

Resilient Seat Butterfly Valves



Description Designed to last longer with minimal downtime, Siemens resilient seat butterfly valves are available in sizes from 2 to 24 inches (DN 50 to 600) built with the highest temperature and chemical resistance available in the market. Available in 2-way and 3-way configurations, 2” through 20” butterfly valves are lug style. 24” valves are double-flanged. All have ANSI 125 rated bodies. 3-way valves can be used for mixing and diverting applications and are available in multiple configurations to match job site needs. These valves are compatible with Siemens A-Series Industrial Electric, and OpenAir® Commercial Electric actuators. A-Series actuators are fail-in-place and available for two-position (On/Off) and Modulating control. OpenAir actuators are available in both spring return and non-spring return variants for two-position (On/Off), Floating and Modulating control. Resilient seat butterfly valves provide bubble-tight shut off (leakage class better than ANSI Class VI) up to 175 PSI (Full Cut) and 50 PSI (Under Cut) requirements.

- Features**
- High purity, peroxide cured, high temperature EPDM seats to ensure continuous operation at 250°F (121°C)
 - Corrosion-resistant, 316 Stainless Steel disc (2” through 12”)
 - Corrosion-resistant Electroless Nickel Plated Ductile Iron (14” through 24”)
 - Internal disc-to-stem connection to eliminate leakage through the stem
 - Wide variety of direct mount actuators.
 - Full 175 PSI and 50 PSI close-off pressure ratings available.

Application Siemens Resilient Seat butterfly valves are suitable for standard temperature (intermittent 250°F) or high temperature applications (continuous 250°F). Standard temperature assemblies can be field upgraded to high temperature at any time by updating the actuator. There is no need to remove the valve from the piping. These valves can be used for isolation purposes or as modulating valves. Siemens butterfly valves are optimized for use in Chilled Water, Hot Water and Open Loop Cooling Tower applications.

**Caution and
Warning Notations**

| | | |
|-----------------|--|---|
| WARNING: | | Personal injury or loss of life may occur if you do not perform a procedure as specified. |
| CAUTION: | | Equipment damage may occur if you do not perform a procedure as specified. |

Product Numbers See Table 6.

Manual Operators

Valve assemblies with manual operators can be used for standard temperature (Intermittent 250°F) and high temperature (continuous 250°F) applications.

Table 1. 2-Way Valves.

| Description | Valve Size in Inches | Valve with Manual Operator | |
|---------------|----------------------|----------------------------|-----------|
| | | Full Cut | Under Cut |
| Lever | 2 | B202FM | N/A |
| | 2.5 | B225FM | N/A |
| | 3 | B203FM | N/A |
| | 4 | B204FM | B204UM |
| | 5 | B205FM | B205UM |
| | 6 | B206FM | B206UM |
| Gear Operator | 8 | B208FM | B208UM |
| | 10 | B210FM | B210UM |
| | 12 | B212FM | B212UM |
| | 14 | B214FM | B214UM |
| | 16 | B216FM | B216UM |
| | 18 | B218FM | B218UM |
| | 20 | B220FM | B220UM |
| | 24 | B224FM | B224UM |

| | | |
|-------------------------|-----------|--|
| Manual Operators | 599-10091 | Manual Operator (Lever) for 2", 2.5", and 3" valves |
| | 599-10092 | Manual Operator (Lever) for 4" valves |
| | 599-10093 | Manual Operator (lever) for 5" and 6" valves |
| | 593-10094 | Manual Operator (Gearbox) for 8", 10", and 12" valves |
| | 593-10095 | Manual Operator (Gearbox) for 14" and 16" valves |
| | 599-10096 | Manual Operator (Gearbox) for 18", 20", and 24" valves |

| | | |
|-------------------------|-------------|---|
| Accessories/Kits | 599-10083 | Bracket for GCA/GIB 2-way, 2" to 4" valves |
| | 599-10084 | Bracket for GCA/GIB 2-way valves, dual actuators |
| | 599-10085 | Bracket for GCA/GIB 2-way, 5" under cut valves |
| | 599-10086 | Bracket for GCA/GIB 3-way valves |
| | 599-10087 | Bracket for GCA/GIB 3-way valves dual 2" and 3" actuators |
| | 599-10089 | Bracket for GCA/GIB 3-way, 4" under cut valves |
| | 599-10090 | Bracket for GCA/GIB 3-way 5", 6" under cut valves, dual actuators |
| | 599-10097LT | 120V Servo NXT Kit A-Series 600 to 6.5K lb-in actuators |
| | 599-10097HT | 120V Servo NXT Kit for A-Series 13K and 18K lb-in actuators |
| | 599-10098 | 24V Servo NXT Kit A-Series 600 to 5K lb-in actuators |

Flow Direction

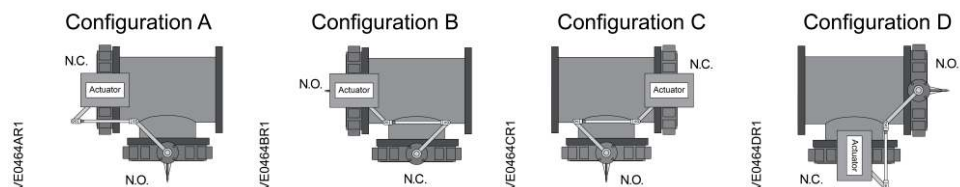


Figure 1. Typical Three-Way Valve Configurations.

**Flow Direction,
 Continued**

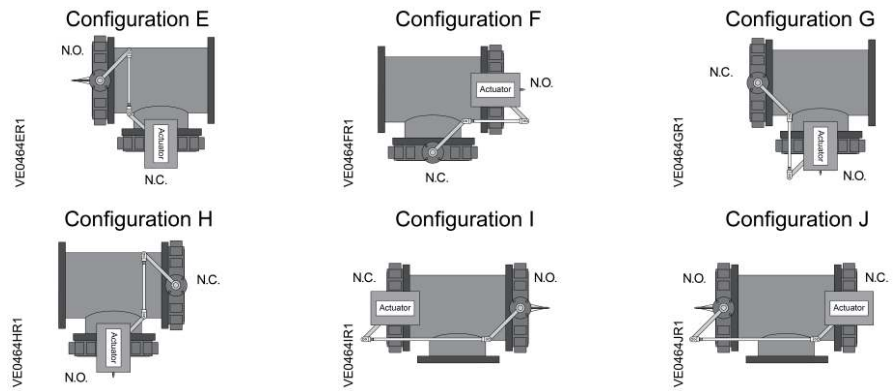


Figure 2. Alternate Three-Way Valve Configurations.

| | | |
|-----------------------|---|---|
| Specifications | Body | ASTM A126 Class A Cast Iron |
| | Disc for sizes 2"-12" | 316 Stainless Steel |
| Material | Disc for sizes 14" and above | Electroless Nickel Plated Ductile Iron |
| | Seat | High purity, peroxide-cured, high temperature EPDM |
| | Stem | 416 Stainless Steel |
| | Stem Bearing | Heavy Duty Acetal |
| | Packing | Nitrile Butadiene Rubber (NBR) |
| | Tee | Ductile Iron (3-Way valves only) |
| Operating | Body cold working pressure rating | 250 psi (17.2 bar) |
| | Media temperature | -20 to 250°F [continuous] (-28 to 121°C) |
| | Controlled medium | Hot water, chilled water, condenser water up to 50% Glycol |
| | Flow characteristic | Modified equal percentage |
| | Flow Coefficients | Table 2. |
| | Close-off | 2" to 12", 175 PSI, full cut 14" to 24", 150 PSI, full cut 50 PSI dead end service, full cut 50 PSI, all under cut discs |
| | Angle of rotation | 0° to 90° |
| | Leakage | Bubble tight at 175 PSI close-off (better than ANSI class VI) |
| | Maximum fluid velocity | 30 feet/second (9 m/second) |
| | Max recommended differential pressure with flow | 29 psi (2 bar) |

Specifications, Continued

| | | | |
|----------------------|--|--------------------------------------|--|
| Size range | 2-inch through 24-inch (DN 50 to 600) | | |
| Body style | Lug (2" through 20") or double flange (24"), 2-way and 3-way, ANSI 125 rated | | |
| Miscellaneous | Dimensions, service envelope, weight | See Tables 5 and 6 and Figures 2 - 5 | |
| | Agency Certification (for actuators) | UL | Meets UL 873 |
| | | cUL | Certified to Canadian Standard C22.2 No. 24.93 |
| | | CE | European standard |
| | Agency Certification (for valves) | SIL | |

NOTE:

These performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult your local Siemens office. Siemens, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

Table 2. Cv at Opening Angles, Two-Way Valves.

