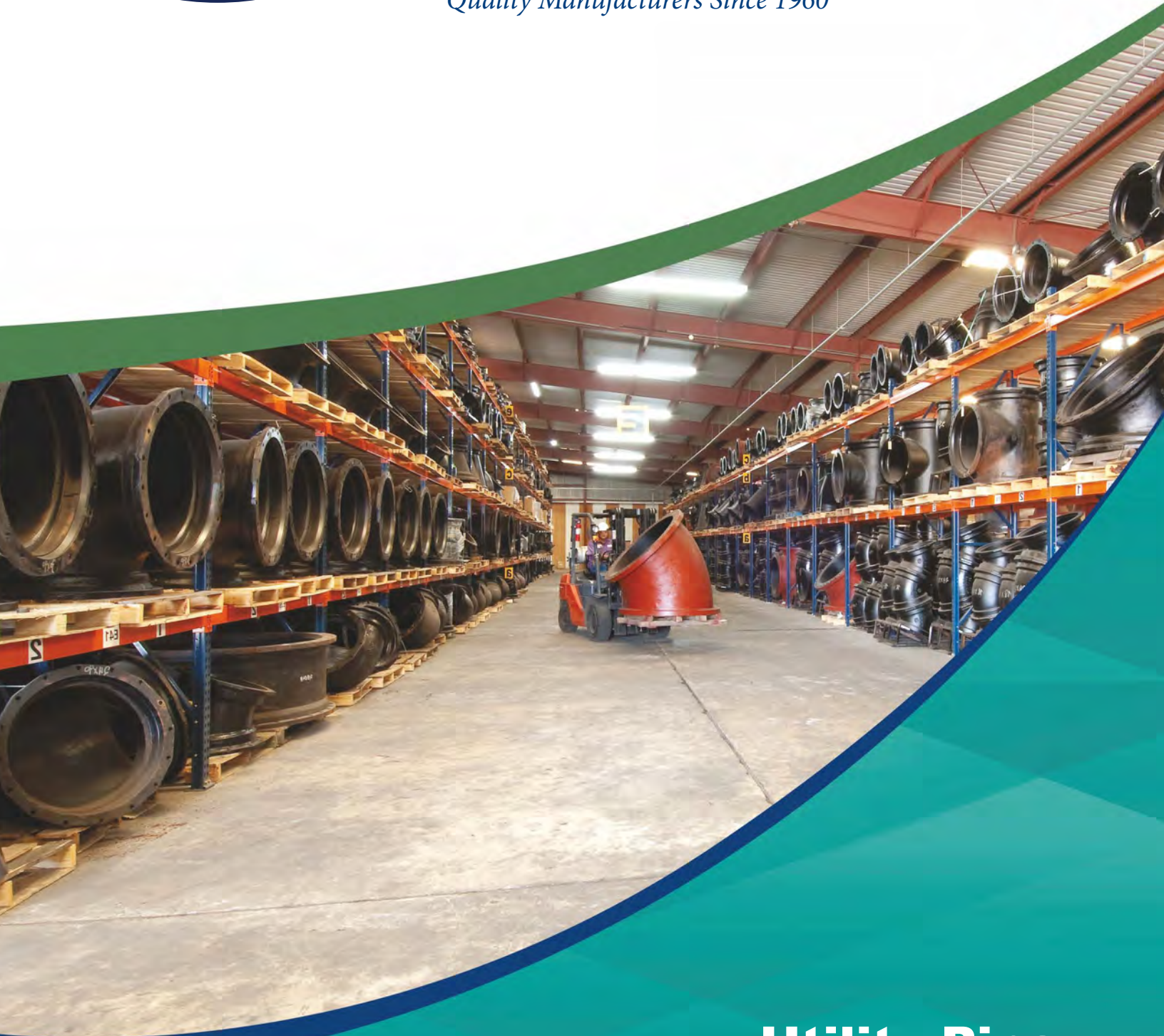




SIP Industries

Quality Manufacturers Since 1960



Utility Pipe Fittings

www.sipindustries.com

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SIP INDUSTRIES
SERAMPORE
SINCE 1960

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- All dimensions are in inches unless noted otherwise.
- All weights are approximate in pounds unless noted otherwise.

1. Acceptance. All sales by SIP Industries (Seller) are made pursuant to these Terms and Conditions. Submission of a purchase order to Seller, and/or acceptance of goods delivered by Seller, shall be deemed an acceptance of these Terms and Conditions by Purchaser. Please note that these Terms and Conditions may be modified from time to time; the applicable Terms and Conditions are those posted on SIP's website, www.sipindustries.com, at the time that a purchase order is accepted or an agreement otherwise confirmed. Purchaser's alteration or addition to these Terms and Conditions, as same may be in effect from time to time, is expressly rejected unless accepted in writing by an authorized representative of Seller.

2. Entire Agreement. These Terms and Conditions, together with Seller's price list and Purchaser's purchase order, when accepted by Seller, shall be the entire agreement between Seller and Purchaser. Neither Seller nor Purchaser is relying on any representations, warranties or agreements except as expressly provided in these Terms and Conditions and in an accepted purchase order. To the extent of any conflict between the terms of a purchase order or any other documents submitted by Purchaser, on the one hand, and these Terms and Conditions, on the other, these Terms and Conditions shall govern.

3. Prices. Prices and descriptions of goods stated in Seller's price lists are subject to change without notice. Prices are subject to tariffs, raw material surcharges, labor disputes and shipping surcharges. To submit a purchase order, SIP Industries item numbers and part codes should be included. Seller's quotations are on globally sourced products unless otherwise noted. The ordering party is responsible to specify any required origin as required for end use. Quotations, if provided by Seller, expire sixty (60) days from the date provided unless otherwise agreed in writing.

4. Terms. Invoices are due and payable thirty (30) days from date of shipment, unless otherwise written on the invoice or confirmed in writing by Seller. A five percent (5%) late fee will be charged on all past-due accounts. If it becomes necessary to retain attorneys to collect an account, the Purchaser is liable for Seller's attorney's fees and other costs of collection.

5. FOB point of shipment. All prices are FOB point of shipment, unless otherwise agreed in writing. Seller's responsibility for goods therefore ceases and title passes to the Purchaser at the point of shipment; all claims for damages or losses in transit must be directed to the carrier with copy to Seller within ten (10) days of shipment.

6. Delivery. Seller shall have the right to select the freight carrier unless otherwise agreed. Seller has the right to substitute material with same function and design to accommodate unforeseen delays, shortages or restrictions.

