

Fisher® Control-Disk™ Valve







You can depend on the Fisher® Control-Disk™ rotary valve to keep quality on spec and output on target. Its wide control range is twice that of traditional butterfly valves for better adherence to set point.

You will find the Control-Disk valve ideal for applications that involve fast processes and varying pressure drops, such as in hydrocarbon, refining, chemical, pulp and paper, and metals and mining industries.

Rely on the Control-Disk valve to keep your facility on stream and operations on budget. It is reliable and has low maintenance requirements for high plant availability. Especially when it is paired with the Fisher 2052 spring-and-diaphragm actuator and FIELDVUE™ digital valve controller. This assembly can capture and deliver diagnostic data to AMS ValveLink™ software, providing you an accurate picture of valve, actuator, and digital valve controller performance. This makes it a core component of PlantWeb™ digital plant architecture.

Without question, the Fisher Control-Disk valve is a problem solver.





Wide control range to keep quality on spec and output on target.

The Control-Disk valve offers excellent throttling performance. Its equal percentage flow characteristic provides an improved throttling range that allows control in the 15 to 70 percent valve travel range.

With its improved capability, the Control-Disk valve allows you to control closer to the ideal set point with less chance of set point overshoot, so you can keep quality on spec and output on target.

The Control-Disk valve replaces poor performing butterfly valves that typically have a narrow 30 to 50 percent valve travel range.



Innovation in Design

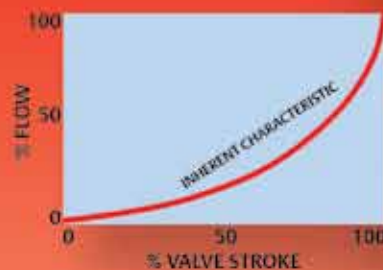
With a contoured edge on one side, the unique and patented disk creates a flow clearance to give the Control-Disk valve an inherent equal percentage characteristic. Computational fluid dynamics (CFD), verified by flow testing, show the Control-Disk valve's ability to reduce dynamic torque. Compare its performance to a standard butterfly disk, which is shown in the lower CFD.

FISHER Control-Disk Valve



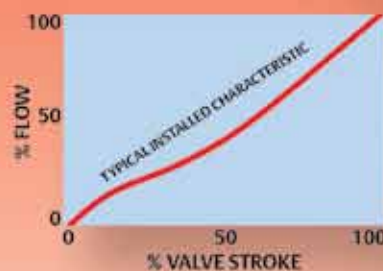
Inherent equal percentage characteristic

Disk design has a significant effect on butterfly valve flow rate as the valve travels from closed to open. A disk with an inherent equal percentage characteristic can compensate for changing pressure drops as the flow changes.



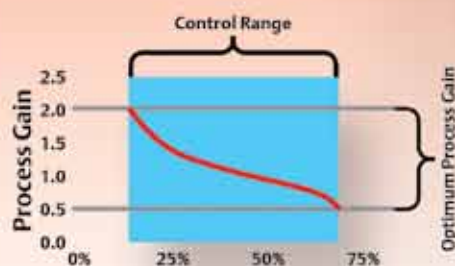
Installed linear characteristic

Only equal percentage trim will give a linear installed characteristic for changing pressure drops, which is ideal. The result is a more accurate, one-to-one change between flow rate and valve travel, i.e. a linear installed characteristic.

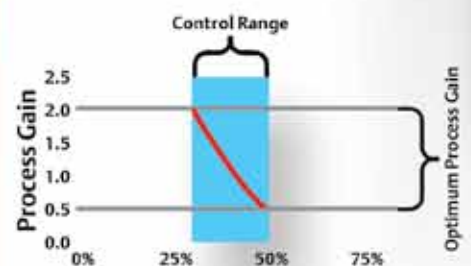
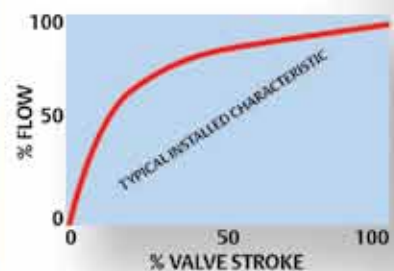
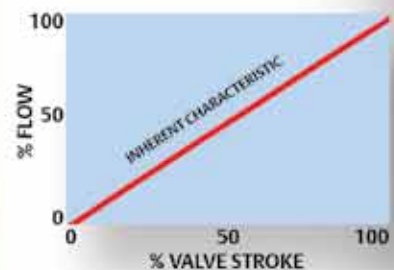


Wide control range

The range of travel over which process gain stays between 0.5 to 2.0 is defined as a valve's control range. Outside of this range good control is lost. The Control-Disk valve provides excellent throttling control in the 15 to 70 percent valve travel range.



