

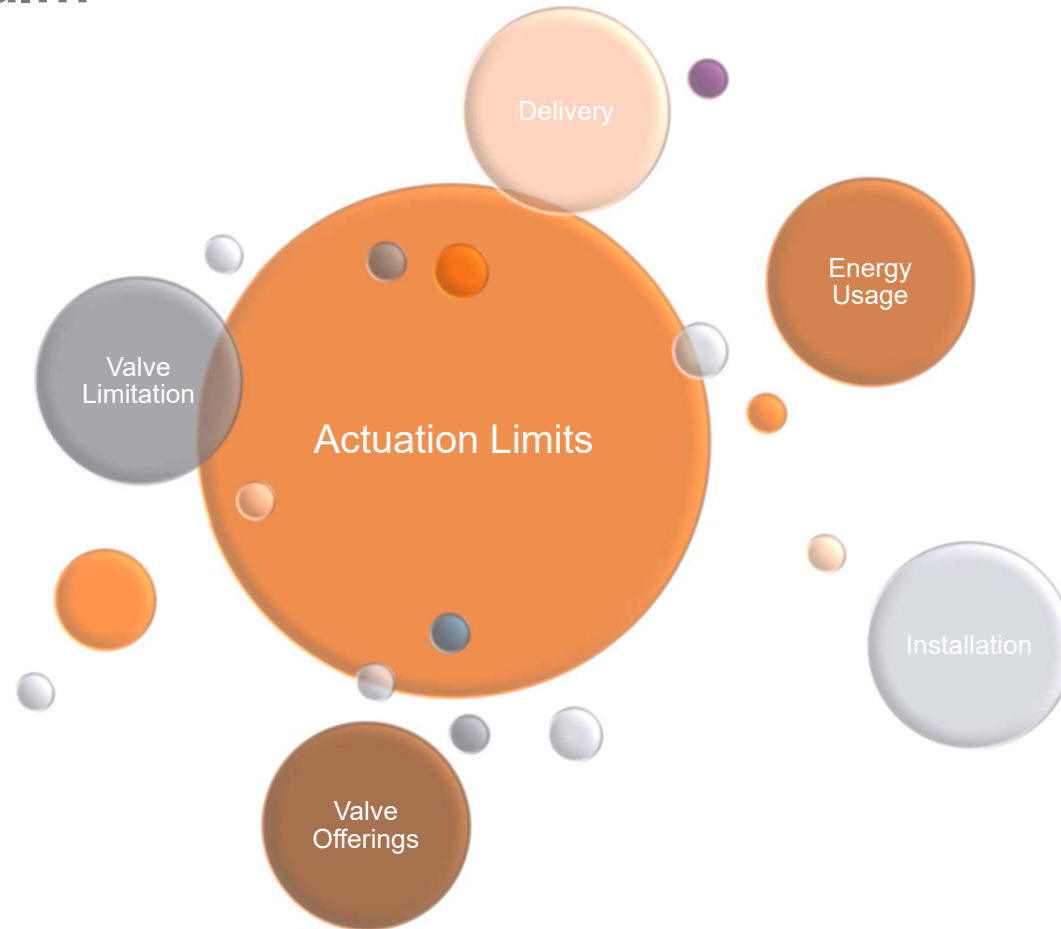
The Most Comprehensive Butterfly Valve Offering for HVAC Applications

Agenda

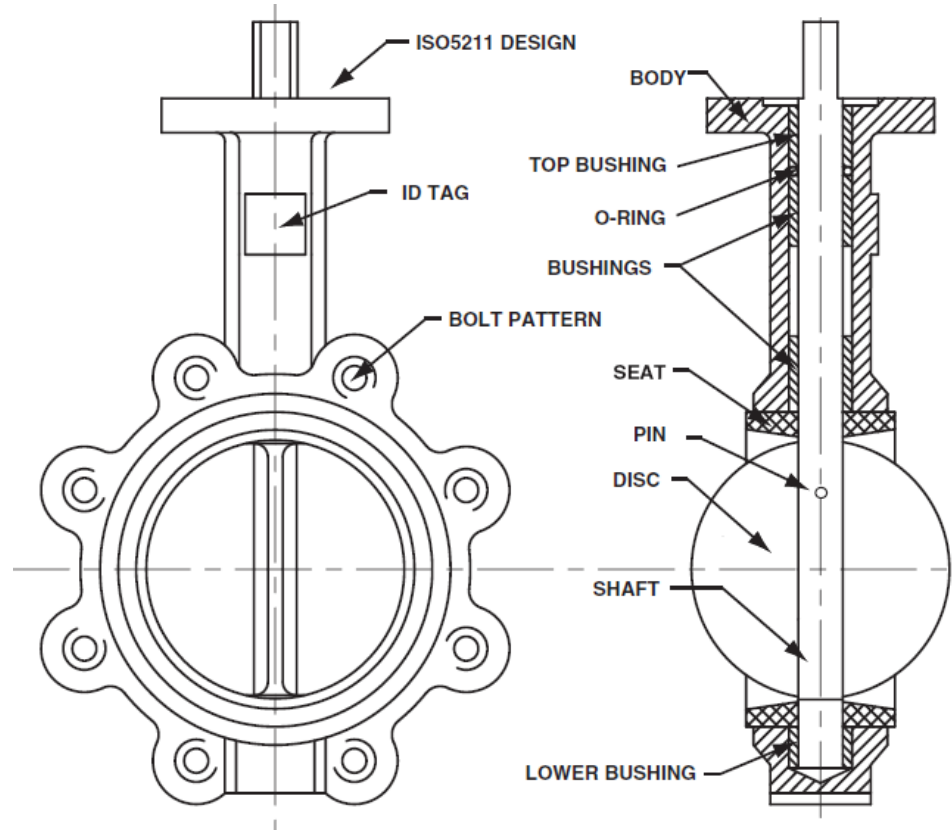
- Butterfly Valve Range
 - Resilient Seat
 - Grooved
 - High Performance
 - Ordering/Specs
- Value
 - Quality/Delivery
 - Innovative Solutions
 - Retrofit
 - PR Highlights
- Resources
- Delivery



