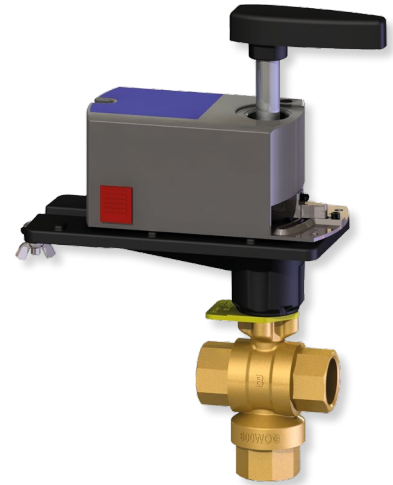


# FlowCon Unimizer 3-way 1/2"-3"

## Actuated Control Valves



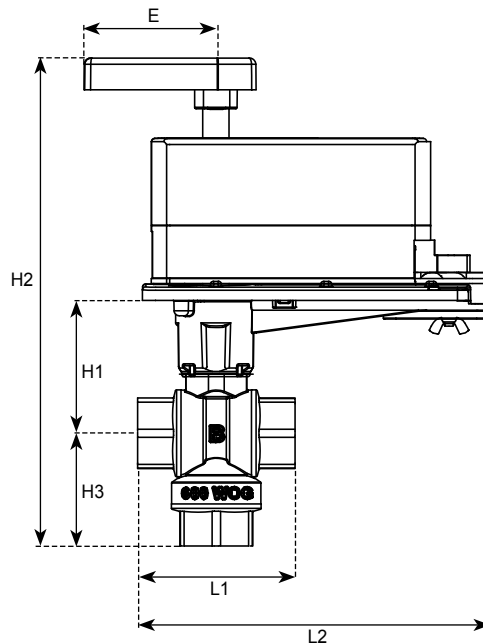
## SPECIFICATIONS

Pressure rating:	360 psi / 2400 kPa
Temperature rating, media:	-4°F to +248°F / -20°C to +120°C
Temperature rating, ambient:	-4°F to +122°F / -20°C to +50°C
Media:	Chilled water, hot water (Fluid grp. 2) For higher glycol content than 50% or additional fluids, please consult factory
Material:	
- Flow Optimizer:	Glass filled polymer
- Body:	Forged brass ASTM B283-06
- End connections:	Brass - ISO or NPT
- Field repairable stem:	Dual teflon seals and EPDM o-ring
- Stem seals:	EPDM o-rings
- Ball valve:	Nickel-plated brass ball
- Ball seals:	Teflon seals with EPDM o-rings
Angle of rotation:	0-90°
Installation:	Valve can be installed in mixing or diverting installations.
Leakage rates:	IEC 60534-1 Class IV

## DIMENSIONS AND WEIGHTS (NOMINAL) (measured in inches unless noted)

Model no.	Size (")	Size (mm)	Cv	L1	L2	H1	H2	H3	D depth (not shown)	E (handle)	Weight (lbs)
				NPT/BSP	NPT/BSP						
FUR3A_	1/2	15	0.33 0.59 1.0 2.4 4.3 8.0	2.7	7.0	3.4	9.5	2.0	3.0	2.0	1.6
FUR3B_	3/4	20	0.40 0.66 1.3 2.4 3.8 7.0 11.0	2.8	6.5	3.4	8.9	2.0	3.0	2.0	1.6
FUR3C_	1	25	0.40 0.65 1.3 2.3 3.5 10.0	2.8	7.3	3.4	9.6	2.1	3.0	2.0	1.6
			8.6 22.3	3.0	6.8	3.9	9.9	2.4			2.3
			4.5 14.9 30.8	4.3	7.8	4.1	10.9	3.3			3.6
FUR3D_	1 1/4	32	4.1 8.7 19.4	3.0	6.8	3.9	9.9	2.4	3.0	2.0	3.3
			12.7 26.8 34.1	3.6	7.3	4.1	10.4	2.8			3.5
FUR3E_	1 1/2	40	4.0 8.3 13.4 32.0	3.4	7.8	4.1	10.9	2.7	3.0	2.0	3.6
			23.5 61.1	4.0	7.3	4.6	11.1	3.2			5.2
FUR3F_	2	50	23.9 38.2 56.7	4.0	7.3	4.6	11.1	3.2	3.0	2.0	5.2
			82.6 108.5	5.0	7.8	5.9	12.4	3.8			8.5
FUR3G_	2 1/2	65	38.1 74.1 99.5	5.3	7.8	5.9	12.4	4.1	3.0	2.0	9.1
FUR3H_	3'	80 <sup>2</sup>	75 100 125 150 175 200	9.4	10.1	4.5 <sup>3</sup>	12.3	2.8 <sup>2</sup>	7.1	2.0	22.0

