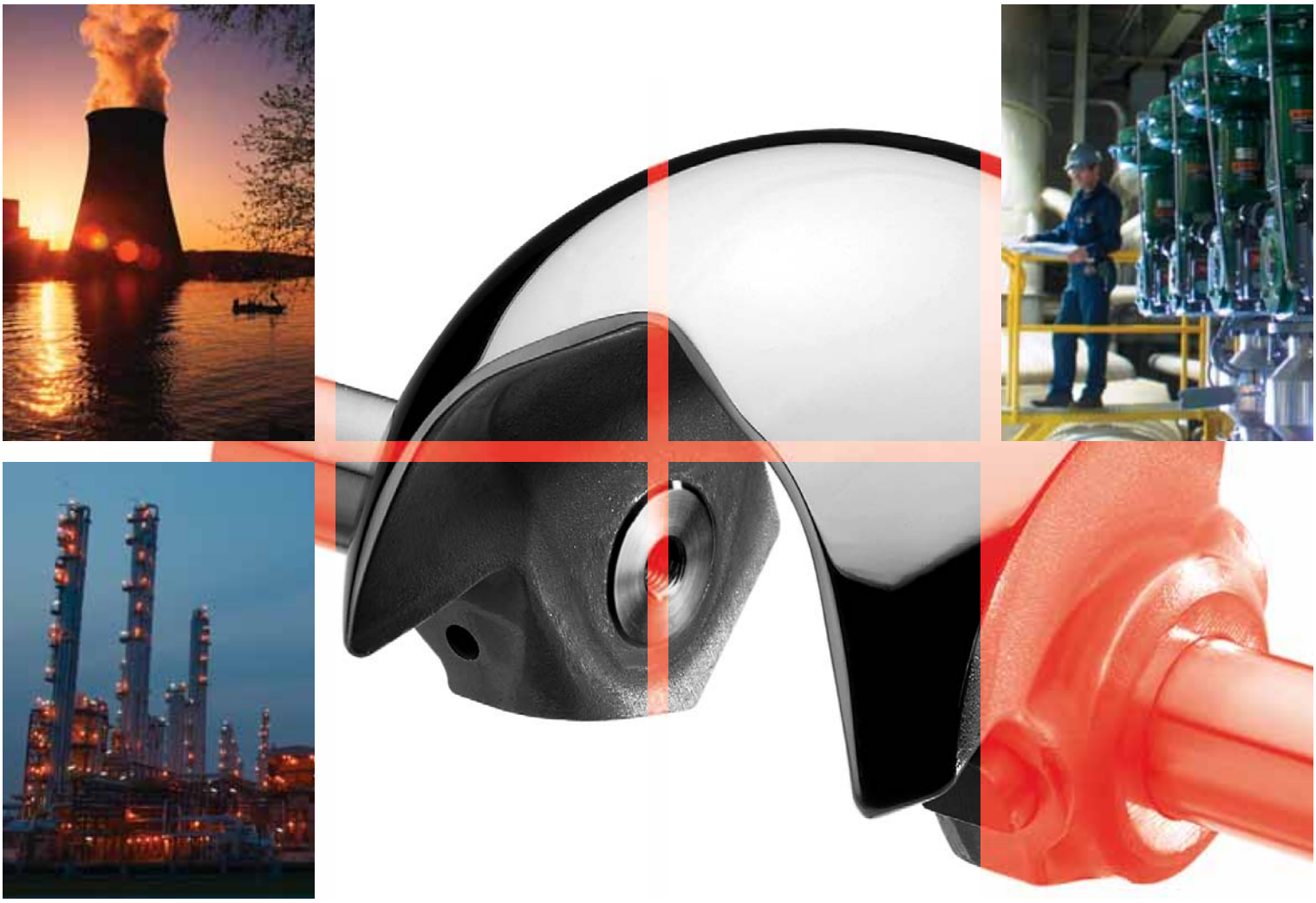
Fisher® Vee-Ball® Rotary Control Valves

Highly efficient rotary valves to meet a variety of applications



FISHER®

EMERSON™
Process Management

Fisher Vee-Ball Rotary Control Valve

Emerson wants to be your partner.
With Emerson, you'll have the support of a global company with extensive international engineering, research, sales, marketing, manufacturing, and service operations. Which means you'll have access to leading control valve and instrument technologies that offer new levels of performance and reliability. Regardless of your industry. And regardless of your location.

If you can't count on your control valves, you can't count on your process! That's why operations like yours have chosen Fisher final control elements.