Less Than Ideal...

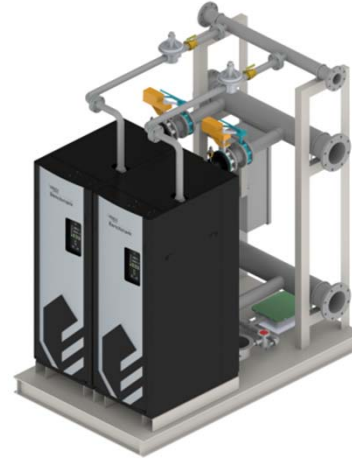


A Closer Look



Applications

- Chiller/Boiler Isolation
- Cooling Tower
- Change Over Systems
- Large Air Handling Coil Control
- Bypass & Process Control
- Heat Exchanger Economizing



Our Butterfly Valve Family



Resilient Seat
HD & L
Series



Grooved
Victaulic
Series



High
Performance
SHP Series

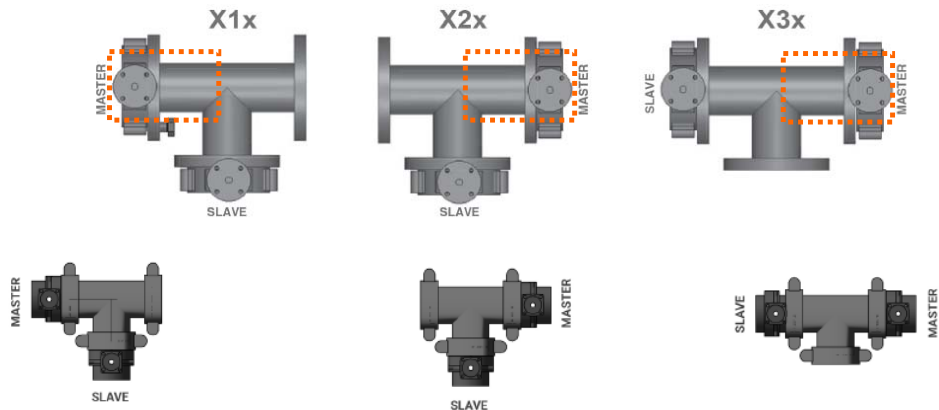
Nomenclature

F6	200	L	+PRB	UP	-3	-T	-200
Valve F6 = 2-way F7 = 3-way	Valve Size 50 = 2" 65 = 2½" 80 = 3" 100 = 4" 125 = 5" 150 = 6" 200 = 8" 250 = 10" 300 = 12" 350 = 14" 400 = 16" 450 = 18" 500 = 20" 600 = 24"	Trim Material HD = Stainless Disc, Ductile Iron Body, EPDM Liner, 0% Leakage to 200 psi (2...6"), 150 psi (14"+) L = Stainless Disc, Ductile Iron Body, EPDM Liner, 0% Leakage to 200 psi (8...12") HDU/LU = Stainless Disc, Ductile Iron Body, EPDM Liner, 0% Leakage to 50 psi (3...10") VIC = Ductile Iron Grooved End Body, Nickel Coated Ductile Iron Disc, 0% Leakage up to 200 psi -150SHP = ANSI Class 150, Stainless Disc, Steel Body, RPTFE Seat, 0% Leakage up to 285 psi -300SHP = ANSI Class 300, Stainless Disc, Steel Body, RPTFE Seat, 0% Leakage up to 600 psi	Actuator Type Non Fail-Safe ARB, ARX AMB, AMX GMB, GMX GRB, GRX GR/GM.. N4 DRB, DRX DR.. N4 PRB, PRX SY Fail-Safe Electronic GKB, GKX DKRB, DKRX DKR..N4 PKRX Spring Return AFB, AFX AFRB, AFRX	Power Supply -24 = AC/DC 24 V -110 = AC 110/120 V -120 = AC 120 V -230 = AC 230 V UP = AC 24...240 V or DC 24...125 V	Control -3-X1 = On/Off, Floating Point -SR = Modulating Input = 2...10 V -MFT or -MFT-X1 = Multi-Function Technology	-S = Built-in Auxiliary Switch N4 = NEMA 4/4X -T = Terminal Block	-200 = 8" -250 = 10"

X models are customizable. Refer to page 16-10 for programming options.