| Valve Size (Inches) | Disc Opening Angle | | | | | | | | |
|---------------------|--------------------|-------|-------|-------|-------|--------|--------|--------|--------|
| | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 2 | 1 | 7 | 16 | 27 | 43 | 61 | 84 | 114 | 144 |
| 2.5 | 1.5 | 11 | 24 | 43 | 67 | 107 | 163 | 223 | 282 |
| 3 | 2 | 15 | 35 | 61 | 96 | 154 | 267 | 364 | 461 |
| 4 | 3 | 27 | 62 | 109 | 171 | 274 | 496 | 701 | 841 |
| 5 | 5 | 43 | 98 | 170 | 268 | 428 | 775 | 1,146 | 1,376 |
| 6 | 6 | 56 | 129 | 225 | 354 | 567 | 1,025 | 1,542 | 1,850 |
| 8 | 12 | 102 | 241 | 421 | 680 | 1,081 | 1,862 | 2,842 | 3,316 |
| 10 | 19 | 162 | 382 | 667 | 1,076 | 1,710 | 2,948 | 4,525 | 5,430 |
| 12 | 27 | 353 | 555 | 1,005 | 1,594 | 2,563 | 4,393 | 6,731 | 8,077 |
| 14 | 34 | 299 | 756 | 1,320 | 2,149 | 3,384 | 5,939 | 9,974 | 10,538 |
| 16 | 45 | 397 | 1,001 | 1,749 | 2,847 | 4,483 | 7,867 | 11,761 | 13,966 |
| 18 | 58 | 507 | 1,281 | 2,237 | 3,643 | 5,736 | 10,062 | 14,496 | 17,214 |
| 20 | 72 | 632 | 1,595 | 2,786 | 4,536 | 7,144 | 12,535 | 1,812 | 22,339 |
| 24 | 259 | 1,028 | 2,387 | 4,244 | 6,962 | 11,040 | 18,235 | 27,186 | 33,154 |

Ordering

Order butterfly valves, actuators, manual operators and mounting kits as assemblies or separately.

Time-Out Function

To prolong Commercial actuator life when using Floating Control (3 Point), a controller with a "time-out" function must be used. This function removes the actuator drive signal after the signal has been on for a pre-defined time.

Actuator Product Numbers**Table 3. A-Series Industrial Electric Actuators, 24V.**

| Product Number | Operating Mode | Voltage 50/60 Hz | Torque | | 90° Stroke Time* | Current Draw (Amps) | |
|----------------|----------------|------------------|---------|------|--------------------------|---------------------|--------------|
| | | | (lb-in) | (Nm) | | Full Load | Locked Rotor |
| A126.600 | On/Off | 24 Vac/dc | 600 | 68 | 60 sec. AC 40 sec. DC | 1.80 | -- |
| A126.2K | | | 2,000 | 226 | 60 sec. | 2.00 | -- |
| A126.5K | | 24 Vac | 5,000 | 565 | 60 sec. | 4.00 | -- |
| A166.600 | Modulating | 24 Vac | 600 | 68 | 60 sec. | 1.80 | -- |
| A166.2K | | | 2,000 | 226 | 60 sec. | 2.00 | -- |
| A166.5K | | | 5,000 | 565 | 60 sec. | 4.00 | -- |

* Operating times shown are with 60 Hz power supply. Actuators with 50 Hz power supply will be 20% slower.

Table 4. A-Series Industrial Electric Actuators, 120V.

| Product Number | Operating Mode | Voltage 50/60 Hz | Torque | | 90° Stroke Time* | Current Draw (Amps) | |
|----------------|----------------|------------------|---------|-------|------------------|---------------------|--------------|
| | | | (lb-in) | (Nm) | | Full Load | Locked Rotor |
| A226.600 | On/Off | 120 Vac | 600 | 68 | 30 sec. | 0.80 | 1.00 |
| A226.1K | | | 1,200 | 135 | 30 sec. | 0.78 | 2.10 |
| A226.2K | | | 2,000 | 226 | 30 sec. | 1.00 | 2.10 |
| A226.3K | | | 3,000 | 339 | 30 sec. | 1.20 | 3.00 |
| A226.5K | | | 5,000 | 565 | 30 sec. | 1.60 | 3.00 |
| A226.6K | | | 6,500 | 734 | 30 sec. | 2.30 | 3.10 |
| A226.13K | | | 13,000 | 1,470 | 110 sec. | 2.30 | 3.10 |
| A226.18K | | | 18,000 | 2,034 | 110 sec. | 2.50 | 3.10 |
| A226.21K | | | 21,300 | 2,406 | 60 sec. | 6.50 | 14.00 |
| A226.41K | | | 40,680 | 4,596 | 60 sec. | 6.50 | 14.00 |
| A266.600 | Modulating | 120 Vac | 600 | 68 | 30 sec. | 0.80 | 1.00 |
| A266.1K | | | 1,200 | 135 | 30 sec. | 0.78 | 2.10 |
| A266.2K | | | 2,000 | 226 | 30 sec. | 1.00 | 2.10 |
| A266.3K | | | 3,000 | 339 | 30 sec. | 1.20 | 3.00 |
| A266.5K | | | 5,000 | 565 | 30 sec. | 1.60 | 3.00 |
| A266.6K | | | 6,500 | 734 | 30 sec. | 2.30 | 3.10 |
| A266.13K | | | 13,000 | 1,470 | 110 sec. | 2.30 | 3.10 |
| A266.18K | | | 18,000 | 2,034 | 110 sec. | 2.50 | 3.10 |
| A266.21K | | | 21,300 | 2,406 | 60 sec. | 6.50 | 14.00 |
| A266.41K | | | 40,680 | 4,496 | 60 sec. | 6.50 | 14.00 |

* Operating times shown are with 60 Hz power supply. Actuators with 50 Hz power supply will be 20% slower.

Table 5. Commercial Actuators.

| Product Number | Operating Mode | Voltage 50/60 Hz | Torque | | 90° Stroke Time (Seconds) | Current Draw (Amps) | |
|----------------|----------------|------------------|---------|------|----------------------------|---------------------|--------------|
| | | | (lb-in) | (Nm) | | Full Load | Locked Rotor |
| GCA121.3U | On/Off | 24 Vac/dc | 160 | 18 | 90 (15 with Spring Return) | 7 Va | 5 Va |
| GCA126.3U | | | | | | 7 Va | 5 Va |
| GCA161.3U | Modulating | | | | | 7 Va | 5 Va |
| GCA221.3U | On/Off | 120 Vac | 8 Va | 6 Va | | | |
| GIB131.3U | Floating | 24 Vac | 310 | 35 | 125 | 7 Va | 7 Va* |
| GIB161.3U | Modulating | | | | | 7 Va | 7 Va* |

***CAUTION:**

It is recommended to switch off the power during two-position control when the actuator has reached the open or closed position to enhance life span and reduce power consumption.

Ordering a Valve/Actuator Assembly

Use the product numbers in the following table to order a valve or a valve and actuator assembly. The valve product number consists of the type, action, valve size, disc type, and valve configuration.

To order an assembly, add a (-) after the valve product number and then choose the application, actuator, voltage, control signal, end switches followed by a separator (.) and the actuator torque.

Table 6. Product Numbers.

| Sample: | B | 2 | 02 | F | C | - | S | A | 1 | 2 | 6 | . | 600 |
|---|---|---|----|---|---|---|---|---|---|---|---|---|-----|
| Valve Type: Butterfly | | | | | | | | | | | | | |
| Action: 2 = 2-Way 3 = 3-Way | | | | | | | | | | | | | |
| Valve Size: 02=2", 25=2.5", 03=3", 04=4", 05=5", 06=6", 08=8" 10=10", 12=12", 14=14", 16=16", 18=18", 20=20", 24=24" | | | | | | | | | | | | | |
| Disc Type: F = Full Cut U = Under Cut | | | | | | | | | | | | | |
| Valve Configuration *: 3-Way - A, B, C, D 2-Way O = Normally Open C = Normally Closed M = Valve assembly with manual operator | | | | | | | | | | | | | |
| Denotes Assembly | | | | | | | | | | | | | |
| Application: S = Standard Temp – Intermittent 250°F Operation H = High Temperature – Continuous 250°F Operation Blank = Siemens Commercial Actuator | | | | | | | | | | | | | |
| Actuator: A = Industrial Actuator GCA = Siemens SR Commercial Actuator GIB = Siemens NSR Commercial Actuator | | | | | | | | | | | | | |
| Voltage: 1 = 24V 2 = 120V | | | | | | | | | | | | | |
| Control Signal: 2 = 2-Position 3 = Floating (Commercial Actuators only) 6 = Modulating (0-10V) | | | | | | | | | | | | | |
| End Switches: 1 = No switches 6 = Switches | | | | | | | | | | | | | |
| Separator | | | | | | | | | | | | | |
| Industrial Actuator Torque (lb-in): 600=600, 1K=1200, 2K=2000, 3K=3000, 5K=5000, 6K=6500, 13K=13000, 18K=18000, 21K=21300, 41K=40680, 3U = Shaft adapter with 3-foot cable (Commercial Actuators only) | | | | | | | | | | | | | |

* See Figure 1 and Figure 2.

