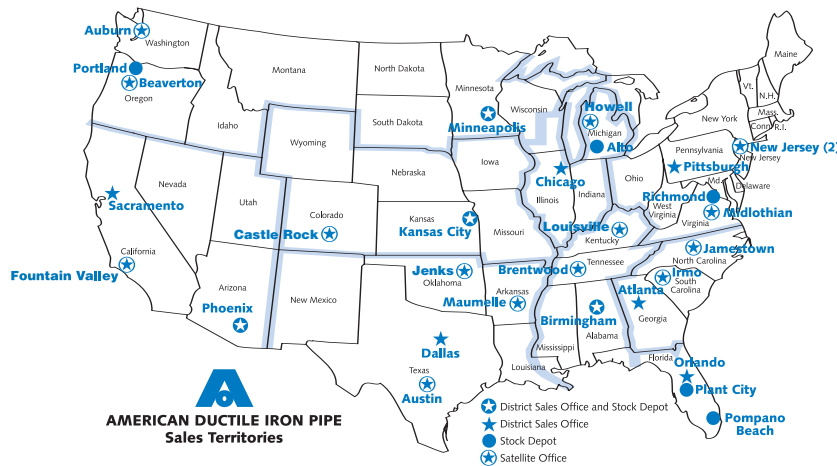


AMERICAN Ductile Iron Mechanical Joint Fittings



AMERICAN DUCTILE IRON PIPE



American Ductile Iron Pipe (A Division of ACIPCO) General Offices and Plants

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Suite 14-1049
Phoenix, AZ 85008-2442
Telephone: 602/275-3540
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4703 W. Pasadena Ave.
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INTERNATIONAL SALES

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AMERICAN Ductile Iron Mechanical Joint Fittings

The principal standards covering full body mechanical joint fittings are ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11. Compact ductile iron fittings are covered in ANSI/AWWA C153/A21.53. These and other standards are referenced throughout this Section either by the full ANSI/AWWA designation or by only the AWWA numbering, such as AWWA C110.

AMERICAN supplies a complete line of 4" through 48" mechanical joint fittings meeting the requirements of ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 with the joint meeting the requirements of ANSI/AWWA C111/A21.11. Also included in this Section are fittings which are unusual as to size combination, joint combination, outlets, and other variations. These fittings are designated as "AMERICAN Standard" and comply with the applicable requirements of the ANSI/AWWA Standards.

Mechanical joint fittings have been used extensively in underground service with Fastite joint pipe as well as mechanical joint pipe. Since 48" is the maximum size mechanical joint, Fastite or Lok-Ring fittings are normally furnished with AMERICAN 54" and larger Fastite or Lok-Ring joint pipe. Mechanical joint fittings have also been used aboveground in some applications.

While mechanical joint fittings have provided excellent service for decades, their use is currently being supplanted in many cases by Fastite, Flex-Ring, and Lok-Ring fittings. These fittings offer improved and less labor-intensive field assembly and

performance, and their use should be considered in lieu of mechanical joint fittings in most applications. See Section 4.

When joint restraint is required underground or aboveground, several types of restrained joints are available from AMERICAN. See Sections 4 and 9.

The design of mechanical joint fittings is based on their use with pipe having outside diameters that are standard for mechanical joint and for Fastite joint pipe. In planning a mechanical joint connection to an old existing pipeline, the outside diameter should be carefully checked where connection is to be made.

Mechanical joint fittings are normally furnished complete with a gland, plain rubber gasket, and tee head alloy steel bolts with heavy hex nuts for each socket.

Ductile iron fittings for pressure ratings of 150, 250 and 350 psi are furnished as shown in the tables in this Section.

Fittings for water service are generally furnished with cement lining in accordance with AWWA C104 and with an outside asphaltic coating. They can also be furnished asphaltic coated or uncoated inside. For special conditions, other types of coatings and linings are available. See Section 11.



Installing a mechanical joint bend in a gravity sewer utilizing field-cut closure pieces to locate the fitting accurately.



General Notes Relating to Mechanical Joints

1. Fittings in the following tables with ANSI/AWWA Standards listed in the heading are as specified in those Standards. Fittings in tables with heading "AMERICAN Standard" are either not included in the ANSI/AWWA Standards or vary therefrom in weights and/or dimensions.

2. Fittings are manufactured of ductile iron grade 70-50-05 (minimum tensile strength: 70,000 psi; minimum yield strength: 50,000 psi; minimum elongation: 5%) as specified in AWWA C110.

3. Weights of accessories are not included in weights of fittings shown in tables unless specifically noted. Where "Assembled Weight" is shown, joint materials are shipped assembled on the fitting. For weights of accessories see Section 2.

4. Weights and dimensions of fittings can vary due to changes in foundry equipment.

5. Orientation of bolt holes in mechanical joint fittings with respect to any centerline* is not fixed. Where bolt holes are required to straddle the centerline of the fitting, this must be specified by the purchaser.

6. For allowable joint deflection of mechanical joints see Section 2.

7. Mechanical joint flanges can normally be furnished tapped for studs when specified by the purchaser. See Section 2, Table No. 2-15.

8. All pressure ratings shown are for water service.

9. The ANSI/AWWA C110/A21.10 thicknesses of most mechanical joint fittings shown in tables in this Section are the same thicknesses as Class "B" or "D" (most of them being Class "B") per the obsolete AWWA C100 Standard; these thicknesses and corresponding outside diameters are shown in Section 12, Table No. 12-1.

10. Some fittings are available with body metal thickness other than as shown in the tables. Some fittings are available in different sizes and with different size combinations than shown. Check AMERICAN regarding special requirements.

11. See Section 7 for AMERICAN specials.

12. Locations of taps in mechanical joint fittings should be designated as shown on page 6-5 for flanged fittings.

13. MJ connecting pieces (MJ-MJ, MJ-PE, MJ-Flg, and Flg-PE) are furnished by AMERICAN as fabricated piping and can be furnished in variable lengths. See Sections 7 and 8.

14. Fittings may be furnished by AMERICAN manufactured by others. Any such fittings will be manufactured in accordance with appropriate ANSI/AWWA or AMERICAN Standards.

15. Some configurations shown for both AWWA C110 and C153 may not be available both ways.

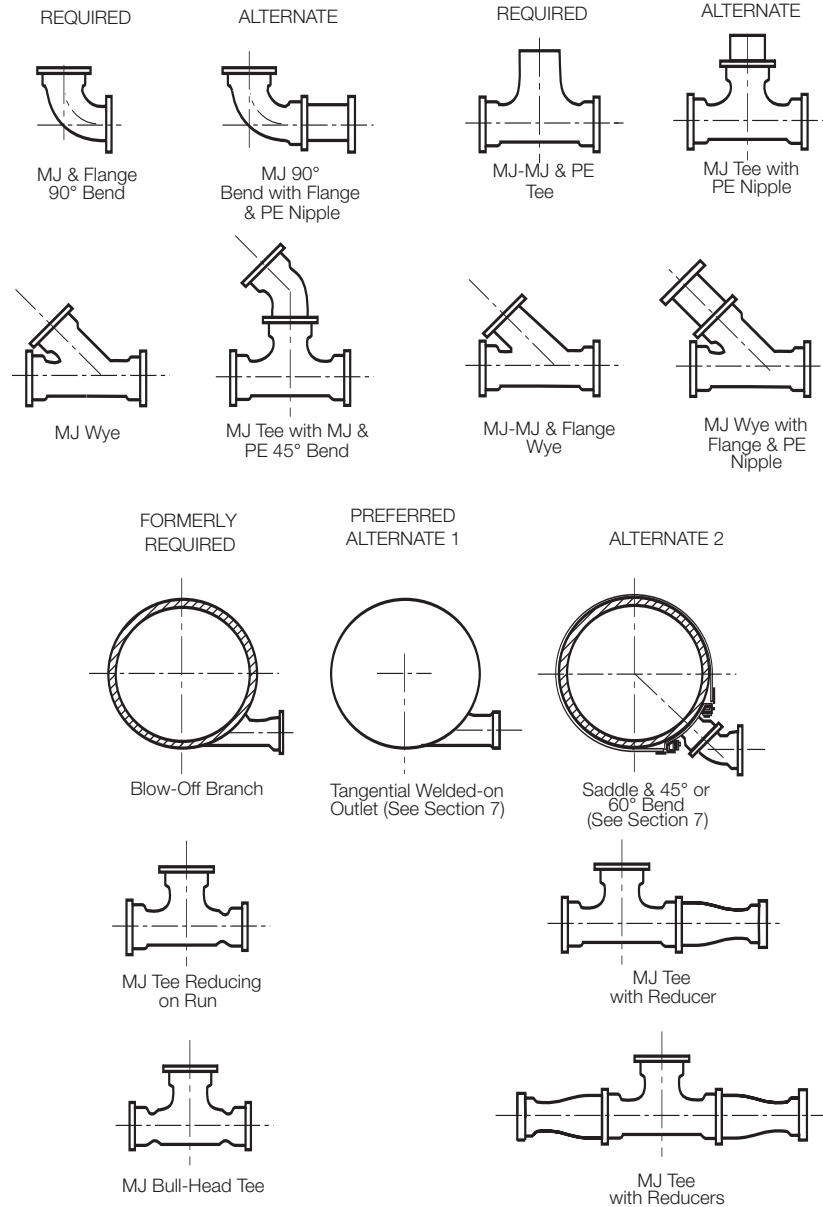
16. The thicknesses shown for C153 standard fittings are the nominal thicknesses shown in this standard. The shown lengths and center-to-socket dimensions of these fittings are minimum dimensions also in accordance with the C153 standard. Actual thicknesses of fittings will vary as allowed by the standard, and actual lengths and center-to-socket dimensions will generally be equal to or greater than those shown in the tables, all depending on foundry equipment.

