

Baumann™ 89000 Sanitary Control Valve

Baumann 89000 sanitary control valves provide control solutions for various sanitary process systems. These valves meet FDA and UPS CLVI standards and are acceptable for cleaning in place (CIP) and sanitizing or steam in place (SIP) operation. All metal parts in contact with the media are made of S31603 stainless steel and each valve comes standard with a stainless steel actuator to resist corrosion from caustic wash down.

The 89000 control valve is designed for use in a wide range of applications in many industries, including biotechnology, pharmaceutical, food & beverage, cosmetics, and others where cleanliness and sterility are required. The valves have a modular design allowing for quick assembly and easy maintenance and calibration.

Features

- Sizes ranging from NPS 1/2 to 6
- Elastomers meet FDA and USP CLVI standards
- Internal surface finish of 20 Ra (0.5 µm) available
- Stainless steel diaphragm actuators with an electropolish finish come standard
- Actuators are optimally matched to each valve size to suit many processes
- A robust stainless steel yoke construction connects the valve with its actuator and allows the Fisher® FIELDVUE™ digital valve controller to be attached
- The entire valve assembly can be easily disassembled for inspection and maintenance



W9850

Baumann 89000 NPS 1/2 Sanitary Control Valve Shown with FIELDVUE DVC2000 Digital Valve Controller

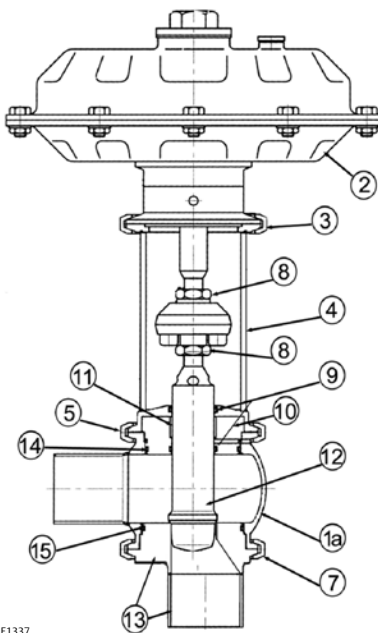


W9851-2

Baumann 89000 NPS 3 Sanitary Control Valve Shown with FIELDVUE DVC6200 Digital Valve Controller

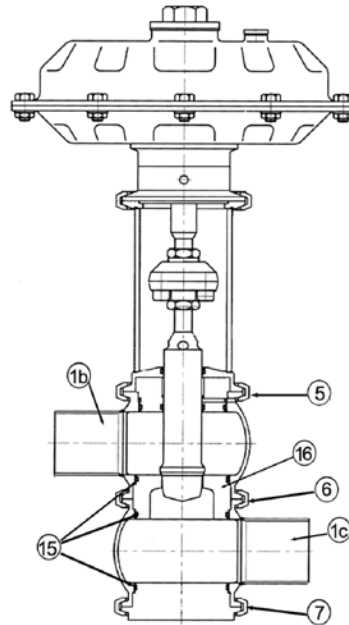


Figure 1. Baumann 89000A Angle Valve Assembly



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Figure 2. Baumann 89000I Inline Valve Assembly