3-way Configurations

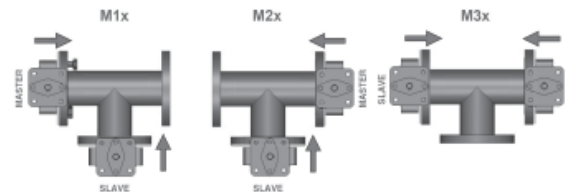
Actuators installed default over Master Valve.



- Notes:**
1. Slave Valve operates inversely of the Master Valve.
 2. The Master Valve is always located on the run.
 3. The Slave Valve may also have an actuator if required (Direct Coupled).
 4. On/Off actuator normal position is a function of field logic.
 5. Modulating actuator normal position (i.e., fully CW or fully CCW) is set by the direction control switch or field programming via NFC app.
 6. All 3-way assemblies are designed for 90 degree actuator rotation.

■ HD/L, VIC Series

MIXING

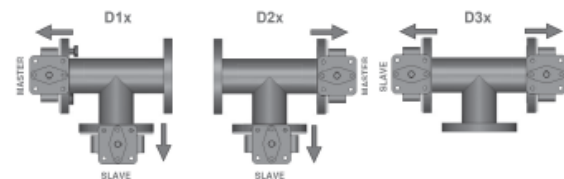


CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
M10	OPEN	FAIL IN PLACE
M11	OPEN	OPEN
M12	OPEN	CLOSED
M13	CLOSED	FAIL IN PLACE
M14	CLOSED	OPEN
M15	CLOSED	CLOSED

CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
M20	OPEN	FAIL IN PLACE
M21	OPEN	OPEN
M22	OPEN	CLOSED
M23	CLOSED	FAIL IN PLACE
M24	CLOSED	OPEN
M25	CLOSED	CLOSED

CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
M30	OPEN	FAIL IN PLACE
M31	OPEN	OPEN
M32	OPEN	CLOSED
M33	CLOSED	FAIL IN PLACE
M34	CLOSED	OPEN
M35	CLOSED	CLOSED

DIVERTING



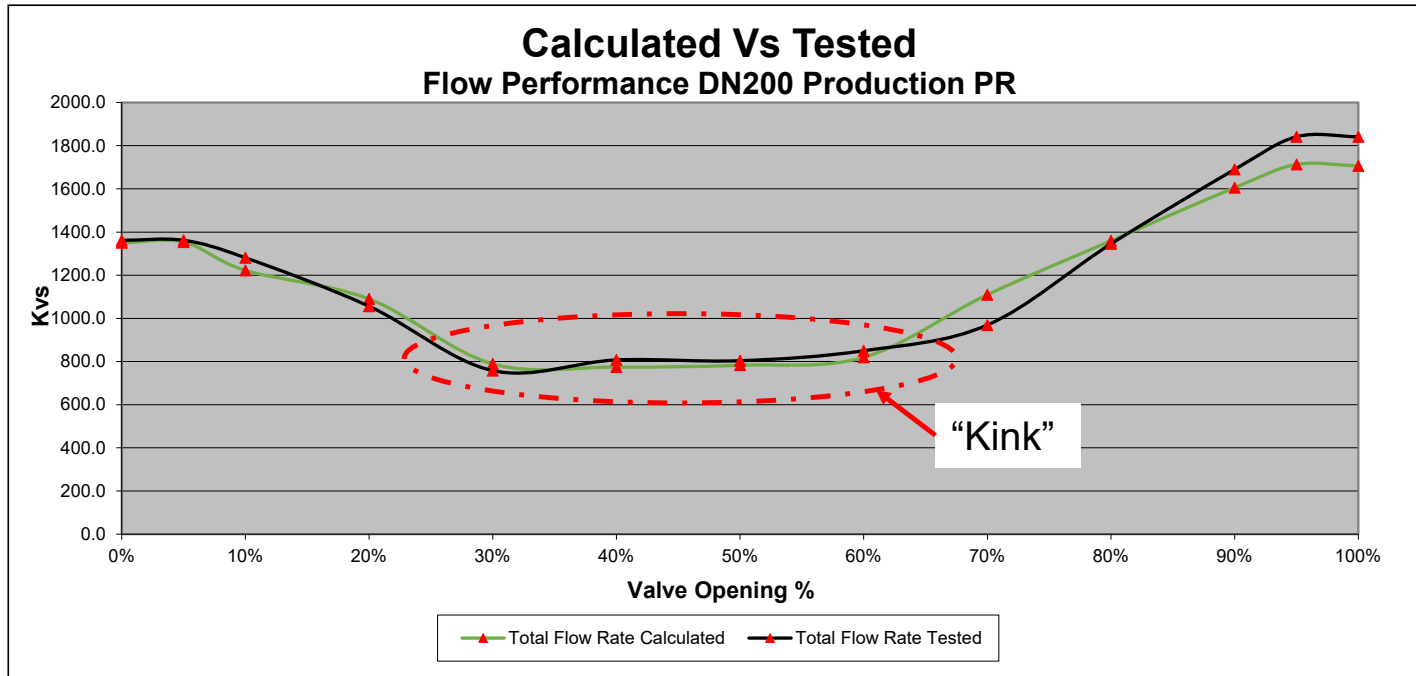
CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
D10	OPEN	FAIL IN PLACE
D11	OPEN	OPEN
D12	OPEN	CLOSED
D13	CLOSED	FAIL IN PLACE
D14	CLOSED	OPEN
D15	CLOSED	CLOSED

CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
D20	OPEN	FAIL IN PLACE
D21	OPEN	OPEN
D22	OPEN	CLOSED
D23	CLOSED	FAIL IN PLACE
D24	CLOSED	OPEN
D25	CLOSED	CLOSED

CONFIG CODE	ON/OFF OR MOD@2VDC MASTER VALVE IS	MASTER VALVE @ FAIL
D30	OPEN	FAIL IN PLACE
D31	OPEN	OPEN
D32	OPEN	CLOSED
D33	CLOSED	FAIL IN PLACE
D34	CLOSED	OPEN
D35	CLOSED	CLOSED

■ SHP Series

DN200 3-way BFV Flow Curve Production PR Program Results

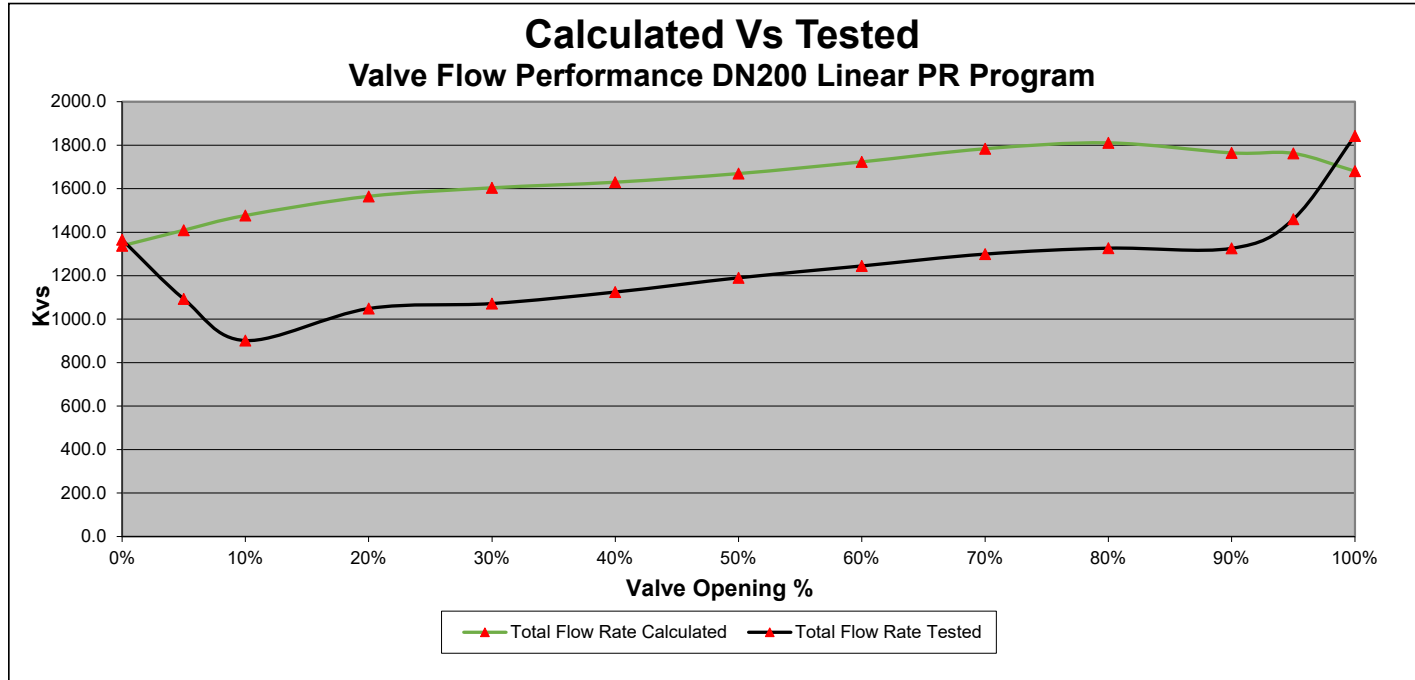


<http://vikingcontrols.com/documents/product/977AN12.PDF>



FW Flow characteristics G6 and G7.msg

DN200 3-way BFV Flow Curve Linear PR Program Results



- Actuator programmed with Linear Parameter setting.
- Tested flow (**Black Line**) measured from 10% to 90% on average -40% than the Calculated flow (**Green Line**).
- The Tested flow follows Linear profile similar to Calculated flow with no “Kink” present in the middle of the curve.

