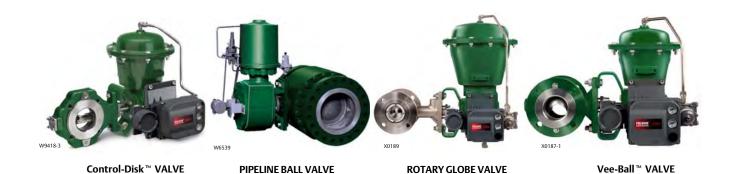
Fisher™ Rotary Valve Selection Guide



Typical Fisher Rotary Valves

Control-Disk Valve	Expanded control range, lower process variability	Fisher Control-Disk Valve
High-Performance Butterfly Valves	Outstanding performance under extreme pressure and temperature conditions, available for a variety of throttling or on/off applications	Fisher 8532, 8580, 8590, 9500, A11, and A31C
Multiport Flow Selector	Allows for automated selecting and diverting of well fluids from an individual well to a single test outlet, flow loop, or sampling device	Fisher MPFS
Pipeline Ball Valves	Full or reduced bore ball valves for throttling and severe service applications in gas transmission lines, gas distribution, or liquid pipelines	Fisher V250, V260, V270, and V280
Rotary Globe Valves	Designed for throttling control for a broad range of industrial applications	Fisher V500 and CV500
Vee-Ball Valves	High-capacity, low-friction, non-clogging	Fisher V150, V200, V300, V150S, and V300S

- ENVIRO-SEAL[™] and ISO-SEAL[™] live-loaded packing systems are available to assist in compliance with environmental emissions requirements
- FIELDVUE[™] digital valve controllers offer digital control and remote diagnostics. The traditional proven line of Fisher positioners, controllers, transmitters, and switches also is available
- Spring-return pneumatic diaphragm and double-acting piston actuators
- Contact your <u>Emerson sales office</u> for details





Fisher Control-Disk Valve



Control-Disk VALVE

Control-Disk Valve
Applications
Expanded control, lower process variability applications
Style
Wafer and lugged
Sizes
NPS 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 30, 36
Ratings
PN 10 to 40
CL150, CL300, and CL600
End Connections
Raised-face (RF)
Valve Body Materials
EN: 1.0619 steel, 1.4409 stainless steel, CW2M, or M35-1
ASME: SA216 WCC steel, SA351 CF3M or CF8M stainless steel, CW2M, or M35-1
Disk Material
SA351 CF3M or CF8M stainless steel
Seal Types (Material)
Soft (PTFE, RPTFE, ETFE, or UHMWPE) or metal (S31600)
Flow Characteristics and Maximum Flow Coefficients
Equal percentage
Maximum Cv from 60.7 to 59500
Rangeability (Flow Coefficient Ratio)
100 to 1
Shutoff Class
Soft Seal: Class VI
Metal Seal: Class IV
Available Actuators (refer to page 10)
Fisher 2052, 1052 Size 70, and 1061

