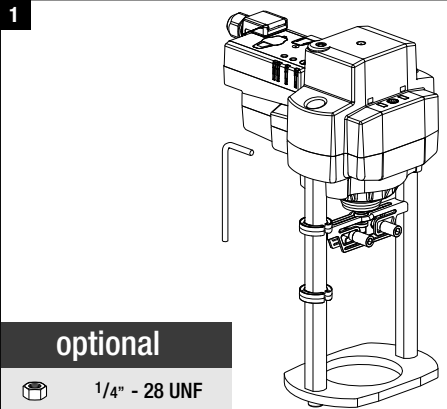
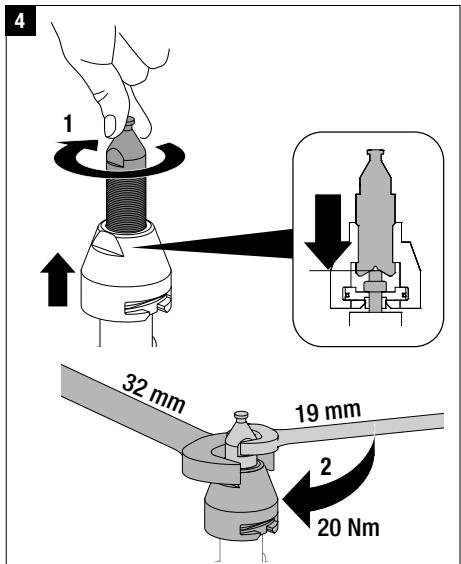
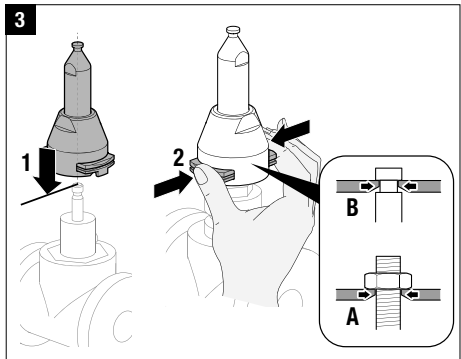
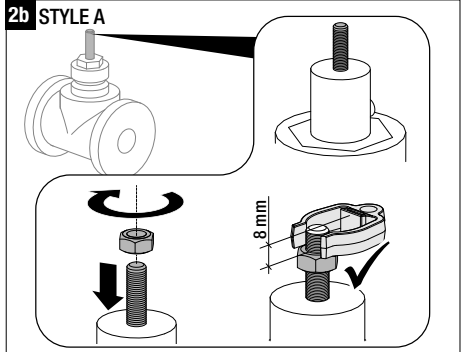
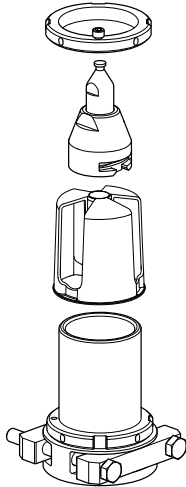
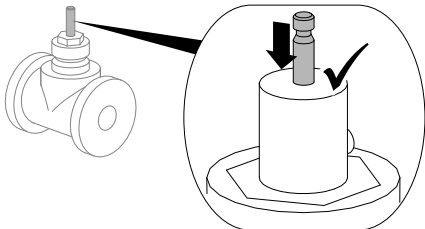


## FGVL Linkage with EV Series Actuators



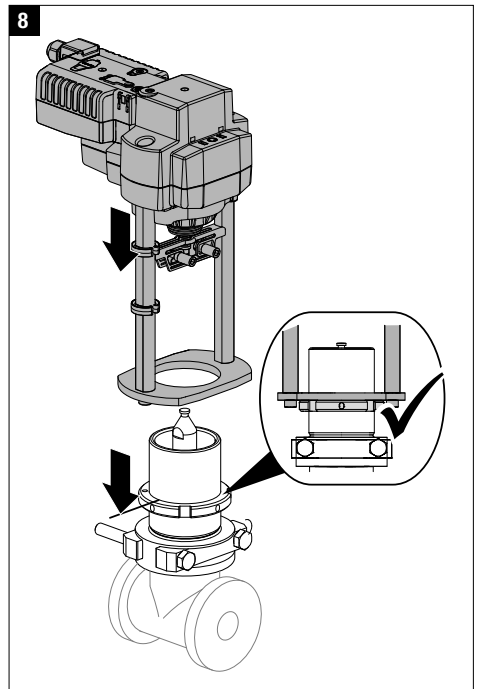
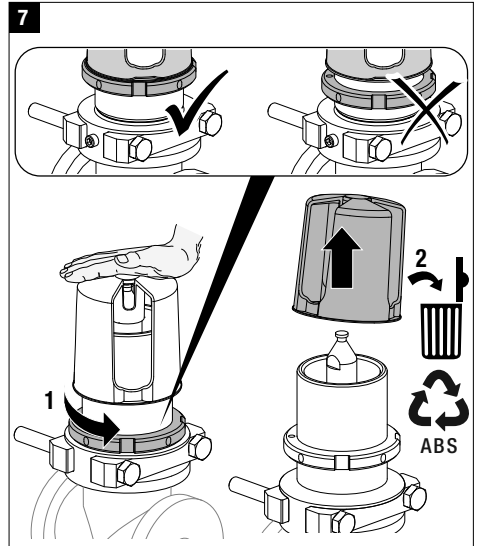
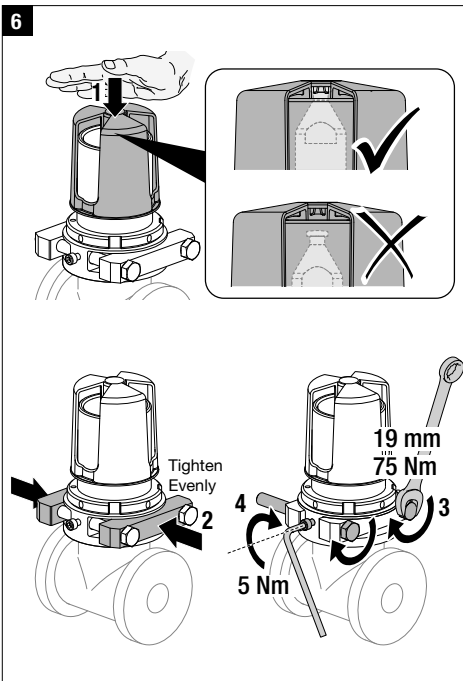
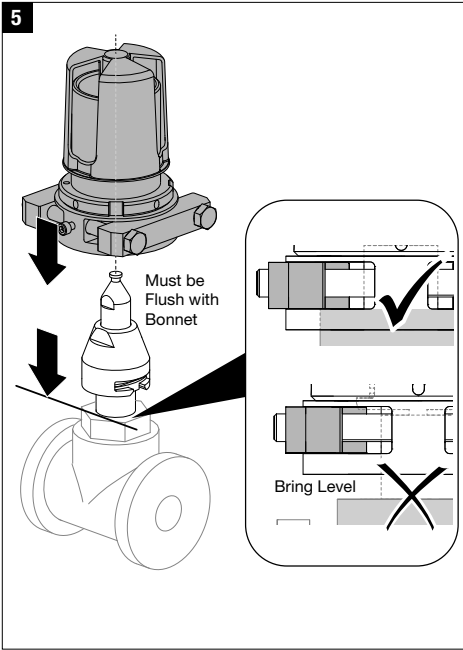
## optional

