Belimo Project: Hearst Tower,
New York, New York

HVAC Guide to Retrofitting

RETROFIT®

BELIMO®

Why Retrofitting Makes Sense

Valves and actuators are responsible for ensuring reliable functioning hydronic and air control HVAC systems all over the world. With innovative technology, verified quality and easy handling during installations and operation, they boost the performance and efficiency of integrated building technology.

Are you in need of a solution for a broken linkage, leaky hydraulic actuator, non-functioning electric or pneumatic actuator? Do you have a need for replacing a non-functioning application within a day or so?

Belimo provides airside and waterside retrofit application solutions, with direct coupled or remote access linkages, and efficient actuators.

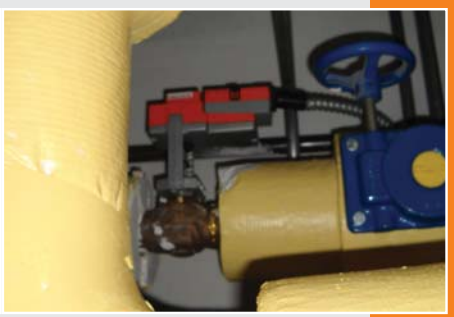
Damaged linkages and/or actuators resulting in non-functioning HVAC system applications used to mean a loss of properly functioning systems leading to a degradation of energy efficiency, consumer comfort, time, and labor. Replacing a valve along with the actuator or trying to determine how to fix an airside linkage is not always a sensible solution. Taking a system off-line to replace various components is not only laborious, it's expensive. Facilities can lose thousands of dollars a day during maintenance shut-down. With retrofit solutions this problem simply goes away. Valves and damper applications can be quickly and conveniently restored without any interruption in service. In fact, entire systems can often be updated in a day. A poorly functioning or even non-functioning system can be transformed into a highly functioning, more efficient system.

Belimo provides many retrofit solutions that are compatible with all major control systems, so there is no need to replace other system controls. MFT Technology is also available and can be reprogrammed to suit your controller needs with just one MFT model actuator.

In addition, Belimo's design team is ready and willing to customize a solution for non-standard retrofit solutions. Call Belimo at 800-543-9038 for assistance in fulfilling your retrofit application requirements.

Hearst Tower, New York, NY

Existing Installation



Solution with No Down Time!

New Generation Globe Valve Actuator

- Higher steam inlet rating up to 100 psi.
- Increased force ranges for higher close-off pressures.
- Full selection of electronic fail and non-fail-safe options.
- Field selectable, fail-safe position with switch.
- Modular order entry process for customizing flexibility, e.g. cable length, run times, etc.

ZG-JSL Jackshaft Linkage

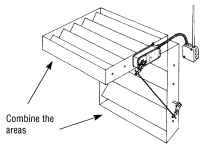
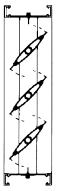
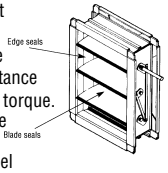
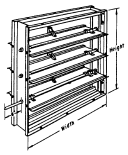
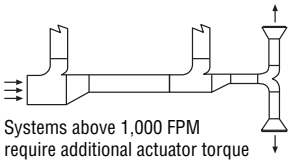
- Simplifies typical installations and eliminates the difficulties where jackshaft bearings are hard to access.
- Unique open ended design and clamp insert accommodates any jackshaft ½" to 1.05" in diameter.
- Anti-rotation plate enables various actuators to be mounted and in multiple orientations.

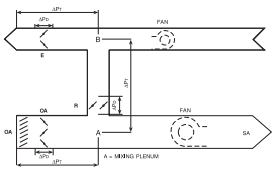
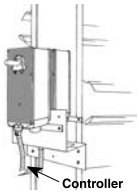
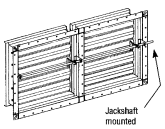
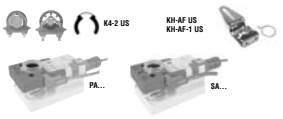
Table of Contents

Retrofit and Replacement

How to Select an Actuator for Damper Retrofit

The "10 questions" method for sizing and selection shown below is recommended as the best method for your actuation requirements. Use the "Application Data" column in this chart as a worksheet to help in the selection process.

APPLICATION INFO		APPLICATION DATA
1 What is the total area of the damper?		_____ **sq.ft.**
2 Opposed blade or Parallel blade control construction?	L" x W" = Total sq inches/144 = total sq feet **Opposed Blade w/o seals 3 in-lbs/sq feet*** **Opposed Blade w/ seals 5 in-lbs/sq feet** **Parallel Blade w/o seals 4 in-lbs/sq feet** **Parallel Blade w/ seals 7 in-lbs/sq feet** ***Less than 1,000 feet per minute**  	❑ **Opposed Blade** ❑ **Parallel Blade**
3 Are there blade and edge seals on the damper?	This will impact the proper selection as the seals add resistance requiring more torque. If unknown, use a worst case scenario, parallel blade with seals. 	❑ **Yes** ❑ **No**
4 For the damper in question, what does the manufacturer specify as the torque rating?	 If this information is not available refer to the "typical damper requirements and sizing" chart below.	_____ **in-lbs/sq.ft.**
5 What is the air velocity, static pressure, or design CFM?	 Systems above 1,000 FPM require additional actuator torque	_____**W.G.** _____**CFM** _____**FPM**

ACTUATOR REQUIREMENTS		APPLICATION DATA
6 Is fail-safe actuation required?	 Consider the application. Is the actuator and/or damper exposed to outside air? If yes, use spring return.	❑ **Yes** ❑ **No**
7 What is the supply voltage to the actuator? • 24 VAC/DC • 120 VAC • 230 VAC single phase	Do you need a step down transformer? If replacing an oil immersed gear train actuator, is the transformer in the defective actuator? You may need to purchase one. 	❑ **24 VAC** ❑ **120 VAC** ❑ **230 VAC**
8 What is the control signal to the actuator?	 • 2 position • Floating point • Modulating • Sequencing • "Non-standard" voltage signals This will be a critical component to the selection of an actuator. Consider the …MFT actuator product range and the flexibility of its application.	❑ **On/Off** ❑ **Floating Point** ❑ **2-10 VDC** ❑ **0-10 VDC** ❑ **4-20 mA** ❑ **PWM____ range** ❑ **Other (MFT)**
9 Can you direct couple to a damper shaft?	 Direct-coupling has become the industry standard. Some retrofit applications do not allow direct coupling. Refer to the Belimo "Mounting & Methods Guide" for application details.	❑ **Yes** ❑ **No, see accessories page**
10 Are there additional accessories required?	 For example, some applications require the addition of an auxiliary switch for proof of position; a retrofit application may require an additional mounting bracket and linkage kit. We advise that you identify these needs prior to leaving the job site or ordering products.	❑ **No** ❑ **Yes, see accessories section or actuator series for details**

TYPICAL DAMPER REQUIREMENTS AND SIZING

Square Damper (with square shape): ft² = h x w /144; (h= height, w= width, in inches)

EXAMPLE: Damper Area (8 ft²) x Rated Torque Loading of Damper (4 in-lbs/ft²) = Total in-lbs Required (32 in-lbs) **Belimo LF 35 in-lbs/ LM 45 in-lbs actuators**

		Torque Loading in-lbs/ft²		
	Damper Blade Type	**< 1000 FPM**	**1000-2500 FPM**	**2500-3500 FPM**
SQUARE	Parallel blade/edge seals	**7 (Typical)**	10.5	14
	Opposed blade/edge seals	**5 (Typical)**	7.5	10
	Parallel blade/no edge seals	4	6	8
	Opposed blade/no edge seals	3	4.5	6
	Round	10	14	20

TYPICAL DAMPER REQUIREMENTS AND SIZING EXAMPLE:

APPLICATION REQUIREMENTS	SQUARE DAMPER	ROUND DAMPER
Damper Length	24"	
Damper Width	12"	
Damper (Round)		12"
Blade Type	Opposed	Round
Edge Seals	Edge Seals	
Design CFM	1800 CFM	700 CFM
Fail-Safe	Yes	Yes
Supply Voltage	24 Volt	24 Volt
Control Signal	2-10 VDC	2-10 VDC
CALCULATIONS		
Damper Area (sq inches)	24" x 12" = 288 in^2	πr^2 =113.04 in^2
Damper Area (sq feet)*	288 in^2 x 1ft/12 in x 1ft/12 in = 2 ft^2	113.04 in^2 / 1ft/12in x 1ft/12in= 0.785 ft^2
Velocity	1800 ft^3/min / 2 ft^2 = 900 ft/min	700 ft^3/min / .785 ft^2 = 892 ft/min
	See chart under <1000 FPM (ft/min)	See chart under <1000 FPM (ft/min)
Rated Torque Loading (in-lbs/ft^2)**	Select 5 in-lbs/ft^2 for Opposed Blade/Edge Seals	Select 10 in-lbs/ft^2 for Round Damper
EXAMPLE EQUATION	***Damper Area (sq ft) x **Rated Torque Loading of Damper (in-lbs/ft^2) = Total in-lbs Required**	
	2 ft^2 x 5 in-lbs/ft^2 = 10 in-lbs Belimo LF24-SR US @ 35 in-lbs	0.785 ft^2 x 10 in-lbs/ft^2 = 7.85 in-lbs Belimo LF24-SR US @ 35 in-lbs

CONTROL SIGNAL OVERVIEW

Belimo actuators are compatible with many control inputs and all direct digital control (DDC) systems. There are many signals to select from with today's controllers.

On/Off or Open-Close: The actuator is able to drive either to its full clockwise (CW) position, or to its full counter-clockwise (CCW) position. The same indication is used for spring return type actuators. Where the actuator will drive to its full CW position and spring return to its CCW position. This can also be reversed.

3-point, Tri-State, Floating Point: The actuator has both clockwise (CW) and counter-clockwise (CCW) control inputs. One drives the actuator to its CW, the other to its CCW position. If there is no signal (Null point) on either input the actuator simply stays in its last position.

Proportional Control: The actuator drives proportional to its control input and modulates throughout its angle of rotation. This control type is usually a variation of VDC. Common values are:

0-10 VDC 2-10 VDC

It is common to also have a 0-20/4-20 mA output from a controller. This can be very easily converted to 0-10 VDC or 2-10 VDC with a 500 Ω resistor.

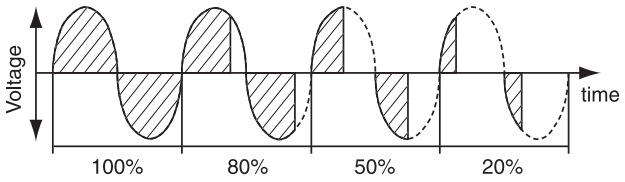
Pulse Width Modulation (PWM): The actuator drives to a specified position according to a pulse duration, the "length" of signal. The pulse can originate from a dry contact closure or a triac sink or source controller. An example of PWM control:

Time base: 0 to 10 seconds

Output pulse: 5 seconds

Actuator position: 50%

Phasecut: An actuator drives depending on the power result of a remaining wave. This signal type cuts the amplitude of the wave and the actuator recognizes this signal as a proportional movement.



Multi-Functional Technology (MFT): This technology was developed by Belimo for incorporation into our damper and valve actuators. MFT provides the ability to program certain characteristics of the actuators. Some of the key characteristics to change are:

CONTROL INPUT
Selectable on/off, VDC, PWM or floating point

MOTION VALUES
Selectable running time adjustment

FEEDBACK
Selectable feedback values

Replacement of Discontinued Belimo Products

When replacing an actuator, whether Belimo or other, be sure to consider the application parameters before selecting the replacement. The new product may not be the best fit for the application.

An example would be an existing SM24-SR US mounted to a valve linkage. The direct replacement of the actuator is the AMX24-MFT. However, the SM… and AM… are different lengths, the linkage would need to be replaced as well. When retrofitting or replacing actuators, it is always best to select the new product based on application parameters. This ensures the selected actuator is fit for the application.

SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
LF24-SR-MP US	LF24-MFT-20 US
LF24-SR-S-MP US	LF24-MFT-S-20 US
NF230 US	NFBUP
NF230-S US	NFBUP-S
SF24 US	AFB24
SF24-S US	AFB24-S
SF120 US	AFBUP
SF120-S US	AFBUP-S
FM24 US	AFB24
FM24-SR US	AFB24-SR
FM24-SR90 US	AFB24-MFT95
FM24-SR95 US	AFB24-MFT95
FS24	AFB24
FS24-S	AFB24-S
AFR24 US	AFB24
AFR24-S US	AFB24-S
AFR120 US	AFBUP
AFR120-S US	AFBUP-S
AF24-3 US	AFX24-MFT + P-300…
AFR24-3 US	AFX24-MFT + P-300…
AF24-3-S US	AFX24-MFT-S + P-300…
AFR24-3-S US	AFX24-MFT-S + P-300…
AFR24-SR US	AFB24-SR**
AF24 US	AFB24
AF24-S US	AFB24-S
AF120 US	AFBUP
AF120-S US	AFBUP-S
AF230 US	AFBUP
AF230-S US	AFBUP-S
AF24-SR-S US	AFB24-SR-S**

DISCONTINUED MODEL	REPLACEMENT MODEL
AF24-SR95 US	AFB24-MFT95
AF24-PWM US	AFB24-MFT + P-200…
AF24-SR US	AFB24-SR**
AFA24-SR US**	AFB24-SR**
AF24-PC US	AFB24-PC
AF24-ECON-R03 US	Contact Belimo
AF24-SR US*	AFB24-PC if phasecut is needed
AF24-MFT US	AFB24-MFT
AF24-MFT-S US	AFB24-MFT-S
AF24-MFT95 US	AFB24-MFT95
NF24 US	NFB24
NF24-S US	NFB24-S
NF24-S2 US	NFB24-S
NF120 US	NFBUP
NF120-S US	NFBUP-S
NF24-SR US	NFB24-SR
NF24-SR-S US	NFB24-SR-S
NF24-MFT US	NFB24-MFT
TF24 US	TFB24
TF24-S US	TFB24-S
TF120 US	TFB120
TF120-S US	TFB120-S
TFC120-S US	TFCB120-S
TF24-SR US	TFB24-SR
TF24-SR-S US	TFB24-SR-S
TF24-3 US	TFB24-3
TF24-3-S US	TFB24-3-S
TF24-MFT US	TFB24-MFT
TF24-MFT-S US	TFB24-MFT-S

NON-SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
LM24-SR US	LMB24-SR
LM24-SR.1 US	LMB24-SR.1
LM24-SR-2.0 US	LMB24-SR
LM24-SR-T US	LMB24-SR-T
LM24-SR-T.1 US	LMB24-SR-T.1
LM24-SR-T-2.0 US	LMB24-SR-T
LMC24-SR US	LMCB24-SR
LM24-MFT US	LMX24-MFT + # LM100 1C1 ❑ ❑ ❑
LM24-MFT.1 US	LMX24-MFT+ # LM100 1C1 ❑ ❑ ❑
NM24 US	NMB24-3
NM24-1 US	NMB24-3
NM24 EU	NMB24-3
NM24-1/200 US	NMX24-3 + # NM00 1C3 000
NM24-1/300 US	NMX24-3 + # NM00 1C3 000
NM24-SR US	NMB24-SR
NM24-SRS US	NMX24-MFT + # NM100 1C1 A ❑ ❑
NM24-PWM US	NMX24-MFT + # NM100 1C1 W ❑ ❑
NM24-MFT US	NMX24-MFT + # NM100 1C1 ❑ ❑ ❑
NM24-MFT.1 US	NMX24-MFT + # NM100 1C1 ❑ ❑ ❑
NMQ24-MFT US	NMQ24-MFT
NMV24-D US	NMV-D3-MFT
NMV24-V US	NMV-D3-MFT

DISCONTINUED MODEL	REPLACEMENT MODEL
AM24 US	AMB24-3
AM24-S US	AMB24-3-S
AM24-SR US	AMB24-SR
AM24-PWM-A US	AMX24-MFT + # AM100 1C1 W02
AM24-PWM-B US	AMX24-MFT + # AM100 1C1 W03
AM24-PWM-C US	AMX24-MFT + # AM100 1C1 W01
AM24-SRS-A US	AMX24-MFT + # AM100 1C1 A04
AM24-SRS-B US	AMX24-MFT + # AM100 1C1 A05
AM24-SRS-C US	AMX24-MFT + # AM100 1C1 A06
AM24-PC US	AMX24-PC + # AM0N0 1C1 ❑ ❑ ❑
AM24-MFT US	AMX24-MFT + # AM100 1C1 ❑ ❑ ❑
AM24-MFT 95 US	AMX24-MFT95 + # AM0L0 1C1 R01
SM24 US	AMB24-3
SM24-S US	AMX24-MFT + # AM110 1C1 ❑ ❑ ❑ + S1A/S2A
SM24-SR US	AMB24-SR
SM24-SR US	AMX24-PC if phasecut is needed
SM24-SRS US	AMX24-MFT + # AM100 1C1 A ❑ ❑
SM24-SR94 US	AMX24-MFT95 + # AM0L0 1C1 R01
GM24 US	GMB24-3
GM24-SR US	GMB24-SR
GM24-SR US	GMX24-PC if phasecut is needed
GM24-MFT US	GMX24-MFT+ # GM110 1C1 ❑ ❑ ❑

* Purchased before May 2003. ** Not piggy back capable. ❑ Placeholder for custom options.

Replacement of Discontinued Belimo Products

When replacing an actuator on a valve, whether Belimo or other, be sure to consider the application parameters before selecting the replacement. The new product may not be the best fit for the application.

An example would be an existing MAR actuator mounted to a valve linkage. The direct replacement of the actuator would be the SY series actuator. However, the MAR and the SY have different linkage construction, and the linkage would need to be replaced as well. When retrofitting or replacing actuators, it is always best to select the new product based on application parameters. This ensures the selected actuator is fit for the application.

Please consult Belimo for assistance with valve actuator replacement.

SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
LF24-SR-MP US	LF24-MFT-20 US
LF24-SR-S-MP US	LF24-MFT-S-20 US
AF24-3 US	AFX24-MFT + P-300..
AF24-3-S US	AFX24-MFT-S + P-300..
AF24-SR-S US	AFX24-MFT-S + P-100..
AF24-SR95 US	AFB24-MFT95
AF24-PWM US	AFX24-MFT + P-200..
NVF24-MFT US	SVKX24-MFT* or SVKX24-SR*
NVF24-MFT-E US	SVKX24-MFT* or SVKX24-SR*

*New linkage required.

NON-SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
LV24 US	CCV with LR... or TR….
LV24/200 US	CCV with LR... or TR….
LV24/300 US	CCV with LR... or TR….
LV24-3 US	CCV with LR... or TR….
LV24-1 US	CCV with LR... or TR….
LV24-1/200 US	CCV with LR... or TR….
LV24-1/300 US	CCV with LR... or TR….
LV24-3-1 US	CCV with LR... or TR….
LV24-SR US	CCV with LR... or TR….
LV24-SR/200 US	CCV with LR... or TR….
LV24-SR/300 US	CCV with LR... or TR….
LV24-SR-1 US	CCV with LR... or TR….
LV24-SR-1/200 US	CCV with LR... or TR….
LV24-SR-1/300 US	CCV with LR... or TR….
LV24-SR-1-2.0 US	CCV with LR... or TR….
LV24-SR-1-2.0/200 US	CCV with LR... or TR….
LV24-SR-1-2.0/300 US	CCV with LR... or TR….
LR24 US	LRB24-3
LR24-MFT US	LRX24-MFT + # LR100 RC1 ❑ ❑ ❑
LR24/200 US	LRX24-3 + # LR000 RC3 002
LR24/300 US	LRX24-3 + # LR000 RC3 002
LR24-1 US	LRB24-3
LR24-1/200 US	LRX24-3 + # LR000 RC3 002
LR24-1/300 US	LRB24-3 + # LR000 RC3 002
LR24-3-1 US	LRB24-3
LR24-3-1/200 US	LRX24-3 + # LR000 RC3 002
LR24-3-1/300 US	LRX24-3 + # LR000 RC3 002
LR24-SR/200 US	LRX24-SR + # LR030 RC3 002
LR24-SR/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1 US	LRB24-SR
LR24-SR-1/200 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1-2.0 US	LRB24-SR
LR24-SR-1-2.0/200 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1-2.0/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-2.0 US	LRB24-SR
LR24-SR-2.0/200 US	LRX24-SR + # LR030 RC3 002
LR24-SR-2.0/300 US	LRX24-SR + # LR030 RC3 002
LR24-MFT/200 US	LRX24-MFT + # LR100 RC3 ❑ ❑ ❑
LR24-MFT/300 US	LRX24-MFT + # LR100 RC3 ❑ ❑ ❑

❑ Placeholder for custom options.

NON-SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
NV24-3 US	SVX24-3*
NV24-MFT US	SVX24-MFT* or SVX24-SR*
NVG24-MFT US	EVX24-MFT* or EVX24-3*
NR24-3 US**	LRB24-3
NR24-SR US**	LRX24-MFT + # LR100 RC1 ❑ ❑ ❑
NM24 US	ARB24-3
NM24-SR US	ARX24-SR + # AR030 RC1 ❑ ❑ ❑
NM24-MFT US	ARX24-MFT + # AR100 RC1A ❑ ❑
NM24-SRS US	ARX24-MFT + # AR100 RC1W ❑ ❑
AM24 US	ARB24-3
AM24-S US	ARB24-S US
AM24-MFT US	ARX24-MFT + # AR100 RC1 ❑ ❑ ❑

* New linkage required.
❑ Placeholder for custom options.
** Consider ambient temperature for application.

NON-SPRING RETURN – 24 VAC / NON-SPRING RETURN – 24 VAC

DISCONTINUED MODEL	Torque	REPLACEMENT MODEL	Torque
MAR100B-24V	1,500	SY4-24*	3,560
MAR160-B-24V	2,000	SY4-24*	3,560
MAR100BP-24V	1,800	SY4-24MFT*	3,560
MAR160-BP-24V	2,500	SY4-24MFT*	3,560
MAR250-60-24V	5,000	SY5-24*	4,450
MAR250-60P-24V	5,000	SY5-24MFT*	4,450

*New linkage required.

NON-SPRING RETURN – 110 VAC / NON-SPRING RETURN – 110 VAC

DISCONTINUED MODEL	Torque	REPLACEMENT MODEL	Torque
MAR95-15B	1,000	SY3-110*	1,335
MAR95-15BP	1,000	SY3-120MFT*	1,335
MAR100B	1,500	SY4-110*	3,559
MAR160B	2,000	SY4-110*	3,560
MAR100BP	1,800	SY4-120MFT*	3,560
MAR160-BP	2,500	SY4-120MFT*	3,560
MAR250-30	5,000	SY5-110*	4,450
MAR250-30P	5,000	SY5-120MFT*	4,450
		SY6-110*	6,450
		SY6-120MFT*	6,450
MAR800-30	10,000	SY7-110*	9,790
MAR800-30P	10,000	SY7-120MFT*	9,790
		SY8-110 *	13,350
		SY8-120MFT*	13,350
MAR1600-70	21,000	SY10-110*	22,250
MAR1600-70P	21,000	SY10-120MFT*	22,250
MAR4000-70	48,000	SY12-110*	31,150
MAR4000-70P	48,000	SY12-120MFT*	31,150

*New linkage required.

SPRING RETURN – 110 VAC / NON-SPRING RETURN – 110 VAC

DISCONTINUED MODEL	Torque	REPLACEMENT MODEL	Torque & Battery System
Sure49-30-CW	600	SY2-110*	800 + NSV-SY-01
Sure100-30-CW	1,200	SY3-110*	1,335 + NSV-SY-01
Sure49-30P-CW	600	SY2-120MFT*	800 + NSV-SY-02
Sure100-30P-CW	1,200	SY3-120MFT*	1,335 + NSV-SY-02

*New linkage required.

ZONE VALVES*

DISCONTINUED MODEL	Size	C_V Rating	Close-off	REPLACEMENT MODEL(S)	Size	C_V Rating	Close-off
Z214T+SEF24 NO	½"	2.3	43.5	ZONE215N-10+ZONE24NO ZONE215N-25+ZONE24NO	½"	1 2.5	75 50
Z215T+SEF24 NO	½"	3.7	30	ZONE215N-35+ZONE24NO	½"	3.5	30
Z220T+SEF24 NO	¾"	3.7	30	ZONE220N-35+ZONE24NO ZONE220N-50+ZONE24NO	¾"	3.5 5	30
Z214T+SEF120 NO	½"	2.3	43.5	ZONE215N-10+ZONE120NO ZONE215N-25+ZONE120NO	½"	1 2.5	75
Z215T+SEF120 NO	½"	3.7	30	ZONE215N-35+ZONE120NO	½"	3.5	30
Z220T+SEF120 NO	¾"	3.7	30	ZONE220N-35+ZONE120NO ZONE220N-50+ZONE120NO	¾"	3.5 5	30 25
Z214T+SEF24 NC	½"	2.3	43.5	ZONE215N-10+ZONE24NC ZONE215N-25+ZONE24NC	½"	1 2.5	75 50
Z215T+SEF24 NC	½"	3.7	30	ZONE215N-35+ZONE24NC	½"	3.5	30
Z220T+SEF24 NC	¾"	3.7	30	ZONE220N-35+ZONE24NC ZONE220N-50+ZONE24NC	¾"	3.5 5	30 25
Z214T+SEF120 NC	½"	2.3	43.5	ZONE215N-10+ZONE120NC ZONE215N-25+ZONE120NC	½"	1 2.5	75 50
Z215T+SEF120 NC	½"	3.7	30	ZONE215N-35+ZONE120NC	½"	3.5	30
Z220T+SEF120 NC	¾"	3.7	30	ZONE220N-35+ZONE120NC ZONE220N-50+ZONE120NC	¾"	3.5 5	30 25
Z214T+SEF24 NC	½"	2.3	43.5	ZONE215N-10+ZONE24NC ZONE215N-25+ZONE24NC	½"	1 2.5	75 50
Z215T+SEF24 NC	½"	3.7	30	ZONE215N-35+ZONE24NC	½"	3.5	30
Z220T+SEF24 NC	¾"	3.7	30	ZONE220N-35+ZONE24NC ZONE220N-50+ZONE24NC	¾"	3.5 5	30 25
Z214T+SEF120 NC	½"	2.3	43.5	ZONE215N-10+ZONE120NC ZONE215N-25+ZONE120NC	½"	1 2.5	75 50
Z215T+SEF120 NC	½"	3.7	30	ZONE215N-35+ZONE120NC	½"	3.5	30
Z220T+SEF120 NC	¾"	3.7	30	ZONE220N-35+ZONE120NC ZONE220N-50+ZONE120NC	¾"	3.5 5	30 25
Z315T+SEF24 NC	½"	5	30	ZONE315N-10+ZONE24NC ZONE315N-25+ZONE24NC ZONE315N-35+ZONE24NC	½"	1 2.5 3.5	75 50 30
Z315T+SEF120 NC	½"	5	30	ZONE315N-10+ZONE120NC ZONE315N-25+ZONE120NC ZONE315N-35+ZONE120NC	½"	1 2.5 3.5	75 50 30
Z320T+SEF24 NC	¾"	5.4	30	ZONE320N-35+ZONE24NC ZONE320N-50+ZONE24NC	¾"	3.5 5	30 25
Z320T+SEF120 NC	¾"	5.4	30	ZONE320N-35+ZONE120NC ZONE320N-50+ZONE120NC	¾"	3.5 5	30 25
Z814T+SEF24 NO	½"	2.3	43.5	ZONE215S-10+ZONE24NC ZONE215S-25+ZONE24NC	½"	1 2.5	75 50
Z815T+SEF24 NO	½"	3.7	30	ZONE215S-35+ZONE24NO	½"	3.5	30
Z820T+SEF24 NO	¾"	3.7	30	ZONE220S-35+ZONE24NO ZONE220S-50+ZONE24NO	¾"	3.5 5	30 25
Z814T+SEF120 NO	½"	2.3	43.5	ZONE215S-10+ZONE120NO ZONE215S-25+ZONE120NO	½"	1 2.5	75 50
Z815T+SEF120 NO	½"	3.7	30	ZONE215S-35+ZONE120NO	½"	3.5	30
Z820T+SEF120 NO	¾"	3.7	30	ZONE220S-35+ZONE120NO ZONE220S-50+ZONE120NO	¾"	3.5 5	30 25
Z814T+SEF24 NC	½"	2.3	43.5	ZONE215S-10+ZONE24NC ZONE215S-25+ZONE24NC	½"	1 2.5	75 50
Z815T+SEF24 NC	½"	3.7	30	ZONE215S-35+ZONE24NC	½"	3.5	30
Z820T+SEF24 NC	¾"	3.7	30	ZONE220S-35+ZONE24NC ZONE220S-50+ZONE24NC	¾"	3.5 5	30 25
Z814T+SEF120 NC	½"	2.3	43.5	ZONE215S-10+ZONE120NC ZONE215S-25+ZONE120NC	½"	1 2.5	75 50
Z815T+SEF120 NC	½"	3.7	30	ZONE215S-35+ZONE120NC	½"	3.5	30
Z820T+SEF120 NC	¾"	3.7	30	ZONE220S-35+ZONE120NC ZONE220S-50+ZONE120NC		3.5 5	30 25
Z915T+SEF24 NC	½"	5	30	ZONE315S-10+ZONE24NC ZONE315S-25+ZONE24NC ZONE315S-35+ZONE24NC	½"	1 2.5 3.5	75 50 30
Z915T+SEF120 NC	½"	5	30	ZONE315S-10+ZONE120NC ZONE315S-25+ZONE120NC ZONE315S-35+ZONE120NC	½"	1 2.5 3.5	75 50 30
Z920T+SEF24 NC	¾"	5.4	30	ZONE320S-35+ZONE24NC ZONE320S-50+ZONE24NC	¾"	3.5 5	30 25
Z920T+SEF120 NC	¾"	5.4	30	ZONE320S-35+ZONE120NC ZONE320S-50+ZONE120NC	¾"	3.5 5	30 25

*The recommended replacements must be considered depending on the C_V rating and Close-off requirement involving your application.

Replacement of Competitor Fire and Smoke Actuators

DISCLAIMER:

For Fire and Smoke series actuators, use the UL555S test to select the correct actuator for your application - do not match actuator to actuator.

Different methods have been employed by different manufacturers to achieve the fire spring-closed function. For example, Pottorff with the MA220 used a single spring. To replace the MA220, which is no longer made, the fusible link must be removed and a thermal sensor installed. Alternately, Ruskin used an external spring and a thermal sensor so removal of the old MA220 and external spring and replacement with Belimo is all that is required.

Note that NFPA 80 & NFPA 105 require that dampers be repaired as soon as possible. In most jurisdictions, this is a normal repair. In some a permit and 3rd party inspection may be required. In all cases, a log of periodic testing and any repairs must be maintained within the facility.

Repair of any fire and smoke damper is required by codes. A permit and retest may be required if the replacement is not an ordinary repair. Where any fire alarm wiring is touched or any structural changes are made, the fire department or building official must be consulted and a permit plus inspection is required.

Visit *http://www.belimo.us/firesmoke* for detailed instructions for each damper manufacturer.

Legend	
COMPETITOR "WHITE"	**BELIMO "GRAY"**

NOTES	Model Numbers HONEYWELL	BELIMO	Spring Return		Control Signal	Power		Torque (in-lbs)		Timing (seconds)	Timing Drive/Spring
Use FSNF for dampers >4 sq.ft. All HW 50 in-lbs passed UL555S same damper sizes as FSLF.	ML4105A1000	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	50	**30**	14, 25, 75	**15**
	ML4105B1009	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	50	**30**	14, 25, 75	**15**
	M4105C1008	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	50	**30**	14, 25, 75	**15**
	ML4105D1007	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	50	**30**	14, 25, 75	**15**
	ML4115A1009	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	30	**30**	18	**15**
	ML4115B1008	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	30	**30**	18	**15**
	ML4115C	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	30	**30**	18	**15**
	ML4115D	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	30	**30**	18	**15**
	ML4115H	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	30	**30**	18	**15**
	ML4115J	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	30	**30**	18	**15**
	ML4202	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	20	**30**	25	**15**
	ML4302	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	20	**30**	25	**15**
	ML4702	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	20	**30**	25	**15**
	ML4802	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	20	**30**	25	**15**
	ML8105A1006	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	25	**15**
	ML8105B1005	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	25	**15**
	ML8115A1005	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	18	**15**
	ML8115B1004	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	18	**15**
	ML8115H	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	22	**15**
	ML8115J	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	30	**30**	22	**15**
	ML8202	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	20	**30**	25	**15**
	ML8302	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	20	**30**	25	**15**
Single FSAF is limited to 12 sq.ft. @ 250ºF. If fast speed needed, use FSNF.	MS4120F1006	**FSAF120 US**	Yes	**Yes**	On/Off	120	**120**	175	**133**	15	**<75/20**
	MS4120F1204	**FSAF120-S US**	Yes	**Yes**	On/Off	120	**120**	175	**133**	15	**<75/20**
UL555S listing of FSNF is 8 sq.ft. @ 350ºF for Ruskin. 12 sq.ft. for others @ 350ºF.	MS4209F	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	80	**70**	14, 25, 75	**15**
	MS4309F	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	80	**70**	14, 25, 75	**15**
Single FSAF is limited to 12 sq.ft. @ 250ºF. If fast speed needed, use FSNF.	MS4620F1005	**FSAF230 US**	Yes	**Yes**	On/Off	230	**230**	175	**133**	15	**<75/20**
	MS4620F1203	**FSAF230-S US**	Yes	**Yes**	On/Off	230	**230**	175	**133**	15	**<75/20**
UL555S listing of FSNF is 8 sq.ft. @ 350ºF for Ruskin. 12 sq.ft. for others @ 350ºF.	MS4709F	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	80	**70**	14, 25, 75	**15**
	MS4809F	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	80	**70**	14, 25, 75	**15**
Single FSAF is limited to 12 sq.ft. @ 250ºF. If fast speed needed, use FSNF.	MS8120F1002	**FSAF24 US**	Yes	**Yes**	On/Off	24	**24**	175	**133**	15	**<75/20**
	MS8120F1200	**FSAF24-S US**	Yes	**Yes**	On/Off	24	**24**	175	**133**	15	**<75/20**
UL555S listing of FSNF is 8 sq.ft. @ 350ºF for Ruskin. 12 sq.ft. for others @ 350ºF.	MS8209F	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	80	**70**	14, 25, 75	**15**
	MS8309F	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	80	**70**	14, 25, 75	**15**
Auxiliary switch packages	32003532-002 Aux Switch Package	**Use Belimo "-S" models**	N/A	**N/A**	N/A	N/A	**N/A**	N/A	**N/A**	N/A	**N/A**

ECM	Some replacements are possible. Call Belimo. Digital photographs of damper may be needed.
Phillips T150	FSNF or FSAF. See www.belimo.us/media/downloads/Technical_Documents/Fire_and_Smoke_Actuators/Ruskin_P150_to_FSNF_or_FSAF.pdf or http://www.belimo.us/firesmoke, Installation Instructions for Retrofit Applications.
Prefco	5800 EMB 2X and other models. If damper shaft is present, replacement is possible. Call Belimo.
Proportional	Various models of HW and other proportional can be replaced. FSAF24-SR, FSAFB24-SR, and FSAF24-BAL are available. All have a -S model available.
Pneumatic	AHJ permission, permit, and inspection may be required. Call Belimo.

NOTES	Model Numbers: RUSKIN	Model Numbers: BELIMO	Spring Return		Control Signal	Power		Torque (in-lbs)		Timing (seconds)	Timing Drive/Spring
The Ruskin/HW motors vary irregularly in torque. It is best to use damper size to select. < 4 sq.ft. use FSLF Series. > 4 sq.ft. use FSNF Series.	H-2000A/3 Low	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	20	**30**	25 nominal	**15**
	H-2000A/6 Medium	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	42	**70**	25 nominal	**15**
	H-2000A/8 High	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	56	**70**	25 nominal	**15**
	H-2000B/3 Low	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	20	**30**	25 nominal	**15**
	H-2000B/6 Medium	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	42	**30**	25 nominal	**15**
	H-2000B/8 High	**FSNF120 US**	Yes	**Yes**	On/Off	120	**120**	56	**30**	25 nominal	**15**
	H-2024A/3 Low	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	20	**30**	25 nominal	**15**
	H-2024A/6 Medium	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	42	**70**	25 nominal	**15**
	H-2024A/8 High	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	56	**70**	25 nominal	**15**
	H-2024B/3 Low	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	20	**30**	25 nominal	**15**
	H-2024B/6 Medium	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	42	**70**	25 nominal	**15**
	H-2024B/8 High	**FSNF24 US**	Yes	**Yes**	On/Off	24	**24**	56	**70**	25 nominal	**15**
	H-2230A/3 Low	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	20	**30**	25 nominal	**15**
	H-2230A/6 Medium	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	42	**70**	25 nominal	**15**
	H-2230A/8 High	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	56	**70**	25 nominal	**15**
	H-2230B/3 Low	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	20	**30**	25 nominal	**15**
	H-2230B/6 Medium	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	42	**70**	25 nominal	**15**
	H-2230B/8 High	**FSNF230 US**	Yes	**Yes**	On/Off	230	**230**	56	**70**	25 nominal	**15**

NOTES	Model Numbers: MULTIPRODUCTS	Model Numbers: BELIMO	Spring Return		Control Signal	Torque (in-lbs)		Timing (seconds)	Timing Drive/Spring
FSNF with a ZG-AF US linkage kit is necessary for many linkage versions. Check spring on old damper. Where the old shaft is not in plane of wall or drywall has been cut to fit, replace damper and repair drywall.	MP2430	**FSNF Series**	No	**Yes**	On/Off	No Data	**70**	No Data	**15**
FSLF If a shaft is available for direct coupling. FSNF and ZG-AF US or other linkage if linkage is necessary. Note that old linkage, spring, and motor can be removed and mounting Belimo to the shaft is the accepted procedure.	MP2659	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
Air Balance. FSLF < 3 sq.ft.; FSNF 3 to 8 sq.ft. Remove old motor and external spring. Belimo mounts on shaft without linkages.	MP2724	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
FSLF if a shaft is available for direct coupling. FSNF and ZG-AF US or other linkage if linkage is necessary. Note that old linkage, spring, and motor can be removed and mounting Belimo to the shaft is the accepted procedure.	2814, 2920	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
Prefco. FSLF can be direct coupled if there is an external shaft. Internal mount motors are difficult to replace. FSTF may be linkaged on small dampers. Belimo jackshaft linkage may be used in some cases.	5800 EMB	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
Prefco. If externally mounted on a shaft, Belimo FSLF can replace old motor and spring. Belimo jackshaft linkage may be used in some cases.	5800 EMB 2XPO/C	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
Greenheck. FSLF < 3 sq.ft.; FSNF 3 to 8 sq.ft. Remove old motor and external spring. Belimo mounts on shaft without linkages.	MP3158, 9 MP2985, 6	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
Ruskin. FSLF120/MP Kit available from Ruskin Reps. See instructions for negator spring removal. Some dampers will need fusible link replaced and thermal sensor installed.	MP2781	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**
FSLF < 3 sq.ft.; FSNF 3 to 8 sq.ft. Remove old motor and external spring. Belimo mounts on shaft without linkages.	TSB2000/1	**FSLF Series**	No	**Yes**	On/Off	No Data	**30**	No Data	**15**

Model Numbers

NOTES	SIEMENS	BELIMO	Spring Return		Control Signal	Power		Torque (in-lbs)		Timing (seconds)	Timing Drive/Spring
One FSAF is limited to 12 sq.ft. @ 250ºF. May be paralleled. If fast speed is required, use FSNF. It is UL555S listed for 8 sq.ft. @ 350ºF with Ruskin, 12 sq.ft. with others, and 16 sq.ft. @ 250ºF. FSLF passes UL555S at 4 sq.ft. (in some cases, 3 ft. wide x 2 ft. high as well.)	GGD121.1U	**FSAF24 US**	Yes	**Yes**	On/Off	24	**24**	142*	**133**	15	**<75/20**
	GGD121.3U	**FSAF24 US**	Yes	**Yes**	On/Off	24	**24**	142*	**133**	15	**<75/20**
	GGD221.1U	**FSAF120 US**	Yes	**Yes**	On/Off	115	**120**	142*	**133**	15	**<75/20**
	GGD221.3U	**FSAF120 US**	Yes	**Yes**	On/Off	115	**120**	142*	**133**	15	**<75/20**
	GGD321.1U	**FSAF230 US**	Yes	**Yes**	On/Off	230	**230**	142*	**133**	15	**<75/20**
	GND12x.1x	**FSLF24 US**	Yes	**Yes**	On/Off	24	**24**	50	**30**	15	**15**
	GND22x.1x	**FSLF120 US**	Yes	**Yes**	On/Off	120	**120**	50	**30**	15	**15**
	GND32x.1x	**FSLF230 US**	Yes	**Yes**	On/Off	230	**230**	50	**30**	15	**15**
This is a 165ºF thermal sensor. Call for information.	ASK79.165	**BAE165 US**									

* While drive torque of Siemens is 142 in-lb, spring torque is 110 in-lbs. Belimo has passed UL555S at 12 sq.ft.

Model Numbers

NOTES	SIEBE	BELIMO	Spring Return		Control Signal	Power		Damper Size	Stroke
Where linkages are needed, use FSNF. Timing is a function of damper spring. When replacing the actuator, remove the old spring from the damper. If the damper has one spring, add a new electric thermal sensor. (Belimo BAE 165) A -500 part number indicates an auxiliary switch. Replace with a Belimo "-S" version.	MA318	**FSNF24**	No	**Yes**	On/Off	24	**24**	For <4 sq. ft. dampers use FSLF Series For >4 sq. ft. use FSNF Series	**180°**
	MA418	**FSNF120**	No	**Yes**	On/Off	120	**120**		
	MA220 (23VA)	**For <4 sq. ft. dampers use FSLF Series** **For >4 sq. ft. use FSNF Series**	No	**Yes**	On/Off	120	**120**		**90°**
	MA220		No	**Yes**	On/Off	120	**120**		
	MA221 (23VA)		No	**Yes**	On/Off	240	**240**		
	MA221		No	**Yes**	On/Off	240	**240**		
	MA223 (23VA)		No	**Yes**	On/Off	24	**24**		
	MA223		No	**Yes**	On/Off	24	**24**		
	MA230 (36VA)		No	**Yes**	On/Off	120	**120**		
	MA230		No	**Yes**	On/Off	120	**120**		
	MA233 (36VA)		No	**Yes**	On/Off	24	**24**		
	MA233		No	**Yes**	On/Off	24	**24**		
	MA240	**No direct replacement**							
	MA250	**FSLF Series**	No	**Yes**	On/Off	24/120	**24/120**	<4 sq.ft use FSLF >4.sq.ft. use FSNF	MA250 replaces MA220 and MA230
		FSNF Series	No	**Yes**	On/Off	24/120	**24/120**		

Honeywell to Belimo

Actuator Replacement Cross Reference

BELIMO

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
HONEYWELL "WHITE"	**BELIMO "GRAY"**

✦ Belimo 24V actuators are AC/DC

Model Numbers

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M4185A1001	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**					30-60	**<75**
M4185B1009	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			1	**2**	30-60	**<75**
M4185B1058	**NFBUP-S**	Yes	On/Off	**On/Off**	100-230	**24-240**	60	**90**			1	**2**	30-60	**<75**
M4185C1007	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			2	**2**	30-60	**<75**
M6184A1015	**AMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**					30-60	**150**
M6184A1023	**NMX120-3**	No	Floating Point	**On/Off, Floating Pt.**	120	**120**	75	**90**					15-30	**45**
M6184D1001	**NMBC24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	75	**90**					15-30	**45**
M6184D1035	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6184D1068	**AMX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			120-240	**150-adj**
M6184F1014	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M6194B1011	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**			1	**add S1A**	60-120	**150**
M6194D1017	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**					120-240	**150**
M6194E1006	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**			1	**add S1A**	120-240	**150**
M6284A1055	**AMCX24-MFT***	No	Floating Point	**On/Off, Floating Pt.**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6284D1000	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6284F1013	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M6285A1005	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M6285C1001	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M6294D1008	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**					120-240	**150**
M7164A1017	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	35	**35**		**2-10 VDC**			30-60	**35**
M7164G1030	**LMCB24-SR***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	35	**35**		**2-10 VDC**			30-60	**35**
M7215A1008	**LF24-SR US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7284A1004	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284A1012	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284A1038	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	75	**180**		**2-10 VDC**			15-30	**35-adj**
M7284A1079	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284C1000	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M7284C1059	**AMCX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30	**35-adj**
M7284C1067	**AMCX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	60	**35-adj**
M7284Q1009	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M7284Q1033	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30	**35-adj**
M7284Q1041	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	60	**35-adj**
M7285A1003	**NFX24-MFT***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**			30-60	**150-adj**
M7285A1045	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**			30-60	**150-adj**
M7285C1009	**NFX24-MFT-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M7285Q1008	**NFX24-MFT-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M7286G1009	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M7294A1010	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**		**2-10 VDC**			60-120	**150**
M7294Q1007	**GMB24-SR***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	300	**360**		**2-10 VDC**	2	**add S2A**	60-120	**150**
M7415A1006	**LF24-ECON-R03 US**	Yes	Thermistor, 3000 ohm NTC	**Thermistor, 3000 ohm NTC**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7415B1004	**LF24-ECON-R03 US**	Yes	Thermistor, 3000 ohm NTC	**Thermistor, 3000 ohm NTC**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7685A1025	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M8185D1006	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	60	**90**					30-60	**<75**
M8405A1006	**LF24-SR-E US**	Yes	On/Off, Floating Pt.	**2-10 VDC, 4-20 mA**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**150-adj**
M9164A1005	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	120	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1013	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	100-230	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1013	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	100-230	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1070	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164C1001	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9164C1068	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9164D1009	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9174B1027	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	1	**add S1A**	30-60	**150-adj**
M9174C1025	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9174C1033	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9174D1007	**NMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**			30-60	**150-adj**
M9184A1019	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**			30-60	**150-adj**
M9184C1031	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9184D1005	**NMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**			15-30	**150-adj**
M9184D1021	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**			30-60	**150-adj**
M9184F1034	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9185A1018	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9185C1006	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**	2		30-60	**150-adj**
M9185D1004	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9185E1019	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**	1		30-60	**150-adj**
M9186G1006	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9194D1003	**GMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	300	**360**		**2-10 VDC**			120-240	**150-adj**
M9194E1000	**GMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	300	**360**		**2-10 VDC**	1	**add S1A**	120-240	**150-adj**
ML6131B2001	**LMQX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	6	**35**					15	**2.5-adj**
ML6161A2008	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML6161A2009	**LMB24-3-P5-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**	2 kΩ	**5 kΩ**			90	**95**
ML6161B2024	**LMB24-3-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**					90	**95**
ML6161B2024	**LMB24-3-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**					90	**95**
ML6174A2002	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174A2010	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**180**					180	**95**
ML6174B2019	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174B2019	**NMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	90	**90**					90	**95**
ML6174D2009	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174E2008	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML7161A2008	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML7161A2008	**LMB24-SR-T**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML7174A2001	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**			90	**95**
ML7174A2019	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			90	**95**
ML7174E2007	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			90	**95**
MN6120A1002	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	175	**180**					90	**95**
MN6120A1200	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	175	**180**			2	**add S2A**	90	**95**
MN6134A1003	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	300	**360**					90	**150**
MN6134A1003	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	300	**360**					90	**150**
MN7220A2007	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**			90	**95**
MN7234A2008	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**	2-10 VDC	**2-10 VDC**			90	**150**
MS4105A1002	**LF230 US**	Yes	On/Off	**On/Off**	100-250	**230**	35	**35**					90	**40-75**
MS4105A1002	**LF120 US**	Yes	On/Off	**On/Off**	100-250	**120**	35	**35**					90	**40-75**
MS4110A1002	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	100-250	**24-240**	88	**90**					90	**<75**
MS4110A1002	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	100-250	**24-240**	88	**90**					90	**<75**
MS4110A1200	**LF120-S US**	Yes	On/Off	**On/Off**	100-250	**120**	35	**35**			2	**1**	90	**40-75**
MS4110A1200	**LF230-S US**	Yes	On/Off	**On/Off**	100-250	**230**	35	**35**			2	**1**	90	**40-75**
MS4120A1001	**AFBUP**	Yes	On/Off	**On/Off**	100-250	**24-240**	175	**180**					90	**<75**
MS4120A1209	**AFBUP-S**	Yes	On/Off	**On/Off**	100-250	**24-240**	175	**180**			2	**2**	90	**<75**
MS7150A2206	**LF24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**35**	2-10 VDC	**2-10 VDC**	2	**1**	90	**150**
MS7505A2008	**LFC24-3-R US**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**Floating Point**	24	**24**	44	**35**	2-10 VDC	**2-10 VDC**			90	**90**
MS7510A2008	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
MS7510A2206	**LF24-MFT-S US**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	88	**35**	2-10 VDC	**2-10 VDC**	2	**1**	90	**150-adj**
MS7520A2007	**AFX24-MFT**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

Honeywell to Belimo

Actuator Replacement Cross Reference

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MS7520A2205	**AFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
MS8105A1008	**LF24 US**	Yes	On/Off	**On/Off**	24	**24**	44	**35**					90	**40-75**
MS8110A1008	**NFB24**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	88	**90**					90	**<75**
MS8110A1206	**NFB24-S**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	88	**90**			2	**2**	90	**<75**
MS8120A1007	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	175	**180**					90	**<75**
MS8120A1205	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	175	**180**			2	**2**	90	**<75**
MS8309F1001	**FSNF24 US**	Yes	On/Off	**On/Off**	24	**24**	80	**70**					25	**<15**

** Belimo actuators are 95° max rotation.

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
INVENSYS "WHITE"	**BELIMO "GRAY"**

✦ Belimo 24V actuators are AC/DC

Model Numbers

INVENSYS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MA-305	**TFB24**	Yes	On/Off	**On/Off**	24	**24**	16	**22**						**75**
MA-305	**TFB24-MFT**	Yes	On/Off	**On/Off**	24	**24**	16	**22**		**2-10 VDC**				**150-adj**
MA-305-500	**TFB24-S**	Yes	On/Off	**On/Off**	24	**24**	16	**22**			1	**1**		**75**
MA-305-500	**TFB24-MFT-S**	Yes	On/Off	**On/Off**	24	**24**	16	**22**		**2-10 VDC**	1	**1**		**150-adj**
MA-318	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**						**<75**
MA-318-500	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**			1	**2**		**<75**
MA-405	**TFB120**	Yes	On/Off	**On/Off**	120	**120**	16	**22**						**75**
MA-405	**TFCB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**				**1**		**<30**
MA-405-500	**TFB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**			1	**1**		**75**
MA-405-500	**TFCB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**			1	**1**		**<30**
MA40-7040	**LF120 US**	Yes	On/Off	**On/Off**	120	**120**	35	**35**					50	**40-75**
MA40-7040-501	**LF120-S US**	Yes	On/Off	**On/Off**	120	**120**	35	**35**			1	**1**	50	**40-75**
MA40-7041	**LF230 US**	Yes	On/Off	**On/Off**	230	**230**	35	**35**					50	**40-75**
MA40-7041-501	**LF230-S US**	Yes	On/Off	**On/Off**	230	**230**	35	**35**			1	**1**	50	**40-75**
MA40-7043	**LF24 US**	Yes	On/Off	**On/Off**	24	**24**	35	**35**					50	**40-75**
MA40-7043-501	**LF24-S US**	Yes	On/Off	**On/Off**	24	**24**	35	**35**			1	**1**	50	**40-75**
MA40-7151	**AFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	133	**180**					190	**<75**
MA40-7070	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**					80	**<75**
MA40-7070-502	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			2	**2**	80	**<75**
MA40-7071	**NFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**					80	**<75**
MA40-7071-502	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**			2	**2**	80	**<75**
MA40-7073	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	60	**90**					80	**<75**
MA40-7073-502	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	60	**90**			2	**2**	80	**<75**
MA40-7150	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	133	**180**					190	**<75**
MA40-7150-502	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	133	**180**			2	**2**	190	**<75**
MA40-7153	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	133	**180**					190	**<75**
MA40-7153-502	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	133	**180**			2	**2**	190	**<75**
MA40-7170	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	150	**180**					145	**<75**
MA40-7171	**AFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	150	**180**					145	**<75**
MA40-7173	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	150	**180**					145	**<75**
MA-416	**NFBUP**	Yes	On/Off	**On/Off**	208	**24-240**	60	**90**					104	**<75**
MA-416-500	**NFBUP-S**	Yes	On/Off	**On/Off**	208	**24-240**	60	**90**			1	**2**	104	**<75**
MA41-7073	**NFB24**	Yes	On/Off	**On/Off**	24	**24**		**90**						**<75**
MA-418-500	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			1	**2**		**<75**
MA-419	**NFBUP**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**					120	**<75**
MA-419-500	**NFBUP-S**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**			1	**2**	120	**<75**
MA40-7151-502	**AFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	133	**180**			2	**2**	190	**<75**
MA5-419	**NFBUP**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**					120	**<75**
MA5-419-500	**NFBUP-S**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**			1	**2**	120	**<75**
MC-351	**GMB24-3**	No	On/Off	**On/Off, Floating Pt.**	24	**24**	220	**360**					70	**95**
MC-421	**AMQX24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**140**		**2-10 VDC**			20	**7-adj**
MC-431	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			30	**150-adj**
MC-4311	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			30	**150-adj**
MC5-4311	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			36	**150-adj**
MF40-6043	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					<90	**95**
MF40-6043-502	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**			2	**add S2A**	<90	**95**
MF40-6043-510	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					<90	**95**
MF40-6083	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					120	**95**
MF40-6153	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	133	**180**					120	**95**
MF40-7043	**LF24-3 US**	Yes	Floating Point	**Floating Point**	24	**24**	35	**35**	2-10 VDC				130	**150**
MF40-7043-501	**LF24-3-S US**	Yes	Floating Point	**Floating Point**	24	**24**	35	**35**			1	**1**	195	**150**
MF40-7073	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			190	**150-adj**
MF40-7073-502	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	195	**150-adj**

