

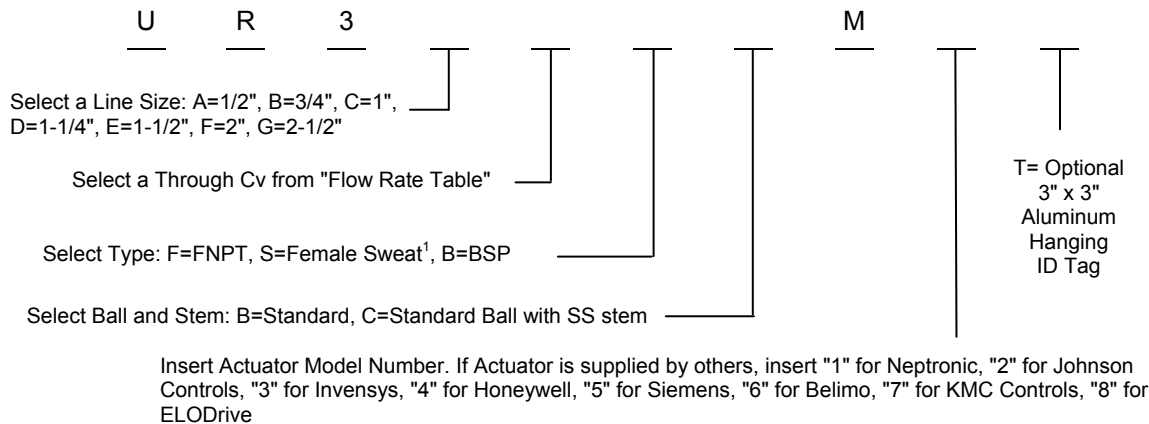
**SPECIFICATIONS**

**Static Pressure/Temp:** 360 PSI / -22°F to 250°F  
**Service:** Chilled water, hot water, up to 50% Glycol, or contact factory for additional fluids.  
**Flow Optimizer:** Glass Filled Polymer  
**Body Material:** Forged Brass ASTM B283-06  
**End Connections:** Brass – NPT, Sweat or BSP  
**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.

**DIMENSIONS & WEIGHTS (NOMINAL) (measured in inches and lbs unless noted)**

SIZE	MODEL NO.	THROUGH Cv	A:LENGTH		B:HEIGHT		C:LENGTH		D:DEPTH (NOT SHOWN)	E: HANDLE	F:HEIGHT		G:HEIGHT		WEIGHT
			FNPT	SWT	FNPT	SWT	FNPT	SWT			FNPT	SWT			
1/2"	UR3A_	0.33, 0.59, 1.0, 2.4, 4.3, 8.0	3.5	2.8	3.4	3.4	7.0	6.5	3.0	2.0	9.5	9.4	2.4	2.3	1.6
3/4"	UR3B_	0.40, 0.66, 1.3, 2.4, 3.8, 11.0	2.8	3.0	3.4	3.4	6.5	6.5	3.0	2.0	8.9	9.4	2.0	2.3	1.6
1"	UR3C_	0.40, 0.65, 1.3, 2.3, 3.5, 10.0	3.8	4.3	3.4	3.4	7.3	7.1	3.0	2.0	9.6	9.9	2.8	2.8	1.6
		8.6, 22.3	3.0	3.5	3.9	3.4	6.8	7.1			9.9	9.9	2.6	2.6	2.3
		4.5, 14.9, 30.8	4.5	4.3	4.1	3.9	7.8	7.8			10.9	10.9	3.3	3.5	3.6
1-1/4"	UR3D_	4.1, 8.7, 19.4	3.0	4.3	3.9	3.9	6.8	7.5	3.0	2.0	9.9	10.9	2.5	3.5	3.3
		12.7, 26.8, 34.1	3.6	4.0	4.1	3.9	7.3	7.3			10.4	10.4	2.8	3.0	3.5
1-1/2"	UR3E_	4.0, 8.3, 13.4, 32.0	4.5	4.3	4.1	3.9	7.8	7.8	3.0	2.0	10.9	10.9	3.3	3.5	3.6
		23.5, 61.1	4.0	4.3	4.6	4.1	7.3	7.5			11.1	11.1	3.3	3.5	5.2
2"	UR3F_	23.9, 38.2, 56.7	4.0	5.3	4.6	4.1	7.3	8.0	3.0	2.0	11.1	11.6	3.3	3.8	5.2
		82.6, 108.5	5.0	5.3	5.9	5.1	7.8	8.0			12.4	12.6	3.8	4.3	8.5
2-1/2"	UR3G_	38.1, 74.1, 99.5	5.0	N/A <sup>1</sup>	5.9		7.8	N/A	3.0	2.0	12.4	N/A	3.8	N/A	9.1

**MODEL NUMBER SELECTION**



**NOTES**

<sup>1</sup> Sweat ends are not available on 2-1/2" valves.  
 Replaces form F-4306

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THROUGH Cv SELECTION AND FLOW RATE TABLE (GPM)