STANDARD Butterfly Valve





Higher reliability to keep your facility on stream.

Your facility has no room for unscheduled downtime. The Control-Disk valve is designed to operate with a very high level of reliability to increase operating uptime.

Extensive laboratory verification was performed on the Control-Disk valve and 2052 spring-and-diaphragm rotary actuator for evidence of reliability. They are designed for 1 million cycles under load conditions. So you can forget leakage, forget failure, and forget poor control.

Advantages of the 2052 spring-and-diaphragm rotary actuator include:

- No O-rings to wear
- Inherent position on air failure
- Low actuator pressures for operation
- Diaphragms are double sided and provide longer life than piston seals

The Control-Disk valve can be one of the strongest players in your plant. It supports PlantWeb alerts, a system for alarms and warnings, when paired with a 2052 actuator and FIELDVUE digital valve controller. This assembly is intelligent and designed to deliver advanced diagnostics.

With butterfly valve technology that is proven in use, count on Emerson and you can keep your facility on stream longer.



Equal percentage disk reduces operating torque at peak angles of disk opening.

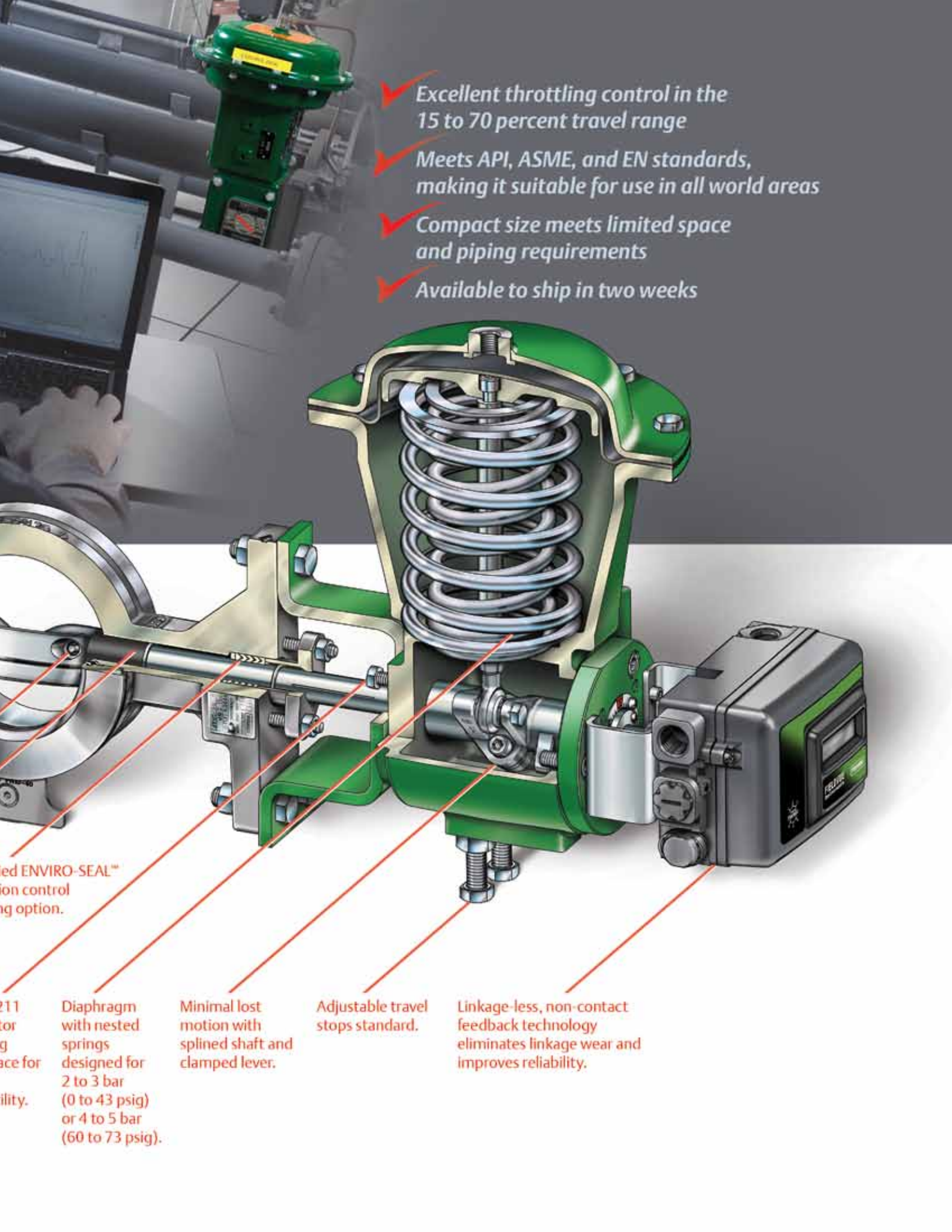
Low friction, low wear PEEK/PTFE bearing standard.