Feature Set (HD/L)

- Sizes: 2" to 24" (2-way & 3-way)
- Chilled, hot water, 60% glycol
- Ductile Iron ASTM A536
- ANSI 125/150 Flange Design
- Close-Off psi: 200 & 50
- SS Disc & Stem Standard
- Media Temp: [-22°F to 250°F]
- 12 FPS



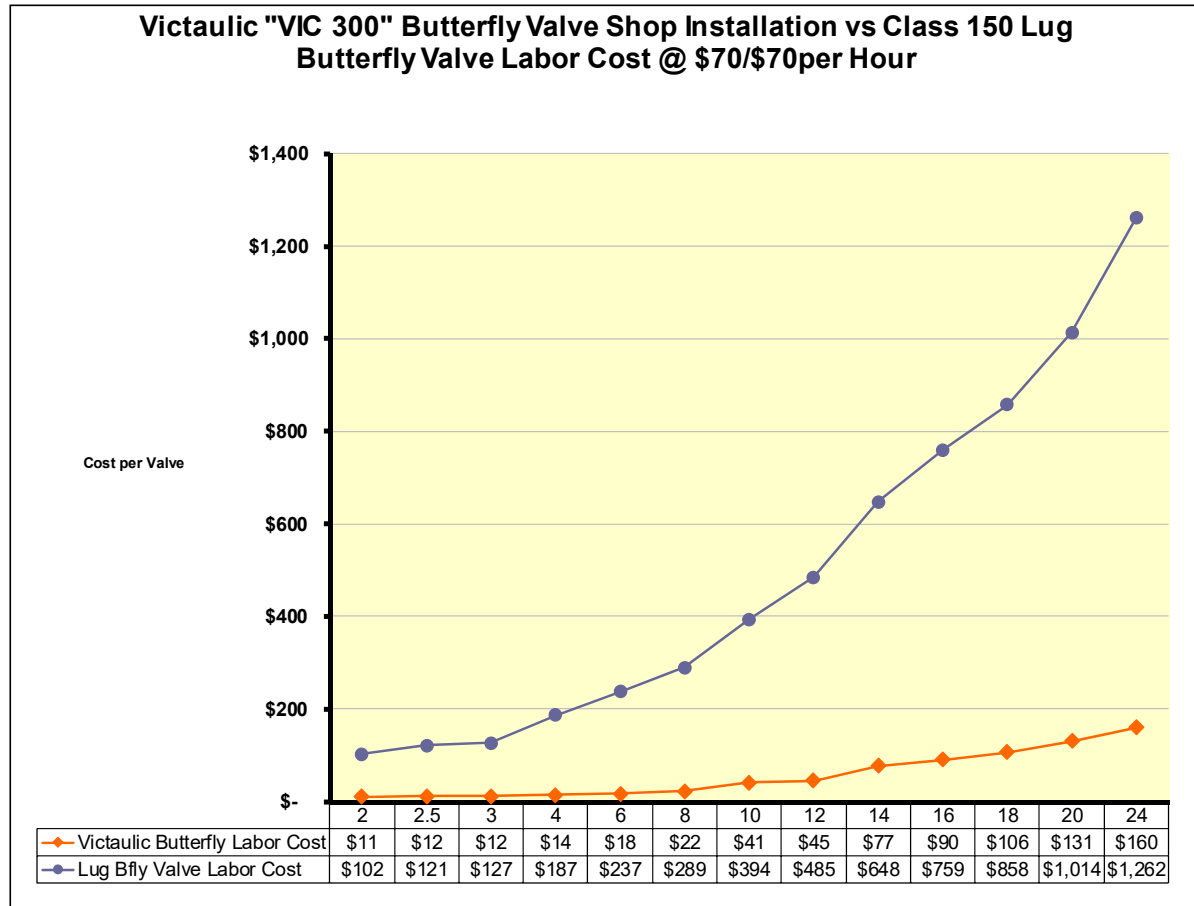


Feature Set (Vic)

- Fast & Easy Installation
- No Cost of a Welder
- Chilled, hot water, 60% glycol
- 300 psi Body Pressure
- 20 FPS
- Less Weight on Pipes & Hangers
- 100:1 Rangeability
- Media Temp: [-22°F to 250°F]



Installation Data from Victaulic Cost to Install

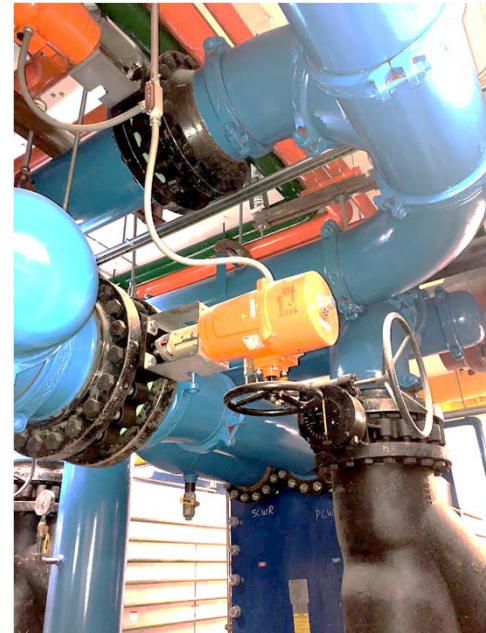


Scottrade Center Arena



Feature Set (SHP)