LINE SIZE	MODEL NO.	THROUGH Cv	FULL <sup>2</sup> PORT	CLOSE OFF <sup>3</sup>	FLOWRATE (GPM) @ DIFFERENTIAL PRESSURE (PSI)											
					2-Position HVAC Apps		HVAC Modulating Apps									
					Cv <sup>4</sup>	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7.0
1/2"	UR3A	A=0.33		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
	UR3A	B=0.59			0.4	0.59	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.6	1.9
	UR3A	C=1.0			0.7	1.0	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.6	3.2
	UR3A	D=2.4			1.7	2.4	2.9	3.4	3.8	4.2	4.5	4.8	5.1	5.4	6.3	7.6
	UR3A	E=4.3			3.0	4.3	5.3	6.1	6.8	7.4	8.0	8.6	9.1	9.6	11.4	13.6
	UR3A	F=8.0			5.7	8.0	9.8	11.3	12.6	13.9	15.0	16.0	17.0	17.9	21.2	25.3
3/4"	UR3B	A=0.40		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
	UR3B	B=0.66			0.5	0.66	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.1
	UR3B	C=1.3			0.9	1.3	1.6	1.8	2.1	2.3	2.4	2.6	2.8	2.9	3.4	4.1
	UR3B	D=2.4			1.7	2.4	2.9	3.4	3.8	4.2	4.5	4.8	5.1	5.4	6.3	7.6
	UR3B	E=3.8			2.7	3.8	4.7	5.4	6.0	6.6	7.1	7.6	8.1	8.5	10.1	12.0
	UR3B	F=11.0	•		7.8	11.0	13.5	15.6	17.4	19.1	20.6	22.0	23.3	24.6	29.1	34.8
1"	UR3C	A=0.40		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
	UR3C	B=0.65			0.5	0.65	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.1
	UR3C	C=1.3			0.9	1.3	1.6	1.8	2.1	2.3	2.4	2.6	2.8	2.9	3.4	4.1
	UR3C	D=2.3			1.6	2.3	2.8	3.3	3.6	4.0	4.3	4.6	4.9	5.1	6.1	7.3
	UR3C	E=3.5			2.5	3.5	4.3	4.9	5.5	6.1	6.5	7.0	7.4	7.8	9.3	11.1
	UR3C	F=10.0			7.1	10.0	12.2	14.1	15.8	17.3	18.7	20.0	21.2	22.4	26.5	31.6
	UR3C	G=8.6			6.1	8.6	10.5	12.1	13.6	14.9	16.1	17.2	18.2	19.2	22.7	27.2
	UR3C	H=22.3			15.8	22.3	27.3	31.5	35.3	38.6	41.7	44.6	47.3	49.9	59.0	70.5
	UR3C	J=14.9			10.5	14.9	18.2	21.1	23.6	25.8	27.9	29.8	31.6	33.3	39.4	47.1
	UR3C	K=4.5			3.2	4.5	5.5	6.4	7.1	7.8	8.4	9.0	9.5	10.1	11.9	14.2
	UR3C	M=30.8			21.8	30.8	37.7	43.6	48.7	53.3	57.6	61.6	65.3	68.9	81.5	97.4
1-1/4"	UR3D	B=19.4	•	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
	UR3D	C=12.7			9.0	12.7	15.6	18.0	20.1	22.0	23.8	25.4	26.9	28.4	33.6	40.2
	UR3D	D=4.1			2.9	4.1	5.0	5.7	6.4	7.0	7.6	8.1	8.6	9.1	10.7	12.8
	UR3D	E=8.7			6.1	8.7	10.6	12.3	13.7	15.0	16.2	17.3	18.4	19.4	22.9	27.4
	UR3D	F=34.1	•		24.1	34.1	41.8	48.2	53.9	59.1	63.8	68.2	72.3	76.2	90.2	107.8
	UR3D	G=26.8			19.0	26.8	32.8	37.9	42.4	46.4	50.1	53.6	56.9	59.9	70.9	84.7
1-1/2"	UR3E	A=13.4		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
	UR3E	B=4.0			2.8	4.0	4.9	5.7	6.4	7.0	7.5	8.1	8.5	9.0	10.7	12.7
	UR3E	C=8.3			5.8	8.3	10.1	11.7	13.1	14.3	15.5	16.5	17.5	18.5	21.9	26.1
	UR3E	D=32.0	•		22.6	32.0	39.2	45.3	50.6	55.5	59.9	64.0	67.9	71.6	84.7	101.3
	UR3E	E=23.5			16.6	23.5	28.8	33.3	37.2	40.8	44.0	47.1	49.9	52.6	62.3	74.4
	UR3E	F=61.1			43.2	61.1	74.8	86.4	96.6	105.8	114.3	122.2	129.6	136.6	161.6	193.2
2"	UR3F	A=23.9		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
	UR3F	B=56.7			40.1	56.7	69.4	80.2	89.7	98.2	106.1	113.4	120.3	126.8	150.0	179.3
	UR3F	C=38.2			27.0	38.2	46.8	54.0	60.4	66.2	71.5	76.4	81.0	85.4	101.1	120.8
	UR3F	D=108.5			76.7	108.5	132.9	153.4	171.6	187.9	203	217	230	243	287	343
	UR3F	E=82.6			58.4	82.6	101.2	116.8	130.6	143.1	154.5	165.2	175.2	184.7	219	261
2-1/2"	UR3G	A=38.1		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
	UR3G	C=74.1			52.4	74.1	90.8	104.8	117.2	128.3	138.6	148.2	157.2	165.7	196.1	234
	UR3G	B=99.5	•		70.4	99.5	121.9	140.7	157.3	172.3	186.1	199.0	211	223	263	315