Fisher Vee-Ball Valves







V150 and V300 VALVES

SLURRY VEE-BALL VALVE

V 2UU	VALVE

V150 AND V300	V150S AND V300S	V200
Applications	V 1303 AIV V3003	V200
Excellent for fibrous slurries as well as liquids, gas, and steam. Shearing V-notch ball for smooth, non-clogging action	Highly wear-resistant trim materials and an unrestricted flow path make this design ideal for controlling the most abrasive of slurries	Excellent for fibrous slurries as well as liquids, gas, and steam. Shearing V-notch ball for smooth, non-clogging action
Sizes	3	33 3
V150: DN 25 - 300 or NPS 1 - 24 x 20 V300: DN 25 - 300 or NPS 1 - 20	NPS 3, 4, 6, 8, 10, 12	NPS 1, 1-1/2, 2, 3, 4, 6, 8, 10
Ratings		<u> </u>
V150: PN 10/16 or CL150 V300: PN 25/40 or CL300	CL150 and CL300	CL150, CL300, or CL600, depending on size
End Connections		
Raised-face (RF) flanged	Raised-face (RF) flanged	Flangeless or flanged, depending on size
Valve Body Materials		
EN: 1.0619 steel, 1.4408 and 1.4409 stainless steel, M35-2, or CW2M ASME: SA216 WCC steel, SA351 CF3M, CG8M, CF8M stainless steel, M35-2, or CW2M	SA216 WCC steel body with high-chromium iron body liner (SA532 Class III Type A)	EN: 1.0619 steel, 1.4409 stainless steel, M35-2, or CW2M ASME: SA216 WCC steel, SA351 CF3M, CG8M stainless steel, M35-2, or CW2M
Ball Material	l	
SA351 CF3M, or CG8M stainless steel, CW2M	High-chromium iron (SA532 Class III Type A) or PSZ ceramic ball optional	SA351 CF3M or CG8M stainless steel, CW2M
Seal Types (Material)		
TCM Plus, metal (S31600), HD (heavy duty), or flow ring	Flow ring construction: high-chromium iron (SA532 Class III Type A) with optional PSZ ceramic insert	TCM Plus, metal (S31600), HD (heavy duty), or flow ring
Flow Characteristics and Maximum Flow Coeffic	ients	<u> </u>
Modified equal percentage Maximum Cv from 3.64 to 10,300	Modified equal percentage Maximum Cv from 170 to 2850	Modified equal percentage Maximum Cv from 8.4 to 3000
Rangeability		
300 to 1		300 to 1
Shutoff Class		
Composition Seal: Class VI Metal Seal: Class IV Flow Ring Construction: 5% of wide-open capacity	Class I	Composition Seal: Class VI Metal Seal: Class IV Flow Ring Construction: 5% of wide-open capacity
Available Actuators (refer to page 10)		
Fisher 2052, 1052 Size 70, 1061, 1068, and Bettis R	PE™	

Fisher High-Performance Butterfly Valves



8532 VALVE 8580 VALVE 8590 VALVE

8532	8580	8590
Applications		
Throttling service, high-temperature, and	Precise throttling and automated on-off service	Throttling or automated on-off service in a variety
cryogenic applications; -196 to 816° C	for process temperatures from -46 to 454° C	of process applications
Style		
Wafer, lugged, and Double flange	Lugged (NPS 2 Wafer) and Double flange	Lugged and Double flange
Sizes		
NPS 14, 16, 18, 20, 24, 30, 36, 42, 48	NPS 2, 3, 4, 6, 8, 10, 12	NPS 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24
Ratings		
CL150/150, CL150, and CL300	PN 10 to 40 CL150 and CL300 NPS 2 (CL150/300/600)	CL600
End Connections		•
Raised-face (RF) and ring-type joint (RTJ)	Raised-face (RF)	Raised-face (RF) and ring-type joint (RTJ)
Valve Body Materials		•
SA216 WCC steel or SA351 CF8M stainless steel High-alloy materials are available	EN: 1.0619 steel, 1.4409 stainless steel ASME: SA216 WCC steel, SA351 CF3M stainless steel High-alloy materials are available	SA216 WCC steel or SA351 CF8M high-alloy materials are available
Disk Material		
SA351 CF8M stainless steel	SA351 CF3M/1.4409 stainless steel	SA351 CF8M stainless steel with chrome plated disk edge
Seal Types (Materials)		
Soft (PTFE), NOVEX, and Phoenix III	Soft (PTFE, RPTFE, or UHMWPE) or metal (S31600)	Soft (ETFE), Metal (S21800, S20910), HPS (S21800, S20910), Phoenix III (S31600/ETFE)
Flow Characteristics and Maximum Flow Coeffi	cients	•
Modified equal percentage Maximum C _v from 4550 to 21500	Approximately linear Maximum C _v from 83.7 to 5080	Approximately linear Maximum Cv from 167 to 13565
Rangeability		
100 to 1	100 to 1	100 to 1
Shutoff Class		
Soft Seal: Class VI NOVEX Seal: Class IV Phoenix III Seal: Class VI	Soft Seal: Class VI Metal Seal: Class IV	Soft Seal: Class VI Metal Seal: Class IV HPS: Class VI Phoenix III Seal: Class VI
Available Actuators (refer to page 10)	1	-1
Fisher 1052 Size 70, 1061, and 1068	Fisher 2052, 1052 Size 70, 1061, 1068, and Bettis RPE	Fisher 2052, 1052 Size 70, 1061, 1068, Bettis RPE, and G Series