** Belimo actuators are 95° max rotation.

Invensys to Belimo

Actuator Replacement Cross Reference

BELIMO

INVENSYS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MF40-7153	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**			190	**150-adj**
MF40-7153-502	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**	2	**2**	190	**150-adj**
MF40-7173	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MF41-6043	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					90	**95**
MF41-6043-502	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**			2	**add S2A**	90	**95**
MF41-6043-510	**LMB24-3-P10-T**	No	Floating Point	**Floating Point**	24	**24**	35	**45**	1 kΩ	**10 kΩ**			90	**95**
MF41-6083	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
MF41-6083-502	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**			2	**add S2A**	90	**95**
MF41-6153	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	133	**180**					90	**95**
MF41-6343	**GMB24-3**	No	Floating Point	**Floating Point**	24	**24**	300	**360**					90	**150**
MF41-7073	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			195	**150-adj**
MF41-7073-502	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	195	**150-adj**
MF41-7153	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**			190	**150-adj**
MF41-7153-502	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**	2	**2**	190	**150-adj**
MF-6343	**GMB24-3**	No	Floating Point	**Floating Point**	24	**24**	300	**360**					145	**150**
MM-400	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**			50	**35**
MM-400-002	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**	2	**add S2A**	50	**35**
MM-500	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**			55	**150-adj**
MM-500-002	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	2	**2**	55	**150-adj**
MMR-400	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**			50	**35**
MMR-400-002	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**	2	**add S2A**	50	**35**
MMR-500	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**			55	**150-adj**
MMR-500-002	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	2	**2**	55	**150-adj**
MP-361	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	95	**95**
MP-361-600	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-361-691	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-371	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**95**
MP-371-600	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-371-602	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-381	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	130	**150**
MP-382	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	130	**150**
MP-421	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	25	**150-adj**
MP-422	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	25-250	**150-adj**
MP-424	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	13-130	**150-adj**
MP-451	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	80	**90**		**2-10 VDC**	1	**add S1A**	80	**150-adj**
MP-453	**GMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	40	**150-adj**
MP-465	**NFB24-SR-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	1	**2**	50	**95**
MP-475	**NFB24-SR-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	1	**2**	50	**95**
MP-481	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-483	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	65	**90**		**2-10 VDC**	1	**add S1A**	65	**150-adj**
MP-485	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-495	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-483	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	65	**90**		**2-10 VDC**	1	**add S1A**	65	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

INVENSYS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MP-485	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-5233	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	19	**22**		**2-10 VDC**			60	**150-adj**
MP-5433	**TFB24-MFT***	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	19	**22**		**2-10 VDC**			60	**150-adj**
MP-5613	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**		**22**		**2-10 VDC**			60	**150-adj**
MS-1233	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-002	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-100	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-102	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**17**		**2-10 VDC**			225	**150-adj**
MS40-7171	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7171	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS40-7043	**LF24-SR US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**35**	2-10 VDC	**2-10 VDC**			130	**150**
MS40-7043-501	**LF24-SR-S US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**35**	2-10 VDC	**2-10 VDC**	1	**1**	130	**150**
MS40-7073-502	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**	2-10 VDC	**2-10 VDC**	2	**2**	130	**95**
MS40-7153	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**			130	**95**
MS40-7153-502	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**	2	**2**	195	**150-adj**
MS40-7170	**AFB24-SR***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7170	**AFB24-MFT***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS40-7173	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7173	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS41-6043	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**35**
MS41-6043-502	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
MS41-6043-520	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
MS41-6043-522	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
MS41-6083	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**95**
MS41-6083-502	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6083-520	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6083-522	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6153	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**				**95**
MS41-6343	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**	2-10 VDC	**2-10 VDC**				**150**
MS41-7073	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**	2-10 VDC	**2-10 VDC**			195	**95**
MS41-7153	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**			190	**95**
MS50-E2001	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-E2101	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-E2301	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-H2001	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**
MS50-H2101	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**
MS50-H2301	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

Johnson Controls to Belimo

Actuator Replacement Cross Reference

BELIMO

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
JOHNSON CONTROLS "WHITE"	BELIMO "GRAY"

✦ Belimo 24V actuators are AC/DC

Model Numbers

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M110AAB-1	**LF120-S US**	Yes	On/Off, Floating Pt.	**On/Off**	120	**120**	25	**35**			1	**1**		**40-75**
M110AGA-1	**LF24-3 US**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	25	**35**						**150**
M110AGB-1	**LF24-3-S US**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	25	**35**			1	**1**		**150**
M110GGA-3	**LF24-MFT US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**				**150-adj**
M110JGA-1	**LF24-MFT US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**				**150-adj**
M110JGB-1	**LF24-MFT-S US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**	1	**1**		**150-adj**
M120AAA-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	35	**45**						**95**
M120AAC-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	35	**45**			2	**add S2A**		**95**
M120AGA-1	**LMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**						**95**
M120GGA-3	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
M120JAA-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
M120JAC-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	35	**45**	2-10 VDC	**2-10 VDC**	2	**add S2A**		**95**
M120JGA-1	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
M120MGA-1	**LMX24-MFT95**	No	0-135 ohm	**MFT, 2-10 VDC default**	24	**24**	35	**45**						**150-adj**
M130AAA-1	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	120	**24-240**	50	**90**						**<75**
M130AAB-1	**NFBUP-S**	Yes	On/Off, Floating Pt.	**On/Off**	120	**24-240**	50	**90**			1	**2**		**<75**
M130AGA-1	**NFB24**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	50	**90**						**<75**
M130AGB-1	**NFB24-S**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	50	**90**			1	**2**		**<75**
M130GGA-3	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**				**150-adj**
M130JGA-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**				**150-adj**
M130JGB-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**	1			**150-adj**
M130JGC-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**	2			**150-adj**
M130MGA-1	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	50	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M140AAA-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	75	**45**						**95**
M140AGA-1	**LMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	75	**45**						**95**
M140GGA-3	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M140JAA-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M140JGA-1	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M150AAA-1	**AMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	150	**180**						**95**
M150AAB-1	**AMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	150	**180**			1	**add S1A**		**95**
M150AGA-1	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**						**95**
M150AGB-1	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**			1	**add S1A**		**95**
M150GGA-3	**AMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M150JGA-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**95**
M150JGB-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**	1	**add S1A**		**95**
M150JGC-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**	2	**add S2A**		**95**
M150MGA-1	**AMB24-MFT**	No	0-135 ohm	**MFT, 2-10 VDC default**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M9108-GGA-2	**NMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**			60	**45**
M9101-AGA-2N	**LMB24-3-T**	No	Floating Point	**Floating Point**	24	**24**	10	**45**					15	**95**
M9104-AGA-2N	**LMB24-3-T**	No	On/Off, Floating Pt.	**Floating Point**	24	**24**	35	**45**					90	**95**
M9104-AGA-2N	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					90	**95**
M9106-AGA-2	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	53	**45**					60	**95**
M9106-AGA-2N01	**LMCB24-3**	No	On/Off, Floating Pt.	**Floating Point**	24	**24**	53	**45**					60	**35**
M9106-AGA-2N01	**LMCB24-3-T**	No	Floating Point	**Floating Point**	24	**24**	53	**45**					60	**35**
M9106-AGA-2N02	**LMB24-MFT**	No	On/Off, Floating Pt.	**MFT, 2-10 VDC default**	24	**24**	53	**45**		**2-10 VDC**			120	**150-adj**

** Belimo actuators are 95° max rotation.

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power +		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9106-AGA-2N02	**LMX24-MFT**	No	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**45**		**2-10 VDC**			120	**150-adj**
M9106-AGC-2	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	53	**45**			2	**add S2A**	60	**95**
M9106-AGF-2	**LMB24-3-P10-T**	No	Floating Point	**Floating Point**	24	**24**	53	**45**		**10 kΩ**			60	**95**
M9106-GGA-2	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**45**		**2-10 VDC**			60	**95**
M9106-IGA-2	**LMB24-MFT**	No	Floating Point	**Floating Point**	24	**24**	53	**45**		**2-10 VDC**			60	**150-adj**
M9108-AGA-2	**NMCB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					25-50	**45**
M9108-AGC-2	**NMCB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**			2	**add S2A**	25-50	**45**
M9108-GGC-2	**NMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**	2	**add S2A**	25-50	**45**
M9108-HGA-2	**NMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	70	**90**		**2-10 VDC**			25-50	**150-adj**
M9108-HGC-2	**NMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	70	**90**		**2-10 VDC**	2	**add S2A**	25-50	**150-adj**
M9109-AGA-2	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	80	**90**					60	**95**
M9109-AGC-2	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	80	**90**			2	**add S2A**	60	**95**
M9109-GGA-2	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	80	**90**		**2-10 VDC**			60	**95**
M9109-GGC-2	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	80	**90**		**2-10 VDC**	2	**add S2A**	60	**95**
M9116-AGA-2	**AMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC				70-115	**95**
M9116-AGA-2	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	140	**180**					70-115	**95**
M9116-AGC-2	**AMB24-3-S**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC		2	**add S2A**	70-115	**95**
M9116-AGC-2	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	140	**180**			2	**add S2A**	70-115	**95**
M9116-AGD-2	**AMB24-3 + P140A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC	**0-140 Ω**			70-115	**95**
M9116-AGE-2	**AMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC	**0-1000 Ω**			70-115	**95**
M9116-AGE-2	**AMB24-3 + P1000A**	No	Floating Point	**Floating Point**	24	**24**	140	**180**		**0-1000 Ω**			70-115	**95**
M9116-GGA-2	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**95**
M9116-GGA-2	**AMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**150-adj**
M9116-GGC-2	**AMB24-SR-S**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**	2	**add S2A**	70-115	**95**
M9116-GGC-2	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**		**2-10 VDC**	2	**add S2A**	70-115	**95**
M9116-HGA-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**150-adj**
M9116-HGA-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-115	**150-adj**
M9116-HGC-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**	2		70-115	**150-adj**
M9124-AGA-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**					115-175	**150**
M9124-AGC-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**			2	**add S2A**	70-130	**150**
M9124-AGD-2	**GMB24-3 + P140A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**		**0-140 Ω**			115-175	**150**
M9124-AGE-2	**GMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**		**0-1000 Ω**			70-130	**150**
M9124-GGA-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	210	**360**		**2-10 VDC**			70-130	**150**
M9124-HGA-2	**GMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	210	**360**		**2-10 VDC**			70-130	**150-adj**
M9124-HGC-2	**GMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	210	**360**		**2-10 VDC**	2	**add S2A**	70-130	**150-adj**
M9132-AGA-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**					115-205	**150**
M9132-AGC-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**			2	**add S2A**	70-130	**150**
M9132-AGE-2	**GMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**		**0-1000 Ω**			115-205	**150**
M9132-GGA-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	280	**360**		**2-10 VDC**			70-130	**150**
M9132-GGC-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	280	**360**		**2-10 VDC**	2	**add S2A**	70-130	**150**
M9206-AGA-2	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**90**		**2-10 VDC**			90	**150-adj**
M9206-AGC-2	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**90**		**2-10 VDC**	2		90	**150-adj**
M9206-BAA-2S	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	53	**90**					90	**<75**
M9206-BAC-2S	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	53	**90**			2	**2**	90	**<75**
M9206-BGA-2S	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	53	**90**					60	**<75**
M9206-BGB-2S	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	53	**90**			1	**2**	60	**<75**
M9206-BGC-2	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	53	**90**			2	**2**	60	**<75**
M9206-GGA-2	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**90**		**2-10 VDC**			60	**95**
M9206-GGA-2MP	**LF24-MFT-20 US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	53	**35**		**2-10 VDC**			90	**150-adj**
M9206-GGC-2	**LF24-SR-S US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**35**		**2-10 VDC**	2	**1**	90	**40-75**
M9206-GGC-2MP	**LF24-MFT-S-20 US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	53	**35**		**2-10 VDC**	2	**1**	90	**150-adj**
M9216-AGA-2	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9216-AGC-2	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-BAA-2	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	140	**180**					70-130	**<75**

** Belimo actuators are 95° max rotation.

Johnson Controls to Belimo

Actuator Replacement Cross Reference

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9216-BAC-2	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	140	**180**			2	**2**	70-115	**<75**
M9216-BGA-2	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	140	**180**					70-130	**<75**
M9216-BGC-2	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	140	**180**			2	**2**	70-130	**<75**
M9216-GGA-2	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**		**2-10 VDC**			70-130	**95**
M9216-GGC-2	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-HGA-2	**AFB24-MFT**	Yes	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9216-HGC-2	**AFB24-MFT-S**	Yes	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-JGA-2	**AFX24-MFT**	Yes	Floating Point	**Floating Point**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9208-AGA-1	**NFX24-MFT**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	70	**90**					150	**150-adj**
M9208-AGC-1	**NFX24-MFT-S**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	70	**90**			2	**2**	150	**150-adj**
M9208-BGA-1	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	70	**90**					55-71	**<75**
M9208-BGC-1	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	70	**90**			2	**2**	55-71	**<75**
M9208-BDA-1	**NFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	70	**90**					55-71	**<75**
M9208-BDC-1	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	70	**90**			2	**2**	55-71	**<75**
M9208-GGA-1	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**95**
M9208-GGC-1	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**	2	**2**	150	**95**

** Belimo actuators are 95° max rotation.

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
SIEMENS "WHITE"	**BELIMO "GRAY"**

✦ Belimo 24V actuators are AC/DC

Model Numbers

SIEMENS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
GBB151.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**			150	**95**
GBB156.1U	**AMB24-SR**	No	On/Off	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**	2	**add S2A**	150	**95**
GBB161.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**			150	**95**
GBB163.1U	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GBB164.1U	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**		**add S2A**	150	**150-adj**
GBB166.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**	2		150	**95**
GBB171.1U	**AMB24-3**	No	On/Off	**On/Off, Floating Pt.**	24	**24**	177	**180**					150	**95**
GBB175.1U	**AMB24-SR**	No	On/Off	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**			150	**95**
GCA121.1U	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	160	**180**					90	**<75**
GCA126.1U	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	160	**180**			2	**2**	90	**<75**
GCA131.1P	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	160	**180**					90	**<75**
GCA135.1U	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	160	**180**			2	**2**	90	**<75**
GCA151.1U	**AFB24-MFT**	Yes	4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**		**2-10 VDC**			90	**150-adj**
GCA156.1U	**AFB24-MFT-S**	Yes	4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**		**2-10 VDC**	2	**2**	90	**150-adj**
GCA161.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GCA163.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GCA164.1U	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA166.1U	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA166.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA221.1U	**AFBUP**	Yes	On/Off	**On/Off**	120	**120**	160	**180**					90	**<75**
GCA226.1U	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**120**	160	**180**			2	**2**	90	**<75**
GDE131.1P	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**					90	**95**
GDE136.1P	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**			2	**add S2A**	90	**95**
GDE161.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**			90	**95**
GDE163.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**			90	**95**
GDE164.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**	2	**add S2A**	90	**95**
GDE166.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**	2	**add S2A**	90	**95**
GEB131.1U	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**					90	**95**
GIB151.1U	**GMB24-SR**	No	4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**		**2-10 VDC**			150	**150**
GIB156.1U	**GMB24-SR**	No	4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**		**2-10 VDC**	2	**add S2A**	150	**150**
GIB161.1U	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**			150	**150**
GIB163.1U	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GIB164.1U	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150-adj**
GIB166.1U	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GIB171.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**					150	**150**
GIB171.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**					150	**150**
GIB175.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**			2	**add S2A**	150	**150**
GLB131.1P	**NMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	88	**90**					150	**150**
GLB136.1P	**NMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	88	**90**			2	**add S2A**	150	**150**
GLB161.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			150	**150**
GLB163.1P	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GLB164.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GLB166.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GMA121.1U	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	62	**90**					90	**<75**
GMA126.1U	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	62	**90**			2	**2**	90	**<75**
GMA131.1U	**NFX24-MFT**	Yes	3 position	**MFT, 2-10 VDC default**	24	**24**	62	**90**		**2-10 VDC**			90	**150-adj**
GMA136.1U	**NFX24-MFT-S**	Yes	3 position	**MFT, 2-10 VDC default**	24	**24**	62	**90**		**2-10 VDC**	2	**2**	90	**150-adj**

** Belimo actuators are 95° max rotation.

Siemens to Belimo

Actuator Replacement Cross Reference

SIEMENS	BELIMO**	Spring Return	Control Signal		Power +		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
GMA161.1U	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GMA163.1U	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GMA166.1U	**NFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GMA221.1U	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	62	**90**					90	**<75**
GMA226.1U	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	62	**90**			2	**2**	90	**<75**
GQD121.1P	**TFB24**	Yes	On/Off	**On/Off**	24	**24**	20	**22**					40-75	**<75**
GQD131.1P	**TFB24-3**	Yes	Floating Point	**Floating Point**	24	**24**	20	**22**					40-75	**95**
GQD151.1P	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	20	**22**	2-10 VDC	**2-10 VDC**			40-75	**150-adj**
GQD221.1U	**TFCB120-S***	Yes	On/Off	**On/Off**	120	**120**	20	**22**					40-75	**30**

*Do not wire switch.

** Belimo actuators are 95° max rotation.

Control Signal Based Retrofit Solutions

HONEYWELL SERIES 90, 0-135 Ω	
BELIMO MODEL	**TORQUE**
AFB24-MFT95, AFX24-MFT95	180 in-lbs
LMX24-MFT95	45 in-lbs
NMX24-MFT95	90 in-lbs
AMX24-MFT95	180 in-lbs
GMX24-MFT95	360 in-lbs

BARBER COLMAN MP..., 6-9 V	
BELIMO MODEL	**TORQUE**
LF24-MFT-20 US	35 in-lbs
LF24-MFT-S-20 US	35 in-lbs

STAEFA CONTROL 0-10 V PHASECUT	
BELIMO MODEL	**TORQUE**
AFB24-PC	180 in-lbs
LMX24-PC	45 in-lbs
NMX24-PC	90 in-lbs
AMX24-PC	180 in-lbs
GMX24-PC	360 in-lbs

AFB24-MFT...

AMX24-MFT...

LF24-MFT...

ZG-JSL, ZG-JSLA Jackshaft Retrofit Linkage

For EF, AF, NF, LF, GM, GK, AM and NM Series Actuators

5 YEAR WARRANTY

Application

The ZG-JSL jackshaft linkage is designed to easily attach to any part of a jackshaft and allows easy installation of select Belimo actuators.

The unique open ended design and clamp insert allows the ZG-JSL to be used with any jackshaft from ½" to ¾" in diameter. Removal of the insert will allow the linkage to attach to a maximum shaft diameter of 1.05". Changing the anti-rotation plate will allow various actuators to be mounted.

Default/Configuration

The ZG-JSL linkage can also be configured by moving the anti-rotation plate 90° for space saving applications. See mounting configurations below. The ZG-JSLA will have a factory mounted actuator on the linkage in the vertical position only.

Operation

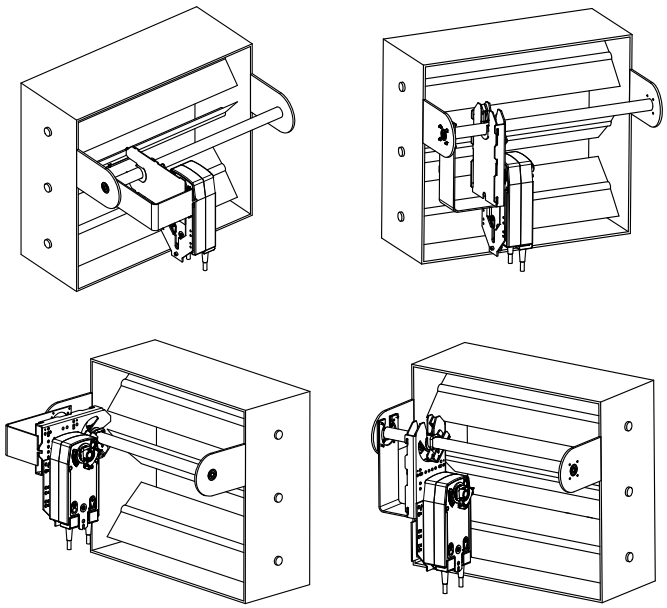
The ¾" diameter built-in steel shaft allows direct coupling to Belimo series actuators (chart below). There is a torque reduction when using the ZG-JSL linkage. Verify application requirements before ordering.

Technical Data	ZG-JSL, ZG-JSLA
Fits shaft diameter	½" to ¾" with insert, 1.05" without insert
Materials:	
Housing	galvanized steel
Bearings	GF Delrin
Shafts	steel
Max torque output	90% of rated actuator torque
Max actuator yield	see chart on right
Mech. angle of rotation	90° mountable
Ambient temperature	-22°F to +122°F [-33°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing type	NEMA 2
Weight	3.25 lbs [1.47 kg]

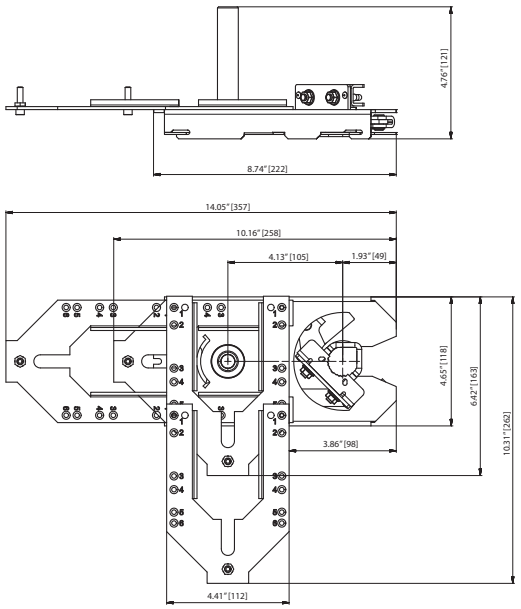
Actuator	Torque Reduction
EF Series*	239 in-lbs
Classic AF Series	123 in-lbs
AF Series	166 in-lbs
NF Series	87 in-lbs
LF Series***	33 in-lbs
GM/GK Series**	288 in-lbs
AM Series	166 in-lbs
NM Series	87 in-lbs

* ZG-121 adapter must be used with EF.
** EF, GM/GK not for use with ½" shafts.
*** K6-1 clamp must be used with LF.

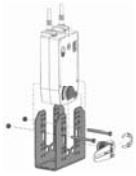
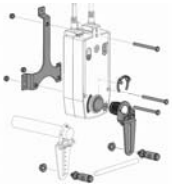
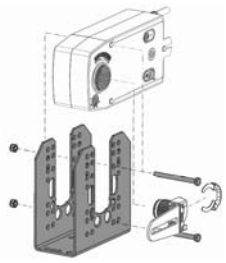
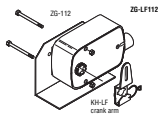
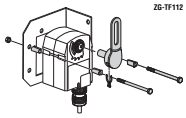
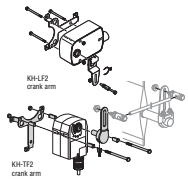
Mounting Configurations



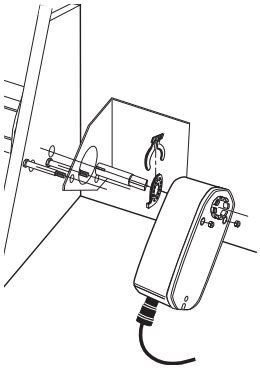
Dimensions (Inches [mm])



CRANK ARM KITS AND MOUNTING PLATES

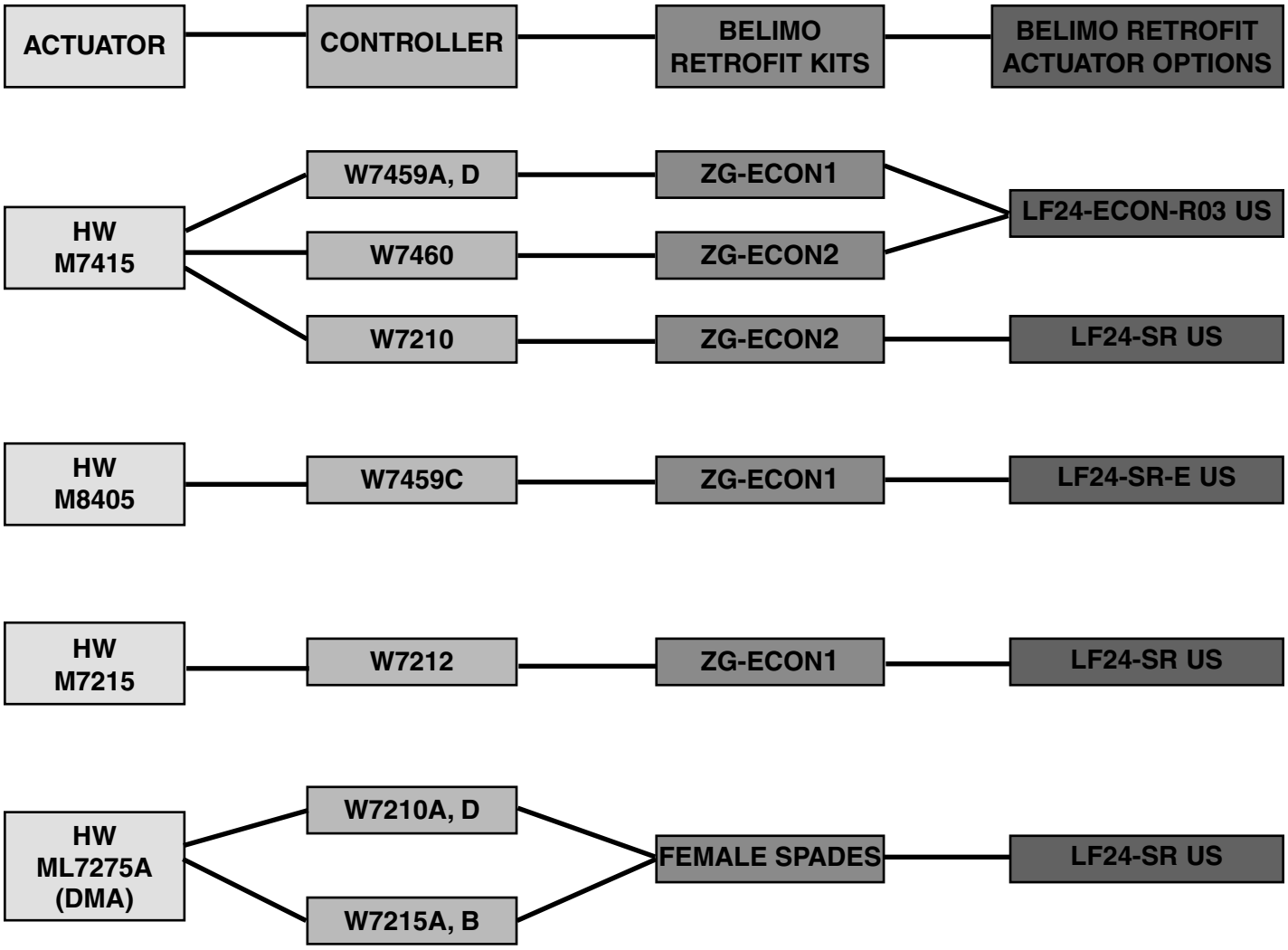
	**ZG-AFB118** Crank arm adaptor kit	The ZG-AFB118 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-AFB118 mounting bracket is designed to mount the NF and AF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit.
	**ZG-AFB** Crank arm adaptor kit	The ZG-AFB crank arm adaptor kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100 and ZG-101 universal mounting brackets are needed to fully convert to crank arm operation.
	**ZG-100 and ZG101** Universal mounting brackets	The ZG-100 and ZG-101 universal mounting brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It can be used for outside or inside the duct mounting, fastened to the duct work or directly to the damper assembly. It can also be used to mount to other surfaces rather than the duct. The ZG-100 and ZG-101 are provided with pre-punched hole patterns for the AM, GM, NF, and AF series actuators. The ZG-100 hole pattern layout allows mounting these actuators in three different, mounting orientations.
	**ZG-118** Universal mounting brackets	The ZG-118 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-118 is designed to mount the NF and AF series actuators in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit. The ZG-118 is designed to place the KH-AFB crank arm in the same relative position as the Honeywell® Mod IV and Mod III actuators.
	KH-AFB Crank arm	The KH-AFB crank arm is required to fully convert the AF for crank arm operation.
 	**ZG-LF112 and ZG-TF112** Crank arm adaptor kit	The ZG-112 is provided with hole patterns to mount the LF and TF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-112 mounting bracket is designed to mount the LF and TF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit. Note: May require crank arm and ball joints.
	**ZG-LF2 and ZG-TF2** Crank arm adaptor kit	The ZG-LF2 and ZG-TF2 crank arm adaptor kits can be used to replace foot mounted, crank arm style actuators. The ZG-LF2 allows for easy retrofit of Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators. Note: May require additional damper shaft crank arm and ball joints.
	**ZG-GMA and ZG-NMA** Crank arm adaptor kits	The ZG-GMA and ZG-NMA crank arm adaptor kits are designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100, ZG-101, ZG-103 and ZG-104 universal mounting brackets are needed to fully convert to crank arm operation.
	ZG-103 and ZG-104 Universal mounting brackets	The ZG-103 and ZG-104 universal mounting brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It may be used for outside or inside the duct mounting, fastened to the duct work or directly to the damper assembly. It may also be used to mount to other surfaces rather than the duct. The ZG-103 and ZG-104 are provided with pre-punched hole patterns for the NM, AM, GM, NF, and AF series actuators. The ZG-103 and ZG-104 hole pattern layout allows mounting these actuators in two different, mounting orientations.

MOUNTING PLATES

	**ZG-102** GM and AF dual mounting bracket	The ZG-102 multiple actuator mounting bracket is designed for where it is necessary to mount two actuators to one shaft to provide extra torque. The dual mounting bracket is typically used with AF and GM series actuators offering the highest torque range available.
	**ZG-LFC114** Mounting kit for Trane Voyager unit retrofit	The ZG-LFC114 crank arm adaptor kit is designed for use with a LF actuator for a Trane Voyager® economizer actuator retrofit. Use this kit when replacing Honeywell® M84... and M7... actuators.
	**ZG-121** Support plate for ZG-JSL with EF actuator	The ZG-121 support plate is designed for use with the ZG-JSL jackshaft shaft linkage and the EF actuator.
	**ZG-EFB** Crank arm adaptor kit	The ZG-EFB crank arm adaptor kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100 and ZG-1010 universal mounting brackets are needed to fully convert to crank arm operation.

Honeywell to Belimo Economizer Solutions

When replacing an existing actuator in an economizer unit, be sure to consider the application parameters before selecting the replacement. Use the chart below for reference. Belimo offers many direct coupled and non-direct replacement solutions. Start with your current model and controller type, and follow the diagram to the appropriate Belimo kit and actuator option.



Please contact Belimo Customer Service for other solutions.

ECON-ZIP-BASE

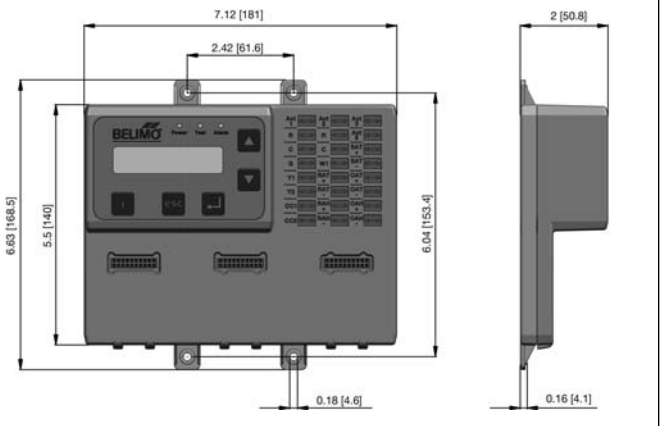
ZIP Economizer Base Unit

5 YEAR WARRANTY

Technical Data

Power supply	24 VAC ± 20%, 50/60 Hz; Class 2 power source
Power consumption rating*	4 VA base control (ECON-ZIP-BASE)
	5.5 VA base control with Energy Module (ECON-ZIP-BASE + ECON-ZIP-EM)
	5 VA base control with Communication Module (ECON-ZIP-BASE + ECON-ZIP-COM)
	6.5 VA base with Energy Module and Communication Module.
Rated impulse voltage	330V
Connectors	¼" male spade connectors
Environmental	RoHS, conformally coated
Software class	A
Control pollution degree	3
Temperature input signal	NTC 10 kΩ
Humidity	5 to 95% RH non-condensing
Humidity input signal	0-10 VDC; corresponds to 0 to 100%
Housing	NEMA 1
Housing material	UL94-5VA
Ambient temperature range	-40°F to +158°F (-40°C to +70°C)
Storage temperature range	-40°F to +176°F (-40°C to +80°C)
Display	2x16 character LCD; LED backlight; transflective
Display op. range**	-22°F to +176°F (-30°C to +80°C)
Agency listing	cULus acc. to UL873, CAN/CSA C22.2, No. 24-93
Energy code compliant	ASHRAE 90.1, CA Title 24, NECB

Dimensions (Inches [mm])



Product Features

The ZIP Economizer is a modular designed, plug and play economizer control solution. The ZIP offers an extended temperature transflective LCD display, with on board help, providing information every step of the way. Through its patented ZIP code set up, the system will automatically recognize your climate zone and will set the high limit change over temperature providing automatic compliance. Integrated onboard test sequence ensures effortless compliance with California Title 24, and verification of proper operation. Auto-detection of inputted devices and non-proprietary sensors, allows for a quicker, and easier set up. Through its superior fault detection and diagnostics (FDD), it troubleshoots faults, initiates alarms, and reconfigures for best operation. Up to 10 alarms are stored as historic alarms, and with operating hours tracking it makes troubleshooting and maintenance easier.

Application

Direct expansion RTUs up to 30 tons, single dry bulb, single enthalpy, differential dry bulb, differential enthalpy change over strategies. Integrated cooling operations only when damper is 100% open (2 stages thermostat required). When optional energy module is used (ECON-ZIP-EM) demand control ventilation, pre occupancy purge, power exhaust, remote damper position override, fan speed switch. When optional communication module (ECON-ZIP-COM) is used remote alarm indication is available.

Suitable Actuators

	Spring Return
ECON-ZIP-BASE	AFB24-SR, NFB24-SR, LF24-SR, TFB24-SR

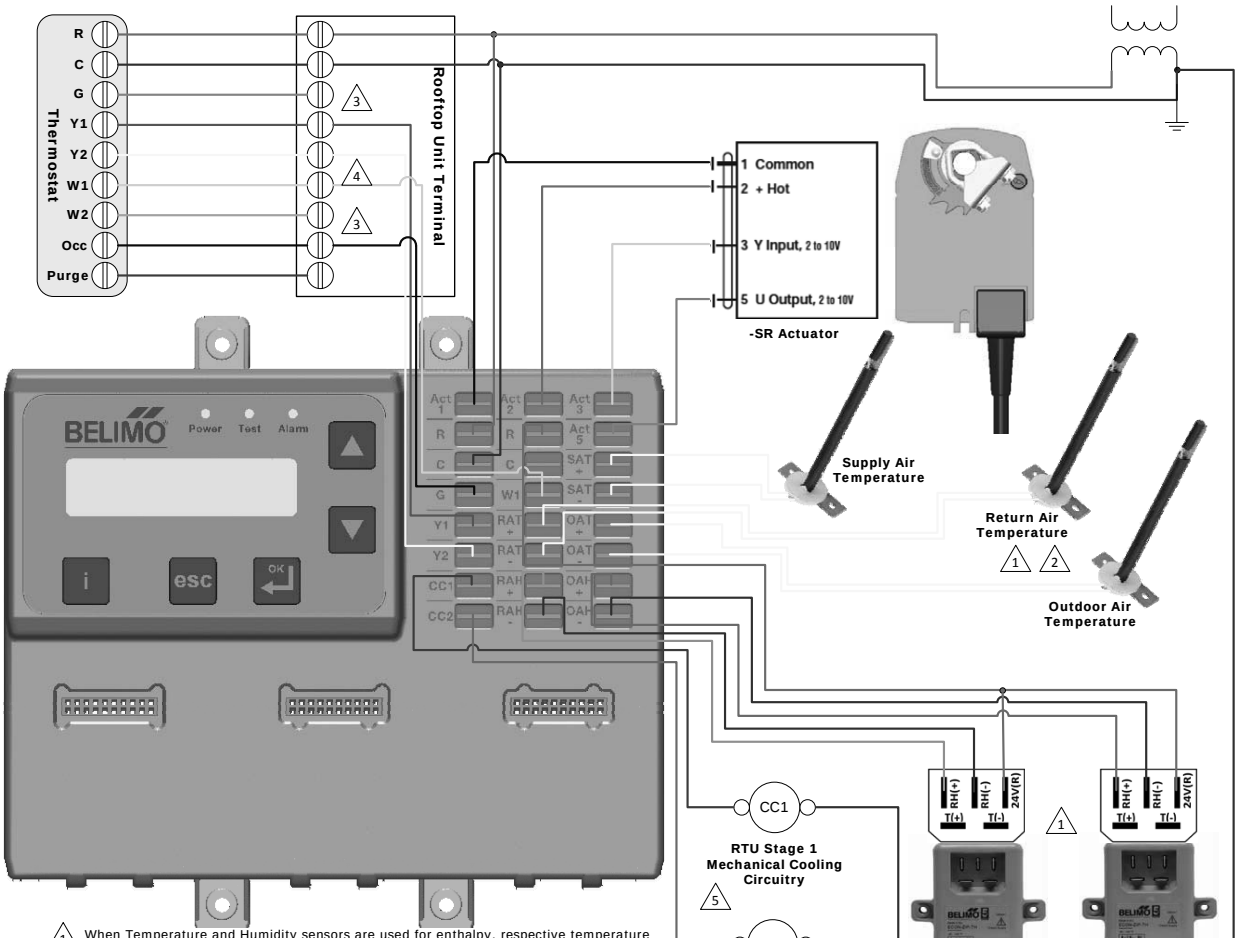
I/O Specifications

Type	Name	Description	Electrical Specification
Input	R	Supply hot	24 VAC, ± 20%, 50/60Hz
Input	G	Fan signal (occupied)	On/Off, 24 VAC, ± 20%, 50/60Hz
Input	C	Supply common	Common
Input	Y1	Cooling requirement Stage 1	On/Off, 24 VAC, ± 20%, 50/60Hz
Input	Y2	Cooling requirement Stage 2	On/Off, 24 VAC, ± 20%, 50/60Hz
Input	W1	Heating requirement Stage 1	On/Off, 24 VAC, ± 20%, 50/60Hz
Input	SAT ±	Supply air temperature sensor	Type: 10K NTC (Type II thermistor)
Input	OAT ±	Outdoor air temperature	Type: 10K NTC (Type II thermistor)
Input	OAH ±	Outdoor air humidity	0-10 VDC Auto Detection: Sensor present if voltage 0.5V-10V
Input	RAT ±	Return air temperature	Type: 10K NTC (Type II thermistor)
Input	RAH ±	Return air humidity	0-10 VDC Auto Detection: Sensor present if voltage 0.5V-10V
Output	CC1	Compressor 1 RTU stage 1 Mechanical cooling circuitry	100'000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @ 24 V: <600 Ohm @ 60Hz <800 Ohm @ 50Hz
Output	CC2	Compressor 2 RTU stage 2 Mechanical cooling circuitry	100'000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @ 24 V: <600 Ohm @ 60Hz <800 Ohm @ 50Hz
Output	Act 1	Actuator supply common	Common
Output	Act 2	Actuator supply hot	24 VAC, 50/60Hz
Output	Act 3	Actuator control output	2-10 VDC
Input	Act 5	Actuator feedback signal	2-10 VDC

*The power consumption is for the control only and does not include connected loads such as actuator, compressors, fans, and sensors. For transformer sizing, the power consumption of these attached components must be included.

**At low temperature, the display has decreased response time, below -22°F (-30°C) it will not function.

Wiring Diagram



1. When Temperature and Humidity sensors are used for enthalpy, respective temperature only sensors are not used and OAT and RAT and wiring shall terminate at ECON-ZIP-TH
2. Return Air Temperature and Humidity sensors are only required when differential temperature or differential enthalpy high limit changeover strategy is used
3. When the thermostat is not equipped with occupancy control, "Fan On" output "G" shall be wired to ECON-ZIP-BASE
4. W1 must be wired to ECON-ZIP-BASE when unit is a Heat Pump, using 2 speed fan, and when it is desired to record operational hours in heating
5. Existing refrigeration safety devices may exist, consult RTU wiring diagram

ECON-ZIP-COM

ZIP Economizer Communication Module

5 YEAR WARRANTY

Technical Data	
Power supply	24 VAC ± 20%, 50/60Hz, class 2 power source
Power consumption rating*	2.5 VA (ECON-ZIP-COM), 6.5 VA (ECON-ZIP-BASE + ECON-ZIP-COM)
Connectors	¼" male spade connectors
Environmental	RoHS, conformally coated
Communication interface	RS485 interface, optical isolation max. 1kVDC (for max.1 min), Pin 4: RS485 Com Gnd, Pin 7: RS485 Com A, Pin 8: RS485 Com B
Supported remote alarm	normal current: 0.5A, inrush current: 1A
Humidity	5 to 95% RH non-condensing
Housing	NEMA 1
Housing material	UL94-5VA
Ambient temperature range	-40°F to +158°F (-40°C to +70°C)
Storage temperature range	-40°F to +176°F (-40°C to +80°C)
Agency listing	cULus acc. to UL873, CAN/CSA C22.2, No. 24-93

*The power consumption is for the control only and does not include connected loads such as actuator, compressors, fans, and sensors. For transformer sizing, the power consumption of these attached components must be included.

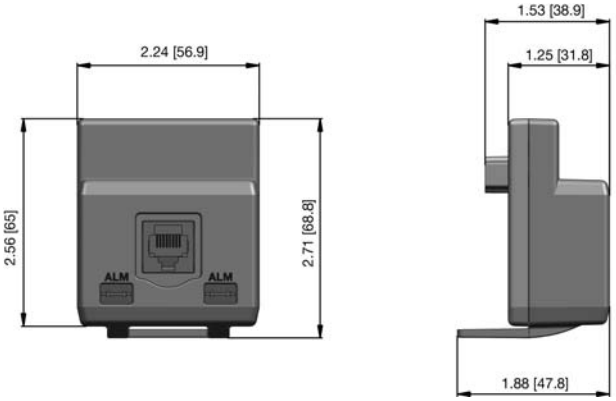
Product Features

The ZIP Economizer Communication Module provides alarm output with future capabilities such as data trending, building automation integration, and OEM communication integration.

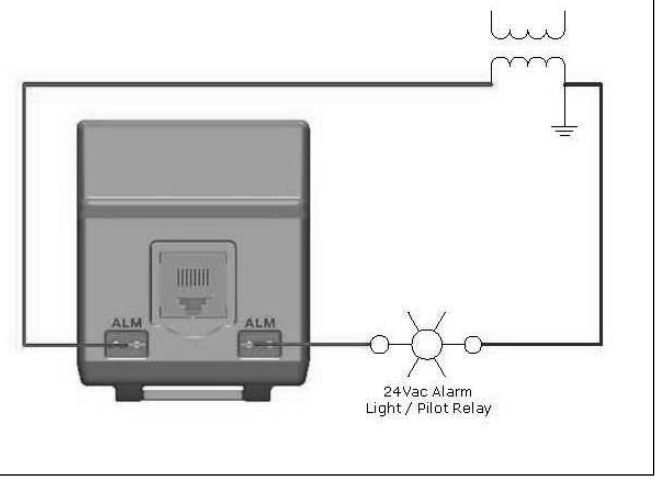
Operation

The ZIP Economizer Communication Module has full functionality when connected to the ECON-ZIP-Base. Its unique keyed slot makes installation a breeze.

Dimensions (Inches [mm])



Wiring Diagram



5 YEAR WARRANTY

Product Features

The ZIP Economizer Energy Module provides additional inputs/outputs (I/Os) to offer higher control functionalities that will save energy and will meet new and future minimum code requirements. The Energy Module is needed for CO2 sensors, indoor fan, two speed fan, exhaust fan, remote potentiometer for damper positioning, as well as purge control. The auto-detection and plug and play capability offers quick set up.

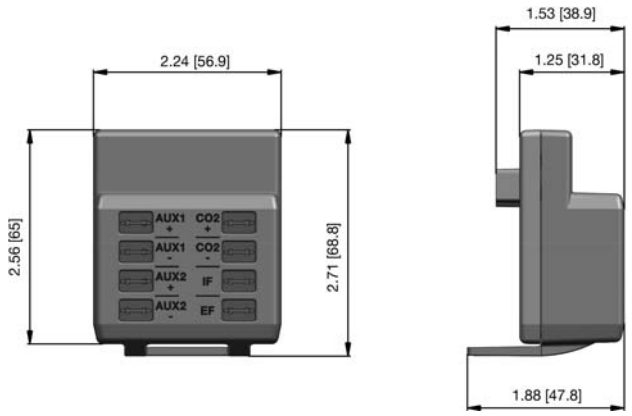
Application

The ZIP Economizer Energy Module offers demand control ventilation for high occupancy areas. A third party CO2 sensor is required. Pre-occupancy purge input for VOC removal requires thermostat with purge contact. Power exhaust for building pressure control requires power exhaust fan. Remote damper override requires remote potentiometer installed. Two speed fan control requires supply fan to be equipped with multi speed fan or VFD.

Technical Data	
Power supply	24 VAC ± 20%, 50/60Hz, class 2 power source
Power consumption rating*	1.5 VA (ECON-ZIP-EM), 5.5 VA (ECON-ZIP-BASE + ECON-ZIP-EM)
Connectors	¼" male spade connectors
Environmental	RoHS, conformally coated
Indoor fan speed selection	100'000 cycles @ inrush current of 3A, normal current 1.5A
Exhaust fan selection	100'000 cycles @ inrush current of 3A, normal current 1.5A
Supported CO2 sensor	0-10 VDC, sensor auto-detection
Auxiliary input - purge contact	on/off - 24 VAC, 50/60HZ - current load min 10mA
Auxiliary input - remote potentiometer	2-10VDC
Humidity	5 to 95% RH non-condensing
Housing	NEMA 1
Housing material	UL94-5VA
Ambient temperature range	-40°F to +158°F (-40°C to +70°C)
Storage temperature range	-40°F to +176°F (-40°C to +80°C)
Agency listing	cULus acc. to UL873, CAN/CSA C22.2, No. 24-93

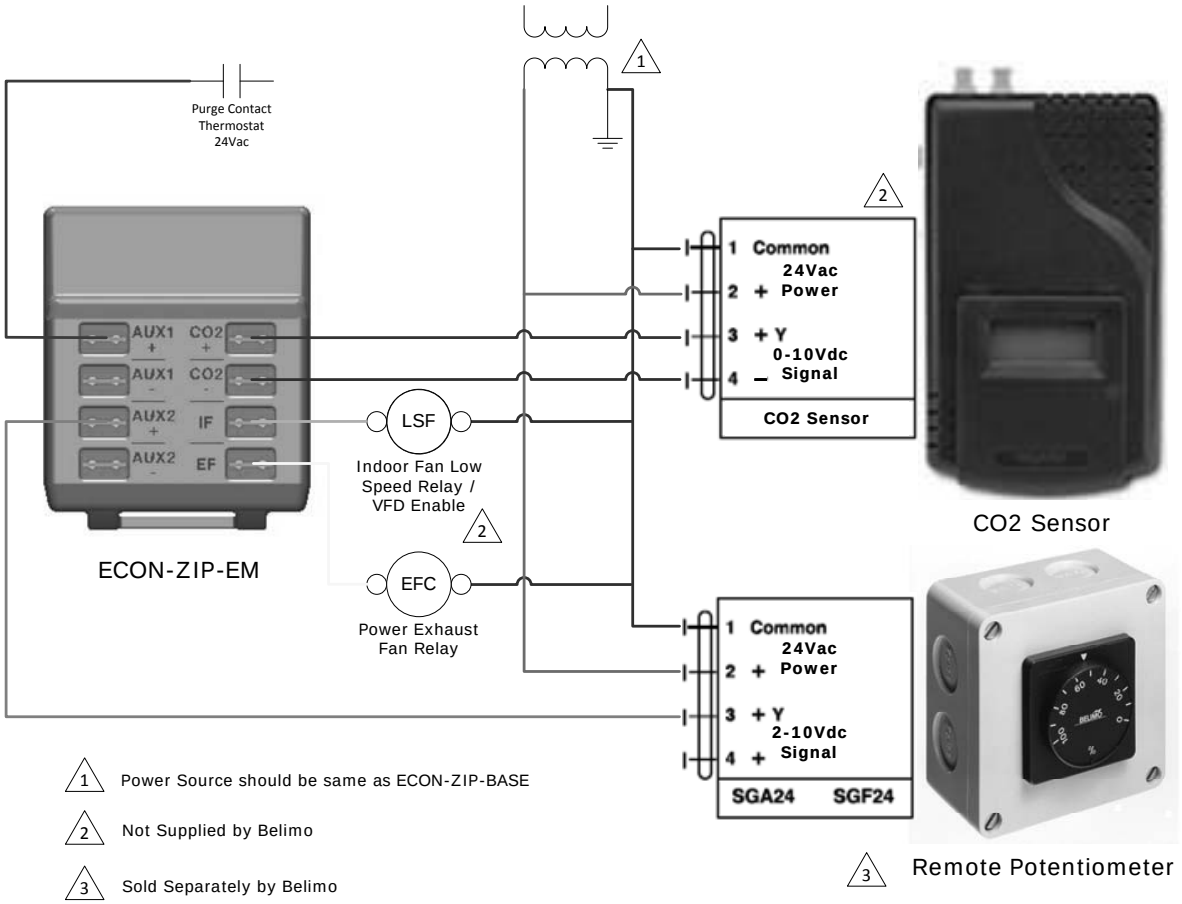
*The power consumption is for the control only and does not include connected loads such as actuator, compressors, fans, and sensors. For transformer sizing, the power consumption of these attached components must be included.

Dimensions (Inches [mm])



I/O Specifications			
Type	Name	Description	Electrical Specification
Input	CO2 ±	CO2 sensor input	0-10 VDC (0-2000 ppm) Sensor auto-detection
Output	IF	Indoor fan low speed enable	100'000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @24 V: <600 Ohm @ 60Hz <800 Ohm @ 50Hz
Output	EF	Exhaust fan enable	100'000 cycles @ inrush current of 3A, normal current 1.5A Impedance for Auto detection @ 24 V: <600 Ohm @ 60Hz <800 Ohm @ 50Hz
Input	AUX1 ±	Auxiliary input Purge contact input	On/Off, 24 VAC, 50/60 Hz Current load min. 10mA
Input	AUX2 ±	Auxiliary input Remote Potentiometer Input	2-10 VDC

Wiring Diagram



1 Power Source should be same as ECON-ZIP-BASE

2 Not Supplied by Belimo

3 Sold Separately by Belimo

4 If the RTU has a 2 speed fan (IF wired), then W1 on the ECON-ZIP-BASE needs to be wired as well, since the fan shall not run in part load when heating.

5 YEAR WARRANTY

Technical Data	
Temperature output signal	NTC 10 kΩ, Type II
Connectors	¼" female spade insulated connectors, 3 ft. cable
Accuracy	± 0.36°F (± 0.2°C)
Stability drift	less than 0.036°F/yr [0.02°C/yr]
Material	etched Teflon, plenum-rated & FEP jacketed cable; galvanized t-bracket
Ambient temperature range	-67°F to +176°F (-55°C to +80°C)

Application

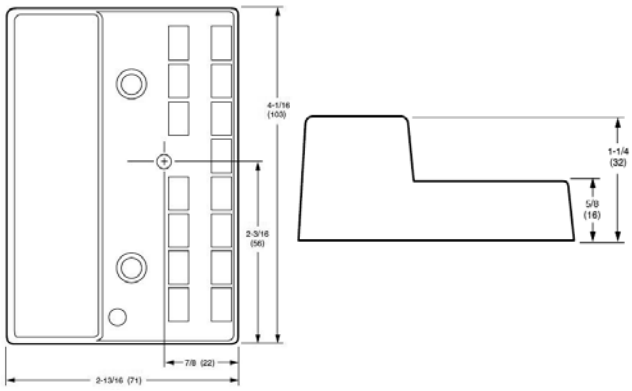
ECON-ZIP-10K allows for reliable temperature air readings. The sensor may be used for outdoor air (OAT), return air (RAT), or supply air (SAT) temperature measurements and control, with no configuration required. A minimum of one SAT and one OAT sensor is required for the ZIP Economizer to function. An RAT sensor can be added for differential temperature change over strategy. For best control results, sensors should be placed in the air stream. T-Bracket mounting is universal and can be inserted through the duct work, fan housing or surface mounted.