Fisher Vee-Ball Rotary Control Valve

Your best choice for performance and cost-effectiveness across a broad range of applications.

The Fisher® Vee-Ball® rotary control valve combines the best of Emerson application experience with the latest in control valve technology.

The Vee-Ball valve offers broad range application versatility. It can be coupled with a full range of Fisher actuators and FIELDVUE® digital valve controllers to yield compact, easy-to-handle control valve packages. All components work together, delivering superior dynamic performance and low operating cost.

Fisher Vee-Ball Control Valve:
The Fisher Vee-Ball valve with its V-notch ball provides positive shearing action and a nearly equal percentage flow characteristic. It provides non-clogging, high-capacity flow control of gas, steam, clean and dirty fluids, abrasive chemicals, and fibrous slurries. You will find this valve hard at work in the pulp and paper, power, chemical, and petrochemical industries.

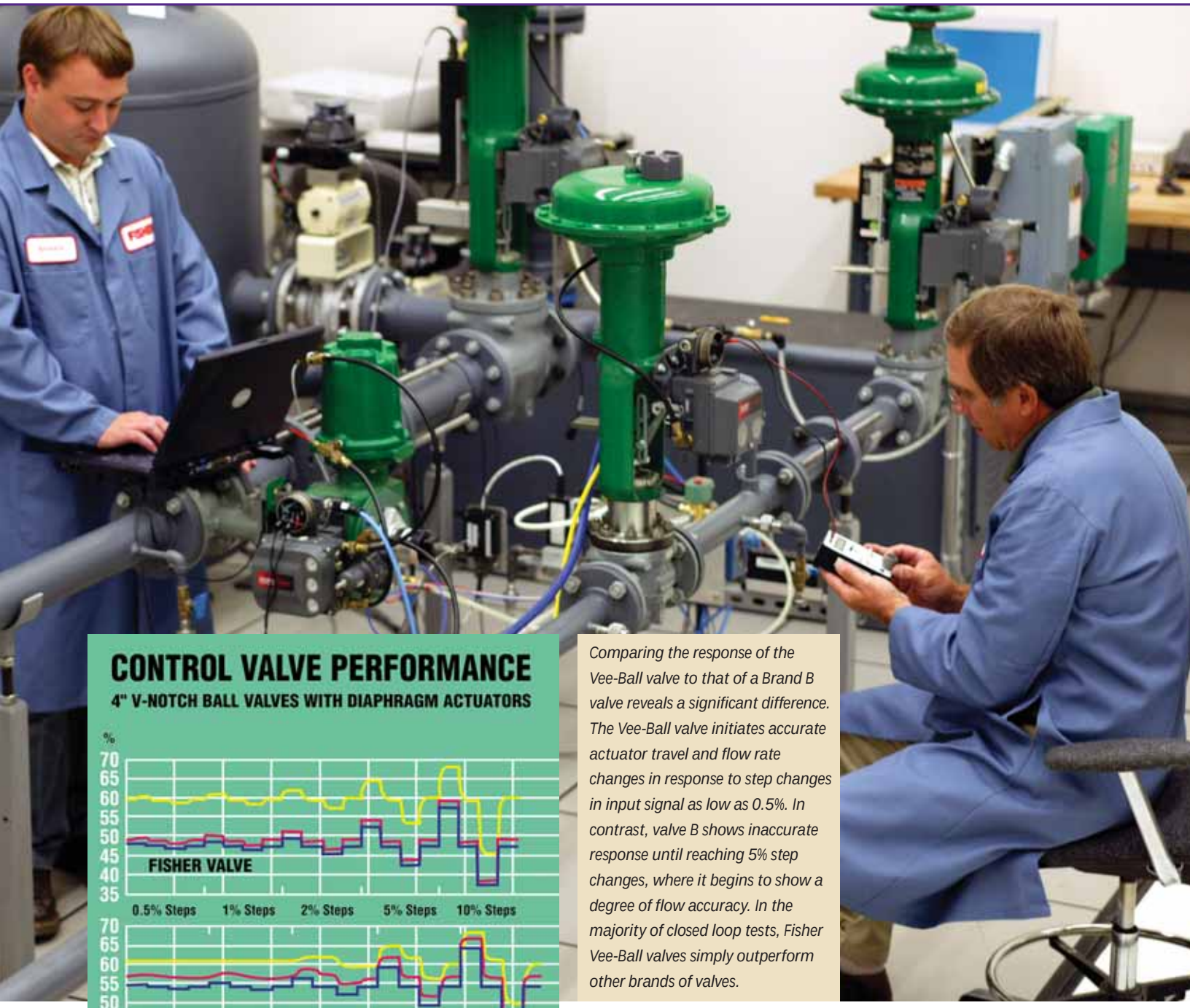
Easy Installation
To reduce installation time and headaches, the Vee-Ball rotary control valve is available with either a flangeless ANSI body or an integral flange body. The flangeless design uses integral centering lugs to help simplify alignment procedures.