Fisher High-Performance Butterfly Valves (continued)





9500	A11
Applications	
Fully lined butterfly valve for on/off or throttling service for tight-shutoff applications	Throttling and automated on/off service, high-pressure, high-temperature, and cryogenic applications; -254 to 816°C
Style	•
Wafer	Wafer and lugged
Ratings and Sizes	<u> </u>
PN10, PN13, CL125B, CL150, or CL300 depending on size and material NPS 2, 3, 4, 6, 8, 10, 12	CL150/150 and CL150: NPS 54, 60, 66, 72 CL600: NPS 30, 36, 42, 48 (CL300 trim available for NPS 3 through 48) CL900: NPS 6, 8, 10, 12, 14, 16, 18, 20, 24, 30, 36 (CL300 and CL600 trim available for NPS 3 through 48) CL1500: NPS 10, 12, 14, 16, 18, 20 (CL300 and CL600 trim available for NPS 3 through 48, CL900 trim available for NPS 6 through 36) CL2500: Consult your Emerson sales office
End Connections	
Cast Iron Bodies: Mate with PN 10 (NPS 2, 3, 6, 8, 10) or CL125B FF flanges Steel and Stainless Steel Bodies: Mate with PN16, CL150, CL300 RF flanges	Raised-face (RF), ring-type joint (RTJ), and buttwelding ends (BWE) NPS 3 through 24 comply with ASME B16.5 NPS 30 through NPS 60 comply with MSS-SP-44
Valve Body Materials	•
Cast iron, carbon steel, S31600 stainless steel	SA216 WCC steel or SA351 CF8M stainless steel Other carbon steel, stainless steel, and high-alloy materials are available
Disk Material	
Aluminum bronze, S31600 stainless steel	CL150/150, CL150, and CL300: SA351 CF8M stainless steel or SA216 WCC steel CL600: SA351 CF8M stainless steel CL900 and CL1500: CB7Cu-1
Seal Types (Material)	
Fully lined nitrile or PTFE	CL150 and CL300: Soft (PTFE), NOVEX (S31600), Phoenix III (S31600/PTFE), and cryogenic (CTFE) CL600, CL900, and CL1500: Soft (ETFE), Metal (S20910), high-pressure (S20910), Phoenix III (S31600/ETFE), and cryogenic (CTFE)
Flow Characteristics and Maximum Flow Coefficients	
Approximately equal percentage through 90° rotation for FISHTAIL™ disk and through 60° rotation for conventional disk Maximum Cv from 91 to 7020	Modified Equal Percentage Maximum Cv from 182 to 106000
Rangeability	
100 to 1	100 to 1
Shutoff Class	
Class VI	Soft Seal: Class VI, NOVEX Seal: Class VI, Metal Seal: Class IV, High-Pressure Seal: Class VI, Phoenix III Seal: Class VI, Cryogenic Seal: Class IV
Available Actuators (refer to page 10)	
Fisher 2052, 1052 Size 70, and 1061	Fisher 2052, 1052 Size 70, 1061, Bettis RPE, and G Series