E1338

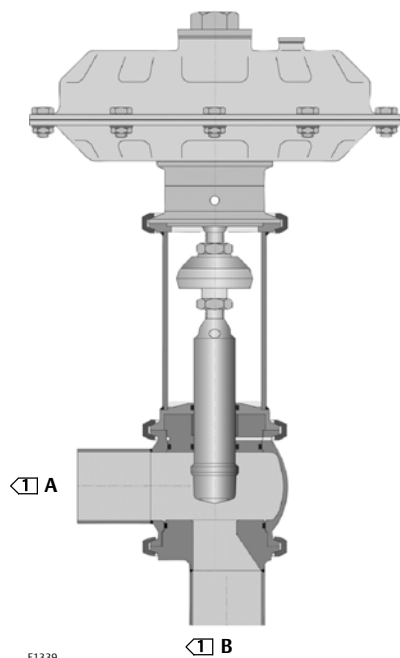
Table 1. Materials of Construction

Key Number	Description	Material
1a	Angle Valve Body	S31603 Stainless Steel
1b	Upper Inline Valve Body	
1c	Lower Inline Valve Body	
2	Diaphragm Actuator	S30400 Stainless Steel
3	Actuator Clamp	
4	Yoke	
5	Upper Body Clamp	
6	Middle Body Clamp	
7	Lower Body Clamp	
8	Stem Locknut	
9	O-Ring	EPDM
10	Bonnet	S31603 Stainless Steel
11	Bearing	PTFE/Bronze
12	Valve Plug with Seat	S31603 Stainless Steel
13	Angle Valve Seat/Lower Pipe Connection (1pc)	
14	O-Ring	EPDM
15	O-Ring	
16	Inline Valve Seat	S31603 Stainless Steel

Specifications

See table 2 for technical specifications and table 4 for actuator specifications.

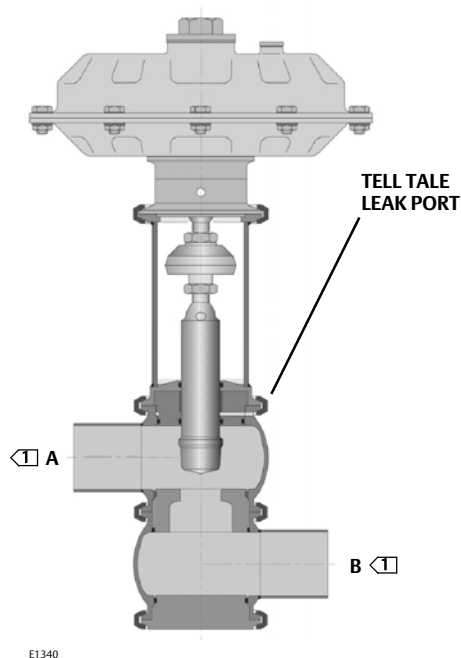
Figure 3. Baumann 89000A Angle Valve Body



E1339

Installed with flow from Port B to Port A. Flow from Port A to Port B is not recommended

Figure 4. Baumann 89000I Inline Valve Body



E1340

Installed with flow from Port B to Port A. Flow from Port A to Port B is not recommended

Table 2. Technical Specifications

Nominal Size	NPS 1/2 through 6
Valve Body Material	S31603 Stainless Steel
Internal Valve Body Finish	$\leq 20\text{Ra}$ Microinch / 0.50Ra Micron
Connections	Tri-Clamp Standard (Weld Ends, ISO Clamps and others available)
Rangeability	50:1
Bonnet	Clamped
Characteristics	Modified Equal Percentage
Seat Leakage	ANSI / FCI 70-2, CLIV (Metal Seat)
Maximum Operating Pressure	17 bar (250 Psi)
Maximum Operating Temperature, Fluids, and Gases (Non-Steam)	135°C (275°F)
Maximum Operating Temperature, Steam	160°C (320°F)

Product Bulletin

52.1:89SV
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89000 Valve
D103346X012