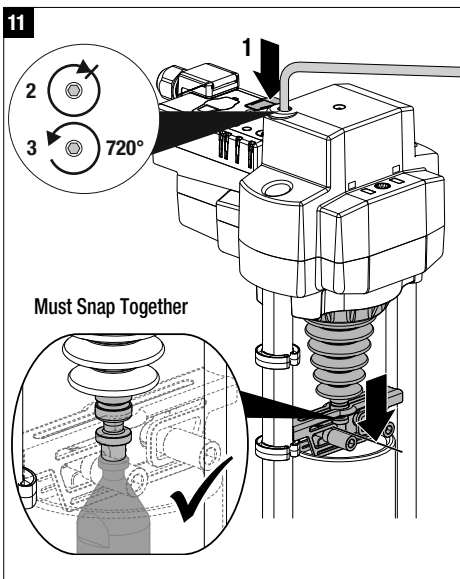
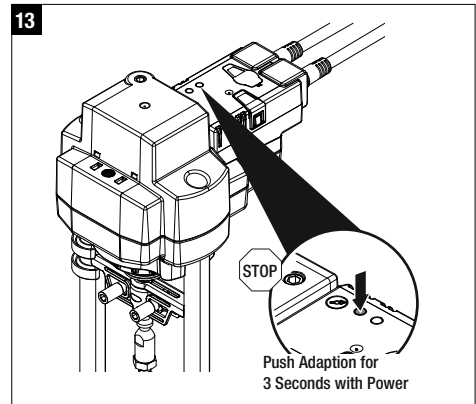
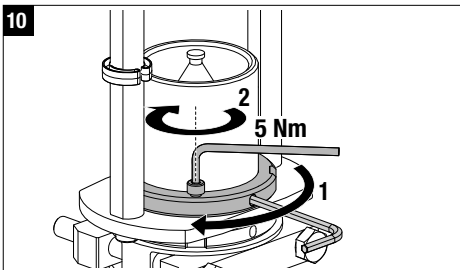
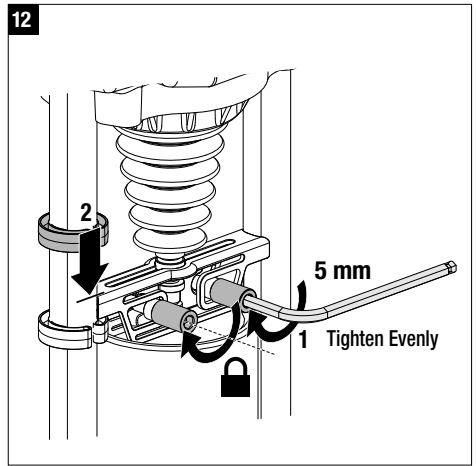
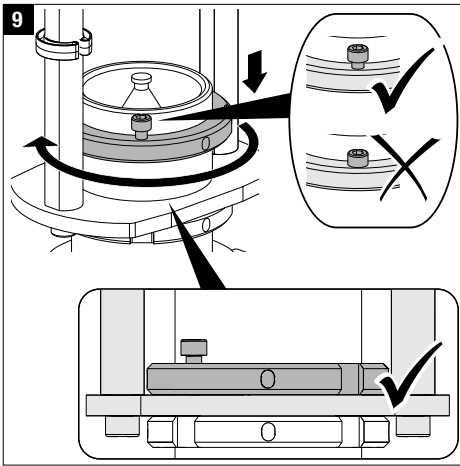
	1/4" - 28 UNF
	1/4"- 32 UNEF
	3/8"- 24 UNF
	7/16" - 20 UNF
	1/2" - 20 UNF
	M8 x 1.25
	M8 x 1
	M10
	M12 x 1.25
	M16 x 2
	M16 x 1.5

**2a** STYLE B

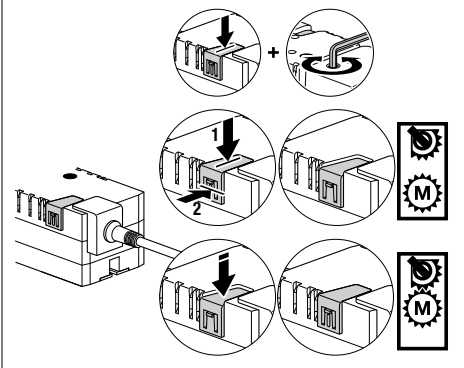
View the installation video for FGVL on Belimo's YouTube channel:  
<https://youtu.be/fqs8XfRPyQw>