Table 7. Two-Way, Full Cut, 24V with Industrial Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | 0 to 10V/4 to 20 mA | | | Two-Position | | |
|-------------------|-------------------|----------------------|----------------------|------------------|----------------------|----------------------|------------------|
| | | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number | |
| High Temp | Standard Temp | | High Temp | Standard Temp | | | |
| 2 | B202F | A166.600 | B202Fx-HA166.600 | B202Fx-SA166.600 | A126.600 | B202Fx-HA126.600 | B202Fx-SA126.600 |
| 2.5 | B225F | | B225Fx-HA166.600 | B225Fx-SA166.600 | | B225Fx-HA126.600 | B225Fx-SA126.600 |
| 3 | B203F | | B203Fx-HA166.600 | B203Fx-SA166.600 | | B203Fx-HA126.600 | B203Fx-SA126.600 |
| 4 | B204F | | B204Fx-HA166.600 | B204Fx-SA166.600 | | B204Fx-HA126.600 | B204Fx-SA126.600 |
| 5 | B205F | A166.600 | -- | B205Fx-SA166.600 | A126.600 | -- | B205Fx-SA126.600 |
| | | A166.2K | B205Fx-HA166.2K | -- | A126.2K | B205Fx-HA126.2K | -- |
| 6 | B206F | A166.2K | B206Fx-HA166.2K | -- | A126.2K | B206Fx-HA126.2K | -- |
| | | A166.600 | -- | B206Fx-SA166.600 | A126.600 | -- | B206Fx-SA126.600 |
| 8 | B208F | A166.2K | B208Fx-HA166.2K | B208Fx-SA166.2K | A126.2K | B208Fx-HA126.2K | B208Fx-SA126.2K |
| 10 | B210F | A166.5K | B210Fx-HA166.5K | B210Fx-SA166.5K | A126.5K | B210Fx-HA126.5K | B210Fx-SA126.5K |

x = O (Normally Open) or C (Normally Closed)

Table 8. Two-Way, Under Cut, 24V with Industrial Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | 0 to 10V/4 to 20 mA | | | 2-Position | | |
|-------------------|-------------------|----------------------|----------------------|------------------|----------------------|----------------------|------------------|
| | | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number | |
| High Temp | Standard Temp | | High Temp | Standard Temp | | | |
| 4 | B204U | A166.600 | B204Ux-HA166.600 | B204Ux-SA166.600 | A126.600 | B204Ux-HA126.600 | B204Ux-SA126.600 |
| 5 | B205U | | B205Ux-HA166.600 | B205Ux-SA166.600 | | B205Ux-HA126.600 | B205Ux-SA126.600 |
| 6 | B206U | | B206Ux-HA166.600 | B206Ux-SA166.600 | | B206Ux-HA126.600 | B206Ux-SA126.600 |
| 8 | B208U | A166.2K | B208Ux-HA166.2K | B208Ux-SA166.2K | A126.2K | B208Ux-HA126.2K | B208Ux-SA126.2K |
| 10 | B210U | | B210Ux-HA166.2K | B210Ux-SA166.2K | | B210Ux-HA126.2K | B210Ux-SA126.2K |
| 12 | B212U | A166.5K | B212Ux-HA166.5K | B212Ux-SA166.5K | A126.5K | B212Ux-HA126.5K | B212Ux-SA126.5K |
| 14 | B214U | | B214Ux-HA166.5K | B214Ux-SA166.5K | | B214Ux-HA126.5K | B214Ux-SA126.5K |

x = O (Normally Open) or C (Normally Closed)

Table 9. Three-Way, Full Cut Valves with 24V Industrial Actuators Assemblies.

| Valve Size (inch) | 0 to 10V/4 to 20 mA | | | 2-Position | | |
|-------------------|---------------------|----------------------|----------------------|------------|----------------------|----------------------|
| | 3-Way, Full Cut | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number |
| High Temp | | | Standard Temp | High Temp | | Standard Temp |
| 2 | A166.600 | B302Fx-HA166.600 | B302Fx-SA166.600 | A126.600 | B302Fx-HA126.600 | B302Fx-SA126.600 |
| 2.5 | | B325Fx-HA166.600 | B325Fx-SA166.600 | | B325Fx-HA126.600 | B325Fx-SA126.600 |
| 3 | | B303Fx-HA166.600 | B303Fx-SA166.600 | | B303Fx-HA126.600 | B303Fx-SA126.600 |
| 4 | | B304Fx-HA166.600 | B304Fx-SA166.600 | | B304Fx-HA126.600 | B304Fx-SA126.600 |
| 5 | | B305Fx-HA166.600 | B305Fx-SA166.600 | | B305Fx-HA126.600 | B305Fx-SA126.600 |
| 6 | | B306Fx-HA166.600 | B306Fx-SA166.2K | | B306Fx-HA126.600 | B306Fx-SA126.2K |
| 8 | A166.2K | B308Fx-HA166.2K | B308Fx-SA166.2K | A126.2K | B308Fx-HA126.2K | B308Fx-SA126.2K |
| 10 | A166.5K | B310Fx-HA166.5K | B310Fx-SA166.5K | A126.5K | B310Fx-HA126.5K | B310Fx-SA126.5K |

x= A, B, C or D (See Figure 1.)

Table 10. Three-Way Under Cut Valves with 24V Industrial Actuators Assemblies.

| Valve Size (inch) | 0 to 10V/4 to 20 mA | | | 2-Position | | |
|-------------------|---------------------|----------------------|----------------------|------------|----------------------|----------------------|
| | 3-Way, Under Cut | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number |
| High Temp | | | Standard Temp | High Temp | | Standard Temp |
| 4 | A166.600 | B304Ux-HA166.600 | B304Ux-SA166.600 | A126.600 | B304Ux-HA126.600 | B304Ux-SA126.600 |
| 5 | | B305Ux-HA166.600 | B305Ux-SA166.600 | | B305Ux-HA126.600 | B305Ux-SA126.600 |
| 6 | A166.2K | B306Ux-HA166.2K | B306Ux-SA166.2K | A126.2K | B306Ux-HA126.2K | B306Ux-SA126.2K |
| 8 | | B308Ux-HA166.2K | B308Ux-SA166.2K | | B308Ux-HA126.2K | B308Ux-SA126.2K |
| 10 | | B310Ux-HA166.2K | B310Ux-SA166.2K | | B310Ux-HA126.2K | B310Ux-SA126.2K |
| 12 | | B312Ux-HA166.5K | B312Ux-SA166.5K | | B312Ux-HA126.5K | B312Ux-SA126.5K |
| 14 | A166.5K | B314Ux-HA166.5K | B314Ux-SA166.5K | A126.5K | B314Ux-HA126.5K | B314Ux-SA126.5K |

x= A, B, C or D (See Figure 1.)

Table 11. Two-Way Full Cut Valves with 24V Commercial Damper Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | Actuator Part Number | Assembly Part Number | |
|---|-------------------|----------------------|----------------------|------------------|
| | | | Normally Open | Normally Closed |
| 2-Way, Full Cut | | | | |
| 2-Position, SR with Switches | | | | |
| 2 | B202F | GCA126.3U | B202FO-GCA126.3U | B202FC-GCA126.3U |
| 2.5 | B225F | | B225FO-GCA126.3U | B225FC-GCA126.3U |
| 3 | B203F | GCA126.3U(-D) | B203FO-GCA126.3U | B203FC-GCA126.3U |
| 0 to 10Vdc, NSR Without Switches | | | | |
| 2 | B202F | GIB161.3U | B202FO-GIB161.3U | B202FC-GIB161.3U |
| 2.5 | B225F | | B225FO-GIB161.3U | B225FC-GIB161.3U |
| 3 | B203F | | B203FO-GIB161.3U | B203FC-GIB161.3U |
| 4 | B204F | GIB161.3U(-D) | B204FO-GIB161.3U | B204FC-GIB161.3U |
| 5 | B205F | | B205FO-GIB161.3U | B205FC-GIB161.3U |
| 6 | B206F | | B206FO-GIB161.3U | B206FC-GIB161.3U |
| Floating, NSR Without Switches | | | | |
| 2 | B202F | GIB131.3U | B202FO-GIB131.3U | B202FC-GIB131.3U |
| 2.5 | B225F | | B225FO-GIB131.3U | B225FC-GIB131.3U |
| 3 | B203F | | B203FO-GIB131.3U | B203FC-GIB131.3U |
| 4 | B204F | GIB131.3U(-D) | B204FO-GIB131.3U | B204FC-GIB131.3U |
| 5 | B205F | | B205FO-GIB131.3U | B205FC-GIB131.3U |
| 6 | B206F | | B206FO-GIB131.3U | B206FC-GIB131.3U |
| 0 to 10 Vdc SR Without Switches | | | | |
| 2 | B202F | GCA161.3U | B202FO-GCA161.3U | B202FC-GCA161.3U |
| 2.5 | B225F | | B225FO-GCA161.3U | B225FC-GCA161.3U |
| 3 | B203F | GCA126.3U(-D) | B203FO-GCA161.3U | B203FC-GCA161.3U |
| 2-Position, SR Without Switches | | | | |
| 2 | B202F | GCA121.3U | B202FO-GCA121.3U | B202FC-GCA121.3U |
| 2.5 | B225F | | B225FO-GCA121.3U | B225FC-GCA121.3U |
| 3 | B203F | | B203FOSGCA121.3U | B203FC-GCA121.3U |