Certified emission packing

Improved shaft-disk pinning for minimal backlash and wear.

ISO 5212 actuator mating interface plant versatile





- ✓ Excellent throttling control in the 15 to 70 percent travel range
- ✓ Meets API, ASME, and EN standards, making it suitable for use in all world areas
- ✓ Compact size meets limited space and piping requirements
- ✓ Available to ship in two weeks

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Diaphragm with nested springs designed for 2 to 3 bar (0 to 43 psig) or 4 to 5 bar (60 to 73 psig).

Minimal lost motion with splined shaft and clamped lever.

Adjustable travel stops standard.

Linkage-less, non-contact feedback technology eliminates linkage wear and improves reliability.



Fast to install and commission to keep operations on budget.

Selecting the Fisher Control-Disk valve couldn't be easier. It is available to ship in two weeks, and valve selection and sizing are simple procedures.

Providing an installation advantage over other butterfly valves, the Control-Disk valve with its 2052 actuator has a compact size for limited space requirements. It also allows for a vertical shaft orientation.

As a direct replacement valve, you can use existing piping. End connections are compatible with EN and ASME standards.

If you are mounting the FIELDVUE DVC2000 instrument for the first time, the linkage-less feedback system is easy to use. A position feedback mechanism with a magnet array is assembled to the 2052 actuator. Physical contact is eliminated between the lever and instrument.

Documentation is detailed and easily accessed on www.Fisher.com.

Easy alignment during installation

Line-centering clips engage the line flange bolts to simplify installation and provide for centering of the valve in the pipeline.



Quick and easy seal replacement

Seal replacement is quick and easy with the Control-Disk valve. Technology allows for the same valve body to accept both soft and metal seals.



Linkages are eliminated

The DVC2000 digital valve controller features linkage-less position feedback. There are no touching parts between the instrument and valve shaft, simplifying controller installation and maximizing cycle life.



Local user interface

With pushbuttons for menu navigation and a liquid crystal display, the local user interface allows you to configure and calibrate the FIELDVUE DVC2000 digital valve controller in any one of seven different languages. The DVC2000 instrument is shown with its cover removed.





Choices to suit your requirements.

Global standards

The Control-Disk valve meets API, ASME, and EN standards, making it suitable for use in all world areas. It has ISO 5211 actuator and NAMUR VDE/ VDI 3845 accessory mountings.

Excellent emission control capabilities

Optional ENVIRO-SEAL packing systems are designed with very smooth shaft surfaces. Live loading provides improved sealing, guiding, and loading force transmission. The seal of the ENVIRO-SEAL packing system can control emissions to below 100 ppm (parts per million).

Sour service capability

Control-Disk valve trim and bolting materials are available for applications involving sour fluids. These constructions comply with MR0103 and MR0175/ISO 15156.

Application assistance

Specify a Fisher Control-Disk valve from Emerson to keep quality on spec, output on target, your facility on stream, and operations on budget. Learn more by contacting an Emerson sales office. Local service and support is available.

Control-Disk Valve Specifications		EN	ASME
Valve Body Size		DN 50, 80, 100, 150, 200, 250, and 300	NPS 2, 3, 4, 6, 8, 10, and 12
Pressure Rating		PN 10 to 40 per EN 12516-1	CL150 / 300 per ASME B16.34
Valve Body Materials		EN 1.0619 steel	WCC steel
		EN 1.4409 stainless steel	CF3M (316L) stainless steel
		CW2M	CW2M
		M35-1	M35-1
Disk Materials	PTFE Seal	EN 1.4409 stainless steel	CF3M stainless steel
		CW2M	CW2M
		M35-1	M35-1
	Metal or UHMWPE Seal	Chrome-plated EN 1.4409 Stainless Steel	Chrome-plated CF3M Stainless Steel
End Connections		Mates with raised-face flanges per EN 1092-1	Mates with raised-face flanges per ASME B16.5
Valve Body Style		Wafer (flangeless) and single flange with tapped holes	
Face-to-Face Dimensions		Meets MSS SP68, API 609, and EN 558 standards	
Shutoff		PTFE seal ring - Class VI per ANSI/FCI 70-2 and IEC 60534-4.	
		S31600 (316 SST) seal ring - 0.001% of maximum valve capacity [1/10 of Class IV per ANSI/FCI 70-2 and IEC 60534-4]	
Flow Directions		Standard (forward flow) is with the seal retainer facing upstream; reverse flow is permissible within specified pressure drop limitations	
Flow Characteristic		Equal percentage (characterized disk)	





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