NOTES

- <sup>2</sup> These valves are full port and do not have the Optimizer insert.
- <sup>3</sup> 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)
- <sup>4</sup> 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.

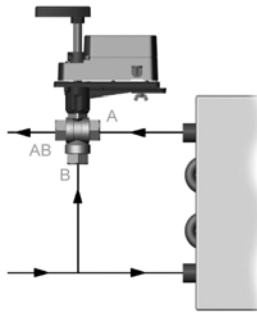
Replaces form F-4306

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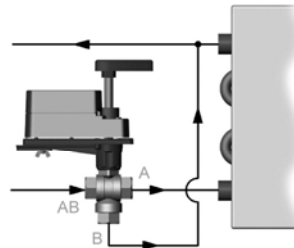
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**PIPING CONFIGURATIONS**

Our 3-Way ball allows the same 3-Way valve to be installed in either a mixing or diverting configuration without sacrificing any performance or Cv.



Mixing — fluid enters through two inlets (A, B) and exits through one outlet (AB)



Diverting — fluid enters through one inlet (AB) and exits through two outlets (A, B)

**ACTUATOR MODEL NUMBER SELECTION**

Griswold Controls Private Label	EMO-35F-24 EMO-35FV-24	EMO-35M-24 EMO-35MV-24	EMO-35F-24- 10S	EMO-70S-24SR
Torque of 35 in-lb	•	•	•	
Torque of 70 in-lb				•
Control Signal: On/Off	•		•	•
Control Signal: 3 Point	•			
Control Signal: Modulating 2–10 VDC		•		
Speed	150 sec	150 sec	8-10 sec	150 sec
Fail Safe (Spring Return)				•
Operating Power	4VA	4VA	6VA	8VA
Weight	1.5 pounds	1.5 pounds	2.2 pounds	4.2 pounds
Wiring Diagram	<p>Where: 1 is Floating Control and 2 is On/Off Control</p>			

Replaces form F-4306

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<b>Griswold Controls Private Label</b>	<b>GCDE131.1P</b>	<b>GCDE161.1P</b>	<b>GCMA121.1P</b>	<b>GCMA131.1P</b>	<b>GCMA161.1P</b>
Torque of 44 in-lb	•	•			
Torque of 62 in-lb			•	•	•
Control Signal: On/Off			•		
Control Signal: 3 Point	•			•	
Control Signal: Modulating 0–10 VDC		•			•
Speed	90 sec	90 sec	90 sec	90 sec	90 sec
Fail Safe (Spring Return)			•	•	•
Operating Power	3.3 VA	3.3 VA	5 VA	5 VA	5 VA
Weight	1.1 pounds	1.1 pounds	3.0 pounds	3.0 pounds	3.0 pounds
Wiring Diagram	<p>Where 6 is CW and 7 is CCW</p>				

**ADDITIONAL COMPATIBLE ACTUATORS:**

- Belimo: LM24, LM24S, LF24, LF24S, LF120, LF120S, LF24-3, LF24-3S, LM24SR, LF24SR, LF24SRS
- ELODrive: BN-44C1U, BNP-44C1U, BS-26F1U, BSP-26F1U, BN-44P1U, BNP-44P1U, BS-26P1U, BSP-26P1
- Honeywell: ML6161D2006, ML6174D2009, ML7161A2008, ML7174A2001, ML6185A1000, ML6185C1008, ML8185A1008, ML8185C1006, ML7285A1007, ML7285C1005
- Johnson Controls: M9106-AGA2, M9106-AGC2, M9106-GGA2, M9106-GGC2, M9206-AGA2, M9206-AGC2, M9206-GGA2, M9206-GGC2
- KMC Controls: MEP-5072, MEP-5073, MEP-5372, MEP-5373
- Neptronic: BBT-24, BBT-1000, BBT-1060, BBT-1021, BBT-1080, BBTHV-1100, BBTHV-1160, BBTHV-1120, BBTHV-1180, BBM2000A, BBM2060A
- Siemens: GDE131.1P, GDE161.1P, GDE136.1P, GDE166.1P, GMA121.1P, GMA161.1P
- TAC: MF40-6083, MA40-7043, MA40-7043-501, MA40-7040, MA40-7040-501, MF40-7043, MF40-7043-501, MS40-7043, MS40-7043-501

Replaces form F-4306

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