Table 3. Cv / Kv Values⁽¹⁾

VALVE SIZE		EQUAL PERCENTAGE C _v VALUES AT PERCENT OPEN											F _L	F _d	X _T	K _C
DN	NPS		10	20	30	40	50	60	70	80	90	100				
15	1/2	Cv	0.016	0.022	0.031	0.042	0.058	0.080	0.110	0.153	0.211	0.29	0.90	0.28	0.68	0.70
		Kv	0.014	0.019	0.026	0.036	0.050	0.069	0.095	0.131	0.181	0.25				
		Cv	0.06	0.09	0.12	0.17	0.23	0.32	0.44	0.61	0.84	1.2				
		Kv	0.06	0.08	0.11	0.15	0.20	0.28	0.38	0.53	0.73	1.0				
20	3/4	Cv	0.10	0.14	0.20	0.27	0.37	0.51	0.71	0.98	1.35	1.9	0.90	0.46	0.68	0.70
		Kv	0.09	0.12	0.17	0.23	0.32	0.44	0.61	0.84	1.16	1.6				
		Cv	0.26	0.35	0.49	0.67	0.93	1.28	1.77	2.44	3.37	4.7				
		Kv	0.22	0.30	0.42	0.58	0.80	1.10	1.52	2.10	2.90	4.0				
25	1	Cv	0.58	0.80	1.10	1.52	2.09	2.88	3.98	5.49	7.59	10	0.90	0.46	0.68	0.70
		Kv	0.49	0.68	0.95	1.31	1.80	2.47	3.42	4.73	6.53	9				
40	1-1/2	Cv	1.16	1.59	2.20	3.03	4.19	5.76	7.95	11.0	15.2	21	0.90	0.46	0.68	0.70
		Kv	1.00	1.37	1.89	2.61	3.60	4.95	6.84	9.45	13.1	18				
50	2	Cv	1.79	2.47	3.42	4.72	6.51	8.95	12.4	17.1	23.60	33	0.90	0.46	0.68	0.70
		Kv	1.5	2.1	2.9	4.1	5.6	7.7	10.6	14.7	20.3	28				
--	3	Cv	4.36	6.01	8.30	11.5	15.8	21.7	30.0	41.5	57.3	79	0.90	0.46	0.68	0.70
		Kv	3.75	5.17	7.14	9.86	13.6	18.7	25.8	35.7	49.3	68				
80	--	Cv	5.44	7.51	10.4	14.3	19.8	27.2	37.6	51.9	71.7	99	0.90	0.46	0.68	0.70
		Kv	4.67	6.46	8.93	12.3	17.0	23.4	32.3	44.6	61.6	85				
100	4	Cv	11.5	15.9	21.9	30.3	41.8	57.5	79.4	110	152	209	0.90	0.46	0.68	0.70
		Kv	9.90	13.7	18.9	26.1	36.0	49.5	68.5	94.6	130.6	180				
150	6 ⁽²⁾	Cv	24.3	33.6	46.4	64.1	88.4	122	168	232	320	442	0.90	0.46	0.68	0.70
		Kv	20.9	28.9	39.9	55.1	76.0	104	144	200	276	380				

1. Installed with flow from Port B to Port A. Flow from Port A to Port B is not recommended.
2. Consult your Emerson Process Management sales office for NPS 6 availability.

Table 4. Actuator Specifications

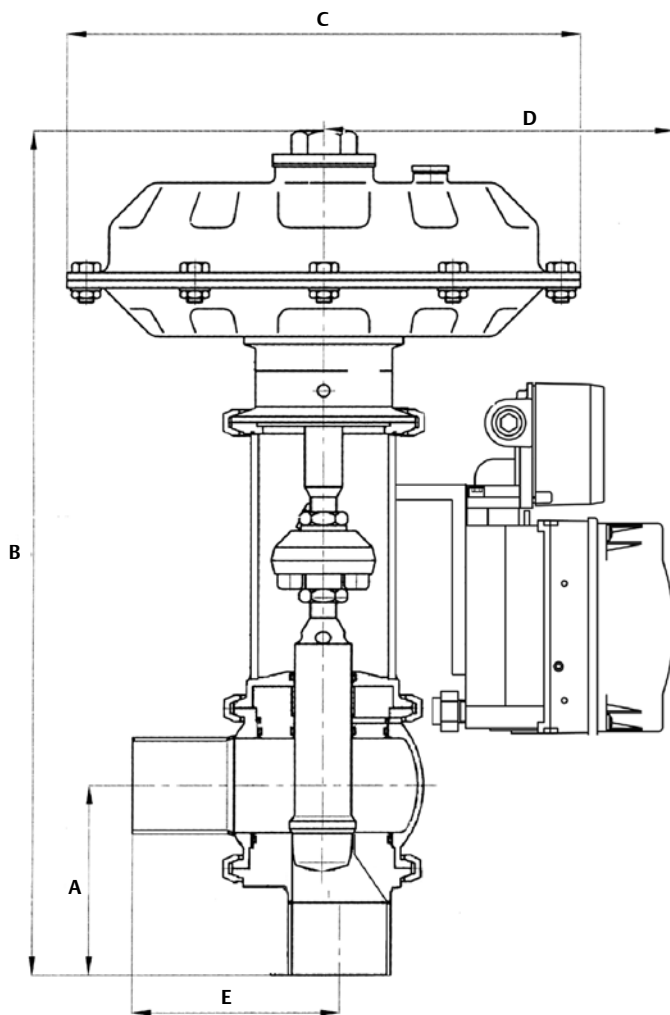
Type	20	50	50H	112
Travel, mm (Inches)	20 (0.8)		30 (1.2)	60 (2.4)
Air Failure	Open or Closed			
Ambient Temperature Range	-20 to 80°C (0 to 175°F)			
Maximum Air Pressure	80 Psi			
Spring Cases	S30400 Stainless Steel			
Yoke	S30400 Stainless Steel			

