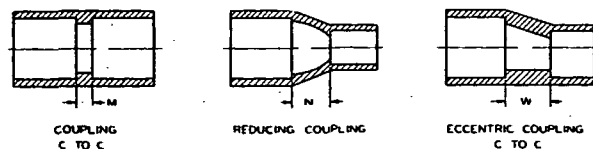


WELDING

Erection of piping in heating and ventilating installations by means of fusion welding has been commonly accepted in the past few years as an alternate method to the screwed and flanged joint. Since the question of economy of welding as against the use of screwed and flanged fittings is dependent on the individual job, the use of welding is generally recommended on the basis of: greatly reduced cost of maintenance and repair;

TABLE 17. DIMENSIONS OF CAST BRASS SOLDER-JOINT COUPLINGS
(Straight, Reducing and Eccentric Sizes)



STRAIGHT		REDUCING		ECCENTRIC	
STANDARD WATER TUBE SIZE	LAYING LENGTH* M	STANDARD WATER TUBE SIZE	LAYING LENGTH* N	STANDARD WATER TUBE SIZE	LAYING LENGTH* W
1/4	1 1/4	3/4 x 1/2	3/4	3/4 x 1/2	3/4
5/8	1 1/4	1 x 3/4	3/4	1 x 3/4	1 1/4
1	1 1/4	1 1/4 x 1	3/4	1 1/4 x 1	3/4
1 1/4	1 1/4	1 1/4 x 3/4	3/4	1 1/4 x 3/4	3/4
1 1/2	1 1/4	1 1/2 x 1 1/4	3/4	1 1/2 x 1 1/4	1 1/4
1 3/4	1 1/4	1 1/2 x 1	3/4	1 1/2 x 1	1 1/4
2	1 1/4	1 1/2 x 3/4	3/4	2 x 1 1/4	1 1/4
2 1/4	1 1/4	2 x 1 1/4	3/4	2 1/4 x 2	1 3/4
3	1 1/4	2 x 1	3/4	3 x 2 1/4	1 3/4
3 1/4	1 1/4	2 x 3/4	3/4	3 x 2	1 3/4
4	1 1/4	2 1/4 x 2	3/4	4 x 3	2
5	1 1/4	2 1/4 x 1 1/4	3/4	.....	.....
6	1 1/4	2 1/4 x 1 1/4	3/4	.....	.....
8	1 1/4	2 1/4 x 1	3/4	.....	.....
.....	.....	3 x 2 1/4	3/4	.....	.....
.....	.....	3 x 2	3/4	.....	.....
.....	.....	4 x 3	1 1/4	.....	.....
.....	.....	4 x 2 1/4	1 1/4	.....	.....
.....	.....	4 x 2	1 1/4	.....	.....
.....	.....	6 x 4	1 3/4	.....	.....
.....	.....	8 x 6	1 3/4	.....	.....

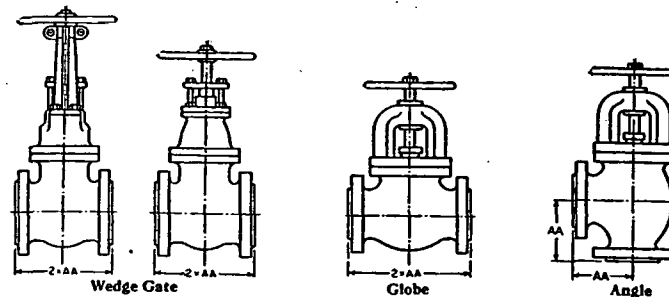
From American Standard for Cast-Brass Solder-Joint Fittings, ASA B16.18-1950.
All dimensions given in inches.

* Not standardized for wrought fittings. Consult manufacturer for dimensions.

reduced weight resulting from the use of a lighter-weight pipe; or increased economy in pipe insulation, hangers, and supports rather than any economy that might be effected in actual erection by welding on low to medium pressure heating jobs.