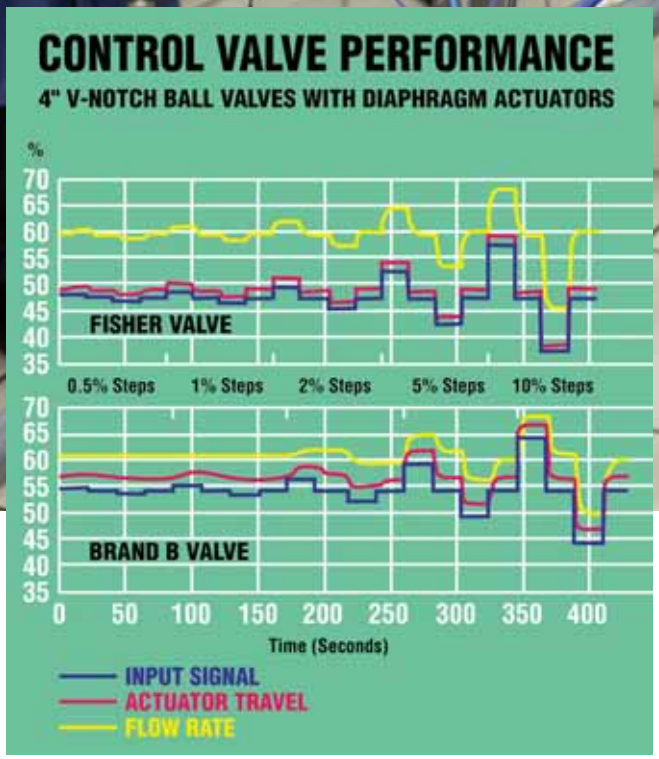
Money and Time-Saving Benefits

Regardless of the application, incorporating the Fisher Vee-Ball valve into your process can have significant money and time-saving benefits:

- **Improve Total Cost of Ownership -** Quality Fisher construction enables long-term performance from your Vee-Ball valve.
- **Reduce Process Variability -** The Vee-Ball rotary control valve is a highly engineered component essential to the accuracy and controllability of your flow system. Extensive flow loop testing has demonstrated the Vee-Ball valve's low friction performance advantage in controlling process variability.
- **Reduce Downtime -** The rugged Vee-Ball valve incorporates large margins of safety in its design. This, coupled with extensive flow testing and evaluation, results in a rotary control valve that is the industry standard for reliability.
- **Improve Operational Efficiency -** The Vee-Ball valve's high capacity and excellent characteristics mean your process can be controlled with less system pressure drop across the control valve.
- **Reduce Parts Inventory -** Commonality of parts across the Vee-Ball line helps you trim inventory costs to a minimum, resulting in bottom-line savings.
- **Reduce Maintenance Costs -** The V-notch ball seal can be replaced without valve disassembly or actuator removal.
- **Reduce Training Costs -** The Vee-Ball valve meets the requirements of a broad range of applications, which means engineering and maintenance training can focus on a single valve design. Your staff can quickly take advantage of the Vee-Ball valve's flexibility, saving training time and expense.
- **Achieve Worldwide Consistency -** With manufacturing plants and service facilities worldwide, you can count on Emerson and its Fisher products to deliver the same high level of performance wherever your operations are located.

In addition to providing top quality, expertly engineered valves, Emerson is committed to providing you with exceptional customer service. Emerson's application assistance, responsive replacement parts service, control valve repair, and training add even more value to the Fisher Vee-Ball rotary control valve.





Comparing the response of the Vee-Ball valve to that of a Brand B valve reveals a significant difference. The Vee-Ball valve initiates accurate actuator travel and flow rate changes in response to step changes in input signal as low as 0.5%. In contrast, valve B shows inaccurate response until reaching 5% step changes, where it begins to show a degree of flow accuracy. In the majority of closed loop tests, Fisher Vee-Ball valves simply outperform other brands of valves.

Demonstrated Performance

Vee-Ball control valves undergo extensive testing for proof of performance. The PlantWeb® dynamic performance loop enables thorough product testing and analysis.