Honeywell W7459 to Belimo ZIP Economizer™

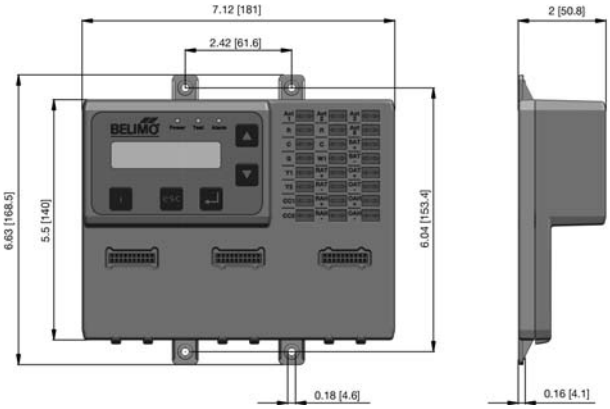
Honeywell W7459

Belimo ZIP Economizer™

Dimensions (Inches [mm])



Dimensions (Inches [mm])



W7459 WIRE TERMINATION	ZIP ECONOMIZER WIRE TERMINATION
1	Y1
2	CC1
3	Y2
4	CC2
5	
TR	R
TR1	C
N	G
P-P1	
T-T1	Mixed Air- New Sensor
So-So+	Outside Air- New Sensor
Sr-Sr+	New Sensors

Actuators and sensors connected to the W7459 should be replaced with a Belimo actuator and correctly specified temperature and humidity sensors (ECON-ZIP-10K and/or ECON-ZIP-TH).

Globe Valve Retrofit Solutions

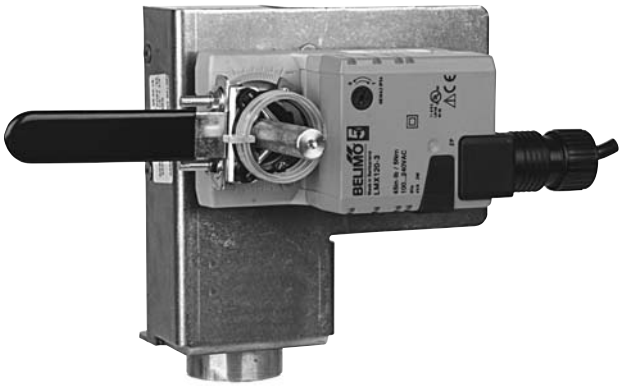
- Adaptive stroke of actuators utilizes full control signal for maximum resolution.
- Visual stroke indicators allow quick installation.
- Linkages can be mounted in any orientation except upside down.
- Travel ranges of up to 1.5” (38mm) of stroke.
- Steam rated for inlets up to 100 psi.

Applications

UGVL,UGLK, UGSL, and UGSP globe valve retrofit solutions are designed to easily attach to the valve bonnet and stem of competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time and money.

UGLK.../UGSP... Retrofit Linkage for Globe Valves

For LM and LF Series Actuators



Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	½" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 50 psi
Weight	2.8 lbs [1.3 kg]

Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing Belimo LM and LF series actuators. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select the actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. With the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuator can be flipped or the directional switch turned to a new rotation. The compact design allows for installation in tight spaces.

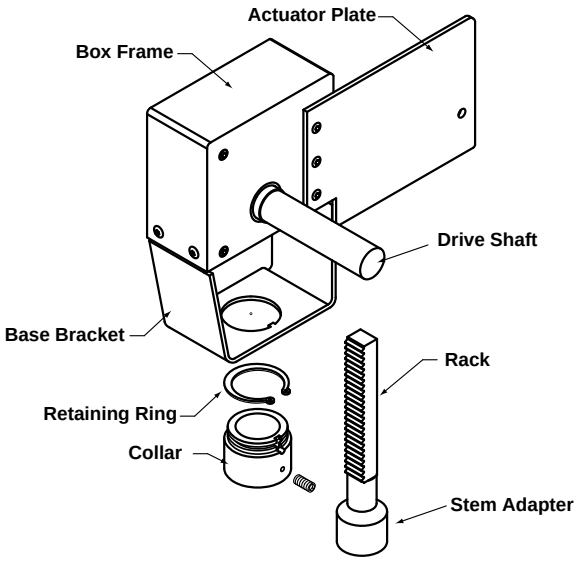
Suitable Actuators	Close-Off Ranges
LM Series	2-250 psi
LF Series	22-250 psi

Competitor Valves**

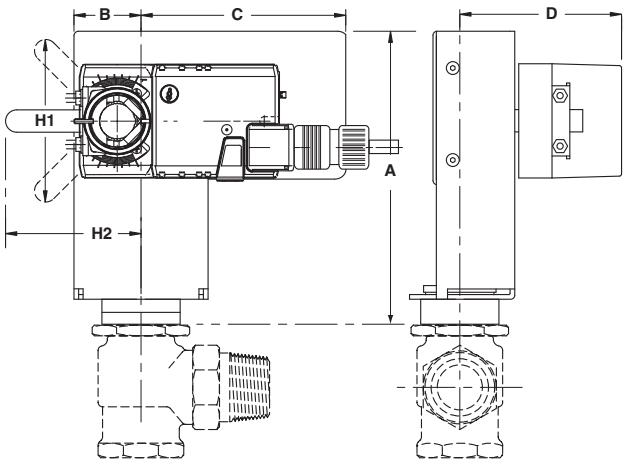
Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

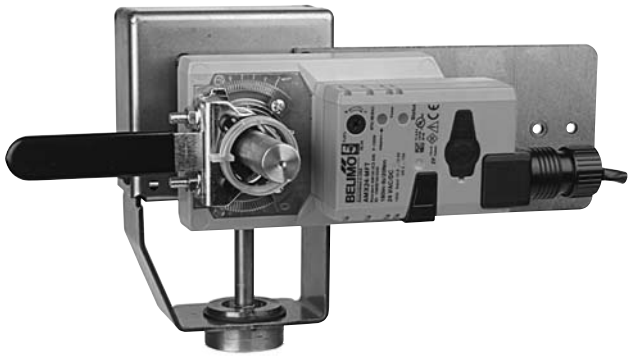
UGLK / UGSP Parts Breakdown



UGLK / UGSP

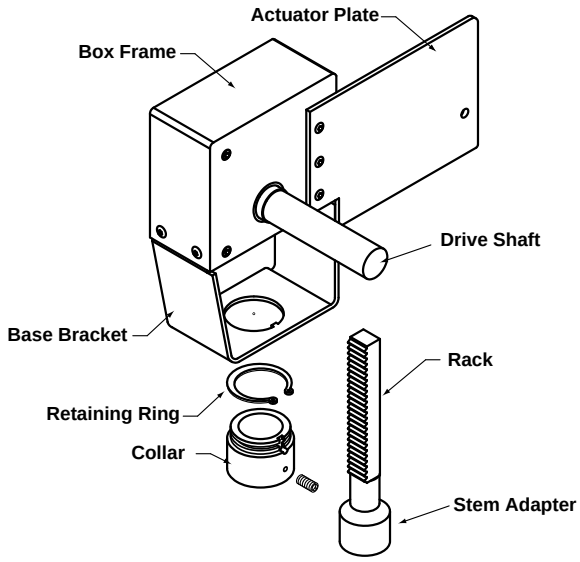


Dimensions (Inches [mm])			
A	6.5" [165]	D	4.0" [102]
B	1.5" [33]	H1	4.0" [102]
C	5.0" [127]	H2	3.5" [89]



Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	¾" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth) ¾" (17 teeth) 1-1/8" (25 teeth) 1-½" (33 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water, and steam
Weight	5.7 lbs [2.6 kg]

UGLK / UGSP Parts Breakdown



Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing Belimo GK, AF, NF, GM, AM and NM series actuators. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select the actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. Due to the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" to 1-½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuator can be flipped or directional switch turned to a new rotation.

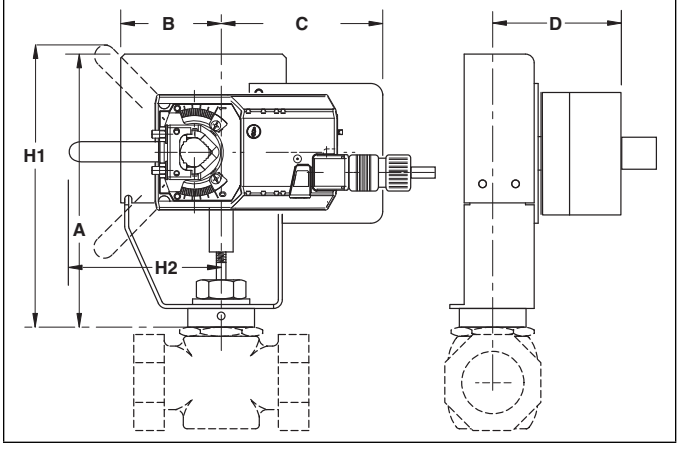
Suitable Actuators	Close-Off Ranges
GK Series	10-250 psi
AF Series	4-250 psi
NF Series	10-250 psi
GM Series	10-250 psi
AM Series	4-250 psi
NM Series	10-250 psi

Competitor Valves**

Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider
Warren Controls

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

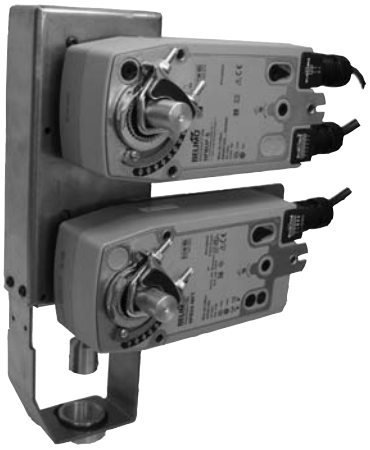
UGLK / UGSP



Dimensions (Inches [mm])			
A	9"-11" [178-356]	D	4.0" [102]
B	1.5" [33]	H1	4.0" [102]
C	5.0" [127]	H2	3.5" [89]

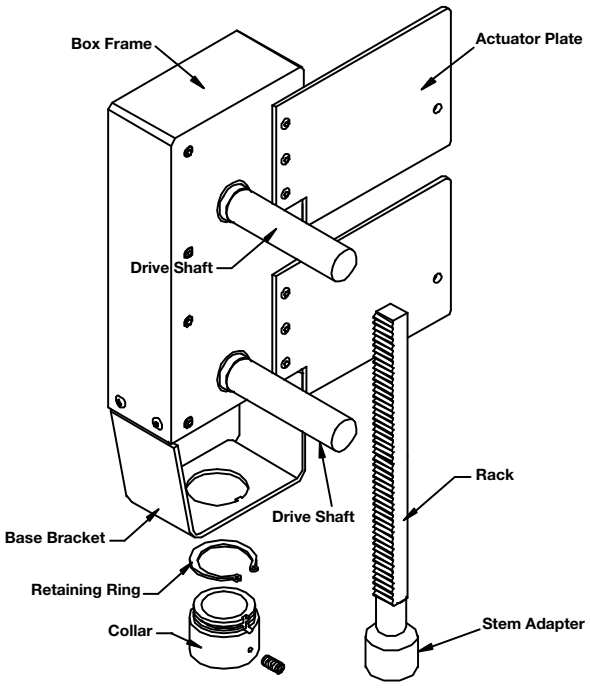
UGLK.../UGSP... Retrofit Linkage for Globe Valves

For Dual Mounted AF, GM, and GK Series Actuators



Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	¾" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth) ¾" (17 teeth) 1-1/8" (25 teeth) 1-½" (33 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water, and steam max steam inlet 50 psi
Weight	10 lbs [4.5 kg]

UGLK / UGSP Parts Breakdown



Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing tandem Belimo AF, GM, and GK series actuators when higher close-off is required. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. With the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" to 1-½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

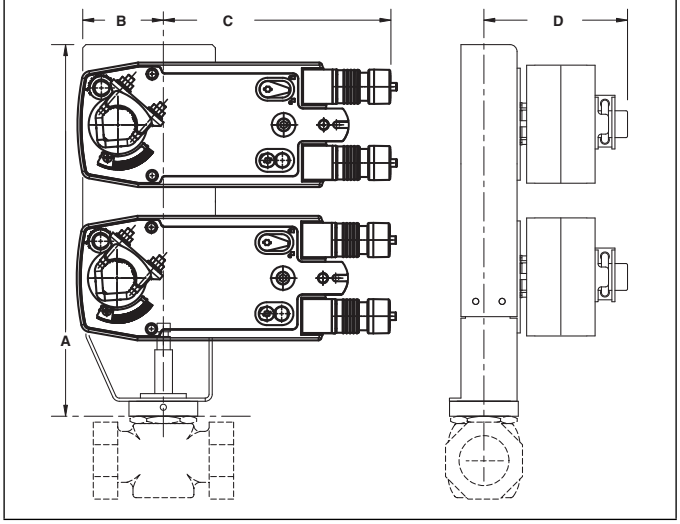
Suitable Actuators	Close-Off Ranges
2*AF Series	10-250 psi
2*GM Series	25-250 psi
2*GK Series	25-250 psi

Competitor Valves**

Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider
Warren Controls

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

UGLK / UGSP



Dimensions (Inches [mm])			
A	13"-17" [483]	C	9" [229]
B	3" [76]	D	5" [127]

5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Stem	slotted, threaded
Frame, plate, base	aluminum, steel
Collar	aluminum, steel, (fits bonnets up to 1.7" dia.)
Stem adaptor	aluminum
Stroke	0.75" [20mm]
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	32°F to 388°F [0°C to 170°C]
Weight	1.9 lbs

Application

The UGVL retrofit kit is designed to easily attach LV and SV series actuators to select globe valves. Its unique adjustable design allows the UGVL to be mounted on ½" to 2" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a UGVL linkage will be factory installed along with a LV or SV series actuator. Included in the kit will be all the necessary hardware to facilitate mounting to the valve.

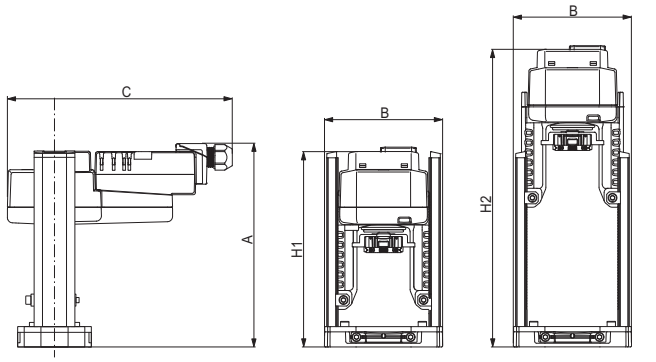
Operation

The UGVL linkage with actuator will provide 20 mm of linear travel to accommodate a wide range of valves.

Suitable Actuators

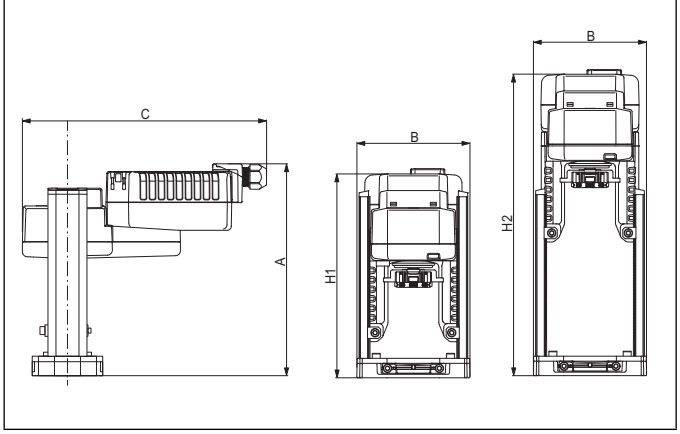
Linkage	Non-Spring Return	Electronic Fail-Safe
UGVL	LV, SV	LVK, SVK

Dimensions (Inches [mm]) with LV and SV Series Actuators



A	B	C	H1	H2
8" [203.2]	4.4" [113]	8.60" [218]	7.5" [190]	11.4" [290]

Dimensions (Inches [mm]) with LVK and SVK Series Actuators



A	B	C	H1	H2
8.5" [217]	4.4" [113]	9.6" [244]	8.4" [207]	12.1" [307]

Application Notes

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

SGVL Schneider Globe Valve Linkage

For use with LV and SV Series Actuators

5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Frame, plate, base	aluminum
Collar*	aluminum (fits VB7 ½" to 2"/VB9 ½" to 1-¼" valves)
Coupling	aluminum
Stem adaptor	steel
Stroke	0.75" [20 mm]
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	20°F to 250°F [-7°C to +120°C]
Housing material	aluminum die cast and plastic casing
Weight	0.5 lbs

*Will also fit post 1994 VB9 1-½" to 2" valves.

Application

The SGVL retrofit kit is designed to easily attach LV and SV series actuators to select Schneider® globe valves. The cast base and free spinning collar allow the SGVL to be mounted on ½" to 2" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a SGVL linkage will be factory installed along with a LV or SV series actuator. Included in the kit is all the necessary hardware to facilitate mounting to the Schneider valve.

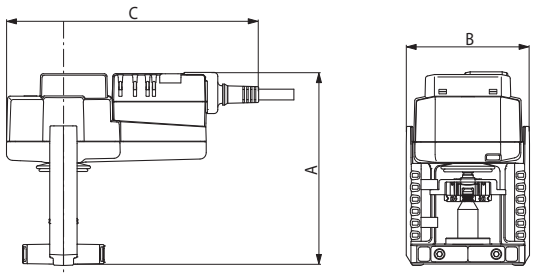
Operation

The SGVL linkage with actuator will provide 20 mm of linear travel to accommodate a wide range of valve sizes.

Suitable Actuators

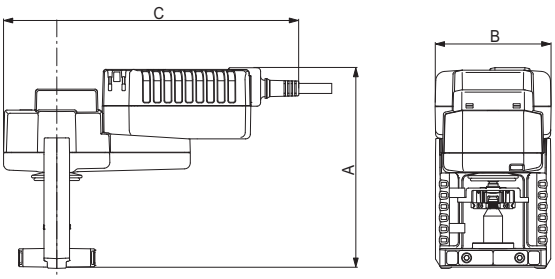
Linkage	Non-Spring Return	Electronic Fail-Safe
SGVL	LV, SV	LVK, SVK

Dimensions (Inches [mm]) with LV and SV Series Actuators



A	B	C
6" [152]	3.9" [98]	7.8" [199]

Dimensions (Inches [mm]) with LVK and SVK Series Actuators



A	B	C
6.7" [169]	3.9" [98]	8.2" [209]

Application Notes

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	2" [50], 2-½" [65], 3" [80], 4" [100], 5" [125], 6" [150]
Stem	316 stainless steel
Frame, plate, base	aluminum, steel (fits Warren Type 20,22,23,30, and 32) (Belimo G6 & G7 series)
Collar	steel
Stem adaptor	steel
Stroke	2" [50 mm]
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	32°F to 388°F [0°C to 170°C]
Housing material	aluminum die cast and plastic casing
Weight	2.59 lbs

Application

The WGVL retrofit kit is designed to easily attach AVK, EV and RV series actuators to select Warren® globe valves. The cast base and lower lock nut allow the WGVL to be mounted on 2-½" to 6" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a WGVL linkage will be factory installed along with an AVK or EV, RV series actuator. Included in the kit is all the necessary hardware to facilitate mounting to the Warren valve.

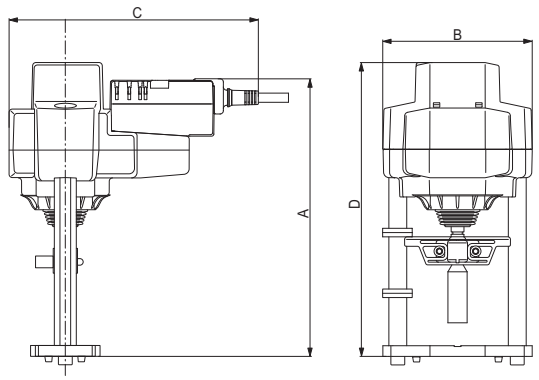
Operation

The WGVL linkage with actuator will provide 50 mm of linear travel to accommodate a wide range of valve sizes.

Suitable Actuators

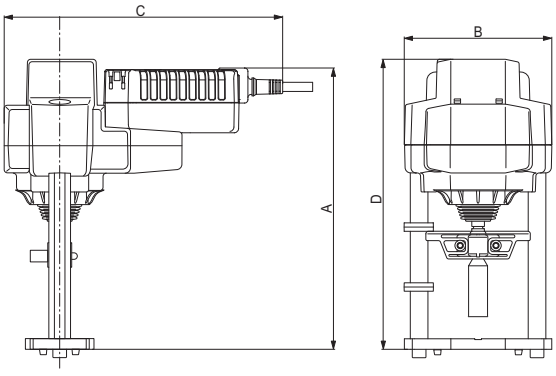
Linkage	Non-Spring Return	Electronic Fail-Safe
WGVL	EV, RV	AVK

Dimensions (Inches [mm]) with EV and RV Series Actuators



A	B	C	D
10.2" [259]	5.5" [140]	9.2" [233]	10.9" [276]

Dimensions (Inches [mm]) with AVK Series Actuators



A	B	C	D
10.4" [264]	5.5" [140]	10.3" [262]	10.9" [276]

Application Notes

**Consult pages 92-134 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

LVX24-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 24 V

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

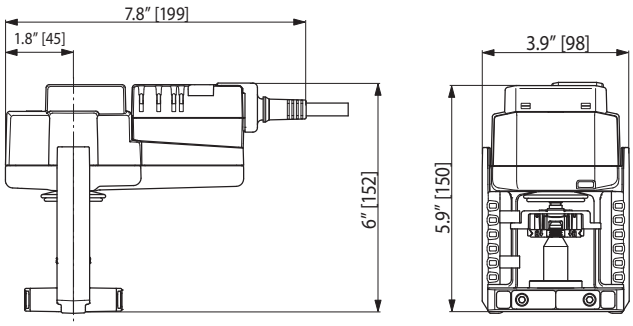
The LV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	2 W
Power consumption holding	0.5 W
Transformer sizing	5 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit.
Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

△2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

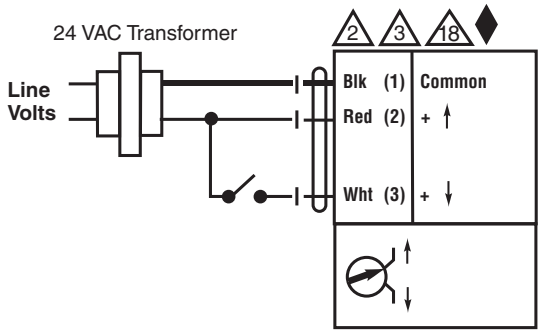
△3 Actuators may also be powered by 24 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

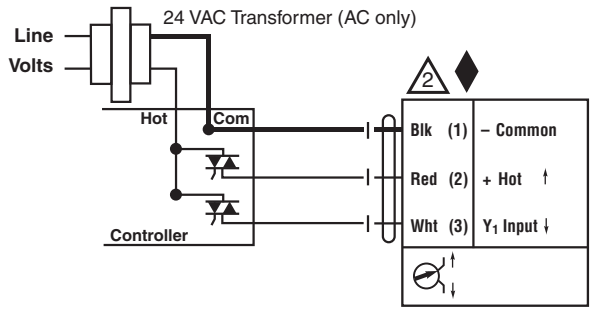
◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

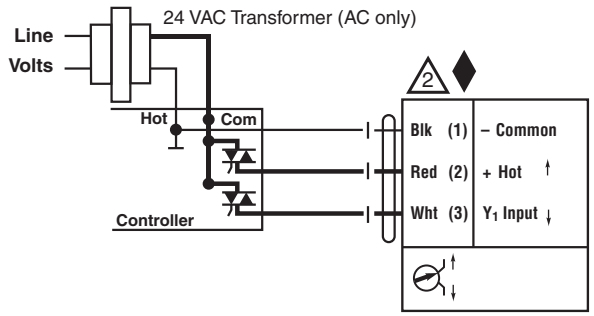
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off



Triac Sink



Triac Source

LVX120-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 100 to 240 VAC

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

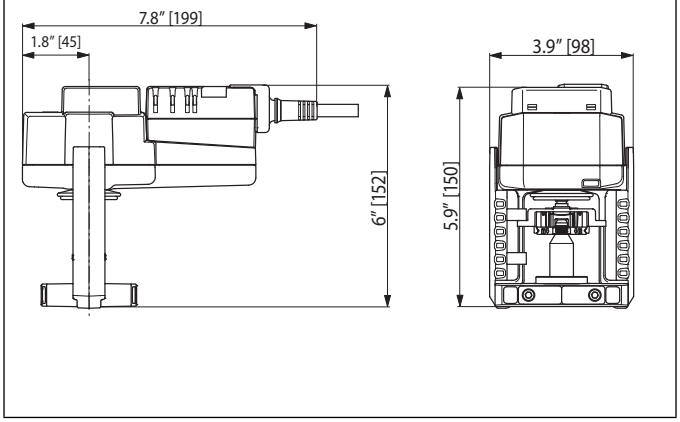
The LV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	5.5 W
Power consumption holding	1 W
Transformer sizing	6 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

Ⓐ Actuators with appliance cables are numbered.

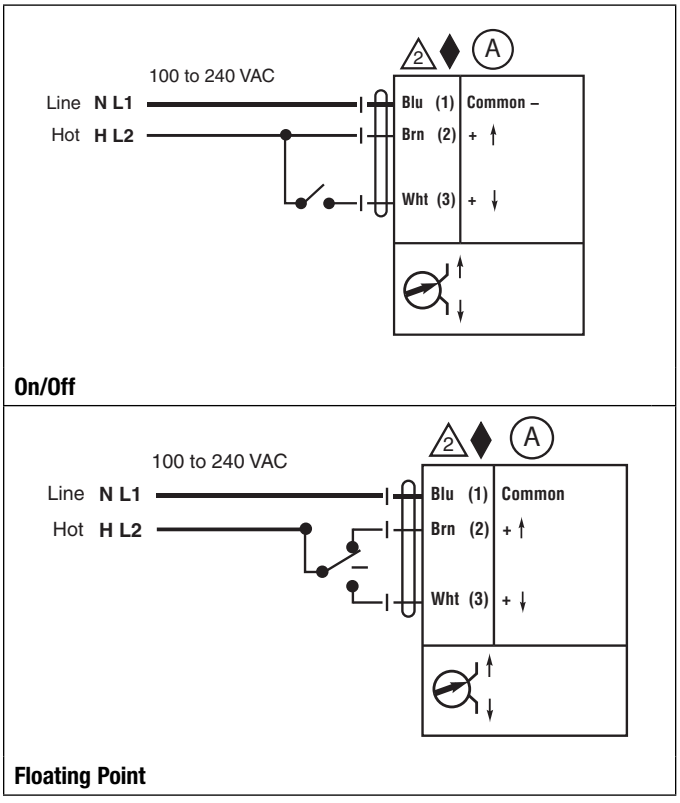
***CAUTION** Equipment Damage!*

△2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

⚠ During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off

Floating Point

LVB24-SR

Proportional, Non-Spring Return Actuator, Linear, 24 V, for 2 to 10 VDC or 4 to 20 mA

Application

For proportional modulation of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

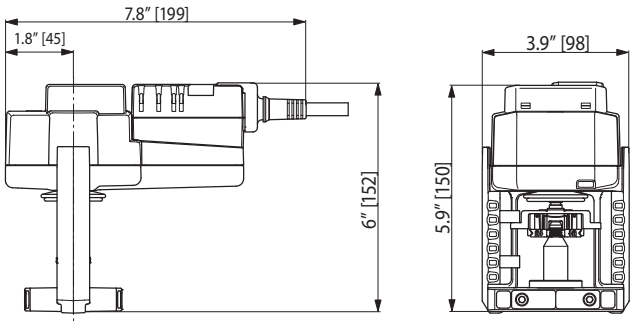
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	2 W
Power consumption holding	0.5 W
Transformer sizing	5 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	2-10 VDC
Operating range Y	2 to 10 VDC, 4 to 20 mA (default)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Feeback output U	2 to 10 VDC
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△3 Actuators may also be powered by 24 VDC.

△5 Only connect common to neg. (-) leg of control circuits.

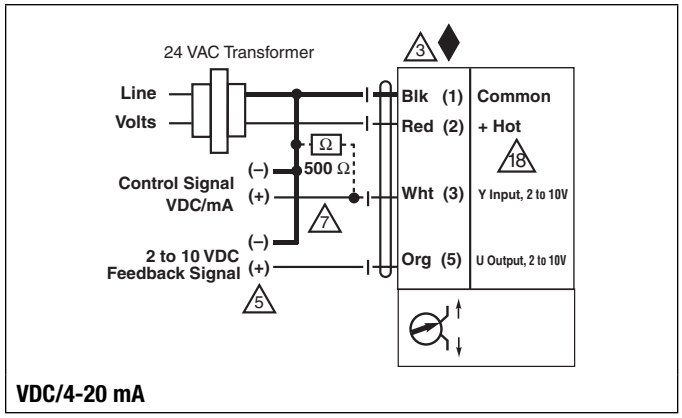
△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

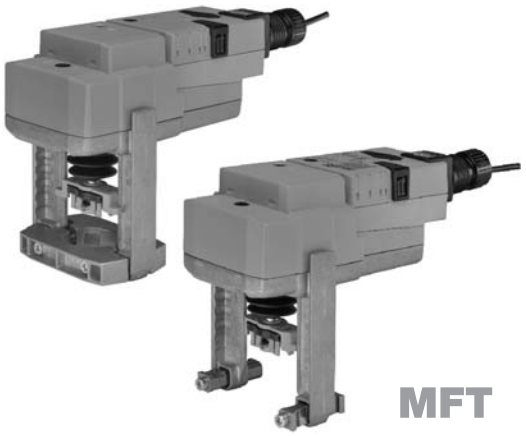
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



VDC/4-20 mA

LVX24-MFT

Proportional, Non-Spring Return Actuator, Linear, 24 V, Multi-Function Technology®



Application

For multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

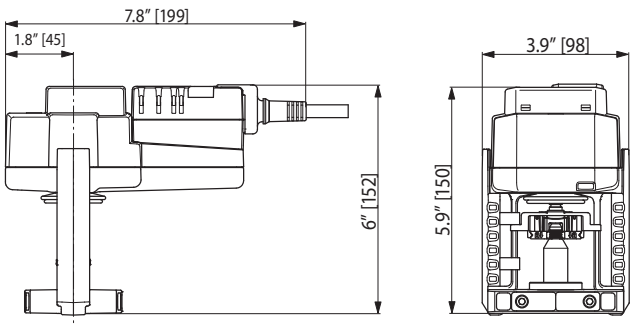
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	3 W
Power consumption holding	1.5 W
Transformer sizing	6 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

2 Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

3 Actuators may also be powered by 24 VDC.

7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

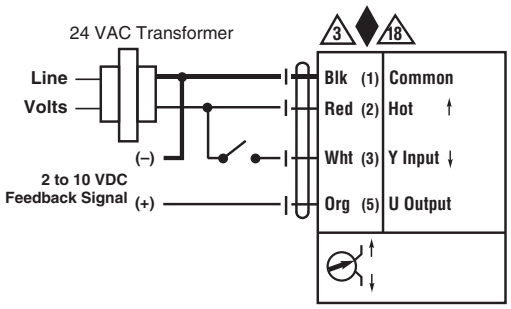
12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

18 Actuators with plenum cable do not have numbers; use color codes instead.

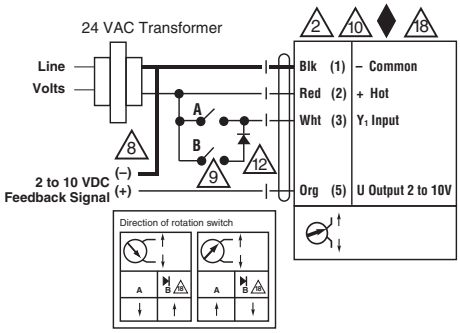
◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

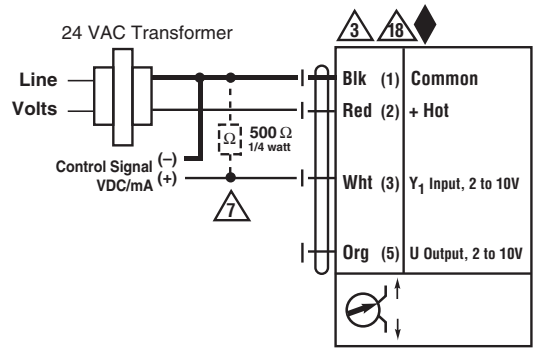
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



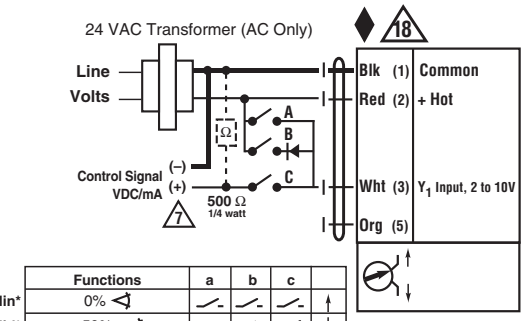
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

SVX24-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 24 V

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SV series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

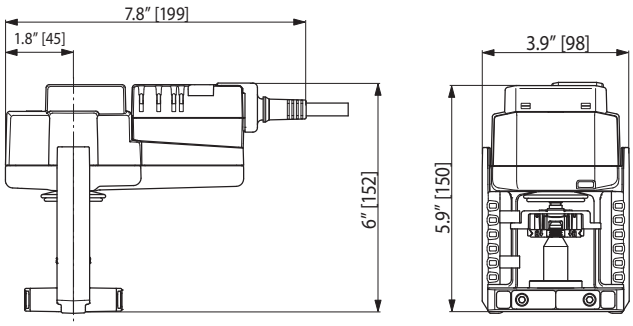
The SV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	2.5 W
Power consumption holding	0.5 W
Transformer sizing	5 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

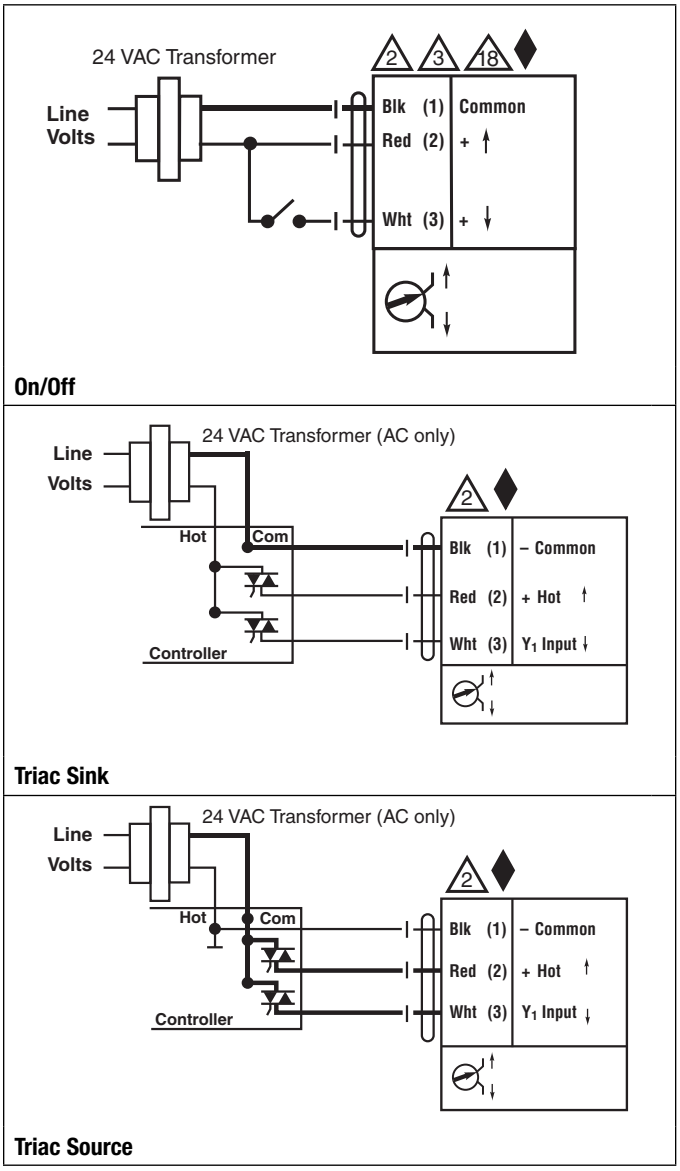
3 Actuators may also be powered by 24 VDC.

18 Actuators with plenum cable do not have numbers; use color codes instead.

Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



SVX120-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 100 to 240 VAC

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SV series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

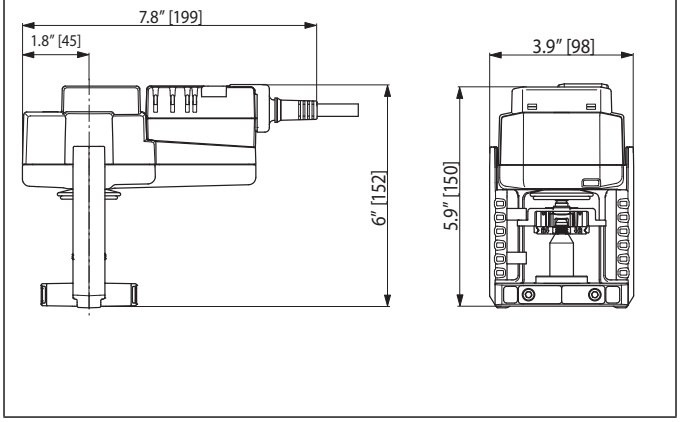
The SV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	5.5 W
Power consumption holding	1 W
Transformer sizing	6 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

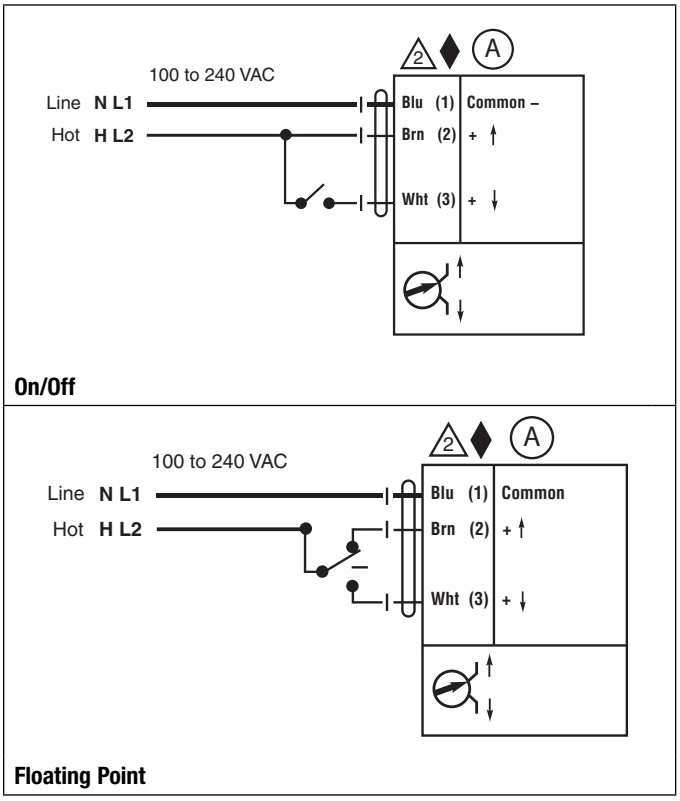
INSTALLATION NOTES

(A) Actuators with appliance cables are numbered.

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel. Power consumption and input impedance must be observed.

♦ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

⚠ ***WARNING** Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off

Floating Point

SVB24-SR

Proportional, Non-Spring Return Actuator, Linear, 24 V, for 2 to 10 VDC or 4 to 20 mA

Application

For proportional modulation of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SV series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

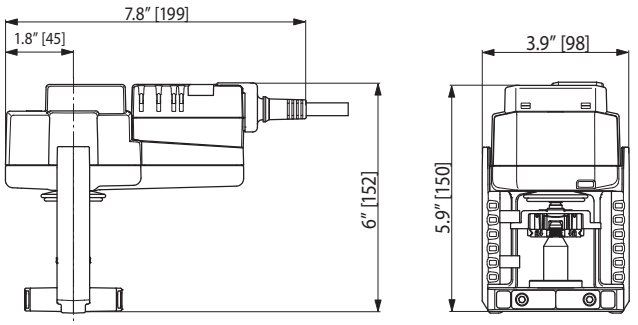
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	4 W
Power consumption holding	2.5 W
Transformer sizing	6 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	2-10 VDC
Operating range Y	2 to 10 VDC, 4 to 20 mA (default)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Feeback output U	2 to 10 VDC
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△3 Actuators may also be powered by 24 VDC.

△5 Only connect common to neg. (-) leg of control circuits.

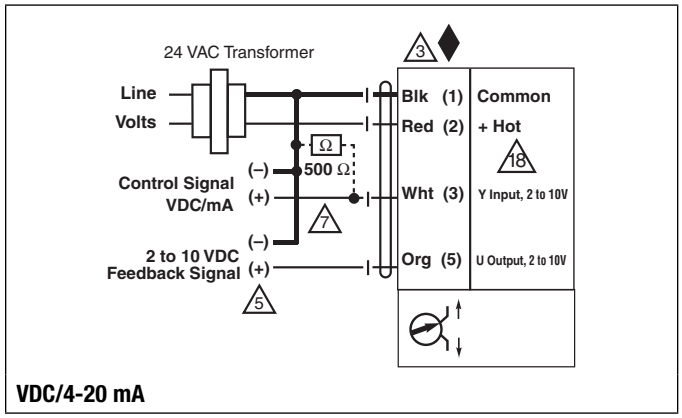
△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

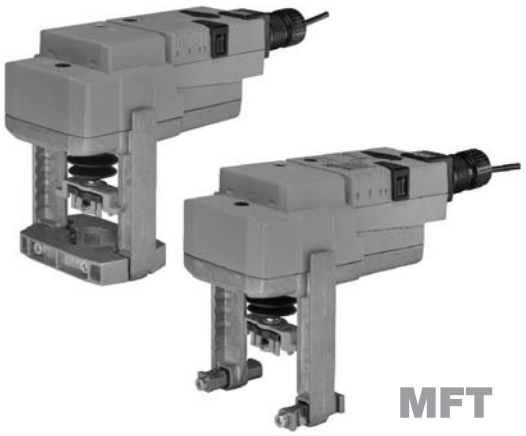
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



VDC/4-20 mA

SVX24-MFT

Proportional, Non-Spring Return Actuator, Linear, 24 V, Multi-Function Technology®



Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	4 W
Power consumption holding	2.5 W
Transformer sizing	6 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	2.9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

For multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

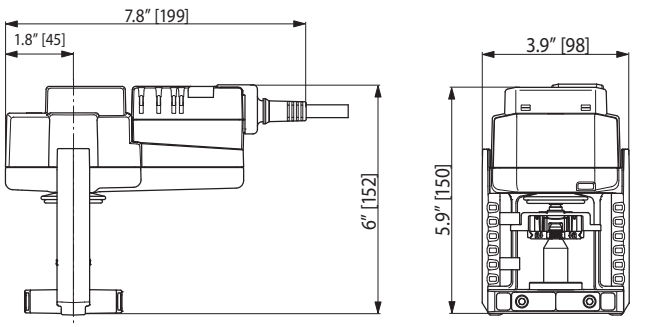
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SV series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

2 Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

3 Actuators may also be powered by 24 VDC.

7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

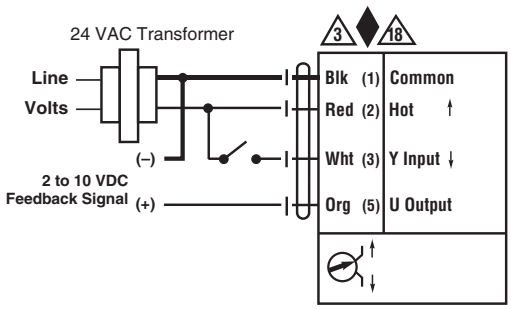
12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

18 Actuators with plenum cable do not have numbers; use color codes instead.

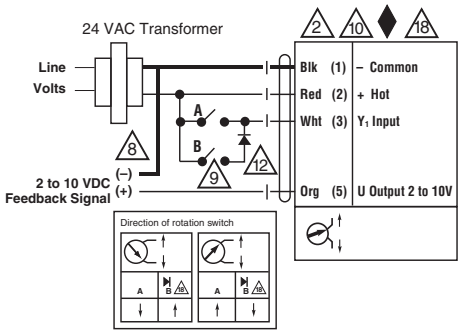
♦ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

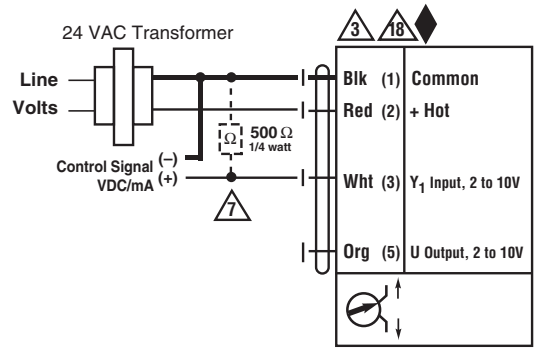
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



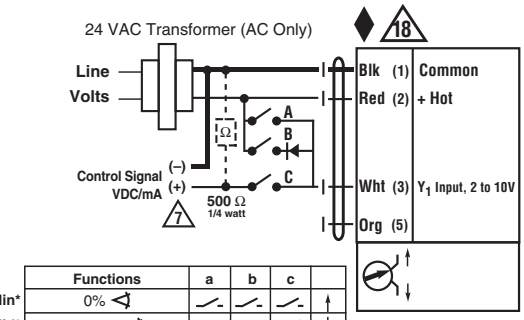
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

EVB24-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 24 V

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The EV series provides 50 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

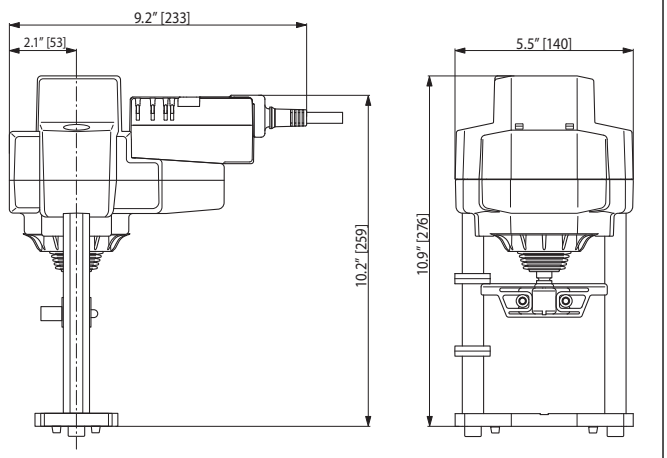
The EV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	6 W
Power consumption holding	3.5 W
Transformer sizing	7 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	2" [50 mm]
Linear force	562 lbf [2500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

△2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

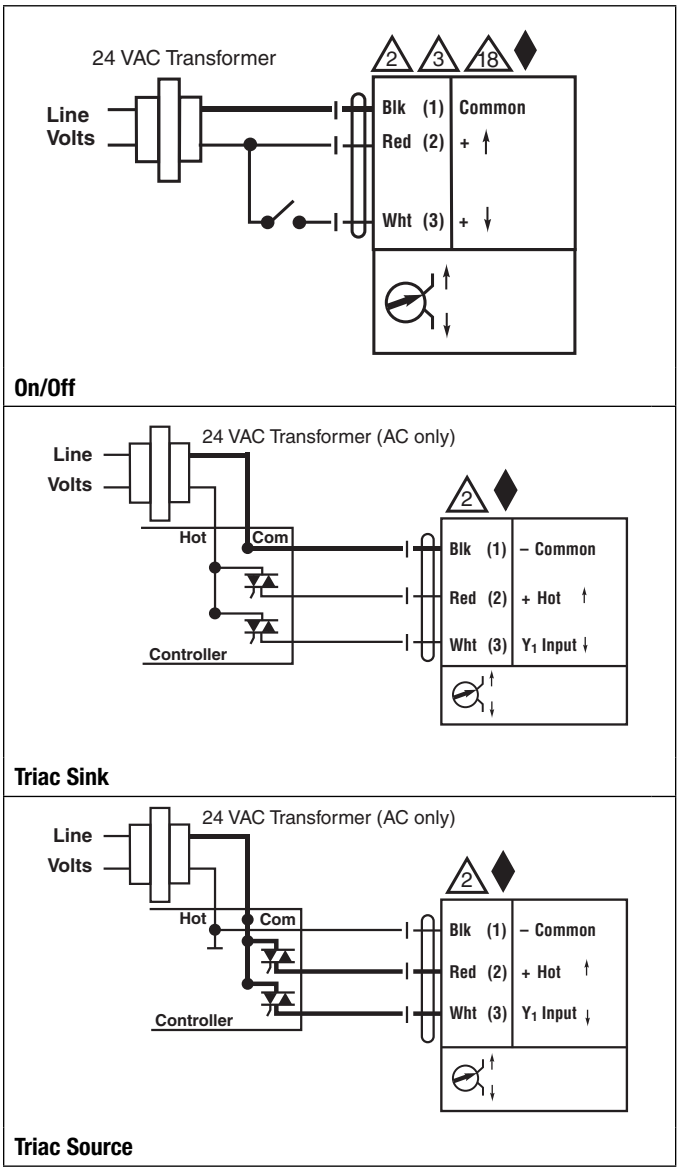
△3 Actuators may also be powered by 24 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



EVX120-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 100 to 240 VAC

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The EV series provides 50 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

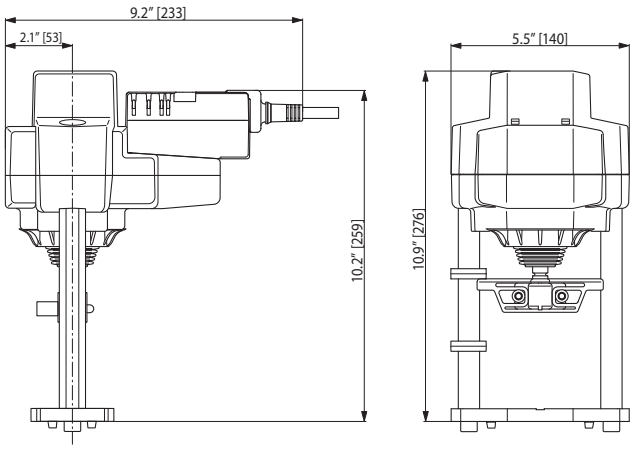
The EV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	5 W
Power consumption holding	1 W
Transformer sizing	10 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	2" [50 mm]
Linear force	562 lbf [2500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

(A) Actuators with appliance cables are numbered.

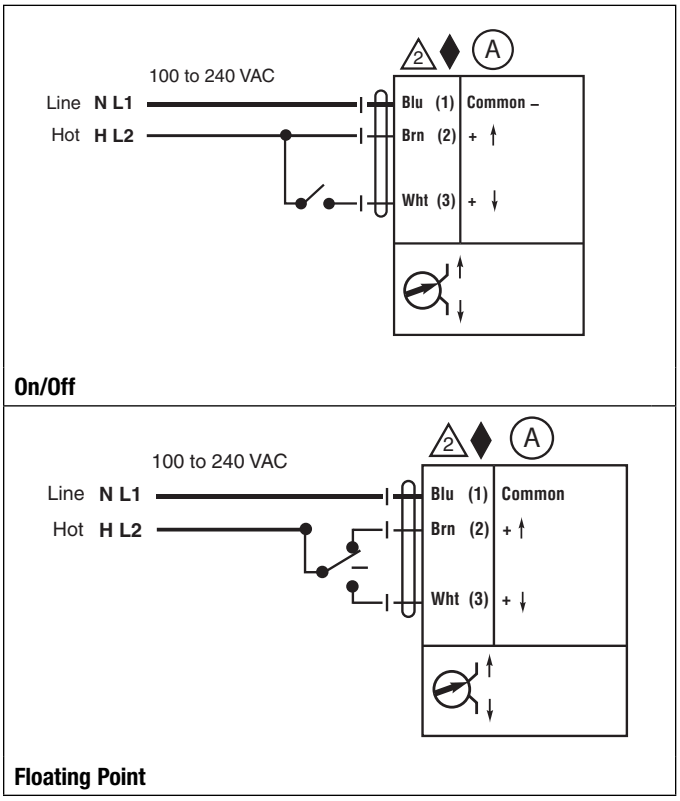
***CAUTION** Equipment Damage!*

△2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off

Floating Point

EVB24-MFT

Proportional, Non-Spring Return Actuator, Linear, 24 V, Multi-Function Technology®

MFT

5 YEAR WARRANTY

CE LISTED 94 D5 TEMP.IND. & REG.EQUIP. c UL us

BRUSHLESS DC MOTOR

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	6 W
Power consumption holding	3.5 W
Transformer sizing	7 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	2" [50 mm]
Linear force	562 lbf [2500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

For multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

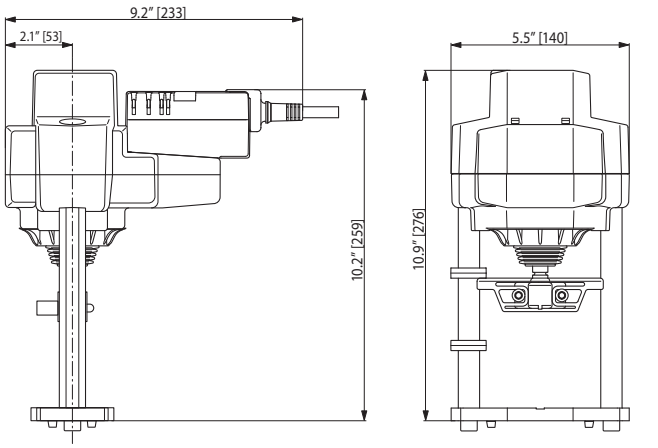
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The EV series provides 50 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The EV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

△3 Actuators may also be powered by 24 VDC.