Fusion welding, commonly used in erection of piping, is defined as the process of joining metal parts in the molten, or molten and vapor states, without the application of mechanical pressure or blows. Fusion welding embraces gas welding and electric arc welding, both of which are commonly

TABLE 18. DIMENSIONS OF FLANGED CAST-IRON AND STEEL VALVES



NOMINAL PIPE SIZE	CONTACT SURFACE TO CONTACT SURFACE DIMENSIONS, (2 X AA)									
	CAST-IRON				STEEL					
	125	175 ¹	250 ¹	800 ¹ Hy-draulic	150 ¹	300 ¹	400 ¹	600 ¹	900 ¹	1500 ¹
1	.....	.....	.....	.....	.....	.....	8 3/4	8 3/4	10	10
1 1/4	.....	.....	.....	.....	.....	7 3/4	9 3/4	9 3/4	11	11
2	7	7 3/4	8 1/4	11 1/4	7	8 1/4	11 1/4	11 1/4	14 1/4	14 1/4
2 1/4	7 1/4	8	8 1/4	13	7 1/4	8 1/4	11 1/4	11 1/4	16 1/4	16 1/4
3	8	8 1/4	11 1/4	14	8	11 1/4	14	14	18 1/4	18 1/4
3 1/4	8 1/4	10	11 1/4	.....	8 1/4	11 1/4	.....	.....	.....	.....
4	9	10 1/4	12	17	9	12	18	17	21 1/4	21 1/4
5	10	11 1/4	15	.....	10	15	18	20	22	26 1/4
6	10 1/4	13	15 1/4	22	10 1/4	15 1/4	19 1/4	22	24	27 1/4
8	11 1/4	14 1/4	18 1/4	26	11 1/4	16 1/4	22 1/4	26	29	32 1/4
10	13	16 1/4	18	31	13	18	26 1/4	31	33	39
12	14	17 1/4	19 1/4	33	14	19 1/4	30	33	38	44 1/4
14 OD	15	.....	22 1/4	.....	15	30	32 1/4	35	40 1/4	.....
16 OD	16	.....	24	.....	16	33	35 1/4	39	44 1/4	.....
18 OD	17	.....	26	.....	17	36	38 1/4	43	48	.....
20 OD	18	.....	28	.....	18	39	41 1/4	47	52	.....
24 OD	20	.....	31	.....	20	45	48 1/4	55	61	.....
1/2	.....	.....	.....	.....	.....	.....	7 1/4	7 1/4	.....	.....
3/4	.....	.....	.....	.....	.....	.....	8 1/4	8 1/4	10	10
1	.....	.....	.....	.....	.....	.....	9	9	11	11
1 1/4	.....	.....	.....	.....	.....	.....	9 1/4	9 1/4	12	12
2	8	.....	10 1/4	.....	8	10 1/4	11 1/4	11 1/4	14 1/4	14 1/4
2 1/4	8 1/4	.....	11 1/4	.....	8 1/4	11 1/4	13	13	16 1/4	16 1/4
3	9 1/4	.....	12 1/4	.....	9 1/4	12 1/4	14	14	18 1/4	18 1/4
3 1/4	10 1/4	.....	13 1/4	.....	10 1/4	13 1/4	.....	.....	.....	.....
4	11 1/4	.....	14	.....	11 1/4	14	16	17	18	21 1/4
5	13	.....	15 1/4	.....	14	15 1/4	18	20	22	26 1/4
6	14	.....	17 1/4	.....	16	17 1/4	19 1/4	22	24	27 1/4
8	16 1/4	.....	21	.....	19 1/4	22	23 1/4	28	29	32 1/4

From American Standard for Face-to-Face Dimensions of Ferrous Flanged and Welding End Valves, ASA B16.10-1939.

All dimensions given in inches.

Where dimensions are not given, the sizes either are not made or there is insufficient demand to warrant the expense of unification.

Female and groove joint facings have bottom of groove in same plane as flange edge, and center to contact surface dimensions for these facings are reduced by the amount of the raised face.

¹ These are pressure designations which refer to the primary service ratings in lb per sq. in. of the connecting end flanges.

² The connecting end flanges of 175 lb valves are the same as those on 250 lb valves.

* The contact surface to contact surface dimensions and connecting end flanges for 400 lb valves 3 in. size and smaller, are identical with those of 600 lb valves; and the contact surface to contact surface dimensions and connecting end flanges for 900 lb valves 2 1/4 in. size and smaller, are identical with those of 1500 lb valves.