Table 5. Allowable Pressure Drops

AIR-TO-OPEN					ACTUATOR SIZE	20	50	50H	112	
					Bench Range (bar)	0.8 - 4.0	1.5 - 3.0	1.5 - 3.0	1.4 - 3.0	
					Bench Range (psi)	12 - 58	22 - 44	22 - 44	45 - 75	
					Valve Stroke, mm (Inches)	20 (0.8)		30 (1.2)	60 (2.4)	
VALVE SIZE		Cv	Kv	Port Diameter mm (Inches)	ALLOWABLE SHUTOFF PRESSURES					
DN	NPS				bar (psi)					
15	1/2	0.29	0.25	7 (0.28)	16 (230)					
		1.2	1.0	7 (0.28)	16 (230)					
20	3/4	1.9	1.6	8.5 (0.33)	16 (230)					
		4.7	4.0	16 (0.63)	16 (230)					
25	1.0	10	9.0	24 (0.94)		16 (230)				
40	1-1/2	21	18	32 (1.26)		16 (230)				
50	2	21	18	32 (1.26)		16 (230)				
		33	28	48 (1.89)		16 (230)				
--	3	79	68	62 (2.44)			11 (155)	16 (230)		
80	--	99	85	73 (2.87)			7.7 (110)	16 (230)		
100	4	209	180	90 (3.54)			5 (70)	16 (230)		
150	6 (A)	442	380	135 (5.31)				8 (115)		
AIR-TO-CLOSE					ACTUATOR SIZE	20	50	50H	112	
					Bench Range, bar	0.8 - 4.0	1.5 - 3.0	1.5 - 3.0	1.4 - 3.0	
					Bench Range, psi	12 - 58	22 - 44	22 - 44	45 - 75	
					Valve Stroke, mm (Inches)	20 (0.8)		30 (1.2)	60 (2.4)	
					VALVE SIZE		Allowable Shutoff Pressure			
					DN	NPS	bar (psi)			
					25 - 100	1 - 4	160 (230)			
150	6 ⁽¹⁾	10 (145)								

1. Consult your Emerson Process Management sales office for NPS6 availability.

Figure 5. Dimensions for Baumann 89000A Angle Valve with FIELDVUE DVC6000 Digital Valve Controller



E1341

Table 6. Baumann 89000A Angle Valve Dimensions

VALVE SIZE		DIMENSIONS													
		Tri-Clamp A		Weld End A		Tri-Clamp B		Weld End B		C		D		E	
DN	NPS	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
15	1/2	64	2.5	36	1.5	300	12	280	11	165	6.5	317	12.5	64	2.5
20	3/4	64	2.5	50	2.0	314	12	293	11.5	165	6.5	317	12.5	64	2.5
25	1	64	2.5	90	3.6	460	18	458	18	165	6.5	317	12.5	64	2.5
40	1-1/2	104	4.1	90	3.6	460	18	445	17.5	165	6.5	317	12.5	104	4.1
50	2	114	4.5	100	4.0	474	19	458	18.5	270	10.6	368	14.5	114	4.5
---	3 ⁽¹⁾	143	5.6	130	5.2	546	22	544	21.4	270	10.6	368	14.5	148	5.8
80 ⁽¹⁾	---	143	5.6	130	5.2	546	22	544	21.4	270	10.6	368	14.5	143	5.6
100	4 ⁽¹⁾	155	6.1	140	5.5	563	23	569	22.4	270	10.6	368	14.5	160	6.3
150	6	N/A													

1. Dimensions are for the 50H actuator. Contact your Emerson Process Management sales office for Baumann 112 actuator dimensions.