7. Cancellations, Changes and Returns. All cancellations, changes and returns must be accepted in writing by an authorized representative of Seller, otherwise they will not be valid and binding on Seller. Seller will not be responsible for unauthorized returned product. It will be the responsibility of purchaser at their expense to have unauthorized product returned or disposed of. Seller shall not be obligated to accept any cancellation, change or return, but if it does so the following terms shall apply: (i) goods must be returned to Seller's facility, in the same condition in which they were accepted by Purchaser; (ii) a handling charge of thirty-five percent (35%) of the purchase price will be deducted from the credit given to Purchaser; and (iii) shipping charges, if not prepaid by Purchaser, will likewise be deducted from the credit given to Purchaser.

8. Specially Manufactured Goods. Unless otherwise agreed, specially-manufactured goods, including goods designed to the Purchaser's specifications, may not be cancelled or returned once work has begun to design or manufacture the goods unless an agreement is reached and confirmed in writing by Seller, including compensation to Seller for work thus far done with respect to the goods.

9. Delays; Force Majeure. Seller shall not be liable for any expenses, loss or damage resulting from any delay in delivery of goods or other failure of Seller's performance due to fire, floods, acts of god, strikes, labor disputes, labor shortages, riots, accidents, transportation delays or other causes beyond the reasonable control of Seller.

10. Disclaimer regarding weights. All stated weights are approximate and are given for inventory and shipping purposes only.

Warranty, General Terms, and Conditions of Sale

11. Taxes. Seller's prices do not include sales, excise or other taxes. Purchaser shall pay all such taxes. If Purchaser claims a tax exemption, Purchaser shall provide Seller with the necessary tax-exemption numbers and certificates. If Seller accepts an exemption but is later required by the taxing authority to pay taxes, Purchaser shall reimburse to Seller the amount of such taxes.

12. Limited Warranty. For a period of one calendar year from the date of shipment, Seller warrants that goods sold and delivered by Seller to Purchaser will conform to the number and type of goods described in the accepted purchase order and that such goods will be free from defects in material and workmanship.

THIS LIMITED WARRANTY IS SELLER'S SOLE AND EXCLUSIVE WARRANTY. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. SELLER DOES NOT WARRANT THAT THE GOODS ARE FIT FOR ANY PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE GOODS ARE MERCHANTABLE.

13. Product Disclaimers. All tooling required to manufacture products are the property of Seller even if tooling costs are incurred by Purchaser. Seller has the right to change product design, engineering, materials, tooling and processes that do not affect the intended use and application of the product. Seller will notify Purchaser if changes are substantial and may affect the application or appearance of the product. Furthermore, references to Buyer's specifications and similar requirements are only to describe the goods and do not give rise to any representation, warranty or other sales term.

Seller manufactures to industry standards and makes every effort to address applications of its products. Please see current technical advisory at Seller's web site, sipindustries.com, for up to date product support and recommendations. All product dimension, designs, technology, tooling, process, software, innovations, and drawings are considered intellectual property and are owned and confidential to Seller. Purchaser has no rights or privileges to SIP industries intellectual property including product applications without Seller's express written consent.

14. Prompt notice required for Limited Warranty claims. Buyer is responsible for promptly inspecting goods on delivery and notifying Seller, within sixty (60) days of delivery to Buyer, of any nonconformity or defect that would be discovered on a reasonable and customary inspection. Provided that such notice is given and that the warranty claim is made within one year, Seller will provide a replacement or price adjustment, in Seller's discretion, not to exceed the net sales price of the defective product. However, this warranty shall be of no force or effect absent such timely notice. Seller shall not in any event be responsible for labor, removal or installation charges incurred in connection with the replacement of defective goods.

15. Conditions to Limited Warranty. Purchaser shall notify Seller immediately upon discovery of a defect so that Seller may inspect the product in its installed condition. Seller shall not be responsible for defects or failures in goods of which it is not so notified; nor shall Seller be responsible for goods manufactured or sold by other parties or losses or impairments caused by such goods; nor shall Seller be responsible for defects or failure of goods due to improper installation, improper usage, normal or abnormal wear and tear, erosion or corrosion, improper storage, use or maintenance, vandalism, vehicular or other accidents, or storms or other forces beyond the control of the parties. Seller also shall not be responsible for goods that have been damaged by misuse, negligence or accident or that have been altered or repaired by any party other than Seller.

16. Limitation on Liability. In the event any remedy hereunder fails of its essential purpose and monetary damages may be imposed, Seller's liability, whether founded in contract or tort (including negligence), arising out of or resulting from (i) the Purchase Order and resulting contract or the performance or breach thereof, or (ii) the design, manufacture, delivery, sale, repair, replacement or use of the goods, shall not exceed the cost of the goods at issue in the claim. NOTWITHSTANDING ANYTHING CONTAINED HEREIN TO THE CONTRARY, SELLER SHALL NOT BE LIABLE TO PURCHASER OR ANY OTHER PERSON FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE OR OTHER INDIRECT DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS, RECALL-RELATED EXPENSES, AND LOSS OF USE OF THE GOODS.

17. Purchaser specifications. If Seller has designed the goods using information provided by Purchaser, Seller shall not be responsible for design errors resulting from inaccurate or incomplete information supplied by Purchaser. If

Warranty, General Terms, and Conditions of Sale

Purchaser has provided specifications or a model or sample from which a good is designed and manufactured, Seller shall not be responsible for any defect, error or inadequacy provided that the good is designed or manufactured in compliance with Purchaser's specifications, model or sample.

18. Solvency and Security Interest. By submitting a Purchase Order, Buyer represents to Seller that Buyer is solvent and capable of timely fulfilling its payment and other obligations to Seller. Until the goods and any other indebtedness of Buyer have been paid in full, Buyer, its agents any successors: (i) will hold the goods subject to a security interest in favor of Seller allowing for the right or re-possession by Seller to the extent permitted by applicable law, (ii) will not alter, remove, destroy, or damage any identifying mark on the goods or their packaging, and (iii) will keep the goods separate from any other products.

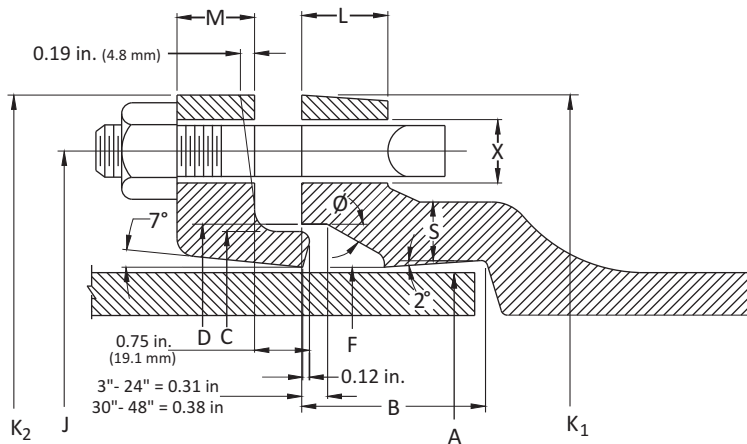
19. Governing law; venue. All sales shall be governed by the law of the state of Texas. In the event that a lawsuit is filed between the parties on any claim arising out of or in connection with such sales, Seller and Purchaser agree that exclusive venue and jurisdiction shall be in the state or federal courts of Harris County, Texas.