Added-Value Features

Minimal Deadband - A patented, taper key ball-to-shaft connection (see ①) eliminates lost motion and minimizes deadband. During maintenance procedures, this arrangement proves to be more reliable and easier to assemble than conventional connections.

Heavy-Duty (HD) Seal - The Fisher patented heavy-duty ball seal (see ②) offers exceptional wear and pressure drop performance over a wide range of steam, gas, liquid, and slurry applications. The metal seal is pressure-balanced, which reduces operating torques and allows higher pressure drops without excessive wear.

Easy Seal Replacement and Inspection - Once the valve is removed from the pipeline, just remove two screws and the seal assembly (see ③) is easily extracted from the body. No need to disassemble the valve body or remove the actuator. Metal and soft seals are fully interchangeable.

Taper key provides solid ball-to-shaft connection.

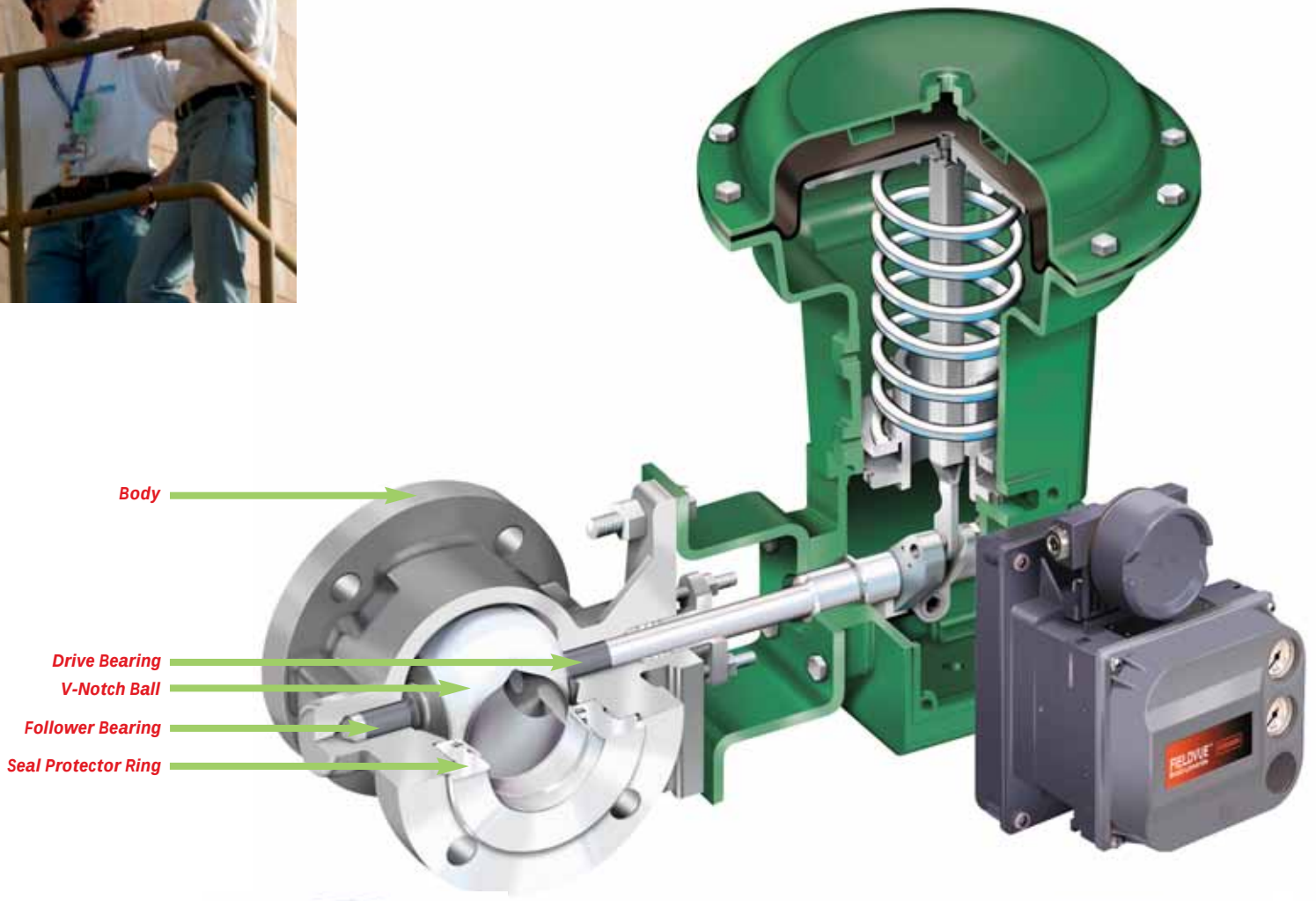
HD metal seal fights off scale and sludge buildup; inspects and replaces easily since it requires no adjustment.