QUICK MOUNT VISUAL INSTRUCTION MANUAL  
 FGVL Linkage with EV Series Actuators





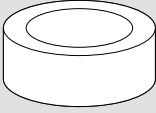
### Optional Lock and Manual Override



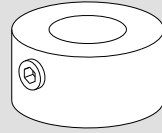
# FGVL Linkage with EV Series Actuators

## Optional

**SIEBE**



**JOHNSON CONTROL**



**SIEBE**

**DN**  
min. / max.

**Temp.**

VB9

65 / 300

2 ... 150 °C

**JOHNSON CONTROLS**

**DN**  
min. / max.

**Temp.**

VG2231 VN

65 / 100

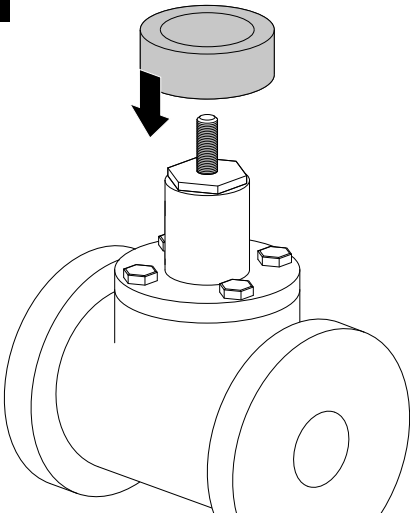
2 ... 150 °C

VG2231 WN

65 / 150

2 ... 150 °C

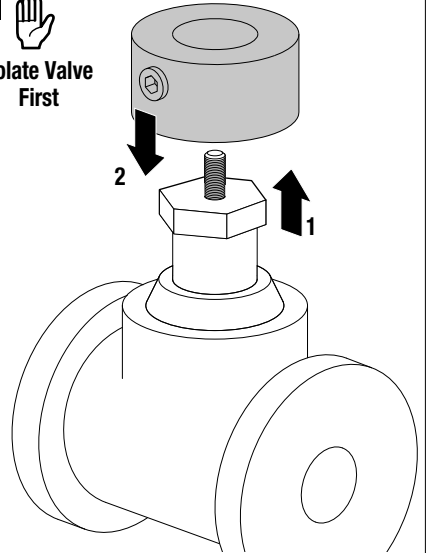
**1**



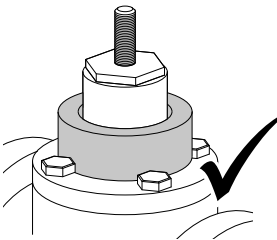
**1**



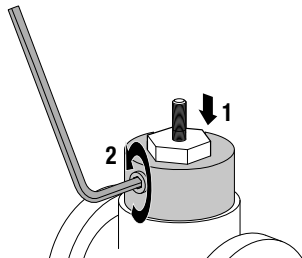
**Isolate Valve First**



**2**



**2**



WIRING DIAGRAMS

<p><b>Non-Spring Return Actuator with -3</b></p> <p><b>On/Off</b></p>	<p><b>24 VAC Transformer</b></p> <p><b>Floating Point</b></p>	<p><b>Non-Spring Return Actuator with -SR</b></p> <p><b>VDC / 4 to 20 mA</b></p>																				
<p><b>On/Off</b></p> <p><b>On/Off</b></p>	<p><b>Floating Point</b></p> <p><b>Floating Point</b></p>	<p><b>Signal Direction</b></p> <p><b>Selector Switches</b></p>																				
<p><b>24 VAC Transformer (AC only)</b></p> <p><b>Triac Sink</b></p>	<p><b>24 VAC Transformer (AC only)</b></p> <p><b>Triac Source</b></p>	<p><b>Selector Switches</b></p>																				
<p><b>Non-Spring Return Actuator with MFT</b></p> <p><b>On/Off</b></p>	<p><b>24 VAC Transformer</b></p> <p><b>Floating Point</b></p>	<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>◆ Meets cULus requirements without the need of an electrical ground connection</li> <li>Ⓐ Actuators with appliance cables are numbered.</li> <li>⚠ Actuators may be connected in parallel. Power consumption and input impedance must be observed.</li> <li>⚠ Actuators may also be powered by 24 VDC.</li> <li>⚠ Only connect common to neg. (-) leg of control circuits.</li> <li>⚠ A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.</li> <li>⚠ Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.</li> <li>⚠ Contact closures A &amp; B also can be triacs. A &amp; B should both be closed for the triac source and open for triac sink.</li> <li>⚠ For triac sink the Common connection of 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.</li> <li>⚠ IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)</li> <li>⚠ Actuators with plenum rated cable do not have numbers on wires; use color codes instead.</li> </ul>																				
<p><b>24 VAC Transformer</b></p> <p><b>VDC / 4 to 20 mA</b></p>	<p><b>24 VAC Transformer (AC Only)</b></p> <p><b>Override Control Min, Mid, Max Positions</b></p> <table border="1"> <thead> <tr> <th>Functions</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Min</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Mid</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Max</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Normal</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table>	Functions	A	B	C	Min	✓	✓	✓	Mid	✓	✓	✓	Max	✓	✓	✓	Normal	✓	✓	✓	<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>◆ Meets cULus requirements without the need of an electrical ground connection</li> <li>Ⓐ Actuators with appliance cables are numbered.</li> <li>⚠ Actuators may be connected in parallel. Power consumption and input impedance must be observed.</li> <li>⚠ Actuators may also be powered by 24 VDC.</li> <li>⚠ Only connect common to neg. (-) leg of control circuits.</li> <li>⚠ A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.</li> <li>⚠ Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.</li> <li>⚠ Contact closures A &amp; B also can be triacs. A &amp; B should both be closed for the triac source and open for triac sink.</li> <li>⚠ For triac sink the Common connection of 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.</li> <li>⚠ IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)</li> <li>⚠ Actuators with plenum rated cable do not have numbers on wires; use color codes instead.</li> </ul>
Functions	A	B	C																			
Min	✓	✓	✓																			
Mid	✓	✓	✓																			
Max	✓	✓	✓																			
Normal	✓	✓	✓																			

- BRN Brown
- BLU Blue
- ORG Orange
- WHI White
- RED Red
- BLK Black
- MAI Maroon
- BLU Azil
- ORG Anaranjado
- WHI Branco
- RED Rojo
- BLK Negro
- MAI Marron
- BLU Bleu
- ORG Orange
- WHI Branco
- RED Rojo
- BLK Negro
- MAI Marrom
- BLU Azul
- ORG Alaranjado
- WHI Cor-de-ros
- RED Vermelho
- BLK Preto

# FGVL Linkage with AVK Series Actuators

**1**

**optional**

- 1/4" - 28 UNF
- 1/4" - 32 UNEF
- 3/8" - 24 UNF
- 7/16" - 20 UNF
- 1/2" - 20 UNF
- M8 x 1.25
- M8 x 1
- M10
- M12 x 1.25
- M16 x 2
- M16 x 1.5