Figure 6. Dimensions for Baumann 89000I Inline Valve with FIELDVUE DVC2000 Digital Valve Controller

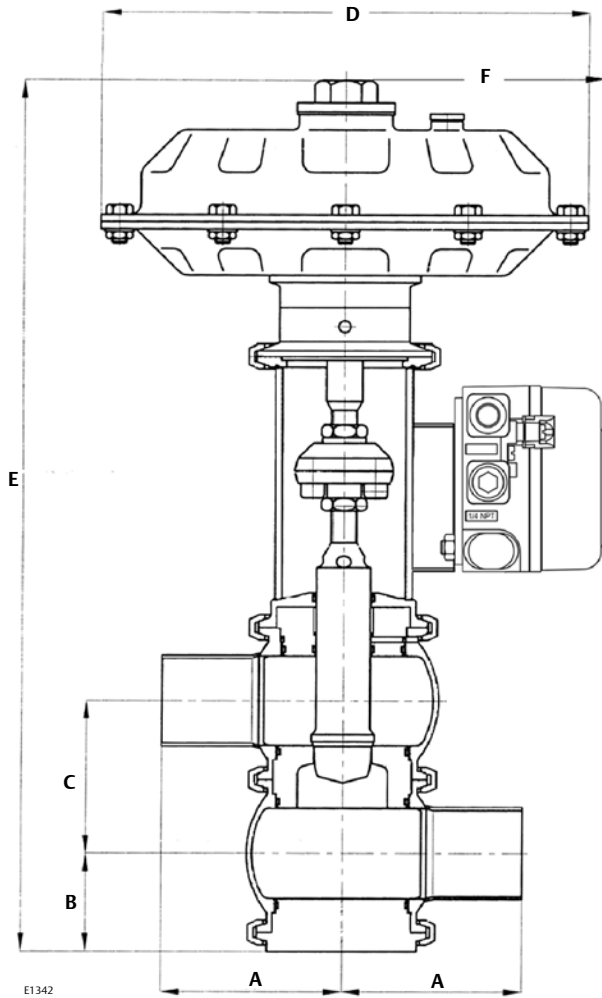


Table 7. Baumann 89000I Inline Valve Dimensions

VALVE SIZE		DIMENSIONS													
		Tri-Clamp A		Weld End A		B		C		D		E		F	
DN	NPS	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
25	1	119	4.7	90	3.5	48	1.9	74	2.9	165	6.5	464	18.3	127	5.0
40	1-1/2	119	4.7	90	3.5	48	1.9	74	2.9	165	6.5	464	18.3	127	5.0
50	2	128	5.1	100	4.0	56	2.2	85	3.4	270	10.6	488	19.2	153	6.0
80	3 ⁽¹⁾	158	6.2	130	5.3	78	3.0	116	4.6	270	10.6	581	22.9	153	6.0
100	4 ⁽¹⁾	168	6.6	140	5.5	86	3.5	136	5.4	270	10.6	617	24.3	153	6.0
150	6	Contact your Emerson Process Management sales office for NPS 6 availability.													
1. Dimensions are for the 50H actuator. Contact your Emerson Process Management sales office for Baumann 112 actuator dimensions.															

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Table 8. Model Numbering System

ACTUATOR TYPE	89	588			VALVE BODY STYLE	
	VALVE BODY	PLUG SERIES	CHARACTERISTIC	SEAT LEAKAGE		
20		588	Equal % / Metal Seat (S31603)	IV	A	Angle
50					I	Inline
50H						
112						

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