



Applications:



The ESBE 3 and 4-Way rotary valves type F are designed for mixing or diverting applications on heating and cooling systems. The valves are capable of controlling and distributing water or non-corrosive liquids on closed looped systems to different zones by either manual operation or automatically via electronic motor actuator and controller.

Features:

- The F series of valves are a rotary design allowing for flexibility in field piping layout.

- Double mixing function for 4-Way valve, reducing the risk of condensation within heat source
- Valve position face plate is printed on both sides and can be rotated allowing a choice of valve mounting positions
- Easily adaptable with ESBE electronic motor actuator Series 90
- Suitable fluid of 100% water or glycol mixture (maximum 50% glycol) for heating or cooling closed loop systems.

Ordering Information:

3-Way Valve

| Code No. | Reference | Connection | Cv* |
|-----------------|-----------|---------------------|-----|
| 065B8960 | 3 G 65-50 | 2-1/2" ANSI Flanged | 75 |
| 065B8961 | 3 F 65 | 2-1/2" ANSI Flanged | 105 |
| 065B8962 | 3 F 80 | 3" ANSI Flanged | 175 |
| 065B8963 | 3 F 100 | 4" ANSI Flanged | 265 |
| 065B8964 | 3 F 125 | 5" ANSI Flanged | 325 |
| 065B8965 | 3 F 150 | 6" ANSI Flanged | 465 |

4-Way Valve

| Code No. | Reference | Connection | Cv* |
|-----------------|-----------|--------------------|-----|
| 065B6150 | 4 F 50 | 2" DIN Flanged | 75 |
| 065B6165 | 4 F 65 | 2-1/2" DIN Flanged | 105 |
| 065B6180 | 4 F 80 | 3" DIN Flanged | 175 |
| 065B6200 | 4 F 100 | 4" DIN Flanged | 265 |
| 065B6225 | 4 F 125 | 5" DIN Flanged | 325 |
| 065B6250 | 4 F 150 | 6" DIN Flanged | 465 |

Note:

ESBE 3-way valves are flat faced ANSI flanges, 4-Way valve are DIN raised flanges and require mating DIN weld raised flanges and gaskets. See page 2 for ordering information.

*Cv = Flow rate allowed by the valve in GPM with a pressure drop of one psi.



**Ordering
Information (Cont.):**

DIN Flanges and Gaskets

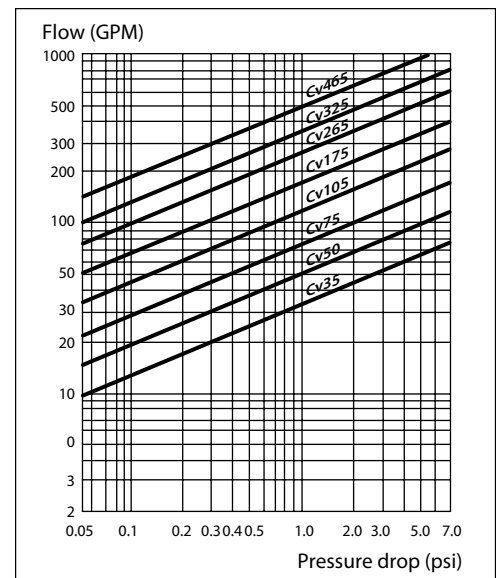
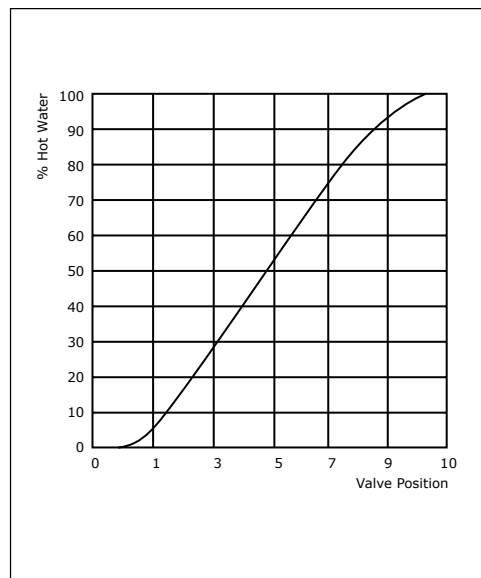
| Code No. | Size | Description |
|----------|--------|--|
| 065F8950 | 2" | DIN Weld Mating Raised Flange (Four Flanges Required per 4-Way Valve) |
| 082F8961 | 2-1/2" | |
| 082F8962 | 3" | |
| 082F8963 | 4" | |
| 082F8964 | 5" | |
| 082F8965 | 6" | |
| 065F8951 | 2" | Gasket for DIN Flange (Four Flanges Required per 4-Way Valve) |
| 082F8966 | 2-1/2" | |
| 082F8967 | 3" | |
| 082F8968 | 4" | |
| 082F8969 | 5" | |
| 082F8970 | 6" | |

