



**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*
<b>065B8960</b>	3 G 65-50	2-1/2" ANSI Flanged	75
<b>065B8961</b>	3 F 65	2-1/2" ANSI Flanged	105
<b>065B8962</b>	3 F 80	3" ANSI Flanged	175
<b>065B8963</b>	3 F 100	4" ANSI Flanged	265
<b>065B8964</b>	3 F 125	5" ANSI Flanged	325
<b>065B8965</b>	3 F 150	6" ANSI Flanged	465

**4-Way Valve**

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

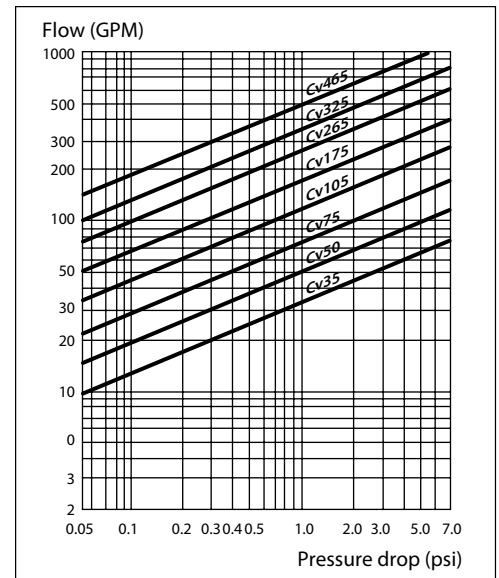
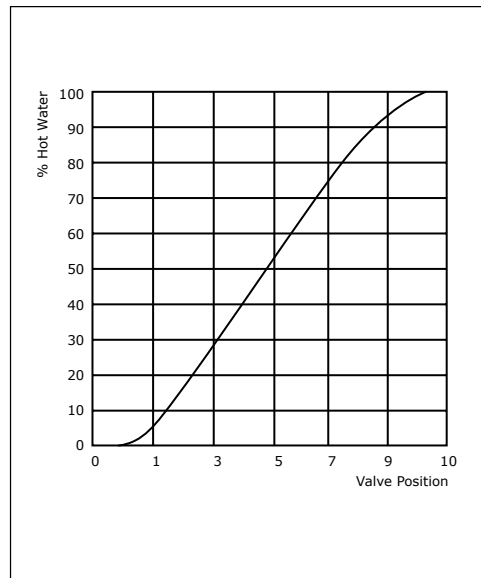
Code No.	Size	Description
065F8950	2"	DIN Weld Mating Raised Flange (Four Flanges Required per 4-Way Valve)
082F8961	2-1/2"	
082F8962	3"	
082F8963	4"	
082F8964	5"	
082F8965	6"	
065F8951	2"	Gasket for DIN Flange (Four Flanges Required per 4-Way Valve)
082F8966	2-1/2"	
082F8967	3"	
082F8968	4"	
082F8969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

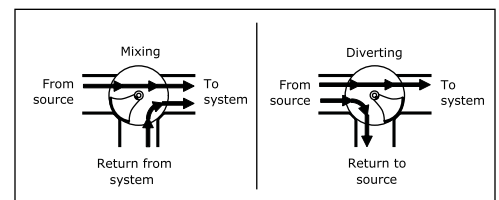
<b>Max. operating pressure</b>	90 psi (6 bar)
<b>Max. operating temperature</b>	230°F (110°C)
<b>Min. operating temperature</b>	14°F (-10°C)
<b>Max. differential pressure</b>	1-1/2" – 2": 8 psi (50kPa) 2-1/2" – 6": 5 psi (30kPa)
<b>Required motor torque (Recommendation for typical application)</b>	Valve 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)
<b>Allowable fluid</b>	Water (maximum 50% glycol) in a closed loop hydronic system.
<b>Connections</b>	3-Way ANSI Flange, flat faced 4-Way DIN Flange, raise faced
<b>Max. Leakage in % of Flow</b>	1.5