Fisher Cryogenic Butterfly Valves



TYPICAL CRYOGENIC BUTTERFLY VALVE

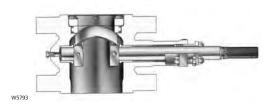
8532	A11	A31C
Applications	•	
8532 stainless steel cryogenic valves for liquified natural gas and other special chemical and hydrocarbon applications with temperatures to -254°C	A11 stainless steel cryogenic valves for liquified natural gas and other special chemical and hydrocarbon applications with temperatures to -254°C	A31C stainless steel cryogenic valves for liquified natural gas and other special chemical and hydrocarbon applications with temperatures to -254°C
Style		
Wafer, lugged, and double flanged	Wafer, lugged, and double flanged	Wafer, lugged, and double flanged
Ratings and Sizes		
CL150 and CL300: NPS 14 - 24	CL150/150, CL150, CL300: NPS 30 - 48 CL600: NPS 3 - 24 CL900: NPS 6 - 24 CL1500: NPS 10 - 20	CL150 and CL300: NPS 3 - 12
End Connections		
Raised-face (RF), ring-type joint (RTJ)	Raised-face (RF), ring-type joint (RTJ)	Raised-face (RF), ring-type joint (RTJ)
Valve Body Materials		
SA351 CF8M stainless steel	SA351 CF8M stainless steel	SA351 CF8M stainless steel
Disk Material		
SA351 CF8M stainless steel	SA351 CF8M stainless steel	SA351 CF8M stainless steel
Seal Types (Material)		
NOVEX and Cryogenic (CTFE and CTFE/aluminum)	CL150 and CL300: NOVEX and Cryogenic (CTFE) CL600, CL900, and CL1500: HPS and cryogenic (CTFE)	NOVEX and Cryogenic (CTFE and CTFE/aluminum)
Flow Characteristics and Maximum Flow Coeffic	ients	
Modified Equal Percentage Maximum Cv from 4550 to 21,500	Modified Equal Percentage Maximum Cv from 182 to 106,000	Modified Equal Percentage Maximum Cv from 188 to 4940
Rangeability		
100 to 1	100 to 1	100 to 1
Shutoff Class		
NOVEX Seal: Class VI Cryogenic (CTFE) Seal: Class IV Cryogenic (CTFE/Aluminum) Seal: Class VI	NOVEX Seal: Class VI Cryogenic (CTFE) Seal: Class IV Cryogenic (CTFE/Aluminum) Seal: Class VI HPS: Class VI	NOVEX Seal: Class VI Cryogenic (CTFE) Seal: Class IV Cryogenic (CTFE/Aluminum) Seal: Class VI
Available Actuators (refer to page 10)		
Fisher 2052, 1052 Size 70, 1061, Bettis RPE, and G Series	Fisher 2052, 1052 Size 70, 1061, Bettis RPE, and G Series	Fisher 2052, 1052 Size 70, 1061, Bettis RPE, and G Series

Fisher Pipeline Ball Valves



V250	V260	V270	V280
Applications			
Heavy-duty, flangeless throttling ball valves. Often used for controlled flow applications in gas transmission lines, gas distribution, and liquid pipelines. Temperatures from -40 to 204°C, depending on seal type	Large, flanged throttling ball valves. Used for demanding pipeline applications such as pump bypass and pipeline take-off. Temperatures from -29 to 93°C, depending on seal type	Full bore ball valve designed for automated control in bypass, batch, monitor, and emergency shutoff service applications. Temperatures from -40 to 82°C	A three-piece, trunnion mounted, full-bore control valve used in demanding pipeline applications to reduce noise and vibration. Temperatures from -29 to 82°C, depending on seal type
Style			
Flangeless	Flanged	Flanged	Flanged
Sizes			
NPS 4, 6, 8, 10, 12, 16, 20, 24	NPS 8, 10, 12, 16, 20, 24	NPS 6, 8, 10, 12, 14, 16, 20, 24	NPS 6, 8, 10, 12, 16
Ratings			
CL600 or CL900	CL150, CL300, or CL600	CL150, CL300, or CL600	CL900
End Connections			
Raised-face (RF) or ring-type joint (RTJ)	Raised-face (RF)	Raised-face (RF)	Raised-face (RF)
Valve Body Materials			
Carbon Steel (LCC)	Carbon Steel (LF2)	Carbon Steel (LF2)	Carbon Steel (LF2)
Ball Material			
Chrome-plated WCC steel	Chrome-plated WCC steel	LF2 Carbon Steel / ENP	LF2 Carbon Steel / ENC
Seal Types (Material)			
Single or dual seal (POM) or flow ring	Single or dual (PEEK/PTFE or POM)	Dual (POM)	POM with S31600 SST Seal Blank
Flow Characteristics and Maximum	Flow Coefficients		
Modified equal percentage Maximum Cv from 499 to 18,300	Modified linear or modified equal percentage Maximum Cv from 381 to 78,000	Modified equal percentage Maximum Cv from 3190 to 78,000	Modified linear or modified equal percentage Maximum Cv from 381 to 78,000
Rangeability			
100 to 1	100 to 1	100 to 1	100 to 1
Shutoff Class			
Single and Dual Seal: Class IV Flow Ring: 1% of valve capacity	Single or Dual Seal: Class IV or VI PEEK/PTFE Seal: Class IV or VI POM Seal: Class IV or VI	Class VI	Single or Dual Seal: Class IV or VI
Available Actuators (refer to page 1	Available Actuators (refer to page 10)		
Fisher 2052, 1052 Size 70, 1061, CB, and G Series	Fisher 2052, 1052 Size 70, 1061, CB, and G Series	Fisher 1068, CB, and G Series	Fisher 2052, 1052 Size 70, 1061, CB, and G Series

