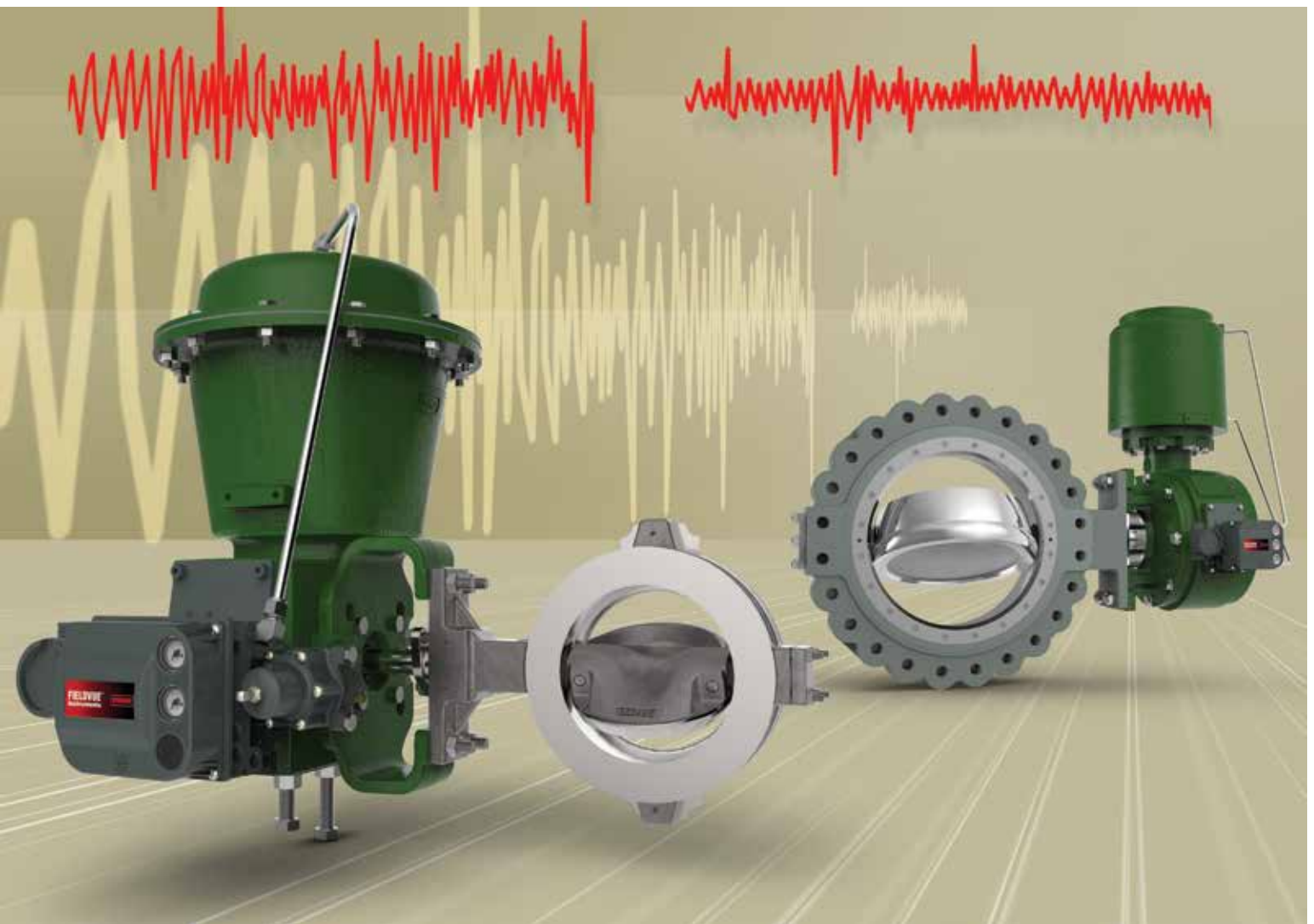


# Fisher® Control-Disk™ Valves

Performance Over a Wide Control Range



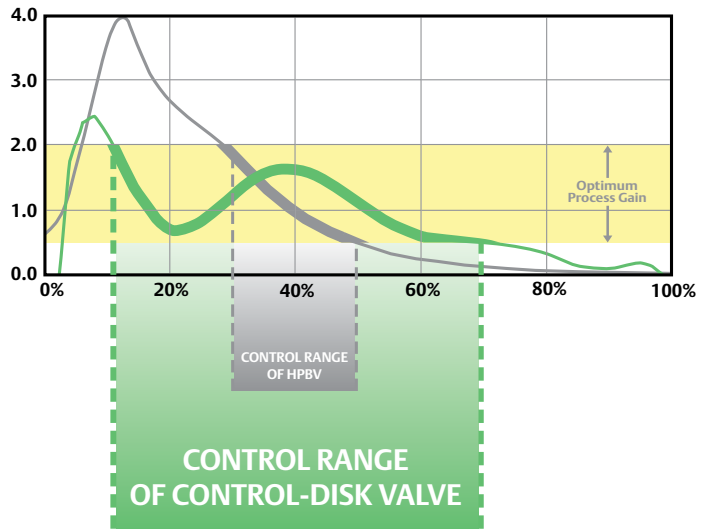
## Performance Over a Wide Control Range

**F**isher® Control-Disk™ valves are designed for precise control, reliability, and to minimize the total cost of ownership. They fit a broad range of applications in all industries and are available with a choice of different valve constructions and sizes up to NPS 36.