△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

△10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

△12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

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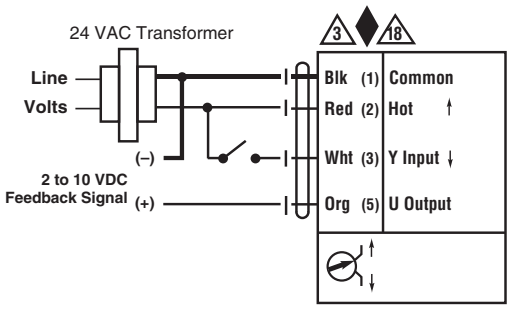
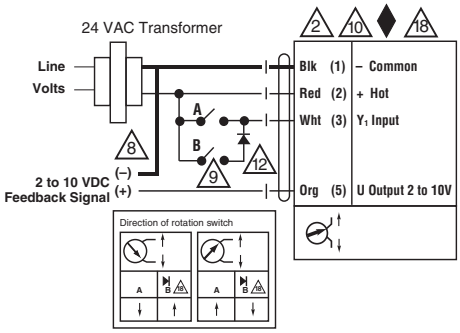
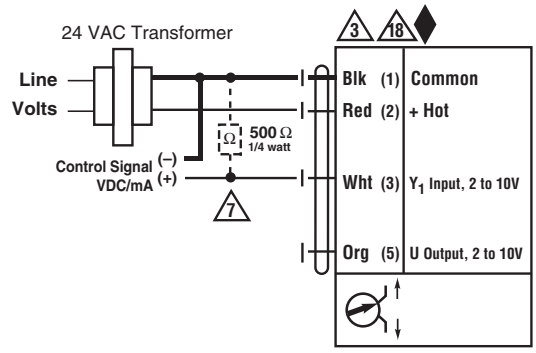


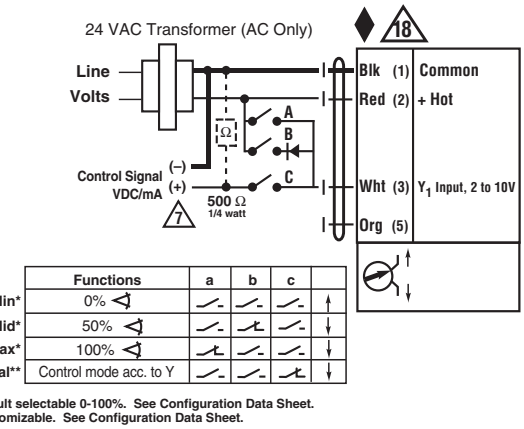
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

RVB24-3

On/Off, Floating Point, Non-Spring Return Actuator, Linear, 24 V

Application

For on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The RV series provides 50 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

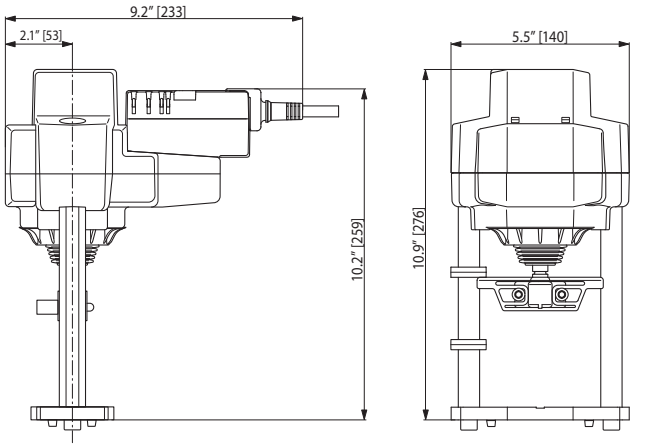
The RV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto he actuator body for signaling and switching functions.

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	6 W
Power consumption holding	3.5 W
Transformer sizing	10 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	2 to 10 VDC, 0.5 mA max
Stroke	2" [50 mm]
Linear force	1011 lbf [4500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

2 Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

3 Actuators may also be powered by 24 VDC.

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

18 Actuators with plenum cable do not have numbers; use color codes instead.

♦ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

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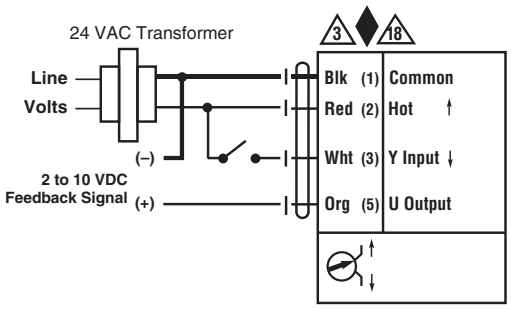
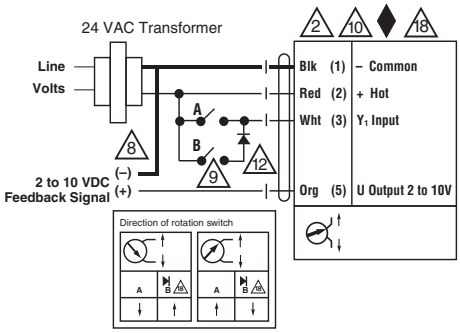


On/Off



Floating Point

RVB24-MFT

Proportional, Non-Spring Return Actuator, Linear, 24 V, Multi-Function Technology®

MFT

5 YEAR WARRANTY

CE LISTED 94 D5 TEMP.IND. & REG.EQUIP. c UL us

BRUSHLESS DC MOTOR

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	6 W
Power consumption holding	3.5 W
Transformer sizing	10 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	2" [50 mm]
Linear force	1011 lbf [4500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<65dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

For multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

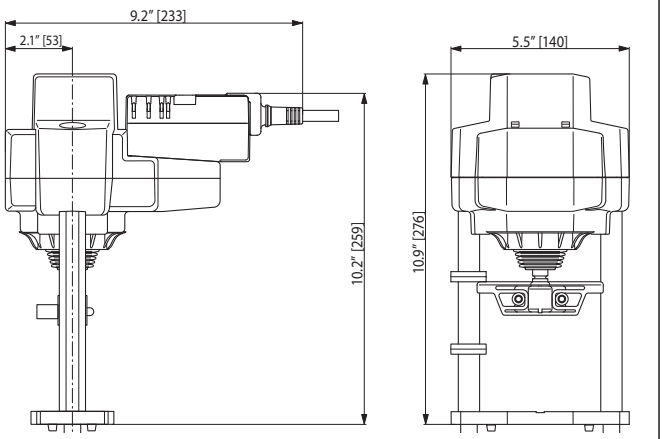
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The RV series provides 50 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The RV… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

△3 Actuators may also be powered by 24 VDC.

△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

△10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

△12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

△18 Actuators with plenum cable do not have numbers; use color codes instead.

♦ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

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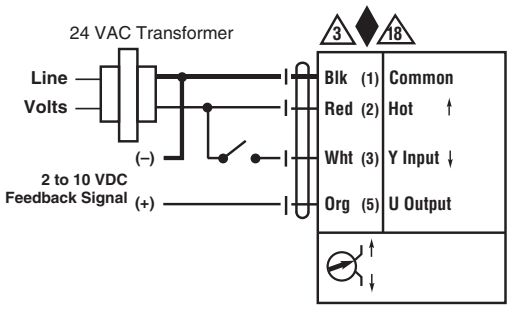
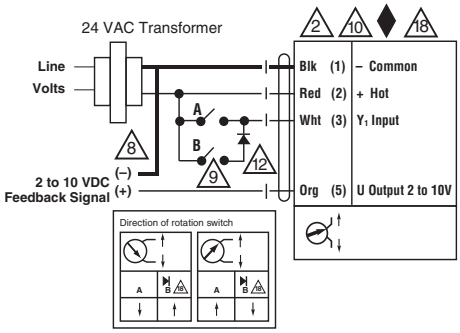
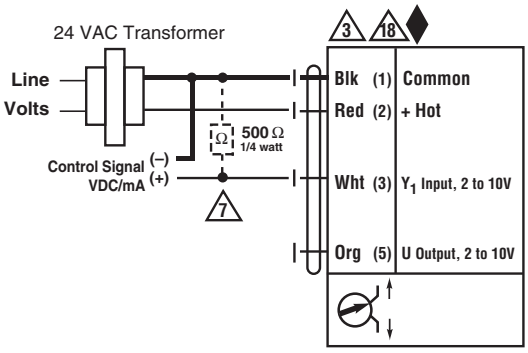


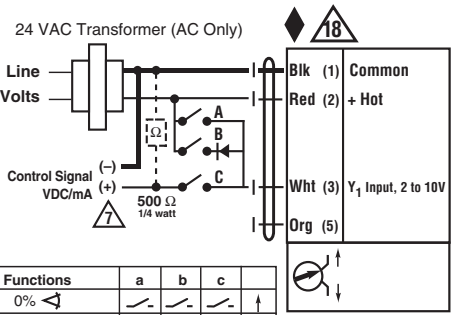
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

LVKX24-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 24 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

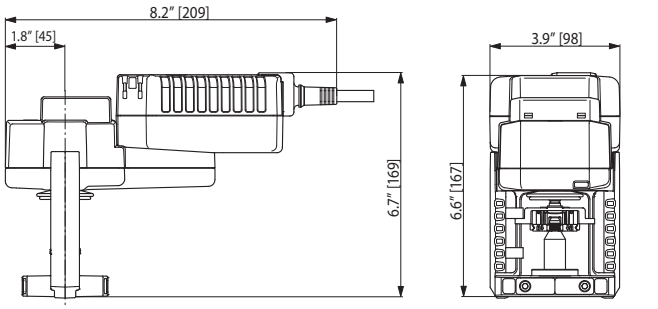
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

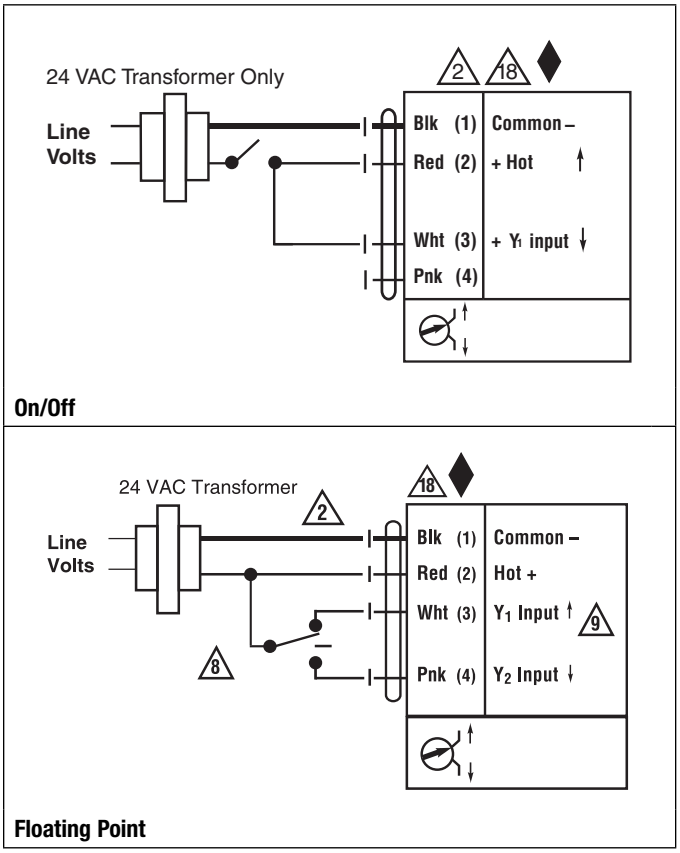
9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off

Floating Point

LVKX120-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 120 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

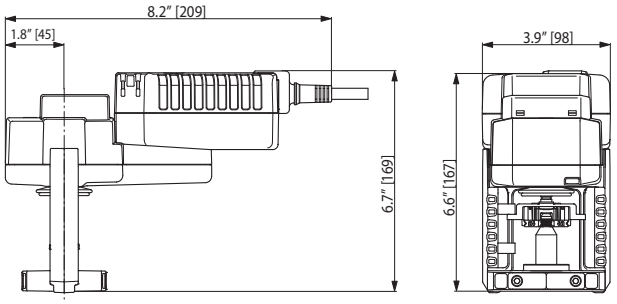
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

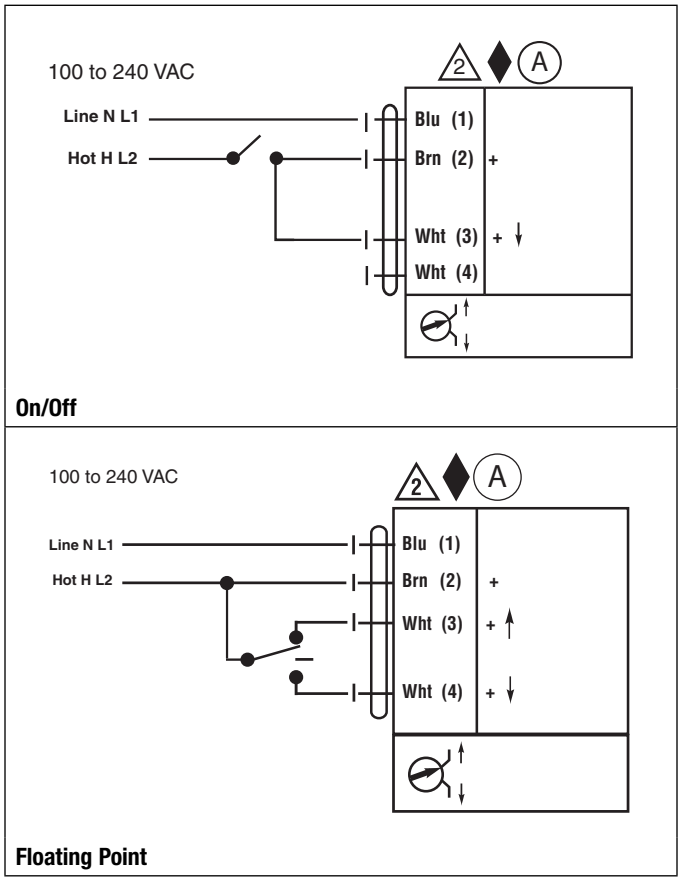
INSTALLATION NOTES

Ⓐ Actuators with appliance cables are numbered.

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel. Power consumption and input impedance must be observed.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

⚠ ***WARNING** Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off

Floating Point

LVKB24-SR

Proportional, Electronic Fail-Safe Actuator, Linear, 24 V, for 2 to 10 VDC or 4 to 20 mA

Application

For fail-safe, proportional modulation of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel.

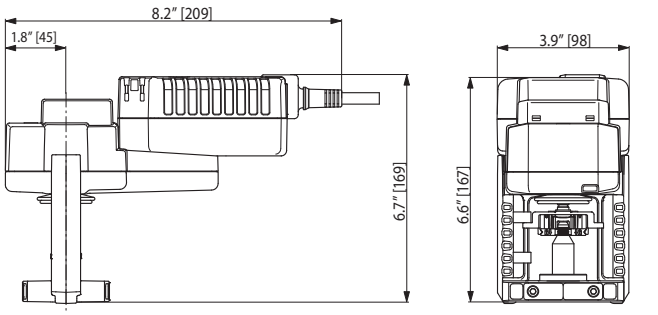
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	2-10 VDC
Operating range Y	2 to 10 VDC, 4 to 20 mA (default)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Feeback output U	2 to 10 VDC
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△3 Actuators may also be powered by 24 VDC.

△5 Only connect common to neg. (-) leg of control circuits.

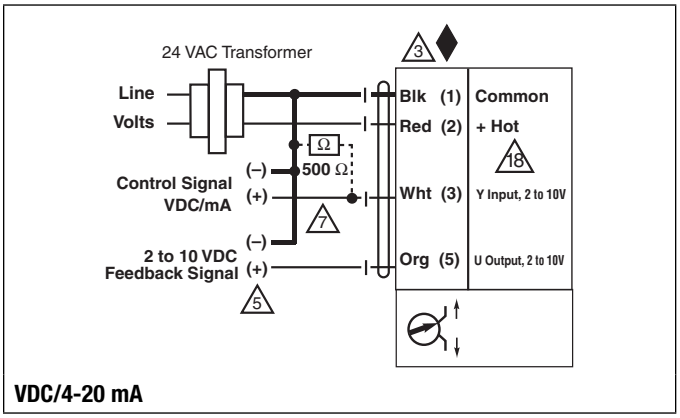
△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

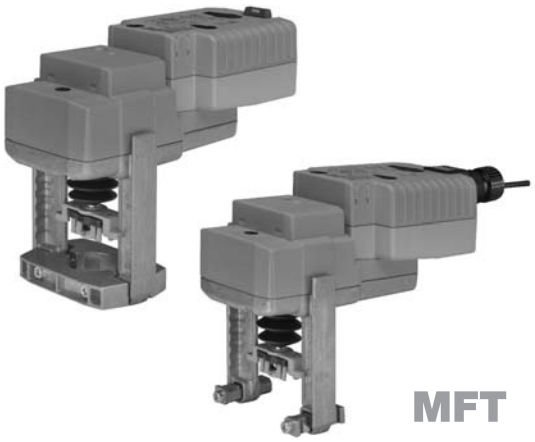
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



VDC/4-20 mA

LVKX24-MFT

Proportional, Electronic Fail-Safe Actuator, Linear, 24 V, Multi-Function Technology®



Technical Data

Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	0.6" [15 mm]
Linear force	112 lbf [500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<55dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

Fail-safe for multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The LV series provides 15 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The LVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

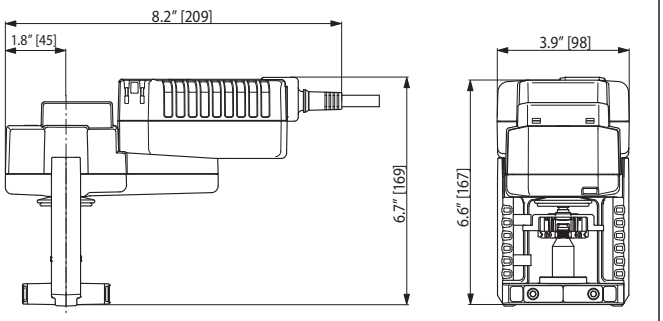
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Fail-Safe LED Status Indicator Light Sequence:

- Yellow off / Green on: operation ok, no faults
- Yellow off / Green blinking: fail-safe mechanism is active
- Yellow on / Green off: fault is detected
- Yellow off / Green off: not in operation / capacitors charging
- Yellow on / Green on: adaption running
- Yellow blinking / Green on: communication with programming tool

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

△3 Actuators may also be powered by 24 VDC.

△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

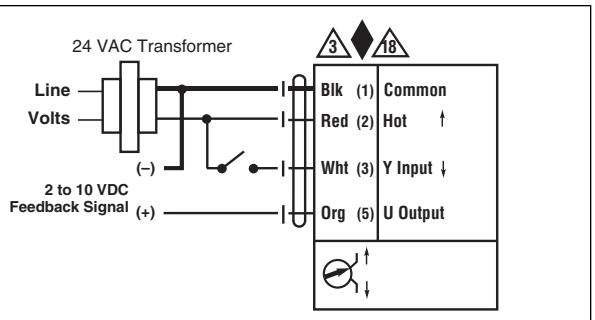
△10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

△12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

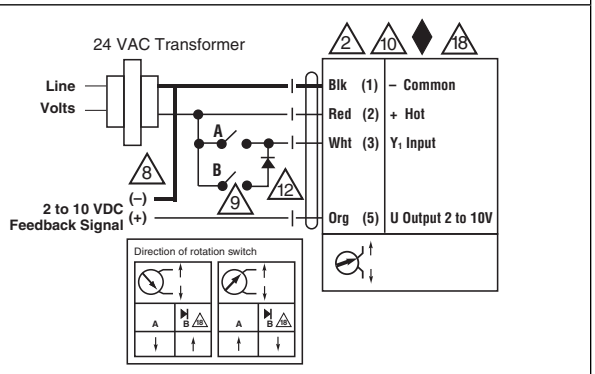
△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

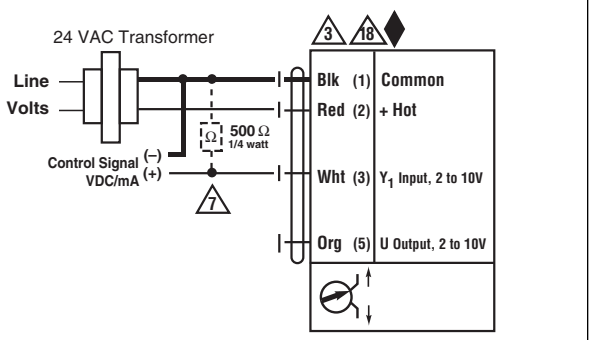
***WARNING** Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



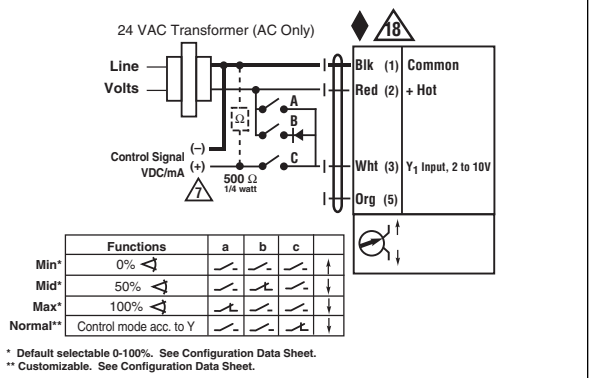
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

SVKX24-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 24 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SVK series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

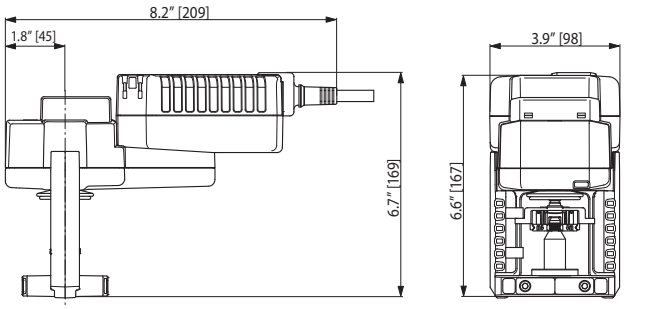
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

***CAUTION** Equipment Damage!*

△2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

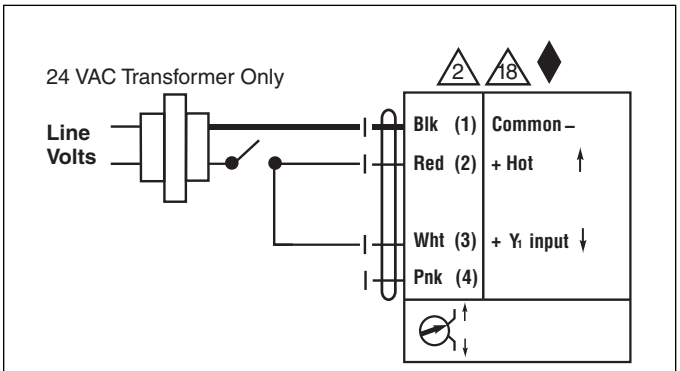
△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

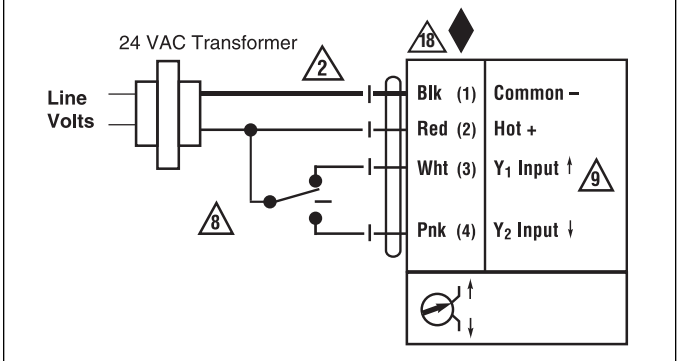
◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off



Floating Point

SVKX120-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 120 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SVK series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

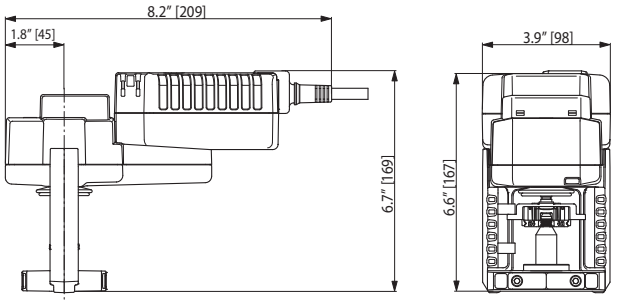
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

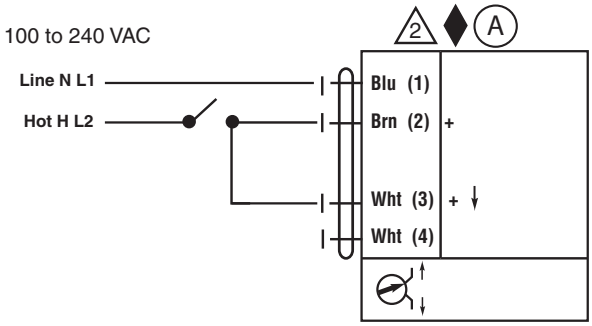
INSTALLATION NOTES

Ⓐ Actuators with appliance cables are numbered.

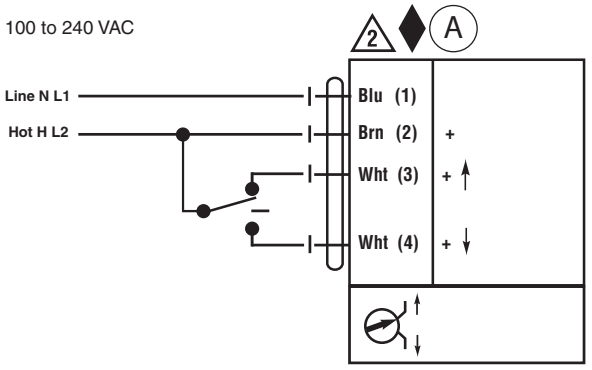
△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel. Power consumption and input impedance must be observed.

♦ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

⚠ ***WARNING** Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off



Floating Point

SVKB24-SR

Proportional, Electronic Fail-Safe Actuator, Linear, 24 V, for 2 to 10 VDC or 4 to 20 mA

Application

For fail-safe, proportional modulation of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SVK series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel.

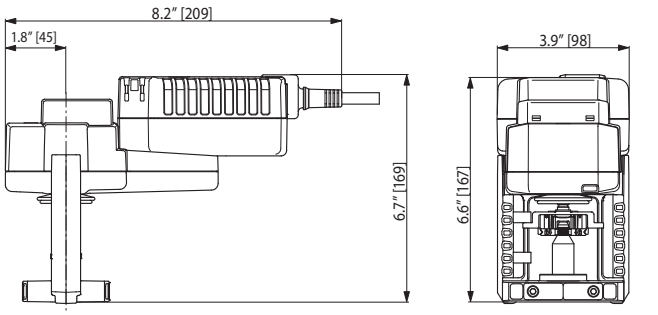
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	2-10 VDC
Operating range Y	2 to 10 VDC, 4 to 20 mA (default)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Feeback output U	2 to 10 VDC
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△3 Actuators may also be powered by 24 VDC.

△5 Only connect common to neg. (-) leg of control circuits.

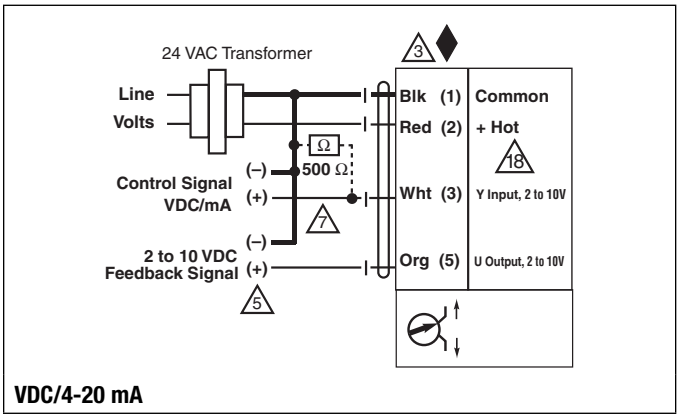
△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC.

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

***WARNING** Live Electrical Components!*

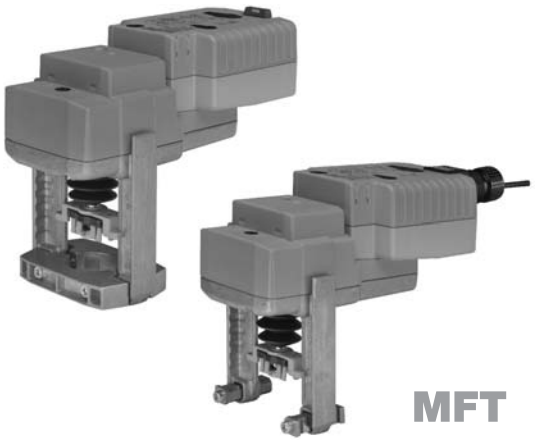
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



VDC/4-20 mA

SVKX24-MFT

Proportional, Electronic Fail-Safe Actuator, Linear, 24 V, Multi-Function Technology®



Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	0.75" [20 mm]
Linear force	337 lbf [1500 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	4 mm hex crank (shipped with actuator)
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.6 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

Fail-safe for multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The SVK series provides 20 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The SVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

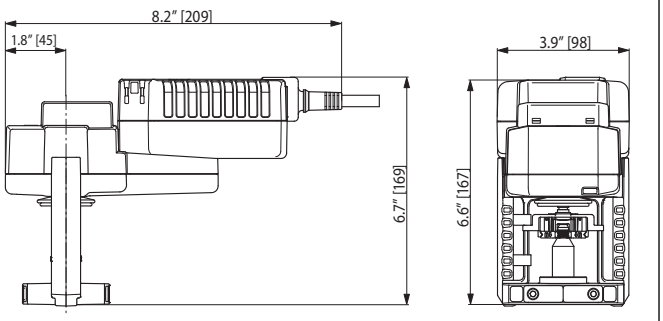
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Fail-Safe LED Status Indicator Light Sequence:

- Yellow off / Green on: operation ok, no faults
- Yellow off / Green blinking: fail-safe mechanism is active
- Yellow on / Green off: fault is detected
- Yellow off / Green off: not in operation / capacitors charging
- Yellow on / Green on: adaption running
- Yellow blinking / Green on: communication with programming tool

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves ½" to 2" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

△3 Actuators may also be powered by 24 VDC.

△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

△10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

△12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

△! ***WARNING** Live Electrical Components!*
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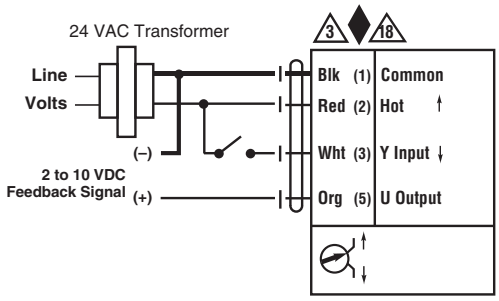
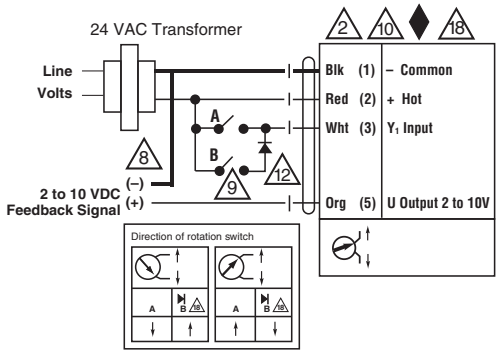
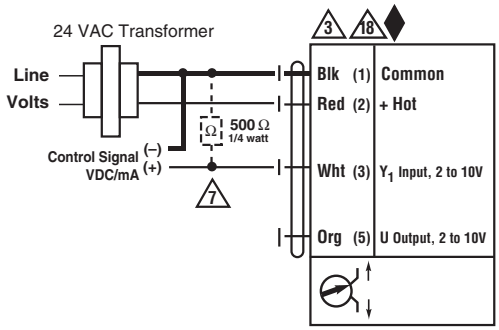


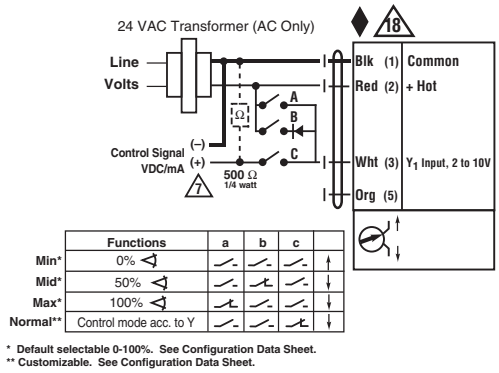
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

AVKB24-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 24 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 24 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The AVK series provides 32 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The AVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

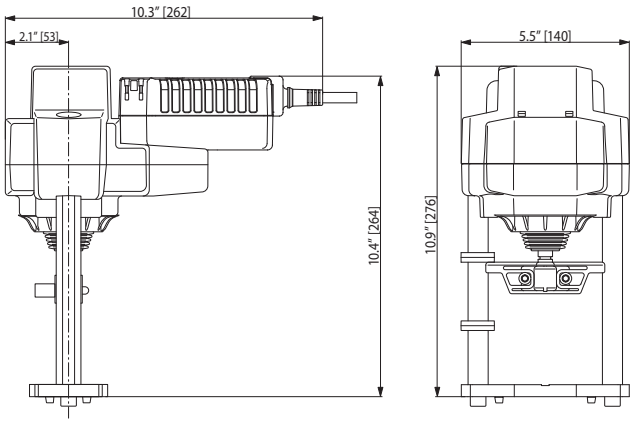
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz
Power consumption running	12 W
Power consumption holding	3 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	1.25" [32 mm]
Linear force	450 lbf [2000 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<60dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel. Power consumption and input impedance must be observed.

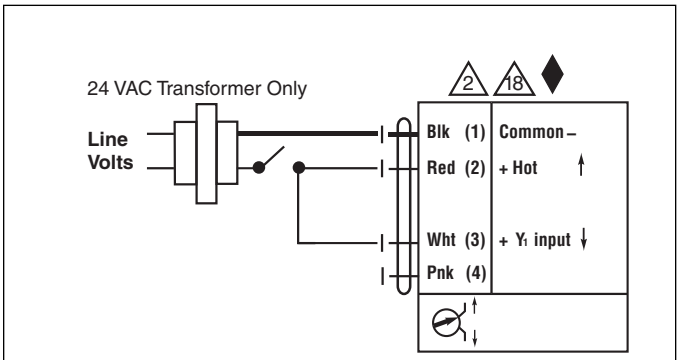
△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

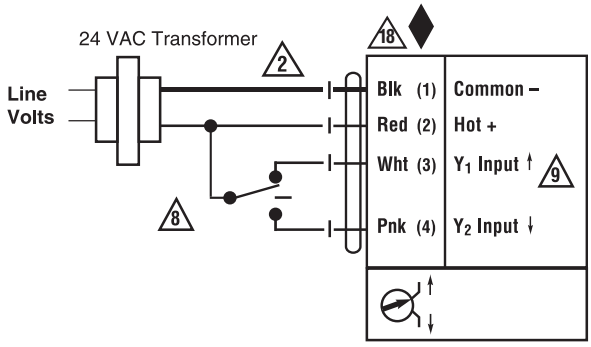
△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

⚠ ***WARNING** Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



On/Off



Floating Point

AVKX120-3

On/Off, Floating Point, Electronic Fail-Safe Actuator, Linear, 120 V

Application

Fail-safe for on/off and floating point control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to a 120 volt signal being applied from an electronic controller or positioner.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The AVK series provides 32 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The AVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

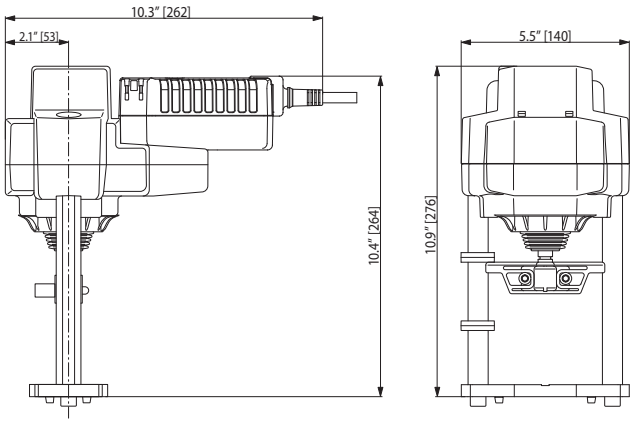
Fail-Safe Green LED Status Indicator Light Sequence:

- On: operation ok, no faults
- Blinking: fail-safe mechanism is active
- Off: fault is detected or not in operation / capacitors charging

Technical Data	
Power supply	100-240 VAC ± 20%, 50/60 Hz
Power consumption running	8.5 W
Power consumption holding	2.5 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	on/off, floating point
Operating range Y	on/off, floating point
Input impedance	100 kΩ (0.1 mA), 500 Ω, 1000 Ω (on/off)
Feeback output U	no feedback
Stroke	1.25" [32 mm]
Linear force	450 lbf [2000 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<60dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 2.5 KV. Type of action 1. Control Pollution Degree 3.

Dimensions (Inches [mm])



Typical Specification

On/off, floating point control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

Ⓐ Actuators with appliance cables are numbered.

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel. Power consumption and input impedance must be observed.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

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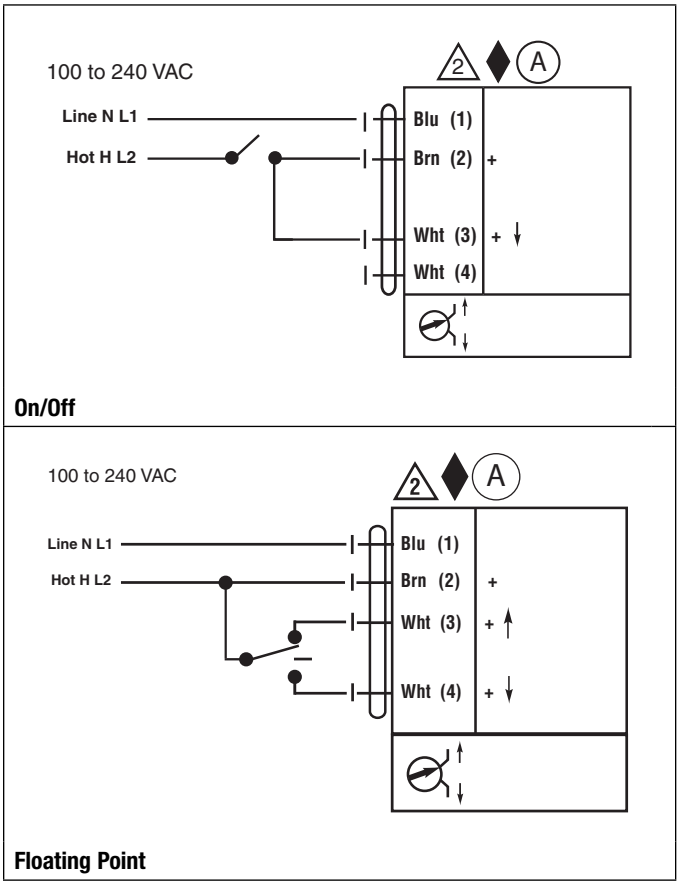


On/Off

Floating Point

AVKB24-MFT

Proportional, Electronic Fail-Safe Actuator, Linear, 24 V, Multi-Function Technology®

MFT

5 YEAR WARRANTY

CE LISTED 94 D5 TEMP.IND. & REG.EQUIP. c UL us

BRUSHLESS DC MOTOR

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz, 24 VDC ± 10%
Power consumption running	12 W
Power consumption holding	3 W
Transformer sizing	21 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable with ½" conduit connector protected NEMA 2 (IP54)
Overload protection	electronic throughout full stroke
Electrical protection	actuators are double insulated
Control	proportional/MFT
Operating range Y	2 to 10 VDC, 4 to 20 mA (default), variable (VDC, PWM, floating point, on/off)
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and on/off
Feeback output U	2 to 10 VDC, 0.5 mA max, VDC variable
Stroke	1.25" [32 mm]
Linear force	450 lbf [2000 N]
Direction of rotation	reversible with switch
Position indication	stroke indicator on bracket
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	90 seconds (default), variable (90 to 150 seconds)
Running time fail-safe	35 seconds
Humidity	5 to 95% RH non condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing material	aluminum die cast and plastic casing
Bridge time	2 second delay before fail-safe activates
Initial charge	5 to 20 seconds
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level	<60dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	9 lbs

† Use flexible metal conduit. Push the Listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with Listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control Pollution Degree 3.

Application

Fail-safe for multiple control types of globe valves in HVAC steam and hydronic systems.

Actuator sizing will be dictated by the valve size and in accordance with the flow parameters and system specifications. The actuator is mounted directly onto the globe valve bonnet with the universal clamp and collar.

The actuator operates in response to many controls types as desired by the customer and/or design control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The AVK series provides 32 mm of downward travel and a visual indicator indicates position of the actuator. When reaching the valve end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The AVK… series actuators use a sensorless brushless DC motor. The ASIC inside monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

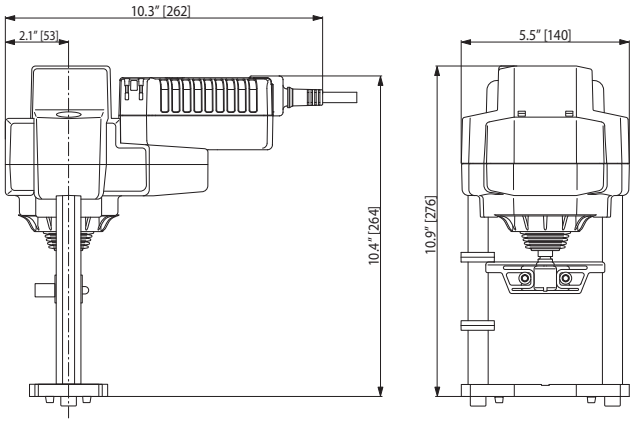
Add-on auxiliary switches are easily fastened directly onto the actuator body for signaling and switching functions.

-SR and –MFT models will have an illuminated green Adaption/Power button to reset and relearn the valve stroke as well as indicate the actuator is powered. This feature allows the actuator to rescale itself based on the actual travel. Along with the Adaption button on –MFT models will have a yellow Status light to confirm communication.

Fail-Safe LED Status Indicator Light Sequence:

- Yellow off / Green on: operation ok, no faults
- Yellow off / Green blinking: fail-safe mechanism is active
- Yellow on / Green off: fault is detected
- Yellow off / Green off: not in operation / capacitors charging
- Yellow on / Green on: adaption running
- Yellow blinking / Green on: communication with programming tool

Dimensions (Inches [mm])



Typical Specification

Proportional control globe valve actuators shall be electronic and direct coupled to the globe valve bonnet via an integrated linkage, which requires no secondary linkage and be capable of mounting to valves 2.5" to 6" in size. Actuators must provide control in response to a control input from an electronic controller or positioner. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

INSTALLATION NOTES

△2 ***CAUTION** Equipment Damage!*
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.

△3 Actuators may also be powered by 24 VDC.

△7 A 500 Ω resistor converts the 4-20 mA control signal to 2-10 VDC

△8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.

△9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.

△10 For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Position feedback cannot be used with a triac sink controller. The actuator internal common reference is not compatible.

△12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155)

△18 Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

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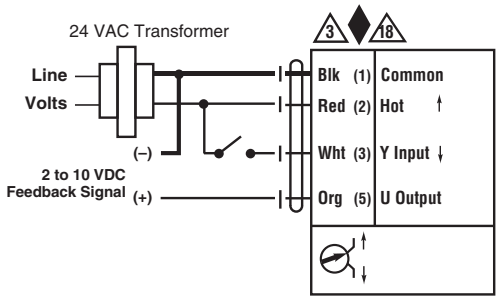
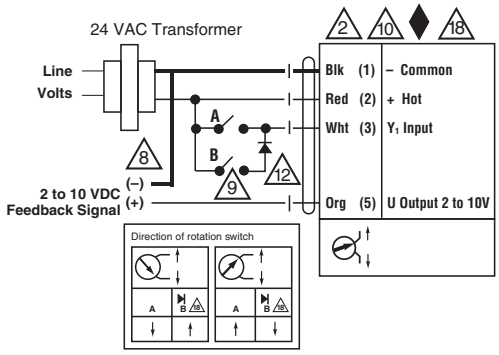
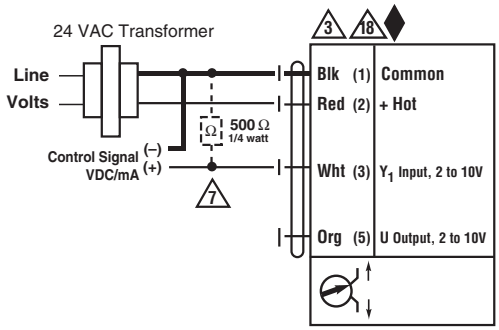


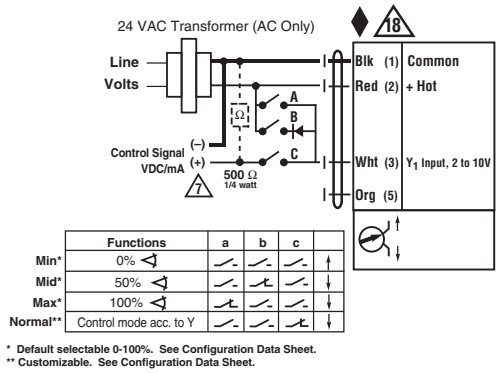
On/Off



Floating Point



VDC/4-20 mA



	Functions	a	b	c	
Min*	0%				
Mid*	50%				
Max*	100%				
Normal**	Control mode acc. to Y				

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override

UGSL1200 Short-Stroke Valve Retrofit Kit

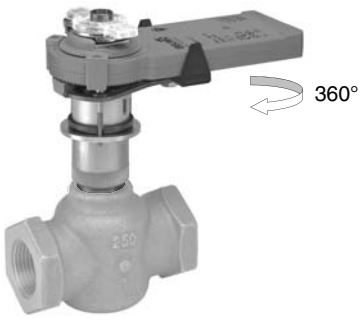
For CM and TF Series Actuators

5 YEAR WARRANTY

Technical Data	UGSL1200
Housing	aluminum
Materials:	
Coupling nut	brass
Shafts	stainless steel
Base plate	aluminum
Upper plate	stainless steel
Cams	nylon 6/6 with MDS
Stroke	6 mm in CW direction
Max out force	67 lbf [300 N]
Mounting position	360° mountable as shown
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 15 psi
Weight	1.25 lbs [0.57 kg]

Mounting Configurations

TF Actuator*



CM Actuator

Application

The UGSL1200 retrofit kit is designed to easily attach to the valve bonnet on select Siemens 599 MT/MZ short-stroke valves utilizing Belimo CM and TF* series actuators.

The unique coupler design allows the UGSL1200 to be mounted on any ½" to 1¼" two-way or three-way valves. In addition, the linkage is suitable for both normally open and normally closed valves.

Default/Configuration

The default set up for this linkage is for usage with the CM actuator. Included in the kit is an extension piece for TF actuators. Hardware is supplied to attach the shaft extension and anti-rotation screws to both a CM or TF actuator.

Operation

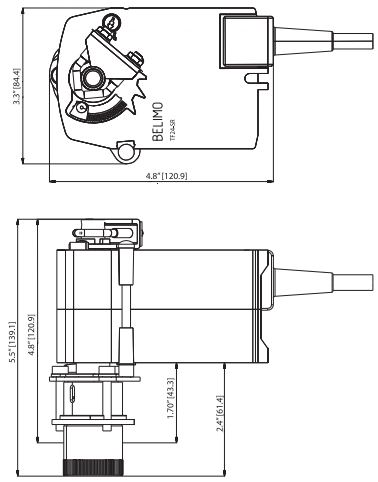
The UGSL1200 linkage provides 6 mm of downward stroke with 95° CW rotation on the actuator. This allows the valve to extend fully open or closed based on signal. The slot located on the housing provides indication when the maximum stroke has been reached. For troubleshooting when using a CM actuator, the operator may use the manual override feature to rotate the linkage up or down. When using the TF, refer to electronic override instructions according to actuator model.

Note: Linkage cannot be used on 1-½" normally closed valves.

***TFL series actuators required for on/off applications**

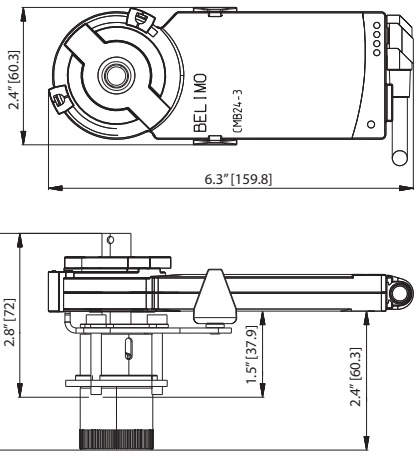
TF Dimensions (Inches [mm])

D315



CM Dimensions (Inches [mm])

D316



How to Select a Globe Valve Retrofit Solution

Follow the four steps listed below when ordering a globe valve retrofit kit for either UGLK or GVL series linkages.

Example: Siemens 658 series, **1¼"** valve, needing **200 psi** close-off pressure and **Fail-Safe** actuation.

1 Based on the **Valve Number, Configuration** and **Size**, select the proper linkage or linkages for your valve.

Some valves will have more than one linkage offered, use the actuator or combination pages to determine the appropriate linkage for a given application. In this example there is a **UGLK1214, UGLK1350** and a **UGVL** series linkage available.

2 Use the selection guide and your close-off pressure requirement to select the correct actuator series for your application. Looking at the **UGLK1350** there are no fail-safe actuators that will achieve 200 psi close-off for 1¼" valve. Looking at the **UGLK1214** or **UGVL,** the **AF** or **SVK** Series actuator will provide over **200 psi close-off** for the **1¼" valve**.

3 Use the actuator listings to make your final actuator selection.

4 HOW TO ORDER: **Option One:**
Item 1 1pc UGLK1214
Item 2 1pc AFB24-MFT

Option Two:
Item 1 1pc UGVL + SVKX24-MFT

5 YEAR WARRANTY

1 Select linkage solution based on the **Valve Number**, **Configuration**, and **Size**; select the proper **Linkage Solution** for your valve.

Siemens\Landis\Powers

658 Series Valves
Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
658 Series	2-way	1¼"	NPT	-	No	78	LM	**UGLK1350**
						156	NM	**UGLK1350**
						236	SV	**UGVL**
						250	AM	**UGLK1214**
					Yes	61	LF	**UGLK1350**
						156	NF	**UGLK1214**
						236	SVK	**UGVL**
						250	AF	**UGLK1214**

Example: **Siemens Series #658, 2-Way, 1¼"** valve to be retrofitted.

Choose correct kit **UGLK1214** or **UGVL**.

2 Verify close-off is suitable for application. Looking at the **UGLK or UGVL**, the **AF and SVK** Series actuator will provide **200 psi close-off** for the **1¼" valve**.

3 Select actuator from Product Guide and Price List based on needed control type. Decide between **AFB24**, **AFB24-MFT**

or **SVKX24-3, SVKX24-MFT**.