Fisher Rotary Globe Valves





CV500 VALVE

V500 VALVE

V500 Flanged or flangeless eccentric plug rotary control valve for erosive, coking, and other hard-to-handle fluids. Throttling or on/off. Temperatures from -198 to 538°C, depending on materials
and other hard-to-handle fluids. Throttling or on/off. Temperatures from
and other hard-to-handle fluids. Throttling or on/off. Temperatures from
Flanged
DN 25 - 200 or NPS 1 - 8
PN 10 - 100 or CL150 - CL600
Raised-face (RF) or ring-type joint (RTJ)
WCC, WCC/1.0619, CF8M, CF8M/1.4408, CF3M, CF3M/1.4409
Chrome-plated CF8M, solid alloy 6, or ceramic
Modified linear Maximum Cv from 12.2 to 1050
100 to 1
Class IV
Fisher 2052, 1052 Size 70, 1061, 1068, and Bettis RPE

Fisher Multiport Flow Selector



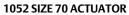
Multiport Flow Selector
Applications
Allows for automated selecting and diverting of well fluids from an individual well to a single test outlet, flow loop, or sampling device
Sizes
NPS 2x4, 3x6, 4x8, 4x10, 6x16
Ratings
CL150, CL300, CL600, CL900, CL1500, CL2500
End Connection
Raised-face (RF)
Valve Body Materials
WCB, WCC, CF3M, CF8M, CD3MN, CD3MWCuN, and WCB/WCC with N06625 Cladding
Plug Materials
CF3M, CF8M, CD3MW, CD3MWCuN, and CW6MC
Seal Types (Material)
Soft with scraper (316L Nitride and N07718)
Shutoff Class
Class IV
Available Actuator
Multiport Actuator

W3813

Fisher 1052 Size 70, 1061, and 2052 Actuators

W3827







1061 ACTUATOR



2052 ACTUATOR

1052 SIZE 70	1061	2052
Features		·
Heavy-duty actuator with enclosed linkage and spl	ined actuator-valve connection for minimized lost mot	ion
Style		
Spring-return pneumatic diaphragm actuator	Double-acting pneumatic piston actuator	Spring-return pneumatic diaphragm actuator
Typical Operating Torque Range (Varies with O	perating Pressure and Construction)	·
12.100 lbf • in PDTC	2500 to 175,000 lbf • in	226 to 5,580 lbf • in PDTO
12,100 IDI • III PDI C		226 to 8,230 lbf • in PDTC
Temperature Capabilities		·
-40 to 82°C (-40 to 180°F) or		Standard: -45 to 80°C (-50 to 176°F)
-40 to 149°C (-40 to 300°F)	-34 to 82°C (-30 to 180°F)	Optional: -45 to 100°C (-50 to 212°F) or
40 10 143 C (40 10 300 1)		-60 to 80°C (-76 to 176°F)
Accessories		

Fisher 1068 Rotary Vane Actuators



DOUBLE ACTING



SPRING RETURN

DOUBLE ACTING	SPRING RETURN		
Features			
Heavy-duty, high cycle vane actuator with or without integral air passages			
Style			
Rotary Vane Actuator			
Sizes			
7i, 8i, 9i, 10i, 12i, 14i, 15i, 16, 18, 20, and 30 5i, 7i, 8i, 9i, 10i, 12i, 14i, 15i, 16, 18, 20, and 30			
Typical Operating Torque Range (Varies with Operating Pressure and Construction)			
Refer to Catalog 14			
Accessories			
DVC2000 and DVC6200			

