems.

Greater availability for greater returns

Compared with conventional solutions, the superior technology of the pinch valve ensures greater availability, especially of key systems in mineral extraction, and thus greater output.



Linear actuator DFPI – integrated, sturdy, flexible!

The linear actuator DFPI is equipped for a wide range of applications thanks to ISO 15552, an optionally integrated positioner or an integrated displacement encoder, and an optimised guide rod for swivel motions. It is suitable for air dampers, processing bulk materials as well as for flow and fill levels.

- Integrated positioner or integrated displacement encoder for external positioner
- ISO 15552 for flexible installation
- Easy to fit
- Swivel motion possible for expanded areas of application
- Sturdy and reliable
- IP65, IP67, IP69K

Superior pinch valve technology for trouble-free applications

The modular design of the heavy-duty pinch valve simplifies maintenance. Worn or defective parts can be easily replaced without having to exchange the entire valve. This, together with the design-specific long service life, makes the pinch valve more cost effective than any other conventional solution.

Ideal for the following fluids/media

- Dry or liquid abrasive fluids
- Corrosive fluids
- Pastes
- Cement
- Sludge
- Powder in general
- Granulates
- Fluids with a high solids content

Features	Heavy-duty pinch valve
Sizes [mm]	DN 50 ... 300 (on-off or proportional regulation)
Standard installation between flanges	ANSI B16.5 150 lbs (others subject to consultation)
Construction technology	Closed housing – flanged connection
Functionality	Full flow and bidirectional
Housing material	Cast iron (DN 50 ... 200 mm) Structural steel (DN 250 and 300 mm)
Material of sealing element (tubing)	SBRT* (others subject to consultation) Only tubing in contact with the fluid (100% tightly sealed)
Working pressure of the medium [bar]	0 ... 6 (for opening/closing all sizes) 0 ... 6 (for proportional valve DN 50 to 200 mm) 0 ... 4 (for proportional valve DN 250 mm) 0 ... 3 (for proportional valve DN 300 mm) (others subject to consultation)
Temperature of the medium/fluid [°C]	-40 ... +110
Actuation	Double-acting pneumatic actuator: – DSBC/DSBG for opening/closing, or – DFPI with integrated positioner for proportional regulation

* Standard tubing material

Further materials dependent on medium:

- NBR (nitrile rubber)
- NR (natural rubber)
- HNBR (hydrogenated nitrile rubber)
- EPDM (ethylene propylene)
- FPM (fluorinated rubber, e.g. Viton®)
- CSM (chlorosulfonated polyethylene, e.g. Hypalon®)
- PU (polyurethane)

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