Table 12. Two-Way Under Cut Valves, with 24V Commercial Damper Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | Actuator Part Number | Assembly Part Number | |
|---|-------------------|----------------------|----------------------|------------------|
| | | | Normally Open | Normally Closed |
| 2-Way, Under Cut | | | | |
| 2-Position, SR with Switches | | | | |
| 4 | B204U | GCA126.3U(-D) | B204UO-GCA126.3U | B204UC-GCA126.3U |
| 0 to 10Vdc, NSR Without Switches | | | | |
| 4 | B204U | GIB161.3U | B204UO-GIB161.3U | B204UC-GIB161.3U |
| 5 | B205U | GIB161.3U(-D) | B205UO-GIB161.3U | B205UC-GIB161.3U |
| 6 | B206U | | B206UO-GIB161.3U | B206UC-GIB161.3U |
| 8 | B208U | | B208UO-GIB161.3U | B208UC-GIB161.3U |
| Floating, NSR Without Switches | | | | |
| 4 | B204U | GIB131.3U | B204UO-GIB131.3U | B204UC-GIB131.3U |
| 5 | B205U | GIB131.3U(-D) | B205UO-GIB131.3U | B205UC-GIB131.3U |
| 6 | B206U | | B206UO-GIB131.3U | B206UC-GIB131.3U |
| 8 | B208U | | B208UO-GIB131.3U | B208UC-GIB131.3U |
| 0 to 10 Vdc SR Without Switches | | | | |
| 4 | B204U | GCA161.3U(-D) | B204UO-GCA161.3U | B204UCSGCA161.3U |
| 2-Position, SR Without Switches | | | | |
| 4 | B204U | GCA121.3U(-D) | B203UO-GCA121.3U | B203UC-GCA121.3U |

Table 13. Three-Way Full Cut Valves with 24V Commercial Damper Actuators Assemblies.

| Valve Size (inch) | Actuator Part Number | Assembly Part Number |
|---|----------------------|----------------------|
| 3-Way, Full Cut | | |
| 2-Position, SR with Switches | | |
| 2 | GCA126.3U | B302Fx-GCA126.3U |
| 2.5 | GCA126.3U(-D) | B325Fx-GCA126.3U |
| 3 | | B303Fx-GCA126.3U |
| 0 to 10Vdc, NSR Without Switches | | |
| 2 | GIB161.3U | B302Fx-GIB161.3U |
| 2.5 | | B325Fx-GIB161.3U |
| 3 | | B303Fx-GIB161.3U |
| 4 | GIB161.3U(-D) | B304Fx-GIB161.3U |
| 5 | | B305Fx-GIB161.3U |
| Floating, NSR Without Switches | | |
| 2 | GIB131.3U(-D) | B302Fx-GIB131.3U |
| 2.5 | | B325Fx-GIB131.3U |
| 3 | | B303Fx-GIB131.3U |
| 4 | GIB131.3U(-D) | B304Fx-GIB131.3U |
| 5 | | B305Fx-GIB131.3U |
| 0 to 10 Vdc SR Without Switches | | |
| 2 | GCA161.3U | B302Fx-GCA161.3U |
| 2.5 | GCA161.3U(-D) | B325Fx-GCA161.3U |
| 3 | | B303Fx-GCA161.3U |

x= A, B, C or D (See Figure 1.)

Table 14. Three-Way Under Cut Valves with 24V Commercial Damper Actuators Assemblies.

| Valve Size (inch) | Actuator Part Number | Assembly Part Number |
|--|----------------------|----------------------|
| 3-Way, Under Cut | | |
| 2-Position, SR with Switches | | |
| 4 | GCA126.3U | B304Ux-GCA126.3U |
| 0 to 10 Vdc, NSR Without Switches | | |
| 4 | GIB161.3U | B304Ux-GIB161.3U |
| 5 | GIB161.3U-D | B305Ux-GIB161.3U |
| 6 | | B306Ux-GIB161.3U |
| Floating, NSR Without Switches | | |
| 4 | GIB131.3U | B304Ux-GIB131.3U |
| 5 | GIB131.3U-D | B305Ux-GIB131.3U |
| 6 | | B306Ux-GIB131.3U |
| 0 to 10 Vdc SR Without Switches | | |
| 4 | GCA161.3U | B304Ux-GCA161.3U |
| 2-Position, SR Without Switches | | |
| 4 | GCA121.3U(-D) | B304Ux-GCA121.3U |

Table 15. Two-Way Full Cut Valves with 120V Industrial Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | 0 to 10V/4 to 20 mA | | | 2-Position | | |
|-------------------|-------------------|----------------------|----------------------|------------------|----------------------|----------------------|------------------|
| | | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number | |
| High Temp | Standard Temp | | High Temp | Standard Temp | | | |
| 2 | B202F | A266.600 | B202Fx-HA266.600 | B202Fx-SA266.600 | A226.600 | B202Fx-HA226.600 | B202Fx-SA226.600 |
| 2.5 | B225F | | B225Fx-HA266.600 | B225Fx-SA266.600 | | B225Fx-HA226.600 | B225Fx-SA226.600 |
| 3 | B203F | | B203Fx-HA266.600 | B203Fx-SA266.600 | | B203Fx-HA226.600 | B203Fx-SA226.600 |
| 4 | B204F | | B204Fx-HA266.600 | B204Fx-SA266.600 | | B204Fx-HA226.600 | B204Fx-SA226.600 |
| 5 | B205F | A266.600 | --- | B205Fx-SA266.600 | A226.600 | -- | B205Fx-SA226.600 |
| | B205F | A266.1K | B205Fx-HA266.1K | -- | A226.1K | B205Fx-HA226.1K | -- |
| 6 | B206F | A266.1K | B206Fx-HA266.1K | -- | A226.600 | -- | B206Fx-SA226.600 |
| | B206F | A266.600 | -- | B206Fx-SA266.600 | A226.1K | B206Fx-HA226.1K | -- |
| 8 | B208F | A266.2K | B208Fx-HA--266.2K | B208Fx-SA266.2K | A226.2K | B208Fx-HA226.2K | B208Fx-SA226.2K |
| 10 | B210F | A266.3K | -- | B210Fx-SA266.3K | A226.3K | -- | B210Fx-SA226.3K |
| | B210F | A266.5K | B210Fx-HA266.5K | -- | A226.5K | B210Fx-HA226.5K | -- |
| 12 | B212F | A266.5K | -- | B212Fx-SA266.5K | A226.5K | -- | B212Fx-SA226.5K |
| | | A266.6K | B212Fx-HA266.6K | -- | A226.6K | B212Fx-HA226.6K | -- |
| 14 | B214F | A266.6K | -- | B214Fx-SA266.6K | A226.6K | -- | B214Fx-SA226.6K |
| | | A266.13K | B214Fx-HA266.13K | -- | A226.13K | B214Fx-HA226.13K | -- |
| 16 | B216F | A266.13K | B216Fx-HA266.13K | B216Fx-SA266.13K | A226.13K | B216Fx-HA226.13K | B216Fx-SA226.13K |
| 18 | B218F | A266.13K | -- | B218Fx-SA266.13K | A226.13K | -- | B218Fx-SA226.13K |
| | | A266.18K | B218Fx-HA266.18K | -- | A226.18K | B218Fx-HA226.18K | -- |
| 20 | B220F | A266.18K | -- | B220Fx-SA266.18K | A226.18K | -- | B220Fx-SA226.18K |
| | | A266.21K | B220Fx-HA266.21K | -- | A226.21K | B220Fx-HA226.21K | -- |
| 24 | B224F | A266.21K | -- | B224Fx-SA266.21K | A226.21K | -- | B224Fx-SA226.21K |
| | | A266.41K | B224Fx-HA266.41K | -- | A226.41K | B224Fx-HA226.41K | -- |

x = O (Normally Open) or C (Normally Closed)