X1591

Bettis RPE and Fisher CB and G Series Actuators







Bettis RPE ACTUATOR

Fisher CB ACTUATOR

Fisher G ACTUATOR

W8305

Bettis RPE	Fisher CB Series	Fisher G Series
Features		
Heavy duty rack-and-pinion pneumatic actuator for mounting to Fisher rotary valves	Scotch yoke type actuator for mounting to Fisher rotary valves	Scotch yoke type actuator for mounting to Fisher rotary valves
Style		
Double-acting or spring-return pneumatic piston actuator	Double-acting or spring-return pneumatic actuator	Double-acting or spring-return series single power module pneumatic actuator
Typical Operating Torque Range (Varies with Opera	ting Pressure and Construction)	
20 to 39,498 lbf•in	38 to 2674 lbf • in	7,758 to 308,254 lbf • in
Accessories		
Bettis RPE-Series actuators can be packaged together with a range of control and feedback accessories.	Pneumatic or electro-pneumatic valve positioners, FIELDVUE digital valve, controllers, limit switches, position transmitters, handwheels, travel stops, supply pressure filter-regulator	Pneumatic or electro-pneumatic valve positioners, FIELDVUE digital valve controllers, limit switches, position transmitters, handwheels, travel stops, supply pressure filter-regulator

Alloy Valve Guidelines

- Emerson expertise has combined its knowledge of metals and foundry techniques with valve user experience to make a variety of high alloy valves available for customer selection.
- Techniques have also been implemented that verify a foundry's ability to cast alloy valves properly and has established stringent specifications that guide the foundry in providing quality results.
- Guidelines have been developed to help the valve user specify alloy valves correctly. Valve user guidelines include: Customer/end user selection of alloy valves must consider compatibility of valve materials with application and process conditions, avoid the use of alloy tradenames, do not specify wrought for cast, specify non-destructive testing only when necessary.
- Steps used to qualify a foundry include: Weldability tests to gauge the foundry's ability to pour alloy materials; Dedicating casting patterns solely to high-alloy service.
- Stringent specifications developed by Emerson include: Raw Material Composition and Quality, Heat Qualification, Visual Inspection, Weld Repair, Heat Treatment, and Nondestructive Testing.

Instruments

- Fisher pneumatic controller C1 and 4195 series provides pressure and temperature control to standalone control loops. These pneumatic controllers provides proportional, integral, and derivative actions towards maintaining the required control loop.
- Electro-pneumatic transducers providing 4-20 mA current input to pneumatic output for pneumatic positioners, controllers, volume booster or directly to actuators are available. Fisher 646, i2P-100, and 846 transducers provide the remote capability for connecting pneumatic instruments to control panel or control room.
- Fisher VBL and 2625 volume boosters used in conjunction with a positioner on a throttling control valve increase stroking speed.
- Fisher Wireless 4320 provides valve position monitoring that will improve visibility to valves without the need for wires. The 4320 can provide on/off control with pneumatic output option enabling easier automation of valves, again without wires.
- Fisher 4660 high-low pressure pilots and 377 trip valves provide pneumatic discrete control and are exida certified for use in Safety Instrument System (SIS) applications.





DVC2000

DVC6200 on Control-Disk VALVE

Typical Fisher Instruments

- FIELDVUE digital valve controllers are communicating, microprocessor-based controllers that convert a current or digital signal to a pressure signal to operate the actuator.
- Through the HART®, FOUNDATION Fieldbus[™], or PROFIBUS communications protocol, the controller gives easy access to critical valve information.
- ValveLink[™] software allows easy access to valve assembly alerts and performance characteristics. Vital information can be obtained without removing the valve from the line.
- Performance Diagnostics tests, including on-line One-Button Sweep, Friction and Deadband analysis, and Trending, can be run while the valve is in service and operating.
- Valve Signature, Dynamic Error Band, and Step Response tests are displayed in an intuitive user-friendly environment that allows easy interpretation of data.
- FIELDVUE models include the DVC6200, DVC6200f and DVC6200p. The DVC6200 SIS is used for safety applications and the DVC2000 has a local user interface.

March 2020

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