

Flange Standards on all Bronze Flanged Valve Bodies

Description

Pressure/temperature ratings for CL150 and CL300 flanged bronze valves, given in table 1, are in accordance with ASME B16.24-2001.

Pressure/temperature ratings for ASME SB-148 C95400 aluminum bronze, shown in table 2, are in accordance with ASME Case Code N-133.

Aluminum bronze is not an ASME B16.34 approved material and should not be used in systems requiring conformance to that standard. Flange facings and dimensions of ASME SB-148 C95400 aluminum bronze valve bodies are in accordance with ASME B16.24-2001. Consult your Emerson Process Management™ sales office for additional information.

Information in table 1 has been extracted from ASME B16.24-2001 (Cast Copper Alloy Pipe Flanges and Flange Fittings), and information in table 2 has been extracted from ASME Case Code N-133. The ratings in both tables are presented with the permission of the publisher, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, New York 10017.

Additional information on flange facings, dimensions, gaskets, and bolting is also provided.

Flange Facings

Faces of bronze and aluminum bronze flanges will be machined to a smooth finish over their entire face. Raised, male-and-female and/or tongue and groove facings will not be used as they cannot be successfully employed in joints between bronze or aluminum bronze flanges conforming to standards.

Where bronze or aluminum bronze flanges are bolted to cast iron or steel flanges, which normally have a raised face, the raised face of the cast iron or steel flanges should be removed.

Dimensions

The center-to-face and face-to-face dimensions of all bronze and aluminum bronze valve bodies will differ from those of cast iron valve bodies. The difference is due to different flange thicknesses recommended by ASME B16.24.

Gaskets

Gasket dimensions will be the same as the flange diameters. Metallic gaskets should not be used.

Bolting

Bolts recommended for companion flanges will be of steel. Bolts smaller than 19 mm (3/4-inch) will have ANSI standard square heads or standard heavy hex heads and will be used with standard heavy nuts. Bolts 19 mm (3/4-inch) and larger will have ANSI standard square heads or standard hex heads and will be used with standard hex nuts, heavy hex nuts, or standard square nuts.

Bolting for bonnet or bottom flanges will be carbon steel cap screws unless otherwise specified. Bronze bolts for bonnet and blind flanges will be furnished only when specifically requested on an order.



Flange Standards on Bronze Valves

Table 1. Pressure/Temperature Ratings for ASTM B62 and B61 Bronze

SERVICE TEMPERATURE		WORKING PRESSURE							
		CL150				CL300			
		ASTM B62		ASTM B61		ASTM B62		ASTM B61	
°C	°F	Bar	Psig	Bar	Psig	Bar	Psig	Bar	Psig
-18 to 66	0 to 150	15.5	225	15.5	225	34.5	500	34.5	500
79	175	15.2	220	15.2	220	33.1	480	33.8	490
93	200	14.5	210	14.8	215	32.1	465	32.8	475
107	225	14.1	205	14.5	210	30.7	445	32.1	465
121	250	13.4	195	14.1	205	29.3	425	31.0	450
135	275	13.1	190	13.8	200	28.3	410	30.3	440
149	300	12.4	180	13.4	195	26.9	390	29.3	425
177	350	11.4	165	12.4	180	24.1	350	27.6	400
204	400	---	---	11.7	170	---	---	25.9	375
208	406	10.3	150	---	---	---	---	---	---
232	450	9.3 ⁽¹⁾	135 ⁽¹⁾	11.0	160	19.3 ⁽¹⁾	280 ⁽¹⁾	24.1	350
260	500	---	---	10.3	150	---	---	22.4	325
288	550	---	---	9.7	140	---	---	20.7	300

1. Some codes (e.g. ASME B31.1) limit the rating temperature of the indicated material to 208°C (406°F).

Table 2. Pressure/Temperature Ratings for ASME SB-148 C95400 Aluminum Bronze

SERVICE TEMPERATURE		WORKING PRESSURE			
		CL150		CL300	
		Bar	Psig	Bar	Psig
°C	°F				
38	100	15.9	230	41.4	600
93	200	15.2	220	39.7	575
149	300	14.8	215	39.0	565
204	400	13.8	200	38.6	560

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