17. AMERICAN manufactures 4" through 12" Mechanical Joint Ductile Iron pipe in accordance with AWWA C151 and AWWA C111 and Mechanical Joint fittings up through 48" in accordance with AWWA C153, AWWA C110, and AWWA C111, as described therein. However, AMERICAN does not warrant the performance of third-party mechanical retainer glands or joints using third-party retainer glands, since the design, manufacturing, and installation methods are beyond our control. AMERICAN does manufacture a number of restrained joints such as Fast-Grip®, Flex-Ring®, Field Flex-Ring®, Lok-Ring®, Flex-Lok®, and other devices, where we warrant the joint as well as the associated pipe and fittings of our manufacture.

*The normal but not universal practice is to have the bolt holes straddle the vertical centerline of a fitting, which is determined when the fitting is in the position to change the direction of fluid flowing in a horizontal plane. With standard base bends and standard base tees, the determination is made when the fitting is in position to change the direction of fluid flowing in a vertical plane.



AMERICAN Ductile Iron Mechanical Joint Fittings Applications of Standard Fittings



In many cases special fittings for various conditions are required; some of these are shown above in columns headed "Formerly Required." Under the columns headed "Preferred Alternate" are shown combinations of standard fittings which in some situations will provide the desired connection. For economy and availability it is often advantageous to use the standard fittings.



AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110 and C153 Mechanical Joint Dimensions

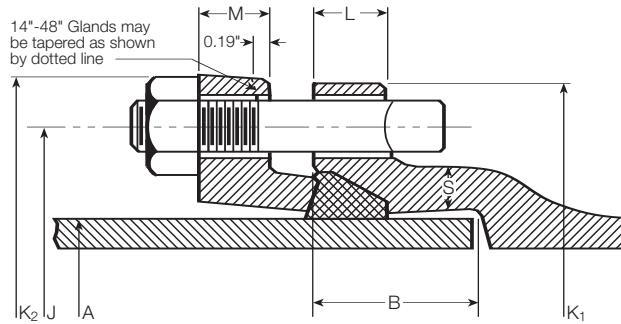


Table No. 5-1

Size in.	Dimensions in Inches									Bolts	
	A Plain End	B	J	K ₁	K ₂	L		M	S	No. per Joint	Size in.
						C110	C153				
4	4.80	2.50	7.50	9.38	9.12	1.00	.60	.75	.65	4	¾ x 3½
6	6.90	2.50	9.50	11.31	11.12	1.06	.63	.88	.70	6	¾ x 3½
8	9.05	2.50	11.75	13.63	13.37	1.12	.66	1.00	.75	6	¾ x 4
10	11.10	2.50	14.00	15.81	15.62	1.19	.70	1.00	.80	8	¾ x 4
12	13.20	2.50	16.25	18.06	18.00	1.25	.73	1.00	.85	8	¾ x 4
14	15.30	3.50	18.75	20.69	20.25	1.31	.79	1.25	.89	10	¾ x 4½
16	17.40	3.50	21.00	22.94	22.50	1.38	.85	1.31	.97	12	¾ x 4½
18	19.50	3.50	23.25	25.28	24.75	1.44	1.00	1.38	1.05	12	¾ x 4½
20	21.60	3.50	25.50	27.08	27.00	1.50	1.02	1.44	1.12	14	¾ x 4½
24	25.80	3.50	30.00	31.75	31.50	1.62	1.02	1.56	1.22	16	¾ x 5
30	32.00	4.00	36.88	39.12	39.12	1.81	-	2.00	1.50	20	1 x 6
36	38.30	4.00	43.75	46.00	46.00	2.00	-	2.00	1.80	24	1 x 6
42	44.50	4.00	50.62	53.12	53.12	2.00	-	2.00	1.95	28	1¼ x 6½
48	50.80	4.00	57.50	60.00	60.00	2.00	-	2.00	2.20	32	1¼ x 6½

For mechanical joints for pipe see Section 2.

For tolerances and additional dimensions see AWWA C111.

Bolt holes are ⅛" larger than the bolt diameters.

Mechanical Joint Retainer Gland designs (by others) often require longer than above standard bolting. See Sections 9 and 12 regarding alternative restrained joints, and also retainer gland applications.



AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 Mechanical Joint Plain End Standard Dimensions

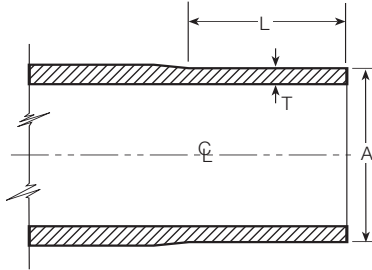


Table No. 5-2

Size in.	Dimensions in Inches			Weight of (8" long) Plain End lb
	A	T	L	
4	4.80	.47	5.5	13
6	6.90	.50	5.5	21
8	9.05	.54	5.5	30
10	11.10	.60	5.5	41
12	13.20	.68	5.5	56
14	15.30	.66	8.0	63
16	17.40	.70	8.0	76
18	19.50	.75	8.0	92
20	21.60	.80	8.0	109
24	25.80	.89	8.0	145
30	32.00	1.03	8.0	208
36	38.30	1.15	8.0	279
42	44.50	1.28	8.0	362
48	50.80	1.42	8.0	458

The "L" dimension is minimum length of the plain end which must be gauged to ensure the outside diameter is within the dimensions and tolerances required.

The laying length of a plain end of an MJ fitting is 8" longer than the laying length of a bell end.

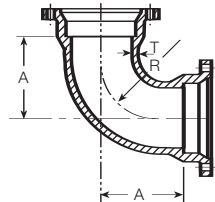
Plain ends of fittings may be furnished with beveled ends for assembly with either Fastite or mechanical joints. However, if beveled ends are required they must be specified.



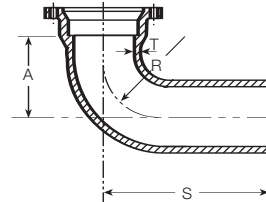
AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 and C153/A21.53 90° Bends (1/4th)



MJ and MJ



MJ and PE

Table No. 5-3

AWWA C110

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
		T	A	S	R	MJ & MJ	MJ & PE
4	350	.52	6.5	14.5	4.5	55	50
6	350	.55	8.0	16.0	6.0	85	80
8	350	.60	9.0	17.0	7.0	125	120
10	350	.68	11.0	19.0	9.0	190	190
12	350	.75	12.0	20.0	10.0	255	255
14	350	.66	14.0	22.0	11.5	340	325
16	350	.70	15.0	23.0	12.5	430	410
18	350	.75	16.5	24.5	14.0	545	520
20	350	.80	18.0	26.0	15.5	680	650
24	350	.89	22.0	30.0	18.5	1025	985
30	250	1.03	25.0	33.0	21.5	1690	1585
36	250	1.15	28.0	36.0	24.5	2475	2310
42	250	1.28	31.0	39.0	27.5	3410	3200
48	250	1.42	34.0	42.0	30.5	4595	4330

See General Notes on page 5-2.
See Section 6 for reducing bends.

Table No. 5-4

AWWA C153 - Compact

Size in.	Pressure Rating psi	Dimensions in Inches			Weight in Pounds	
		T nom.	A nom.	S nom.	MJ & MJ	MJ & PE
4	350	.34	4.0	9.5	23	26
6	350	.36	5.0	11.5	44	48
8	350	.38	6.5	12.5	61	68
10	350	.40	7.5	13.0	94	107
12	350	.42	9.0	14.5	124	141
14	350	.47	11.5	19.5	220	220
16	350	.50	12.5	20.5	264	254
18	350	.54	14.0	22.0	410	405
20	350	.57	15.0	23.0	505	564
24	350	.61	17.0	25.0	586	710
30	250*	.66	22.75	31.75	1060	995
36	250*	.74	25.75	34.75	1550	1455
42	250*	.82	29.25	38.25	2205	2055
48	250*	.90	33.25	42.25	2990	2805

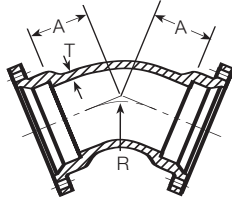
*Based on performance testing per AWWA C153, AMERICAN can rate these fittings 350 psi. However, because of the more labor-intensive and labor-reliant assembly of the MJ joint and the substantial thrust restraint requirements for working pressures that high, we recommend push-on joint configurations (Fastite, Flex-Ring and Lok-Ring) for high pressure applications.
See General Notes on page 5-2.
See Section 6 for reducing bends.