Trim Interchangeability - Across the Vee-Ball line, size-for-size, trim components remain the same regardless of body style. This reduces parts inventory requirements and costs. It also simplifies maintenance training and procedures.

Better Linkage Protection - Integral mounting of positioner protects linkages.

Superior Bearings - To enhance the performance and service life of the valve, a patented, low-friction, high-load bearing system fully supports both drive and follower shafts. To reduce maintenance costs, this bearing system is designed to easily drop into place.

Characterized V-Notch Ball Design - The V-notch ball provides positive shearing action for fibrous flows and creates an inherently equal percentage flow characteristic. It has been specially contoured to maximize capacity and enhance seal life and shutoff integrity. The Vee-Ball valve offers high capacity with its unrestricted, straight-through flow path. The result is accurate throttling control over a wide range of flow conditions.



Available in ceramic and R30006 cobalt alloy (Alloy 6), as well as chromium plated CG8M SST materials, Micro-Notch™ balls allow extremely small flow rates.

Severe service attenuator reduces liquid cavitation and aerodynamic noise.

Added-Value Features

Shaft Packing Options - A choice of shaft packing systems (see ④) provides enhanced shaft sealing to meet specific application requirements.

Structural Integrity - One-piece body (see ⑤) improves structural integrity of the pressure boundary by eliminating the potential leak paths found in two-piece, bolted valve designs.

Accurate Positioning - Splined driveshaft (see ⑥) coupled with clamped actuator lever helps ensure zero lost motion.

Process Compatibility - A wide choice of materials for valve body, V-notch ball, ball seals, shafts, and other components allows you to specify a Vee-Ball valve to meet most process applications.

Standard body materials include both CG8M (317) and CF3M (316L) stainless steel as well as WCC carbon steel materials. Additional body materials include CK3MCuN superaustenitic SST, and nickel alloys CN7M (Alloy 20), M35-2 (Alloy 400) and CW2M (Alloy C).

Erosive Slurry Control - The Design V150S Slurry Vee-Ball valve (see ⑦) has a body liner, V-notch ball, and flow ring all constructed of high-chromium iron. A ceramic flow ring insert is available for especially aggressive slurry services.

ENVIRO-SEAL® packing, which is available in all Vee-Ball valves, helps meet stringent emission control requirements.

V150S erosion-resistant trim components protect the body from erosive wear and are retained without the use of press fits or threads for easy replacement.

Choose the Actuator and Accessories to Fit the Control Situation

A choice of Fisher pneumatically operated rotary actuators makes it easy to specify the right Vee-Ball control valve package for each application. The rotary actuators, available in spring-and-diaphragm and piston styles, share design and construction features that enable efficient and stable valve operation, even under application extremes.

- All actuator/positioner/valve linkages are enclosed for both personnel safety and protection against damage.
- Actuator housings are rugged to meet repeated, high-torque requirements.
- Splined-and-clamped valve shaft lever, plus a single-point actuator rod connection, minimize lost motion for maximum throttling control accuracy.
- A selection of actuator sizes allows matching actuator output to operating torque requirements.
- Corrosion-resistant powder coat paint and corrosion-resistant fasteners are standard.
- Optional declutchable manual operators (see ⑧) will override the actuator to position the valve.

For Even Greater Versatility, FIELDVUE Digital Valve Controllers – Capabilities That Extend Beyond Traditional Valve Control

While a traditional valve positioner serves a single purpose, which is to maintain a valve in its intended control position, FIELDVUE digital valve controllers (see ⑨) provide much more.

FIELDVUE instrumentation collects real-time data about valve performance, which proves crucial not only to reducing process variability but also to enhancing plant operations.

Designed for PlantWeb® digital plant architecture, FIELDVUE digital valve controllers and AMS™ ValveLink® software enable you to run your operation more efficiently, safely, and profitably by delivering new insights on valve health.

Declutchable manual operator mounts directly to the actuator.

Vee-Ball Valve Selection Guide

Flanged design with a Class 150 rating.

Flangeless body provides a multiclass rating.

Class 300 rated flanged design.