Note 1: Valve shown is 1/2" to 2 1/2". 3" valve has bypass port in Z plane.  
 Note 2: Only available as NPT.



## MODEL NUMBER SELECTION

**FUR3** . . . . . **M** . . . . .

Insert ball size:  
**A**=1/2", 15mm   **B**=3/4", 20mm   **C**=1", 25mm   **D**=1 1/4", 32mm  
**E**=1 1/2", 40mm   **F**=2", 50mm   **G**=2 1/2", 65mm   **H**=3", 80mm

Insert a Cv value (**A, B, C, D, E, F, G, H, J, K** or **M**) (see flow rate table next page):

Select connection standard:  
**F**=FNPT   **B**=ISO

Select ball and stem:  
**B**=Standard

Insert mounting kit number:  
**1**=Neptronic  
**2**=Johnson Controls  
**3**=Invensys  
**4**=Honeywell  
**5**=Siemens  
**6**=Belimo  
**7**=KMC Controls

**T**=Optional aluminum hanging ID tag

Example: FUR3.A.C.N.B.M.1.T=Unimizer 3-way 1/2" (Cv equal to 1.00 GPM) with NPT end connections, standard ball and stem, Neptronic mounting kit and ID-tag.

## Cv SELECTION AND FLOW RATE TABLE (GPM)

Line size (")	Model no	Full <sup>3</sup> port	Close OFF ΔP <sup>4</sup>	Flow rate (GPM) differential pressure (psi) across valve												Cv <sup>5</sup>	Model number Code for Cv
				0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7.0	10.0		
1/2"	FUR3.A_		50 psi	0.2	0.33	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.9	1.0	0.33	A
	FUR3.A_			0.4	0.59	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.6	1.9	0.59	B
	FUR3.A_			0.7	1.0	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.6	3.2	1.0	C
	FUR3.A_			1.7	2.4	2.9	3.4	3.8	4.2	4.5	4.8	5.1	5.4	6.3	7.6	2.4	D
	FUR3.A_			3.0	4.3	5.3	6.1	6.8	7.4	8.0	8.6	9.1	9.6	11.4	13.6	4.3	E
	FUR3.A_			5.7	8.0	9.8	11.3	12.6	13.9	15.0	16.0	17.0	17.9	21.2	25.3	8.0	F
3/4"	FUR3.B_		50 psi	0.3	0.40	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.1	1.3	0.40	A
	FUR3.B_			0.5	0.66	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.1	0.66	B
	FUR3.B_			0.9	1.3	1.6	1.8	2.1	2.3	2.4	2.6	2.8	2.9	3.4	4.1	1.3	C
	FUR3.B_			1.7	2.4	2.9	3.4	3.8	4.2	4.5	4.8	5.1	5.4	6.3	7.6	2.4	D
	FUR3.B_			2.7	3.8	4.7	5.4	6.0	6.6	7.1	7.6	8.1	8.5	10.1	12.0	3.8	E
	FUR3.B_	•		4.9	7.0	8.6	9.9	11.1	12.1	13.1	14.0	14.8	15.7	18.5	22.1	7.0	G
1"	FUR3.C_		50 psi	0.3	0.40	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.1	1.3	0.40	A
	FUR3.C_			0.5	0.65	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.1	0.65	B
	FUR3.C_			0.9	1.3	1.6	1.8	2.1	2.3	2.4	2.6	2.8	2.9	3.4	4.1	1.3	C
	FUR3.C_			1.6	2.3	2.8	3.3	3.6	4.0	4.3	4.6	4.9	5.1	6.1	7.3	2.3	D
	FUR3.C_			2.5	3.5	4.3	4.9	5.5	6.1	6.5	7.0	7.4	7.8	9.3	11.1	3.5	E
