

Baumann™ 24003 3-Way Bronze or Stainless Steel Control Valve

The Baumann 24003 3-way control valve is ideally suited for control of flow and temperature where mixing or diverting service is required. This 3-way valve uses a rugged cast bronze or CF8M stainless steel body with S31600 austenitic stainless steel trim for extended service life.

Features

- Compact and light weight design reduces installed piping costs.
- Optional ENVIRO-SEAL™ packing system to meet critical emission control requirements; suitable for use in light duty chemical service (not for use in corrosive service). This option is available in the stainless steel version only.
- High quality S31600 austenitic stainless steel trim materials.
- Dual plug and stem guiding provides increased stability during plug travel.
- Multiple trim capacity reductions available to meet changing process requirements.
- Fisher™ FIELDVUE™ digital valve controllers available for remote calibration and diagnostics in facilities utilizing the PlantWeb™ architecture.



W9764
Stainless Steel 3-Way Valve with Baumann 32 Actuator



W9765
Bronze 3-Way Valve with Baumann 54 Actuator and
FIELDVUE DVC2000 Digital Valve Controller

Product Bulletin

52.1:243WY
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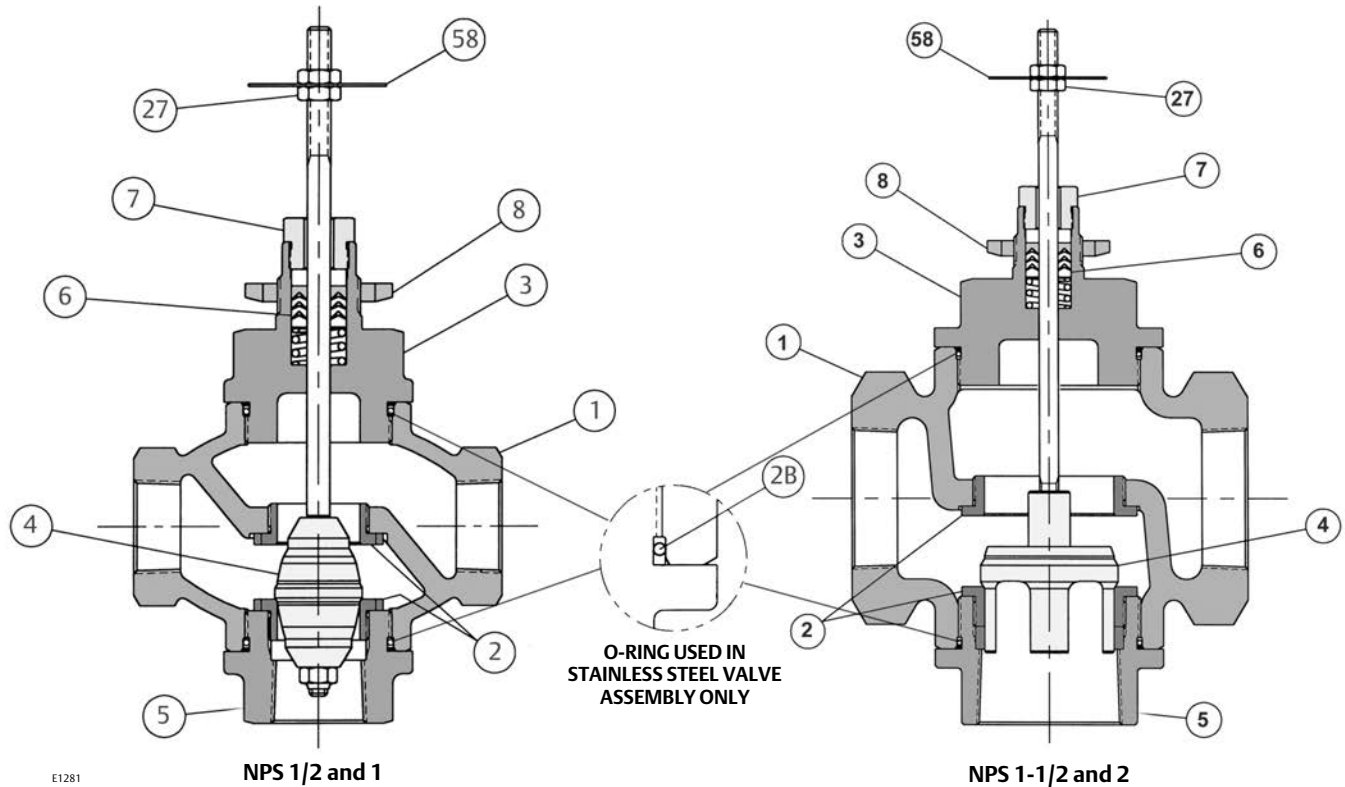
24003 Valve
D103329X012