20. Attorney's fees and costs. In the event of litigation between the parties with respect to the sale of goods, the prevailing party shall be entitled to recover its reasonable attorney's fees and costs, including expert witness fees.

3" - 64" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

General Specifications

- Material** : Ductile Iron per ASTM A536
- Pressure** : 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
- Testing** : In accordance with ANSI/AWWA C153/A21.53 and UL, FM requirements
- Laying Length** : In accordance with ANSI/AWWA C153/A21.53
(fittings not listed in ANSI/AWWA have dimensions per SIP design as noted in the catalog)
- Deflection** : 2"- 4"= 8° | 6"= 7° | 8"-12"= 5° | 14"-16"= 3 ½° | 18"-24"= 3° | 30"-64"= 2°
- Flanges** : Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
- Gaskets** : SBR in accordance with ANSI/AWWA C111/A21.11 (see fittings accessories catalog)
- T-Bolts / Nuts** : Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see fittings accessories catalog)
- Cement Lining** : In accordance with ANSI/AWWA C104/A21.4
- Coating** : Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53 and also available in Fusion-Bonded epoxy (FBE) power coated oxide red color in accordance with the ANSI/AWWA C116/A21.16
- Weight** : Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
- Dimensions** : All dimensions are in inches unless noted otherwise.
- Installations** : Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900
- Approvals** : 3" - 24" UL Listed | 3" - 24" FM Approved | 3" and higher UL/NSF Standards 61 | 3" and higher NSF/ANSI Standards 61 & 372
Approved for Drinking Water. Please consult SIP for detail listing and approvals.



Certified to
NSF/ANSI 61 & 372



ANSI/NSF 61
DRINKING WATER SYSTEM COMPONENTS

Technical Specifications

SIZE	A	B	C	D	F	J	K ₁	K ₂	M	S	L	Ø	X	BOLTS		
														NO.	SIZE	LENGTH
*2	2.50	2.50	3.39	3.50	2.61	4.75	6.19	6.25	0.62	0.36	0.58	28°	¾	2	⅝	3
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.62	0.39	0.58	28°	¾	4	⅝	3
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.75	0.39	0.60	28°	⅞	4	¾	3 ½
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.88	0.43	0.63	28°	⅞	6	¾	3 ½
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	1.00	0.45	0.66	28°	⅞	6	¾	3 ½
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	1.00	0.47	0.70	28°	⅞	8	¾	3 ½
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	1.00	0.49	0.73	28°	⅞	8	¾	3 ½
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	1.25	0.55	0.79	28°	⅞	10	¾	4
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	1.31	0.58	0.85	28°	⅞	12	¾	4
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.38	0.68	1.00	28°	⅞	12	¾	4
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.44	0.69	1.02	28°	⅞	14	¾	4
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.56	0.75	1.02	28°	⅞	16	¾	4 ½
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	2.00	0.82	1.31	20°	1 ⅛	20	1	5 ½
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	2.00	1.00	1.45	20°	1 ⅛	24	1	5 ½
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	2.00	1.25	1.45	20°	1 ⅜	28	1 ¼	6
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	2.00	1.35	1.45	20°	1 ⅜	32	1 ¼	6

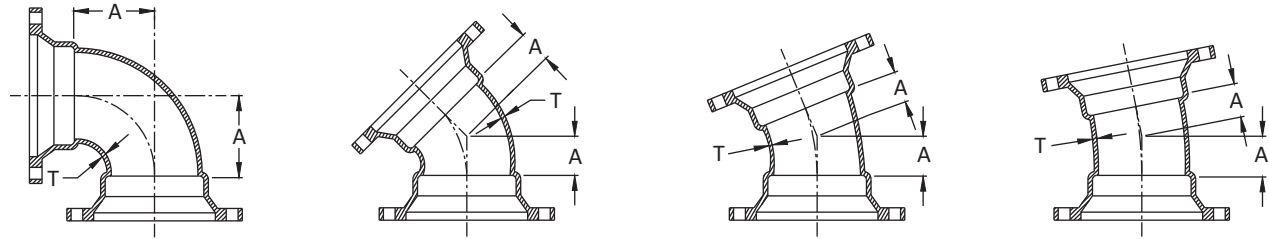
NB : Fittings & Dimensions for Size 54, 60 & 64 available on request only.

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

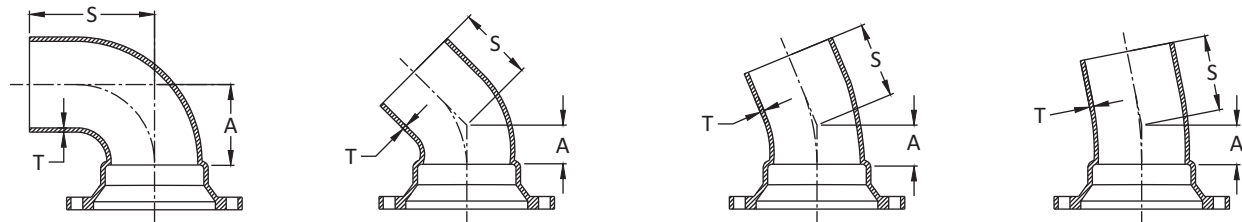
* not included in AWWA C153

MJ X MJ BENDS



MJ X MJ		90° BENDS ($\frac{1}{4}$)		45° BENDS ($\frac{1}{8}$)		22.5° BENDS ($\frac{1}{16}$)		11.25° BENDS ($\frac{1}{32}$)	
SIZE	T	A	WT	A	WT	A	WT	A	WT
*2	0.30	3.25	15	1.80	14	1.00	10	1.00	9
3	0.33	3.50	19	1.50	16	1.00	15	1.00	14
4	0.34	4.00	25	2.00	22	1.50	18	1.25	16
6	0.36	5.00	39	3.00	32	2.00	31	1.50	30
8	0.38	6.50	57	3.50	46	2.50	46	1.75	42
10	0.40	7.50	89	4.50	70	3.00	64	2.00	58
12	0.42	9.00	108	5.50	86	3.50	80	2.25	67
14	0.47	11.50	210	5.00	160	3.75	136	2.50	93
16	0.50	12.50	264	5.50	202	3.75	172	2.50	148
18	0.54	14.00	335	6.00	250	4.50	255	3.00	205
20	0.57	15.00	400	7.00	305	4.50	310	3.00	245
24	0.61	16.75	565	7.50	405	4.50	412	3.00	315
30	0.66	21.50	930	10.50	780	6.75	665	4.75	600
36	0.74	24.50	1450	11.50	1135	7.75	960	5.00	820
42	0.82	29.25	2205	14.00	1610	9.00	1350	6.00	1180
48	0.90	33.25	2990	15.00	2090	10.00	1760	6.50	1475