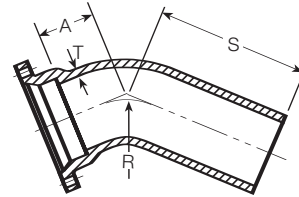
AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 and C153/A21.53

45° Bends (1/8th)



MJ and MJG



MJ and PE

Table No. 5-5

AWWA C110

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
		T	A	S	R	MJ & MJG	MJ & PE
4	350	.52	4.0	12.0	4.81	50	45
6	350	.55	5.0	13.0	7.25	75	70
8	350	.60	5.5	13.5	8.44	110	105
10	350	.68	6.5	14.5	10.88	155	155
12	350	.75	7.5	15.5	13.25	215	215
14	350	.66	7.5	15.5	12.06	270	255
16	350	.70	8.0	16.0	13.25	340	320
18	350	.75	8.5	16.5	14.50	420	395
20	350	.80	9.5	17.5	16.88	530	500
24	350	.89	11.0	19.0	18.12	755	715
30	250	1.03	15.0	23.0	27.75	1380	1275
36	250	1.15	18.0	26.0	35.00	2095	1930
42	250	1.28	21.0	29.0	42.25	2955	2745
48	250	1.42	24.0	32.0	49.50	4080	3815

See General Notes on page 5-2.

Table No. 5-6

AWWA C153 - Compact

Size in.	Pressure Rating psi	Dimensions in Inches			Weight in Pounds	
		T nom.	A nom.	S nom.	MJ & MJG	MJ & PE
4	350	.34	2.0	7.5	19	22
6	350	.36	3.0	8.5	37	38
8	350	.38	3.5	9.0	49	59
10	350	.40	4.5	10.0	74	81
12	350	.42	5.5	11.0	101	111
14	350	.47	5.0	13.0	164	154
16	350	.50	5.5	13.5	202	206
18	350	.54	6.0	14.0	289	290
20	350	.57	7.0	15.0	348	340
24	350	.61	7.5	15.5	475	460
30	250*	.66	10.5	19.5	780	715
36	250*	.74	12.0	21.0	1135	1040
42	250*	.82	14.0	23.0	1610	1460
48	250*	.90	15.0	24.0	2090	1905

*Based on performance testing per AWWA C153, AMERICAN can rate these fittings 350 psi. However, because of the more labor-intensive and labor-reliant assembly of the MJ joint and the substantial thrust restraint requirements for working pressures that high, we recommend push-on joint configurations (Fastite, Flex-Ring and Lok-Ring) for high pressure applications.

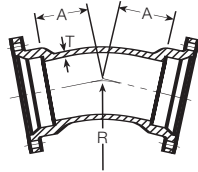
See General Notes on page 5-2.



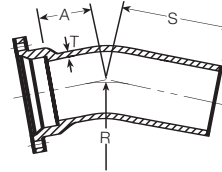
AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 and C153/A21.53 22½° Bends (1/16th)



MJ and MJ



MJ and PE

Table No. 5-7

AWWA C110

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
		T	A	S	R	MJ & MJ	MJ & PE
4	350	.52	4.0	12.0	10.06	50	45
6	350	.55	5.0	13.0	15.06	75	70
8	350	.60	5.5	13.5	17.62	110	105
10	350	.68	6.5	14.5	22.62	160	160
12	350	.75	7.5	15.5	27.62	220	220
14	350	.66	7.5	15.5	25.12	275	260
16	350	.70	8.0	16.0	27.62	345	325
18	350	.75	8.5	16.5	30.19	430	405
20	350	.80	9.5	17.5	35.19	535	505
24	350	.89	11.0	19.0	37.69	765	725
30	250	1.03	15.0	23.0	57.81	1400	1295
36	250	1.15	18.0	26.0	72.88	2135	1970
42	250	1.28	21.0	29.0	88.00	3020	2810
48	250	1.42	24.0	32.0	103.06	4170	3905

See General Notes on page 5-2.

Table No. 5-8

AWWA C153 - Compact

Size in.	Pressure Rating psi	Dimensions in Inches			Weight in Pounds	
		T nom.	A min.	S min.	MJ & MJ	MJ & PE
4	350	.34	1.5	7.0	17	21
6	350	.36	2.0	7.5	33	37
8	350	.38	2.5	8.0	44	51
10	350	.40	3.0	8.5	64	67
12	350	.42	3.5	9.0	85	80
14	350	.47	3.75	11.25	148	152
16	350	.50	3.75	11.75	179	181
18	350	.54	4.5	12.5	292	290
20	350	.57	4.5	12.5	364	345
24	350	.61	4.5	12.5	385	455
30	250*	.66	6.75	15.75	665	600
36	250*	.74	7.75	16.75	960	865
42	250*	.82	9.0	18.0	1350	1200
48	250*	.90	10.0	19.0	1760	1575

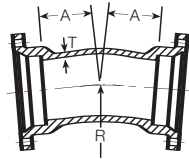
*Based on performance testing per AWWA C153, AMERICAN can rate these fittings 350 psi. However, because of the more labor-intensive and labor-reliant assembly of the MJ joint and the substantial thrust restraint requirements for working pressures that high, we recommend push-on joint configurations (Fastite, Flex-Ring and Lok-Ring) for high pressure applications.

See General Notes on page 5-2.

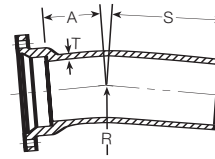


AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 and C153/A21.53 11¼° Bends (1/32nd)



MJ and MJ



MJ and PE

Table No. 5-9

AWWA C110

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
		T	A	S	R	MJ & MJ	MJ & PE
4	350	.52	4.0	12.0	20.31	50	45
6	350	.55	5.0	13.0	30.50	75	70
8	350	.60	5.5	13.5	35.50	110	105
10	350	.68	6.5	14.5	45.69	160	160
12	350	.75	7.5	15.5	55.81	220	220
14	350	.66	7.5	15.5	50.75	275	260
16	350	.70	8.0	16.0	55.81	345	325
18	350	.75	8.5	16.5	60.94	430	405
20	350	.80	9.5	17.5	71.06	540	510
24	350	.89	11.0	19.0	76.12	770	730
30	250	1.03	15.0	23.0	116.75	1410	1305
36	250	1.15	18.0	26.0	147.25	2145	1980
42	250	1.28	21.0	29.0	177.69	3035	2825
48	250	1.42	24.0	32.0	208.12	4190	3925

See General Notes on page 5-2.

Table No. 5-10

AWWA C153 - Compact

Size in.	Pressure Rating psi	Dimensions in Inches			Weight in Pounds	
		T nom.	A min.	S min.	MJ & MJ	MJ & PE
4	350	.34	1.25	6.25	16	19
6	350	.36	1.5	7.0	31	32
8	350	.38	1.75	7.25	40	44
10	350	.40	2.0	7.5	57	60
12	350	.42	2.25	7.75	73	76
14	350	.47	2.5	10.5	129	137
16	350	.50	2.5	10.5	162	161
18	350	.54	3.0	13.0	196	280
20	350	.57	3.0	14.0	227	335
24	350	.61	3.0	14.5	345	450
30	250*	.66	4.75	13.75	600	535
36	250*	.74	5.0	14.0	840	745
42	250*	.82	6.0	15.0	1180	1030
48	250*	.90	6.5	15.5	1475	1290

*Based on performance testing per AWWA C153, AMERICAN can rate these fittings 350 psi. However, because of the more labor-intensive and labor-reliant assembly of the MJ joint and the substantial thrust restraint requirements for working pressures that high, we recommend push-on joint configurations (Fastite, Flex-Ring and Lok-Ring) for high pressure applications.

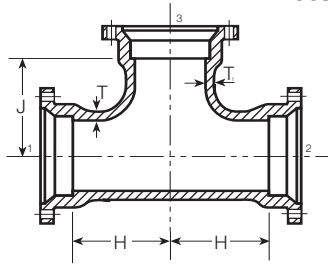
See General Notes on page 5-2.



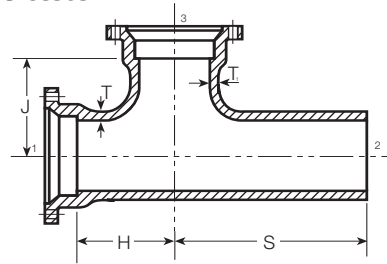
AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings

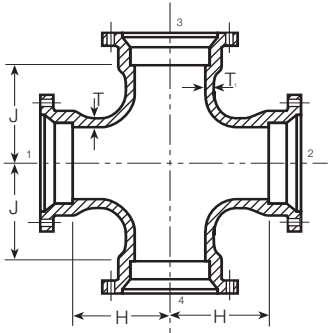
ANSI/AWWA C110/A21.10 Tees and Crosses



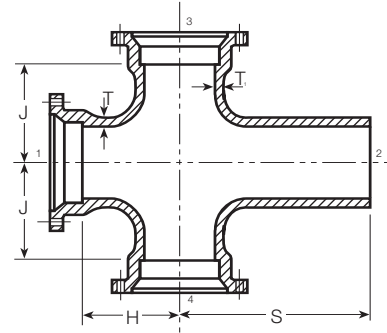
All MJ Tee



MJ-PE and MJ Tee*



All MJ Cross



MJ-PE-MJ and MJ Cross

Table No. 5-11

Size in.		Pressure Rating psi	Dimensions in Inches					Weight in Pounds			
Run	Branch		T	T ₁	H	J	S	Tee		Cross	
								All MJ	MJ-PE & MJ	All MJ	MJ-PE-MJ & MJ
4	4	350	.52	.52	6.5	6.5	14.5	80	75	105	100
6	4	350	.55	.52	8.0	8.0	16.0	115	110	140	135
6	6	350	.55	.55	8.0	8.0	16.0	125	120	160	155
8	4	350	.60	.52	9.0	9.0	17.0	165	160	185	180
8	6	350	.60	.55	9.0	9.0	17.0	175	170	205	200
8	8	350	.60	.60	9.0	9.0	17.0	185	180	235	230
10	4	350	.68	.52	11.0	11.0	19.0	235	235	260	260
10	6	350	.68	.55	11.0	11.0	19.0	250	250	285	285
10	8	350	.68	.60	11.0	11.0	19.0	260	260	310	310
10	10	350	.80	.80	11.0	11.0	19.0	310	310	380	380
12	4	350	.75	.52	12.0	12.0	20.0	315	315	340	340
12	6	350	.75	.55	12.0	12.0	20.0	325	325	360	360
12	8	350	.75	.60	12.0	12.0	20.0	340	340	385	385
12	10	350	.87	.80	12.0	12.0	20.0	390	390	460	460
12	12	350	.87	.87	12.0	12.0	20.0	410	410	495	495

See General Notes on page 5-2.



AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10

Table No. 5-11—Continued **Tees and Crosses**

Size in.		Pressure Rating psi	Dimensions in Inches					Weight in Pounds			
Run	Branch		T	T ₁	H	J	S	Tee		Cross	
								All MJ	MJ-PE & MJ	All MJ	MJ-PE MJ & MJ
*14	4	350	.66	.52	14.0	14.0	22.0	420	405	450	435
14	6	350	.66	.55	14.0	14.0	22.0	435	420	475	460
14	8	350	.66	.60	14.0	14.0	22.0	450	435	500	485
14	10	350	.66	.68	14.0	14.0	22.0	465	450	540	525
14	12	350	.66	.75	14.0	14.0	22.0	495	475	585	570
14	14	350	.66	.66	14.0	14.0	22.0	520	500	635	620
*16	4	350	.70	.52	15.0	15.0	23.0	525	505	555	535
16	6	350	.70	.55	15.0	15.0	23.0	540	520	575	555
16	8	350	.70	.60	15.0	15.0	23.0	550	530	605	585
16	10	350	.70	.68	15.0	15.0	23.0	570	550	645	625
16	12	350	.70	.75	15.0	15.0	23.0	590	570	685	665
16	14	350	.70	.66	15.0	15.0	23.0	620	600	735	715
16	16	350	.70	.70	15.0	15.0	23.0	650	625	790	770
18	6	350	.75	.55	13.0	15.5	21.0	590	565	625	600
18	8	350	.75	.60	13.0	15.5	21.0	605	580	655	630
18	10	350	.75	.68	13.0	15.5	21.0	620	595	685	660
18	12	350	.75	.75	13.0	15.5	21.0	640	615	725	700
18	14	350	.75	.66	16.5	16.5	24.5	755	730	870	845
18	16	350	.75	.70	16.5	16.5	24.5	785	760	930	905
18	18	350	.75	.75	16.5	16.5	24.5	820	795	995	965
20	6	350	.80	.55	14.0	17.0	22.0	725	695	760	730
20	8	350	.80	.60	14.0	17.0	22.0	735	705	790	760
20	10	350	.80	.68	14.0	17.0	22.0	755	725	820	790
20	12	350	.80	.75	14.0	17.0	22.0	775	745	860	830
20	14	350	.80	.66	14.0	17.0	22.0	795	765	905	875
20	16	350	.80	.70	18.0	18.0	26.0	945	915	1085	1055
20	18	350	.80	.75	18.0	18.0	26.0	985	950	1155	1120
20	20	350	.80	.80	18.0	18.0	26.0	1020	990	1230	1200
24	6	350	.89	.55	15.0	19.0	23.0	985	945	1025	985
24	8	350	.89	.60	15.0	19.0	23.0	1000	960	1045	1005
24	10	350	.89	.68	15.0	19.0	23.0	1020	980	1085	1045
24	12	350	.89	.75	15.0	19.0	23.0	1030	990	1110	1070
24	14	350	.89	.66	15.0	19.0	23.0	1055	1015	1155	1115
24	16	350	.89	.70	15.0	19.0	23.0	1075	1035	1200	1160
24	18	350	.89	.75	22.0	22.0	30.0	1400	1360	1590	1550
24	20	350	.89	.80	22.0	22.0	30.0	1450	1410	1675	1630
24	24	350	.89	.89	22.0	22.0	30.0	1535	1490	1835	1795
30	6	250	1.03	.55	18.0	23.0	26.0	1730	1615	1770	1655
30	8	250	1.03	.60	18.0	23.0	26.0	1745	1630	1795	1680
30	10	250	1.03	.68	18.0	23.0	26.0	1760	1645	1830	1715
30	12	250	1.03	.75	18.0	23.0	26.0	1780	1665	1865	1750
30	14	250	1.03	.66	18.0	23.0	26.0	1800	1685	1905	1790
30	16	250	1.03	.70	18.0	23.0	26.0	1820	1705	1950	1835
30	18	250	1.03	.75	18.0	23.0	26.0	1845	1730	2000	1885
30	20	250	1.03	.80	18.0	23.0	26.0	1875	1760	2060	1945
30	24	250	1.03	.89	25.0	25.0	33.0	2400	2280	2675	2560
30	30	250	1.03	1.03	25.0	25.0	33.0	2595	2480	3075	2955

*Not included in AWWA C110.
See General Notes on page 5-2.



AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10

Table No. 5-11—Continued

Tees and Crosses

Size in.		Pressure Rating psi	Dimensions in Inches					Weight in Pounds			
Run	Branch		T	T ₁	H	J	S	Tee		Cross	
								All MJ	MJ-PE & MJ	All MJ	MJ-PE MJ & M.
36	8	250	1.15	.60	20.0	26.0	28.0	2520	2345	2565	2390
36	10	250	1.15	.68	20.0	26.0	28.0	2535	2360	2600	2425
36	12	250	1.15	.75	20.0	26.0	28.0	2550	2375	2630	2455
36	14	250	1.15	.66	20.0	26.0	28.0	2570	2395	2665	2490
36	16	250	1.15	.70	20.0	26.0	28.0	2585	2410	2705	2530
36	18	250	1.15	.75	20.0	26.0	28.0	2610	2435	2750	2575
36	20	250	1.15	.80	20.0	26.0	28.0	2635	2460	2805	2630
36	24	250	1.15	.89	20.0	26.0	28.0	2690	2515	2910	2735
36	30	250	1.15	1.03	28.0	28.0	36.0	3545	3365	3965	3790
36	36	250	1.15	1.15	28.0	28.0	36.0	3745	3565	4370	4190
42	12	250	1.28	.75	23.0	30.0	31.0	3555	3335	3640	3420
42	14	250	1.28	.66	23.0	30.0	31.0	3575	3355	3675	3455
42	16	250	1.28	.70	23.0	30.0	31.0	3595	3375	3715	3495
42	18	250	1.28	.75	23.0	30.0	31.0	3615	3395	3755	3535
42	20	250	1.28	.80	23.0	30.0	31.0	3640	3420	3810	3590
42	24	250	1.28	.89	23.0	30.0	31.0	3690	3470	3910	3690
42	30	250	1.28	1.03	31.0	31.0	39.0	4650	4425	5040	4815
42	36	150	1.28	1.15	31.0	31.0	39.0	4880	4655	5425	5200
42	36	250	1.78	1.58	31.0	31.0	39.0	6075	5850	6655	6430
42	42	150	1.28	1.28	31.0	31.0	39.0	5085	4860	5840	5615
42	42	250	1.78	1.78	31.0	31.0	39.0	6320	6095	7145	6920
48	12	250	1.42	.75	26.0	34.0	34.0	4870	4580	4955	4665
48	14	250	1.42	.66	26.0	34.0	34.0	4885	4595	4985	4695
48	16	250	1.42	.70	26.0	34.0	34.0	4905	4615	5025	4735
48	18	250	1.42	.75	26.0	34.0	34.0	4925	4635	5065	4775
48	20	250	1.42	.80	26.0	34.0	34.0	4950	4660	5115	4825
48	24	250	1.42	.89	26.0	34.0	34.0	4995	4705	5210	4920
48	30	250	1.42	1.03	26.0	34.0	34.0	5140	4855	5495	5210
48	36	250	1.42	1.15	34.0	34.0	42.0	6280	5995	6790	6500
48	42	150	1.42	1.28	34.0	34.0	42.0	6510	6225	7150	6860
48	42	250	1.96	1.78	34.0	34.0	42.0	8130	7845	8815	8530
48	48	150	1.42	1.42	34.0	34.0	42.0	6765	6475	7655	7370
48	48	250	1.96	1.96	34.0	34.0	42.0	8420	8135	9380	9095

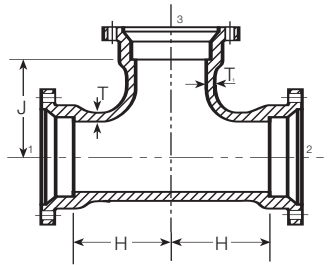
Note: Welded-on outlets may be preferable to tees and crosses in many cases from a layout, installation and economical standpoint. See Section 7.
See General Notes on page 5-2.