Table 16. Two-Way Under Cut Valves with 120V Industrial Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | 0 to10V/4 to 20 mA | | | 2-Position | | |
|-------------------|-------------------|----------------------|----------------------|------------------|----------------------|----------------------|------------------|
| | | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number | |
| 2-Way, Under Cut | High Temp | | Standard Temp | High Temp | | Standard Temp | |
| 4 | B204U | A266.600 | B204Ux-HA266.600 | B204Ux-SA266.600 | A226.600 | B204Ux-HA226.600 | B204Ux-SA226.600 |
| 5 | B205U | | B205Ux-HA266.600 | B205Ux-SA266.600 | | B205Ux-HA226.600 | B205Ux-SA226.600 |
| 6 | B206U | | B206Ux-HA266.600 | B206Ux-SA266.600 | | B206Ux-HA226.600 | B206Ux-SA226.600 |
| 8 | B208U | A266.1K | B208Ux-HA266.1K | B208Ux-SA266.1K | A226.1K | B208Ux-HA226.1K | B208Ux-SA226.1K |
| 10 | B210U | A266.2K | B210Ux-HA266.2K | B210Ux-SA266.2K | A226.2K | B210Ux-HA226.2K | B210Ux-SA226.2K |
| 12 | B212U | A266.3K | B212Ux-HA266.3K | B212Ux-SA266.3K | A226.3K | B212Ux-HA226.3K | B212Ux-SA226.3K |
| 14 | B214U | A266.5K | B214Ux-HA266.5K | B214Ux-SA266.5K | A226.5K | B214Ux-HA226.5K | B214Ux-SA226.5K |
| 16 | B216U | A266.6K | -- | B216Ux-SA266.6K | A226.6K | -- | B216Ux-SA226.6K |
| | | A266.13K | B216Ux-HA266.13K | -- | A226.13K | B216Ux-HA226.13K | -- |
| 18 | B218U | A266.6K | | B218Ux-SA266.6K | A226.6K | | B218Ux-SA226.6K |
| | | A266.13K | B218Ux-HA266.13K | | | B218Ux-HA226.13K | |
| 20 | B220U | A266.13K | B220Ux-HA266.13K | B220Ux-SA266.13K | A226.13K | B220Ux-HA226.13K | B220Ux-SA226.13K |
| 24 | B224U | A266.18K | B224Ux-HA266.18K | B224Ux-SA266.18K | A226.18K | B224Ux-HA226.18K | B224Ux-SA226.18K |

X = C (Normally Closed) or O (Normally Open)

Table 17. Three-Way Full Cut Valves with 120V Industrial Actuators Assemblies.

| Valve Size (inch) | 0 to10V/4 to 20 mA | | | 2-Position | | |
|-------------------|--------------------|----------------------|----------------------|------------|----------------------|----------------------|
| | 3-Way, Full Cut | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number |
| High Temp | | | Standard Temp | High Temp | | Standard Temp |
| 2 | A266.600 | B302Fx-HA266.600 | B302Fx-SA266.600 | A226.600 | B302Fx-HA226.600 | B302Fx-SA226.600 |
| 2.5 | | B325Fx-HA266.600 | B325Fx-SA266.600 | | B325Fx-HA226.600 | B325Fx-SA226.600 |
| 3 | | B303Fx-HA266.600 | B303Fx-SA266.600 | | B303Fx-HA226.600 | B303Fx-SA226.600 |
| 4 | | B304Fx-HA266.600 | B304Fx-SA266.600 | | B304Fx-HA226.600 | B304Fx-SA226.600 |
| 5 | | -- | B305Fx-SA266.600 | | A226.600 | -- |
| | A266.1K | B305Hx-HA266.1K | -- | A226.1K | B305Fx-HA226.1K | -- |
| 6 | A266.2K | B306Fx-HA266.2K | B306Fx-SA266.2K | A226.1K | -- | B306Fx-SA226.1K |
| | | | | A226.2K | B306Fx-HA226.2K | |
| 8 | A266.2K | B308Fx-HA266.2K | B308Fx-SA266.2K | A226.2K | B308Fx-HA226.2K | B308Fx-SA226.2K |
| 10 | A266.5K | B310Fx-HA266.5K | B310Fx-SA266.5K | A226.5K | B310Fx-HA226.5K | B310Fx-SA226.5K |
| 12 | A266.6K | -- | B312Fx-SA266.6K | A226.6K | -- | B312Fx-SA226.6K |
| | A266.13K | B312Fx-HA266.13K | -- | A226.13K | B312Fx-HA226.13K | -- |
| 14 | A266.13K | B314Fx-HA266.13K | B314Fx-SA266.13K | A226.13K | B314Fx-HA226.13K | B314Fx-SA226.13K |
| 16 | A266.13K | B316Fx-HA266.13K | B316Fx-SA266.13K | A226.13K | B316Fx-HA226.13K | B316Fx-SA226.13K |
| 18 | A266.18K | B318Fx-HA266.18K | B318Fx-SA266.18K | A226.18K | B318Fx-HA226.18K | B318Fx-SA226.18K |
| 20 | A266.41K | B320Fx-HA266.41K | B320Fx-SA266.41K | A226.21K | -- | B320Fx-SA226.21K |
| | | | | A226.41K | B320Fx-HA226.41K | -- |
| 24 | A266.41K | B324Fx-HA266.41K | B324Fx-SA266.41K | A226.41K | B324Fx-HA226.41K | B324Fx-SA226.41K |

x= A, B, C or D (See **Figure 1.**)

Table 18. Three-Way Under Cut Valves with 120V Industrial Actuators Assemblies.

| Valve Size (inch) | 0 to 10V/4 to 20 mA | | | 2-Position | | | |
|-------------------|---------------------|----------------------|----------------------|---------------|----------------------|----------------------|---------------|
| | 3-Way, Under Cut | Actuator Part Number | Assembly Part Number | | Actuator Part Number | Assembly Part Number | |
| | | | High Temp | Standard Temp | | High Temp | Standard Temp |
| 4 | A266.600 | B304Ux-HA266.600 | B304Ux-SA266.600 | A226.600 | B304Ux-HA226.600 | B304Ux-SA226.600 | |
| 5 | | B305Ux-HA266.600 | B305Ux-SA266.600 | | B305Ux-HA226.600 | B305Ux-SA226.600 | |
| 6 | A266.1K | B306Ux-HA266.1K | B306Ux-SA266.1K | A226.1K | B306Ux-HA226.1K | B306Ux-SA226.1K | |
| 8 | A266.1K | B308Ux-HA266.1K | B308Ux-SA266.1K | | B308Ux-HA226.1K | B308Ux-SA226.1K | |
| 10 | A266.2K | B310Ux-HA266.2K | B310Ux-SA266.2K | A226.2K | B310Ux-HA226.2K | B310Ux-SA226.2K | |
| 12 | A266.5K | B312Ux-HA266.5K | B312Ux-SA266.5K | A226.3K | -- | B312Ux-SA226.3K | |
| | | | | A226.5K | B312Ux-HA226.5K | -- | |
| 14 | A266.5K | B314Ux-HA266.5K | B314Ux-SA266.5K | A226.5K | B314Ux-HA226.5K | B314Ux-SA226.5K | |
| 16 | A266.13K | B316Ux-HA266.13K | B316Ux-SA266.13K | A226.13K | B316Ux-HA226.13K | B316Ux-SA226.13K | |
| 18 | | B318Ux-HA266.13K | B318Ux-SA266.13K | | B318Ux-HA226.13K | B318Ux-SA226.13K | |
| 20 | | B320Ux-HA266.13K | B320Ux-SA266.13K | | B320Ux-HA226.13K | B320Ux-SA226.13K | |
| 24 | A266.18K | B324Ux-HA266.18K | B324Ux-SA266.18K | A226.18K | B324Ux-HA226.18K | B324Ux-SA226.18K | |

x= A, B, C or D (See Figure 1.)

Table 19. Standard Temperature Valves with 120V Commercial Damper Actuators Assemblies.

| Valve Size (inch) | Valve Part Number | Actuator Part Number | Assembly Part Number | |
|--|-------------------|----------------------|----------------------|------------------|
| | | | Normally Open | Normally Closed |
| 2-Position, SR without Switches | | | | |
| 2-Way, Full Cut | | | | |
| 2 | B202F | GCA221.3U | B202FO-GCA221.3U | B202FC-GCA221.3U |
| 2.5 | B225F | GCA221.3U | B225FO-GCA221.3U | B225FC-GCA221.3U |
| 3 | B203F | GCA221.3U(-D) | B203FO-GCA221.3U | B203FC-GCA221.3U |
| Under | B203U | GCA221.3U(-D) | B203UO-GCA221.3U | B203UC-GCA221.3U |
| 3-Way Full Cut | | | | |
| 2 | B302F | GCA221.3U | B302Fx-GCA221.3U | -- |
| 2.5 | B325F | GCA221.3U(-D) | B325Fx-GCA221.3U | -- |
| 3 | B303F | | B303Fx-GCA221.3U | -- |
| 3-Way Under Cut | | | | |
| 4 | B304U | GCA221.3U(-D) | B304Ux-GCA221.3U | -- |

Mounting and Installation

All A-Series industrial actuators are suitable for direct mounting on Siemens resilient seat butterfly valves. Commercial actuators require a mounting bracket (See *Accessories/Kits*).