MJ X PE BENDS



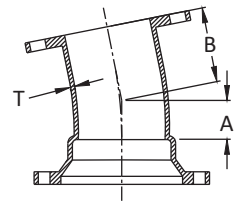
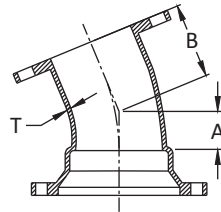
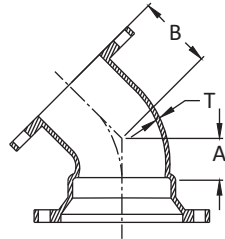
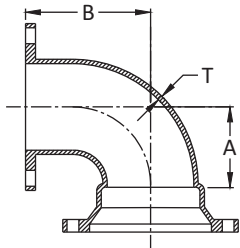
MJ X PLAIN END		90° BENDS ($\frac{1}{4}$)			45° BENDS ($\frac{1}{8}$)			22.5° BENDS ($\frac{1}{16}$)			11.25° BENDS ($\frac{1}{32}$)		
SIZE	T	A	S	WT	A	S	WT	A	S	WT	A	S	WT
3	0.33	3.25	8.50	16	1.50	7.00	13	1.00	6.50	12	1.00	6.50	12
4	0.34	4.00	9.50	22	2.00	7.50	19	1.50	7.00	18	1.25	6.25	17
6	0.36	5.00	11.50	41	3.00	8.50	34	2.00	7.50	29	1.50	7.00	27
8	0.38	6.50	12.50	58	3.50	9.00	49	2.50	8.00	43	1.75	7.25	39
10	0.40	7.50	13.00	83	4.50	10.00	69	3.00	8.50	61	2.00	7.50	52
12	0.42	9.00	14.50	114	5.50	11.00	93	3.50	9.00	79	2.25	7.75	69
14	0.47	11.50	19.50	197	5.00	13.00	146	3.75	11.25	133	2.50	10.50	118
16	0.50	12.50	20.50	248	5.50	13.50	184	3.75	11.75	166	2.50	10.50	136
18	0.54	14.00	21.00	325	6.00	13.00	235	6.00	13.00	235	6.00	13.00	235
20	0.57	15.00	22.50	390	7.00	14.00	290	7.00	14.00	300	7.00	14.00	300
24	0.61	17.00	25.00	575	7.50	14.50	390	7.50	14.50	395	7.50	14.50	400
30	0.66	22.50	30.50	865	10.50	19.50	715	6.75	15.75	600	4.75	13.75	535
36	0.74	24.50	33.50	1355	12.00	21.00	1040	7.75	16.75	865	5.00	14.00	725
42	0.82	29.25	38.25	2055	14.00	23.00	1460	9.00	18.00	1200	6.00	15.00	1030
48	0.90	33.25	42.25	2805	15.00	24.00	1905	10.00	19.00	1575	6.50	15.50	1290

* not included in AWWA C153

All dimensions are in inches unless noted otherwise.

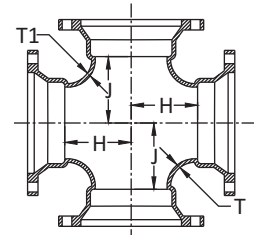
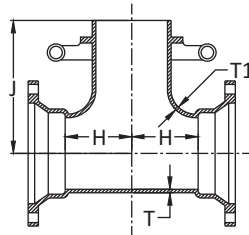
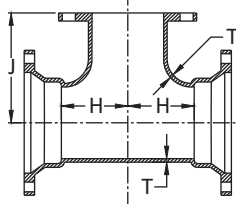
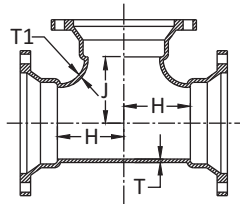
All weights are approximate in pounds unless noted otherwise.

MJ X FLANGE BENDS*



MJ X FLANGE		90° BENDS (¾)			45° BENDS (½)			22.5° BENDS (⅓)			11.25° BENDS (¼)		
SIZE	T	A	B	WT	A	B	WT	A	B	WT	A	B	WT
3	0.33	3.50	5.50	20	1.50	3.00	17	1.00	3.00	18	1.00	3.00	16
4	0.34	4.00	6.50	26	2.00	4.00	24	1.50	4.00	27	1.25	4.00	20
6	0.36	5.00	8.00	47	3.50	5.00	39	2.00	5.00	36	1.50	5.00	30
8	0.38	6.50	9.00	68	3.50	5.50	57	2.50	5.50	53	1.75	5.50	50
10	0.40	7.50	11.00	102	4.50	6.50	83	3.00	6.50	100	2.00	6.50	75
12	0.42	9.00	12.00	134	5.50	7.50	111	3.50	7.50	145	2.25	7.50	88
14	0.47	11.50	14.00	227	5.00	7.50	208	3.75	7.50	159	2.50	7.50	145
16	0.50	12.50	15.00	306	5.50	8.00	240	3.75	8.00	218	2.50	8.00	186
18	0.54	14.00	16.50	332	6.00	8.50	252	4.50	8.50	244	3.00	8.50	229
20	0.57	15.00	18.00	440	7.00	9.50	340	4.50	9.50	319	3.00	9.50	286
24	0.61	16.75	22.00	618	7.50	11.00	441	4.50	11.00	417	3.00	11.00	395
30	0.66	21.50	25.00	1010	10.50	15.00	805	6.75	15.00	729	4.75	15.00	686
36	0.74	24.50	28.00	1456	11.50	18.00	1175	7.75	18.00	1110	5.00	18.00	1050
42	0.82	29.25	31.00	2125	14.00	21.00	1732	9.00	21.00	1587	6.00	21.00	1535
48	0.90	33.25	34.00	2950	15.00	24.00	2285	10.00	24.00	2185	6.50	24.00	2032