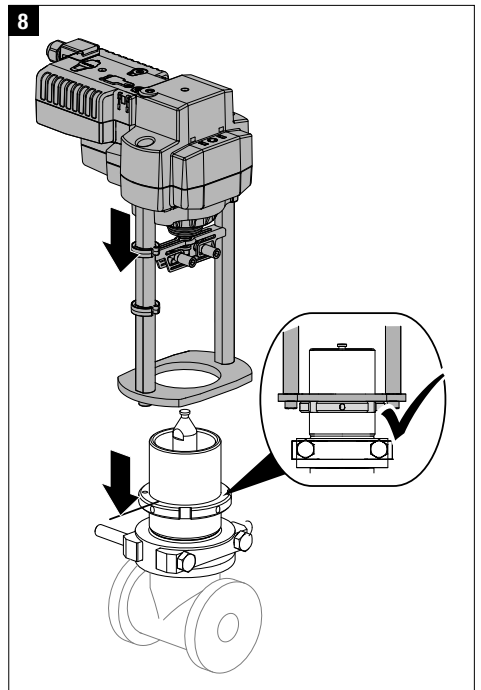
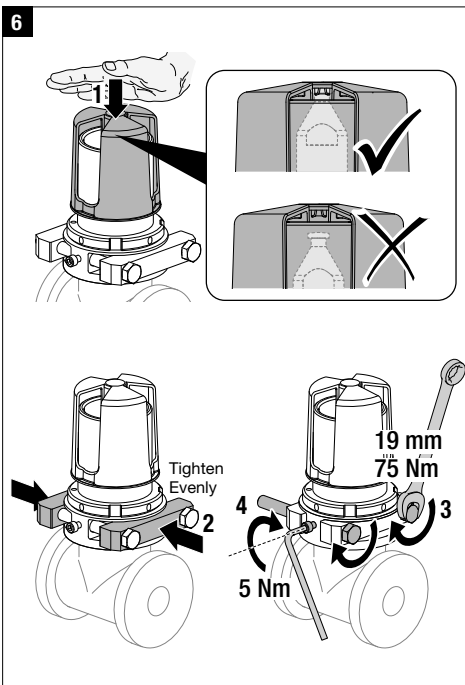
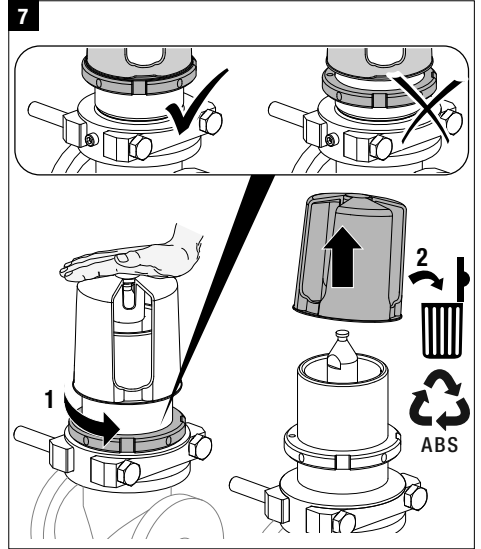
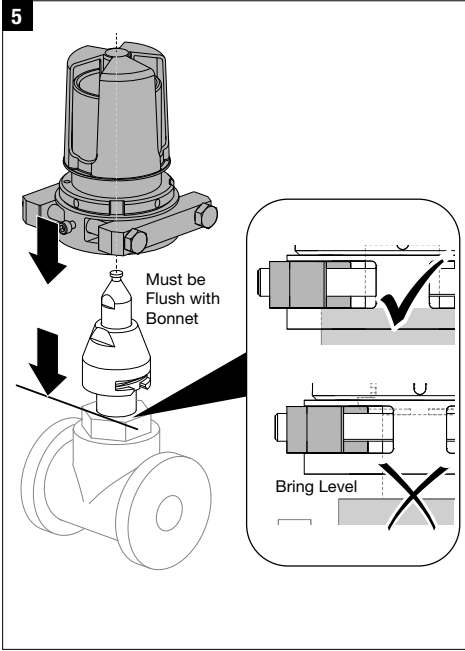
Optional	Siebe	VB9..	page 4
	Johnson Controls	VG2231 VN, VG2231 WN	page 4

**2a STYLE B**

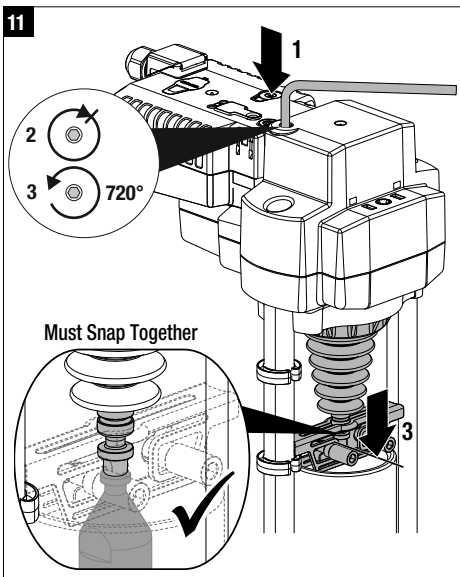
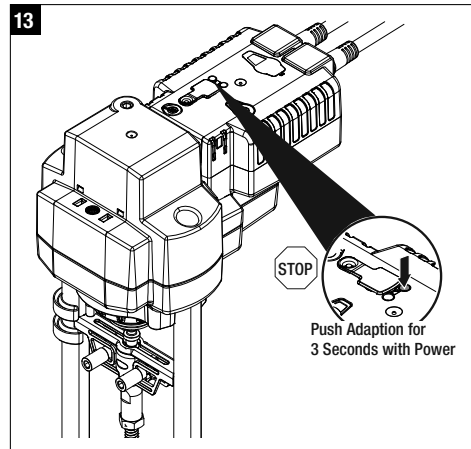
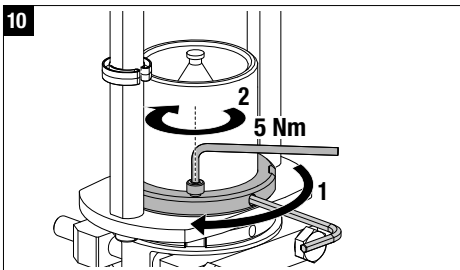
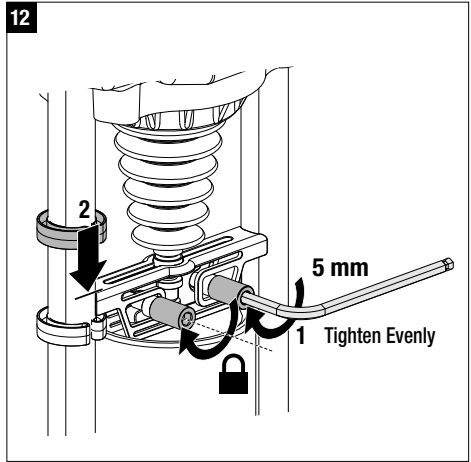
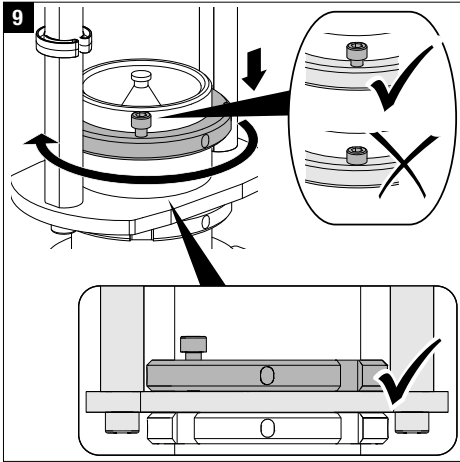
**2b STYLE A**