- Sizes: 2" to 24" (2-way & 3-way)
- ANSI Class 150 or 300
- Close Off: 285 psi, 600 psi
- Media Temperature: [-20°F to 400°F]
- Chilled, hot water, 60% glycol
- Steam: Inlet 50 psi
- Double Dead End Service
- Double Offset Shaft Design
- Replaceable Packing & Seats
- 32 FPS



HP Valves

- Hot water over 250°F
- High pressure over 200 psi
- Specs rule the world!



Motorized Butterfly Valves

1. All motorized butterfly valves, where shown on the drawings or specified herein, shall be high-performance type with lug ends. Valve body shall be carbon steel with 316 stainless disc, 17-4 pH one-piece stainless shaft. Seat and seal materials shall be Teflon. Valves shall be provided with internal travel stop designed to prevent overtravel of disc to minimize possible seat damage. Valves shall be full-bodied, full-lug type only (wafer-type or semi-lugged valves shall not be permitted). Valves shall be bolted from both ends of the flanges. Valves shall be capable of bubble-tight double dead-end closure with either upstream or downstream flange removed through the valves' full-rated pressure. Body pressure rating and connection-type construction shall conform to fitting and valve schedules. All valves in chilled water service shall be rated for 300 psig working pressure. All such valves shall be provided under this section. Valve shall be Jamesbury Corp., Bray, Keystone, Belimo Figures 362 or 372 (Pentair).

Comprehensive Product Line Electronic Fail-Safe

- **Fail-Safe to 12"**
- **Programmable
Fail Position**
- **Self Contained**
- **Cost Effective**



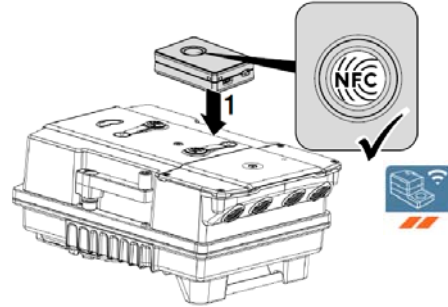
Actuator Options

- 24v 120 & UP
- Brushless DC
- Fail or Non Fail-Safe
- Manual Override
- Outdoor NEMA 4X
- Fast Running
- Cable or terminal



Communications

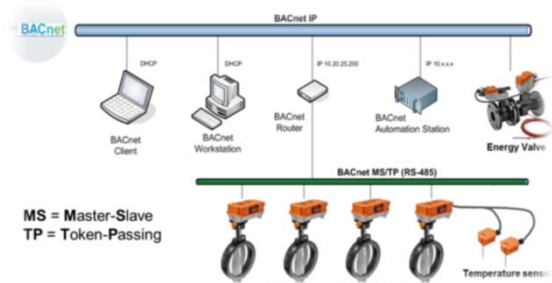
ZIP-BT-NFC



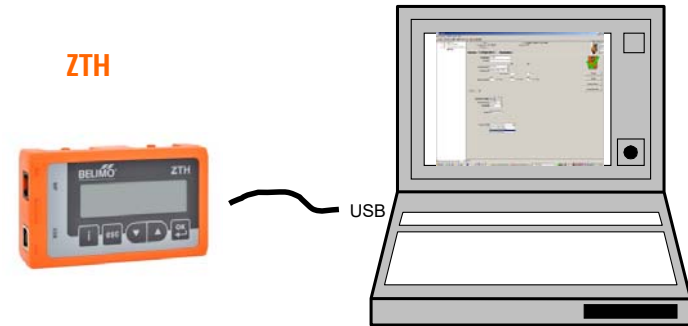
NFC




BACnet MS/TP





ZTH




Benefits of the PR


 **BACnet communication** protocol provides useful data for advanced BMS control sequences


 **Near Field Communication (NFC)** allows fast programming, commissioning and troubleshooting – even when the actuator is not powered it can be programmed


 **NEMA 4X protection** for outdoor usage and protects the actuator against UV radiation, rain, snow, dirt, dust, and humidity

 **Intelligent self-adjusting end stops** ensure an easy installation, less commissioning effort and adapts over the entire lifespan of the valve

 **Flexible position indicator** is viewable from long distances and any angle for easy troubleshooting


 **Ductile iron valve body** with a pressure rating of 232 psi


 **Universal power supply** 24-240 VAC / 24-125 VDC requires only one actuator type which eases planning and increases flexibility for all applications


 **Reduced height and weight** of the PR actuator allow for an optimized mechanical layout and easy installation


 **80% less power consumption** with patented brushless DC motor technology saves energy and reduces transformer and wiring costs