TEES : MJ X MJ, MJ X FLANGE, MJ X SWIVEL HYDRANT & CROSSES



TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X ST*			MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	WT	H	J	WT
*2 X 2	0.30	0.30	3.25	3.25	21	---	---	---	---	---	---	---	---	---
*3 X 2	0.48	0.30	3.50	3.50	45	---	---	---	---	---	---	---	---	---
3 X 3	0.33	0.33	3.00	3.00	28	3.00	5.50	30	---	---	---	3.00	3.00	35
*4 X 2	0.34	0.30	3.00	4.00	30	---	---	---	---	---	---	---	---	---
4 X 3	0.34	0.33	3.50	4.00	30	3.50	6.50	34	---	---	---	3.50	4.00	38
4 X 4	0.34	0.34	4.00	4.00	32	4.00	6.50	40	4.00	8.50	---	4.00	4.00	40
6 X 3	0.36	0.33	3.50	5.00	42	3.50	8.00	51	---	---	---	*3.50	5.00	51
6 X 4	0.36	0.34	4.00	5.00	46	4.00	8.00	58	4.00	10.00	---	4.00	5.00	57
*6 X 4 X 6	0.36	0.36	*5.00	5.00	47	---	---	---	---	---	---	---	---	---
6 X 6	0.36	0.36	5.00	5.00	56	5.00	8.00	61	5.00	10.25	66	5.00	5.00	75
*6 X 6 X 8	0.36	0.38	*6.50	6.50	63	---	---	---	---	---	---	---	---	---
*8 X 3	0.38	0.33	*4.00	6.50	55	4.00	9.00	69	---	---	---	---	---	---
8 X 4	0.38	0.34	4.00	6.50	60	4.00	9.00	74	---	---	---	4.00	6.00	68
8 X 6	0.38	0.36	5.00	6.50	72	5.00	9.00	82	5.00	11.25	87	5.00	6.00	74
*8 X 6 X 6	0.38	0.38	*5.00	6.50	65	---	---	---	---	---	---	---	---	---
*8 X 6 X 8	0.38	0.38	*6.00	6.50	87	---	---	---	---	---	---	---	---	---
8 X 8	0.38	0.38	6.50	6.50	86	6.50	9.00	93	6.50	11.50	105	6.00	6.00	105
*10X 3	0.40	0.33	*4.00	7.50	76	---	---	---	---	---	---	3.00	7.00	111

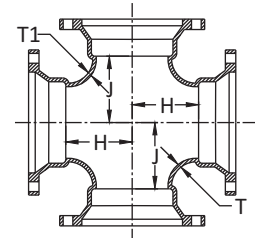
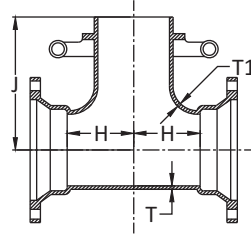
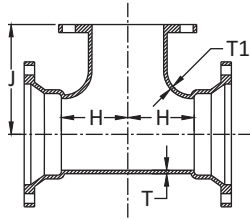
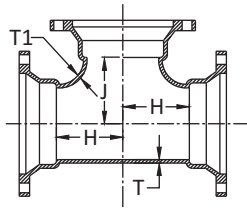
Con't

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C153

TEES : MJ X MJ, MJ X FLANGE, MJ X SWIVEL HYDRANT & CROSSES (Con't)



TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X ST*			MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	WT	H	J	WT
10X 4	0.40	0.34	4.00	7.50	78	4.00	11.00	90	---	---	---	4.00	7.00	112
10X 6	0.40	0.36	5.00	7.50	90	5.00	11.00	109	5.00	12.75	110	5.00	7.00	119
10X 8	0.40	0.38	6.50	7.50	105	6.50	11.00	116	6.50	12.75	120	6.50	7.00	124
10X10	0.40	0.40	7.50	7.50	120	7.50	11.00	132	---	---	---	7.00	7.00	145
*12X 3	0.42	0.33	*4.00	8.75	93	---	---	---	---	---	---	---	---	---
12X 4	0.42	0.34	4.00	8.75	94	4.00	12.00	118	4.00	13.50	---	4.00	8.50	119
12X 6	0.42	0.36	5.00	8.75	110	5.00	12.00	127	5.00	13.75	127	5.00	8.50	126
12X 8	0.42	0.38	6.50	8.75	125	6.50	12.00	138	6.50	13.75	130	6.00	8.50	149
12X10	0.42	0.40	7.50	8.75	140	7.50	12.00	150	---	---	---	7.50	8.50	179
12X12	0.42	0.42	8.75	8.75	160	8.75	12.00	178	8.75	13.50	---	8.50	8.50	213
14X 4	0.47	0.34	5.50	10.50	172	5.50	14.00	163	---	---	---	*5.50	10.50	164
14X 6	0.47	0.36	6.50	10.50	182	6.50	14.00	181	6.50	15.00	212	6.50	10.50	200
14X 8	0.47	0.38	7.50	10.50	206	7.50	14.00	201	7.50	15.00	220	7.50	10.50	228
14X10	0.47	0.40	8.50	10.50	228	8.50	14.00	244	---	---	---	*8.50	10.50	225
14X12	0.47	0.42	9.50	10.50	234	9.50	14.00	282	---	---	---	*9.50	10.50	247
14X14	0.47	0.47	10.50	10.50	280	10.50	14.00	298	---	---	---	10.50	10.50	299
16X 6	0.50	0.36	6.50	11.50	228	6.50	15.00	210	6.50	16.00	256	6.50	11.50	240
16X 8	0.50	0.38	7.50	11.50	248	7.50	15.00	261	7.50	16.00	300	7.50	11.50	260
16X10	0.50	0.40	8.50	11.50	264	8.50	15.00	285	---	---	---	8.50	11.50	317
16X12	0.50	0.42	9.50	11.50	280	9.50	15.00	311	---	---	---	9.50	11.50	326
16X14	0.50	0.47	10.50	11.50	316	10.50	15.00	350	---	---	---	*10.50	11.50	336
16X16	0.50	0.50	11.50	11.50	322	11.50	15.00	372	---	---	---	11.50	11.50	385
18X 6	0.54	0.36	6.50	12.50	275	6.50	15.50	324	6.50	18.00	282	*6.50	12.50	262
18X 8	0.54	0.38	7.50	12.50	295	7.50	15.50	352	7.50	17.00	271	*7.50	12.50	285
18X10	0.54	0.40	8.50	12.50	315	8.50	15.50	---	---	---	---	*8.50	12.50	311
18X12	0.54	0.42	9.50	12.50	335	9.50	15.50	360	---	---	---	9.50	12.50	348
18X14	0.54	0.47	10.50	12.50	380	10.50	16.50	---	---	---	---	*10.50	12.50	388
18X16	0.54	0.50	11.50	12.50	405	11.50	16.50	442	---	---	---	*11.50	12.50	---
18X18	0.54	0.54	12.50	12.50	435	12.50	16.50	448	---	---	---	12.50	12.50	481
20X 6	0.57	0.36	6.50	14.00	315	6.50	17.00	365	6.50	18.50	360	*6.50	14.00	325
20X 8	0.57	0.38	8.00	14.00	345	8.00	17.00	342	8.00	18.50	380	8.00	14.00	379
20X10	0.57	0.40	9.00	14.00	370	9.00	17.00	374	---	---	---	*9.00	14.00	382
20X12	0.57	0.42	10.00	14.00	395	10.00	17.00	405	---	---	---	10.00	14.00	413
20X14	0.57	0.47	11.00	14.00	440	11.00	17.00	437	---	---	---	*11.00	14.00	456
20X16	0.57	0.50	12.00	14.00	465	12.00	18.00	478	---	---	---	*12.00	14.00	632
20X18	0.57	0.54	13.00	14.00	505	13.00	18.00	510	---	---	---	*13.00	14.00	552
20X20	0.57	0.57	14.00	14.00	535	14.00	18.00	557	---	---	---	14.00	14.00	600
24X 6	0.61	0.36	7.00	16.00	415	7.00	19.00	435	7.00	19.00	461	*7.00	16.00	425
24X 8	0.61	0.38	8.00	16.00	445	8.00	19.00	426	8.00	19.00	480	8.00	16.00	481
24X10	0.61	0.40	9.00	16.00	470	9.00	19.00	466	---	---	---	*9.00	16.00	485
24X12	0.61	0.42	10.00	16.00	500	10.00	19.00	515	---	---	---	10.00	16.00	529
24X14	0.61	0.47	11.00	16.00	550	11.00	19.00	544	---	---	---	*11.00	16.00	558
24X16	0.61	0.50	12.00	16.00	580	12.00	19.00	582	---	---	---	12.00	16.00	576
24X18	0.61	0.54	13.00	16.00	625	13.00	22.00	640	---	---	---	13.00	16.00	---
24X20	0.61	0.57	14.00	16.00	660	14.00	22.00	693	---	---	---	*14.00	16.00	780
24X24	0.61	0.61	16.00	16.00	720	16.00	22.00	790	---	---	---	*17.00	17.00	885
30X6	0.66	0.36	8.00	20.00	678	8.00	23.00	805	8.00	24.50	664	8.50	20.00	670