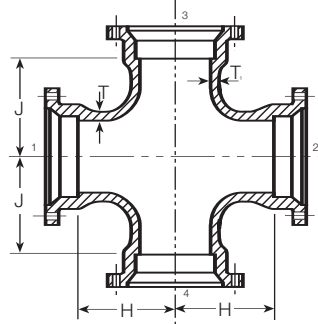
AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C153/A21.53

Compact Tees and Crosses



All MJ Tee



All MJ Cross

Table No. 5-12

Size in.		Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
Run	Branch		T nom.	T ₁ nom.	H min.	J min.	Tee All MJ	Cross All MJ
4	4	350	.34	.34	4.0	4.0	32	42
6	4	350	.36	.34	4.0	5.0	51	-
6	6	350	.36	.36	5.0	5.0	63	72
8	4	350	.38	.34	4.0	6.5	61	-
8	6	350	.38	.36	5.0	6.5	75	-
8	8	350	.38	.38	6.5	6.5	87	108
10	4	350	.40	.34	4.0	7.5	80	-
10	6	350	.40	.36	5.0	7.5	93	-
10	8	350	.40	.38	6.5	7.5	102	-
10	10	350	.40	.40	7.5	7.5	117	144
12	4	350	.42	.34	4.0	8.75	98	-
12	6	350	.42	.36	5.0	8.75	113	-
12	8	350	.42	.38	6.5	8.75	123	-
12	10	350	.42	.40	7.5	8.75	137	-
12	12	350	.42	.42	8.75	8.75	156	214
14	4	350	.47	.34	5.5	10.5	172	-
14	6	350	.47	.36	6.5	10.5	183	-
14	8	350	.47	.38	7.5	10.5	206	-
14	10	350	.47	.40	8.5	10.5	229	-
14	12	350	.47	.42	9.5	10.5	235	-
14	14	350	.47	.47	10.5	10.5	281	344
16	6	350	.50	.36	6.5	11.5	229	-
16	8	350	.50	.38	7.5	11.5	248	-
16	10	350	.50	.40	8.5	11.5	265	-
16	12	350	.50	.42	9.5	11.5	281	-
16	14	350	.50	.47	10.5	11.5	317	-
16	16	350	.50	.50	11.5	11.5	323	410

Numerals on cuts indicate standard order of specifying size and joint type of fitting.
See Section 6 for reducing tees, tees reducing on run and branch, and bullhead tees.
See General Notes on page 5-2.



AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings ANSI/AWWA C153/A21.53 Compact Tees and Crosses

Table No. 5-12—Continued

Size in.		Pressure Rating psi	Dimensions in Inches				Weight in Pounds	
Run	Branch		T nom.	T ₁ nom.	H min.	J min.	Tee All MJ	Cross All MJ
18	6	350	.54	.36	6.5	12.5	275	-
18	8	350	.54	.38	7.5	12.5	280	-
18	10	350	.54	.40	8.5	12.5	286	-
18	12	350	.54	.42	9.5	12.5	370	-
18	14	350	.54	.47	10.5	12.5	415	-
18	16	350	.54	.50	11.5	12.5	445	-
18	18	350	.54	.54	12.5	12.5	490	-
20	6	350	.57	.36	6.5	14.0	335	-
20	8	350	.57	.38	8.0	14.0	383	-
20	10	350	.57	.40	9.0	14.0	410	-
20	12	350	.57	.42	10.0	14.0	432	-
20	14	350	.57	.47	11.0	14.0	475	-
20	16	350	.57	.50	12.0	14.0	530	-
20	18	350	.57	.54	13.0	14.0	560	-
20	20	350	.57	.57	14.0	14.0	605	-
24	6	350	.61	.36	13.0	17.0	615	650
24	8	350	.61	.38	13.0	17.0	621	655
24	10	350	.61	.40	13.0	17.0	628	680
24	12	350	.61	.42	13.0	17.0	634	690
24	14	350	.61	.47	13.0	17.0	650	720
24	16	350	.61	.50	13.0	17.0	663	750
24	18	350	.61	.54	17.0	17.0	788	910
24	20	350	.61	.57	17.0	17.0	804	935
24	24	350	.61	.61	17.0	17.0	841	1010
30	20	250*	.66	.57	16.5	21.0	1110	1220
30	24	250*	.66	.61	22.0	22.0	1420	1660
30	30	250*	.66	.66	22.0	22.0	1525	1860
36	24	250*	.74	.61	18.5	26.0	1660	1865
36	30	250*	.74	.66	26.0	26.0	2200	2580
36	36	250*	.74	.74	26.0	26.0	2240	2670
42	24	250*	.82	.61	22.0	27.5	2235	2350
42	30	250*	.82	.66	22.0	29.5	2525	2920
42	36	250*	.82	.74	30.0	30.0	3130	3675
42	42	250*	.82	.82	30.0	30.0	3360	4090
48	24	250*	.90	.61	23.0	32.0	3070	3200
48	30	250*	.90	.66	23.0	32.0	3375	3785
48	36	250*	.90	.74	33.5	32.25	4405	5045
48	42	250*	.90	.82	33.5	33.5	4615	5465
48	48	250*	.90	.90	33.5	33.5	5045	6220

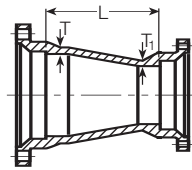
See General Notes on page 5-2.

* Based on performance testing per AWWA C153, AMERICAN can rate these fittings 350 psi. However, because of the more labor-intensive and labor-reliant assembly of the MJ joint and the substantial thrust restraint requirements for working pressures that high, we recommend push-on joint configurations (Fastite, Flex-Ring and Lok-Ring) for high-pressure applications.

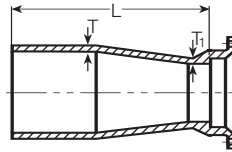


AMERICAN Ductile Iron Mechanical Joint Fittings

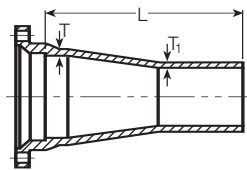
ANSI/AWWA C110/A21.10 Reducers



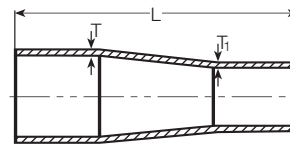
MJ and MJ Reducer



Small End MJ Reducer *



Large End MJ Reducer *



PE and PE Reducer*

Table No. 5-13

Size in.		Pressure Rating psi	Thickness in.		MJ & MJ		Small End MJ		Large End MJ		PE & PE	
Large End	Small End		T Large End	T ₁ Small End	L in.	Weight lb	L in.	Weight lb	L in.	Weight lb	L in.	Weight lb
6	4	350	.55	.52	9	60	17	60	17	60	25	55
8	4	350	.60	.52	11	80	19	80	19	80	27	75
8	6	350	.60	.55	11	95	19	90	19	90	27	85
10	4	350	.68	.52	12	105	20	100	20	100	28	100
10	6	350	.68	.55	12	115	20	115	20	115	28	115
10	8	350	.68	.60	12	135	20	130	20	130	28	130
12	4	350	.75	.52	14	135	22	130	22	130	30	130
12	6	350	.75	.55	14	150	22	150	22	145	30	145
12	8	350	.75	.60	14	165	22	165	22	165	30	165
12	10	350	.75	.68	14	190	22	190	22	185	30	185
14	6	350	.66	.55	16	190	24	175	24	185	32	170
14	8	350	.66	.60	16	210	24	190	24	205	32	190
14	10	350	.66	.68	16	230	24	215	24	230	32	215
14	12	350	.66	.75	16	255	24	240	24	255	32	240
16	6	350	.70	.55	18	230	26	210	26	230	34	210
16	8	350	.70	.60	18	250	26	230	26	250	34	230
16	10	350	.70	.68	18	280	26	255	26	275	34	255
16	12	350	.70	.75	18	305	26	285	26	305	34	285
16	14	350	.70	.66	18	335	26	310	26	315	34	295
**18	6	350	.75	.55	19	-	27	-	-	-	-	-
18	8	350	.75	.60	19	295	27	270	27	295	35	270
18	10	350	.75	.68	19	325	27	300	27	320	35	295
18	12	350	.75	.75	19	350	27	325	27	350	35	325
18	14	350	.75	.66	19	380	27	355	27	365	35	340
18	16	350	.75	.70	19	415	27	390	27	395	35	370