Model	Spring Return Actuators: Control Input	Feedback	Power Supply	Running Time(s): (M)	Running Time(s): ♦♦	VA Rating	Auxiliary Switch
BASIC PRODUCTS							
AFB24	On/Off	-	24 VAC/DC	<75 seconds	20 secs	7.5	-
AFB24-S	On/Off	-	24 VAC/DC	<75 seconds	20 secs	7.5	Built-In
AFBUP	On/Off	-	24-240 VAC	<75 seconds	20 secs	8.5	-
AFBUP-S	On/Off	-	24-240 VAC	<75 seconds	20 secs	8.5	Built-In
AFB24-SR	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	95 seconds	<20 secs	8.5	-
AFB24-SR-S	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	95 seconds	<20 secs	8.5	Built-In
AFB24-PC	0-10 V Phasecut	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-
AFB24-MFT	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-
AFB24-MFT-S	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	Built-In
AFB24-MFT95	0 to 135	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-

4 Complete Ordering Example Option One:
Item 1: **UGLK1214**
Item 2: **AFB24-MFT**

4 Complete Ordering Example Option Two:
Item 1: **UGVL + SVKX24-MFT**

ACTUATOR PART #		LVKX24-3	LVKB24-SR	LVKX24-MFT	SVKX24-3	SVKB24-SR	SVKX24-MFT
Control type		On/Off, Floating Point	Proportional	Proportional/MFT	On/Off, Floating Point	Proportional	Proportional/ MFT
Input signal / Feedback		-	2-10 VDC	Variable	-	2-10 VDC	Variable
Running time	Motor	150 seconds	150 seconds	Variable	150 seconds	150 seconds	Variable
	Fail-Safe	35 seconds	35 seconds	35 seconds	35 seconds	35 seconds	35 seconds
Actuator travel		24mm	24mm	24mm	24mm	24mm	24mm
Actuator noise level		<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)
Valve Description							
GVL LINKAGES WITH ELECTRONIC FAIL-SAFE ACTUATORS							
UGVL	Universal Adjustable for ½" to 2"	$850.00	$895.00	$950.00	$955.00	$1,000.00	$1,050.00
SGVL	Schnieder VB7..., VB9...	$750.00	$795.00	$875.00	$825.00	$875.00	$925.00

Globe Valve Retrofit Actuators

Actuator Suggestion Guide

BELIMO

ROTARY ACTUATORS

SERIES	MODEL	Spring Return	Electronic Fail-Safe	Tandem Mounting Available	Control Input	Feedback Position	Power Supply	Standard Running Time
LF Series*	LF24 US	•			On/Off	-	24 VAC/DC	Consult Specifications
	LF24-MFT US	•			Variable with MFT	Variable VDC	24 VAC/DC	
NF Series*	NFBUP-X1	•			On/Off	-	24-240 VAC	
	NFX24-MFT	•			(24 VAC/DC) Variable with MFT	Variable VDC	24 VAC/DC	
AF Series*	AFBUP-X1	•		•	On/Off	-	24-240 VAC	
	AFX24-MFT-X1	•		•	Variable with MFT	Variable VDC	24 VAC/DC	
LM Series*	LMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
	LMX24-MFT-X1				Variable with MFT	Variable VDC	24 VAC/DC	
NM Series*	NMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
	NMX24-MFT-X1				Variable with MFT	Variable VDC	24 VAC/DC	
AM Series*	AMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
	AMX24-MFT-X1				Variable with MFT	Variable VDC	24 VAC/DC	
GM Series*	GMB24-3-X1			•	Floating Point, On/Off	-	24 VAC/DC	
	GMX24-MFT-X1			•	Variable with MFT	Variable VDC	24 VAC/DC	
GK Series*	GKB24-3-X1		•		Floating Point, On/Off	-	24 VAC/DC	
	GKX24-MFT-X1		•	•	Variable with MFT	Variable VDC	24 VAC/DC	

*Please consult the Damper section of the Product Guide and Price List for a full list of product offerings. Standard run times should be considered in the selection. All air side products are applicable for retrofit kits. Select "X1" actuators come with a handle.

LINEAR ACTUATORS**

SERIES	MODEL	Fail-Safe	Control Input	Feedback Position	Power Supply	Standard Running Time*	Force
LV Series	LVX24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	112 lbf
	LVX120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	112 lbf
	LVBSR-SR	No	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	112 lbf
	LVX24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	112 lbf
LVK Series	LVKX24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	112 lbf
	LVKX120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	112 lbf
	LVKBSR-SR	Yes	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	112 lbf
	LVKX24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	112 lbf
SV Series	SVX24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	337 lbf
	SVX120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	337 lbf
	SVBSR-SR	No	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	337 lbf
	SVX24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	337 lbf
SVK Series	SVKX24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	337 lbf
	SVKX120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	337 lbf
	SVKBSR-SR	Yes	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	337 lbf
	SVKX24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	337 lbf
AV Series	AVKB24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	450 lbf
	AVKB120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	450 lbf
	AVKB24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	450 lbf
EV Series	EVB24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	562 lbf
	EVB120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	562 lbf
	EVB24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	562 lbf
RV Series	RVB24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	562 lbf
	RVB24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	562 lbf

* Other speeds available on request. ** Sold as an assembly with linkage.

MULTI-FUNCTION TECHNOLOGY

	PROGRAMMING CODE		Control Input	Running Time	Built-in Feedback
ROTARY ACTUATOR	P-10001	A01	2-10 VDC	150 seconds	2-10 VDC
	P-10002	A02	0.5-10 VDC	150 seconds	0.5-10 VDC
	P-10028	A28	0.5-10 VDC	150 seconds	0.5-10 VDC
	P-10063	A63	0.5-4.5 VDC	150 seconds	0.5-4.5 VDC
	P-10064	A64	5.5-10 VDC	150 seconds	5.5-10 VDC
	P-20002	W02	0.02-5.00 seconds PWM	150 seconds	2-10 VDC
	P-20003	W03	0.10-25.5 seconds PWM	150 seconds	2-10 VDC
	P-30001	F01	Floating Point	150 seconds	2-10 VDC
	P-40002	J02	On/Off	150 seconds	2-10 VDC
LINEAR ACTUATOR	G43		2-10 VDC	90 seconds	2-10 VDC
	G53		0.5-10 VDC	90 seconds	0.5-10 VDC
	W3M		0.02-5.00 seconds PWM	90 seconds	2-10 VDC
	G13		Floating Point	90 seconds	2-10 VDC
	G03		On/Off	90 seconds	2-10 VDC

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5011 Series	2-way	½"	NPT	-	No	250	LV	UGVL
					Yes	250	LVK	UGVL
		¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
		2½"	NPT	-	No	59	SV	UGVL
					Yes	59	SVK	UGVL
		3"	NPT	-	No	41	SV	UGVL
					Yes	41	SVK	UGVL
V5011N Series	2-way	½"	NPT	-	No	250	LM	UGLK1806
							LV	UGVL
					Yes	250	LF	UGLK1806
							LVK	UGVL
							NF	UGLK1800
		¾"	NPT	-	No	153	LM	UGLK1806
						211	LV	UGVL
						250	NM	UGLK1806
					Yes	119	LF	UGLK1806
						211	LVK	UGVL
						250	NF	UGLK1800
		1"	NPT	-	No	92	LV	UGVL
						86	LM	UGLK1806
						173	NM	UGLK1806
						250	AM	UGLK1800
							SV	UGVL
					Yes	67	LF	UGLK1806
						92	LVK	UGVL
						173	NF	UGLK1800
						250	SVK	UGVL
						250	AF	UGLK1800
		1¼"	NPT	-	No	55	LM	UGLK1806
						110	NM	UGLK1806
						221	AM	UGLK1800
						236	SV	UGVL
					Yes	43	LF	UGLK1806
						110	NF	UGLK1800
						221	AF	UGLK1800
						236	SVK	UGVL
		1½"	NPT	-	No	38	LM	UGLK1806
						77	NM	UGLK1806
						153	AM	UGLK1800
						160	SV	UGVL
						250	GM	UGLK1800
					Yes	77	NF	UGLK1800
						30	LF	UGLK1806
						153	AF	UGLK1800
						160	SVK	UGVL
						250	GK	UGLK1800
					No	22	LM	UGLK1806
						43	NM	UGLK1806
						85	SV	UGVL
						86	AM	UGLK1800
						173	GM	UGLK1800

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V5011N, V5013, V5013N Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5011N Series	2-way	2”	NPT	-	Yes	17	LF	UGLK1806
						43	NF	UGLK1800
						85	SVK	UGVL
						86	AF	UGLK1800
						173	GK	UGLK1800
V5013 Series	3-way	½”	NPT	-	No	250	LV	UGVL
					Yes	250	LVK	UGVL
		¾”	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1”	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼”	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½”	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2”	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
		2½”	NPT	-	No	59	SV	UGVL
					Yes	59	SVK	UGVL
		3”	NPT	-	No	41	SV	UGVL
					Yes	41	SVK	UGVL
V5013N Series	3-way	½”	NPT	-	No	250	LM	UGLK1806
							LV	UGVL
					Yes	250	LF	UGLK1806
							LVK	UGVL
							NF	UGLK1800
		¾”	NPT	-	No	153	LM	UGLK1806
						211	LV	UGVL
						250	NM	UGLK1806
					Yes	119	LF	UGLK1806
						211	LVK	UGVL
						250	NF	UGLK1800
		1”	NPT	-	No	92	LV	UGVL
						86	LM	UGLK1806
						173	NM	UGLK1806
						250	AM	UGLK1800
							SV	UGVL
					Yes	67	LF	UGLK1806
						92	LVK	UGVL
						173	NF	UGLK1800
						250	SVK	UGVL
						250	AF	UGLK1800
		1¼”	NPT	-	No	55	LM	UGLK1806
						110	NM	UGLK1806
						221	AM	UGLK1800
						236	SV	UGVL
					Yes	43	LF	UGLK1806
						110	NF	UGLK1800
						221	AF	UGLK1800
						236	SVK	UGVL
		1½”	NPT	-	No	38	LM	UGLK1806
						77	NM	UGLK1806
						153	AM	UGLK1800
						160	SV	UGVL
						250	GM	UGLK1800
					Yes	77	NF	UGLK1800
						30	LF	UGLK1806
						153	AF	UGLK1800
						160	SVK	UGVL
						250	GK	UGLK1800
		2”	NPT	-	No	22	LM	UGLK1806
						43	NM	UGLK1806
						85	SV	UGVL
						86	AM	UGLK1800
						173	GM	UGLK1800

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5013N Series	3-way	2"	NPT	-	Yes	17	LF	UGLK1806
						43	NF	UGLK1800
						85	SVK	UGVL
						86	AF	UGLK1800
						173	GK	UGLK1800
V5011F (1014, 1022, 1030, 1048, 1121, 1139)	2-way	½"	NPT	-	No	250	LM	UGLK1806
					Yes	250	LF	UGLK1806
							NF	UGLK1800
V5011G (1137, 1145, 1152, 1160, 1178, 1186)	2-way	½"	NPT	-	No	250	LM	UGLK1806
					Yes	250	LF	UGLK1806
							NF	UGLK1800
V5011H (1002, 1010)	2-way	½"	NPT	-	No	250	LM	UGLK1806
					Yes	250	LF	UGLK1806
							NF	UGLK1800
V5011J (1012, 1079)	2-way	½"	NPT	-	No	250	LM	UGLK1806
					Yes	250	LF	UGLK1806
							NF	UGLK1800
V5011F (1055, 1147)	2-way	¾"	NPT	-	No	153	LM	UGLK1806
						250	NM	UGLK1806
					Yes	119	LF	UGLK1806
						250	NF	UGLK1800
V5011 (H1028, G1194, J1023)	2-way	¾"	NPT	-	No	153	LM	UGLK1806
						250	NM	UGLK1806
					Yes	119	LF	UGLK1806
						250	NF	UGLK1800
V5011 (F1063, F1154, H1028, G1194)	2-way	1"	NPT	-	No	86	LM	UGLK1806
						173	NM	UGLK1806
						250	AM	UGLK1800
					Yes	67	LF	UGLK1806
						173	NF	UGLK1800
						250	AF	UGLK1800
V5011F (1071, 1162)	2-way	1¼"	NPT	-	No	55	LM	UGLK1806
						110	NM	UGLK1806
						221	AM	UGLK1800
					Yes	43	LF	UGLK1806
						110	NF	UGLK1800
						221	AF	UGLK1800
V5011 (H1044, G1210, J1049)	2-way	1¼"	NPT	-	No	55	LM	UGLK1806
						110	NM	UGLK1806
						221	AM	UGLK1800
					Yes	43	LF	UGLK1806
						110	NF	UGLK1800
						221	AF	UGLK1800
V5011 (F1089, F1178, G1228)	2-way	1½"	NPT	-	No	38	LM	UGLK1806
						77	NM	UGLK1806
						153	AM	UGLK1800
						250	GM	UGLK1800
					Yes	77	NF	UGLK1800
						30	LF	UGLK1806
						153	AF	UGLK1800
						250	GK	UGLK1800
V5011 (F1097, F1188, G1103)	2-way	2"	NPT	-	No	22	LM	UGLK1806
						43	NM	UGLK1806
						86	AM	UGLK1800
						173	GM	UGLK1800
V5011 (F1097, F1188, G1103)	2-way	2"	NPT	-	Yes	17	LF	UGLK1800
						43	NF	UGLK1806
						86	AF	UGLK1800
						173	GK	UGLK1800
V5013F (1004, 1012, 1079)	3-way	½"	NPT	-	No	250	LM	UGLK1806
					Yes	250	LF	UGLK1806
							NF	UGLK1800
V5013F (1020, 1087)	3-way	¾"	NPT	-	No	153	LM	UGLK1806
						250	NM	UGLK1806
					Yes	119	LF	UGLK1806
						250	NF	UGLK1800

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V5013, V5045, V3350 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5013F (1038, 1095)	3-way	1"	NPT	-	No	86	LM	UGLK1806
						173	NM	UGLK1806
						250	AM	UGLK1800
					Yes	67	LF	UGLK1806
						173	NF	UGLK1800
						250	AF	UGLK1800
V5013F (1046, 1103)	3-way	1¼"	NPT	-	No	55	LM	UGLK1806
						110	NM	UGLK1806
						221	AM	UGLK1800
					Yes	43	LF	UGLK1806
						110	NF	UGLK1800
						221	AF	UGLK1800
V5013F (1053, 1111)	3-way	1½"	NPT	-	No	38	LM	UGLK1806
						77	NM	UGLK1806
						153	AM	UGLK1800
						250	GM	UGLK1800
					Yes	77	NF	UGLK1800
						30	LF	UGLK1806
						153	AF	UGLK1800
						250	GK	UGLK1800
V5013F (1061, 1129)	3-way	2"	NPT	-	No	22	LM	UGLK1806
						43	NM	UGLK1806
						86	AM	UGLK1800
						173	GM	UGLK1800
					Yes	17	LF	UGLK1800
						43	NF	UGLK1806
						86	AF	UGLK1800
						173	GK	UGLK1800
V5045	2-way	½"	NPT	-	No	250	AM	UGLK1804
					Yes	250	NF	UGLK1804
		¾"	NPT	-	Yes	250	NF	UGLK1804
		1"	NPT	-	No	250	AM	UGLK1804
					Yes	244	NF	UGLK1804
		1¼"	NPT	-	No	250	AM	UGLK1804
					Yes	156	NF	UGLK1804
		1½"	NPT	-	No	217	AM	UGLK1804
					Yes	217	AF	UGLK1804
		2"	NPT	-	No	122	AM	UGLK1804
					Yes	122	AF	UGLK1804
V3350 (A2009, A2017, B2007, C2013, D2003)	2-way	2½"	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3350 (A3007, A3015, B3005, C3011, D3001)	2-way	3"	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3350 (A4005, A4013, B4003, C4019, D4009)	2-way	4"	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3350 (A5002, A5010, B5000, C5016, D5006)	2-way	5"	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V3350 (A6000, A6008, A6018, C6014, D6004)	2-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V3351 (A2008, C2005, D2002)	2-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3351 (A3006, C3002, C3003)	2-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3351 (A4004, C4000, C4001)	2-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3351 (A5001, C5008, D5005)	2-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872
V3351 (A6009, C6005, C6006)	2-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V3360E2008, V3361E2007	3-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3360E3006, V3361E3005	3-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3360E4004, V3361E4003	3-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3360E5001, V3361E5000	3-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V3360, V3450, V3451 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V3360E6009, V3361E6008	3-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V3450 (A2008, A2016, B2006, C2012, D2002)	2-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3450 (A3006, A3014, B3004, C3010, D3000)	2-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3450 (A4004, A4012, B4002, C4018, D4008)	2-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3450 (A5001, A5019, B5009, C5015, D5005)	2-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872
V3450 (A6009, A6007, A6017, C6013, D6003)	2-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V3451 (A2007, C2003, C2004)	2-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3451 (A3005, C3001, C3002)	2-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
V3451 (A3005, C3001, C3002)	2-way	3”	Flanged	-	Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3451 (A4003, C4000, C4009)	2-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3451 (A5000, C5006, C5007)	2-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V3451 (A6008, C6004, C6005)	2-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V3460E2007, V3461E2006	3-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V3460E3005, V3461E3004	3-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V3460E4003, V3461E4002	3-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V3460E5000, V3461E5009	3-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872
V3460E6008, V3461E6007	3-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V5011 (A1734, F1105, F1196, G1111)	2-way	2½”	Flanged/NPT	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V5011 (A1767, F1113, F1204, G1129)	2-way	3”	Flanged/NPT	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V5011 (A1858, B1013)	2-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V5011 (A1882, B1047)	2-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V5011, V5013 Series Valves

Linkage/Actuator Selection Guide

Johnson Controls

V52… Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5011 (A1916, B1078)	2-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
V5013 (B1003, C1001)	3-way	2½”	Flanged	-	No	55	AM	UGLK1800
						110	GM	UGLK1800
						196	2*GM	UGLK1870
					Yes	55	AF	UGLK1800
						110	2*AF	UGLK1870
							GK	UGLK1800
						196	2*GK	UGLK1870
V5013 (B1011, C1019)	3-way	3”	Flanged	-	No	38	AM	UGLK1800
						77	GM	UGLK1800
						136	2*GM	UGLK1870
					Yes	38	AF	UGLK1800
						77	2*AF	UGLK1870
							GK	UGLK1800
						136	2*GK	UGLK1870
V5013 (B1029, C1027)	3-way	4”	Flanged	-	No	11	AM	UGLK1802
						22	GM	UGLK1802
						40	2*GM	UGLK1872
					Yes	11	AF	UGLK1802
						22	2*AF	UGLK1872
							GK	UGLK1802
						40	2*GK	UGLK1872
V5013 (B1037, C1035)	3-way	5”	Flanged	-	No	14	GM	UGLK1802
						25	2*GM	UGLK1872
					Yes	7	AF	UGLK1802
						14	2*AF	UGLK1872
							GK	UGLK1802
						25	2*GK	UGLK1872
V5013 (B1045, C1043)	3-way	6”	Flanged	-	No	10	GM	UGLK1802
						18	2*GM	UGLK1872
					Yes	10	2*AF	UGLK1872
							GK	UGLK1802
						18	2*GK	UGLK1872
JOHNSON CONTROLS								
V-5252-12	2-way	3”	Flanged	PDTC	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5252-13	2-way	3”	Flanged	PDTC	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5252-35	2-way	3”	Flanged	PDTC	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5252-14	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5252-36	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
V-5252-17	2-way	5”	Flanged	PDTC	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5252-18	2-way	5”	Flanged	PDTC	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5252-38	2-way	5”	Flanged	PDTC	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5252-19	2-way	6”	Flanged	PDTC	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5252-39	2-way	6”	Flanged	PDTC	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5462-8	2-way	3”	Flanged	PDTO	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5462-9	2-way	3”	Flanged	PDTO	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5462-35	2-way	3”	Flanged	PDTO	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5462-11	2-way	4”	Flanged	PDTO	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
V-5462-12	2-way	4”	Flanged	PDTO	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Johnson Controls

V-54…, V-58… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5462-12	2-way	4”	Flanged	PDTO	Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
V-5462-37	2-way	4”	Flanged	PDTO	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
V-5462-15	2-way	5”	Flanged	PDTO	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5462-16	2-way	5”	Flanged	PDTO	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5462-39	2-way	5”	Flanged	PDTO	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5462-17	2-way	6”	Flanged	PDTO	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5462-18	2-way	6”	Flanged	PDTO	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5462-40	2-way	6”	Flanged	PDTO	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5842-9	3-way	3”	Flanged	Mixing	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5842-10	3-way	3”	Flanged	Mixing	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
V-5842-32	3-way	3”	Flanged	Mixing	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5842-13	3-way	5”	Flanged	Mixing	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5842-14	3-way	5”	Flanged	Mixing	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5842-35	3-way	5”	Flanged	Mixing	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
V-5842-15	3-way	6”	Flanged	Mixing	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5842-16	3-way	6”	Flanged	Mixing	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5842-36	3-way	6”	Flanged	Mixing	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VB-3752-22	2-way	3”	Flanged	PDTC	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
VB-3752-25	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VB-3752-28	2-way	5”	Flanged	PDTC	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VB-3752-31	2-way	6”	Flanged	PDTC	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VB-3970-14	2-way	3”	Flanged	PDTO	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Johnson Controls

VB-39…, VB-43…, VG22… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB-3970-17	2-way	4”	Flanged	PDTO	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VB-3970-20	2-way	5”	Flanged	PDTO	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VB-3970-23	2-way	6”	Flanged	PDTO	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VB-4322-11	3-way	3”	Flanged	Mixing	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
VB-4322-13	3-way	4”	Flanged	Mixing	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VB-4322-18	3-way	6”	Flanged	Mixing	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VB-4322-19	3-way	5”	Flanged	Mixing	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VG2231 UM	2-way	3”	Flanged	PDTC	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
VG2231 VM	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VG2231 WN	2-way	5”	Flanged	PDTC	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VG2231 YN	2-way	6”	Flanged	PDTC	No	10	GM	UGLK1414
						18	2*GM	UGLK1480

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG2231 YN	2-way	6"	Flanged	PDTC	Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VG2431 UM	2-way	3"	Flanged	PDTO	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
VG2431 VM	2-way	4"	Flanged	PDTO	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VG2431 WN	2-way	5"	Flanged	PDTO	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VG2431 YN	2-way	6"	Flanged	PDTO	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
VG2831 UM	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1410
						52	GM	UGLK1410
						93	2*GM	UGLK1476
					Yes	26	AF	UGLK1410
						52	2*AF	UGLK1476
							GK	UGLK1410
						93	2*GK	UGLK1476
VG2831 VM	3-way	4"	Flanged	Mixing	No	15	AM	UGLK1410
						29	GM	UGLK1410
						52	2*GM	UGLK1476
					Yes	15	AF	UGLK1410
						29	2*AF	UGLK1476
							GK	UGLK1410
						52	2*GK	UGLK1476
VG2831 WN	3-way	5"	Flanged	Mixing	No	14	GM	UGLK1414
						25	2*GM	UGLK1480
					Yes	7	AF	UGLK1414
						14	2*AF	UGLK1480
							GK	UGLK1414
						25	2*GK	UGLK1480
VG2831 YN	3-way	6"	Flanged	Mixing	No	10	GM	UGLK1414
						18	2*GM	UGLK1480
					Yes	10	2*AF	UGLK1480
							GK	UGLK1414
						18	2*GK	UGLK1480
V-5210-4595	2-way	2½"	Flanged	PDTC	No	38	AM	UGLK1412
						75	GM	UGLK1412
						134	2*GM	UGLK1478
					Yes	38	AF	UGLK1412
						75	2*AF	UGLK1478
							GK	UGLK1412
						134	2*GK	UGLK1478
V-5210-4596	2-way	3"	Flanged	PDTC	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Johnson Controls

V-52… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5210-4597	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5252-4	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-5	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-6	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-7	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-8	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-32	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-33	2-way	2½”	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5252-9	2-way	3”	Flanged	PDTC	No	38	AM	UGLK1404
						77	GM	UGLK1404
						136	2*GM	UGLK1472
V-5252-9	2-way	3”	Flanged	PDTC	Yes	38	AF	UGLK1404
						77	2*AF	UGLK1472
							GK	UGLK1404
						136	2*GK	UGLK1472
V-5252-10	2-way	3”	Flanged	PDTC	No	38	AM	UGLK1404
						77	GM	UGLK1404
						136	2*GM	UGLK1472

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5252-10	2-way	3”	Flanged	PDTC	Yes	38	AF	UGLK1404
						77	2*AF	UGLK1472
							GK	UGLK1404
						136	2*GK	UGLK1472
V-5252-11	2-way	3”	Flanged	PDTC	No	38	AM	UGLK1404
						77	GM	UGLK1404
						136	2*GM	UGLK1472
					Yes	38	AF	UGLK1404
						77	2*AF	UGLK1472
							GK	UGLK1404
						136	2*GK	UGLK1472
V-5252-34	2-way	3”	Flanged	PDTC	No	38	AM	UGLK1404
						77	GM	UGLK1404
						136	2*GM	UGLK1472
					Yes	38	AF	UGLK1404
						77	2*AF	UGLK1472
							GK	UGLK1404
						136	2*GK	UGLK1472
V-5252-15	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5252-16	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5252-37	2-way	4”	Flanged	PDTC	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5410-4595	2-way	2½”	Flanged	PDTO	No	38	AM	UGLK1412
						75	GM	UGLK1412
						134	2*GM	UGLK1478
					Yes	38	AF	UGLK1412
						75	2*AF	UGLK1478
							GK	UGLK1412
						134	2*GK	UGLK1478
V-5410-4596	2-way	3”	Flanged	PDTO	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5410-4597	2-way	4”	Flanged	PDTO	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
V-5410-4597	2-way	4”	Flanged	PDTO	Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5462-6	2-way	2½”	Flanged	PDTO	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472

All close-off pressures listed are approximate and based on valve condition and application. PDTO = Push down to open PDTC = Push down to close

Johnson Controls

V-54…, V-58… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5462-7	2-way	2½"	Flanged	PDTO	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5462-34	2-way	2½"	Flanged	PDTO	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5462-10	2-way	3"	Flanged	PDTC	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5462-36	2-way	3"	Flanged	PDTC	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5462-13	2-way	4"	Flanged	PDTO	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5462-14	2-way	4"	Flanged	PDTO	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5462-38	2-way	4"	Flanged	PDTO	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5842-7	3-way	2½"	Flanged	Mixing	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5842-8	3-way	2½"	Flanged	Mixing	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5842-31	3-way	2½"	Flanged	Mixing	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5842-31	3-way	2½"	Flanged	Mixing	Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
V-5842-17	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5842-18	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5842-33	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
V-5842-11	3-way	4"	Flanged	Mixing	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5842-12	3-way	4"	Flanged	Mixing	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V-5842-34	3-way	4"	Flanged	Mixing	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
VB-3752-19	2-way	2½"	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
VB-3970-11	2-way	2½"	Flanged	PDTO	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
VB-4322-9	3-way	2½"	Flanged	Mixing	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472

All close-off pressures listed are approximate and based on valve condition and application. PDTO = Push down to open PDTC = Push down to close

Johnson Controls

VG2…, V(B)-37… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG2231 TM	2-way	2½"	Flanged	PDTC	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
VG2231 UN	2-way	3"	Flanged	PDTC	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
VG2231 VN	2-way	4"	Flanged	PDTC	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
VG2431 TM	2-way	2½"	Flanged	PDTO	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
VG2431 UN	2-way	3"	Flanged	PDTO	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
VG2431 VN	2-way	4"	Flanged	PDTO	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
VG2831 TM	3-way	2½"	Flanged	Mixing	No	55	AM	UGLK1404
						110	GM	UGLK1404
						196	2*GM	UGLK1472
					Yes	55	AF	UGLK1404
						110	2*AF	UGLK1472
							GK	UGLK1404
						196	2*GK	UGLK1472
VG2831 UN	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1412
						52	GM	UGLK1412
						93	2*GM	UGLK1478
					Yes	26	AF	UGLK1412
						52	2*AF	UGLK1478
							GK	UGLK1412
						93	2*GK	UGLK1478
VG2831 VN	3-way	4"	Flanged	Mixing	No	15	AM	UGLK1412
						29	GM	UGLK1412
						52	2*GM	UGLK1478
					Yes	15	AF	UGLK1412
						29	2*AF	UGLK1478
							GK	UGLK1412
						52	2*GK	UGLK1478
V(B)-3754 Series, Bronze Trim	2-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL

All close-off pressures listed are approximate and based on valve condition and application. PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V(B)-3754 Series, Bronze Trim	2-way	1"	NPT	-	Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V(B)-3974 Series, Bronze Trim	2-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V(B)-4324 Series, Bronze Trim	3-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V(B)-5844 Series	2-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
	3-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V-4332	3-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V-43…, VG7000, V-37…, V-38…, V-39… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-4332	3-way	2”	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
VG7000 Series	2-way	½”	NPT	-	No	250	LV	UGVL
							NVG	UGVL
					Yes	250	LVK	UGVL
		¾”	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1”	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼”	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½”	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2”	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
	3-way	½”	NPT	-	No	250	LV	UGVL
							NVG	UGVL
					Yes	250	LVK	UGVL
		¾”	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1”	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼”	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½”	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2”	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V-3754-(4, 1008, 1022, 1026)	2-way	¾”	NPT	PDTC	No	215	LM	UGLK1550
						250	NM	UGLK1550
					Yes	215	LF	UGLK1550
						250	NF	UGLK1400
V-3754-(5, 1010, 1023, 1027)	2-way	1”	NPT	PDTC	No	250	AM	UGLK1402
					Yes	173	NF	UGLK1402
						250	AF	UGLK1402
V-3754-8	2-way	1¼”	NPT	PDTC	No	221	AM	UGLK1402
					Yes	110	NF	UGLK1402
						221	AF	UGLK1402
V-3754-(6, 1028, 1029, 1030)	2-way	1½”	NPT	PDTC	No	153	AM	UGLK1402
						250	GM	UGLK1402
					Yes	77	NF	UGLK1402
						153	AF	UGLK1402
						209	2*AF	UGLK1478
						250	GK	UGLK1402
V-3754-7	2-way	2”	NPT	PDTC	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
					Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
V-3766	2-way	½”	FLARE	PDTC	No	250	LM	UGLK1552
					Yes	250	LF	UGLK1552
V-3854-5	2-way	½”	NPT	PDTC	No	250	LM	UGLK1554
					Yes	250	LF	UGLK1554
V-3966	2-way	½”	FLARE	PDTO	No	250	LM	UGLK1552
					Yes	250	LF	UGLK1552
V-3974-(4, 1004, 1010)	2-way	¾”	NPT	PDTO	No	215	LM	UGLK1550
						250	NM	UGLK1550
					Yes	215	LF	UGLK1550
						250	NF	UGLK1400

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-3974-(5, 1005, 1011)	2-way	1"	NPT	PDTO	No	250	AM	UGLK1402
					Yes	173	NF	UGLK1402
						250	AF	UGLK1402
V-3974-(6, 1012, 1013)	2-way	1½"	NPT	PDTO	No	153	AM	UGLK1402
						250	GM	UGLK1402
					Yes	77	NF	UGLK1402
						153	AF	UGLK1402
						209	2*AF	UGLK1478
						250	GK	UGLK1402
V-3974-7	2-way	2"	NPT	PDTO	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
					Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
V-4324-(4, 1005, 1006, 1013)	3-way	¾"	NPT	Mixing	No	215	LM	UGLK1550
						250	NM	UGLK1550
					Yes	215	LF	UGLK1550
						250	NF	UGLK1400
V-4324-(5, 1007, 1008, 1014)	3-way	1"	NPT	Mixing	No	250	AM	UGLK1402
					Yes	173	NF	UGLK1402
						250	AF	UGLK1402
V-4324-8	3-way	1¼"	NPT	Mixing	No	221	AM	UGLK1402
					Yes	110	NF	UGLK1402
						221	AF	UGLK1402
V-4324-(6,1015, 1016, 1017)	3-way	1½"	NPT	Mixing	No	153	AM	UGLK1402
						250	GM	UGLK1402
					Yes	77	NF	UGLK1402
						153	AF	UGLK1402
						209	2*AF	UGLK1478
						250	GK	UGLK1402
V-4324-7	3-way	2"	NPT	Mixing	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
					Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
V-4332	3-way	½"	FLARE	PDTC	No	250	LM	UGLK1552
					Yes	250	LF	UGLK1552
V-5254-(1, 2, 3, 11)	2-way	1½"	NPT	PDTC	No	153	AM	UGLK1404
						250	2*GM	UGLK1472
							GM	UGLK1404
					Yes	77	NF	UGLK1404
						153	AF	UGLK1404
						250	2*GK	UGLK1472
							GK	UGLK1404
						307	2*AF	UGLK1472
V-5254-(4, 5, 6, 12)	2-way	2"	NPT	PDTC	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
V-5254-(4, 5, 6, 12)	2-way	2"	NPT	PDTC	Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
V-5464-(1, 2, 11)	2-way	1½"	NPT	PDTO	No	153	AM	UGLK1404
						250	2*GM	UGLK1472
							GM	UGLK1404

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Johnson Controls

V-54…, V-58…, VG7… Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5464-(1, 2, 11)	2-way	1½"	NPT	PDTO	Yes	77	NF	UGLK1404
						153	AF	UGLK1404
						250	2*GK	UGLK1472
							GK	UGLK1404
						307	2*AF	UGLK1472
V-5464-(3, 4, 12)	2-way	2"	NPT	PDTO	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
					Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
V-5844-(1, 2, 3, 11)	3-way	1½"	NPT	Mixing	No	153	AM	UGLK1404
						250	2*GM	UGLK1472
							GM	UGLK1404
					Yes	77	NF	UGLK1404
						153	AF	UGLK1404
						250	2*GK	UGLK1472
							GK	UGLK1404
						307	2*AF	UGLK1472
V-5844-(4, 5, 6, 12)	3-way	2"	NPT	Mixing	No	86	AM	UGLK1406
						173	GM	UGLK1406
						250	2*GM	UGLK1474
					Yes	43	NF	UGLK1406
						86	AF	UGLK1406
						173	2*AF	UGLK1474
							GK	UGLK1406
						250	2*GK	UGLK1474
VG7XXX-(C, E, GT) *Threaded Stem Only	2-way	½"	NPT	-	No	250	LM	UGLK1416
					Yes	250	LF	UGLK1416
	3-way	½"	NPT	-	No	250	LM	UGLK1416
					Yes	250	LF	UGLK1416
VG7XXX-LT *Threaded Stem Only	2-way	¾"	NPT	-	No	217	LM	UGLK1416
						250	NM	UGLK1416
					Yes	169	LF	UGLK1416
	3-way	¾"	NPT	-	No	217	LM	UGLK1416
						250	NM	UGLK1416
					Yes	169	LF	UGLK1416
VG7XXX-NT *Threaded Stem Only	2-way	1"	NPT	-	No	122	LM	UGLK1418
						244	NM	UGLK1418
					Yes	95	LF	UGLK1418
	3-way	1"	NPT	-	No	122	LM	UGLK1418
						244	NM	UGLK1418
					Yes	95	LF	UGLK1418
VG7XXX-PT *Threaded Stem Only	2-way	1¼"	NPT	-	No	78	LM	UGLK1418
						156	NM	UGLK1418
					Yes	61	LF	UGLK1418
	3-way	1¼"	NPT	-	No	78	LM	UGLK1418
						156	NM	UGLK1418
					Yes	61	LF	UGLK1418
VG7XXX-RT *Threaded Stem Only	2-way	1½"	NPT	-	No	38	LM	UGLK1420
						77	NM	UGLK1420
						153	AM	UGLK1422
						250	GM	UGLK1422
					Yes	77	NF	UGLK1422
						30	LF	UGLK1420
						250	GK	UGLK1422
	3-way	1½"	NPT	-	No	38	LM	UGLK1420
						77	NM	UGLK1420
						153	AM	UGLK1422
						250	GM	UGLK1422
					Yes	77	NF	UGLK1422
						30	LF	UGLK1420
						153	AF	UGLK1422
						250	GK	UGLK1422

All close-off pressures listed are approximate and based on valve condition and application.

PDTO = Push down to open PDTC = Push down to close

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG7XXX-ST *Threaded Stem Only	2-way	2"	NPT	-	No	22	LM	UGLK1420
						43	NM	UGLK1420
						86	AM	UGLK1422
						173	GM	UGLK1422
					Yes	17	LF	UGLK1420
						43	NF	UGLK1422
						86	AF	UGLK1422
						153	AF	UGLK1422
						173	GK	UGLK1422
	3-way	2"	NPT	-	No	22	LM	UGLK1420
						43	NM	UGLK1420
						86	AM	UGLK1422
						173	GM	UGLK1422
					Yes	17	LF	UGLK1420
						43	NF	UGLK1422
						86	AF	UGLK1422
						173	GK	UGLK1422
VTM-TN-(007, 019, 047)* Threaded Stem Only	2-way	½"	FLARE	-	No	250	LM	UGLK1550
					Yes	250	LF	UGLK1550
	3-way	½"	NPT	-	No	250	LM	UGLK1550
					Yes	250	LF	UGLK1550
ROBERTSHAW								
V6700	2-way	½"	NPT	-	No	250	LV	UGVL
					Yes	250	LVK	UGVL
		¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V6600	3-way	½"	NPT	-	No	250	LV	UGVL
					Yes	250	LVK	UGVL
		¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
		1"	NPT	-	No	92	LV	UGVL
						250	SV	UGVL
					Yes	92	LVK	UGVL
						250	SVK	UGVL
		1¼"	NPT	-	No	236	SV	UGVL
					Yes	236	SVK	UGVL
		1½"	NPT	-	No	160	SV	UGVL
					Yes	160	SVK	UGVL
		2"	NPT	-	No	85	SV	UGVL
					Yes	85	SVK	UGVL
V6800	2-way	¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
SIEBE\INVENSYS\BARBER COLMAN								
Belimo USA G2 Series	2-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	250	SV	SGVL
					Yes	250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
		1½"	NPT	-	No	160	SV	SGVL
					Yes	160	SVK	SGVL
		2"	NPT	-	No	85	SV	SGVL
					Yes	85	SVK	SGVL

All close-off pressures listed are approximate and based on valve condition and application.

Siebe\Invensys\Barber Colman

Belimo USA G2…, G3…, VB7000, VB9000 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Belimo USA G2…S Series	2-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
		1½"	NPT	-	No	160	SV	SGVL
					Yes	160	SVK	SGVL
		2"	NPT	-	No	85	SV	SGVL
					Yes	85	SVK	SGVL
Belimo USA G3 Series	3-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
		1½"	NPT	-	No	160	SV	SGVL
					Yes	160	SVK	SGVL
		2"	NPT	-	No	85	SV	SGVL
					Yes	85	SVK	SGVL
VB7000 Series	2-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
		1½"	NPT	-	No	160	SV	SGVL
					Yes	160	SVK	SGVL
		2"	NPT	-	No	85	SV	SGVL
					Yes	85	SVK	SGVL
	3-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
		1½"	NPT	-	No	160	SV	SGVL
					Yes	160	SVK	SGVL
		2"	NPT	-	No	85	SV	SGVL
					Yes	85	SVK	SGVL
VB9000 Series	2-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB9000 Series	3-way	½"	NPT	-	No	250	LV	SGVL
					Yes	250	LVK	SGVL
		¾"	NPT	-	No	211	LV	SGVL
					Yes	211	LVK	SGVL
		1"	NPT	-	No	92	LV	SGVL
						250	SV	SGVL
					Yes	92	LVK	SGVL
						250	SVK	SGVL
		1¼"	NPT	-	No	236	SV	SGVL
					Yes	236	SVK	SGVL
Belimo USA G2 Series	2-way	1"	NPT	-	No	250	AM	UGLK1000
					Yes	250	AF	UGLK1000
		1¼"	NPT	-	No	250	AM	UGLK1000
					Yes	250	AF	UGLK1000
		1½"	NPT	-	No	217	AM	UGLK1000
					Yes	217	AF	UGLK1000
		2"	NPT	-	No	122	AM	UGLK1000
					Yes	122	AF	UGLK1000
Belimo USA G3 Series	3-way	1"	NPT	-	No	250	AM	UGLK1000
					Yes	250	AF	UGLK1000
		1¼"	NPT	-	No	250	AM	UGLK1000
					Yes	250	AF	UGLK1000
		1½"	NPT	-	No	217	AM	UGLK1000
					Yes	217	AF	UGLK1000
		2"	NPT	-	No	122	AM	UGLK1000
					Yes	122	AF	UGLK1000
Belimo USA G2 Series	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
		¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
		1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
					Yes	95	LF	UGLK1150
		1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
					Yes	61	LF	UGLK1150
Belimo USA G3 Series	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
		¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
		1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
					Yes	95	LF	UGLK1150
		1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
					Yes	61	LF	UGLK1150
VB304X-0-1-4	3-way	½"	NPT	Mixing	No	250	LM	UGLK1002
							NM	UGLK1002
					Yes	250	AF	UGLK1004
							LF	UGLK1002
VB304X-0-1-7	3-way	¾"	NPT	Mixing	No	153	LM	UGLK1002
						250	NM	UGLK1002
					Yes	119	LF	UGLK1002
VB304X-0-1-8	3-way	1"	NPT	Mixing	No	86	LM	UGLK1002
						173	NM	UGLK1002
						250	AM	UGLK1004
					Yes	67	LF	UGLK1002
						250	AF	UGLK1004
VB304X-0-1-9	3-way	1¼"	NPT	Mixing	No	55	LM	UGLK1002
						110	NM	UGLK1002
						221	AM	UGLK1004
					Yes	43	LF	UGLK1002
						221	AF	UGLK1004

All close-off pressures listed are approximate and based on valve condition and application.

Siebe\Invensys\Barber Colman

VB3…, VB7… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB304X-0-1-10	3-way	1½"	NPT	Mixing	No	38	LM	UGLK1002
						77	NM	UGLK1002
						153	AM	UGLK1004
						250	GM	UGLK1004
					Yes	30	LF	UGLK1002
						153	AF	UGLK1004
						250	GK	UGLK1004
VB304X-0-1-11	3-way	2"	NPT	Mixing	No	22	LM	UGLK1002
						43	NM	UGLK1002
						86	AM	UGLK1004
						173	GM	UGLK1004
					Yes	17	LF	UGLK1002
						86	AF	UGLK1004
						173	GK	UGLK1004
VB7XXX-0-4-1	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB7XXX-0-4-2	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB7XXX-0-4-3	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB7XXX-0-4-4	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB7XXX-0-4-5	2-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
	3-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
VB7XXX-0-4-6	2-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
	3-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
VB7XXX-0-4-7	2-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
	3-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
VB7XXX-0-4-8	2-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
	3-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
VB7XXX-0-4-9	2-way	1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
						250	AM	UGLK1000
					Yes	61	LF	UGLK1150
						250	AF	UGLK1000

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB7XXX-0-4-9	3-way	1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
						250	AM	UGLK1000
					Yes	61	LF	UGLK1150
						250	AF	UGLK1000
VB7XXX-0-4-10	2-way	1½"	NPT	-	No	217	AM	UGLK1000
					Yes	217	AF	UGLK1000
	3-way	1½"	NPT	-	No	217	AM	UGLK1000
					Yes	217	AF	UGLK1000
VB7XXX-0-4-11	2-way	2"	NPT	-	No	122	AM	UGLK1000
					Yes	122	AF	UGLK1000
	3-way	2"	NPT	-	No	122	AM	UGLK1000
					Yes	122	AF	UGLK1000
VB804X-0-1-4	3-way	½"	NPT	Mixing	No	250	LM	UGLK1002
							NM	UGLK1002
					Yes	250	AF	UGLK1004
							LF	UGLK1002
VB804X-0-1-7	3-way	¾"	NPT	Mixing	No	153	LM	UGLK1002
						250	NM	UGLK1002
					Yes	119	LF	UGLK1002
VB804X-0-1-8	3-way	1"	NPT	Mixing	No	86	LM	UGLK1002
						173	NM	UGLK1002
						250	AM	UGLK1004
					Yes	67	LF	UGLK1002
						250	AF	UGLK1004
VB804X-0-1-9	3-way	1¼"	NPT	Mixing	No	55	LM	UGLK1002
						110	NM	UGLK1002
						221	AM	UGLK1004
					Yes	43	LF	UGLK1002
						221	AF	UGLK1004
VB804X-0-1-10	3-way	1½"	NPT	Mixing	No	38	LM	UGLK1002
						77	NM	UGLK1002
						153	AM	UGLK1004
						250	GM	UGLK1004
					Yes	30	LF	UGLK1002
						153	AF	UGLK1004
						250	GK	UGLK1004
VB804X-0-1-11	3-way	2"	NPT	Mixing	No	22	LM	UGLK1002
						43	NM	UGLK1002
						86	AM	UGLK1004
						173	GM	UGLK1004
					Yes	17	LF	UGLK1002
						86	AF	UGLK1004
						173	GK	UGLK1004
VB9XXX-0-4-1	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB9XXX-0-4-2	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB9XXX-0-4-3	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB9XXX-0-4-4	2-way	½"	NPT	-	No	250	LM	UGLK1150
					Yes	250	LF	UGLK1150
	3-way	½"	NPT	-	No	130	LM	UGLK1150
					Yes	250	LF	UGLK1150
VB9XXX-0-4-5	2-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
	3-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150

All close-off pressures listed are approximate and based on valve condition and application.

Siebe\Invensys\Barber Colman

VB9… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB9XXX-0-4-6	2-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
	3-way	¾"	NPT	-	No	215	LM	UGLK1150
						250	NM	UGLK1150
					Yes	215	LF	UGLK1150
VB9XXX-0-4-7	2-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
	3-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
VB9XXX-0-4-8	2-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	250	AF	UGLK1000
	3-way	1"	NPT	-	No	120	LM	UGLK1150
						244	NM	UGLK1150
						250	AM	UGLK1000
					Yes	95	LF	UGLK1150
						250	AF	UGLK1000
VB9XXX-0-4-9	2-way	1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
						250	AM	UGLK1000
					Yes	61	LF	UGLK1150
						250	AF	UGLK1000
	3-way	1¼"	NPT	-	No	78	LM	UGLK1150
						156	NM	UGLK1150
						250	AM	UGLK1000
					Yes	61	LF	UGLK1150
						250	AF	UGLK1000
VB9XXX-0-4-10 (Pre '94)	2-way	1½"	NPT	-	No	104	AM	UGLK1008
						209	GM	UGLK1008
						250	2*GM	UGLK1064
					Yes	104	AF	UGLK1008
						209	2*AF	UGLK1064
							GK	UGLK1008
						250	2*GK	UGLK1064
	3-way	1½"	NPT	-	No	104	AM	UGLK1008
						209	GM	UGLK1008
						250	2*GM	UGLK1064
					Yes	104	AF	UGLK1008
						209	2*AF	UGLK1064
							GK	UGLK1008
						250	2*GK	UGLK1064
VB9XXX-0-4-10 (Post '94)	2-way	1½"	NPT	-	No	79	AM	UGLK1016
						158	GM	UGLK1016
						250	2*GM	UGLK1066
					Yes	79	AF	UGLK1016
						158	GK	UGLK1016
						209	2*AF	UGLK1066
						250	2*GK	UGLK1066
	3-way	1½"	NPT	-	No	79	AM	UGLK1016
						158	GM	UGLK1016
						250	2*GM	UGLK1066
					Yes	79	AF	UGLK1016
						158	GK	UGLK1016
						209	2*AF	UGLK1066
						250	2*GK	UGLK1066
VB9XXX-0-4-11 (Pre '94)	2-way	2"	NPT	-	No	59	AM	UGLK1008
						117	GM	UGLK1008
						209	2*GM	UGLK1064

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB9XXX-0-4-11 (Pre '94)	2-way	2"	NPT	-	Yes	59	AF	UGLK1008
						117	2*AF	UGLK1064
							GK	UGLK1008
						209	2*GK	UGLK1064
	3-way	2"	NPT	-	No	59	AM	UGLK1008
						117	GM	UGLK1008
						209	2*GM	UGLK1064
					Yes	59	AF	UGLK1008
						117	2*AF	UGLK1064
							GK	UGLK1008
						209	2*GK	UGLK1064
VB9XXX-0-4-11 (Post '94)	2-way	2"	NPT	-	No	44	AM	UGLK1016
						89	GM	UGLK1016
						209	2*GM	UGLK1066
					Yes	44	AF	UGLK1016
						89	GK	UGLK1016
						117	2*AF	UGLK1066
						209	2*GK	UGLK1066
	3-way	2"	NPT	-	No	44	AM	UGLK1016
						89	GM	UGLK1016
						209	2*GM	UGLK1066
					Yes	44	AF	UGLK1016
						89	GK	UGLK1016
						117	2*AF	UGLK1066
						209	2*GK	UGLK1066
VB9XXX-0-4-12	2-way	2½"	NPT	-	No	38	AM	UGLK1010
						75	GM	UGLK1010
						134	2*GM	UGLK1070
					Yes	38	AF	UGLK1010
						75	2*AF	UGLK1070
							GK	UGLK1010
						134	2*GK	UGLK1070
	3-way	2½"	NPT	-	No	38	AM	UGLK1010
						75	GM	UGLK1010
						134	2*GM	UGLK1070
					Yes	38	AF	UGLK1010
						75	2*AF	UGLK1070
							GK	UGLK1010
						134	2*GK	UGLK1070
VB9XXX-0-4-13	2-way	3"	NPT	-	No	26	AM	UGLK1010
						52	GM	UGLK1010
						93	2*GM	UGLK1070
					Yes	26	AF	UGLK1010
						52	2*AF	UGLK1070
							GK	UGLK1010
						93	2*GK	UGLK1070
	3-way	3"	NPT	-	No	26	AM	UGLK1010
						52	GM	UGLK1010
						93	2*GM	UGLK1070
					Yes	26	AF	UGLK1010
						52	2*AF	UGLK1070
							GK	UGLK1010
						93	2*GK	UGLK1070
VB304X-0-2-12	3-way	2½"	Flanged	Mixing	No	38	AM	UGLK1006
						75	GM	UGLK1006
						134	2*GM	UGLK1072
					Yes	38	AF	UGLK1006
						75	2*AF	UGLK1072
							GK	UGLK1006
						134	2*GK	UGLK1072
VB304X-0-2-13	3-way	3"	Flanged	Mixing	No	26	AM	UGLK1006
						52	GM	UGLK1006
						93	2*GM	UGLK1072
					Yes	26	AF	UGLK1006
						52	2*AF	UGLK1072
							GK	UGLK1006
						93	2*GK	UGLK1072

All close-off pressures listed are approximate and based on valve condition and application.

Siebe\Invensys\Barber Colman

VB3…, VB8…, VB9… Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB304X-0-2-14	3-way	4”	Flanged	Mixing	No	15	AM	UGLK1006
						29	GM	UGLK1006
						52	2*GM	UGLK1072
					Yes	15	AF	UGLK1006
						29	2*AF	UGLK1072
							GK	UGLK1006
						52	2*GK	UGLK1072
VB304X-0-2-15	3-way	5”	Flanged	Mixing	No	7	AM	UGLK1014
						14	GM	UGLK1014
						25	2*GM	UGLK1076
					Yes	7	AF	UGLK1014
						14	2*AF	UGLK1076
							GK	UGLK1014
						25	2*GK	UGLK1076
VB304X-0-2-16	3-way	6”	Flanged	Mixing	No	5	AM	UGLK1014
						10	GM	UGLK1014
						18	2*GM	UGLK1076
					Yes	5	AF	UGLK1014
						10	2*AF	UGLK1076
							GK	UGLK1014
						18	2*GK	UGLK1076
VB804X-0-2-12	3-way	2½”	Flanged	Mixing	No	38	AM	UGLK1006
						75	GM	UGLK1006
						134	2*GM	UGLK1072
					Yes	38	AF	UGLK1006
						75	2*AF	UGLK1072
							GK	UGLK1006
						134	2*GK	UGLK1072
VB804X-0-2-13	3-way	3”	Flanged	Mixing	No	26	AM	UGLK1006
						52	GM	UGLK1006
						93	2*GM	UGLK1072
					Yes	26	AF	UGLK1006
						52	2*AF	UGLK1072
							GK	UGLK1006
						93	2*GK	UGLK1072
VB804X-0-2-14	3-way	4”	Flanged	Mixing	No	15	AM	UGLK1006
						29	GM	UGLK1006
						52	2*GM	UGLK1072
					Yes	15	AF	UGLK1006
						29	2*AF	UGLK1072
							GK	UGLK1006
						52	2*GK	UGLK1072
VB804X-0-2-15	3-way	5”	Flanged	Mixing	No	7	AM	UGLK1014
						14	GM	UGLK1014
						25	2*GM	UGLK1076
					Yes	7	AF	UGLK1014
						14	2*AF	UGLK1076
							GK	UGLK1014
						25	2*GK	UGLK1076
VB804X-0-2-16	3-way	6”	Flanged	Mixing	No	5	AM	UGLK1014
						10	GM	UGLK1014
						18	2*GM	UGLK1076
					Yes	5	AF	UGLK1014
						10	2*AF	UGLK1076
							GK	UGLK1014
						18	2*GK	UGLK1076
VB9XXX-0-5-12	2-way	2½”	Flanged	-	No	38	AM	UGLK1010
						75	GM	UGLK1010
						134	2*GM	UGLK1070
					Yes	38	AF	UGLK1010
						75	2*AF	UGLK1070
							GK	UGLK1010
						134	2*GK	UGLK1070
	3-way	2½”	Flanged	-	No	38	AM	UGLK1010
						75	GM	UGLK1010
						134	2*GM	UGLK1070

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB9XXX-0-5-12	3-way	2½"	Flanged	-	Yes	38	AF	UGLK1010
						75	2*AF	UGLK1070
							GK	UGLK1010
						134	2*GK	UGLK1070
VB9XXX-0-5-13	2-way	3"	Flanged	-	No	26	AM	UGLK1010
						52	GM	UGLK1010
						93	2*GM	UGLK1070
					Yes	26	AF	UGLK1010
						52	2*AF	UGLK1070
							GK	UGLK1010
						93	2*GK	UGLK1070
	3-way	3"	Flanged	-	No	26	AM	UGLK1010
						52	GM	UGLK1010
						93	2*GM	UGLK1070
					Yes	26	AF	UGLK1010
						52	2*AF	UGLK1070
							GK	UGLK1010
						93	2*GK	UGLK1070
VB9XXX-0-5-14	2-way	4"	Flanged	-	No	11	AM	UGLK1012
						22	GM	UGLK1012
						40	2*GM	UGLK1074
					Yes	11	AF	UGLK1012
						22	2*AF	UGLK1074
							GK	UGLK1012
						40	2*GK	UGLK1074
	3-way	4"	Flanged	-	No	11	AM	UGLK1012
						22	GM	UGLK1012
						40	2*GM	UGLK1074
					Yes	11	AF	UGLK1012
						22	2*AF	UGLK1074
							GK	UGLK1012
						40	2*GK	UGLK1074
SIEMENS/LANDIS/POWERS								
591 Series	2-way	½"	NPT	-	No	250	AM	UGLK1200
							LV	UGVL
					Yes	250	LVK	UGVL
							NF	UGLK1200
		¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
						250	NF	UGLK1200
		1"	NPT	-	No	92	LV	UGVL
						250	AM	UGLK1200
							SV	UGVL
					Yes	92	LVK	UGVL
						244	NF	UGLK1200
						250	SVK	UGVL
						250	AF	UGLK1200
		1¼"	NPT	-	No	236	SV	UGVL
						250	AM	UGLK1200
					Yes	156	NF	UGLK1200
						236	SVK	UGVL
						250	AF	UGLK1200
		1½"	NPT	-	No	104	AM	UGLK1202
						209	GM	UGLK1202
					Yes	52	NF	UGLK1202
						104	AF	UGLK1202
						209	GK	UGLK1202
		2"	NPT	-	No	59	AM	UGLK1202
						117	GM	UGLK1202
					Yes	29	NF	UGLK1202
						59	AF	UGLK1202
						117	GK	UGLK1202

All close-off pressures listed are approximate and based on valve condition and application.