Table 20. Bolt Tightening Sequence and Torque Chart.



| Valve Size in Inches | Bolt Size (Threads UNC-2B) | Maximum Bolt Torque Requirement in ft-lbs (Nm) |
|----------------------|----------------------------|--|
| 2,3,4 | 5/8"-11 | 35 (4) |
| 5,6,8 | 3/4"-10 | 60 (7) |
| 10,12 | 7/8"-9 | 75 to 110 (8 to 12) |
| 14,16 | 1"-8 | 120 (14) |
| 18 | 1-1/8"-7 | 130 (15) |
| 20 | 1-1/8"-7 | 130 (15) |
| 24 | 1-1/4"-7 | 150 to 155 (17 to 18) |

Installation Instructions

1. Lower the valve into the open pipe work with the disc in the 10° open position. Valves with non-spring actuators are shipped in this position.



Figure 3. Disc in 10° Open Position.

2. Once the valve is placed in the pipework, turn the disc to the full-open position. Gradually remove the flange spreaders.
3. Center the valve body to the flanges and tighten the bolts hand-tight. Slowly close the valve clockwise to check for adequate disc clearance.

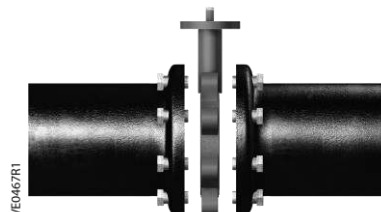


Figure 4. Centered Valve Body.

- Return the disc to the full-open position and cross tighten all bolts to the proper torque specifications (See Table 20).

NOTE: Do not install with the disc in the fully closed position. This will cause seat distortion. When flange bolts are tightened, the rubber will close around the disc edge creating excessive breakaway torque in the initial operation. The valve should always be installed with the disc open at 10°.

Installation is now complete.



CAUTION:

DO NOT lower the valve into the pipe with the pipe work spread insufficiently or with the disc in the fully open position. This can lead to disc edge damage and can impact the flange.



CAUTION:

DO NOT use flange gaskets. The butterfly valve seat has a molded-in O-ring that creates a positive seal against standard ANSI flange faces.



CAUTION:

Incorrect pipe alignment will cause interference between the disc edge and the flange face creating leakage, excessive torque and damage to the disc and seat.

Operation

The seat in a resilient seat butterfly valve has molded O-rings on its flange face. No gaskets are required as these O-rings serve the function of a gasket. The flange face and molded O-rings of the seat extend beyond the body face-to-face to ensure sealing at the flange faces. The seat material, which extends past the face is compressed in installation and flows toward the center of the valve seat I.D.

The elastomer seat acts as a liquid, and the displaced elastomer moves toward the point of least resistance. The seat I.D. of all resilient seat butterfly valves is smaller than the disc O.D. This difference, the disc-seat interference, plus the increased interference due to the elastomer movement toward the seat center after installation, has been engineered to be the basis for pressure rating capability and the related seating/unseating torques.

3-Way Configuration Change



CAUTION:

Always wear the proper safety gear when working on mechanical or electrical equipment. Failure to do so can result in injury or death. 3-Way valve components are heavy and must be properly supported at all times. Disconnect all power and input signals from electric actuators before servicing.

Typical 3-Way Assembly

To change the configuration of a 3-way valve in the field, the assembly must first be removed from service. The only configuration changes that can be made with the assembly in line is to move the actuator from the primary valve to the secondary valve. The primary valve is defined as the valve with the actuator mounted on it. The other valve is the secondary valve. See Figure 5 for a typical 3-way assembly.

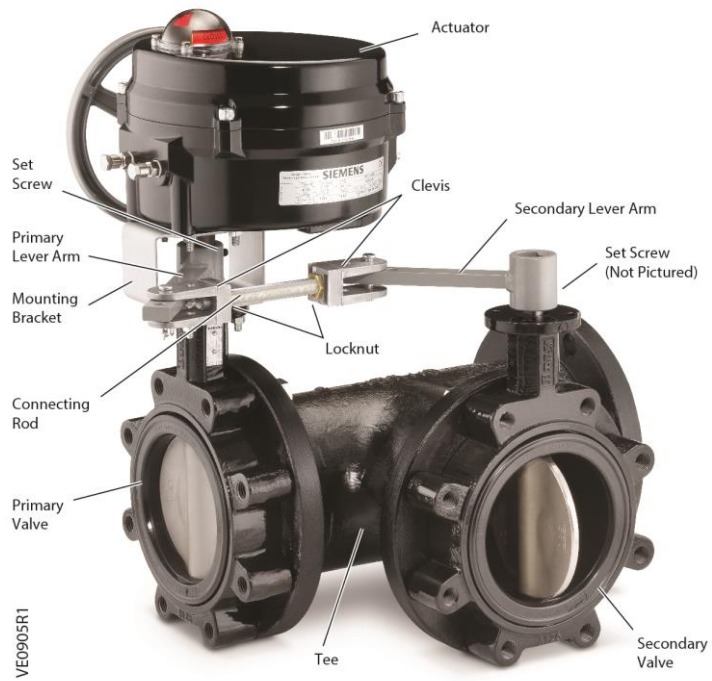


Figure 5. Typical 3-Way Assembly.

Actuator Removal

1. Remove the hex nuts and lockwashers from the mounting studs in the actuator base. See Figure 6.



Figure 6. Mounting Hardware.

2. Remove the actuator.

Linkage Kit Removal

1. Remove the clevis pin from the clevis on each end of the connecting rod and remove the assembly.
2. Loosen the set screws on the primary valve's lever arm.
3. Remove the hex nuts and lockwashers from the valve mounting bolts. See Figure 6.
4. Remove the lever arm and mounting bracket from the valve.
5. Loosen the set screw on the secondary valve and remove the lever arm.
6. If necessary, remove either valve that needs to be located on a different port and reinstall it there.

NOTE:

Use **Figure 1** and Figure 2 to choose possible valve/actuator locations. The valve shown with the mounting bracket is the primary valve.

Linkage Kit and Actuator Repositioning

1. Place the mounting bracket and lever arm on the valve that will be the primary valve. The lever arms must be oriented in such a way as to rotate the valve clockwise to close and counterclockwise to open and not interfere with hand wheel operation (if applicable). The exception to this is on Configurations I and J. The primary valve will rotate normally, but the secondary valve will rotate in the opposite direction because the lever arms must be parallel. **Figure 1** and Figure 2 shows the preferred placement of the lever arms and connecting rod for all configurations.
2. Orient the bracket and arm with the beveled portion of the bracket in line with the quadrant of travel of the lever arm. See **Figure 1** and Figure 2.
3. Attach the mounting bolts to the mounting bracket and valve. Tighten the hex nuts and lockwashers to the mounting bolts.
4. Tighten the setscrews on both lever arms. Leave a little space between the lever arm collar and the face of the valve flange so that the lever arm and valve flange do not wear on each other. See Figure 7.

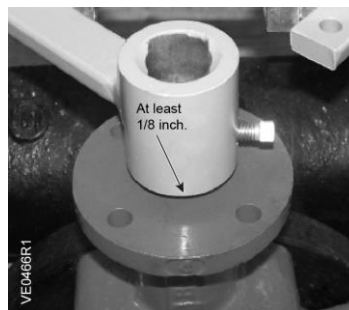
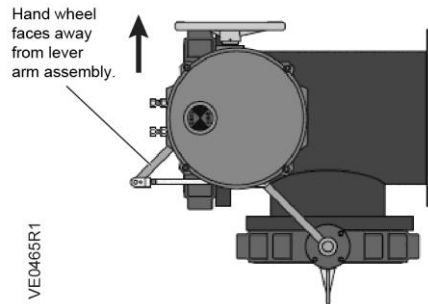


Figure 7. Valve Flange.

5. Attach the clevis and connecting rod assembly to the lever arms. Each clevis can be rotated on the connecting arm to lengthen or shorten the assembly. This may be necessary to ensure proper close-off of both valves.
6. Place the actuator on what will be the primary valve.

NOTES:

- Ensure that an actuator being located on a normally closed valve in the fully closed position and the primary valve is fully closed. Also ensure that an actuator being located on a normally open valve is in the fully open position and the primary valve is fully open.
- Ensure that the hand wheel is oriented away from the lever arm assembly. See Figure 8.

**Figure 8. Proper Hand Wheel Alignment.**

7. Attach the hex nuts and lockwashers to the mounting studs in the actuator and tighten.
8. Use the actuator to verify close-off of both valves.
9. Reinstall the tee/assembly, if removed from the line, using the recommended installation techniques.

The configuration change is now complete.

Service**WARNING:**

No valve maintenance, including removal of commercial or industrial actuators should be performed until the piping system is completely depressurized.