**AMERICAN Ductile Iron Mechanical Joint Fittings****ANSI/AWWA C110/A21.10
Reducers**

Table No. 5-13—Continued

Size in.		Pressure Rating psi	Thickness in.		MJ & MJ		Small End MJ		Large End MJ		PE & PE	
Large End	Small End		T Large End	T, Small End	L in.	Weight lb	L in.	Weight lb	L in.	Weight lb	L in.	Weight lb
**20	6	350	.80	.55	20	320	28	290	28	320	36	290
**20	8	350	.80	.60	20	360	28	330	28	365	36	330
20	10	350	.80	.68	20	375	28	345	28	375	36	345
20	12	350	.80	.75	20	405	28	375	28	405	36	375
20	14	350	.80	.66	20	430	28	400	28	415	36	385
20	16	350	.80	.70	20	470	28	435	28	445	36	415
20	18	350	.80	.75	20	510	28	475	28	485	36	455
**24	6	350	.89	.55	24	450	32	430	32	450	40	430
**24	8	350	.89	.60	24	475	32	455	32	475	40	455
**24	10	350	.89	.68	24	510	32	470	32	520	40	480
24	12	350	.89	.75	24	550	32	510	32	550	40	510
24	14	350	.89	.66	24	575	32	535	32	560	40	520
24	16	350	.89	.70	24	615	32	575	32	595	40	555
24	18	350	.89	.75	24	660	32	620	32	635	40	595
24	20	350	.89	.80	24	705	32	665	32	675	40	635
**30	6	250	1.03	.55	30	735	38	640	38	735	46	640
**30	8	250	1.03	.60	30	770	38	675	38	770	46	675
**30	10	250	1.03	.68	30	815	38	720	38	815	46	720
**30	12	250	1.03	.75	30	865	38	755	38	875	46	770
**30	14	250	1.03	.66	30	885	38	780	38	875	46	770
**30	16	250	1.03	.70	30	940	38	830	38	920	46	810
30	18	250	1.03	.75	30	990	38	885	38	965	46	860
30	20	250	1.03	.80	30	1050	38	945	38	1020	46	915
30	24	250	1.03	.89	30	1165	38	1060	38	1125	46	1020
**36	14	250	1.15	.66	36	1265	44	1095	44	1250	52	1080
**36	16	250	1.15	.70	36	1320	44	1150	44	1300	52	1130
**36	18	250	1.15	.75	36	1385	44	1215	44	1360	52	1190
36	20	250	1.15	.80	36	1450	44	1285	44	1420	52	1255
36	24	250	1.15	.89	36	1580	44	1410	44	1535	52	1370
36	30	250	1.15	1.03	36	1855	44	1690	44	1750	52	1585
42	20	250	1.28	.80	42	1915	50	1705	50	1880	58	1670
42	24	250	1.28	.89	42	2060	50	1855	50	2020	58	1810
42	30	250	1.28	1.03	42	2370	50	2165	50	2265	58	2055
42	36	250	1.28	1.15	42	2695	50	2485	50	2530	58	2320
**48	18	250	1.42	.75	48	2400	56	2134	56	2375	64	2110
**48	20	250	1.42	.80	48	2485	56	2220	56	2455	64	2190
**48	24	250	1.42	.89	48	2645	56	2380	56	2605	64	2340
48	30	250	1.42	1.03	48	3005	56	2740	56	2900	64	2635
48	36	250	1.42	1.15	48	3370	56	3100	56	3205	64	2940
48	42	250	1.42	1.28	48	3750	56	3480	56	3540	64	3275

*Plain Ends (PE's) on 4"-20" reducers are beveled for Fastite bells.

**Not included in AWWA C110.

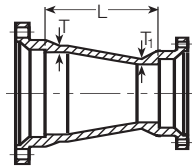
Eccentric reducers are available in some of the above sizes; dimensions and weights are approximately the same as those shown for concentric reducers. Check availability of specified size of eccentric reducers as required.

See General Notes on page 5-2.

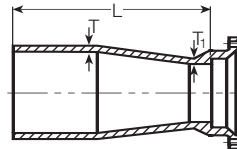


AMERICAN Ductile Iron Mechanical Joint Fittings

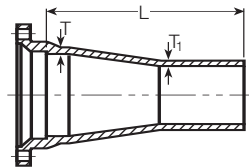
ANSI/AWWA C153/A21.53 Compact Reducers



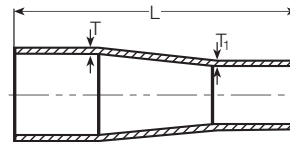
MJ and MJ Reducer



Small End MJ Reducer



Large End MJ Reducer



PE and PE Reducer

Table No. 5-14

Size in.		Pressure Rating psi	Thickness in.		MJ & MJ		Small End MJ		Large End MJ		PE & PE	
Large End	Small End		T Large End (nom)	T ₁ Small End (nom)	L in. (min)	Weight lb	L in. (min)	Weight lb	L in. (min)	Weight lb	L in. (min)	Weight lb
6	4	350	.36	.34	4	32	9.5	26	9.5	22	15.0	22
8	4	350	.38	.34	5	43	10.5	34	10.5	29	16.0	30
8	6	350	.38	.36	4	54	9.5	37	9.5	32	15.0	31
10	4	350	.40	.34	7	61	12.5	46	12.5	40	18.0	40
10	6	350	.40	.36	5	64	10.5	48	10.5	42	16.0	42
10	8	350	.40	.38	4	62	9.5	52	9.5	45	15.0	44
12	4	350	.42	.34	9	82	14.5	61	14.5	52	20.0	54
12	6	350	.42	.36	7	85	12.5	58	12.5	53	18.0	56
12	8	350	.42	.38	5	82	10.5	62	10.5	55	16.0	58
12	10	350	.42	.40	4	82	9.5	62	9.5	57	15.0	60
14	6	350	.47	.36	9	108	16.9	107	14.5	112	22.3	109
14	8	350	.47	.38	7	104	14.9	107	12.4	108	20.3	101
14	10	350	.47	.40	5	100	12.9	102	10.4	100	18.3	96
14	12	350	.47	.42	4	100	11.9	101	9.4	100	17.3	85

See notes at end of Table.

**AMERICAN Ductile Iron Mechanical Joint Fittings****ANSI/AWWA C153/A21.53
Compact Reducers**

Table No. 5-14—Continued

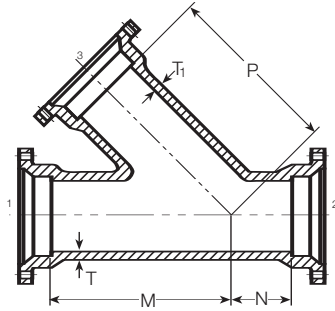
Size in.		Pressure Rating psi	Thickness in.		MJ & MJ		Small End MJ		Large End MJ		PE & PE	
Large End	Small End		T Large End (nom)	T ₁ Small End (nom)	L in. (min)	Weight lb	L in. (min)	Weight lb	L in. (min)	Weight lb	L in. (min)	Weight lb
16	6	350	.50	.36	11	136	18.9	132	16.5	144	24.3	128
16	8	350	.50	.38	9	132	16.9	128	14.4	136	22.3	112
16	10	350	.50	.40	7	128	15.0	124	12.5	128	20.5	123
16	12	350	.50	.42	5	125	12.9	123	10.5	119	18.3	113
16	14	350	.50	.47	4	140	12.0	139	12.0	138	19.7	133
18	8	350	.54	.38	13	194	20.0	190	19.5	195	27.4	170
18	10	350	.54	.40	10	196	18.0	165	17.4	185	25.5	185
18	12	350	.54	.42	7	185	15.5	150	14.0	190	19.5	150
18	14	350	.54	.47	6	190	15.0	175	15.0	190	23.0	160
18	16	350	.54	.50	5	196	12.5	170	12.5	190	18.0	145
20	10	350	.57	.40	14	225	22.0	210	19.0	210	27.5	185
20	12	350	.57	.42	12	210	17.5	200	16.0	210	21.5	195
20	14	350	.57	.47	10	208	18.0	198	17.9	205	26.0	195
20	16	350	.57	.50	7	225	13.5	215	13.5	220	19.0	212
20	18	350	.57	.54	4	233	12.0	220	12.0	225	20.0	210
24	12	350	.61	.42	16	310	21.5	300	21.0	290	22.5	290
24	14	350	.61	.47	14	315	22.0	325	21.9	335	25.0	310
24	16	350	.61	.50	12	324	17.5	319	17.5	310	23.0	304
24	18	350	.61	.54	10	312	18.0	310	18.0	315	21.0	304
24	20	350	.61	.57	7	315	13.5	305	13.5	307	14.0	304

See General Notes on page 5-2.