Siemens\Landis\Powers

591 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
591 Series	2-way	2½"	Flanged	-	No	55	AM	UGLK1204
						110	GM	UGLK1204
						196	2*GM	UGLK1270
					Yes	55	AF	UGLK1204
						110	2*AF	UGLK1270
							GK	UGLK1204
						196	2*GK	UGLK1270
		3"	Flanged	-	No	38	AM	UGLK1204
						77	GM	UGLK1204
						136	2*GM	UGLK1270
					Yes	38	AF	UGLK1204
						77	2*AF	UGLK1270
							GK	UGLK1204
						136	2*GK	UGLK1270
		4"	Flanged	-	No	11	AM	UGLK1206
						22	GM	UGLK1206
						40	2*GM	UGLK1274
					Yes	11	AF	UGLK1206
						22	2*AF	UGLK1274
							GK	UGLK1206
						40	2*GK	UGLK1274
		5"	Flanged	-	No	14	GM	UGLK1206
						25	2*GM	UGLK1274
					Yes	14	2*AF	UGLK1274
							GK	UGLK1206
						25	2*GK	UGLK1274
		6"	Flanged	-	No	18	2*GM	UGLK1274
					Yes	10	2*AF	UGLK1274
						18	2*GK	UGLK1274
	3-way	½"	NPT	-	No	250	AM	UGLK1200
							LV	UGVL
					Yes	250	LVK	UGVL
							NF	UGLK1200
		¾"	NPT	-	No	211	LV	UGVL
					Yes	211	LVK	UGVL
						250	NF	UGLK1200
		1"	NPT	-	No	92	LV	UGVL
						250	AM	UGLK1200
							SV	UGVL
					Yes	92	LVK	UGVL
						244	NF	UGLK1200
						250	SVK	UGVL
						250	AF	UGLK1200
		1¼"	NPT	-	No	236	SV	UGVL
						250	AM	UGLK1200
					Yes	156	NF	UGLK1200
						236	SVK	UGVL
						250	AF	UGLK1200
		1½"	NPT	-	No	217	AM	UGLK1200
						250	GM	UGLK1200
					Yes	109	NF	UGLK1200
						217	AF	UGLK1200
						250	GK	UGLK1200
		2"	NPT	-	No	85	SV	UGVL
						122	AM	UGLK1200
						244	GM	UGLK1200
					Yes	61	NF	UGLK1200
						85	SVK	UGVL
						122	AF	UGLK1200
						244	GK	UGLK1200
		2½"	Flanged	-	No	55	AM	UGLK1204
						110	GM	UGLK1204
						196	2*GM	UGLK1270

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
591 Series	3-way	2½"	Flanged	-	Yes	55	AF	UGLK1204
						110	2*AF	UGLK1270
							GK	UGLK1204
						196	2*GK	UGLK1270
		3"	Flanged	-	No	38	AM	UGLK1204
						77	GM	UGLK1204
						136	2*GM	UGLK1270
					Yes	38	AF	UGLK1204
						77	2*AF	UGLK1270
							GK	UGLK1204
						136	2*GK	UGLK1270
		4"	Flanged	-	No	11	AM	UGLK1206
						22	GM	UGLK1206
						40	2*GM	UGLK1274
					Yes	11	AF	UGLK1206
						22	2*AF	UGLK1274
							GK	UGLK1206
						40	2*GK	UGLK1274
		5"	Flanged	-	No	14	GM	UGLK1206
						25	2*GM	UGLK1274
					Yes	14	2*AF	UGLK1274
							GK	UGLK1206
						25	2*GK	UGLK1274
		6"	Flanged	-	No	18	2*GM	UGLK1274
					Yes	10	2*AF	UGLK1274
						18	2*GK	UGLK1274
599 Flowrite	2-way	½"	NPT	-	No	250	AM	UGLK1208
							LV	UGVL
					Yes	250	LVK	UGVL
							NF	UGLK1208
		¾"	NPT	-	No	211	LV	UGVL
						250	AM	UGLK1208
					Yes	211	LVK	UGVL
						250	NF	UGLK1208
		1"	NPT	-	No	92	LV	UGVL
						250	AM	UGLK1208
							SV	UGVL
					Yes	92	LVK	UGVL
						173	NF	UGLK1208
						250	SVK	UGVL
						250	AF	UGLK1208
		1¼"	NPT	-	No	221	AM	UGLK1208
						236	SV	UGVL
					Yes	110	NF	UGLK1208
						221	AF	UGLK1208
						236	SVK	UGVL
		1½"	NPT	-	No	153	AM	UGLK1208
						250	GM	UGLK1208
					Yes	77	NF	UGLK1208
						153	AF	UGLK1208
						250	GK	UGLK1208
		2"	NPT	-	No	85	SV	UGVL
						86	AM	UGLK1208
						173	GM	UGLK1208
					Yes	43	NF	UGLK1208
						85	SVK	UGVL
						86	AF	UGLK1208
						173	GK	UGLK1208
		2½"	Flanged	-	No	55	AM	UGLK1210
						110	GM	UGLK1210
						196	2*GM	UGLK1272
					Yes	55	AF	UGLK1210
						110	2*AF	UGLK1272
							GK	UGLK1210
						196	2*GK	UGLK1272

All close-off pressures listed are approximate and based on valve condition and application.

Siemens\Landis\Powers

599 Flowrite Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
599 Flowrite	2-way	3”	Flanged	-	No	38	AM	UGLK1210
						77	GM	UGLK1210
						136	2*GM	UGLK1272
					Yes	38	AF	UGLK1210
						77	2*AF	UGLK1272
							GK	UGLK1210
						136	2*GK	UGLK1272
		4”	Flanged	-	No	11	AM	UGLK1212
						22	GM	UGLK1212
						40	2*GM	UGLK1276
					Yes	11	AF	UGLK1212
						22	2*AF	UGLK1276
							GK	UGLK1212
						40	2*GK	UGLK1276
		5”	Flanged	-	No	14	GM	UGLK1212
						25	2*GM	UGLK1276
					Yes	14	2*AF	UGLK1276
							GK	UGLK1212
						25	2*GK	UGLK1276
599 Flowrite	3-way	½”	NPT	-	No	250	AM	UGLK1208
							LV	UGVL
					Yes	250	LVK	UGVL
							NF	UGLK1208
		¾”	NPT	-	No	211	LV	UGVL
						250	AM	UGLK1208
					Yes	211	LVK	UGVL
						250	NF	UGLK1208
		1”	NPT	-	No	92	LV	UGVL
						250	AM	UGLK1208
							SV	UGVL
					Yes	92	LVK	UGVL
						173	NF	UGLK1208
						250	SVK	UGVL
						250	AF	UGLK1208
		1¼”	NPT	-	No	221	AM	UGLK1208
						236	SV	UGVL
					Yes	110	NF	UGLK1208
						221	AF	UGLK1208
						236	SVK	UGVL
		1½”	NPT	-	No	153	AM	UGLK1208
						250	GM	UGLK1208
					Yes	77	NF	UGLK1208
						153	AF	UGLK1208
						250	GK	UGLK1208
		2”	NPT	-	No	85	SV	UGVL
						86	AM	UGLK1208
						173	GM	UGLK1208
					Yes	43	NF	UGLK1208
						85	SVK	UGVL
						86	AF	UGLK1208
						173	GK	UGLK1208
		2½”	Flanged	-	No	55	AM	UGLK1210
						110	GM	UGLK1210
						196	2*GM	UGLK1272
					Yes	55	AF	UGLK1210
						110	2*AF	UGLK1272
							GK	UGLK1210
						196	2*GK	UGLK1272
		3”	Flanged	-	No	38	AM	UGLK1210
						77	GM	UGLK1210
						136	2*GM	UGLK1272
					Yes	38	AF	UGLK1210
						77	2*AF	UGLK1272
							GK	UGLK1210
						136	2*GK	UGLK1272

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
599 Flowrite	3-way	4"	Flanged	-	No	11	AM	UGLK1212
						22	GM	UGLK1212
						40	2*GM	UGLK1276
					Yes	11	AF	UGLK1212
						22	2*AF	UGLK1276
							GK	UGLK1212
						40	2*GK	UGLK1276
		5"	Flanged	-	No	14	GM	UGLK1212
						25	2*GM	UGLK1276
					Yes	14	2*AF	UGLK1276
							GK	UGLK1212
						25	2*GK	UGLK1276
656 Series	2-way	½"	NPT	-	No	250	AM	UGLK1214
							LM	UGLK1350
					Yes	250	LF	UGLK1350
							NF	UGLK1214
		¾"	NPT	-	No	215	LM	UGLK1350
						250	NM	UGLK1350
					Yes	215	LF	UGLK1350
						250	NF	UGLK1214
	3-way	½"	NPT	-	No	250	AM	UGLK1214
							LM	UGLK1350
					Yes	250	LF	UGLK1350
							NF	UGLK1214
		¾"	NPT	-	No	215	LM	UGLK1350
						250	NM	UGLK1350
					Yes	215	LF	UGLK1350
						250	NF	UGLK1214
658 Series	2-way	½"	NPT	-	No	250	AM	UGLK1214
							LM	UGLK1350
							LV	UGVL
					Yes	250	LF	UGLK1350
							LVK	UGVL
							NF	UGLK1214
		¾"	NPT	-	No	211	LV	UGVL
						215	LM	UGLK1350
						250	NM	UGLK1350
					Yes	211	LVK	UGVL
						215	LF	UGLK1350
						250	NF	UGLK1214
		1"	NPT	-	No	92	LV	UGVL
						120	LM	UGLK1350
						244	NM	UGLK1350
						250	AM	UGLK1214
							SV	UGVL
					Yes	92	LVK	UGVL
						95	LF	UGLK1350
						244	NF	UGLK1214
						250	SVK	UGVL
						250	AF	UGLK1214
		1¼"	NPT	-	No	78	LM	UGLK1350
						156	NM	UGLK1350
						236	SV	UGVL
						250	AM	UGLK1214
					Yes	61	LF	UGLK1350
						156	NF	UGLK1214
						236	SVK	UGVL
						250	AF	UGLK1214
	3-way	½"	NPT	-	No	250	AM	UGLK1214
							LM	UGLK1350
							LV	UGVL
					Yes	250	LF	UGLK1350
							LVK	UGVL
							NF	UGLK1214
		¾"	NPT	-	No	211	LV	UGVL
						215	LM	UGLK1350
						250	NM	UGLK1350

All close-off pressures listed are approximate and based on valve condition and application.

Siemens\Landis\Powers

658, 599 Powermite Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
658 Series	3-way	¾"	NPT	-	Yes	211	LVK	UGVL
						215	LF	UGLK1350
						250	NF	UGLK1214
		1"	NPT	-	No	92	LV	UGVL
						120	LM	UGLK1350
						244	NM	UGLK1350
						250	AM	UGLK1214
							SV	UGVL
					Yes	92	LVK	UGVL
						95	LF	UGLK1350
						244	NF	UGLK1214
						250	SVK	UGVL
						250	AF	UGLK1214
		1¼"	NPT	-	No	78	LM	UGLK1350
						156	NM	UGLK1350
						236	SV	UGVL
						250	AM	UGLK1214
					Yes	61	LF	UGLK1350
						156	NF	UGLK1214
						236	SVK	UGVL
						250	AF	UGLK1214
599-01100 MZ (Cv <.4)	2-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01102 MZ (Cv <.63)	2-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01104 MZ (Cv <1)	2-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01106 MZ (Cv <1.6)	2-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01108 MZ (Cv <2.5)	2-way	½"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-01110 MZ (Cv <4)	2-way	½"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-01115 MZ (Cv <.4)	2-way	½"	NPT	-	No	60	CM	UGSL1200
					Yes	60	TF	UGSL1200
599-01117 MZ (Cv <.63)	2-way	½"	NPT	-	No	60	CM	UGSL1200
					Yes	60	TF	UGSL1200
599-01119 MZ (Cv <1)	2-way	½"	NPT	-	No	60	CM	UGSL1200
					Yes	60	TF	UGSL1200
599-01121 MZ (Cv <1.6)	2-way	½"	NPT	-	No	60	CM	UGSL1200
					Yes	60	TF	UGSL1200
599-01123 MZ (Cv <2.5)	2-way	½"	NPT	-	No	35	CM	UGSL1200
					Yes	35	TF	UGSL1200
599-01126 MZ (Cv <4)	2-way	½"	NPT	-	No	35	CM	UGSL1200
					Yes	35	TF	UGSL1200
599-01132 MZ (Cv <.4)	3-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01133 MZ (Cv <.63)	3-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01134 MZ (Cv <1)	3-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01135 MZ (Cv <1.6)	3-way	½"	NPT	-	No	70	CM	UGSL1200
					Yes	70	TF	UGSL1200
599-01136 MZ (Cv <2.5)	3-way	½"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-01137 MZ (Cv <4)	3-way	½"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-02000 MT (Cv <.4)	2-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02002 MT (Cv <.63)	2-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02004 MT (Cv <1)	2-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02006 MT (Cv <1.6)	2-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
599-02008 MT (Cv <2.5)	2-way	½"	NPT	-	No	50	CM	UGSL1200
					Yes	50	TF	UGSL1200
599-02010 MT (Cv <4)	2-way	½"	NPT	-	No	50	CM	UGSL1200
					Yes	50	TF	UGSL1200
599-02030 MT (Cv <.4)	2-way	½"	NPT	-	No	120	CM	UGSL1200
					Yes	120	TF	UGSL1200
599-02032 MT (Cv <.63)	2-way	½"	NPT	-	No	120	CM	UGSL1200
					Yes	120	TF	UGSL1200
599-02034 MT (Cv <1)	2-way	½"	NPT	-	No	120	CM	UGSL1200
					Yes	120	TF	UGSL1200
599-02036 MT (Cv <1.6)	2-way	½"	NPT	-	No	120	CM	UGSL1200
					Yes	120	TF	UGSL1200
599-02038 MT (Cv <2.5)	2-way	½"	NPT	-	No	65	CM	UGSL1200
					Yes	65	TF	UGSL1200
599-02041 MT (Cv <4)	2-way	½"	NPT	-	No	65	CM	UGSL1200
					Yes	65	TF	UGSL1200
599-02064 MT (Cv <.4)	3-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02065 MT (Cv <.63)	3-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02066 MT (Cv <1)	3-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02067 MT (Cv <1.6)	3-way	½"	NPT	-	No	95	CM	UGSL1200
					Yes	95	TF	UGSL1200
599-02068 MT (Cv <2.5)	3-way	½"	NPT	-	No	50	CM	UGSL1200
					Yes	50	TF	UGSL1200
599-02069 MT (Cv <4)	3-way	½"	NPT	-	No	50	CM	UGSL1200
					Yes	50	TF	UGSL1200
599-02070 MT (Cv <6.3)	3-way	¾"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-01129 MZ (Cv <6.3)	2-way	¾"	NPT	-	No	30	CM	UGSL1200
					Yes	30	TF	UGSL1200
599-01138 MZ (Cv <6.3)	3-way	¾"	NPT	-	No	10	CM	UGSL1200
					Yes	10	TF	UGSL1200
599-02012 MT (Cv <6.3)	2-way	¾"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-01112 MZ (Cv <6.3)	2-way	¾"	NPT	-	No	30	CM	UGSL1200
					Yes	30	TF	UGSL1200
599-02044 MT (Cv <6.3)	2-way	¾"	NPT	-	No	55	CM	UGSL1200
					Yes	55	TF	UGSL1200
599-01131 MZ (Cv <10)	2-way	1"	NPT	-	No	30	CM	UGSL1200
					Yes	30	TF	UGSL1200
599-01114 MZ (Cv <10)	2-way	1"	NPT	-	No	30	CM	UGSL1200
					Yes	30	TF	UGSL1200
599-01139 MZ (Cv <10)	3-way	1"	NPT	-	No	10	CM	UGSL1200
					Yes	10	TF	UGSL1200
599-02071 MT (Cv <10)	3-way	1"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599-02046 MT (Cv <10)	2-way	1"	NPT	-	No	55	CM	UGSL1200
					Yes	55	TF	UGSL1200
599-02014 MT (Cv <10)	2-way	1"	NPT	-	No	40	CM	UGSL1200
					Yes	40	TF	UGSL1200
599 MZ (Cv 16)	2-way	1¼"	NPT	-	No	20	CM	UGSL1200
					Yes	20	TF	UGSL1200
	3-way	1¼"	NPT	-	No	10	CM	UGSL1200
					Yes	10	TF	UGSL1200
599-02084 MT (Cv <10)	2-way	1¼"	NPT	-	No	20	CM	UGSL1200
					Yes	20	TF	UGSL1200
599-02085 MT (Cv <10)	2-way	1¼"	NPT	-	No	21	CM	UGSL1200
					Yes	20	TF	UGSL1200
599-02086 MT (Cv <16)	3-way	1¼"	NPT	-	No	10	CM	UGSL1200
					Yes	10	TF	UGSL1200
599 MZ (Cv 25)	2-way	1½"	NPT	-	No	10	CM	UGSL1200
					Yes	10	TF	UGSL1200

All close-off pressures listed are approximate and based on valve condition and application.

Warren Controls

Type 20, Type 22, Type 23, Type 30, Type 32, 100 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Type 20	2-way	2½"	Flanged	-	No	94	EV	WGVL
						185	RV	WGVL
					Yes	71	AVK	WGVL
		3"	Flanged	-	No	63	EV	WGVL
						126	RV	WGVL
					Yes	47	AVK	WGVL
		4"	Flanged	-	No	68	RV	WGVL
		5"	Flanged	-	No	42	RV	WGVL
Type 22	2-way	2½"	Flanged	-	No	94	EV	WGVL
						185	RV	WGVL
					Yes	71	AVK	WGVL
		3"	Flanged	-	No	63	EV	WGVL
						126	RV	WGVL
					Yes	47	AVK	WGVL
		4"	Flanged	-	No	68	RV	WGVL
		5"	Flanged	-	No	42	RV	WGVL
Type 23	2-way	2½"	Flanged	-	No	228	EV	WGVL
					Yes	228	AVK	WGVL
		3"	Flanged	-	No	157	EV	WGVL
					Yes	157	AVK	WGVL
		4"	Flanged	-	No	340	EV	WGVL
					Yes	340	AVK	WGVL
		5"	Flanged	-	No	232	EV	WGVL
					Yes	232	AVK	WGVL
Type 30	3-way	2½"	Flanged	-	No	94	EV	WGVL
						185	RV	WGVL
					Yes	71	AVK	WGVL
		3"	Flanged	-	No	63	EV	WGVL
						126	RV	WGVL
					Yes	47	AVK	WGVL
		4"	Flanged	-	No	68	RV	WGVL
		5"	Flanged	-	No	42	RV	WGVL
Type 32	3-way	2½"	Flanged	-	No	94	EV	WGVL
						185	RV	WGVL
					Yes	71	AVK	WGVL
		3"	Flanged	-	No	63	EV	WGVL
						126	RV	WGVL
					Yes	47	AVK	WGVL
		4"	Flanged	-	No	68	RV	WGVL
		5"	Flanged	-	No	42	RV	WGVL
100 SGL SEAT	2-way	2½"	Flanged	-	No	28	AM	UGLK2202
						57	GM	UGLK2202
						101	2*GM	UGLK2272
					Yes	14	NF	UGLK2202
						28	AF	UGLK2202
						57	2*AF	UGLK2272
							GK	UGLK2202
						101	2*GK	UGLK2272
		3"	Flanged	-	No	40	GM	UGLK2202
						20	AM	UGLK2202
						70	2*GM	UGLK2272
					Yes	40	2*AF	UGLK2272
							GK	UGLK2202
						10	NF	UGLK2202
						20	AF	UGLK2202
						70	2*GK	UGLK2272
		4"	Flanged	-	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5"	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
100 SGL SEAT	2-way	5”	Flanged	-	Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
1800 3W DIV	3-way	2½”	Flanged	Diverting	No	28	AM	UGLK2202
						57	GM	UGLK2202
						101	2*GM	UGLK2272
					Yes	14	NF	UGLK2202
						28	AF	UGLK2202
						57	2*AF	UGLK2272
							GK	UGLK2202
						101	2*GK	UGLK2272
		3”	Flanged	Diverting	No	40	GM	UGLK2202
						20	AM	UGLK2202
						70	2*GM	UGLK2272
					Yes	40	2*AF	UGLK2272
							GK	UGLK2202
						10	NF	UGLK2202
						20	AF	UGLK2202
						70	2*GK	UGLK2272
		4”	Flanged	Diverting	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	Diverting	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	Diverting	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
1800 3W MIX	3-way	2½”	Flanged	Mixing	No	28	AM	UGLK2202
						57	GM	UGLK2202
						101	2*GM	UGLK2272
					Yes	14	NF	UGLK2202
						28	AF	UGLK2202
						57	2*AF	UGLK2272
							GK	UGLK2202
						101	2*GK	UGLK2272
		3”	Flanged	Mixing	No	40	GM	UGLK2202
						20	AM	UGLK2202
						70	2*GM	UGLK2272
					Yes	40	2*AF	UGLK2272
							GK	UGLK2202
						10	NF	UGLK2202
						20	AF	UGLK2202
						70	2*GK	UGLK2272
		4”	Flanged	Mixing	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272

All close-off pressures listed are approximate and based on valve condition and application.

Warren Controls

1800 M, 1800 BAL, Type 20 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
1800 3W MIX	3-way	4”	Flanged	Mixing	Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	Mixing	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	Mixing	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
1800 BAL	2-way	2½”	Flanged	-	No	28	AM	UGLK2202
						57	GM	UGLK2202
						101	2*GM	UGLK2272
					Yes	14	NF	UGLK2202
						28	AF	UGLK2202
						57	2*AF	UGLK2272
							GK	UGLK2202
						101	2*GK	UGLK2272
		3”	Flanged	-	No	40	GM	UGLK2202
						20	AM	UGLK2202
						70	2*GM	UGLK2272
					Yes	40	2*AF	UGLK2272
							GK	UGLK2202
						10	NF	UGLK2202
						20	AF	UGLK2202
						70	2*GK	UGLK2272
		4”	Flanged	-	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
Type 20	2-way	2½”	Flanged	-	No	55	AM	UGLK2200
						110	GM	UGLK2200
						196	2*GM	UGLK2270
					Yes	28	NF	UGLK2200
						55	AF	UGLK2200
						110	2*AF	UGLK2270
							GK	UGLK2200
						196	2*GK	UGLK2270
		3”	Flanged	-	No	38	AM	UGLK2200
						77	GM	UGLK2200
						136	2*GM	UGLK2270
					Yes	19	NF	UGLK2200
						38	AF	UGLK2200
						77	2*AF	UGLK2270
							GK	UGLK2200
						136	2*GK	UGLK2270

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Type 20	2-way	4”	Flanged	-	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
Type 22	2-way	2½”	Flanged	-	No	55	AM	UGLK2200
						110	GM	UGLK2200
						196	2*GM	UGLK2270
					Yes	28	NF	UGLK2200
						55	AF	UGLK2200
						110	2*AF	UGLK2270
							GK	UGLK2200
						196	2*GK	UGLK2270
		3”	Flanged	-	No	38	AM	UGLK2200
						77	GM	UGLK2200
						136	2*GM	UGLK2270
					Yes	19	NF	UGLK2200
						38	AF	UGLK2200
						77	2*AF	UGLK2270
							GK	UGLK2200
						136	2*GK	UGLK2270
		4”	Flanged	-	No	22	AM	UGLK2200
						43	GM	UGLK2200
						77	2*GM	UGLK2270
					Yes	11	NF	UGLK2200
						22	AF	UGLK2200
						43	2*AF	UGLK2270
							GK	UGLK2200
						77	2*GK	UGLK2270
		5”	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
Type 30	3-way	2½”	Flanged	-	No	55	AM	UGLK2200
						110	GM	UGLK2200
						196	2*GM	UGLK2270
					Yes	28	NF	UGLK2200
						55	AF	UGLK2200
						110	2*AF	UGLK2270
							GK	UGLK2200
						196	2*GK	UGLK2270
		3”	Flanged	-	No	38	AM	UGLK2200
						77	GM	UGLK2200
						136	2*GM	UGLK2270

All close-off pressures listed are approximate and based on valve condition and application.

Warren Controls

Type 30, Type 32, Type 20 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Type 30	3-way	3”	Flanged	-	Yes	19	NF	UGLK2200
						38	AF	UGLK2200
						77	2*AF	UGLK2270
							GK	UGLK2200
						136	2*GK	UGLK2270
		4”	Flanged	-	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
Type 32	3-way	2½”	Flanged	-	No	55	AM	UGLK2200
						110	GM	UGLK2200
						196	2*GM	UGLK2270
					Yes	28	NF	UGLK2200
						55	AF	UGLK2200
						110	2*AF	UGLK2270
							GK	UGLK2200
						196	2*GK	UGLK2270
		3”	Flanged	-	No	38	AM	UGLK2200
						77	GM	UGLK2200
						136	2*GM	UGLK2270
					Yes	19	NF	UGLK2200
						38	AF	UGLK2200
						77	2*AF	UGLK2270
							GK	UGLK2200
						136	2*GK	UGLK2270
		4”	Flanged	-	No	11	AM	UGLK2202
						22	GM	UGLK2202
						40	2*GM	UGLK2272
					Yes	11	AF	UGLK2202
						22	2*AF	UGLK2272
							GK	UGLK2202
						40	2*GK	UGLK2272
		5”	Flanged	-	No	14	GM	UGLK2202
						25	2*GM	UGLK2272
					Yes	7	AF	UGLK2202
						14	2*AF	UGLK2272
							GK	UGLK2202
						25	2*GK	UGLK2272
		6”	Flanged	-	No	10	GM	UGLK2202
						18	2*GM	UGLK2272
					Yes	5	AF	UGLK2202
						10	2*AF	UGLK2272
							GK	UGLK2202
						18	2*GK	UGLK2272
Type 20	2-way	½”	NPT	-	No	250	AM	UGLK2200
					Yes	250	NF	UGLK2200
		¾”	NPT	-	No	250	AM	UGLK2200
					Yes	250	NF	UGLK2200
		1”	NPT	-	No	250	AM	UGLK2200
					Yes	173	NF	UGLK2200
						250	AF	UGLK2200

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Body Type	Flow	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Type 20	2-way	1¼"	NPT	-	No	221	AM	UGLK2200
					Yes	110	NF	UGLK2200
						221	AF	UGLK2200
		1½"	NPT	-	No	153	AM	UGLK2200
						250	GM	UGLK2200
					Yes	77	NF	UGLK2200
						153	AF	UGLK2200
						250	GK	UGLK2200
		2"	NPT	-	No	86	AM	UGLK2200
						173	GM	UGLK2200
					Yes	43	NF	UGLK2200
						86	AF	UGLK2200
						173	GK	UGLK2200
Type 30	3-way	½"	NPT	-	No	250	AM	UGLK2200
					Yes	250	NF	UGLK2200
		¾"	NPT	-	No	250	AM	UGLK2200
					Yes	250	NF	UGLK2200
		1"	NPT	-	No	250	AM	UGLK2200
					Yes	173	NF	UGLK2200
						250	AF	UGLK2200
		1¼"	NPT	-	No	221	AM	UGLK2200
					Yes	110	NF	UGLK2200
						221	AF	UGLK2200
		1½"	NPT	-	No	153	AM	UGLK2200
						250	GM	UGLK2200
					Yes	77	NF	UGLK2200
						153	AF	UGLK2200
						250	GK	UGLK2200
		2"	NPT	-	No	86	AM	UGLK2200
						173	GM	UGLK2200
					Yes	43	NF	UGLK2200
						86	AF	UGLK2200
						173	GK	UGLK2200

All close-off pressures listed are approximate and based on valve condition and application.

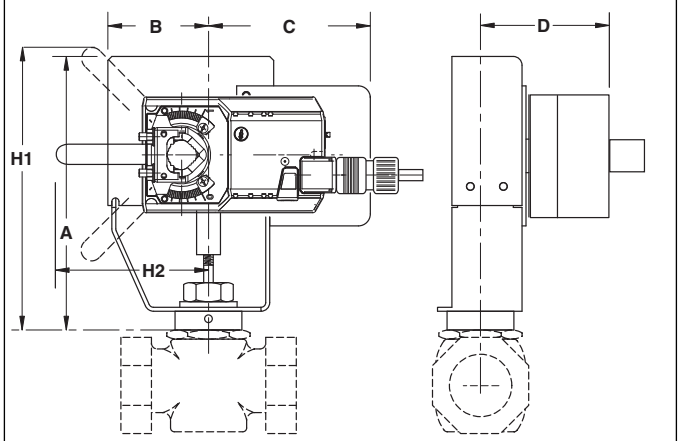
Globe valves which cannot be matched to one of the Belimo UGLK part numbers, for quotation only, use p/n UGSP0000 for valves requiring single actuation, and UGSP0002 for valves requiring dual actuation. These part numbers do not have Bill of Materials (BOM) associated with them, and therefore cannot be produced and shipped. When these two part numbers are quoted, sold and orders processed, the "Globe Valve Retrofit" form must be completed and accompany the order. Our engineering department will then determine the correct UGSP linkage number for production. UGSP0000 and UGSP0002 will **NOT** be stated on final paperwork but will be replaced with the correct UGSP part number.

Custom kits are designed to your unique specification and are not returnable.

The single actuated globe retrofit linkage depicts the MINIMUM and MAXIMUM dimensional data for use in determining the space required to mount the linkage. These dimensions do NOT include VALVE dimensions which will affect combined height requirements.

Dims H1 & **H2** are used only when override handles are utilized on the linkage system, and are not required for proper operation of the linkage system.

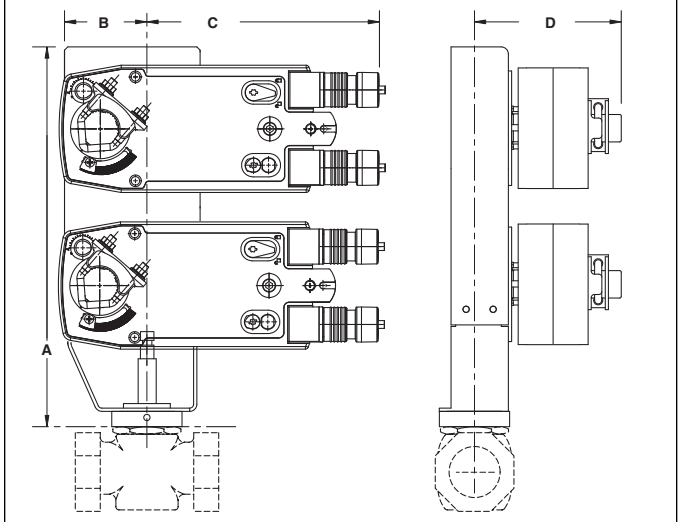
Dimensions UGSP0000 (Inches [mm])



A	B	C	D	H1	H2
7.50 [190] min 14.00 [356] max	3.00 [76]	9.00 [229]	5.00 [127]	9.50 [242]	9.50 [242]

The dual MINIMUM and MAXIMUM actuated globe retrofit linkage depicts the MAXIMUM dimensional data for use in determining the space required to mount the linkage. These dimensions do NOT include VALVE dimensions which will affect combined height requirements.

Dimensions UGSP0002 (Inches [mm])



A	B	C	D
9.50 [241] min 19.00 [483] max	3.00 [76]	9.00 [229]	5.00 [127]

Instructions for Completing this Form

Dimensions A, B & C relate to the existing valve stem. **Dim A** is the stem diameter where it is NOT threaded (Style A), or grooved (Style B). **Dim B** refers to the length of the threaded region on the valve stem or top region of the grooved stem. **Dim C** is the actual thread specification for the threaded style stem (1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20 are typical). Dim C for the grooved style is the measurement of the stem groove height. This information is used to design a stem adapter which will connect the valve stem to the new linkage drive rack. It is important to specify the correct thread pattern, as incorrect data will prevent the stem adapter from attaching to your valve. If you cannot determine the correct thread spec, you can send a nut from the valve stem and we will match the correct specification. In some cases where older valves are concerned, some valve stems must be trimmed in the field to allow attachment of the linkage system. In these cases, a stem adapter is designed to "bite" into the smooth surface of the valve stem itself.

Dimensions D1, D2 & D3 are used to determine the height of the linkage assembly required to clear the valves' full stroke. A minimum of **two** dimensions are required to manufacture the correct linkage system for your valve. These dimensions also provide the information necessary to determine valve stroke. The **maximum stroke** from Belimo globe valve retrofit systems is 1.500".

Dimension E refers to the valve bonnet diameter (regardless if threads are present or not). Over time, impurities will react to the bonnet threads and corrode them to the point where they no longer meet the original thread specification. Because of this, we manufacture **slip fit** collars designed to **slide over** the bonnet threads, and locking setscrews are provided which "bite" into the original threads. All retrofit systems are designed to work with the raw valve body and do not account for previous actuation components which **must** be removed from the valve body before attaching the new linkage system.

Dimension F refers to the thread specification on threaded bonnets, and refers to the minor diameter on slip on bonnets (Landis type). This information helps us determine the length of the locking devices required to hold the collar onto the bonnet.

Dimensions G & H are used to determine working height of the bonnet region of your globe valve, while **Dim I** is used in calculating the minimum ID of the collar that will fit over the packing nut. Additionally, information about the environment and process in which this linkage system will be utilized should be provided.

All the requested information contained on this form is required to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage systems. Measurements rounded to the nearest 1/8 or 1/16 inch will not perform as well as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

Required Tools - calipers, thread gauge and retrofit form

DISCLAIMER:

We will do our best to provide a linkage system designed around your specifications and measurements however, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

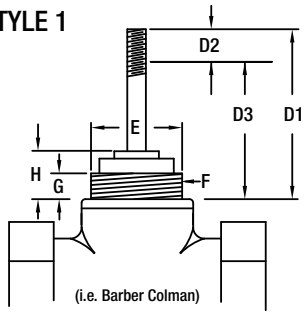
Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

Custom Globe Valve Retrofit Form

UGSP Series Globe Valve Retrofit System

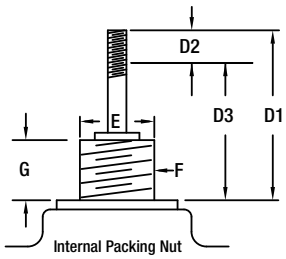
BELIMO

VALVE STYLE 1

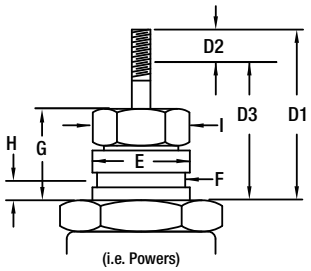


NOTE:
Nut "F" rotates on
valve bonnet!!

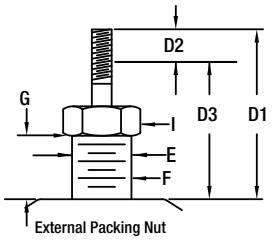
VALVE STYLE 2



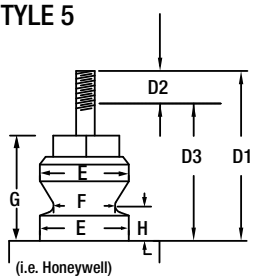
VALVE STYLE 3



VALVE STYLE 4



VALVE STYLE 5

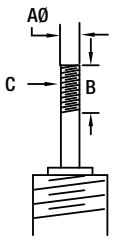


VALVE STYLE DIMENSIONS

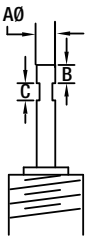
VALVE STYLE:		
DIM D1*: Stem up, length to base mount surface		
DIM D2: Stem stroke, stem up vs. stem down (D1-D3)		max. 1.500"
DIM D3: Stem down, length to base mount surface		
DIM E: Bonnet major diameter		
DIM F: Thread spec or bonnet minor diameter		
DIM G: Bonnet mount height		
DIM H: Bonnet minor diameter height		
DIM I: External packaging nut, across points		

*MAXIMUM LENGTH LINKAGE FRAME WILL ACCOMODATE UP TO 6.500" D1 MEASUREMENT VALVE STEMS LONGER THAN THIS NEED TO BE CUT.

STEM STYLE A



STEM STYLE B



STEM STYLE A or B: ☐

STEM DIAMETER DIM A: ☐

THREAD LENGTH DIM B: ☐

TO STEM GROOVE DIM B: ☐

THREADS PER INCH DIM C: ☐

STEM GROOVE HEIGHT DIM C: ☐

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC Range:_____ ☐ PWM Range:_____

FAIL SAFE: ☐ YES ☐ NO

FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

VOLTAGE _____

COMPANY: _____ VALVE MANUFACTURE: _____ 2 WAY/3 WAY: _____

JOB NAME: _____ VALVE SERIES: _____ VALVE SIZE: _____

PO#: _____ VALVE MODEL: _____ MEDIA TEMP: _____

PHONE: _____ VALVE TAG/LOCATION: _____ MEDIA TYPE: _____

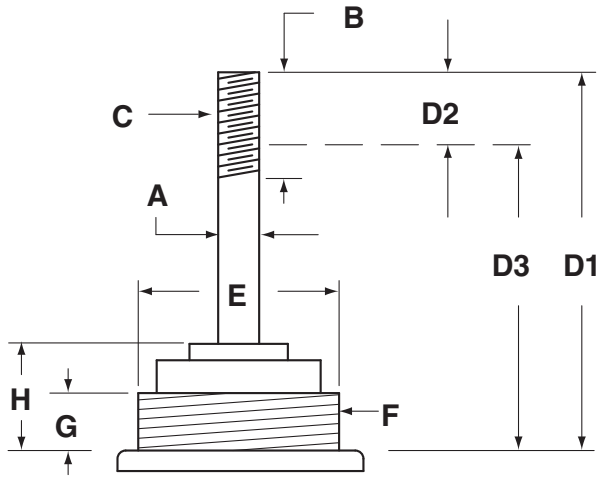
EMAIL: _____ QUANTITY: _____ SYSTEM PRESSURE: _____

NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

CUSTOM KITS ARE DESIGNED TO YOUR UNIQUE SPECIFICATIONS AND ARE **NOT RETURNABLE.**

COMPANY CONTACT/DIMENSIONS PROVIDED BY: _____ DATE: _____

Dimensions Needed



Identification & Measurement of Existing Valves

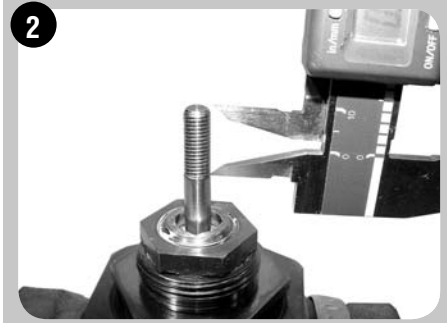
The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that the bonnet nut is permanently attached to the valve body, and that it also spins freely.

Follow these important steps to properly measure STYLE 1 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

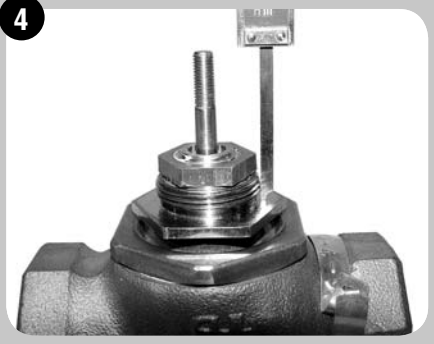


Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

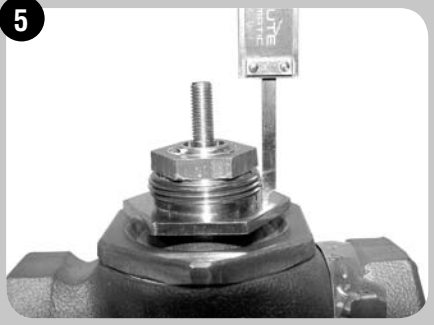
Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

4



Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

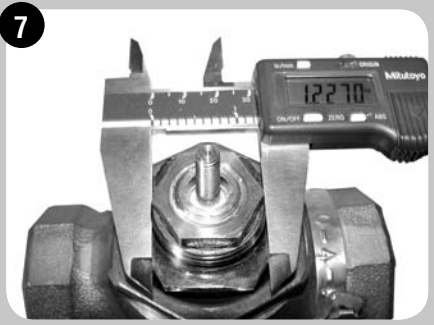
5



Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

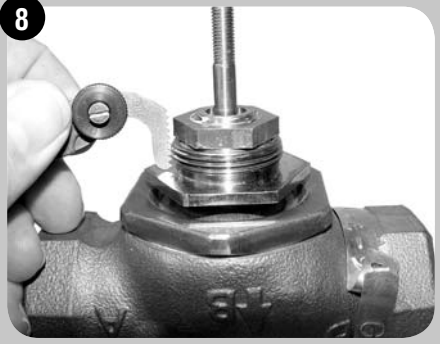
6 Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



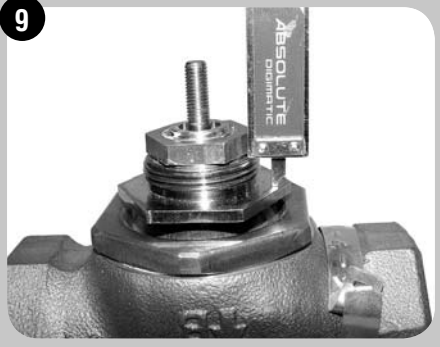
Dimension E is measured across the MAJOR diameter of the bonnet threads. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form.

8



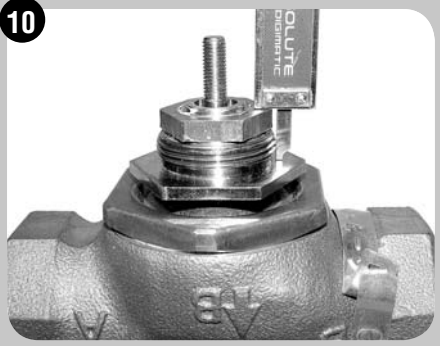
Dimension F is measured using a thread gage or by counting the number of threads per inch.

9



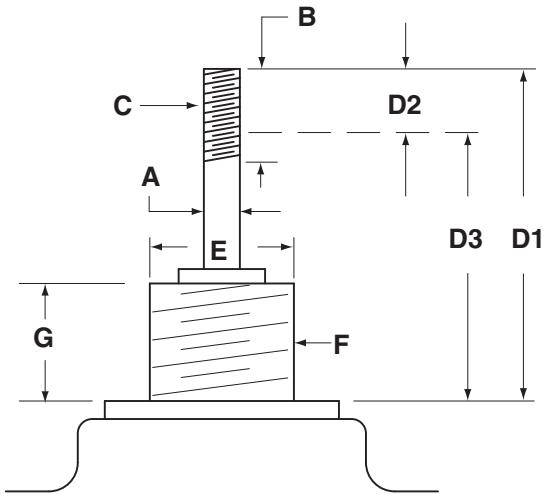
Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10



Dimension H is measured as the distance between the bonnet mounting base height and the TOP of the stem packing retainer.

Dimensions Needed



Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that the packing nut is inside the bonnet, and does NOT interfere with the bonnet threads.

Follow these important steps to properly measure STYLE 2 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

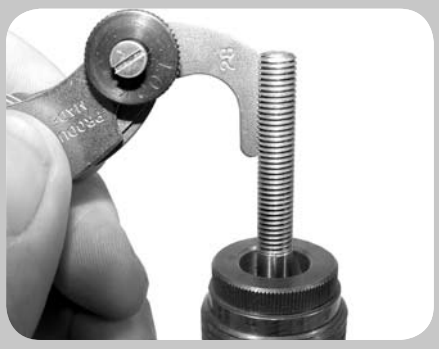
Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.



4

Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

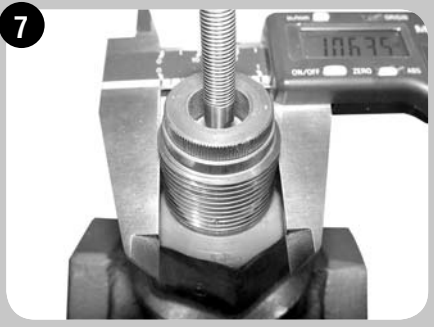
5

Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6

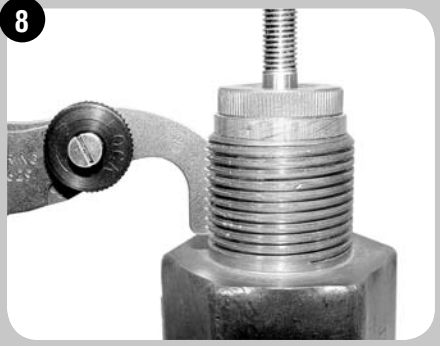
Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



Dimension E is measured across the MAJOR diameter of the bonnet threads. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form.

8

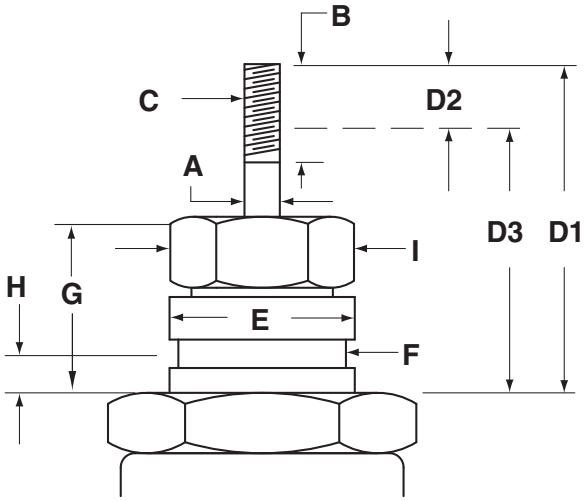


Dimension F is measured using a thread gage or by counting the number of threads per inch.

9

Measure Dimension G using the caliper depth gage, and record on the retrofit form.

Dimensions Needed



Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that there are no threads on the bonnet. The packing nut is smaller that the diameter of the bonnet. There is a groove in the bonnet used to secure the retrofit collar to the valve.

Follow these important steps to properly measure STYLE 3 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

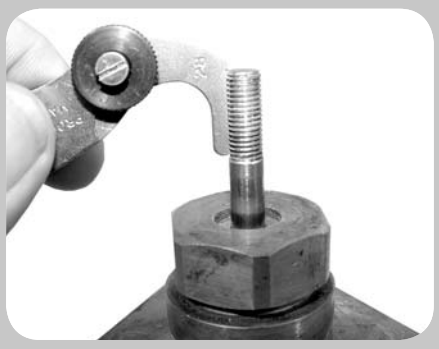
Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.



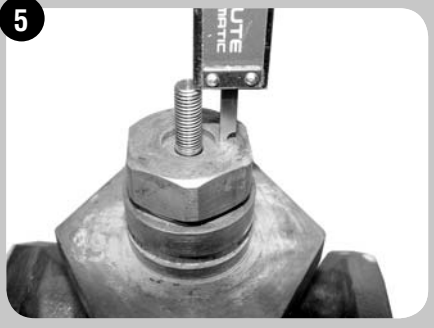
UGSP Series Globe Valve Retrofit Solution

Retrofitting STYLE 3 Globe Valves Typical for Powers 599 Series and Other Non-Threaded, Non-Tapered Bonnet Valves

4

Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5



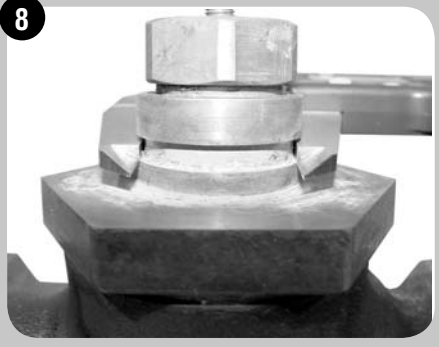
Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6 Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7

Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. This dimension should be checked both above and below the locking groove.

8

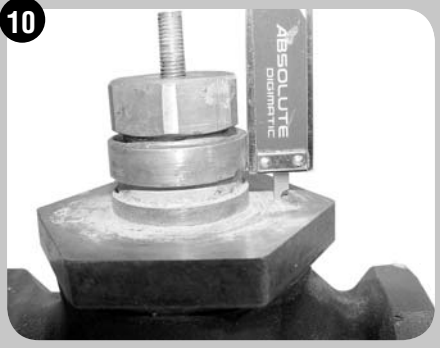


DImension F is measured using calipers across the MINOR diameter of the bonnet. This may be a square or a round groove. Measure the SMALLEST dimension of this groove.

9

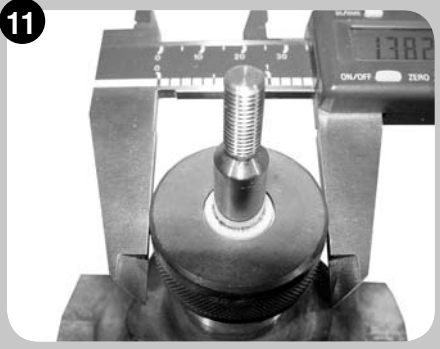
Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10



Measure Dimension H using the caliper depth gage, and record on the retrofit form.

11

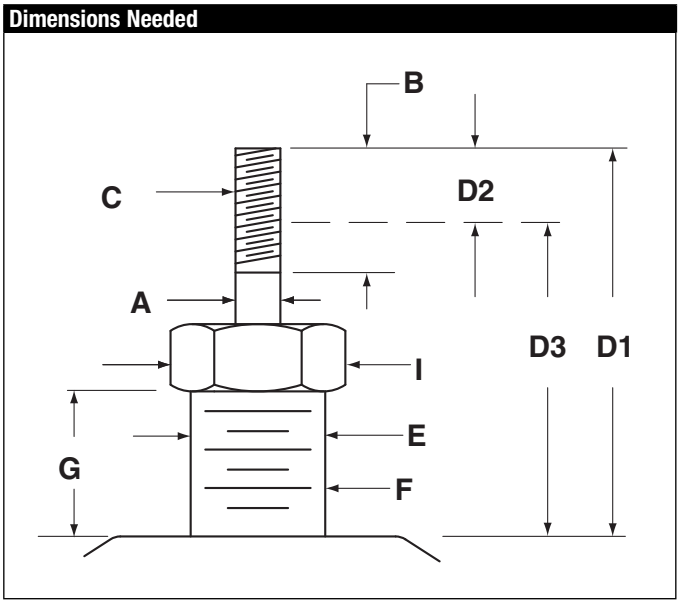


Dimension I is measured on the outside diameter of the external packing nut.

Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that many pneumatically operated valves have hardware that must be removed from the threaded bonnet area before measurements can be taken.

Dimensions Needed



Follow these important steps to properly measure STYLE 4 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

4

Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5

Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6 Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7

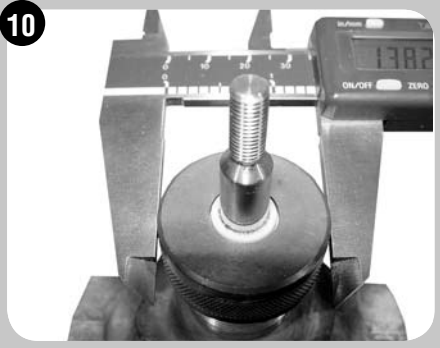
Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. Do NOT measure the diameter of the packing nut for this dimension.

8 DImension F is measured using a thread gage or by counting the number of threads per inch. It is easier to use a thread gage with the external packing nut removed.

9

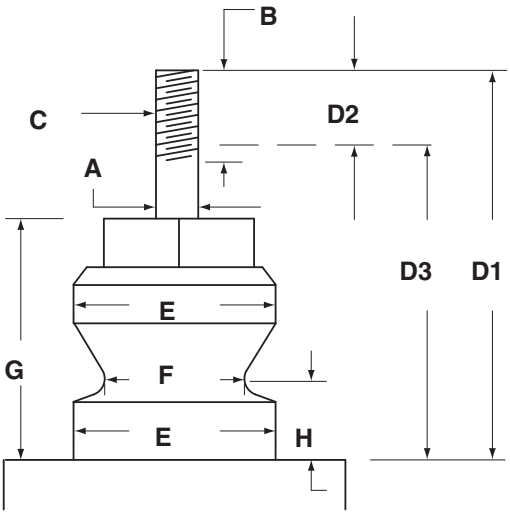
Measure Dimension G using the caliper depth gage to measure the distance between the bottom on the packing nut and the valve collar seating surface.

10



Dimension I is measured on the outside diameter or point of the external packing nut.

Dimensions Needed



Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit.Note that there are no threads on the bonnet. The packing nut is smaller that the diameter of the bonnet. There is a groove in the bonnet used to secure the retrofit collar to the valve.