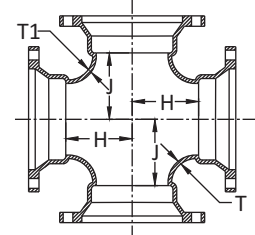
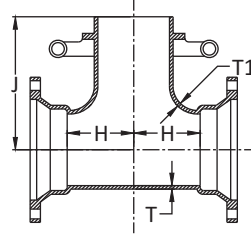
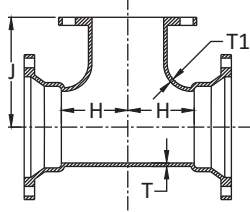
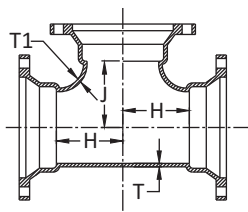
* not included in AWWA C153

Con't

All dimensions are in inches unless noted otherwise.

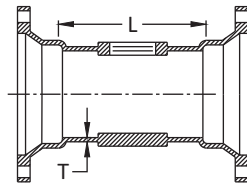
All weights are approximate in pounds unless noted otherwise.

TEES : MJ X MJ, MJ X FLANGE, MJ X SWIVEL HYDRANT & CROSSES (Con't)



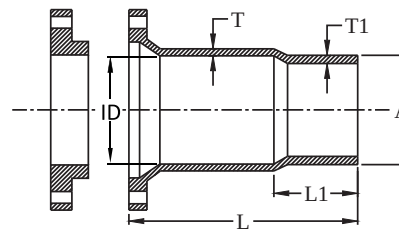
TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X ST*			MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	WT	H	J	WT
30X 8	0.66	0.38	8.50	20.00	739	8.50	23.00	722	---	---	---	*8.50	20.00	678
30X12	0.66	0.42	10.00	20.00	830	10.00	23.00	824	---	---	---	10.00	20.00	882
30X16	0.66	0.50	12.50	20.00	959	12.50	23.00	1028	---	---	---	*12.50	20.00	885
30X18	0.66	0.54	14.00	20.00	1039	---	---	---	---	---	---	---	---	---
30X20	0.66	0.57	15.00	20.00	995	15.00	23.00	---	---	---	---	*16.00	20.00	1012
30X24	0.66	0.61	16.00	20.00	1060	16.00	25.00	1287	---	---	---	22.00	22.00	1246
30X30	0.66	0.66	20.00	20.00	1323	20.00	25.00	1292	---	---	---	22.00	22.00	1840
36 X 6	0.74	0.36	7.00	23.50	1045	7.00	26.00	1175	7.00	27.50	901	---	---	---
36 X 8	0.74	0.38	9.00	23.50	1095	---	---	---	9.00	27.50	945	---	---	---
36X16	0.74	0.50	12.50	23.50	1385	---	---	---	---	---	---	---	---	---
36X24	0.74	0.61	16.00	23.50	1498	16.00	26.00	1949	---	---	---	16.00	23.50	1785
36X30	0.74	0.66	20.00	23.50	1555	20.00	28.00	1956	---	---	---	*26.00	26.00	---
36X36	0.74	0.74	23.50	23.50	1900	23.50	28.00	1943	---	---	---	26.00	26.00	2655
42X18	0.82	0.54	16.00	27.50	2072	---	---	---	---	---	---	---	---	---
42X24	0.82	0.61	20.00	27.50	2270	20.00	30.00	---	---	---	---	20.00	27.50	2668
42X30	0.82	0.66	22.00	29.50	2425	22.00	31.00	3163	---	---	---	22.00	29.50	2950
42X36	0.82	0.74	30.00	30.00	3000	30.00	31.00	2792	---	---	---	30.00	30.00	3607
42X42	0.82	0.82	30.00	30.00	3175	30.00	31.00	---	---	---	---	30.00	30.00	3725
48 X 6	0.90	0.36	10.00	32.00	1949	---	---	---	---	---	---	---	---	---
48X16	0.90	0.50	13.00	32.00	2657	---	---	---	---	---	---	*23.00	32.00	2623
48X24	0.90	0.61	23.00	32.00	2870	23.00	34.00	---	---	---	---	*23.00	32.00	2785
48X30	0.90	0.66	23.00	32.00	3050	23.00	34.00	2774	---	---	---	*23.00	32.00	3672
48X36	0.90	0.74	33.50	32.25	3900	33.50	34.00	3619	---	---	---	*33.50	32.25	3735
48X42	0.90	0.82	33.50	33.50	4100	33.50	34.00	3746	---	---	---	*33.50	33.50	4651
48X48	0.90	0.90	33.50	33.50	4250	33.50	34.00	3907	---	---	---	33.50	33.50	4955

TEES : MJ X MJ TAPPED (2" TAP)



SIZE	T	L	TAP SIZE	WT
3	0.33	6.00	2	18
4	0.34	6.00	2	24
6	0.36	6.00	2	42
8	0.38	6.00	2	52
10	0.40	6.00	2	64
12	0.42	6.00	2	81
16	0.50	6.00	2	168
24	0.61	8.00	2	331