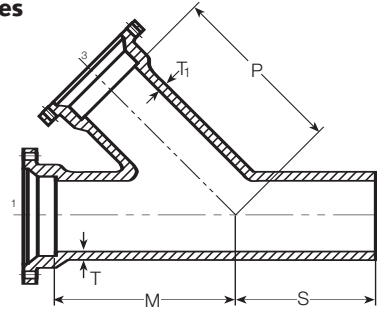


AMERICAN Ductile Iron Mechanical Joint Fittings

AMERICAN Standard Wyes



All MJ Wye



MJ-PE and MJ Wye

Table No. 5-15

Size in.		Pressure Rating* psi	Dimensions in Inches						Weight in Pounds	
Run	Branch		T	T ₁	M	N	P	S	All MJ	MJ-PE & MJ
4	4	250	.52	.52	12.0	3.0	12.0	-	95	-
6	4	250	.55	.52	14.5	3.5	14.5	-	135	-
6	6	250	.55	.55	14.5	3.5	14.5	-	150	-
8	4	250	.60	.52	17.5	4.5	17.5	-	190	-
8	6	250	.60	.55	17.5	4.5	17.5	-	205	-
8	8	250	.60	.60	17.5	4.5	17.5	-	225	-
10	4	250	.68	.52	20.5	5.0	20.5	-	270	-
10	6	250	.68	.55	20.5	5.0	20.5	-	285	-
10	8	250	.68	.60	20.5	5.0	20.5	-	305	-
10	10	250	.68	.68	20.5	5.0	20.5	-	375	-
12	4	250	.75	.52	24.5	5.5	24.5	-	375	-
12	6	250	.75	.55	24.5	5.5	24.5	-	390	-
12	8	250	.75	.60	24.5	5.5	24.5	-	415	-
12	10	250	.75	.68	24.5	5.5	24.5	-	500	-
12	12	250	.75	.75	24.5	5.5	24.5	-	535	-
14	6	250	.82	.55	27.0	6.0	27.0	-	590	-
14	8	250	.82	.60	27.0	6.0	27.0	-	615	-
14	10	250	.82	.68	27.0	6.0	27.0	-	650	-
14	12	250	.82	.75	27.0	6.0	27.0	-	690	-
14	14	250	.82	.82	27.0	6.0	27.0	-	755	-
16	6	250	.89	.55	30.0	6.5	30.0	-	770	-
16	8	250	.89	.60	30.0	6.5	30.0	-	795	-
16	10	250	.89	.68	30.0	6.5	30.0	-	830	-
16	12	250	.89	.75	30.0	6.5	30.0	-	870	-
16	14	250	.89	.82	30.0	6.5	30.0	-	935	-
16	16	250	.89	.89	30.0	6.5	30.0	-	1000	-
18	4	250	.96	.52	25.0	1.0	27.5	-	700	-
18	6	250	.96	.55	25.0	1.0	27.5	-	730	-
18	8	250	.96	.60	25.0	1.0	27.5	-	750	-
18	10	250	.96	.68	32.0	7.0	32.0	-	1015	-
18	12	250	.96	.75	32.0	7.0	32.0	-	1055	-
18	14	250	.96	.82	32.0	7.0	32.0	-	1120	-
18	16	250	.96	.89	32.0	7.0	32.0	-	1180	-
18	18	250	.96	.96	32.0	7.0	32.0	-	1245	-

Numerals on cuts indicate standard order of specifying size of fitting.
See General Notes on page 5-2.



AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings AMERICAN Standard Wyes

Table No. 5-15—Continued

Size in.		Pressure Rating* psi	Dimensions in Inches						Weight in Pounds	
Run	Branch		T	T ₁	M	N	P	S	All MJ	MJ-PE & MJ
20	10	250	1.03	.68	27.0	1.0	29.5	-	940	-
20	12	250	1.03	.75	35.0	8.0	35.0	-	1300	-
20	14	250	1.03	.82	35.0	8.0	35.0	-	1365	-
20	16	250	1.03	.89	35.0	8.0	35.0	-	1430	-
20	18	250	1.03	.96	35.0	8.0	35.0	-	1495	-
20	20	250	1.03	1.03	35.0	8.0	35.0	-	1575	-
24	10	250	1.16	.68	31.5	.5	34.5	-	1330	-
24	12	250	1.16	.75	31.5	.5	34.5	-	1360	-
24	14	250	1.16	.82	40.5	9.0	40.5	-	1930	-
24	16	250	1.16	.89	40.5	9.0	40.5	-	1990	-
24	18	250	1.16	.96	40.5	9.0	40.5	-	2060	-
24	20	250	1.16	1.03	40.5	9.0	40.5	-	2135	-
24	24	250	1.16	1.16	40.5	9.0	40.5	-	2315	-
30	12	250	1.37	.75	49.0	10.00	49.0	18.0	3110	3080
30	14	250	1.37	.82	49.0	10.00	49.0	18.0	3185	3150
30	16	250	1.37	.89	49.0	10.00	49.0	18.0	3250	3220
30	18	250	1.37	.96	49.0	10.00	49.0	18.0	3325	3290
30	20	250	1.37	1.03	49.0	10.00	49.0	18.0	3405	3370
30	24	250	1.37	1.16	49.0	10.00	49.0	18.0	3580	3550
30	30	250	1.37	1.37	52.5	18.25	52.5	26.25	4580	4550
36	14	250	1.58	.82	54.0	15.25	54.0	23.25	4875	4800
36	16	250	1.58	.89	54.0	15.25	54.0	23.25	4940	4865
36	18	250	1.58	.96	54.0	15.25	54.0	23.25	5005	4935
36	20	250	1.58	1.03	54.0	15.25	54.0	23.25	5080	5005
36	24	250	1.58	1.16	54.0	15.25	54.0	23.25	5245	5170
36	30	250	1.58	1.37	56.0	15.25	56.0	23.25	5800	5725
36	36	250	1.58	1.58	60.0	19.50	60.0	27.5	6975	6905
42	20	250	1.78	1.03	60.0	12.00	60.0	-	6655	-
42	24	250	1.78	1.16	60.0	12.00	60.0	-	6810	-
42	30	250	1.78	1.37	63.0	12.00	63.0	-	7280	-
42	36	150	1.78	1.58	66.0	12.00**	66.0	-	8355	-
42	42	150	1.78	1.78	71.0	15.00	71.0	-	9900	-
48	20	250	1.96	1.03	52.0	0.00	66.0	-	6545	-
48	24	250	1.96	1.16	58.0	5.00	64.0	-	7430	-
48	30	250	1.96	1.37	59.0	4.00	64.0	-	7925	-
48	36	250	1.96	1.58	64.0	5.00	68.0	-	9065	-
48	42	150	1.96	1.78	77.0	12.00	77.0	-	11940	-
48	48	150	1.96	1.96	77.0	16.00	77.0	-	13130	-

*Higher pressure rated Wyes may be available in some sizes. Check AMERICAN.

**Dimension N for 42" X 36" Wyes was 16.00" prior to mid-1986.

Numerals on cuts indicate standard order of specifying size of fitting.

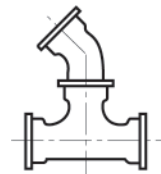
Other joints (e.g. **Fastite**, **Flex-Ring**, or **Lok-Ring**) are available in some sizes. Check AMERICAN.

See General Notes on page 5-2.

Wyes Are Special...

...and if a standard tee and 45° bend, as shown, can satisfactorily meet the requirement—particularly in large-diameter piping—it may be advantageous to use them.

Note: Welded-on lateral outlets may be preferable to wyes in some cases from a layout, installation and economical standpoint. See Section 7.

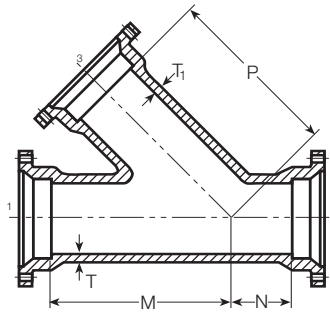


MJ Tee with MJ &
PE 45° Bend



AMERICAN Ductile Iron Mechanical Joint Fittings

AMERICAN Standard Compact Wyes



All MJ Wye

Table No. 5-16

Size in.		Pressure Rating* psi	Dimensions in Inches					Weight in lbs
Run	Branch		T (nom)	T ₁ (nom)	M	N	P	All MJ
4	4	250	.34	.34	9.5	2.5	9.5	45
6	6	250	.37	.37	13.0	3.0	13.0	93
8	8	250	.39	.39	16.0	3.5	16.0	136
10	10	250	.41	.41	19.0	3.5	19.0	199
12	12	250	.43	.43	22.5	4.5	22.5	272
14	14	250	.51	.51	25.0	6.0	25.0	465
16	16	250	.52	.52	28.0	6.5	28.0	575

Numerals on cuts indicate standard order of specifying size of fitting.

*Higher pressure rated Wyes may be available in some sizes. Check AMERICAN.

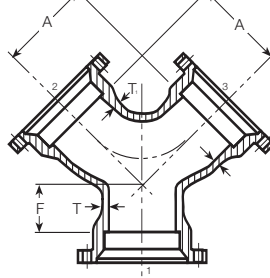
See General Notes on page 5-2.



AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Mechanical Joint Fittings

AMERICAN Standard True Wyes



All MJ True Wye

Table No. 5-17

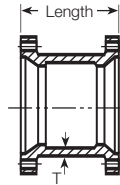
Size in.		Pressure Rating psi	Dimensions in Inches				Weight lb
Stem (1)	Branches (2 & 3)		T	T ₁	A	F	
30	24	250	1.37	1.16	25.0	10.0	1820
30	20	250	1.37	1.03	25.0	10.0	1430
30	30	250	1.37	1.37	25.0	10.0	2535
36	24	250	1.58	1.16	28.0	15.0	2370
36	30	250	1.58	1.37	28.0	15.0	3070
36	36	250	1.58	1.58	28.0	15.0	3990
42	30	250	1.78	1.37	31.0	21.0	3820
42	36	*150	1.78	1.58	31.0	21.0	4725
42	42	*150	1.78	1.78	31.0	21.0	5750
48	36	250	1.96	1.58	34.0	18.0	5015
48	48	*150	1.96	1.96	34.0	18.0	7315

Numerals on cuts indicate standard order of specifying size of fitting. See General Notes on page 5-2.

*Contact AMERICAN if higher pressure ratings are required.