Follow these important steps to properly measure STYLE 5 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

UGSP Series Globe Valve Retrofit Solution

Retrofitting STYLE 5 Globe Valves Typical for Honeywell and Other Non-Threaded, Tapered Bonnet Valves

4

Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

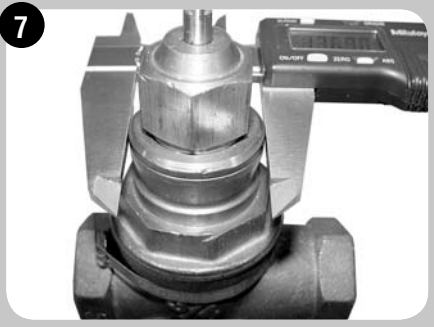
5

Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

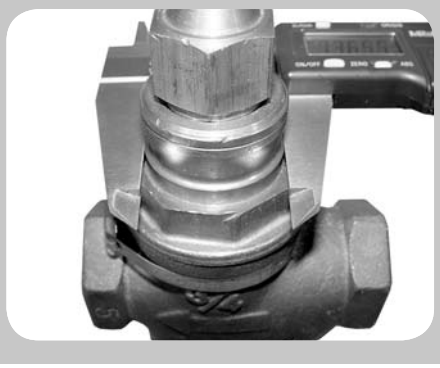
6

Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

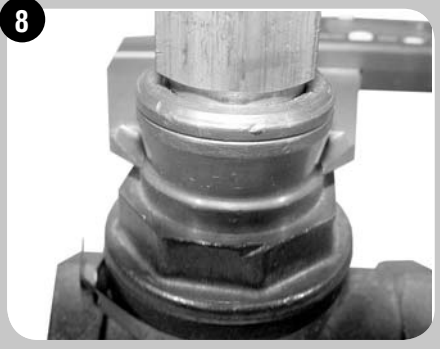
7



Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. This dimension should be checked both above and below the locking groove.



8



DImension F is measured using calipers across the MINOR diameter of the bonnet. This may be a square or a round groove. Measure the SMALLEST dimension of this groove.

9

Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10

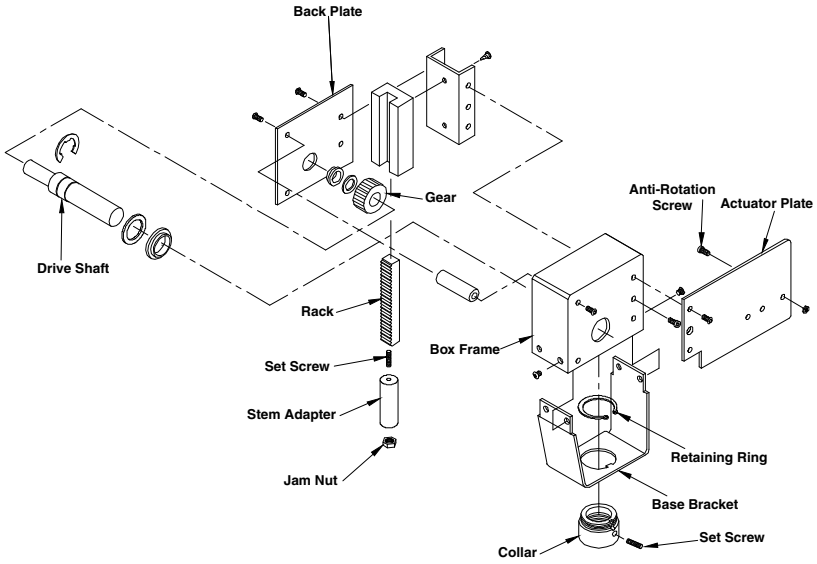
Measure Dimension H using the caliper depth gage, and record on the retrofit form.

UGLK Collars			Most Commonly Used Valve Style				
Part Number	Inside Diameter	Description	Style 1	Style 2	Style 3	Style 4	Style 5
UGLK-COL-1005	1.000”	3 setscrews, for frame type		•			
UGLK-COL-1063	1.063”	3 setscrews, for frame type		•			
UGLK-COL-1100	1.100”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-1255	1.250”	3 setscrews, for frame type		•			
UGLK-COL-1315	1.315”	3 setscrews, for frame type, can be used with VB7 with shim			•		
UGLK-COL-1375	1.375”	3 setscrews, for frame type		•			
UGLK-COL-BC10	1.250”- 16 Thd.	Fits Siebe VB7/VB9. Use on frame type only	•				
UGLK-COL-HY02	1.370”	1 setscrew, for frame type					•
UGLK-COL-LG02	1.740”	1 setscrew, for frame type			•		
UGLK-COL-LG04	1.740”	1 setscrew, for frame type			•		
UGLK-COL-JC05	1.070”	3 setscrews, for frame type		•			
UGLK-COL-JC06	1.562”- 14 Thd.	Threaded, brass		•			
UGLK-COL-JC08	0.760”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-JC15	1.070”	Ring, no setscrews		•			
UGLK-COL-0880	0.880”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-WNUT	1.375”- 20 Thd.	Replacement Warren nut. Will not go over damaged threads		•			
UGLK-COL-AD01	1.250”- 16 Thd.	Fits Siebe VB7/VB9. For VB7 frame only	•				
UGLK-COL-UNIV	Custom	3 setscrews, for frame type. Must be machined		•	•	•	•

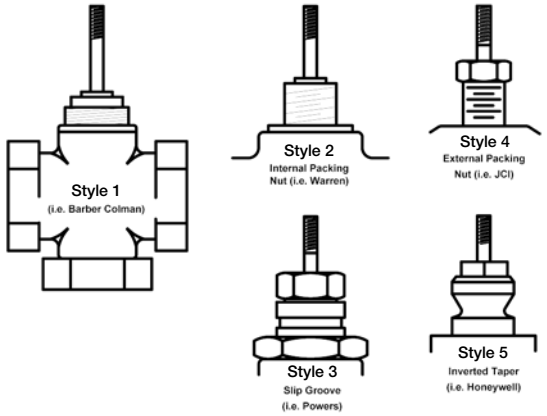
* Must reuse clip and set screws.

UGLK Stem Adapters			Most Commonly Used Valve Style				
Part Number	Inside Diameter	Description	Style 1	Style 2	Style 3	Style 4	Style 5
UGLK-STM-1800	¼”- 28 Stem Thd.	Stem adapter for ¼”- 28 valve stems	•	•	•	•	•
UGLK-STM-1801	3/8”- 24 Stem Thd.	Stem adapter for 3/8”- 24 valve stems	•	•	•	•	•
UGLK-STM-1802	½”- 20 Stem Thd.	Stem adapter for ½”- 20 valve stems	•			•	•
UGLK-STM-1803	7/16”- 20 Stem Thd.	Stem adapter for 7/16”- 20 valve stems					•
UGLK-STM-1501	3/8”- 24 Stem Thd.	For Warren FLG valves with UGLK		•			
UGLK-STM-1805	3/8” OD Grooved	Landis 2.5-3” -599 Series			•		
UGLK-STM-2305	½” OD Grooved	Landis 4-6” -599 Series			•		
UGLK-STM-UNIV	Custom	Must be machined	•	•	•	•	•

UGLK Stem Adapters



UGLK Collars



Valve Accessories

Globe Valves

		Non-Spring Return				Spring Return		
Auxiliary Switches & Potentiometers		**LMB LMX**	**NMB NMX**	**AMB AMX**	**GMB GMX**	**LF**	**NF**	**AF**
	S1A Auxiliary switch - 1x SPDT, 3A (0.5A Inductive) @ 250 VAC	•	•	•	•			
	**S2A** Auxiliary switch - 1x SPDT, 3A (0.5A Inductive) @ 250 VAC	•	•	•	•			
	P140A GR Feedback potentiometer 140 Ω	•	•	•	•			
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•			
	P1000A GR Feedback potentiometer 1000 Ω	•	•	•	•			
	P2800A GR Feedback potentiometer 2800 Ω	•	•	•	•			
	P5000A GR Feedback potentiometer 5000 Ω	•	•	•	•			
	P10000A GR Feedback potentiometer 10000 Ω	•	•	•	•			
Battery Backup								
	NSV24 US Battery backup module	•	•	•	•	•	•	•
	**NSV-BAT US** 12VDC 1.2 AH battery (2 required)	•	•	•	•	•	•	•

Note: Each NSV-24 US requires 2 NSV-BAT.

Butterfly Valve Retrofit Solutions

- Full range of kits for 2-way and 3-way valve assemblies.
- Visual stroke indicators allow quick installation.
- Linkages can be mounted in any orientation except upside down.
- NEMA 2 and NEMA 4 options available.

Applications

UFLK and UFSP butterfly retrofit solutions are designed to easily attach to the valve mounting pad of competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time and money.

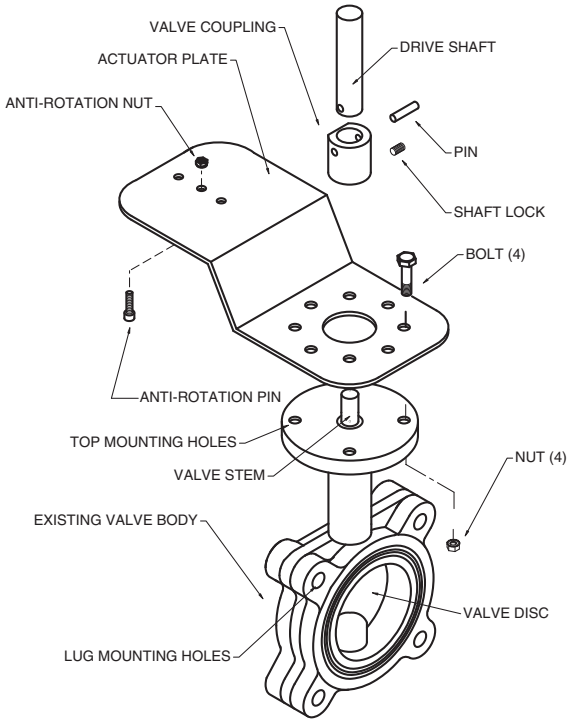
UFLK.../UFSP... Retrofit Linkage for Butterfly Valves

For 2-Way AF and GM Series Actuators

2 YEAR WARRANTY

Technical Data	UFLK... / UFSP
Materials:	
Plate	stainless steel
Coupling	stainless steel
Shafts	stainless steel
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 50 psi
Weight	4.8 lbs [2.2 kg]

UFLK / UFSP Parts Breakdown- Single Shown



Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 2-way competitor valves utilizing Belimo AF and GM series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard air-side actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to the actuator wiring guides on Master/Slave wiring for dual mounted actuators.

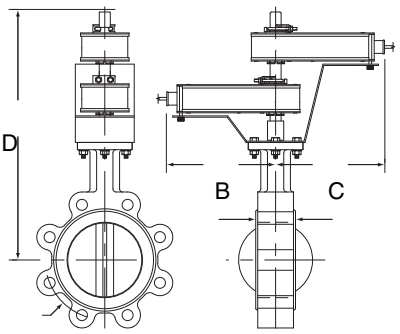
Suitable Actuators	Close-Off Ranges
AF Series	50-200 psi
GM Series	50-300 psi
GK Series	50-300 psi
2*AF Series	50-300 psi
2*GM Series	50-740 psi
2*GK Series	50-740 psi

Competitor Valves**

Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 158-178 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures a cross reference of each valve.

UFLK / UFSP Dual Shown



Maximum Dimensions (Inches)

Size	B	C	D(Max)	Actuator
2"	9	9	19.5	AF/GK
2"	7	7	15	AMB(X)
2½"	9	9	20	AF
2½"	9	9	20	2*AF/2*GK
2½"	7	7	15.5	AMB(X)
3"	7	7	16	AMB(X)
3"	8	8	16	GMB(X)
3"	9	9	20.5	2*AF/2*GK
4"	8	8	17	GMB(X)
4"	9	9	21	2*AF/ 2*GK
4"	8	8	21	2*GMB(X)
5"	8	8	17.5	GMB(X)
5"	9	9	22	2*AF/ 2*GK
6"	8	8	22.5	GMB(X)

2 YEAR WARRANTY

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 3-way competitor valves utilizing Belimo AF and GM series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard air-side actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to the actuator wiring guides on Master/Slave wiring for dual mounted actuators.

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	configuration specific (X10-X35)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	7 lbs [3.2 kg]

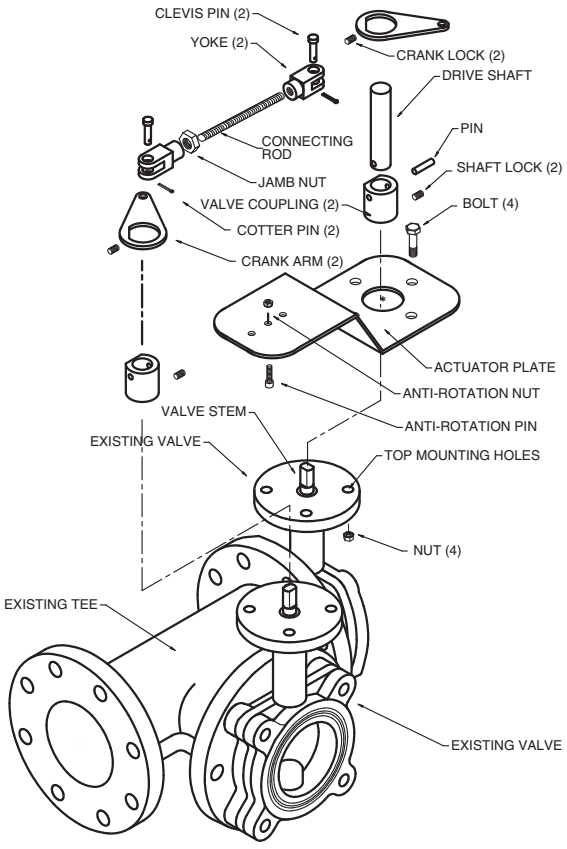
Suitable Actuators	Close-Off Ranges
AF Series	50-200 psi
GM Series	50-300 psi
GK Series	50-300 psi
2*AF Series	50-300 psi
2*GM Series	50-740 psi
2*GK Series	50-740 psi

Competitor Valves**

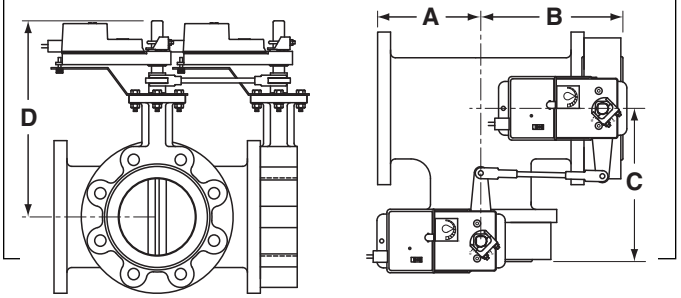
Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 158-178 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures a cross reference of each valve.

UFLK / UFSP Parts Breakdown- Single Shown



UFLK / UFSP Dual Shown



Maximum Dimensions (Inches)

Size	A	B	C	D(Max)	Actuator
2"	7	9	9	19.5	AF/GK
2"	5	7	7	15	AMB(X)
2½"	7	9	9	20	AF
2½"	7	9	9	20	2*AF/2*GK
2½"	5	7	7	15.5	AMB(X)
3"	5	7	7	16	AMB(X)
3"	6	8	8	16	GMB(X)
3"	7	9	9	20.5	2*AF/2*GK
4"	6	8	8	17	GMB(X)
4"	7	9	9	21	2*AF/ 2*GK
4"	6	8	8	21	2*GMB(X)
5"	6	8	8	17.5	GMB(X)
5"	7	9	9	22	2*AF/ 2*GK
6"	6	8	8	22.5	GMB(X)

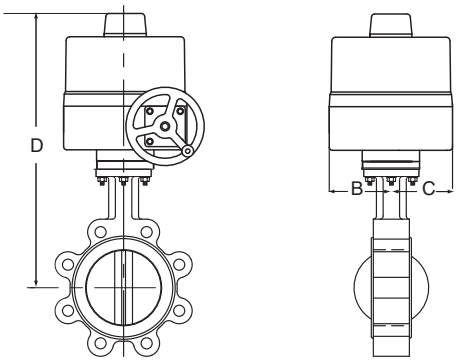
UFLK.../UFSP... Retrofit Linkage for Butterfly Valves

For 2-Way SY Industrial Series Actuators

2 YEAR WARRANTY

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	7 lbs [3.2 kg]

UFLK / UFSP



Maximum Dimensions (Inches)

Size	B	C	D(Max)	Actuator
2"	6.15	6.15	15.5	SY1...
2"	6.15	6.15	20.25	SY2...
2½"	6.76	6.76	16	SY1...
2½"	6.76	6.76	20.75	SY2...
3"	7.28	7.28	21	SY2...
4"	8.55	8.55	21.75	SY2...
5"	9.64	9.64	22.25	SY2...
5"	9.64	9.64	22.25	SY3...
6"	10.19	10.19	22.75	SY2...
6"	10.19	10.19	22.75	SY3...
8"	11.37	11.37	24.25	SY3...
8"	11.37	11.37	29	SY4...
10"	13.58	13.58	30	SY4...
12"	15.01	15.01	32	SY4...
12"	15.01	15.01	32	SY5...
14"	17.02	17.02	33	SY6...
16"	18.39	18.39	38.5	SY7...
18"	20.63	20.63	39.5	SY9...
20"	23	23	41.5	SY9...
24"	27.9	27.9	53.25	SY12...

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 2-way competitor valves utilizing Belimo SY industrial series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard SY actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuator's directional switch can be flipped to change the rotation. The SY is NEMA 4 rated and can be used outdoors.

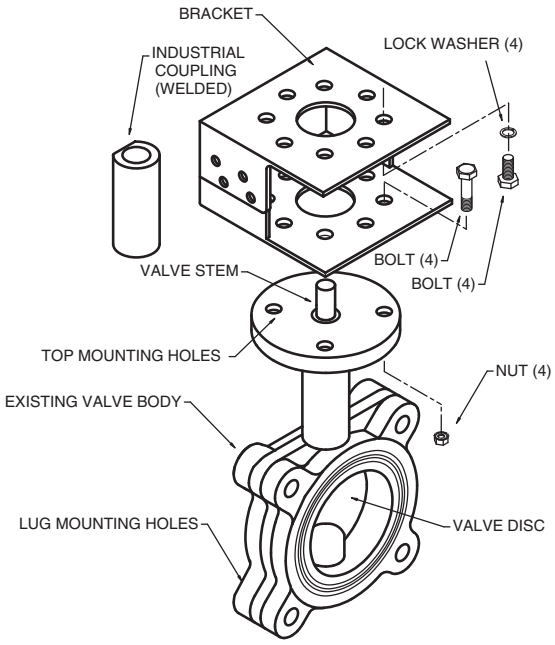
Suitable Actuators	Close-Off Ranges
SY1 Series	50-300 psi
SY2 Series	50-740 psi
SY3-SY4 Series	50-780 psi
SY5 Series	150-300 psi
SY6-SY12 Series	150-780 psi

Competitor Valves**

Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 158-178 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures a cross reference of each valve.

UFLK / UFSP Parts Breakdown



2 YEAR WARRANTY

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 3-way competitor valves utilizing Belimo SY industrial series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard SY actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuator's directional switch can be flipped to change the rotation. The SY is NEMA 4 rated and can be used outdoors.

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	configuration specific (X10-X35)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	12.6 lbs [5.73 kg]

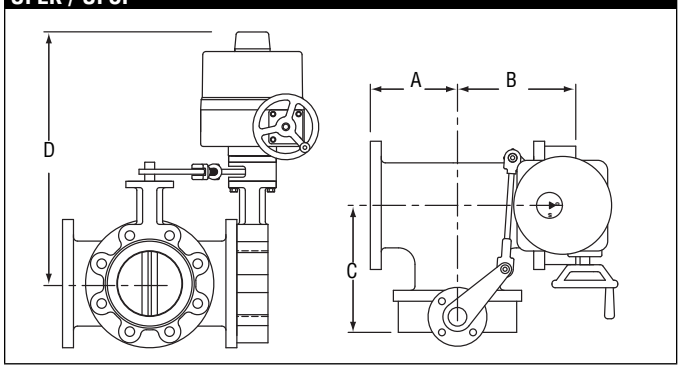
Suitable Actuators	Close-Off Ranges
SY1 Series	50-285 psi
SY2 Series	50-200 psi
SY3-SY4 Series	50-780 psi
SY5 Series	150-300 psi
SY6-SY12 Series	150-780 psi

Competitor Valves**

Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 158-178 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures a cross reference of each valve.

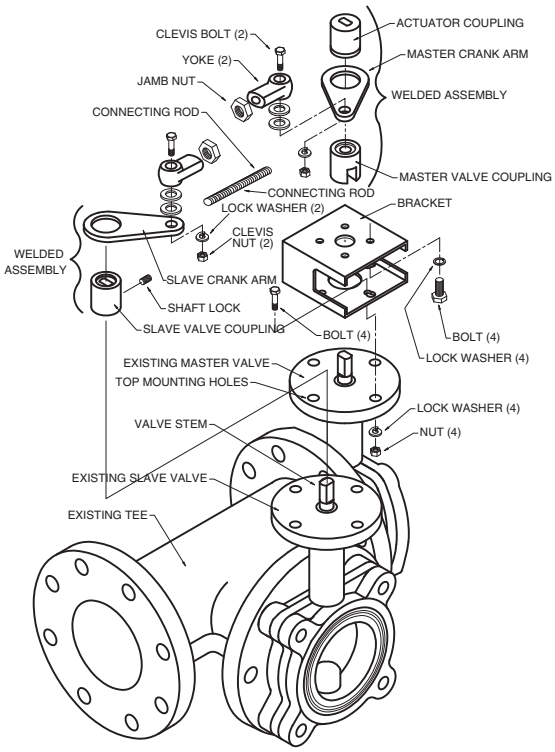
UFLK / UFSP



Maximum Dimensions (Inches)

Size	A	B	C	D(Max)	Actuator
2"	4.15	6.15	6.15	15.5	SY1...
2"	4.15	6.15	6.15	20.25	SY2...
2½"	4.76	6.76	6.76	16	SY1...
2½"	4.76	6.76	6.76	20.75	SY2...
3"	5.28	7.28	7.28	21	SY2...
4"	6.55	8.55	8.55	21.75	SY2...
5"	7.64	9.64	9.64	22.25	SY2...
5"	7.64	9.64	9.64	22.25	SY3...
6"	8.19	10.19	10.19	22.75	SY2...
6"	8.19	10.19	10.19	22.75	SY3...
8"	9.37	11.37	11.37	24.25	SY3...
8"	9.37	11.37	11.37	29	SY4...
10"	11.58	13.58	13.58	30	SY4...
12"	13.01	15.01	15.01	32	SY4...
12"	13.01	15.01	15.01	32	SY5...
14"	15.02	17.02	17.02	33	SY6...
16"	16.39	18.39	18.39	38.5	SY7...
18"	18.63	20.63	20.63	39.5	SY9...
20"	21	23	23	41.5	SY9...
24"	25.9	27.9	27.9	53.25	SY12...

UFLK / UFSP Parts Breakdown



How to Select a Butterfly Valve Retrofit Solution

Follow the four steps listed below when ordering a butterfly valve retrofit kit.

Example: Centerline C200 Series, **2½"** valve, using a **Non-Spring Return** Belimo actuator.

1. Identify the **Valve Manufacturer, Valve Series** and **Valve Size.**

2. Determine the type of actuator you require: Belimo Spring Return, Non-Spring or SY Series Industrial. Belimo Spring and Non-Spring actuators are typically only available on smaller sizes.

   Look at the solution using the Non-Spring Return Belimo Actuator. Looking at the **UFLK3500,** the **GM** Series actuator will provide a **200 psi close-off** for the **2½" valve** with **Non-Spring Return** actuation**.**

3. Use the actuator listings to make your final actuator selection. Decide between **GMB24-3-X1** and **GMB24-MFT-X1.**

   ACTUATOR NOT INCLUDED IN THE LIST PRICE OF THE LINKAGE.

4. HOW TO ORDER: **Item 1 1pc UFLK3500**
   Item 2 1pc GMB24-MFT-X1

2 YEAR WARRANTY

1. Select linkage solution based on the **Valve Number**, **Configuration**, and **Size**; select the proper **Linkage Solution** for your valve.

UFLK1300
Example: **Centerline C200 Series, 2½"** valve using a **non-spring return** Belimo actuation.

Choose correct linkage **UFLK3500**.

Centerline
C200 Round Top Series Butterfly Valves
Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Failsafe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
C200 Round Top Series Butterfly Valves	2-way	2"	No	200	AM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	AF	UFLK3500
		2½"	No	200	GM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500
		3"	No	200	GM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500

2. Verify close-off is suitable for application.
Looking at the **UFLK3500**, the **GM** Series actuator will provide **200 psi close-off** for the **2½" valve**.

Model	Non-Spring Return Actuators						
	Control Input	Feedback	Power Supply	Running Time(s) [Default]	VA Rating	Auxiliary Switch	Cable Length
BASIC PRODUCTS							
GMB24-3-X1	On/Off, Floating Point	Add-on	24 VAC/DC	150 seconds	6	Add-on	3 ft.
GMB24-SR	2-10 VDC (4-20 mA*)	2-10 VDC	24 VAC/DC	150 seconds	6.5	Add-on	3 ft.
GMB24-MFT-X1	2-10 VDC	2-10 VDC	24 VAC/DC	150 seconds	7	Add-on	3 ft.

♦ Variable with MFT
‡ Prices do not reflect additional programming code surcharge.
NOTE: 10' and 16' cables are available with a $28.00 and $48.00 adder except for the PC and MFT95 version, which are only available with a 3' cable.

3. Select actuator from the Product Guide and Price List based on needed control type.
Decide between **GMB24-3-X1** and **GMB24-MFT-X1**.

4. Complete Ordering Example:
Item 1: **UFLK3500**
Item 2: **GMB24-MFT-X1**

SY Series Actuators

					CONTROL TYPE			
SERIES	MODEL	Run Time(s) 90°@60Hz	Power Supply	Duty Cycle	Proportional	3 Point	On/Off	Feedback
SY1	SY1-110	12 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-24	15 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-220	12 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-110P	12 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY1-24P	15 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY1-220P	12 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY2	SY2-110	15 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-24	15 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-220	15 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-120MFT	15 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY2-24MFT	15 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY2-230MFT	15 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY3	SY3-110	22 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-24	22 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-220	22 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-24MFT	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY3-120MFT	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY3-230MFT	22 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY4	SY4-110	16 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-24	16 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-220	16 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-24MFT	16 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY4-120MFT	16 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY4-230MFT	16 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY5	SY5-110	22 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-24	22 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-220	22 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-24MFT	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY5-120MFT	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY5-230MFT	22 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY6	SY6-110	28 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY6-220	28 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY6-120MFT	28 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY6-230MFT	28 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY7	SY7-110	46 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY7-220	46 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY7-120MFT	46 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY7-230MFT	46 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY8	SY8-110	46 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY8-220	46 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY8-120MFT	46 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY8-230MFT	46 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY9	SY9-110	58 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY9-220	58 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY9-120MFT	58 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
	SY9-230MFT	58 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY10	SY10-110	58 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY10-220	58 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY10-120MFT	58 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
	SY10-230MFT	58 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY11	SY11-110	58 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY11-220	58 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY11-120MFT	58 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
	SY11-230MFT	58 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY12	SY12-110	58 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY12-220	58 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY12-120MFT	58 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
	SY12-230MFT	58 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA

Proportional actuators will accept 0-10 VDC, 2-10 VDC (default), or 4-20 mA control signals as standard.
All SY actuators are non-spring return, but can be used with NSV-SY back up systems for fail-safe applications.
These products carry a two year warranty when sold as part of an assembly or with a UFLK retrofit kit.

ROTARY ACTUATORS

SERIES	MODEL	Spring Return	Electronic Fail-Safe	Tandem Mounting Available	Control Input	Feedback Position	Power Supply
AF Series*	AFBUP-X1	•		•	On/Off	-	24-240 VAC
	AFX24-MFT-X1	•		•	Variable with MFT	Variable VDC	24 VAC/DC
AM Series*	AMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC
	AMX24-MFT-X1				Variable with MFT	Variable VDC	24 VAC/DC
GM Series*	GMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC
	GMX24-MFT-X1			•	Variable with MFT	Variable VDC	24 VAC/DC
GK Series*	GKB24-3-X1		•		Floating Point, On/Off	-	24 VAC/DC
	GKX24-MFT-X1		•	•	Variable with MFT	Variable VDC	24 VAC/DC

***Please consult the Damper sections of the Product Guide and Price List for a full list of product offerings. Standard run times should be considered in the selection. All air side products are applicable for retrofit kits.**
Select "X1" actuators come with a handle.

MULTI-FUNCTION TECHNOLOGY

	P-CODE		Control Input	Running Time	Built-in Feedback
ROTARY ACTUATOR CODES	P-10001	A01	2-10 VDC	150 seconds	2-10 VDC
	P-10002	A02	0-10 VDC	150 seconds	0-10 VDC
	P-10028	A28	0-10 VDC	150 seconds	0-10 VDC
	P-10063	A63	0.5-4.5 VDC	150 seconds	0.5-4.5 VDC
	P-10064	A64	5.5-10 VDC	150 seconds	5.5-10 VDC
	P-20002	W02	0.02-5.00 seconds PWM	150 seconds	2-10 VDC
	P-20003	W03	0.10-25.5 seconds PWM	150 seconds	2-10 VDC
	P-30001	F01	Floating Point	150 seconds	2-10 VDC
	P-40002	J02	On/Off	150 seconds	2-10 VDC

SY MULTI-FUNCTION TECHNOLOGY

Description	MFT-CODE	Control Input	Built-in Feedback	Loss of Signal	Running Time
MFT	ACE	2-10 VDC	2-10 VDC	stop	actuator(s) constant
MFT	ACF	0.5-10 VDC	0.5-10 VDC	stop	actuator(s) constant
MFT	ACG	4-20mA	4-20mA	stop	actuator(s) constant
MFT	ACH	4-20mA	2-10 VDC	stop	actuator(s) constant
MFT	ACJ	2-10 VDC	2-10 VDC	open	actuator(s) constant
MFT	ACK	0.5-10 VDC	0.5-10 VDC	open	actuator(s) constant
MFT	ACL	4-20mA	4-20mA	open	actuator(s) constant
MFT	ACM	4-20mA	2-10 VDC	open	actuator(s) constant
MFT	ACN	2-10 VDC	2-10 VDC	close	actuator(s) constant
MFT	ACP	0.5-10 VDC	0.5-10 VDC	close	actuator(s) constant
MFT	ACR	4-20mA	4-20mA	close	actuator(s) constant
MFT	ACS	4-20mA	2-10 VDC	close	actuator(s) constant

Standard delivery may vary, please consult your customer service representative for the latest lead time(s).

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
HS Series Butterfly Valves	2-way	2”	No	200	AM	UFLK3900
					SY2	UFLK3918
			Yes	200	AF	UFLK3930
		2½”	No	200	AM	UFLK3900
					SY2	UFLK3918
			Yes	200	2*AF	UFLK3936
		3”	No	200	GM	UFLK3900
					SY2	UFLK3918
			Yes	200	2*AF	UFLK3936
					GK	UFLK3900
		4”	No	200	2*GM	UFLK3908
					SY2	UFLK3920
			Yes	200	2*GK	UFLK3908
		5”	No	200	SY2	UFLK3922
		6”	No	200	SY3	UFLK3922
		8”	No	200	SY4	UFLK3970
		10”	No	200	SY4	UFLK3970
		12”	No	200	SY4	UFLK3928
		14”	No	150	SY5	UFLK3928
		16”	No	150	SY6	UFLK3976
		18”	No	150	SY8	UFLK3978
		20”	No	150	SY8	UFLK3978
						UFLK3980
		24”	No	150	SY11	UFLK3982
	3-way	2”	No	200	AM	UFLK6900
					SY2	UFLK6910
			Yes	200	AF	UFLK6950
		2½”	No	200	2*GM	UFLK6902
					SY2	UFLK6910
			Yes	200	2*AF	UFLK6952
		3”	No	200	2*GM	UFLK6902
					SY2	UFLK6910
			Yes	200	2*GK	UFLK6902
		4”	No	200	SY2	UFLK6912
		5”	No	200	SY3	UFLK6914
		6”	No	200	SY3	UFLK6914
		8”	No	200	SY4	UFLK6920
		10”	No	200	SY4	UFLK6920
		12”	No	200	SY5	UFLK6922
		14”	No	150	SY6	UFLK7018
		16”	No	150	SY7	UFLK7020
		18”	No	150	SY8	UFLK7022
		20”	No	150	SY9	UFLK7024
		24”	No	150	SY12	UFLK7026
HSU Series Butterfly Valves	2-way	2”	No	50	AM	UFLK3900
					SY1	UFLK3912
					SY2	UFLK3918
			Yes	50	AF	UFLK3930
		2½”	No	50	AM	UFLK3900
					SY1	UFLK3912
					SY2	UFLK3918
			Yes	50	AF	UFLK3930
		3”	No	50	AM	UFLK3900
					SY1	UFLK3912
					SY2	UFLK3918
			Yes	50	2*AF	UFLK3936
		4”	No	50	GM	UFLK3905
					SY2	UFLK3920
			Yes	50	2*AF	UFLK3938
					GK	UFLK3905
		5”	No	50	GM	UFLK3905
					SY2	UFLK3922
			Yes	50	GK	UFLK3905
		6”	No	50	2*GM	UFLK3910
					SY2	UFLK3922

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
HSU Series Butterfly Valves	2-way	6”	Yes	50	2*GK	UFLK3910
		8”	No	50	SY3	UFLK3924
		10”	No	50	SY3	UFLK3926
		12”	No	50	SY4	UFLK3928
	3-way	2”	No	50	GM	UFLK6900
					SY1	UFLK6908
					SY2	UFLK6910
			Yes	50	AF	UFLK6950
					GK	UFLK6900
		2½”	No	50	GM	UFLK6900
					SY1	UFLK6908
					SY2	UFLK6910
			Yes	50	2*AF	UFLK6952
					GK	UFLK6900
		3”	No	50	GM	UFLK6900
					SY2	UFLK6910
			Yes	50	2*AF	UFLK6952
					GK	UFLK6900
		4”	No	50	2*GM	UFLK6904
					SY2	UFLK6912
			Yes	50	2*GK	UFLK6904
		5”	No	50	2*GM	UFLK6906
					SY2	UFLK6914
			Yes	50	2*GK	UFLK6906
		6”	No	50	2*GM	UFLK6906
					SY2	UFLK6914
			Yes	50	2*GK	UFLK6906
		8”	No	50	SY3	UFLK6919
		10”	No	50	SY4	UFLK6920
		12”	No	50	SY4	UFLK6922
BRAY						
30/31 Series Butterfly Valves	2-way	2”	No	175	AM	UFLK1100
					SY1	UFLK1130
					SY2	UFLK1132
			Yes	175	2*AF	UFLK1102
		2½”	No	175	GM	UFLK1100
					SY1	UFLK1130
					SY2	UFLK1132
			Yes	175	2*AF	UFLK1102
					GK	UFLK1100
		3”	No	175	2*GM	UFLK1102
					SY2	UFLK1132
			Yes	175	2*GK	UFLK1102
		4”	No	175	2*GM	UFLK1108
					SY2	UFLK1134
			Yes	175	2*GK	UFLK1108
		5”	No	175	SY3	UFLK1136
		6”	No	175	SY3	UFLK1136
		8”	No	175	SY4	UFLK1138
		10”	No	175	SY4	UFLK1140
		12”	No	175	SY6	UFLK1142
		14”	No	175	SY7	UFLK1144
		16”	No	175	SY8	UFLK1144
		18”	No	175	SY9	UFLK1146
		20”	No	175	SY10	UFLK1146
	3-way	2”	No	200	SY1	UFLK4130
					SY2	UFLK4132
			Yes	200	2*AF	UFLK4102
		2½”	No	200	2*GM	UFLK4102
					SY2	UFLK4132
			Yes	200	2*GK	UFLK4102
		3”	No	200	2*GM	UFLK4102
					SY2	UFLK4132
			Yes	200	2*GK	UFLK4102
		4”	No	200	SY3	UFLK4134
		5”	No	200	SY4	UFLK4136

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
30/31 Series Butterfly Valves	3-way	6”	No	200	SY4	UFLK4136
		8”	No	200	SY5	UFLK4138
		10”	No	200	SY6	UFLK4140
		12”	No	200	SY7	UFLK4142
		14”	No	150	SY8	UFLK4144
		16”	No	150	SY9	UFLK4146
		18”	No	150	SY11	UFLK4148
		20”	No	150	SY12	UFLK4148
40/41 Series Butterfly Valves	2-way	2½”	No	285	2*GM	UFLK1200
					SY2	UFLK1224
			Yes	285	2*GK	UFLK1200
		3”	No	285	2*GM	UFLK1200
					SY2	UFLK1224
			Yes	285	2*GK	UFLK1200
		4”	No	285	2*GM	UFLK1200
					SY2	UFLK1224
			Yes	285	2*GK	UFLK1200
		5”	No	285	SY3	UFLK1226
		6”	No	285	SY4	UFLK1228
		8”	No	285	SY4	UFLK1230
		10”	No	285	SY6	UFLK1232
		12”	No	285	SY7	UFLK1234
		14”	No	285	SY8	UFLK1236
		16”	No	285	SY9	UFLK1238
		18”	No	285	SY11	UFLK1240
		20”	No	285	SY12	UFLK1242
	3-way	2½”	No	285	2*GM	UFLK4200
					SY2	UFLK4222
			Yes	285	2*GK	UFLK4200
		3”	No	285	2*GM	UFLK4200
					SY2	UFLK4222
			Yes	285	2*GK	UFLK4200
		4”	No	285	SY3	UFLK4222
		5”	No	285	SY4	UFLK4224
		6”	No	285	SY4	UFLK4224
		8”	No	285	SY5	UFLK4226
		10”	No	285	SY7	UFLK4228
		12”	No	285	SY8	UFLK4230
		14”	No	285	SY10	UFLK4232
		16”	No	285	SY12	UFLK4234
CENTERLINE						
C200 Round Top Series Butterfly Valves	2-way	2”	No	200	AM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	AF	UFLK3500
		2½”	No	200	GM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500
		3”	No	200	GM	UFLK3500
					SY1	UFLK3538
					SY2	UFLK3540
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500
		4”	No	200	2*GM	UFLK3508
					SY2	UFLK3542
			Yes	200	2*GK	UFLK3508
		5”	No	200	SY2	UFLK3544
		6”	No	200	SY3	UFLK3544
		8”	No	200	SY4	UFLK3546
		10”	No	200	SY4	UFLK3548
		12”	No	200	SY5	UFLK3550
		14”	No	150	SY5	UFLK3550
		16”	No	150	SY7	UFLK3552
		18”	No	150	SY8	UFLK3554

All close-off pressures listed are approximate and based on valve condition and application.

Centerline

C200 Round Top, C200 Square Top Series Butterfly Valves

Linkage/Actuator Selection Guide

2 YEAR WARRANTY

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
C200 Round Top Series Butterfly Valves	2-way	20”	No	150	SY8	UFLK3556
		24”	No	150	SY10	UFLK3558
	3-way	2”	No	200	AM	UFLK6500
					SY1	UFLK6536
					SY2	UFLK6538
			Yes	200	2*AF	UFLK6502
		2½”	No	200	GM	UFLK6500
					SY1	UFLK6536
					SY2	UFLK6538
			Yes	200	2*AF	UFLK6502
					GK	UFLK6500
		3”	No	200	2*GM	UFLK6502
					SY1	UFLK6536
					SY2	UFLK6538
			Yes	200	2*GK	UFLK6502
		4”	No	200	2*GM	UFLK6508
					SY2	UFLK6540
			Yes	200	2*GK	UFLK6508
		5”	No	200	SY3	UFLK6542
		6”	No	200	SY4	UFLK6544
		8”	No	200	SY4	UFLK6546
		10”	No	200	SY5	UFLK6548
		12”	No	200	SY7	UFLK6550
		14”	No	150	SY7	UFLK6550
		16”	No	150	SY8	UFLK6552
		18”	No	150	SY9	UFLK6554
		20”	No	150	SY10	UFLK6556
C200 Square Top Series Butterfly Valves	2-way	2”	No	200	AM	UFLK1300
					SY1	UFLK1338
					SY2	UFLK1340
			Yes	200	AF	UFLK1300
		2½”	No	200	GM	UFLK1300
					SY1	UFLK1338
					SY2	UFLK1340
			Yes	200	2*AF	UFLK1302
					GK	UFLK1300
		3”	No	200	GM	UFLK1300
					SY1	UFLK1338
					SY2	UFLK1340
			Yes	200	2*AF	UFLK1302
					GK	UFLK1300
		4”	No	200	2*GM	UFLK1308
					SY2	UFLK1342
			Yes	200	2*GK	UFLK1308
		5”	No	200	SY2	UFLK1344
		6”	No	200	SY3	UFLK1344
		8”	No	200	SY4	UFLK1346
		10”	No	200	SY4	UFLK1348
		12”	No	200	SY5	UFLK1350
		14”	No	150	SY5	UFLK1350
		16”	No	150	SY7	UFLK1352
		18”	No	150	SY8	UFLK1354
		20”	No	150	SY8	UFLK1356
		24”	No	150	SY10	UFLK1358
	3-way	2”	No	200	AM	UFLK4300
					SY1	UFLK4338
					SY2	UFLK4340
			Yes	200	2*AF	UFLK4302
		2½”	No	200	GM	UFLK4300
					SY2	UFLK4340
			Yes	200	2*AF	UFLK4302
					GK	UFLK4300
		3”	No	200	2*GM	UFLK4302
					SY2	UFLK4340
			Yes	200	2*GK	UFLK4302

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
C200 Square Top Series Butterfly Valves	3-way	4”	No	200	2*GM	UFLK4308
					SY2	UFLK4342
			Yes	200	2*GK	UFLK4308
		5”	No	200	SY3	UFLK4344
		6”	No	200	SY4	UFLK4346
		8”	No	200	SY4	UFLK4348
		10”	No	200	SY5	UFLK4350
		12”	No	200	SY7	UFLK4352
		14”	No	150	SY7	UFLK4352
		16”	No	150	SY8	UFLK4354
		18”	No	150	SY9	UFLK4356
		20”	No	150	SY10	UFLK4358
C225 Square Top Series Butterfly Valves	2-way	2”	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
					GK	UFLK1400
		2½”	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
					GK	UFLK1400
		3”	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
					GK	UFLK1400
		4”	No	285	2*GM	UFLK1408
					SY2	UFLK1440
			Yes	285	2*GK	UFLK1408
		5”	No	285	SY2	UFLK1442
		6”	No	285	SY4	UFLK1444
		8”	No	285	SY4	UFLK1446
		10”	No	285	SY5	UFLK1448
		12”	No	285	SY6	UFLK1450
		14”	No	285	SY7	UFLK1452
		16”	No	285	SY9	UFLK1454
		18”	No	285	SY10	UFLK1456
		20”	No	285	SY10	UFLK1458
	3-way	2”	No	285	GM	UFLK4400
					SY1	UFLK4436
					SY2	UFLK4438
			Yes	285	GK	UFLK4400
		2½”	No	285	GM	UFLK4400
					SY2	UFLK4438
			Yes	285	GK	UFLK4400
		3”	No	285	2*GM	UFLK4402
					SY2	UFLK4438
			Yes	285	2*GK	UFLK4402
		4”	No	285	SY3	UFLK4440
		5”	No	285	SY3	UFLK4442
		6”	No	285	SY4	UFLK4444
		8”	No	285	SY5	UFLK4446
		10”	No	285	SY7	UFLK4448
		12”	No	285	SY8	UFLK4450
		14”	No	285	SY8	UFLK4452
		16”	No	285	SY12	UFLK4454
FLOWSEAL						
1L/W Series Butterfly Valves	2-way	2”	No	285	GM	UFLK1700
					SY1	UFLK1734
					SY2	UFLK1736
			Yes	285	2*AF	UFLK1702
					GK	UFLK1700
		2½”	No	285	2*GM	UFLK1702
					SY2	UFLK1736
			Yes	285	2*GK	UFLK1702

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
1L/W Series Butterfly Valves	2-way	3”	No	285	2*GM	UFLK1708
					GM	UFLK1709
					SY2	UFLK1738
			Yes	285	2*GK	UFLK1708
					GK	UFLK1709
		4”	No	285	2*GM	UFLK1708
					GM	UFLK1709
					SY2	UFLK1738
			Yes	285	2*GK	UFLK1708
					GK	UFLK1709
		5”	No	285	SY3	UFLK1740
		6”	No	285	SY3	UFLK1740
		8”	No	285	SY4	UFLK1742
		10”	No	285	SY4	UFLK1744
		12”	No	285	SY6	UFLK1746
		14”	No	285	SY6	UFLK1746
		16”	No	285	SY7	UFLK1748
		18”	No	285	SY9	UFLK1750
		20”	No	285	SY9	UFLK1752
	3-way	2”	No	285	GM	UFLK4700
					SY2	UFLK4734
			Yes	285	2*AF	UFLK4702
					GK	UFLK4700
		2½”	No	285	2*GM	UFLK4702
					SY2	UFLK4734
			Yes	285	2*GK	UFLK4702
		3”	No	285	2*GM	UFLK4708
					SY2	UFLK4736
			Yes	285	2*GK	UFLK4708
		4”	No	285	SY3	UFLK4736
		5”	No	285	SY4	UFLK4738
		6”	No	285	SY4	UFLK4738
		8”	No	285	SY4	UFLK4740
		10”	No	285	SY6	UFLK4742
		12”	No	285	SY7	UFLK4744
		14”	No	285	SY8	UFLK4744
		16”	No	285	SY9	UFLK4746
		18”	No	285	SY11	UFLK4748
		20”	No	285	SY12	UFLK4750
3L/W Series Butterfly Valves	2-way	2”	No	780	SY3	UFLK1828
		2½”	No	780	SY3	UFLK1828
		3”	No	780	SY3	UFLK1830
		4”	No	780	SY4	UFLK1832
		5”	No	780	SY4	UFLK1834
		6”	No	780	SY4	UFLK1836
		8”	No	780	SY7	UFLK1838
		10”	No	780	SY7	UFLK1840
		12”	No	780	SY9	UFLK1842
		14”	No	780	SY9	UFLK1844
	3-way	2”	No	780	SY3	UFLK4828
		2½”	No	780	SY3	UFLK4828
		3”	No	780	SY3	UFLK4844
		4”	No	780	SY4	UFLK4830
		5”	No	780	SY4	UFLK4832
		6”	No	780	SY4	UFLK4834
		8”	No	780	SY8	UFLK4836
		10”	No	780	SY8	UFLK4838
		12”	No	780	SY12	UFLK4840
		14”	No	780	SY12	UFLK4842
JOHNSON CONTROLS						
VF.. (H) Series Butterfly Valves	2-way	2”	No	175	GM	UFLK2100
					SY1	UFLK2136
					SY2	UFLK2138
			Yes	175	2*AF	UFLK2102
					GK	UFLK2100

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VF.. (H) Series Butterfly Valves	2-way	2½"	No	175	GM	UFLK2100
					SY1	UFLK2136
					SY2	UFLK2138
			Yes	175	2*AF	UFLK2102
					GK	UFLK2100
		3"	No	175	GM	UFLK2100
					SY1	UFLK2136
					SY2	UFLK2138
			Yes	175	2*AF	UFLK2102
					GK	UFLK2100
		4"	No	175	2*GM	UFLK2108
					SY2	UFLK2140
			Yes	175	2*GK	UFLK2108
		5"	No	175	SY3	UFLK2142
		6"	No	175	SY4	UFLK2144
		8"	No	175	SY4	UFLK2158
		10"	No	175	SY5	UFLK2146
		12"	No	175	SY7	UFLK2148
		14"	No	150	SY7	UFLK2156
		16"	No	150	SY9	UFLK2150
		18"	No	150	SY10	UFLK2152
		20"	No	150	SY10	UFLK2154
	3-way	2"	No	175	GM	UFLK5100
					SY1	UFLK5130
					SY2	UFLK5132
			Yes	175	2*AF	UFLK5102
					GK	UFLK5100
		2½"	No	175	2*GM	UFLK5102
					SY2	UFLK5132
			Yes	175	2*GK	UFLK5102
		3"	No	175	2*GM	UFLK5102
					SY2	UFLK5132
			Yes	175	2*GK	UFLK5102
		4"	No	175	SY3	UFLK5134
		5"	No	175	SY4	UFLK5136
		6"	No	175	SY4	UFLK5136
		8"	No	175	SY5	UFLK5138
		10"	No	175	SY6	UFLK5140
		12"	No	175	SY7	UFLK5142
		14"	No	150	SY8	UFLK5144
		16"	No	150	SY9	UFLK5146
		18"	No	150	SY11	UFLK5148
		20"	No	150	SY12	UFLK5150
KEYSTONE						
360/362 Series Butterfly Valves, K-LOK	2-way	2½"	No	285	GM	UFLK2400
					SY1	UFLK2440
					SY2	UFLK2442
			Yes	285	2*AF	UFLK2402
					GK	UFLK2400
		3"	No	285	2*GM	UFLK2408
					SY2	UFLK2444
			Yes	285	2*GK	UFLK2408
		4"	No	285	2*GM	UFLK2414
					SY2	UFLK2446
			Yes	285	2*GK	UFLK2414
		5"	No	285	SY2	UFLK2446
		6"	No	285	SY3	UFLK2448
		8"	No	285	SY3	UFLK2450
		10"	No	285	SY4	UFLK2452
		12"	No	285	SY4	UFLK2454
		14"	No	285	SY6	UFLK2456
		16"	No	285	SY6	UFLK2458
		18"	No	285	SY7	UFLK2460
		20"	No	285	SY9	UFLK2462
		24"	No	285	SY9	UFLK2464

All close-off pressures listed are approximate and based on valve condition and application.

Keystone

360/362, 370/372, AR1/AR2 Series Butterfly Valves

Linkage/Actuator Selection Guide

2 YEAR WARRANTY

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
360/362 Series Butterfly Valves, K-LOK	3-way	2½"	No	285	GM	UFLK5400
					SY2	UFLK5440
			Yes	285	2*AF	UFLK5402
					GK	UFLK5400
		3"	No	285	2*GM	UFLK5408
					SY2	UFLK5442
			Yes	285	2*GK	UFLK5408
		4"	No	285	2*GM	UFLK5414
					SY2	UFLK5444
			Yes	285	2*GK	UFLK5414
		5"	No	285	SY3	UFLK5444
		6"	No	285	SY4	UFLK5446
		8"	No	285	SY4	UFLK5448
		10"	No	285	SY4	UFLK5450
		12"	No	285	SY6	UFLK5452
		14"	No	285	SY7	UFLK5454
		16"	No	285	SY8	UFLK5456
		18"	No	285	SY9	UFLK5458
		20"	No	285	SY11	UFLK5460
		24"	No	285	SY12	UFLK5462
370/372 Series Butterfly Valves, K-LOK	2-way	2½"	No	600	SY3	UFLK2526
		3"	No	600	SY3	UFLK2528
		4"	No	600	SY4	UFLK2530
		5"	No	600	SY4	UFLK2530
		6"	No	600	SY4	UFLK2532
		8"	No	600	SY7	UFLK2534
		10"	No	600	SY7	UFLK2536
		12"	No	600	SY9	UFLK2538
		14"	No	600	SY9	UFLK2540
	3-way	2½"	No	600	SY4	UFLK5526
		3"	No	600	SY4	UFLK5528
		4"	No	600	SY4	UFLK5530
		5"	No	600	SY4	UFLK5530
		6"	No	600	SY4	UFLK5532
		8"	No	600	SY8	UFLK5534
		10"	No	600	SY8	UFLK5536
		12"	No	600	SY12	UFLK5538
		14"	No	600	SY12	UFLK5540
AR1/AR2 Series Butterfly Valves	2-way	2"	No	175	GM	UFLK2300
					SY1	UFLK2334
					SY2	UFLK2336
			Yes	175	2*AF	UFLK2302
					GK	UFLK2300
		2½"	No	175	GM	UFLK2300
					SY1	UFLK2334
					SY2	UFLK2336
			Yes	175	2*AF	UFLK2302
					GK	UFLK2300
		3"	No	175	GM	UFLK2300
					SY1	UFLK2334
					SY2	UFLK2336
			Yes	175	2*AF	UFLK2302
					GK	UFLK2300
		4"	No	175	2*GM	UFLK2308
					SY2	UFLK2338
			Yes	175	2*GK	UFLK2308
		5"	No	175	SY3	UFLK2340
		6"	No	175	SY4	UFLK2356
		8"	No	175	SY4	UFLK2342
		10"	No	175	SY5	UFLK2344
		12"	No	175	SY7	UFLK2346
		14"	No	150	SY7	UFLK2348
		16"	No	150	SY9	UFLK2350
		18"	No	150	SY10	UFLK2352
		20"	No	150	SY11	UFLK2352
		24"	No	150	SY12	UFLK2354

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
AR1/AR2 Series Butterfly Valves	3-way	2”	No	175	GM	UFLK5300
					SY1	UFLK5332
					SY2	UFLK5334
			Yes	175	2*AF	UFLK5302
					GK	UFLK5300
		2½”	No	175	GM	UFLK5300
					SY2	UFLK5334
			Yes	175	2*AF	UFLK5302
					GK	UFLK5300
		3”	No	175	2*GM	UFLK5302
					SY2	UFLK5334
			Yes	175	2*GK	UFLK5302
		4”	No	175	SY3	UFLK5336
		5”	No	175	SY4	UFLK5338
		6”	No	175	SY4	UFLK5338
		8”	No	175	SY5	UFLK5340
		10”	No	175	SY7	UFLK5342
		12”	No	175	SY8	UFLK5344
		14”	No	150	SY9	UFLK5346
		16”	No	150	SY10	UFLK5348
		18”	No	150	SY12	UFLK5350
Figure 222 Series Butterfly Valves	2-way	2”	No	200	GM	UFLK2200
					SY1	UFLK2224
					SY2	UFLK2226
			Yes	200	2*AF	UFLK2202
					GK	UFLK2200
		2½”	No	200	GM	UFLK2200
					SY1	UFLK2224
					SY2	UFLK2226
			Yes	200	2*AF	UFLK2202
					GK	UFLK2200
		3”	No	200	GM	UFLK2200
					SY1	UFLK2224
					SY2	UFLK2226
			Yes	200	2*AF	UFLK2202
					GK	UFLK2200
		4”	No	200	2*GM	UFLK2208
					SY2	UFLK2228
			Yes	200	2*GK	UFLK2208
		5”	No	200	SY3	UFLK2230
		6”	No	200	SY4	UFLK2232
		8”	No	200	SY4	UFLK2234
		10”	No	200	SY5	UFLK2236
		12”	No	200	SY7	UFLK2238
	3-way	2”	No	200	GM	UFLK5200
					SY2	UFLK5224
			Yes	200	2*AF	UFLK5202
					GK	UFLK5200
		2½”	No	200	GM	UFLK5200
					SY2	UFLK5224
			Yes	200	2*AF	UFLK5202
					GK	UFLK5200
		3”	No	200	2*GM	UFLK5202
					SY2	UFLK5224
			Yes	200	2*GK	UFLK5202
		4”	No	200	SY3	UFLK5226
		5”	No	200	SY4	UFLK5228
		6”	No	200	SY4	UFLK5228
		8”	No	200	SY5	UFLK5230
		10”	No	200	SY7	UFLK5232
		12”	No	200	SY8	UFLK5234
MILWAUKEE						
CL Series Butterfly Valves	2-way	2”	No	150	AM	UFLK2600
					SY1	UFLK2624
					SY2	UFLK2628
			Yes	150	AF	UFLK2600

All close-off pressures listed are approximate and based on valve condition and application.