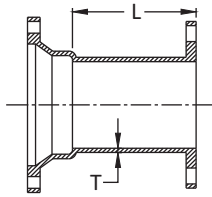
**CUTTING IN SLEEVE : MJ X PE*
(WITH OVER SIZE GLAND)**



SIZE	ID	T	T1	A	L	L1	WT
4	5.10	0.36	0.34	4.80	20.00	9.00	51
6	7.20	0.38	0.36	6.90	20.00	9.00	64
8	9.40	0.40	0.38	9.05	20.00	9.00	89
10	11.50	0.42	0.40	11.10	20.00	9.00	106
12	13.60	0.47	0.42	13.20	20.00	9.00	130
16	17.94	0.54	0.50	17.40	20.00	9.00	272

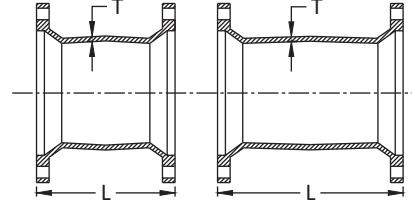
* not included in AWWA C153

ADAPTER : MJ X FLANGE



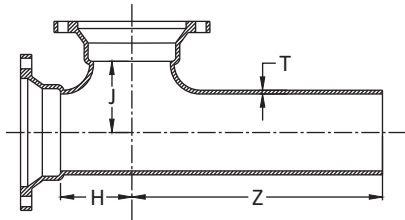
SIZE	L	T	WT
3	3.50	0.33	13
4	3.50	0.34	23
6	3.50	0.36	31
8	3.50	0.38	54
10	3.75	0.40	70
12	3.75	0.42	95
14	5.00	0.47	141
16	5.00	0.50	170
18	5.00	0.54	221
20	5.00	0.57	252
24	5.00	0.61	324
30	7.00	0.66	558
36	7.00	0.74	796
42	7.00	0.82	1190
48	7.00	0.90	1653

MJ SLEEVES



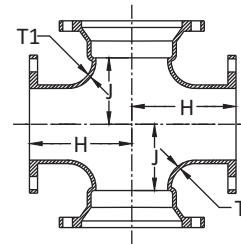
MJ SLEEVES		LONG		SHORT	
SIZE	T	L	WT	L	WT
3	0.30	12.00	13	7.50	8
3	0.33	12.00	17	7.50	12
4	0.34	12.00	20	7.50	15
6	0.36	12.00	29	7.50	23
8	0.38	12.00	45	7.50	31
10	0.40	12.00	61	7.50	45
12	0.42	12.00	76	7.50	56
14	0.47	15.00	128	9.50	94
16	0.50	15.00	159	9.50	118
18	0.54	15.00	200	9.00	145
20	0.57	15.00	236	9.00	173
24	0.61	15.00	306	9.00	226
30	0.66	24.00	634	15.00	472
36	0.74	24.00	889	15.00	673
42	0.82	24.00	1150	15.00	887
48	0.90	24.00	1435	15.00	1136

TEES : MJ X PE X MJ*



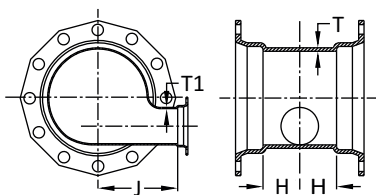
SIZE	T	H	J	Z	WT
6 X 6	0.36	5.00	5.00	12.00	59
8 X 6	0.38	5.50	6.50	11.50	72
8 X 8	0.38	6.50	6.50	12.50	80
8 X 10	0.40	7.50	7.50	13.00	125

CROSSES : MJ X FLANGE*



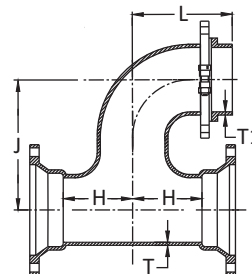
SIZE	T	T1	J	H	WT
8 X 8	0.38	0.38	9.00	6.50	133
10 X 10	0.40	0.40	11.00	7.50	190
12 X 12	0.42	0.42	12.00	8.75	260

TEES : MJ X MJ TANGENTIAL*



SIZE	T	T1	J	H	WT
16 X 6	0.50	0.38	11.50	6.50	226
16 X 12	0.50	0.42	11.50	9.50	304
18 X 6	0.54	0.36	12.50	6.50	287
24 X 6	0.61	0.36	16.00	7.00	458
24 X 12	0.61	0.42	16.00	10.00	542

TEES : MJ X SWIVEL PARALLEL*



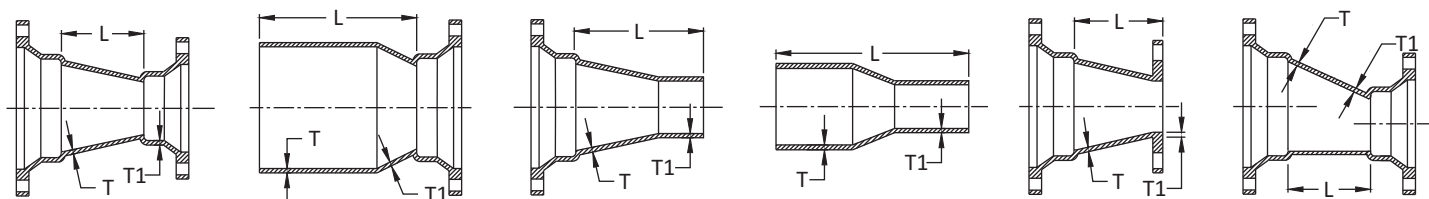
SIZE	T	T1	J	H	L	WT
6 X 6	0.36	0.36	12.50	8.00	10.00	85
8 X 6	0.38	0.36	13.50	9.00	11.00	109
10 X 6	0.40	0.36	14.00	11.00	13.00	127
12 X 6	0.42	0.36	16.00	12.00	14.00	240