Replacement Parts

| Code No. | Description | Valve Sizes | Valve Type |
|----------|-------------------|-------------|------------|
| 065B0003 | Gasket Set | 2" – 2-1/2" | 3 & 4-Way |
| 065B0004 | | 3" – 6" | |
| 082F8981 | Complete Interior | 2-1/2" | 3-Way |
| 082F8982 | | 3" | |
| 082F8983 | | 4" | |
| 082F8984 | | 5" | |
| 082F8985 | | 6" | |
| 082F8987 | Complete Interior | 2" | 4-Way |
| 082F8988 | | 2-1/2" | |
| 082F8989 | | 3" | |
| 082F8990 | | 4" - 5" | |
| 082F8991 | | 6" | |

Technical Specifications:

| | |
|---|--|
| Max. operating pressure | 90 psi (6 bar) |
| Max. operating temperature | 230°F (110°C) |
| Min. operating temperature | 14°F (-10°C) |
| Max. differential pressure | 1-1/2" – 2": 8 psi (50kPa) 2-1/2" – 6": 5 psi (30kPa) |
| Required motor torque (Recommendation for typical application) | Valve size max. 2" – 45 in lb (5Nm) Valve size max. 4" – 85 in lb (10Nm) Valve size max. 6" – 130 in lb (15Nm) (Recommended exercise function for valve body) |
| Allowable fluid | Water (maximum 50% glycol) in a closed loop hydronic system. |
| Connections | 3-Way ANSI Flange, flat faced 4-Way DIN Flange, raise faced |
| Max. Leakage in % of Flow | 1.5 |



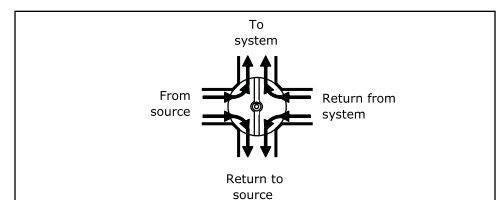
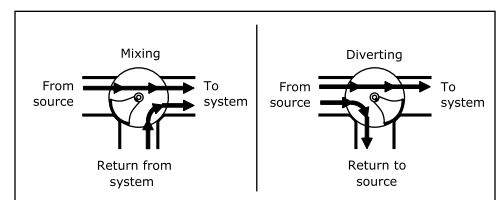
Piping Arrangement:

3-Way Valves

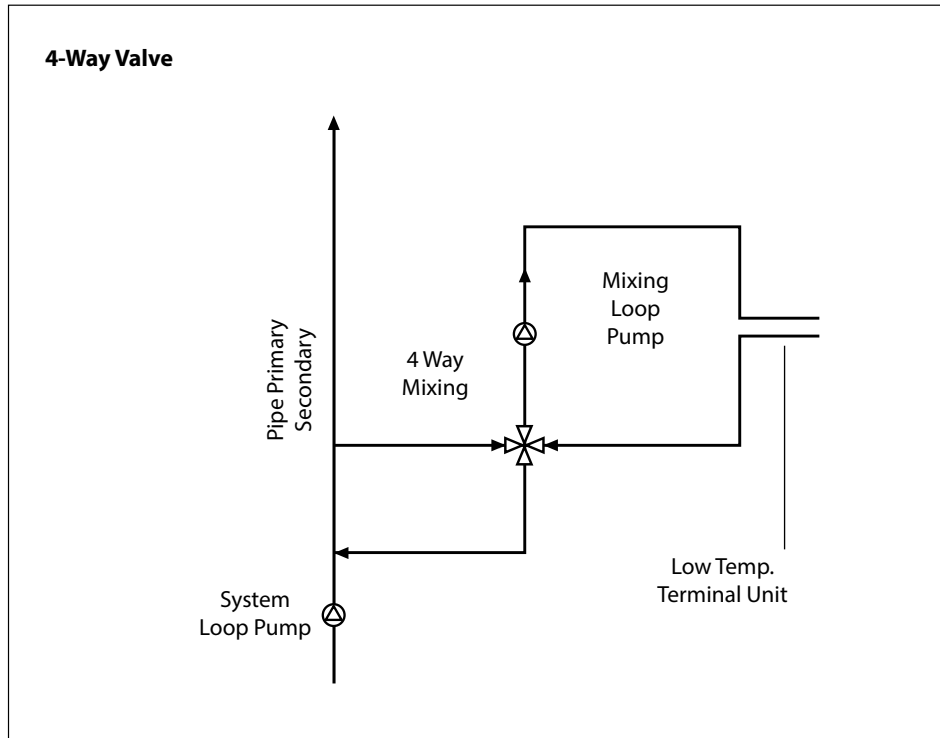
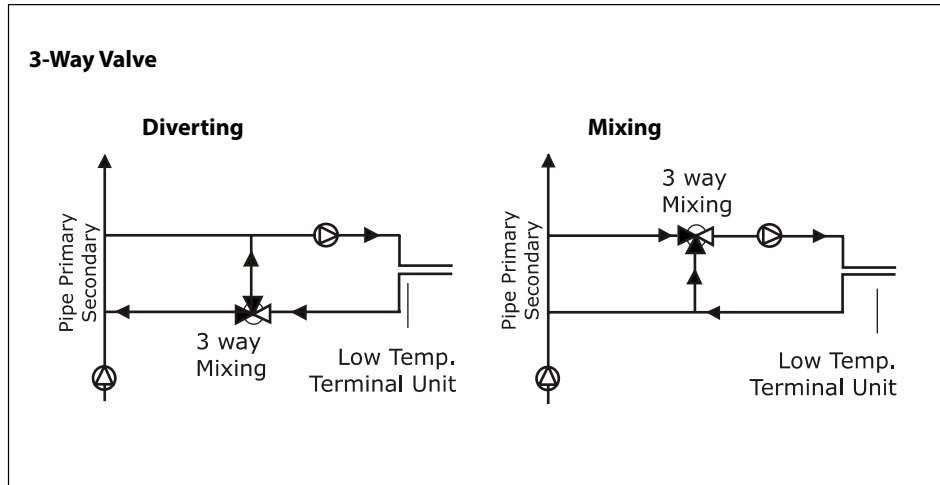
- Ideal valves for mixing and diverting applications
- Reduces risk of low temperature water returning to boiler