Milwaukee

CL, ML Series Butterfly Valves

Linkage/Actuator Selection Guide

2 YEAR WARRANTY

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
CL Series Butterfly Valves	2-way	2½”	No	150	AM	UFLK2600
					SY1	UFLK2624
					SY2	UFLK2628
			Yes	150	AF	UFLK2600
		3”	No	150	GM	UFLK2600
					SY1	UFLK2624
					SY2	UFLK2628
			Yes	150	2*AF	UFLK2602
					GK	UFLK2600
		4”	No	150	2*GM	UFLK2608
					SY2	UFLK2630
			Yes	150	2*GK	UFLK2608
		5”	No	150	2*GM	UFLK2608
					SY2	UFLK2630
			Yes	150	2*GK	UFLK2608
		6”	No	150	SY3	UFLK2632
		8”	No	150	SY4	UFLK2634
		10”	No	150	SY4	UFLK2636
		12”	No	150	SY5	UFLK2636
	3-way	2”	No	150	AM	UFLK5600
					SY1	UFLK5622
					SY2	UFLK5624
			Yes	150	2*AF	UFLK5602
		2½”	No	150	GM	UFLK5600
					SY1	UFLK5622
					SY2	UFLK5624
			Yes	150	2*AF	UFLK5602
					GK	UFLK5600
		3”	No	150	GM	UFLK5600
					SY2	UFLK5624
			Yes	150	2*AF	UFLK5602
					GK	UFLK5600
		4”	No	150	2*GM	UFLK5608
					SY2	UFLK5626
			Yes	150	2*GK	UFLK5608
		5”	No	150	SY3	UFLK5626
		6”	No	150	SY4	UFLK5628
		8”	No	150	SY4	UFLK5630
		10”	No	150	SY6	UFLK5632
		12”	No	150	SY7	UFLK5634
ML Series Butterfly Valves	2-way	2”	No	150	AM	UFLK2700
					SY1	UFLK2732
					SY2	UFLK2734
			Yes	150	AF	UFLK2700
		2½”	No	150	AM	UFLK2700
					SY1	UFLK2732
					SY2	UFLK2734
			Yes	150	AF	UFLK2700
		3”	No	150	GM	UFLK2700
					SY1	UFLK2732
					SY2	UFLK2734
			Yes	150	2*AF	UFLK2702
					GK	UFLK2700
		4”	No	150	2*GM	UFLK2708
					SY2	UFLK2736
			Yes	150	2*GK	UFLK2708
		5”	No	150	2*GM	UFLK2708
					SY2	UFLK2736
			Yes	150	2*GK	UFLK2708
		6”	No	150	SY3	UFLK2738
		8”	No	150	SY4	UFLK2740
		10”	No	150	SY4	UFLK2742
		12”	No	150	SY5	UFLK2742
		14”	No	150	SY7	UFLK2744
		16”	No	150	SY7	UFLK2744
		18”	No	150	SY8	UFLK2746

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
ML Series Butterfly Valves	2-way	20”	No	150	SY9	UFLK2748
		24”	No	150	SY10	UFLK2750
	3-way	2”	No	150	AM	UFLK5700
					SY1	UFLK5732
					SY2	UFLK5734
			Yes	150	2*AF	UFLK5702
		2½”	No	150	AM	UFLK5700
					SY1	UFLK5732
					SY2	UFLK5734
			Yes	150	2*AF	UFLK5702
		3”	No	150	GM	UFLK5700
					SY2	UFLK5734
			Yes	150	2*AF	UFLK5702
					GK	UFLK5700
		4”	No	150	2*GM	UFLK5708
					SY2	UFLK5736
			Yes	150	2*GK	UFLK5708
		5”	No	150	SY3	UFLK5736
		6”	No	150	SY4	UFLK5738
		8”	No	150	SY4	UFLK5740
		10”	No	150	SY6	UFLK5742
		12”	No	150	SY7	UFLK5744
		14”	No	150	SY8	UFLK5746
		16”	No	150	SY9	UFLK5748
		18”	No	150	SY10	UFLK5750
		20”	No	150	SY11	UFLK5750
NIBCO						
LD1/WD1 Series Butterfly Valves	2-way	14”	No	150	SY7	UFLK2960
		16”	No	150	SY8	UFLK2968
		18”	No	150	SY8	UFLK2962
		20”	No	150	SY9	UFLK2964
		24”	No	150	SY11	UFLK2966
	3-way	14”	No	150	SY8	UFLK5956
		16”	No	150	SY9	UFLK5958
		18”	No	150	SY10	UFLK5960
		20”	No	150	SY12	UFLK5962
LD2/WD2, LD3 Series Butterfly Valves	2-way	2”	No	150	GM	UFLK2900
					SY1	UFLK2942
					SY2	UFLK2946
			Yes	150	2*AF	UFLK2902
					GK	UFLK2900
		2½”	No	150	GM	UFLK2908
					SY1	UFLK2944
					SY2	UFLK2948
			Yes	150	2*AF	UFLK2910
					GK	UFLK2908
		3”	No	150	2*GM	UFLK2910
					SY2	UFLK2948
			Yes	150	2*GK	UFLK2910
		4”	No	150	2*GM	UFLK2916
					SY2	UFLK2950
			Yes	150	2*GK	UFLK2916
		5”	No	150	SY3	UFLK2952
		6”	No	150	SY3	UFLK2952
		8”	No	150	SY4	UFLK2954
		10”	No	150	SY4	UFLK2956
		12”	No	150	SY6	UFLK2958
	3-way	2”	No	150	GM	UFLK5900
					SY2	UFLK5942
			Yes	150	2*AF	UFLK5902
					GK	UFLK5900
		2½”	No	150	2*GM	UFLK5910
					SY2	UFLK5944
			Yes	150	2*GK	UFLK5910

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
LD2/WD2, LD3 Series Butterfly Valves	3-way	3”	No	150	2*GM	UFLK5910
					SY2	UFLK5944
			Yes	150	2*GK	UFLK5910
		4”	No	150	SY3	UFLK5946
		5”	No	150	SY4	UFLK5948
		6”	No	150	SY4	UFLK5948
		8”	No	150	SY6	UFLK5950
		10”	No	150	SY6	UFLK5952
		12”	No	150	SY8	UFLK5954
PDC						
27 Series Butterfly Valves (Double D Shaft Type)	2-way	2”	No	150	GM	UFLK3100
					SY1	UFLK3122
					SY2	UFLK3124
			Yes	150	2*AF	UFLK3102
					GK	UFLK3100
		2½”	No	150	2*GM	UFLK3102
					SY2	UFLK3124
			Yes	150	2*GK	UFLK3102
		3”	No	150	2*GM	UFLK3102
					SY2	UFLK3124
			Yes	150	2*GK	UFLK3102
		4”	No	150	2*GM	UFLK3108
					SY2	UFLK3126
			Yes	150	2*GK	UFLK3108
		5”	No	150	SY3	UFLK3128
		6”	No	150	SY3	UFLK3130
		8”	No	150	SY4	UFLK3132
		10”	No	150	SY4	UFLK3132
		12”	No	150	SY6	UFLK3132
	3-way	2”	No	150	GM	UFLK6100
					SY2	UFLK6122
			Yes	150	2*AF	UFLK6102
					GK	UFLK6100
		2½”	No	150	2*GM	UFLK6102
					SY2	UFLK6122
			Yes	150	2*GK	UFLK6102
		3”	No	150	2*GM	UFLK6102
					SY2	UFLK6122
			Yes	150	2*GK	UFLK6102
		4”	No	150	SY3	UFLK6124
		5”	No	150	SY4	UFLK6126
		6”	No	150	SY4	UFLK6128
		8”	No	150	SY4	UFLK6130
		10”	No	150	SY6	UFLK6132
		12”	No	150	SY7	UFLK6134
VICTAULIC						
Masterseal (New Style) Series Butterfly Valves	2-way	2”	No	200	AM	UFLK8172
					SY1	UFLK8178
					SY2	UFLK8180
			Yes	200	2*AF	UFLK8174
		2½”	No	200	GM	UFLK8172
					SY1	UFLK8178
					SY2	UFLK8180
			Yes	200	2*AF	UFLK8174
					GK	UFLK8172
		3”	No	200	GM	UFLK8172
					SY2	UFLK8180
			Yes	200	GK	UFLK8172
		4”	No	200	2*GM	UFLK8176
					SY2	UFLK8182
			Yes	200	2*GK	UFLK8176
		5”	No	200	SY3	UFLK8184
		6”	No	200	SY3	UFLK8184
		8”	No	200	SY4	UFLK8188
		10”	No	200	SY5	UFLK8190
		12”	No	200	SY6	UFLK8190

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Masterseal (New Style) Series Butterfly Valves	3-way	2”	No	200	GM	UFLK7400
					SY1	UFLK7404
					SY2	UFLK7406
			Yes	200	2*AF	UFLK7402
					GK	UFLK7400
		2½”	No	200	2*GM	UFLK7402
					SY2	UFLK7406
			Yes	200	2*GK	UFLK7402
		3”	No	200	SY2	UFLK7406
		4”	No	200	SY2	UFLK7408
		5”	No	200	SY3	UFLK7410
		8”	No	200	SY4	UFLK7414
		12”	No	200	SY7	UFLK7418
Vic300 (Old Style) Series Butterfly Valves	2-way	2”	No	300	AM	UFLK3300
					SY1	UFLK3338
					SY2	UFLK3342
			Yes	300	AF	UFLK3300
		2½”	No	300	AM	UFLK3308
					SY1	UFLK3340
					SY2	UFLK3344
			Yes	300	AF	UFLK3308
		3”	No	300	GM	UFLK3308
					SY1	UFLK3340
					SY2	UFLK3344
			Yes	300	2*AF	UFLK3310
					GK	UFLK3308
		4”	No	300	2*GM	UFLK3316
					SY2	UFLK3346
			Yes	300	2*GK	UFLK3316
		5”	No	300	SY2	UFLK3348
		6”	No	300	SY3	UFLK3350
		8”	No	300	SY4	UFLK3352
		10”	No	300	SY4	UFLK3354
		12”	No	300	SY4	UFLK3356
	3-way	2”	No	300	GM	UFLK6300
					SY1	UFLK6336
					SY2	UFLK6340
			Yes	300	AF	UFLK6300
					GK	UFLK6300
		2½”	No	300	GM	UFLK6308
					SY1	UFLK6338
					SY2	UFLK6342
			Yes	300	2*AF	UFLK6310
					GK	UFLK6308
		3”	No	300	SY2	UFLK6342
		4”	No	300	SY3	UFLK6344
		5”	No	300	SY3	UFLK6346
		6”	No	300	SY4	UFLK6348
		8”	No	300	SY4	UFLK6350
		10”	No	300	SY5	UFLK6352
		12”	No	300	SY6	UFLK6354

All close-off pressures listed are approximate and based on valve condition and application.

Specialty Solutions for Valve Manufacturers

Belimo offers specialty linkage solutions for the manufacturers in the chart below.
Please contact technical support for a quotation.

Valve Company	Valve Series	Valve Configuration
Apollo®	141/143 Series Butterfly Valves	2-way
		3-way
Challenger®	CH100 Series Butterfly Valves	2-way
		3-way
Chemtrol®	PVC Model C Series Butterfly Valves	2-way
		3-way
Dezurik®	BRS Series Butterfly Valves	2-way
		3-way
FNW®	Figure 1000/2000 Series Butterfly Valves	2-way
		3-way
Gruvlok®	Figure 7700 (Double D Shaft 2003 and Newer) Series Butterfly Valves	2-way
		3-way
	Figure 7700 (Sheared Pin Shaft Pre 2003) Series Butterfly Valves	2-way
		3-way
Hammond®	61/62 Series Butterfly Valves	2-way
		3-way
Jamesbury®	815 L/W Series Butterfly Valves	2-way
		3-way
	830 L/W Series Butterfly Valves	2-way
		3-way
Jenkins®	22XXEXJ Series Butterfly Valves	2-way
		3-way
Metraflex®	200 WOG Series Butterfly Valves	2-way
		3-way
Mueller®	65/66 Series Butterfly Valves	2-way
		3-way
Quartermaster®	42/44 Series Butterfly Valves	2-way
		3-way
Watts®	DBF Series Butterfly Valves (Pre 2009)	2-way
		3-way

Considerations:

- The kits above do not require a completed retrofit form. Only the make and model of the competitor valve is needed.
- Each linkage order is custom made and will take additional time to ship than a stock kit.
- Prices may vary with complexity of kit and material availability.
- Every retrofit solution is available in 2-way and 3-way configurations for both SY and damper style actuators.

Instructions for Completing this Form

Please keep in mind that all dimensions should be taken with ALL original actuation and hardware components removed from the valve body.

Examples of dimensions A & B **(Dim A and Dim B)** relate to the TOP mounting holes on the butterfly valve body. These holes are usually arranged on the body in either an "X" pattern (**MOUNT STYLE 1**), or a cross pattern (**MOUNT STYLE 2**). This information is entered on the UFSP Series Butterfly Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim C**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

Next is the valve stem data. The five styles of valve stems cover 98% of the butterfly valves ever produced. Examine the valve being retrofitted to establish which shaft style matches the diagrams above. Use caution when recording these dimensions. Careless use of calipers will result in a sloppy and possibly dysfunctional linkage system. **Dim D** refers to the valve stem diameter and should be measured at several points up and down as well as around the stem itself. **Dim E** refers to the length of the drive surface available, whether it be a key, flatted surface, or the distance a drive hole is from the top of the stem. There are two types of keys (Keyway-Shaft Style 4 and Woodruff Key-Shaft Style 5). Please select the key size as noted in the column "For Shaft Style 4 & 5". **Dim F** refers to the width of the drive surface. This is the most critical dimension for correct linkage operation. Please measure accordingly.

In addition, we require information about the environment and process in which this linkage system will be utilized.

The form must be completed in its entirety to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage system for the facility. Measurements rounded to the nearest ⅛ or 1/16 inch will not perform as well (sometimes not at all) as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

Required tools - calipers and retrofit form.

DISCLAIMER:

We will do our best to provide a linkage system designed around your specifications and measurements however, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

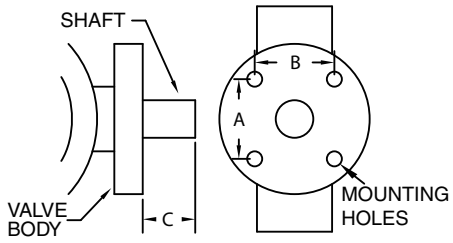
Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

Custom Butterfly Valve Retrofit Solution Form

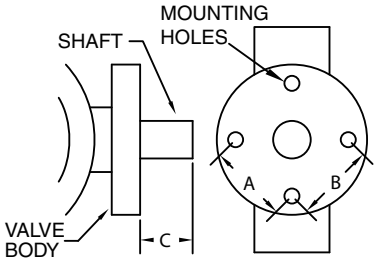
UFSP Series

BELIMO

MOUNT STYLE 1



MOUNT STYLE 2

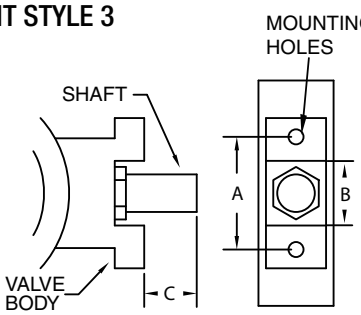


MOUNT STYLE DIMENSIONS

MOUNT STYLE	
DIM A:	
DIM B:	
DIM C:	

DIM. A & B MEASURED FROM CENTER OF HOLE

MOUNT STYLE 3



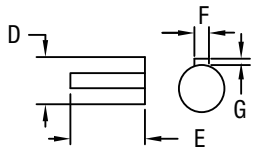
MOUNT STYLE 4

SKETCH YOUR MOUNT STYLE
USING MOUNT STYLE EXAMPLES.

MOUNTING HOLES:

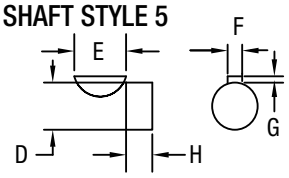
	DRILLED	
DIA Ø:		Ex: 0.437"
THREAD	TAPPED	
SPEC.		Ex: 1/2-20

SHAFT STYLE 4



KEYWAY

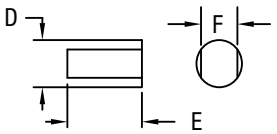
SHAFT STYLE 5



WOODRUFF KEY

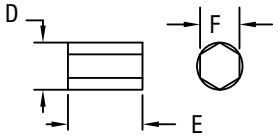
KEY SIZE	CHECK ONE
.125"	☐
.1875"	☐
.250"	☐
.3125"	☐
.375"	☐
.4375"	☐
.500"	☐

SHAFT STYLE 6



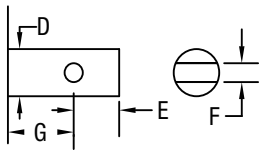
DOUBLE D

SHAFT STYLE 7



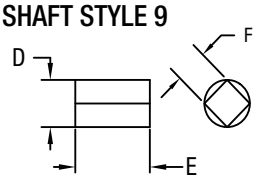
HEX

SHAFT STYLE 8



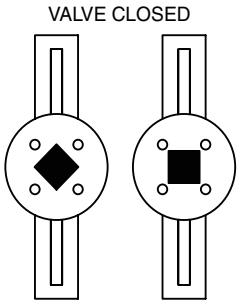
PINNED

SHAFT STYLE 9



SQUARE

SHAFT STYLE 9



☐ ☐

CHECK ONE

SHAFT STYLE ☐ DIM D: ☐ DIM E: ☐ DIM F: ☐ DIM G: ☐ DIM H: ☐

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC Range:_____ ☐ PWM Range:_____

FAIL SAFE: ☐ YES ☐ NO

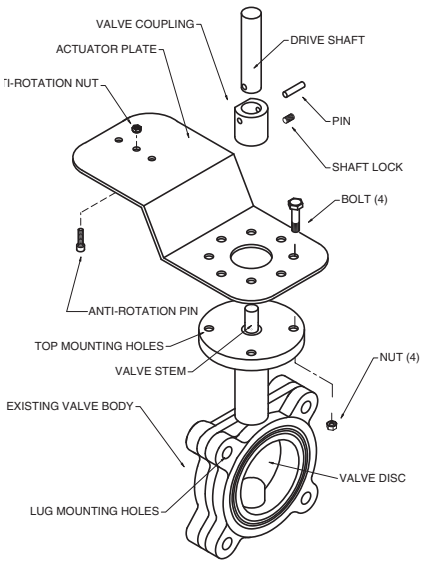
FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

VOLTAGE_____

COMPANY:		VALVE MANUFACTURE:		2 WAY/3 WAY:	
JOB NAME:		VALVE SERIES:		VALVE SIZE:	
PO#:		VALVE MODEL:		MEDIA TEMP:	
PHONE:		VALVE TAG/LOCATION:		MEDIA TYPE:	
EMAIL:		QUANTITY:		SYSTEM PRESSURE:	

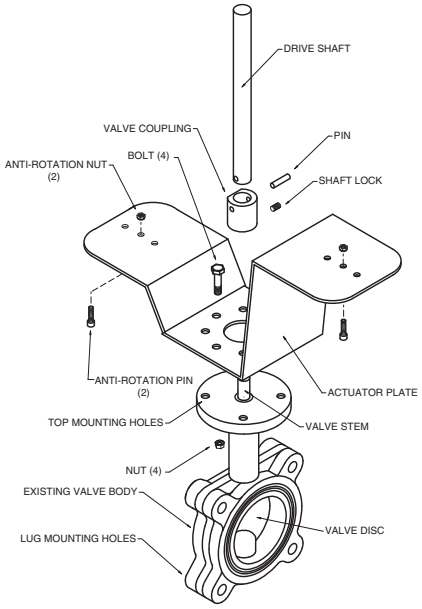
NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

2-way Single Actuator
Generic – Retrofit Form Required



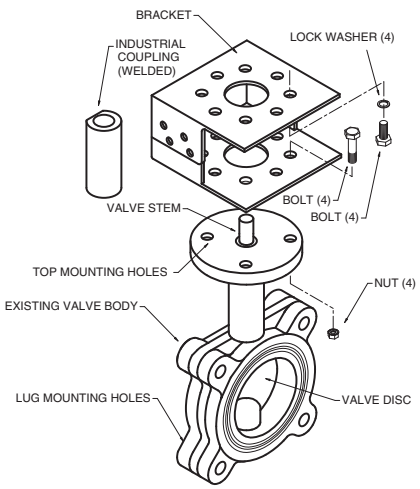
UFSP0000

2-way Dual Actuator
Generic – Retrofit Form Required



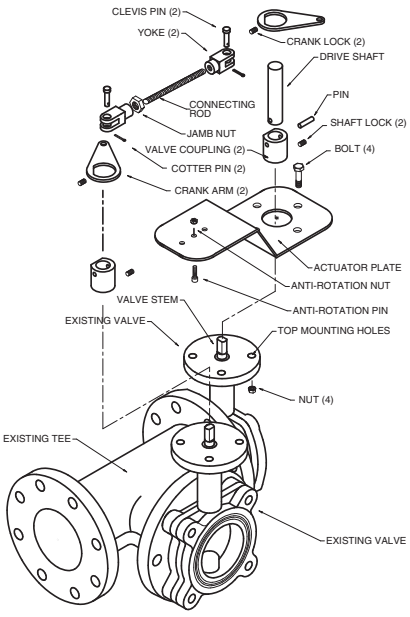
UFSP0008

2-way SY Actuator
Generic – Retrofit Form Required



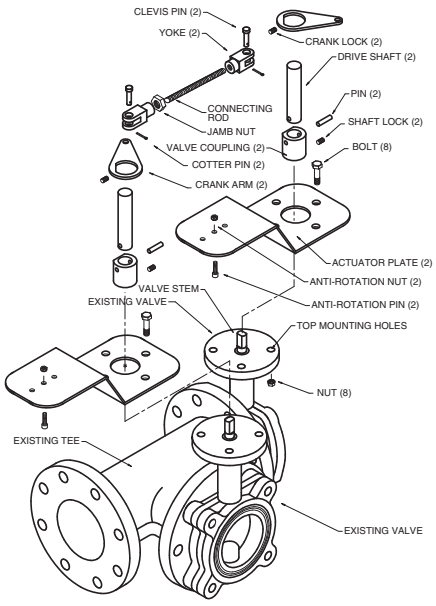
UFSP0020 SY1 - SY8
UFSP0022 SY9 - SY12

3-way Single Actuator
Generic – Retrofit Form Required



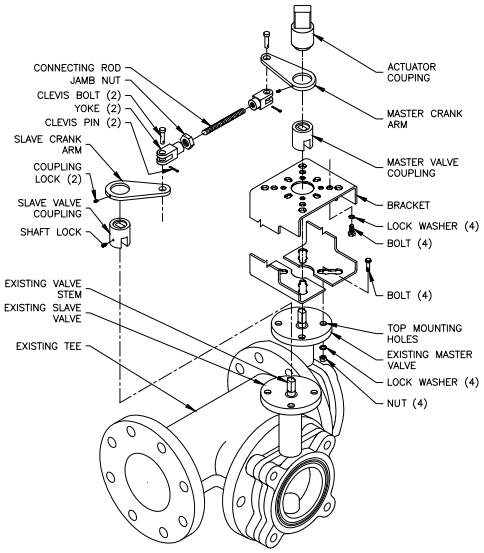
UFSP0002

3-way Dual Actuator
Generic – Retrofit Form Required



UFSP0010

3-way SY Actuator
Generic – Retrofit Form Required



UFSP0024 SY1 - SY8
UFSP0026 SY9 - SY12

NOTE: 3-way bracket configuration shown is only one of many possible arrangements. Custom kits are designed to your unique specification and are not returnable.

BELIMO

2 YEAR WARRANTY

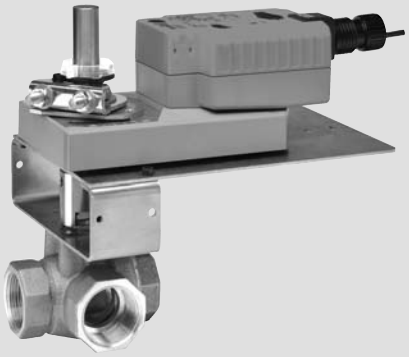
ELECTRIC DISCONNECT		
	HOA-120V	Local electric disconnect SY2-SY12; 2 position - 110/230V
	HOA-120VMFT	Local electric disconnect SY2-SY12; proportional - 110/230V
	HOA-24V	Local electric disconnect SY2-SY12; 2 position - 24V
	HOA-24VMFT	Local electric disconnect SY2-SY12; proportional - 24V
POTENTIOMETERS		
	SY-1000-FB01	1000 Ω feedback potentiometer. SY2-12, 2 position
	SY-1000-FB02	1000 Ω feedback potentiometer. SY2-12, proportional
BATTERY BACKUP		
	EXT-NSV-B01-120	Battery backup system for Belimo SY1 - SY3 120 VAC, on/off actuators
	EXT-NSV-B02-120	Battery backup system for Belimo SY1 - SY3 120 VAC, MFT actuators
	EXT-NSV-B03-120	Battery backup system for Belimo SY4 - SY6 120 VAC, on/off actuators
	EXT-NSV-B04-120	Battery backup system for Belimo SY4 - SY6 120 VAC, MFT actuators
	EXT-NSV-B05-120	Battery backup system for Belimo SY7 - SY12 120 VAC, on/off actuators
	EXT-NSV-B06-120	Battery backup system for Belimo SY7 - SY12 120 VAC, MFT actuators
	EXT-NSV-B11-24	Battery backup system for Belimo SY1 24 VAC, on/off actuators
	EXT-NSV-B12-24	Battery backup system for Belimo SY1 24V MFT actuators
	EXT-NSV-B13-24	Battery backup system for Belimo SY2 - SY5 24 VAC, on/off actuators
	EXT-NSV-B14-24	Battery backup system for Belimo SY2 - SY5 24 VAC, MFT actuators
	EXT-NSV-B21-230	Battery backup system for Belimo SY1 - SY3 230 VAC, on/off actuators
	EXT-NSV-B22-230	Battery backup system for Belimo SY1 - SY3 230 VAC, MFT actuators
	EXT-NSV-B23-230	Battery backup system for Belimo SY4 - SY6 230 VAC, on/off actuators
	EXT-NSV-B24-230	Battery backup system for Belimo SY4 - SY6 230 VAC, MFT actuators
	EXT-NSV-B25-230	Battery backup system for Belimo SY7 - SY12 230 VAC, on/off actuators
	EXT-NSV-B26-230	Battery backup system for Belimo SY7 - SY12 230 VAC, MFT actuators
HANDWHEELS		
	ZG-SY23	SY2-3 handwheel (replacement only)
	ZG-SY46	SY4-6 handwheel (replacement only)
	ZG-SY78	SY7-8 handwheel (replacement only)
	ZG-SY912	SY9-12 handwheel (replacement only)

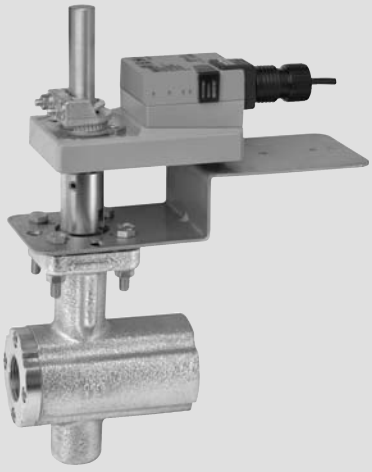
Ball Valve Retrofit Solutions

- Full range of kits for 2-way and 3-way valve assemblies.
- Visual stroke indicators allow quick installation.
- Linkages can be mounted in any orientation except upside down.
- NEMA 2 and NEMA 4 options available.

Applications

UBSP Ball Valve Retrofit Solutions are designed to easily attach to the valve mounting pad of competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time and money.





BELIMO

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Instructions for Completing this Form

Ball valves without a mounting flange are typically not designed for installing actuation, therefore the valve design may not support modulation outside of manual usage. Belimo does not recommend retrofitting these types of ball valves.

All dimensions should be taken with ALL original actuation and hardware components removed from the valve body.

An example using **Mounting Style 3:** Dimensions A & B (**Dim A and Dim B**) relate to the TOP mounting holes on the ball valve body. These holes are usually arranged on the body in a "X" pattern (**MOUNT STYLE 3**). This information is entered on the UBSP Series Ball Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim D and E**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

MOUNT STYLE 3: Dimensions A & B (**Dim A and Dim B**) relate to the TOP mounting holes on the ball valve body. These holes are usually arranged on the body in a "X" pattern (**MOUNT STYLE 3**). This information is entered on the UBSP Series Ball Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim D and E**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

STEM STYLE: Examine the valve being retrofitted to establish which stem style matches the diagrams above. Use caution when recording these dimensions. **Dim H** refers to the valve stem diameter and should be measured at several points up and down as well as around the stem itself. **Dim E** refers to the length of the drive surface available, whether it is a key or flatted surface. **Dim F** refers to the width of the drive surface or the distance across the flats. This is the most critical dimension for correct linkage operation. Please measure accordingly. Lastly please specify the desired actuator orientation in reference to the valve body using the ports as reference, i.e. over the "A" port etc. We have also includes an ISO-5211 standard dimension chart for reference. If the valve is labeled please specify its "F" number so that we may confirm the dimensions per the ISO spec.

In addition, we require information about the environment and process in which this linkage system will be utilized. As well as the frequency of use the current actuator runs. This will help to ensure the longevity of the new linkage and actuator. Having the prior actuator spec and model will help.

The form must be completed in its entirety to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage systems. Measurements rounded to the nearest 1/8 or 1/16 inch will not perform as well (sometimes not at all) as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

Required tools - calipers and retrofit form.

DISCLAIMER:

We will do our best to provide a linkage system designed around your specifications and measurements however, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

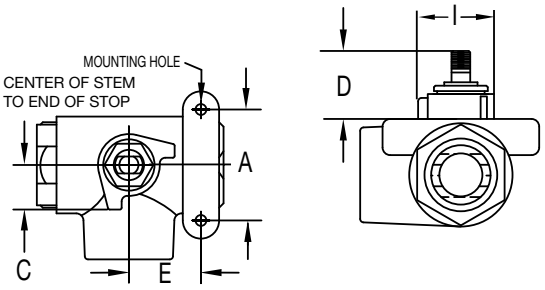
Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

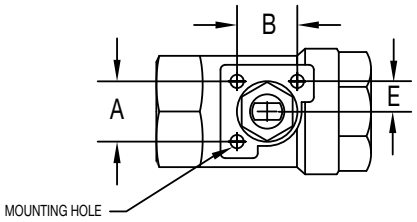
Custom Ball Valve Retrofit Solution Form

BELIMO

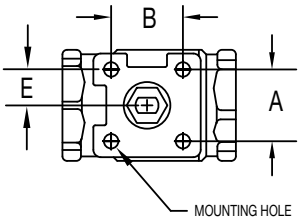
MOUNT STYLE 1



MOUNT STYLE 2



MOUNT STYLE 3



MOUNT STYLE 4

SKETCH YOUR MOUNT STYLE USING EXAMPLES ABOVE

MOUNT STYLE DIMENSIONS

MOUNT STYLE ☐

DIM A: ☐

DIM B: ☐

DIM C: ☐

DIM D: ☐

DIM E: ☐

MOUNTING HOLES:

DRILLED

DIA Ø: ☐

TAPPED

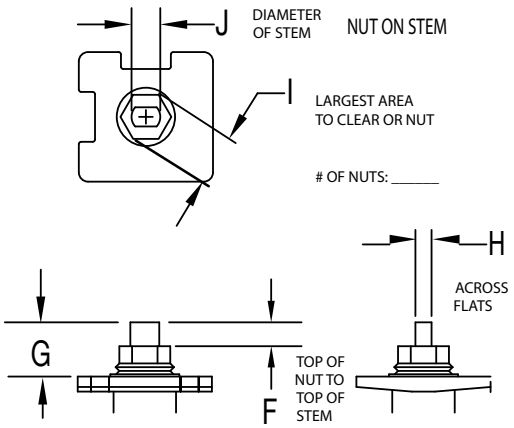
THREAD SPEC. ☐

DIM. A & B MEASURED FROM CENTER OF HOLE

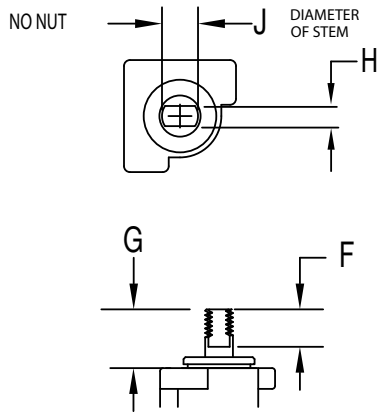
ISO STANDARD

ISO	BOLT SQUARE	BOLT SIZE Ø	CHECK ONE
F03	1.002	M5	
F04	1.169	M5	
F05	1.392	M6	
F07	1.949	M8	
F10	2.840	M10	
F12	3.480	M12	
F14	3.879	M16	
F16	4.593	M20	
F25	7.071	M16	

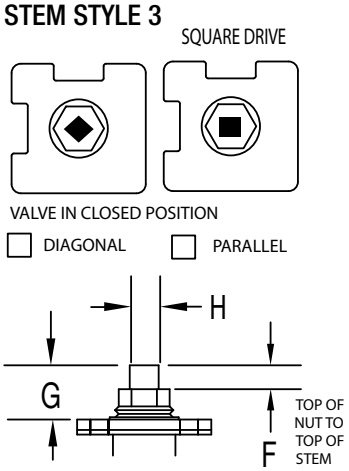
STEM STYLE 1



STEM STYLE 2



STEM STYLE 3



STEM STYLE ☐ DIM F: ☐ DIM G: ☐ DIM H: ☐ DIM I: ☐ DIM J: ☐

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC ☐ PWM

Range:_____ Range:_____

FAIL SAFE: ☐ YES ☐ NO

FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

FREQUENCY OF OPERATION (*specify how often*): DAILY_____ WEEKLY_____ MONTHLY_____

VOLTAGE: _____

ACTUATOR ORIENTATION:

COMPANY: _____

JOB NAME: _____

PO#: _____

PHONE: _____

EMAIL: _____

VALVE MANUFACTURE: _____

VALVE SERIES: _____

VALVE MODEL: _____

VALVE TAG/LOCATION: _____

QUANTITY: _____

2 WAY/3 WAY: _____

VALVE SIZE: _____

MEDIA TEMP: _____

MEDIA TYPE: _____

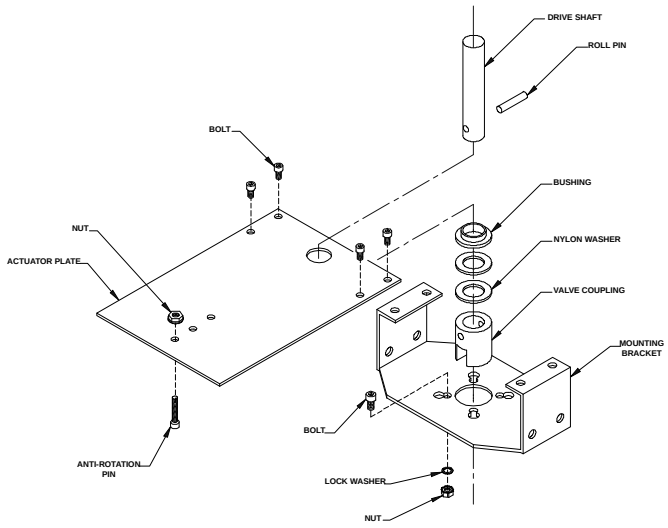
SYSTEM PRESSURE: _____

NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

CUSTOM KITS ARE DESIGNED TO YOUR UNIQUE SPECIFICATIONS AND ARE **NOT RETURNABLE.**

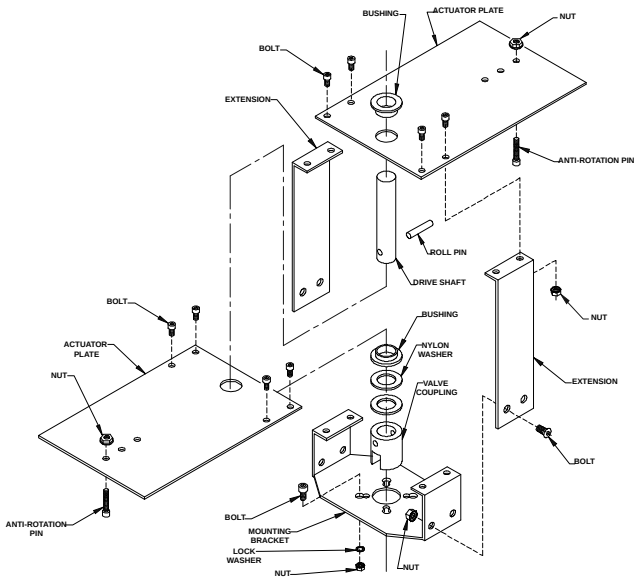
COMPANY CONTACT/DIMENSIONS PROVIDED BY: _____ DATE: _____

2-way/3-way Single Actuator
Generic – Retrofit Form Required



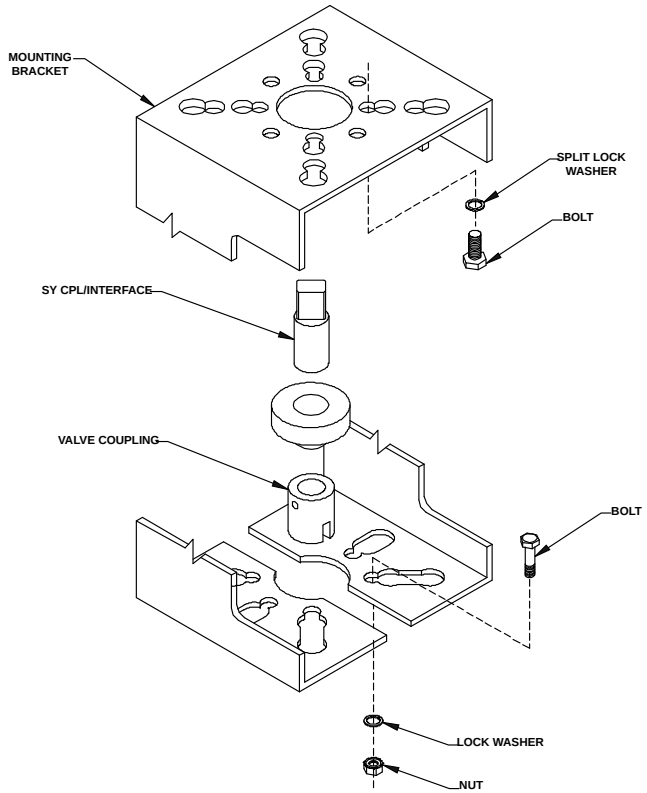
UBSP0004

2-way/3-way Dual Actuator
Generic – Retrofit Form Required



UBSP0006

Industrial Electric 2-way/3-way
Generic – Retrofit Form Required

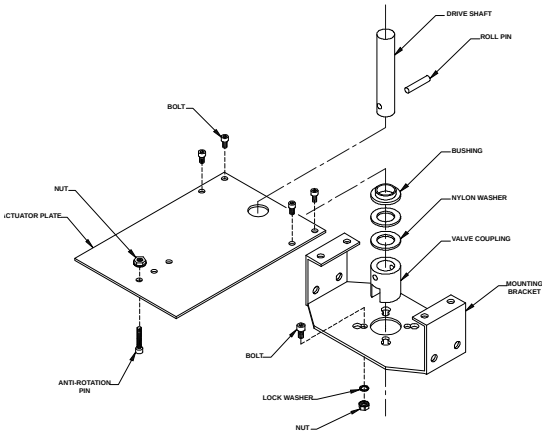


UBSP0008 **SY1-SY6**
UBSP0012 **SY7-SY9**

Custom kits are designed to your unique specification and are not returnable.

UBSP0004 Custom Retrofit Linkage for Ball Valves

For Use with Belimo Rotary Actuators



2 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Frame, plate, base	stainless steel
Shaft diameter	½" to ¾" round
Shaft	stainless steel
Coupling	stainless steel
Bearing	bronze oil-lite
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Weight	9 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

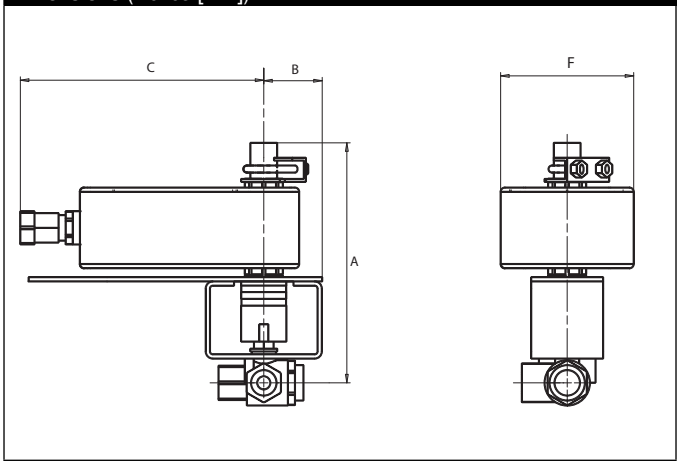
Default/Configuration

The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Suitable Actuators

Linkage	Spring Return	Electronic Fail-Safe	Non-Spring Return
UBSP0004	LF, NF, AF	GK	LM, NM, AM, GM

Dimensions (Inches [mm])



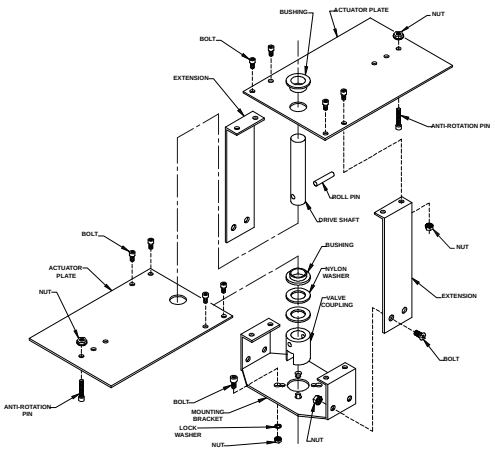
A	B	C	F
8.00 [203.2]	2.00 [51]	8.00 [203]	6.00 [152.4]

Application Notes

Custom retrofit kits require a filled out retrofit form during or before ordering.

UBSP0006 Custom Retrofit Linkage for Ball Valves

For Use with Belimo Rotary Actuators



2 YEAR WARRANTY

Technical Data

Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Frame, plate, base	stainless steel
Shaft diameter	½" to ¾" round
Shaft	stainless steel
Coupling	stainless steel
Bearing	bronze oil-lite
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Weight	18 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

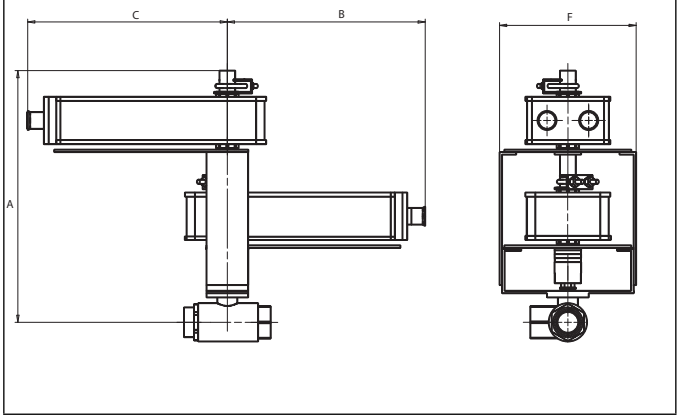
Default/Configuration

The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Suitable Actuators

Linkage	Spring Return	Electronic Fail-Safe	Non-Spring Return
UBSP0006	2*AF	2*GK	2*GM

Dimensions (Inches [mm])



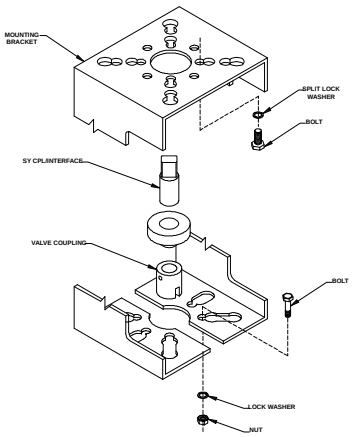
A	B	C	F
15.60 [396.24]	8.00 [203]	8.00 [203]	6.00 [152.4]

Application Notes

Custom retrofit kits require a filled out retrofit form during or before ordering.

UBSP0008 Custom Retrofit Linkage for Ball Valves

For Use with Belimo SY Actuators



2 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50], 2-½" [63.5], 3" [76.2]
Frame, plate, base	stainless steel
Shaft	steel
Coupling	steel
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Housing	NEMA 4X, IP66
Weight	12 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

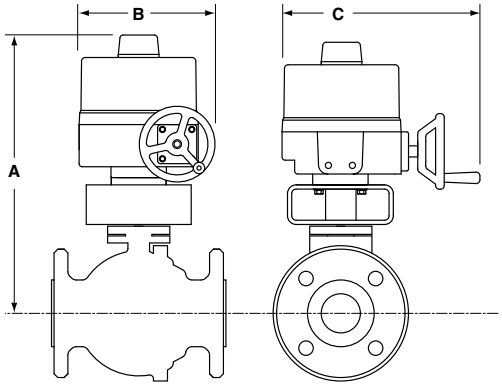
Default/Configuration

The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Suitable Actuators

Linkage	Non-Spring Return
UBSP0008	SY1, SY2, SY3, SY4, SY5, SY6

Dimensions (Inches [mm])



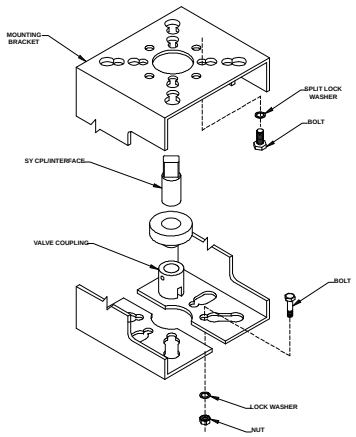
A	B	C
16.63 [422.4]	12.00 [305]	15.00 [381]

Application Notes

Custom retrofit kits require a filled out retrofit form during or before ordering.

UBSP0012 Custom Retrofit Linkage for Ball Valves

For Use with Belimo SY Actuators



2 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	3" [76.2], 4" [101.6], 5" [127], 6" [152.4]
Frame, plate, base	stainless steel
Shaft	steel
Coupling	steel
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Housing	NEMA 4X, IP66
Weight	20 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

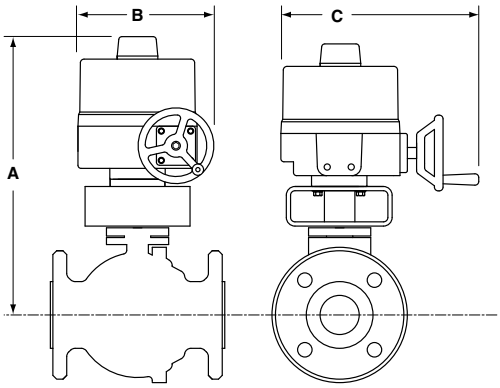
Default/Configuration

The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Suitable Actuators

Linkage	Non-Spring Return
UBSP0012	SY7, SY8, SY9, SY10, SY11, SY12

Dimensions (Inches [mm])

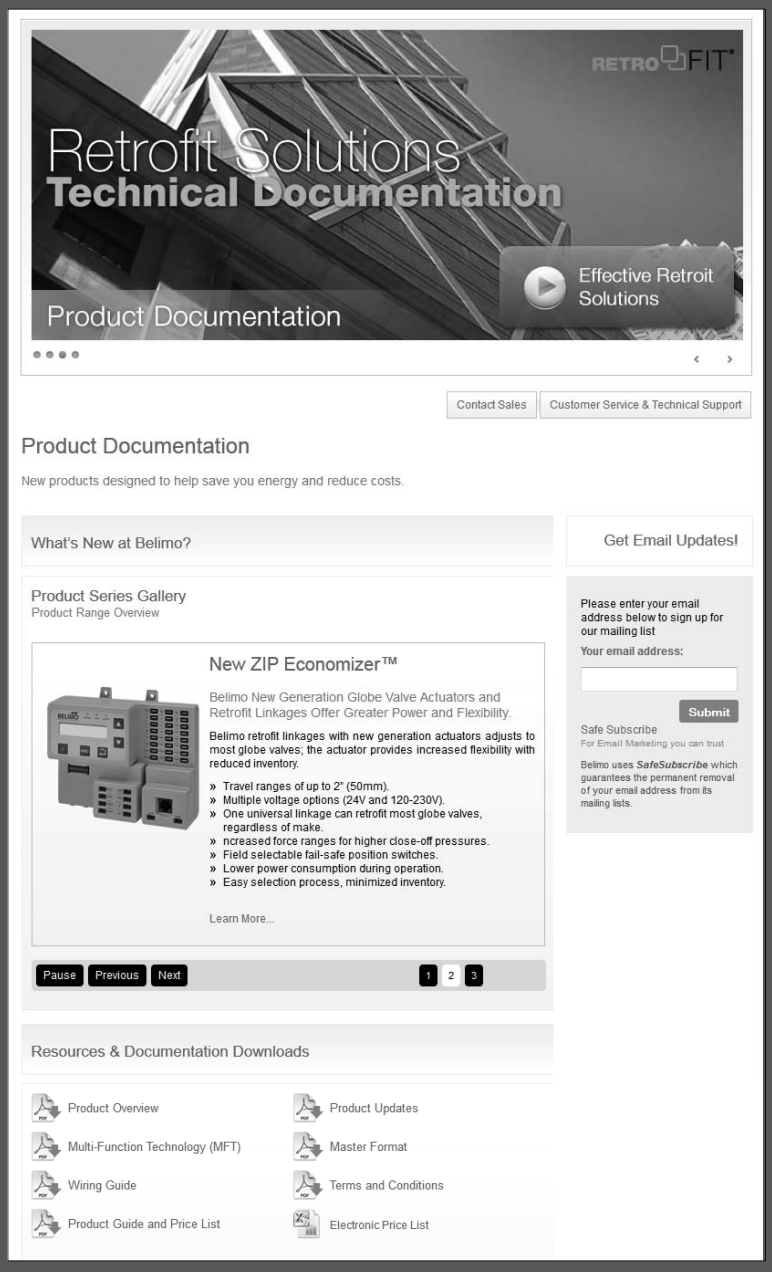


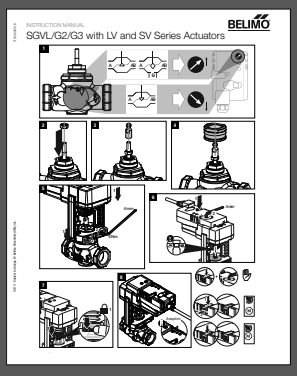
A	B	C
19.7 [499]	14.00 [356]	21.00 [533]

Application Notes

Custom retrofit kits require a filled out retrofit form during or before ordering.

Visit www.belimo.us to find the latest resources for Retrofit Solutions.





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