	FUR3.C_			7.1	10.0	12.2	14.1	15.8	17.3	18.7	20.0	21.2	22.4	26.5	31.6	10.0	F
	FUR3.C_			6.1	8.6	10.5	12.1	13.6	14.9	16.1	17.2	18.2	19.2	22.7	27.2	8.6	G
	FUR3.C_			15.8	22.3	27.3	31.5	35.3	38.6	41.7	44.6	47.3	49.9	59.0	70.5	22.3	H
	FUR3.C_			10.5	14.9	18.2	21.1	23.6	25.8	27.9	29.8	31.6	33.3	39.4	47.1	14.9	J
	FUR3.C_			3.2	4.5	5.5	6.4	7.1	7.8	8.4	9.0	9.5	10.1	11.9	14.2	4.5	K
FUR3.C_		21.8	30.8	37.7	43.6	48.7	53.3	57.6	61.6	65.3	68.9	81.5	97.4	30.8	M		
1-1/4"	FUR3.D_	•	40 psi	13.7	19.4	23.8	27.4	30.7	33.6	36.3	38.8	41.2	43.4	51.3	61.3	19.4	B
	FUR3.D_			9.0	12.7	15.6	18.0	20.1	22.0	23.8	25.4	26.9	28.4	33.6	40.2	12.7	C
	FUR3.D_			2.9	4.1	5.0	5.7	6.4	7.0	7.6	8.1	8.6	9.1	10.7	12.8	4.1	D
	FUR3.D_			6.1	8.7	10.6	12.3	13.7	15.0	16.2	17.3	18.4	19.4	22.9	27.4	8.7	E
	FUR3.D_	•		24.1	34.1	41.8	48.2	53.9	59.1	63.8	68.2	72.3	76.2	90.2	107.8	34.1	F
	FUR3.D_			19.0	26.8	32.8	37.9	42.4	46.4	50.1	53.6	56.9	59.9	70.9	84.7	26.8	G
1-1/2"	FUR3.E_		40 psi	9.5	13.4	16.4	18.9	21.1	23.2	25.0	26.7	28.4	29.9	35.4	42.3	13.4	A
	FUR3.E_			2.8	4.0	4.9	5.7	6.4	7.0	7.5	8.1	8.5	9.0	10.7	12.7	4.0	B
	FUR3.E_			5.8	8.3	10.1	11.7	13.1	14.3	15.5	16.5	17.5	18.5	21.9	26.1	8.3	C
	FUR3.E_	•		22.6	32.0	39.2	45.3	50.6	55.5	59.9	64.0	67.9	71.6	84.7	101.3	32.0	D
	FUR3.E_			16.6	23.5	28.8	33.3	37.2	40.8	44.0	47.1	49.9	52.6	62.3	74.4	23.5	E
	FUR3.E_			43.2	61.1	74.8	86.4	96.6	105.8	114.3	122.2	129.6	136.6	161.6	193.2	61.1	F
2"	FUR3.F_		40 psi	16.9	23.9	29.3	33.8	37.8	41.4	44.7	47.8	50.7	53.4	63.2	75.6	23.9	A
	FUR3.F_			40.1	56.7	69.4	80.2	89.7	98.2	106.1	113.4	120.3	126.8	150.0	179.3	56.7	B
	FUR3.F_			27.0	38.2	46.8	54.0	60.4	66.2	71.5	76.4	81.0	85.4	101.1	120.8	38.2	C
	FUR3.F_			76.7	108.5	132.9	153.4	171.6	187.9	203	217	230	243	287	343	108.5	D
	FUR3.F_			58.4	82.6	101.2	116.8	130.6	143.1	154.5	165.2	175.2	184.7	219	261	82.6	E
2-1/2"	FUR3.G_		40 psi	26.9	38.1	46.7	53.9	60.2	66.0	71.3	76.2	80.8	85.2	100.8	120.5	38.1	A
	FUR3.G_			52.4	74.1	90.8	104.8	117.2	128.3	138.6	148.2	157.2	165.7	196.1	234	74.1	B
	FUR3.G_	•		70.4	99.5	121.9	140.7	157.3	172.3	186.1	199.0	211	223	263	315	99.5	C
3"	FUR3.H_		70 psi	53.0	75.0	91.9	106.1	118.6	129.9	140.3	150.0	159.1	167.7	198.4	237	75.0	A
	FUR3.H_			70.7	100.0	122.5	141.4	158.1	173.2	187.1	200	212	223	264	316	100.0	B
	FUR3.H_			88.4	125.0	153.1	176.8	197.6	216	234	250	265	279	331	395	125.0	C
	FUR3.H_			106.0	150.0	183.7	212	237	260	281	300	318	335	397	474	150.0	D
	FUR3.H_			123.7	175.0	214	247	277	303	327	350	371	391	463	553	175.0	E
	FUR3.H_	•		141.4	200.0	245	283	316	346	374	400	424	447	529	632	200.0	F