4-Way Valves

- Double mixing function, providing proportional mixing from source to system and system to source
- Reduces risk of low temperature water returning to boiler.



Typical Installation



Dimensions:

| Material | |
|--------------------|---------------------------------|
| Valve Body | Cast iron |
| Slider | Brass CW 614N & Stainless Steel |
| Stem | Stainless Steel |
| O-ring | EPDM |
| Bushing | Plastic / Brass CW 602N |
| Cover Plate | Zinc / Cast Iron |

Type F

| | Size | Reference | A | B | C | D | E | F | G | Weight |
|--------------|--------|-----------|-------------|------------|----------|-----------|-----------|------------|----------|-------------|
| 3-Way | 2-1/2" | 3 F65-50 | 3.9 (100) | 7.9 (200) | 2.0 (52) | 3.7 (95) | 5.1 (130) | 6.3 (160) | 4 x 3/4" | 32.0 (14.5) |
| | 2-1/2" | 3 F65 | 3.9 (100) | 7.9 (200) | 2.0 (52) | 3.7 (95) | 5.1 (130) | 6.3 (160) | 4 x 3/4" | 32.0 (14.5) |
| | 3" | 3 F180 | 4.7 (120) | 9.4 (240) | 2.5 (63) | 4.2 (106) | 5.9 (150) | 7.5 (190) | 4 x 3/4" | 37.0 (16.8) |
| | 4" | 3 F100 | 5.2 (132.5) | 10.4 (265) | 2.9 (73) | 4.6 (116) | 6.7 (170) | 8.3 (210) | 8 x 3/4" | 60.0 (27.2) |
| | 5" | 3 F125 | 5.9 (150) | 11.8 (300) | 3.1 (80) | 4.8 (123) | 7.9 (200) | 9.4 (240) | 8 x 3/4" | 72.0 (32.7) |
| | 6" | 3 F150 | 6.9 (175) | 13.8 (350) | 3.5 (88) | 5.1 (130) | 8.9 (225) | 10.4 (265) | 8 x 3/4" | 90.0 (40.8) |
| 4-Way | 2" | 4 F50 | 3.8 (97.5) | 7.7 (195) | 2.0 (50) | 3.6 (92) | 4.3 (110) | 5.5 (140) | 4 x .6" | 24.3 (11.0) |
| | 2-1/2" | 4 F65 | 3.9 (100) | 7.9 (200) | 2.0 (50) | 3.6 (92) | 5.1 (130) | 6.3 (160) | 4 x .6" | 26.9 (12.2) |
| | 3" | 4 F80 | 4.7 (120) | 9.4 (240) | 2.6 (65) | 4.3 (108) | 5.9 (150) | 7.5 (190) | 4 x .7" | 44.1 (20.0) |
| | 4" | 4 F100 | 5.2 (132.5) | 10.4 (265) | 3.2 (81) | 4.9 (124) | 6.7 (170) | 8.3 (210) | 4 x .7" | 55.1 (25.0) |
| | 5" | 4 F125 | 5.9 (150) | 11.8 (300) | 3.2 (81) | 4.9 (124) | 7.9 (200) | 9.4 (240) | 8 x .7" | 77.2 (35.0) |
| | 6" | 4 F150 | 6.9 (175) | 13.8 (350) | 3.5 (89) | 5.2 (131) | 8.9 (225) | 10.4 (265) | 8 x .7" | 99.2 (45.0) |



Technical Specifications:

The 3 or 4-Way rotary valve shall be made of a cast iron material with flanged connections. The valve should be capable of being utilized in heating or cooling closed loop applications. The valve position shall have a face plate with printing on both sides to provide a choice of

valve mounting positions. The valve should be capable of assembly with an ESBE series 60 or 90 electric motor actuator.

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