**3**

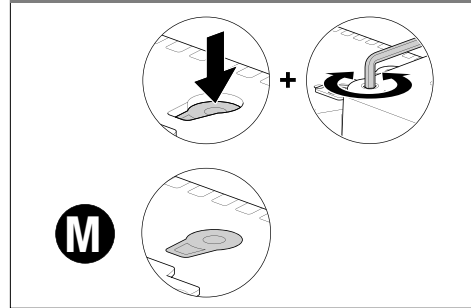
**4**



# FGVL Linkage with AVK Series Actuators

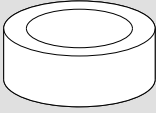


**Optional Manual Override**





**SIEBE**



SIEBE

DN  
min. / max.

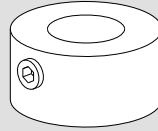
Temp.

VB9

65 / 300

2 ... 150 °C

**JOHNSON CONTROL**



JOHNSON  
CONTROLS

DN  
min. / max.

Temp.

VG2231 VN

65 / 100

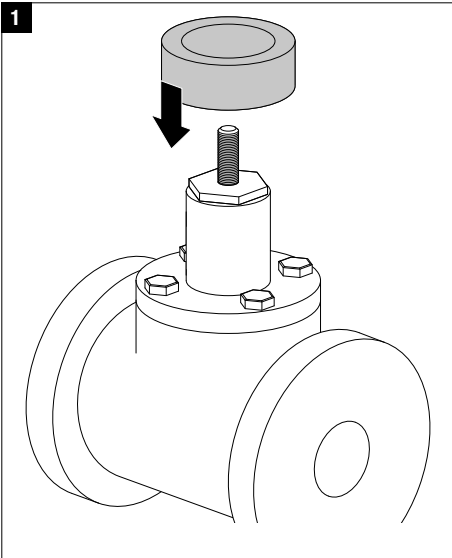
2 ... 150 °C

VG2231 WN

65 / 150

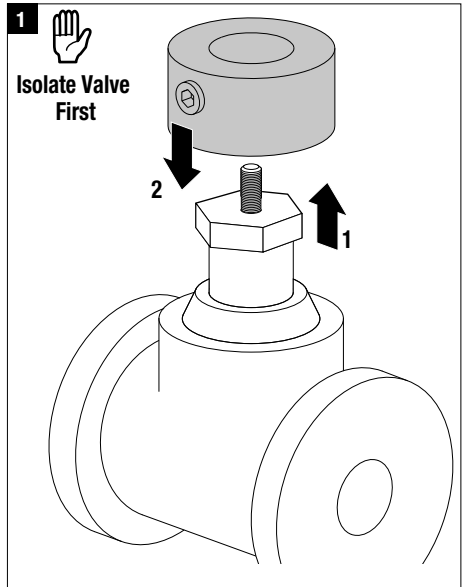
2 ... 150 °C

**1**

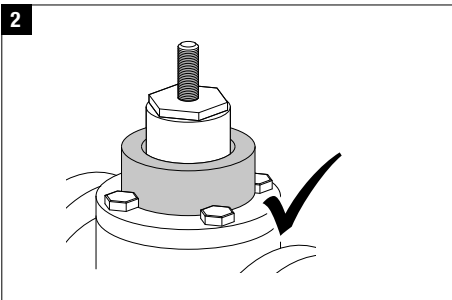


**1**

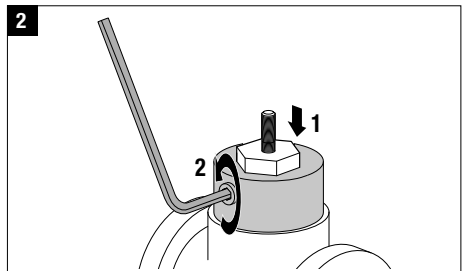
Isolate Valve First



**2**



**2**



# QUICK MOUNT VISUAL INSTRUCTION MANUAL

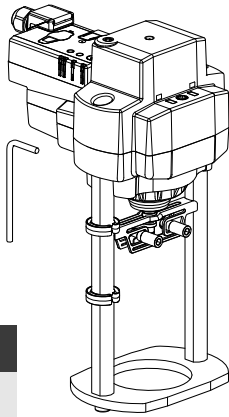
## FGVL Linkage with AVK Series Actuators