AMERICAN Ductile Iron Mechanical Joint Fittings ANSI/AWWA C110/A21.10, C153/A21.53, and AMERICAN Standard Sleeves



MJ Sleeve

Table No. 5-18 AWWA C153-Compact

Size in.	Pressure Rating psi	T in.	Short		Long	
			Length in.	Weight lb	Length in.	Weight lb
4	350	.34	7.5	17	12.0	20
6	350	.36	7.5	28	12.0	33
8	350	.38	7.5	38	12.0	46
10	350	.40	7.5	49	12.0	62
12	350	.42	7.5	56	12.0	76
14	350	.47	9.5	111	15.0	140
16	350	.50	9.5	130	15.0	170
18	350	.54	-	-	15.0	200
20	350	.57	-	-	15.0	255
24	350	.61	-	-	15.0	300
30	250	.66	-	-	24.0	655
36	250	.74	-	-	24.0	900
42	250	.82	-	-	24.0	1150
48	250	.90	-	-	24.0	1435

Table No. 5-19 AWWA C110

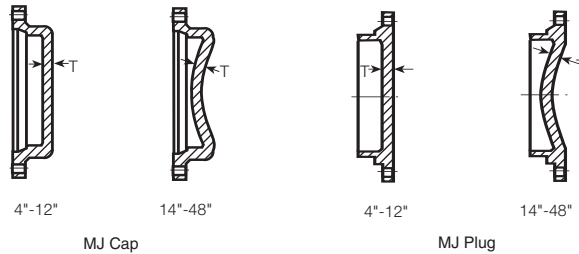
Size in.	Pressure Rating psi	T in.	Solid Sleeves	
			Length in.	Weight lb
30	250	1.37	24	1085
36	250	1.58	24	1495
42	250	1.28	24	1550
42	250	1.78	-	-
48	250	1.42	24	1940
48	250	1.96	-	-
**54	250	1.55	24	2072
**60	250	1.55	24	2284

** 54"-64" Ductile Iron Mechanical Joint Sleeves are not included in AWWA C110. In many cases, fabricated sleeves/couplings accomplish the same installation objectives as mechanical joint sleeves. "Drop-in" restraint can be provided by coupling gland ends. (See Section 9.) Contact manufacturers for details.

For connection to steel pipe O.D. products, AMERICAN provides standard MJ glands for use in conjunction with MJ Transition gaskets in 12" and smaller sizes. Transition sleeves, glands, and gaskets are no longer provided in 14" and larger sizes. Fabricated sleeves are also readily available from various manufacturers for coupling ductile iron pipe plain ends to pipe plain ends of other material types and other outside diameters.



AMERICAN Ductile Iron Mechanical Joint Fittings



ANSI/AWWA C153/A21.53 Compact Caps and Plugs

Table No. 5-20

Size in.	Pressure Rating psi	T in.	Weight in Pounds	
			MJ Cap	MJ Plug
4	350	.46	12	12
6	350	.46	19	19
8	350	.46	30	36
10	350	.56	41	50
12	350	.56	53	67
14	350	.62	79	85
16	350	.62	100	93
18	350	.65	125	130
20	350	.66	148	153
24	350	.68	214	202

Normally, sizes 12" and smaller caps and plugs are flat and 14" and larger are dished. This is subject to change depending on foundry equipment. Caps and plugs can be furnished tapped for service connections or testing purposes. Thicknesses and weights of some caps and plugs may be more than specified in AWWA C153.
See General Notes on page 5-2.

ANSI/AWWA C110/A21.10 Caps and Plugs

Table No. 5-21

Size in.	Pressure Rating psi	T in.	Weight in Pounds	
			MJ Cap	MJ Plug
30	250	1.37	680	660
36	250	1.58	1005	975
42	250	1.78	1535	1355
48	250	1.96	1950	1810

Normally, 30" and larger caps and plugs are dished. This is subject to change depending on foundry equipment. Caps and plugs can be furnished tapped for service connections or testing purposes.

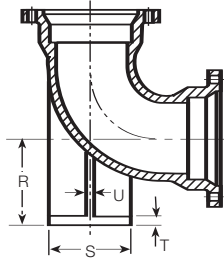
A lifting eye is furnished on all 30" and larger caps and plugs.

Thicknesses and weights of some caps and plugs may be more than specified in AWWA C110.
See General Notes on page 5-2.

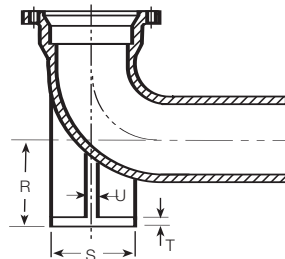


AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 Base Bends



MJ and MJ 90° Base Bend



MJ and PE 90° Base Bend

Table No. 5-22

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds		
		R	S Dia.	T	U	MJ & MJ	MJ & PE	Base Only
30	250	23.00	16.00	1.19	1.15	1880	1775	190
36	250	26.00	19.00	1.25	1.15	2725	2560	250
42	250	30.00	23.50	1.44	1.28	3820	3610	410
48	250	34.00	25.00	1.56	1.42	5110	4845	515

Bases are faced and drilled only when specified. See Section 6, Table No. 6-21.

Dimension "R" is a finished dimension; unfinished bases will be slightly longer.

Bases of these fittings are intended for support in compression and are not to be used for anchors or supports in tension or shear.

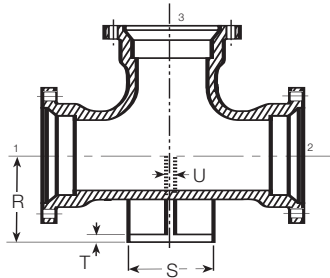
For size of supporting pipe see Table No. 5-24.

See General Notes on page 5-2.

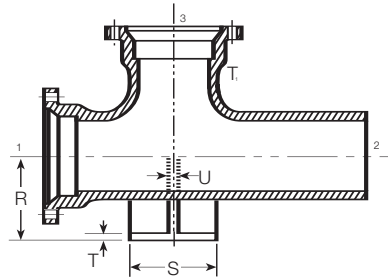


AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C110/A21.10 Base Tees



All MJ Base Tee



MJ-PE and MJ Base Tee

Table No. 5-23

Size in.	Pressure Rating psi	Dimensions in Inches				Weight in Pounds		
		R	S Dia.	T	U	All MJ	MJ - PE & MJ	Base Only
30	250	23.00	16.00	1.19	1.15	2715	2600	120
36	250	26.00	19.00	1.25	1.15	3905	3725	160
42	150	30.00	23.50	1.44	1.28	5355	5130	270
42	250	30.00	23.50	1.44	1.28	6590	6365	270
48	150	34.00	25.00	1.56	1.42	7100	6810	335
48	250	34.00	25.00	1.56	1.42	8755	8470	335

Bases are faced and drilled only when specified. See Section 6, Table No. 6-21.

Dimension "R" is a finished dimension; unfinished bases will be slightly longer.

Bases of these fittings are intended for support in compression and are not to be used for anchors or supports in tension or shear.

Base dimensions are applicable to Tees reducing on the branch as well as full opening Tees.

For weight of Reducing Base Tee add weight of base to weight of tee shown in Table No. 5-11.

See General Notes on page 5-2.

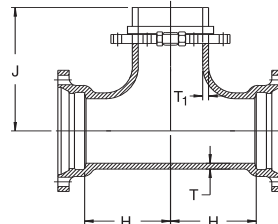
Size of Supporting Pipe for Base Fittings

Table No. 5-24

Fitting Size-in.	30	36	42	48
Supporting Flange Pipe Size-in.	10	12	16	18



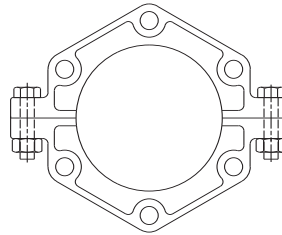
AMERICAN Ductile Iron Mechanical Joint Fittings
ANSI/AWWA C153/A21.53
AMERICAN Standard
Swivel Tees and Glands



MJ and Swivel Tees

Table No. 5-25

Size in.		Pressure Rating psi	Dimensions in Inches				Weight in lbs
Run	Branch		T (nom)	T ₁ (nom)	H	J	
6	6	350	.36	.36	5.0	9.00	57
8	6	350	.38	.36	5.0	10.00	71
8	8	350	.38	.38	6.5	10.25	84
10	6	350	.40	.36	5.0	11.00	93
10	8	350	.40	.38	6.5	11.25	109
12	6	350	.42	.36	5.0	12.25	113
12	8	350	.42	.38	6.5	12.50	130



Swivel Glands

Table No. 5-26

Size in.	Wt.
6	5
8	7



AMERICAN Ductile Iron Mechanical Joint Fittings

ANSI/AWWA C111/A21.11

AMERICAN Standard

Glands



MJ Gland

Table No. 5-27

Size in.	Weight in Pounds*
	Gland
4	6
6	11
8	18
10	20
12	30
14	35
16	45
18	55
20	70
24	90
30	180
36	235
42	300
48	365

*Gland weights may be less than shown because of pattern changes.
See General Notes on page 5-2.

Special Glands

MJ Glands for “D” pattern pipe are special and cannot be interchanged with standard MJ Glands or MJ Split Glands. MJ Transition gaskets in the 12” and smaller sizes are used with standard MJ glands for connections to steel pipe O.D. products. Transition sleeves, glands, and gaskets are no longer available in the 14” and larger sizes. (See footnote under Table 5-19.) Various designs of MJ retainer gland devices, designed and manufactured by others, are available. AMERICAN does not warrant the performance of joints utilizing such devices; however, AMERICAN has designed and does manufacture a number of restrained joints, such as Fast-Grip, Flex-Ring, Field Flex-Ring, Lok-Ring, and Flex-Lok shown in Section 9, that do carry AMERICAN’s standard warranty.



AMERICAN DUCTILE IRON PIPE



AMERICAN reserves the right to modify or change designs, materials, specifications, or dimensions shown herein without prior notice.



This is a revised reprint of a section from the 19th Edition of the AMERICAN Pipe Manual. References may be made in this section to other sections of this manual.