Table 1. Flow Direction⁽¹⁾

Service	Inlet	Outlet
Diverting	C	U and L
Mixing	U and L	C

1. C = Common port, U = Upper port, L = Lower port

Figure 1. Baumann 24003 Valve Body with Standard Bonnet and NPS 1 Integral Seat

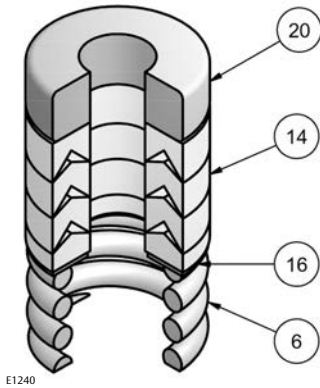


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Table 2. Materials of Construction

KEY NO.	DESCRIPTION	MATERIAL	
		Bronze	Stainless Steel
1	Valve Body	Bronze ASTM B62	ASTM A351 CF8M
2	Seat Rings	ASTM A276 S31600 Condition A	ASTM A276 S31600 Condition A
2B	O-Ring	N/A	TFE/P (tetrafluoroethylene/propylene)
3	Bonnet	Bronze ASTM B62	ASTM A351 CF8M
4	Plug & Stem Assembly	ASTM A276 S31600 Condition A	ASTM A276 S31600 Condition A
5	Bottom Port	Bronze ASTM B62	ASTM A351 CF8M
6	Packing	Standard	PTFE (Polytetrafluoroethylene) / PTFE, 25% carbon filled
		Optional	Molded Graphite Ribbon (Flexible Graphite)
			ENVIRO-SEAL (Stainless Steel ONLY)
7	Packing Follower	ASTM A276 S31600 Condition A Stainless Steel	
8	Drive Nut (Yoke)	ASTM A194 S30400 Gr. 8	
27	Locknuts	Stainless Steel (18-8 SST)	
58	Travel Indicator	ASTM A240 S30400	

Figure 2. Standard Spring-Loaded PTFE V-Ring Packing Kit

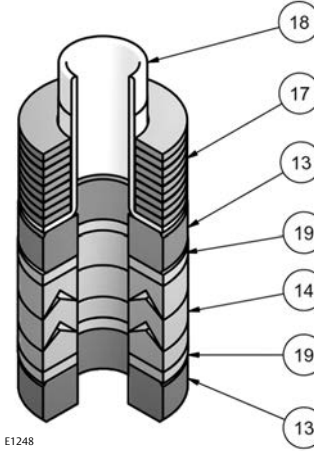


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Table 3. Standard Spring-Loaded PTFE V-Ring Packing Kit

Key Number	Description	Material
6	Spring	ASTM A313 S30200
14	Packing Set	PTFE (Polytetrafluoroethylene) / PTFE, 25% carbon filled
16	Washer	ASTM A240 S31600
20	Spacer	J-2000 (filled-Polytetrafluoroethylene)

Figure 4. ENVIRO-SEAL Packing Kit (Optional for Stainless Steel Only)

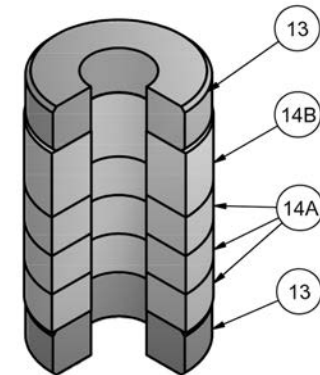


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Table 5. ENVIRO-SEAL Packing Kit (Optional for Stainless Steel Only)

Key Number	Description	Material
13	Bushing	Carbon-Graphite
14	Packing Set	PTFE (Polytetrafluoroethylene) / PTFE, 25% carbon filled
17	Belleville Spring	N06600 Nickel Alloy (ASTM B637 N07718, 40 HRC max)
18	Bushing	PEEK (polyetheretherketone)
19	Washer	Modified PTFE

Figure 3. Molded Graphite (Flexible Graphite) Packing Kit (Optional)



E1241

Table 4. Molded Graphite (Flexible Graphite) Packing Kit (Optional)

Key Number	Description	Material
13	Bushings	Carbon-Graphite
14A	Packing Rings	Graphite
14B	Packing Ring	Graphite

Special ENVIRO-SEAL Packing Note

The ENVIRO-SEAL PTFE packing system is suitable for 100 ppm environmental applications on services up to 51.7 barg (750 psig) and process temperatures ranging from -46 to 232°C (-50 to 450°F).

For non-environmental applications, this packing system offers excellent performance at the same temperature range up to the maximum valve working pressure.