### WIRING DIAGRAMS












<p><b>Electronic Fail-Safe Actuator with -3</b></p>																				
<p><b>On/Off</b></p>	<p><b>Floating Point</b></p>																			
<p><b>100 to 240 VAC</b></p>	<p><b>100 to 240 VAC</b></p>	<p><b>Selector Switches</b></p>																		
<p><b>On/Off</b></p>	<p><b>Floating Point</b></p>																			
<p><b>24 VAC Transformer</b></p>	<p><b>24 VAC Transformer</b></p>	<p><b>Triac Sink with Separate Transformer</b></p>																		
<p><b>Triac Sink</b></p>	<p><b>Triac Source</b></p>																			
<p><b>Electronic Fail-Safe Actuator with MFT</b></p>	<p><b>24 VAC Transformer</b></p>	<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>Meets cULus requirements without the need of an electrical ground connection.</li> <li>Actuators with appliance cables are numbered.</li> <li>Actuators may be connected in parallel. Power consumption and input impedance must be observed.</li> <li>Actuators may also be powered by 24 VDC.</li> <li>Only connect common to neg. (-) leg of control circuits.</li> <li>A 500 <math>\Omega</math> resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.</li> <li>Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.</li> <li>Contact closures A &amp; B also can be triacs. A &amp; B should both be closed for the triac source and open for triac sink.</li> <li>For triac sink the Common connection from the actuator must be connected to the Hot connection of the triac sink controller. The actuator internal common reference is not compatible.</li> <li>IM4004 or IM4007 diode. (IM4007 supplied, Belimo Part number 40155)</li> <li>Actuators with plenum rated cable do not have numbers on wires; use color codes instead.</li> </ul>																		
<p><b>VDC / 4 to 20 mA</b></p>	<p><b>Override Control Min, Mid, Max Postions</b></p> <table border="1"> <thead> <tr> <th>Min</th> <th>Mid</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Function</td> <td>2</td> <td>3</td> </tr> <tr> <td>75% -</td> <td>50%</td> <td>25%</td> </tr> <tr> <td>50%</td> <td>25%</td> <td>0%</td> </tr> <tr> <td>25%</td> <td>0%</td> <td>-</td> </tr> <tr> <td>Number</td> <td>Control</td> <td>Feedback</td> </tr> </tbody> </table>	Min	Mid	Max	Function	2	3	75% -	50%	25%	50%	25%	0%	25%	0%	-	Number	Control	Feedback	
Min	Mid	Max																		
Function	2	3																		
75% -	50%	25%																		
50%	25%	0%																		
25%	0%	-																		
Number	Control	Feedback																		

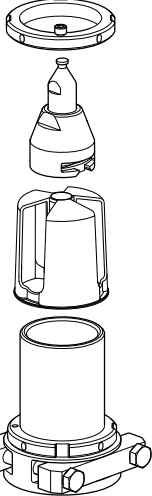
- BRN Brown
- BLU Blue
- ORG Orange
- PNK Pink
- WHI White
- RED Red
- BLK Black
- MAI Maroon
- BUJ Beige
- ANR Anaranjado
- ROS Rosa
- ROU Rouge
- NEI Noir
- VER Vermelho
- BRN Brown
- BLU Blue
- ORG Orange
- PNK Pink
- WHI White
- RED Red
- BLK Black
- MAI Maroon
- BUJ Beige
- ANR Anaranjado
- ROS Rosa
- ROU Rouge
- NEI Noir
- VER Vermelho

**1**

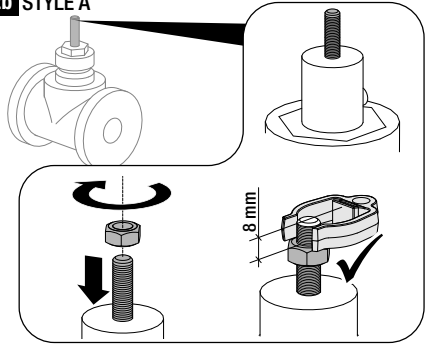


### optional

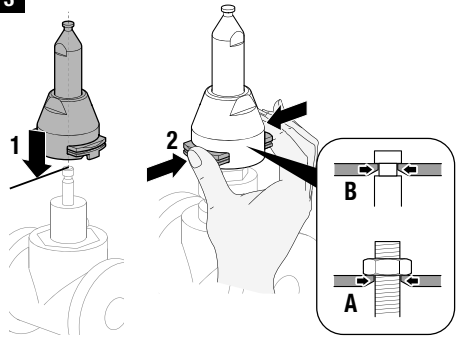
-  1/4" - 28 UNF
-  1/4"- 32 UNEF
-  3/8"- 24 UNF
-  7/16" - 20 UNF
-  1/2" - 20 UNF
-  M8 x 1.25
-  M8 x 1
-  M10
-  M12 x 1.25
-  M16 x 2
-  M16 x 1.5