### Precise Control

Control-Disk valves are ideal for processes that require precise, throttling control performance. They can control closer to the target set point, regardless of process disturbances, which results in a reduction in process variability. There is minimal lost motion between Fisher actuators and Control-Disk valves because of splined shaft connections and clamped levers. With less chance of overshoot, you can produce more on-specification end product.

The unique equal percentage technology in Control-Disk valves enables precise control by providing a wide control range of 15–70% of valve travel. This range is similar to segmented ball valves or sliding-stem valves. High performance butterfly valves (HPBVs) are typically limited to only a 30–50% control range.



### Wide Control Range

*Process gain defines the relationship between changes in process output and input. The travel over which process gain stays between 0.5 to 2.0 is a valve's control range. When process gain is not within 0.5 to 2.0, poor dynamic performance and loop instability can occur. Control-Disk valves have a wide control range of 15–70% and excellent throttling control.*



### Innovation in Design

*The unique disk with a contoured edge on one side creates a flow profile giving Control-Disk valves an inherent equal percentage flow characteristic that enables precise, throttling performance over a wide control range.*

Selection Considerations	Globe	Segmented Ball	Control-Disk™ Valve	Eccentric Plug	HPBV
Control Range	High 15–75%	High 15–70%	High 15–70%	Medium 15–55%	Low 30–50%
Inherent Control Valve Characteristic	Selectable up to Equal Percentage	Equal Percentage	Equal Percentage	Modified Equal Percentage	Linear
Capacity	Low	High	High	Medium	High
Relative Price	High	Medium	Low/Medium	Medium/High	Low

*When selecting a control valve, there are several variables that need to be considered. To find out if Control-Disk valves are ideal for your application, ask your Emerson sales contact.*

## Proven Results

### Designed for Reliability

Control-Disk valves can be equipped with Fisher actuators and Fisher FIELDVUE™ digital valve controllers. Complete Fisher valve assemblies are designed, tested, and validated for performance and reliability in the Emerson Innovation Center. They help you keep your facility operational and on budget.

For better reliability, FIELDVUE digital valve controllers are integral and linkage-less with fewer parts to wear. They can capture and deliver diagnostic data to ValveLink™ software, providing you with an accurate picture of valve, actuator, and digital valve controller performance.

### Total Cost of Ownership

For new projects, Control-Disk valves have a lower initial installed cost, provide a wide control range, and can fit into tight spaces. They have high capacity and minimal flow restrictions.

They can be used to replace poor performing HPBVs because they share the same face-to-face dimensions, eliminating costly piping changes.

### For More Information

The next time you have valves that are performing poorly, are a maintenance concern, or you need to specify cost-effective control valves, consider Fisher Control-Disk valves. A local Emerson sales office can provide additional information and can help you take advantage of their many benefits.

From application expertise, to training, to quick replacement parts to valve repairs, you can count on Emerson for quality, service, and expertise.



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### POWER INDUSTRY EXAMPLE: RELIABILITY AND CONTROL RANGE

#### Application:

- Extraction steam turbine.
- Need for better control initially resulted in installation of an NPS 16 segmented ball valve.

#### Challenge:

- Frequent throttling to maintain tight control caused excessive seal, ball, and bearing wear.
- Goal was to go two years without shutting down the turbine for maintenance.

#### Solution:

- NPS 18 Control-Disk valve installed in line after sizing showed it would operate in the 25–70% travel area and provide acceptable control range for installed gain.
- Control-Disk valve allows for no seal-to-disk contact or wear when controlling as well as extends bearing life.

#### Results:

- Control-Disk valve was pulled out of the line eight months after installation and the visual inspection showed no disk, seat, or bearing wear.
- Diagnostic FlowScanner™ results came back good.
- Only replacement was valve soft goods.
- Overall cost of repair decreased by \$38,000 USD.

### METALS AND MINING EXAMPLE: PRECISE CONTROL AND LOWER INSTALLED COST

#### Application:

- Water pressure and flow control in a steel mill coolant system.

#### Challenge:

- Lack of control in process pressure caused end product inconsistency.
- Nine installed HPBVs could not effectively control the flow of water as required.
- \$10,000 USD piping change cost per valve to change from current HPBV to segmented ball valves.
- Goal was to install valves that would successfully control the process and reduce installed cost.

#### Solution:

- Emerson suggested an NPS 8 Control-Disk valve.
- Control-Disk valve met current HPBV face-to-face dimensions.

#### Results:

- Control-Disk valve was tested side-by-side with one of the nine existing installations and performed to specified requirements unlike the other HPBVs.
- Replaced remaining eight HPBVs within the year.
- Removed requirement for \$90,000 USD in piping changes needed for segmented ball valves.
- Provided precise control and helped eliminate end product variability.
- Steel mill estimated that the nine installed Control-Disk valves would potentially save them around \$1,000,000 USD per year collectively.

## Fisher Control Valve Lifecycle Services

The way you manage key production assets like control valves directly affects your plant's efficiency, reliability, and profitability. Emerson's Fisher Services provides trusted expertise for reliability-centered control valve maintenance and repair.

Whether you're starting or commissioning a process, scheduling diagnostics and repair, or planning a turnaround with upgrades to optimize and extend your plant's lifecycle, our global network of owned and authorized service centers provide effective maintenance through experienced, highly skilled technicians when and where you need them.

To help you maintain your plant's efficiency and reliability, Fisher Services uses only certified OEM parts and assemblies sourced through local inventories, regional parts distribution centers, and Quick Ship facilities to deliver unmatched response to customer needs.

With Emerson's Fisher Services as your trusted partner, you can realize the true potential of your Fisher and non-Fisher control valves throughout their lifecycle.



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To find the Emerson sales contact in your area, scan this code.



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