Note 3: These valves are full port and do not have the Optimizer insert.

Note 4: Close-Off Pressures measured with 35 in-lb. actuator. The "Close Off Pressure" is the maximum allowable pressure drop across the valve body when the valve is fully closed. (Do not use actuators with torques higher than 90 in-lbs).

Note 5: The Cv is the gallons of water per minute (GPM) at 60°F that the valve will pass at 1 psi pressure drop. Hence the 1.0 psi pressure differential column in the table above is equivalent to the Cv value.

## GENERAL SPECIFICATIONS

### 1. ACTUATED BALL VALVE

- 1.1. Valve housing shall consist of forged brass ASTM B283-06 rated at no less than 360 psi at +248°F.
- 1.2. Manufacturer shall be able to provide glass-filled polymer ball insert to make flow control equal percentage.
- 1.3. Valve ball shall consist of chemically nickel-plated brass.
- 1.4. Valve shall have EPDM O-Rings behind ball seals to allow for a minimum close-off pressure of 40 psi with 35 in-lb of torque for 1/2"-3" sizes.
- 1.5. Bypass Cv shall be 80% of through Cv.
- 1.6. Stem shall be removable/replaceable without removing valve from line and shall include both teflon seals and EPDM O-ring.
- 1.7. Valves shall be installed in Tee configuration with actuator perpendicular to shaft. Valve shall not require elbows of any kind.

### 2. VALVE ACTUATOR

- 2.1. Control valve actuator shall be analog modulating (4-20 mA or 2-10 V), floating (tri-state), pulse width modulation, or two position as indicated in the control sequence.
- 2.2. Actuator shall provide minimum torque required for full valve shutoff position.
- 2.3. A 3.0 feet cable shall be provided for installation to electrical junction box.
- 2.4. A universal mounting plate shall allow installation of actuators meeting the system electrical requirements and valve torque requirements as provided by Nepronic, Belimo, ELO Drive, Honeywell, Invensys, Johnson Controls, KMC or Siemens. The control valve actuator may be furnished by the controls contractor under Section 15970 or by the valve manufacturer.

### 3. ACCESSORIES

- 3.1. Identification tags shall be available for all valves; tags shall be indelibly marked with Cv, model number and location; tags shall be aluminum.

## UPDATES

**For latest updates please see [www.flowcon.com](http://www.flowcon.com)**

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