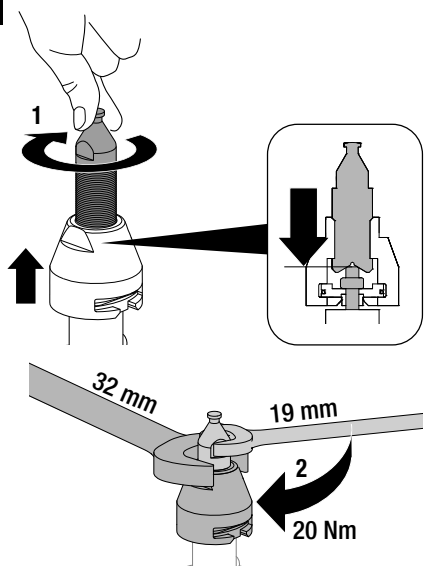
**2b** STYLE A



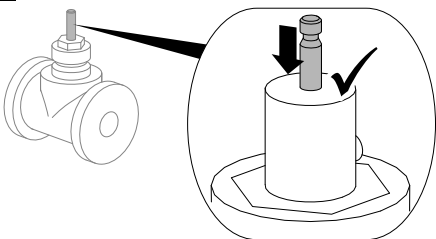
**3**



**4**

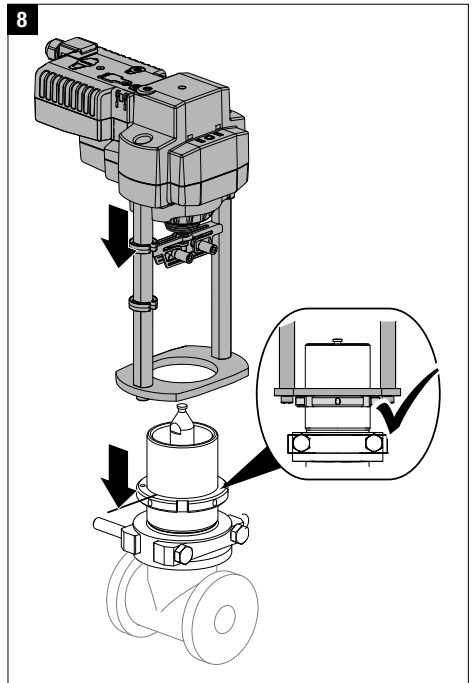
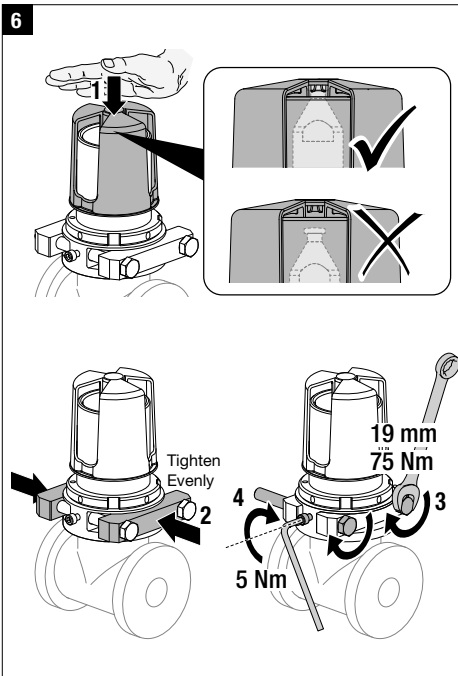
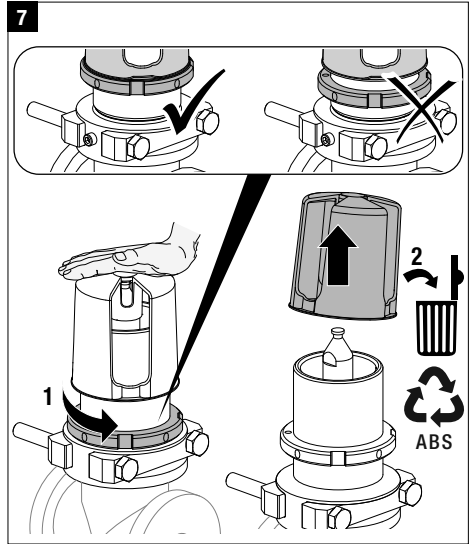
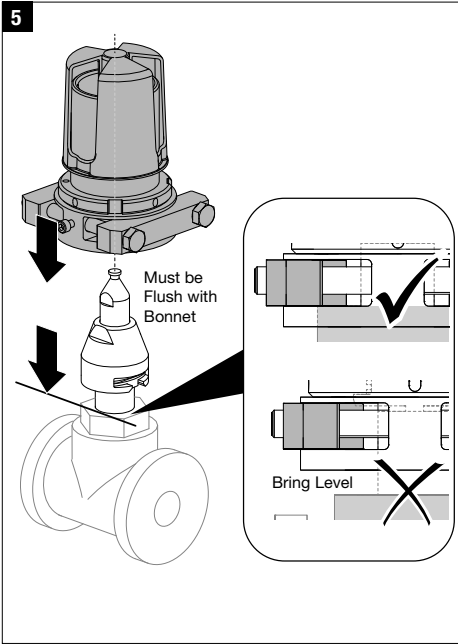


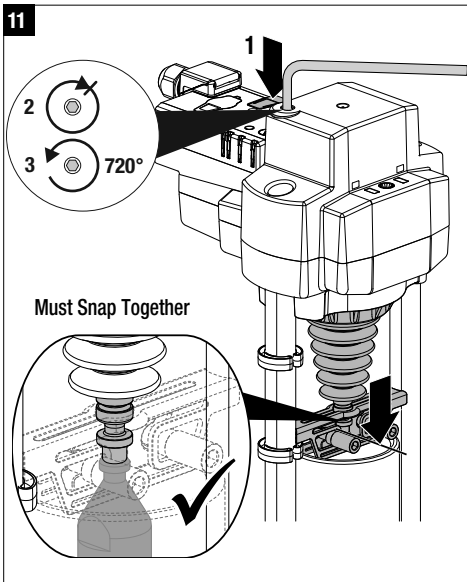
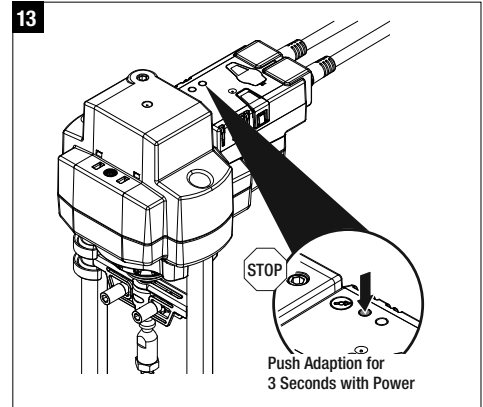
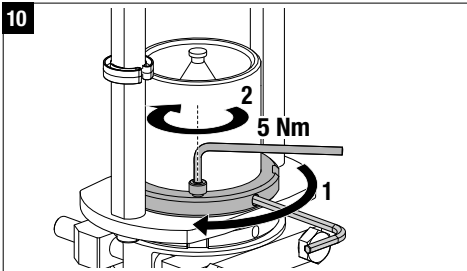
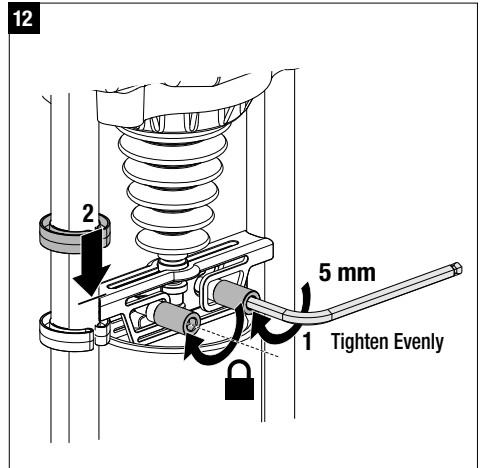
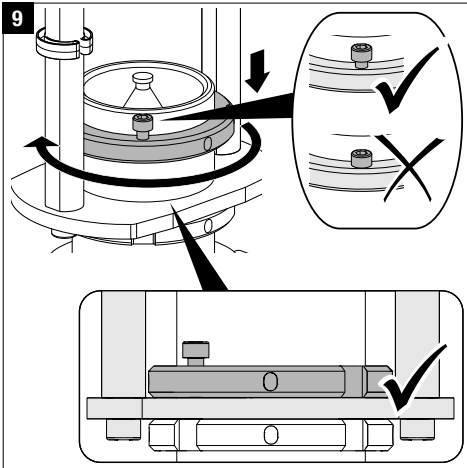
**2a** STYLE B