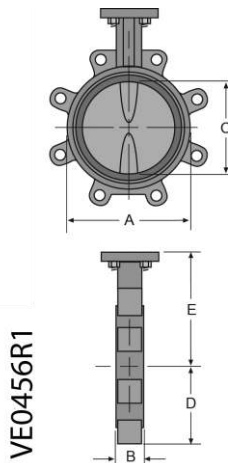
Dimensions – 2-Way, OpenAir Commercial Electric Actuators

Valve Body

Table 21. 2-Way, 2" to 8", Resilient Seat Butterfly Valves.

| Model Number | Size | | CVS | | A | B | C | D | E | Lug Bolting Data | | | Weight ¹ | |
|--------------|------|-----|------|------|-------|------|------|------|------|------------------|-------|---------|---------------------|-------|
| | In. | mm | 90° | 60° | | | | | | BC | Holes | Threads | lbs. | kg |
| B202 | 2 | 50 | 144 | 61 | 3.69 | 1.62 | 2.00 | 2.30 | 5.50 | 4.75 | 4 | 5/8-11 | 7.0 | 3.12 |
| B225 | 2.5 | 65 | 282 | 107 | 4.19 | 1.75 | 2.50 | 2.57 | 6.00 | 5.50 | 4 | 5/8-11 | 8.0 | 3.63 |
| B203 | 3 | 80 | 461 | 154 | 4.88 | 1.75 | 3.00 | 2.81 | 6.25 | 6.00 | 4 | 5/8-11 | 9.0 | 4.08 |
| B204 | 4 | 100 | 841 | 274 | 6.06 | 2.00 | 4.00 | 4.09 | 7.00 | 7.50 | 8 | 5/8-11 | 15.0 | 6.80 |
| B205 | 5 | 125 | 1376 | 428 | 7.06 | 2.12 | 5.00 | 4.61 | 7.50 | 8.50 | 8 | 3/4-10 | 20.0 | 9.07 |
| B206 | 6 | 150 | 1850 | 567 | 8.12 | 2.12 | 5.75 | 5.06 | 8.00 | 9.50 | 8 | 3/4-10 | 23.0 | 10.43 |
| B208 | 8 | 200 | 3316 | 1081 | 10.50 | 2.50 | 7.75 | 6.05 | 9.56 | 11.75 | 8 | 3/4-10 | 42.0 | 19.05 |

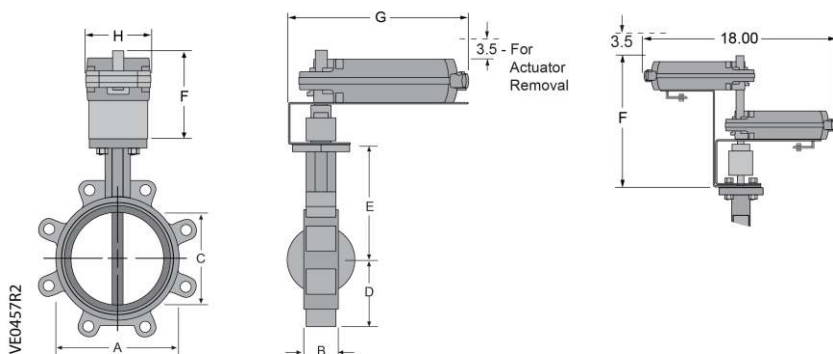
1- Weights are for valve bodies only.



Commercial Actuators

| Model Number | F | G | H | Weight ¹ | |
|---------------|-------|-------|------|---------------------|-----|
| | | | | lbs | kg |
| GIB | 7.43 | 10.96 | 3.95 | 4.4 | 2.0 |
| GCA | 7.43 | 10.96 | 3.95 | 4.9 | 2.2 |
| Dual Actuator | 11.75 | 18.00 | 4.00 | 12.8 | 5.8 |

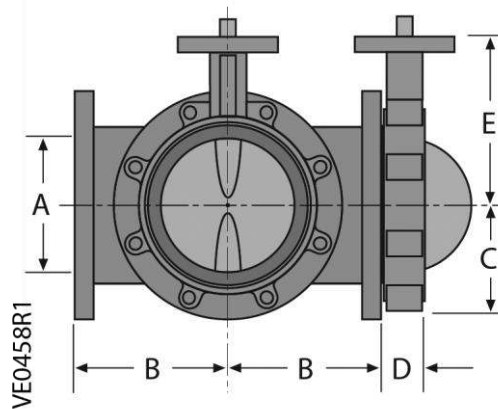
Largest actuator dimension shown



Dimensions (Continued) – 3-Way, OpenAir Commercial Electric Actuators Valve Body

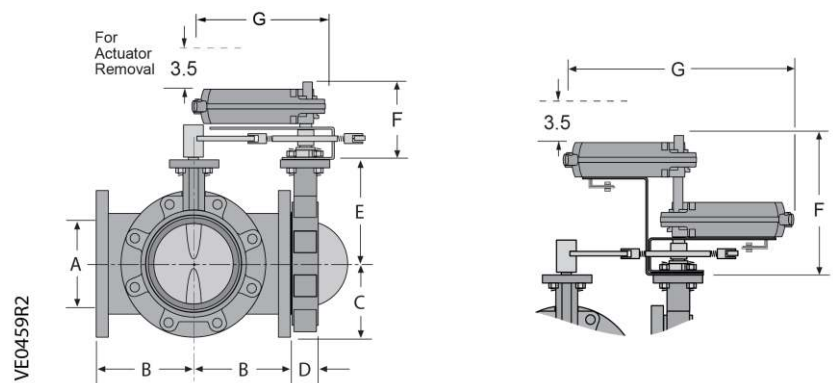
| Model Number | Size | | Cv | | A | B | C | D | E | Lug Bolting Data | | |
|--------------|------|-----|------|-----|------|------|------|------|------|------------------|-------|---------|
| | In. | mm | 90° | 60° | | | | | | BC | Holes | Threads |
| B302 | 2 | 50 | 144 | 61 | 2.00 | 4.50 | 2.30 | 1.62 | 5.50 | 4.75 | 4 | 5/8-11 |
| B325 | 2.5 | 65 | 282 | 107 | 2.50 | 5.00 | 2.57 | 1.80 | 6.00 | 5.50 | 4 | 5/8-11 |
| B303 | 3 | 80 | 461 | 154 | 3.00 | 5.50 | 2.81 | 1.80 | 6.25 | 6.00 | 4 | 5/8-11 |
| B304 | 4 | 100 | 841 | 274 | 4.00 | 6.50 | 4.09 | 2.00 | 7.00 | 7.50 | 8 | 5/8-11 |
| B305 | 5 | 125 | 1376 | 428 | 5.00 | 7.50 | 4.61 | 2.12 | 7.50 | 8.50 | 8 | 3/4-10 |
| B306 | 6 | 150 | 1850 | 567 | 6.00 | 8.00 | 5.06 | 2.12 | 8.00 | 9.50 | 8 | 3/4-10 |

| Size | | Weight | |
|--------|-----|--------|-------|
| Inches | mm | lbs | kg |
| 2 | 50 | 19 | 8.6 |
| 2.5 | 65 | 27 | 12.2 |
| 3 | 80 | 39 | 17.7 |
| 4 | 100 | 62 | 28.1 |
| 5 | 125 | 79 | 35.8 |
| 6 | 150 | 96 | 43.5 |
| 8 | 200 | 155 | 70.3 |
| 10 | 250 | 270 | 122.5 |
| 12 | 300 | 380 | 172.4 |
| 14 | 350 | 435 | 197.3 |
| 16 | 400 | 550 | 249.5 |
| 18 | 450 | 665 | 301.6 |
| 20 | 500 | 855 | 387.8 |
| 24 | 609 | 1330 | 603.3 |



Commercial Actuators

| Model Number | F | G | Weight ¹ | |
|----------------------------------|-------|-------|---------------------|-----|
| | | | lbs | kg |
| GIB | 7.43 | 10.96 | 4.4 | 2.0 |
| GCA | 7.43 | 10.96 | 4.9 | 2.2 |
| Dual Actuator | 11.75 | 18.00 | 12.8 | 5.8 |
| Largest actuator dimension shown | | | | |



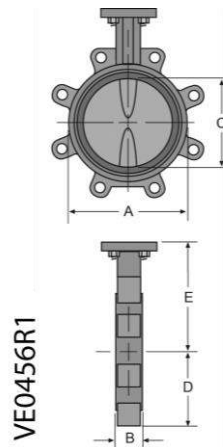
Dimensions (Continued) – 2-Way, Industrial Actuators

Valve Body

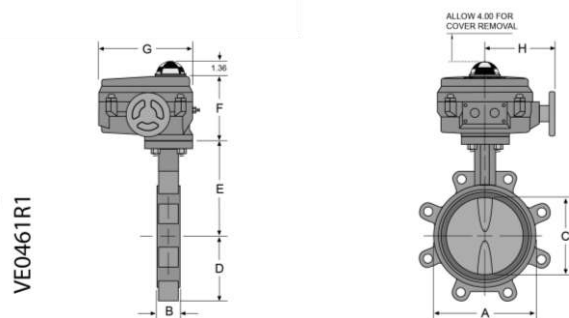
Table 23. 2-Way, 2" to 24", Resilient Seat Butterfly Valves.