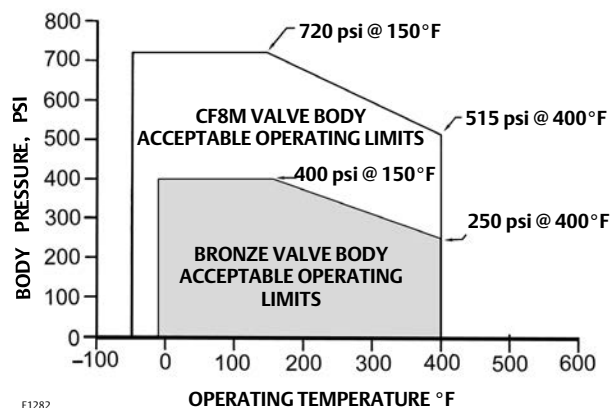
Temperature limits apply to packing arrangements only. Complete valve assembly temperature limits may differ, refer to appropriate pressure/temperature ratings.

(Reference Fisher Packing Selection Guidelines for Sliding-Stem Valves, Bulletin 59.1:062, [D101986X012](#)).

Table 6. Technical Specifications

NOMINAL PIPE SIZE	NPS 1/2, 1, 1-1/2, and 2	
END CONNECTIONS	Screwed NPT	
SEAT PLUG SEALING	Metal-to-Metal	
CHARACTERISTIC	Linear	
SEAT LEAKAGE	Class III	
VALVE BODY MATERIAL	Bronze	Stainless Steel
PRESSURE RATING	400 psi @ 150°F / 250 psi @ 400°F	720 psi @ 150°F / 515 psi @ 400°F
TEMPERATURE LIMITS	-20 to 400°F	-20 to 450°F

Figure 5. Valve Body and Temperature Limits



E1282

Table 7. Max Cv Values at 100% Plug Opening ⁽¹⁾
($K_v = 0.86 \times C_v$)

VALVE SIZE	ORIFICE DIAMETER	PLUG TRAVEL	RATED VALUES
NPS	inches	inches	C_v
1/2	0.626	0.56	1, 2
	0.876	0.56	4
1	0.876	0.56	4
	1.126	0.56	10
1-1/2	1.676	0.75	20
2	2.126	0.75	40

1. See [Fisher Catalog 12](#) for a full range of flow and sizing information.

Figure 6. Mixing Service Flow Characteristics

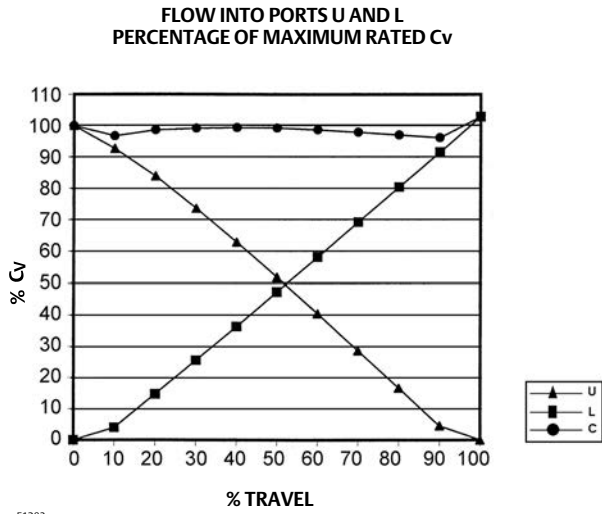


Figure 7. Diverting Service Flow Characteristics

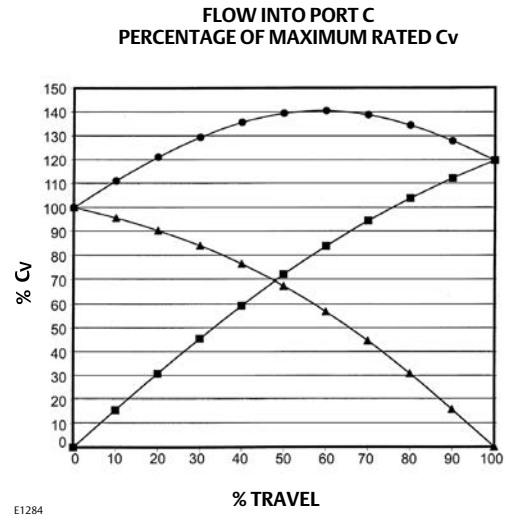
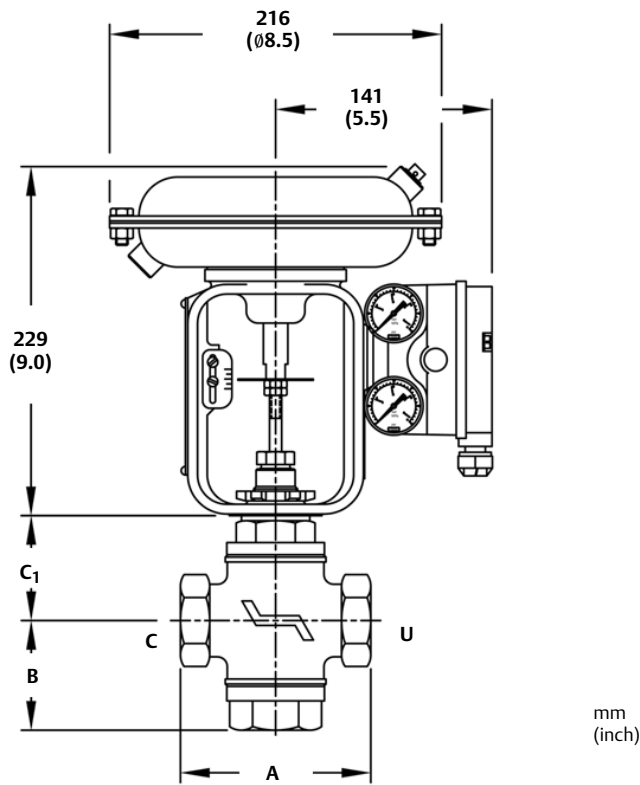