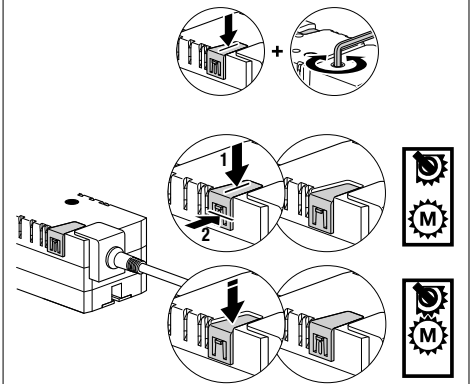
Optional	Siebe	VB9..	page 4
	Johnson Controls	VG2231 VN, VG2231 WN	page 4

QUICK MOUNT VISUAL INSTRUCTION MANUAL  
 FGVL Linkage with RV Series Actuators

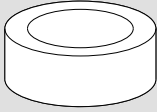




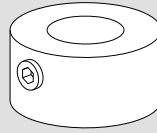
### Optional Lock and Manual Override



**SIEBE**



**JOHNSON CONTROL**



**SIEBE**

**DN**  
min. / max.

**Temp.**

VB9

65 / 300

2 ... 150 °C

**JOHNSON CONTROLS**

**DN**  
min. / max.

**Temp.**

VG2231 VN

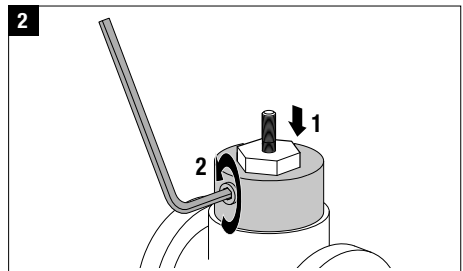
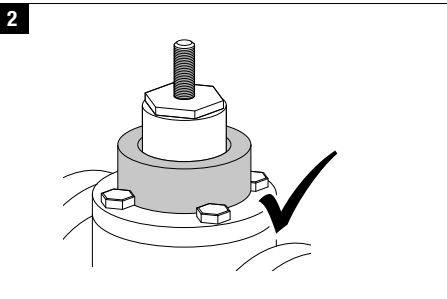
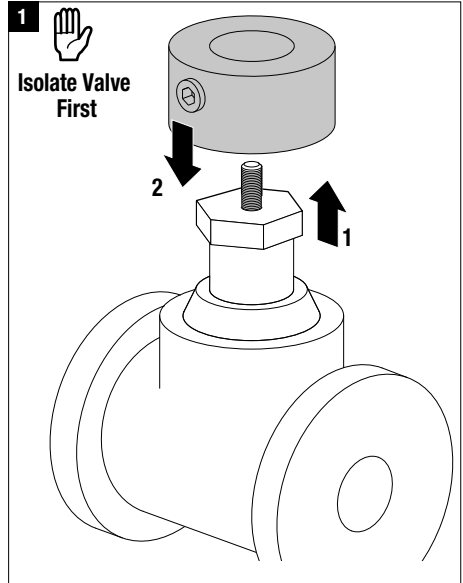
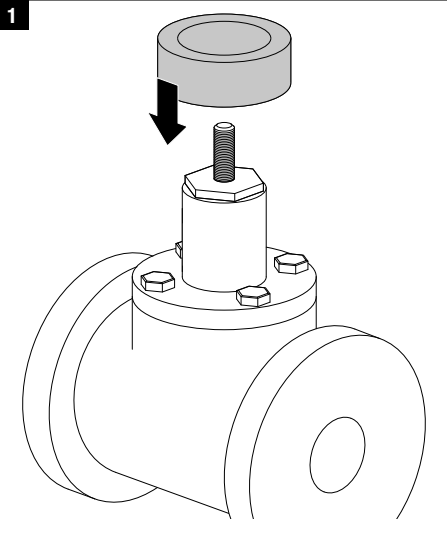
65 / 100

2 ... 150 °C

VG2231 WN

65 / 150

2 ... 150 °C



### WIRING DIAGRAMS

<p><b>Non-Spring Return Actuator with -3</b></p> <p>On/Off</p>	<p><b>Floating Point</b></p> <p>Floating Point</p>	<p><b>Signal Direction</b></p> <p>Signal Direction</p>
<p><b>Non-Spring Return Actuator with MFT</b></p> <p>On/Off</p>	<p><b>Floating Point</b></p> <p>Floating Point</p>	<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>Meets cULus requirements without the need of an electrical ground connection.</li> <li>Actuators with appliance cables are numbered.</li> <li>Actuators may be connected in parallel. Power consumption and input impedance must be observed.</li> <li>Actuators may also be powered by 24 VDC.</li> <li>Only connect common to neg. (-) leg of control circuits.</li> <li>A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.</li> <li>Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.</li> <li>Contact closures A &amp; B also can be triacs. A &amp; B should both be closed for the triac source and open for triac sink.</li> <li>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.</li> <li>IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)</li> <li>Actuators with plenum rated cable do not have numbers on wires; use color codes instead.</li> </ul>
<p><b>VDC / 4 to 20 mA</b></p> <p>VDC / 4 to 20 mA</p>	<p><b>Override Control Min, Mid, Max Postions</b></p> <p>Override Control Min, Mid, Max Postions</p>	<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>Meets cULus requirements without the need of an electrical ground connection.</li> <li>Actuators with appliance cables are numbered.</li> <li>Actuators may be connected in parallel. Power consumption and input impedance must be observed.</li> <li>Actuators may also be powered by 24 VDC.</li> <li>Only connect common to neg. (-) leg of control circuits.</li> <li>A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.</li> <li>Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.</li> <li>Contact closures A &amp; B also can be triacs. A &amp; B should both be closed for the triac source and open for triac sink.</li> <li>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.</li> <li>IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)</li> <li>Actuators with plenum rated cable do not have numbers on wires; use color codes instead.</li> </ul>

- BRN Brown
- MARON Maroon
- BLU Blue
- ORG Orange
- PNK Pink
- WHT White
- RED Red
- BLK Black
- GRY Grey
- NAV Navy
- PREP Preb
- BLU Azul
- GRY Gris
- ORG Anaranjado
- PNK Rosado
- WHT Blanco
- RED Rojo
- BLK Negro
- GRY Verde
- NAV Azul
- PREP Marron
- BLU Azul
- ORG Anaranjado
- PNK Rosado
- WHT Blanco
- RED Rojo
- BLK Negro
- GRY Verde
- NAV Azul
- PREP Marron

# RETRO FIT<sup>®</sup>



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