| Model Number | Size | | Cv | | A | B | C | D | E | Lug Bolting Data | | | Weight ¹ | |
|--------------|------|-----|-------|-------|-------|------|-------|-------|-------|------------------|-------|-----------|---------------------|--------|
| | In. | mm | 90° | 60° | | | | | | BC | Holes | Threads | lbs | kg |
| B202 | 2 | 50 | 144 | 61 | 3.69 | 1.62 | 2.00 | 2.30 | 5.50 | 4.75 | 4 | 5/8-11 | 7.0 | 3.12 |
| B225 | 2.5 | 65 | 282 | 107 | 4.19 | 1.75 | 2.50 | 2.57 | 6.00 | 5.50 | 4 | 5/8-11 | 8.0 | 3.63 |
| B203 | 3 | 80 | 461 | 154 | 4.88 | 1.75 | 3.00 | 2.81 | 6.25 | 6.00 | 4 | 5/8-11 | 9.0 | 4.08 |
| B204 | 4 | 100 | 841 | 274 | 6.06 | 2.00 | 4.00 | 4.09 | 7.00 | 7.50 | 8 | 5/8-11 | 15.0 | 6.80 |
| B205 | 5 | 125 | 1376 | 428 | 7.06 | 2.12 | 5.00 | 4.61 | 7.50 | 8.50 | 8 | 3/4-10 | 20.0 | 9.07 |
| B206 | 6 | 150 | 1850 | 567 | 8.12 | 2.12 | 5.75 | 5.06 | 8.00 | 9.50 | 8 | 3/4-10 | 23.0 | 10.43 |
| B208 | 8 | 200 | 3316 | 1081 | 10.50 | 2.50 | 7.75 | 6.05 | 9.56 | 11.75 | 8 | 3/4-10 | 42.0 | 19.05 |
| B210 | 10 | 250 | 5430 | 1710 | 12.75 | 2.50 | 9.75 | 7.69 | 10.75 | 14.25 | 12 | 7/8-9 | 66.0 | 29.94 |
| B212 | 12 | 300 | 8077 | 2563 | 14.88 | 3.00 | 11.75 | 9.02 | 12.25 | 17.00 | 12 | 7/8-9 | 88.0 | 39.92 |
| B214 | 14 | 350 | 10538 | 3384 | 17.05 | 3.00 | 13.25 | 9.93 | 13.62 | 18.75 | 12 | 1-8 | 114.0 | 51.71 |
| B216 | 16 | 400 | 13966 | 4483 | 19.21 | 4.00 | 15.25 | 11.30 | 14.75 | 21.25 | 16 | 1-8 | 166.0 | 75.30 |
| B218 | 18 | 450 | 17214 | 5736 | 21.12 | 4.25 | 17.25 | 12.16 | 16.00 | 22.75 | 16 | 1-1/8 – 7 | 226.0 | 102.51 |
| B220 | 20 | 500 | 22339 | 7144 | 23.25 | 5.00 | 19.25 | 14.00 | 17.25 | 25.00 | 20 | 1-1/8 – 7 | 305.0 | 138.35 |
| B224 | 24 | 600 | 33154 | 11040 | 33.00 | 5.94 | 23.28 | 17.56 | 19.50 | 29.50 | 4 | 1-1/4 – 7 | 500.0 | 226.80 |

1- Weights are for valve bodies only.



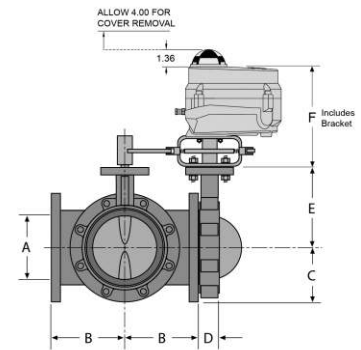
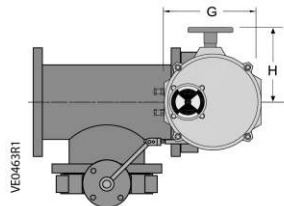
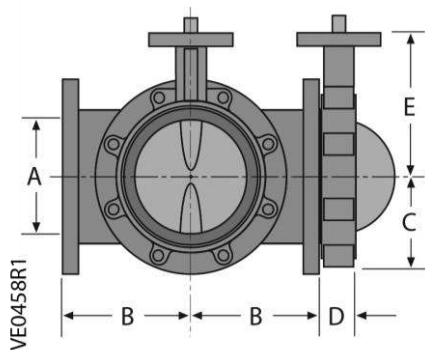
| A-Series Actuators | | | | |
|-------------------------|------|------|------|--------------|
| Model Number | F | G | H | Weight (lbs) |
| Axxx.600 | 5.6 | 7.5 | 5.8 | 13 |
| Axxx.1K/Axxx.2K | 6.6 | 10.1 | 7.8 | 28 |
| Axxx.3K/Axxx.5K/Axxx.6K | 7.2 | 12.1 | 9.5 | 48 |
| Axxx.13K/Axxx.18K | 12.1 | 18.8 | 9.5 | 118 |
| Axxx.21K | 12.3 | 32.1 | 28.9 | 195 |
| Axxx.41K | 12.3 | 32.1 | 28.9 | 195 |



Dimensions (Continued) – 3-Way, Industrial Actuators

Valve Body

| Table 24. 3-Way, 2" to 24", Resilient Seat Butterfly Valves. | | | | | | | | | | | | |
|--|------|-----|-------|-------|-------|-------|-------|------|-------|------------------|-------|-----------|
| Model Number | Size | | Cv | | A | B | C | D | E | Lug Bolting Data | | |
| | In. | mm | 90° | 60° | | | | | | BC | Holes | Threads |
| B302 | 2 | 50 | 144 | 61 | 2.00 | 4.50 | 2.30 | 1.62 | 5.50 | 4.75 | 4 | 5/8-11 |
| B325 | 2.5 | 65 | 282 | 107 | 2.50 | 5.00 | 2.57 | 1.80 | 6.00 | 5.50 | 4 | 5/8-11 |
| B303 | 3 | 80 | 461 | 154 | 3.00 | 5.50 | 2.81 | 1.80 | 6.25 | 6.00 | 4 | 5/8-11 |
| B304 | 4 | 100 | 841 | 274 | 4.00 | 6.50 | 4.09 | 2.00 | 7.00 | 7.50 | 8 | 5/8-11 |
| B305 | 5 | 125 | 1376 | 428 | 5.00 | 7.50 | 4.61 | 2.12 | 7.50 | 8.50 | 8 | 3/4-10 |
| B306 | 6 | 150 | 1850 | 567 | 6.00 | 8.00 | 5.06 | 2.12 | 8.00 | 9.50 | 8 | 3/4-10 |
| B308 | 8 | 200 | 3316 | 1081 | 8.00 | 9.00 | 6.05 | 2.50 | 9.50 | 11.75 | 8 | 3/4-10 |
| B310 | 10 | 250 | 5430 | 1710 | 10.00 | 11.00 | 7.69 | 2.50 | 10.75 | 14.25 | 12 | 7/8-9 |
| B312 | 12 | 300 | 8077 | 2563 | 12.00 | 12.00 | 9.02 | 3.00 | 12.25 | 17.00 | 12 | 7/8-9 |
| B314 | 14 | 350 | 10538 | 3384 | 14.00 | 14.00 | 9.93 | 3.00 | 13.62 | 18.75 | 12 | 1-8 |
| B316 | 16 | 400 | 13966 | 4483 | 16.00 | 15.00 | 11.30 | 4.00 | 14.75 | 21.25 | 15 | 1-8 |
| B318 | 18 | 450 | 17214 | 5736 | 18.00 | 16.50 | 12.16 | 4.26 | 16.00 | 22.75 | 16 | 1-1/8 – 7 |
| B320 | 20 | 500 | 22339 | 7144 | 20.00 | 18.00 | 14.00 | 5.00 | 17.25 | 25.00 | 20 | 1-1/8 – 7 |
| B324 | 24 | 610 | 3315 | 11044 | 24.00 | 22.00 | 16.00 | 5.94 | 19.50 | 29.50 | 20 | 1-1/4 – 7 |



| A-Series Actuators | | | | | |
|--------------------|-------|-------|------|--------------|--|
| Model Number | F | G | H | Weight (lbs) | |
| Axxx.600 | 8.6 | 7.5 | 5.8 | 12 | |
| Axxx.1K/Axxx.2K | 10.73 | 10.1 | 7.8 | 28 | |
| Axxx.3K | 11.33 | 12.10 | 3.50 | 48 | |
| Axxx.5K | 13.2 | 12.10 | 9.50 | 48 | |
| Axxx.6K | 13.2 | 12.10 | 9.50 | 118 | |
| Axxx.13K/Axxx.18K | 20.5 | 12.10 | 9.50 | 118 | |
| Axxx.21K | 22.3 | 32.1 | 28.9 | 195 | |
| Axxx.41K | 22.3 | 32.1 | 28.9 | 195 | |

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