Availability Overview

End Connection	Size (Inches)	Rating ANSI(1)	Rating DIN	Flow Characteristic	Flow Coefficient Ratio
Flanged	1 - 20	150	PN10 or 16	Equal Percentage	300:1
Flanged	3 - 12	150		Equal Percentage	300:1
Flangeless	1 - 2	150/300/600 multi-rated	PN10,16,25, 40,63,100	Equal Percentage	300:1
	3 - 4	150 or 300/600 multi-rated	–		
	6 - 8	150/300 multi-rated	–		
	10	150	–		
Flanged	1 - 20	300	PN25 or 40	Equal Percentage	300:1

(1) ASME/ANSI B 16.34 Class Rating

Vee-Ball Capacity

Nominal Body Size	C_V With Ball Wide Open (90° Rotation) V150, V200, V300	V150S
1 inch	26	
1 1/2 inch	77	
2 inch	127	
3 inch	321	170
4 inch	596	380
6 inch	1100	705
8 inch	1820	1150
10 inch	3000	2200
12 inch	3980	2850
14 inch	5610	
16 inch	8270	
20 inch	10,300	

Seal Overview

Vee-Ball Seal Constructions	Temperature Range	Shutoff Classification per ANSI/FCI 70-2 and IEC 60534-4
Flow Ring	-325 to 800°F	5% of max rated flow (bi-directional)
Flat Metal	-325 to 800°F	Class IV (forward flow)
TCM Plus/Ultra	-50 to 450°/500°F	Class VI (forward flow)
Heavy-Duty (HD)	-50 to 550°F	Class IV (bi-directional)
HD - High Temperature	-50 to 800°F	Class III (bi-directional)

Vee-Ball seal types shown include Flat Metal, TCM (composition), and HD.

Whatever Your Need

In the battle for performance and production, you need every advantage you can get. From application expertise to training to quick replacement parts to valve repairs, you can always count on Emerson for quality, service, and expertise.

Application Assistance From the Experts

The next time you need to specify a control valve for your system, whether for general service or severe, consider the Fisher Vee-Ball rotary control valve. Contact the Emerson Local Business Partner or sales office in your area. If you don't know who they are, visit our Web site at www.EmersonProcess.com/Fisher and click on Sales Contacts. Highly skilled and experienced applications personnel are ready to help you take advantage of the many benefits of the Vee-Ball valve.

Control Valve Training Puts You in the Know

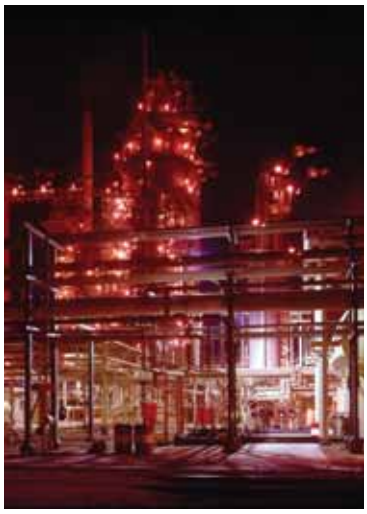
Emerson offers comprehensive customer training and education programs that cover a wide range of process topics. The programs consist of structured courses that are geared to real-world situations. Customer training is provided at our educational facilities located near you. In addition to standard programs, tailored courses designed for the specific needs of an organization are conducted on-site. Prepackaged Fisher training courses are available in video format, making self training convenient and cost effective.

FAST Replacement Parts Service Keeps You Up and Running

Access FisherFAST™ Service parts system, and you're in touch with one of the valve industry's largest valve parts inventory dedicated solely to meeting repair and replacement needs. Computerized and centralized, FisherFAST Service gives you express delivery of parts orders to help meet emergency as well as day-to-day repair parts requirements. Now you can fine-tune your in-plant maintenance inventory with the knowledge that replacement valve parts are readily available to support plant turnarounds and scheduled control valve maintenance programs, as well as unplanned valve repair.

Control Valve Repair Is At Your Service

With facilities at strategic locations around the world, Emerson Instrument & Valve Services gives you fast turnaround of emergency and routine valve repairs. You'll get factory-authorized repair using genuine Fisher parts. All Emerson I&VS locations have direct access to the Fisher extensive serial number database so your repairable Fisher valves are rebuilt to meet original factory specifications.

This mark indicates a core component of Emerson's PlantWeb® digital plant architecture.

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D350004X012 / D350004X412 / MS11-CD171 / Printed in U.S.A. / 7M AQ, 2M A4 / 4-06