 **Electronic fail-safe option** provides security for safety sequences upon a loss of power

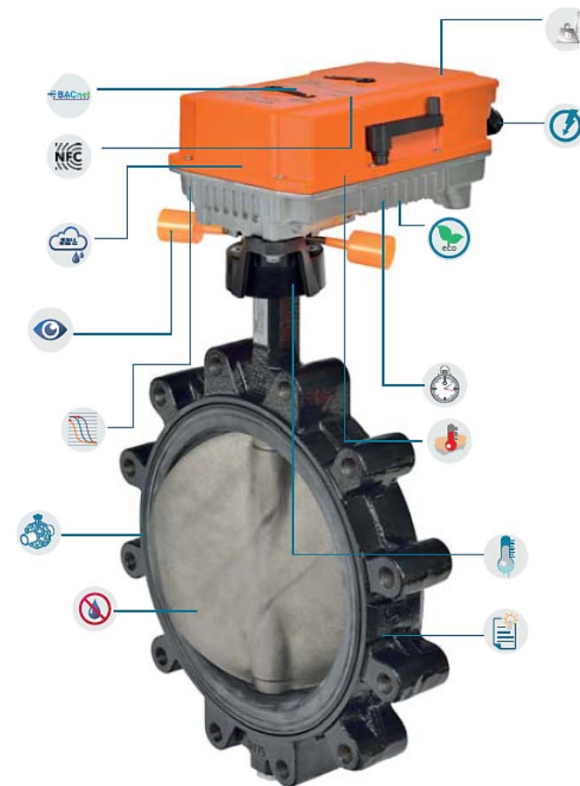
 **Adjustable motor running time** from 30 to 120 seconds to satisfy application needs and avoid water hammer

 **Smart heating logic** uses onboard temperature and humidity sensors and logic within the actuator activate heating elements when needed to prevent condensation within the housing and improve actuator operating performance and longevity

 **Thermal isolation** reduces heat transfer to the actuator and avoids condensation build-up

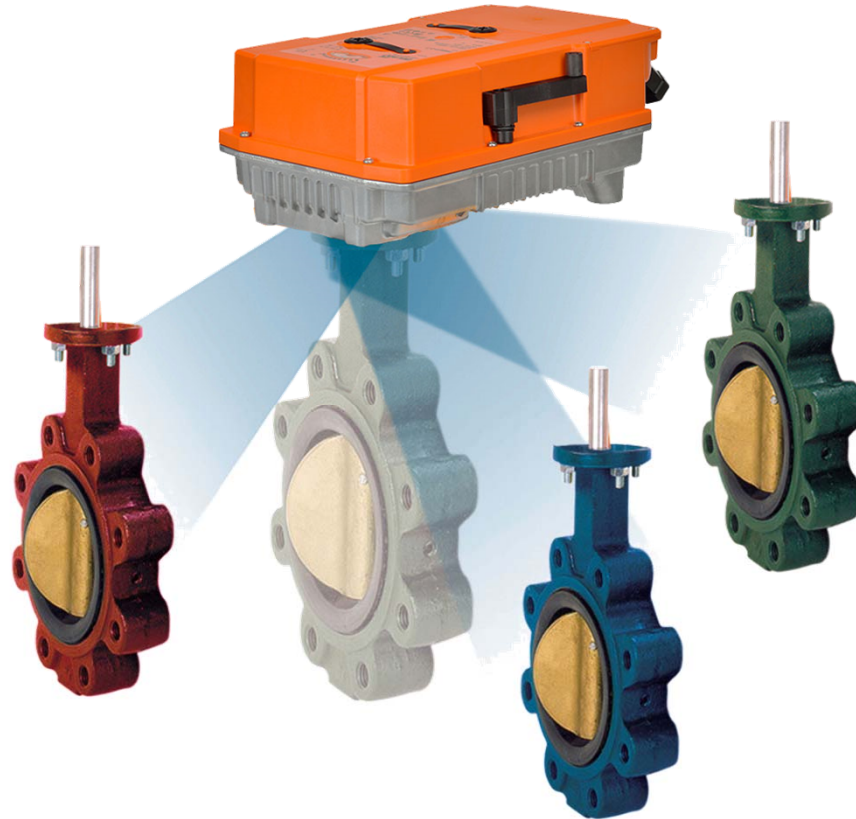
 **Patent pending valve** designed specially for HVAC applications

 **0% Leakage rate** at 200 psi close-off pressure with the self-adjusting end stop algorithm ensures reliable operation throughout the entire life of the valve



Why Replace? Retrofit Instead

- Victaulic
- Flowseal
- Pentair (Keystone)
- Bray
- Nibco
- Centerline
- Johnson Controls
- Milwaukee






Resources

- Comprehensive Website
- Tech Docs
- YouTube Videos
- App for Android & Apple
- SelectPro 3.6
- Flyers
- Case Studies