**Piping Arrangement:**

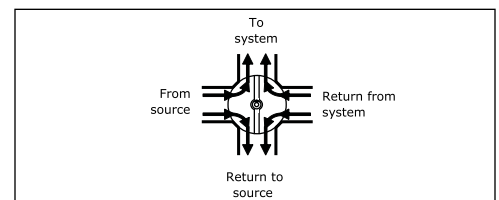
**3-Way Valves**

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

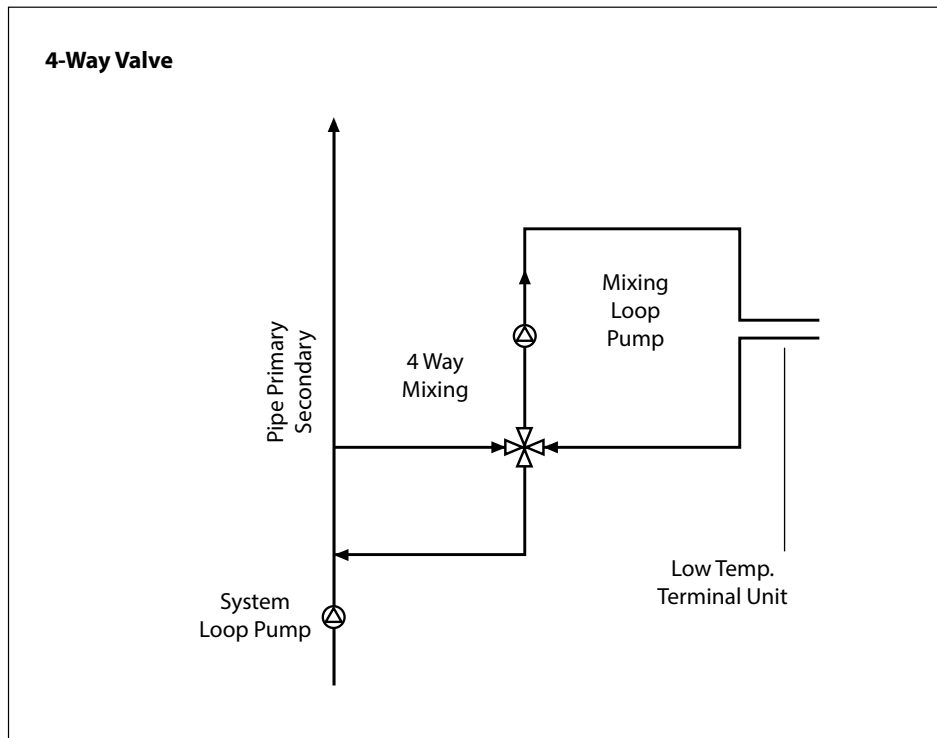
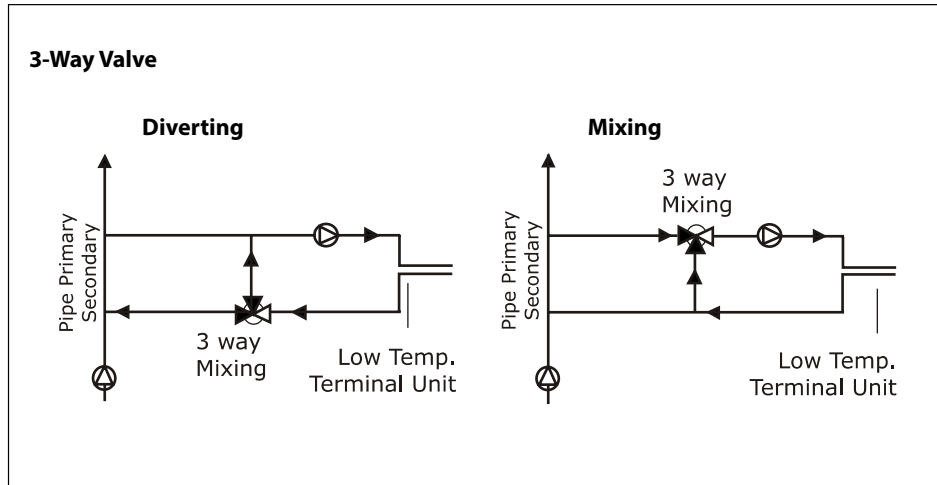


**4-Way Valves**

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

**Type F**

	Size	Reference	A	B	C	D	E	F	G	Weight
<b>3-Way</b>	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)
<b>4-Way</b>	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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