Table 8. Valve Body Dimensions and Weights: NPT Valve Bodies Only

VALVE SIZE	VALVE BODY MATERIAL						TRAVEL	WEIGHT
	BRONZE, NPT			STAINLESS STEEL, NPT (A)				
NPS	A	B	C1	A	B	C1	Inches	lbs
1/2	4.88	2.75	2.75	5.0	2.75	2.75	0.56	8
1	4.88	2.75	2.75	5.0	2.75	2.75	0.56	8
1-1/2	5.75	3.81	3.31	6.1	3.38	3.31	0.75	15
2	6.50	4.0	3.6	6.50	3.75	3.6	0.75	20

Figure 8. Dimensional Drawing



E1285

**24000 3-WAY ATC/FAIL OPEN ACTUATOR
WITH HANDWHEEL**

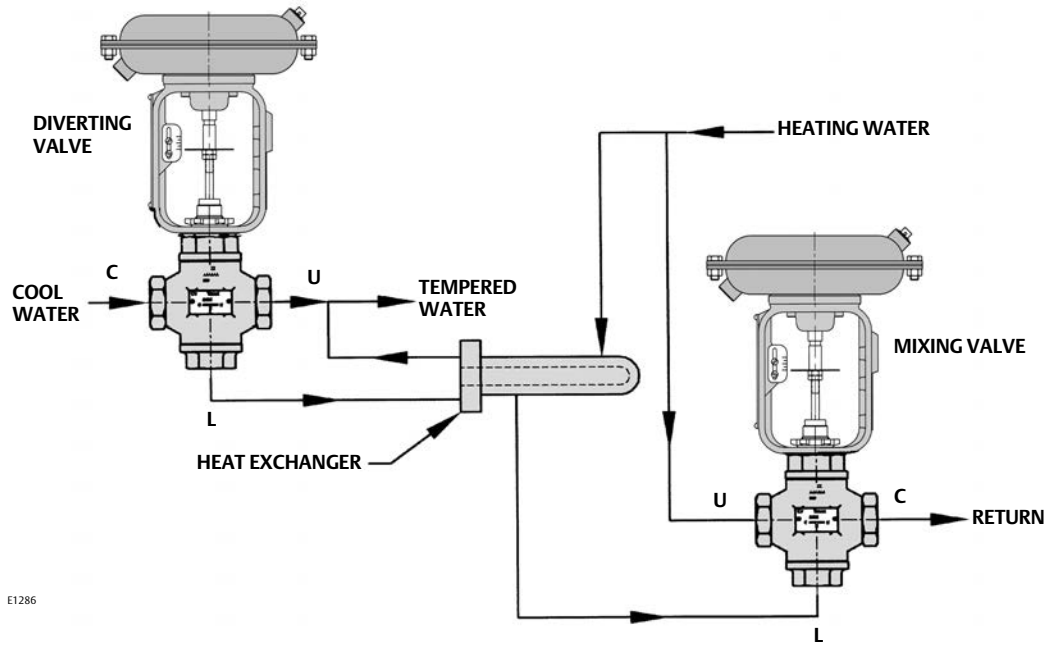
Note: Actuator removal requires 115 mm (4.5 inches) vertical clearance.

Table 9. Application Port⁽¹⁾

Service	Inlet	Outlet
Diverting	C	U and L
Mixing	U and L	C

1. C = Common port, U = Upper port, L = Lower port

Figure 9. Mixing and Diverting Applications



E1286

Table 10. Model Numbering System

24					3			
Valve Body Series	Service		Port "L" Fails		3-Way Valve Body		Material	
24	D	Diverting	1	Closed	3	---	Bronze	
	M	Mixing	2	Open		S	Stainless Steel	

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