Belimo Assistant App



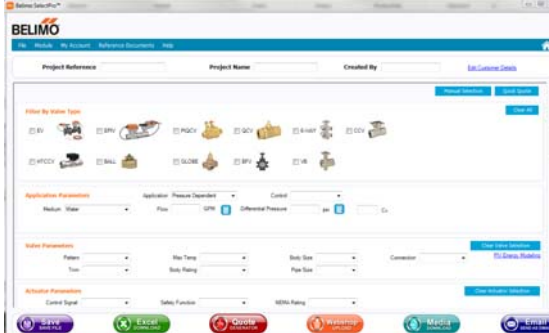
Product Range

 Resilient seated 2" to 24" (2-way & 3-way) ANSI 125/150 Range CAD/REVIT HD and L Series Technical Documentation Butterfly Accessories Shop Now	 Grooved (Victaulic) 2" to 12" (2-way & 3-way) Grooved ANSI / AWWA (C604) VIC Series Technical Documentation Butterfly Accessories Shop Now	 High Performance 2" to 30" (2-way & 3-way) A-SME/ANSI 150 or A-SME/ANSI 300 CAD/REVIT SHP Series Technical Documentation Butterfly Accessories Shop Now
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Most Comprehensive Offering for HVAC Applications



Butterfly Valve



The screenshot shows the BELIMO SelectPro 3.6 software interface. It features a navigation bar with 'Home', 'My Account', 'Reference Documents', and 'Help'. Below this, there are fields for 'Project Reference', 'Project Name', and 'Created By'. The main area is titled 'Filter By Value Type' and contains a grid of valve icons. Below the grid, there are sections for 'Application Parameters' (Medium, Size, Pipe, LPM, Differential Pressure, Control), 'Valve Parameters' (Material, Size, Size Flange, Pipe Size, Connection), and 'Actuator Parameters' (Control Signal, Safety Function, I/Os Rating). At the bottom, there are buttons for 'SELECT', 'EDIT', 'DELETE', 'RENAME', 'MAP', and 'INSTALL'.



Resources....

- Tech docs
- Instructions
- Vendor docs
- EU docs
- CWI

Vickers® W-300 MasterSul® Butterfly Valve Series 701

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

PR Series 2-Way 100mm Class 150 Butterfly Valve Resilient Seat, 316 Stainless Steel

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

PR Series 2-Way 150mm Butterfly Valve

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

3-way BFW - PR combination (US)

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES



Belimo Resilient Seat Butterfly Valves HD & L Series Technical Documentation



FLOWSEAL

brandy you trust.

TECHNICAL DATASHEET

FLOWSEAL - High Performance Butterfly Valves

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

High Performance for a Wide Range of Applications

SHP Series Actuators for Butterfly Valves

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

PR and PKR Actuators with Butterfly Valves

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

L-Series Butterfly Valves

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

1.10 REFERENCES

Master Data Sheet (PRK)

Technical Specifications

Document No. 100221

Revision: 01

Revision History

Team (Stakeholders)

PR-UK, PR-IE, PR-AP, PR-CA, PR-IT, PR-ES, PR-PT, PR-GR, PR-TR, PR-IL, PR-IN, PR-JP, PR-KR, PR-AU, PR-NZ, PR-SG, PR-TW, PR-HK, PR-MO, PR-MY, PR-TH, PR-VN, PR-PH, PR-ID, PR-SE, PR-NO, PR-FI, PR-SW, PR-DK, PR-NL, PR-BE, PR-LU, PR-DE, PR-FR, PR-GB, PR-IE, PR-PT, PR-GR, PR-TR, PR-IL, PR-IN, PR-JP, PR-KR, PR-AU, PR-NZ, PR-SG, PR-TW, PR-HK, PR-MO, PR-MY, PR-TH, PR-VN, PR-PH, PR-ID, PR-SE, PR-NO, PR-FI, PR-SW, PR-DK, PR-NL, PR-BE, PR-LU, PR-DE, PR-FR, PR-GB

Butterfly valves for open-close, change-over and control applications

1.1 PRODUCT DESCRIPTION

1.2 PRODUCT RANGE

1.3 MATERIALS

1.4 DIMENSIONS

1.5 WEIGHTS

1.6 PARTS LIST

1.7 ACCESSORIES

1.8 NOTES

1.9 CONTACTS

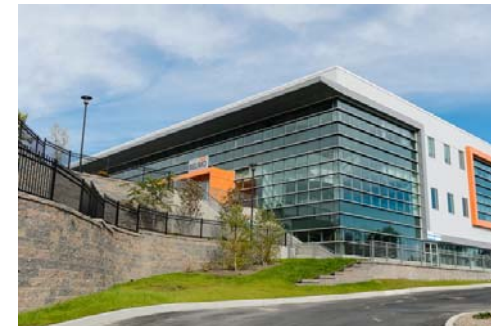
1.10 REFERENCES

Delivery Options



In-house stock

- Sizes 2" to 24" in Danbury, CT
- Sizes 2" to 12" in Sparks, NV
- 2 to 3 days delivery time HD../L.. Most SHP
- 2 delivery locations (Northeast & West)



Value

- Comprehensive Product Line
- Delivery & Service
- Electronic Fail-Safe
- Grooved
- Retrofit
- Advanced Communications
- 5 Year Warranty



BELIMO





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