* not included in AWWA C153

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

REDUCERS : MJ X MJ, PE X SMALL END MJ, LARGE END MJ X PE, PE X PE, MJ x FE, MJ ECENTRIC



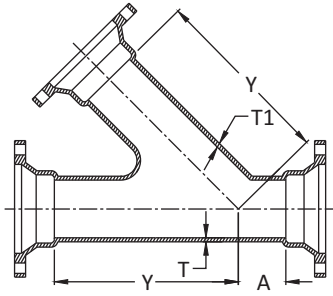
REDUCERS			MJ X MJ		PE X SEB		LEB X PE		PE X PE		MJ X FLANGE*		MJ ECCENTRIC*	
SIZE	T	T1	L	WT	L	WT	L	WT	L	WT	L	WT	L	WT
4 X 3	0.34	0.33	3.00	18	8.50	17	8.50	18	14.00	14	5.00	20	---	---
6 X 3	0.36	0.33	5.00	22	10.50	24	10.50	19	16.00	19	---	---	---	---
6 X 4	0.36	0.34	4.00	24	9.50	25	9.50	25	15.00	22	5.00	32	---	---
8 X 4	0.38	0.34	5.00	32	10.50	30	10.50	34	16.00	30	---	---	---	---
8 X 6	0.38	0.36	4.00	36	9.50	35	9.50	32	15.00	30	6.00	43	---	---
10X 4	0.40	0.34	7.00	46	12.50	43	12.50	43	18.00	46	---	---	---	---
10X 6	0.40	0.36	5.00	47	10.50	46	10.50	42	16.00	46	---	---	5.00	49
10X 8	0.40	0.38	4.00	50	9.50	42	9.50	50	15.00	47	---	---	4.00	53
12X 4	0.42	0.34	9.00	58	14.50	60	14.50	60	20.00	58	---	---	---	---
12X 6	0.42	0.36	7.00	58	12.50	58	12.50	58	18.00	57	---	---	---	---
12X 8	0.42	0.38	5.00	57	10.50	54	10.50	55	16.00	54	7.00	83	---	---
12X10	0.42	0.40	4.00	61	9.50	59	9.50	59	15.00	54	7.00	87	---	---
14X 6	0.47	0.36	9.00	100	16.90	100	14.50	104	22.30	93	---	---	---	---
14X 8	0.47	0.38	7.00	100	14.90	98	12.40	98	20.30	94	---	---	---	---
14X10	0.47	0.40	5.00	100	12.90	94	10.40	92	18.30	90	8.00	115	---	---
14X12	0.47	0.42	4.00	100	11.90	90	9.40	92	17.30	88	---	---	---	---
16X 6	0.50	0.36	11.00	124	18.90	125	16.50	136	24.30	93	---	---	---	---
16X 8	0.50	0.38	9.00	124	16.90	121	14.40	128	22.30	119	---	---	---	---
16X10	0.50	0.40	7.00	124	15.00	105	12.50	123	20.50	119	---	---	---	---
16X12	0.50	0.42	5.00	112	12.90	109	10.50	108	18.30	99	---	---	5.00	116
16X14	0.50	0.47	4.00	140	12.00	126	12.00	132	19.70	129	---	---	---	---
18X 8	0.54	0.38	13.00	190	20.00	170	19.50	195	27.40	170	16.00	193	---	---
18X10	0.54	0.40	10.00	195	18.00	165	17.40	185	25.50	160	---	---	---	---
18X12	0.54	0.42	7.00	180	15.50	150	14.00	175	19.50	150	12.00	199	---	---
18X14	0.54	0.47	6.00	190	15.00	175	15.00	190	23.00	160	---	---	---	---
18X16	0.54	0.50	5.00	195	12.50	170	12.50	190	18.00	145	---	---	---	---
20X10	0.57	0.40	14.00	220	22.00	200	19.00	210	27.50	180	---	---	---	---
20X12	0.57	0.42	12.00	205	17.50	170	16.00	205	21.50	190	---	---	---	---
20X14	0.57	0.47	10.00	200	18.00	190	17.90	205	26.00	195	---	---	---	---
20X16	0.57	0.50	7.00	200	13.50	185	13.50	200	19.00	170	---	---	8.00	237
20X18	0.57	0.54	4.00	225	12.00	200	12.00	215	20.00	190	---	---	---	---
24X12	0.61	0.42	16.00	305	21.50	275	21.00	290	22.50	240	18.00	322	---	---
24X14	0.61	0.47	14.00	306	22.00	310	21.90	315	25.00	295	---	---	---	---
24X16	0.61	0.50	12.00	320	17.50	285	17.50	285	23.00	285	---	---	12.00	325
24X18	0.61	0.54	10.00	305	18.00	300	18.00	310	21.00	290	---	---	---	---
24X20	0.61	0.57	7.00	300	13.50	270	13.50	275	20.00	249	---	---	7.00	373
30X16	0.66	0.50	30.00	633	39.00	565	39.00	623	48.00	555	---	---	---	---
30X18	0.66	0.54	28.00	658	37.00	590	37.00	635	46.00	567	---	---	28.00	807
30X20	0.60	0.57	24.00	628	33.00	560	33.00	603	42.00	535	---	---	24.00	633
30X24	0.66	0.61	10.00	478	24.50	45	24.50	526	33.50	458	---	---	10.00	578
36X16	0.74	0.50	30.00	1016	27.00	595	---	---	---	---	---	---	---	---
36X18	0.74	0.54	36.00	983	37.00	815	---	---	---	---	---	---	---	---
36X20	0.74	0.57	36.00	975	45.00	874	45.00	950	54.00	849	---	---	---	---
36X24	0.74	0.61	19.00	770	33.00	746	33.00	810	42.00	709	---	---	19.00	831
36X30	0.74	0.66	15.50	650	24.50	725	24.50	758	33.50	657	---	---	15.50	819
42X24	0.82	0.61	40.00	1356	49.00	1204	49.00	1319	58.00	1167	---	---	40.00	1783
42X30	0.82	0.66	20.00	1083	29.00	931	29.00	1015	38.00	863	---	---	20.00	1439
42X36	0.82	0.74	15.50	1114	24.50	962	24.50	1013	33.50	861	---	---	15.50	1117
48X24	0.90	0.61	40.00	1761	---	---	---	---	---	---	---	---	40.00	1809
48X30	0.90	0.66	40.00	1779	49.00	1594	49.00	1711	58.00	1526	---	---	40.00	1962
48X36	0.90	0.74	28.00	1641	37.00	1456	37.00	1540	46.00	1355	---	---	28.00	2011
48X42	0.90	0.82	15.50	1426	24.50	1241	24.50	1274	33.50	1089	---	---	15.50	1475

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

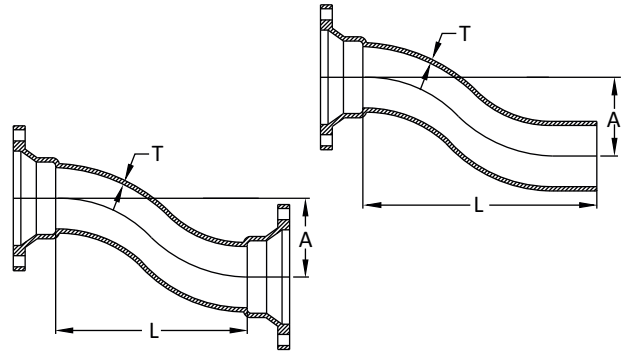
* not included in AWWA C153

MJ LATERALS*



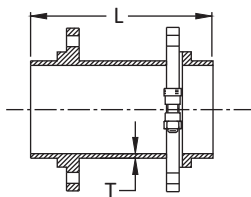
SIZE	A	Y	T	T1	WT
3 X 3	2.50	8.50	0.33	0.33	37
4 X 3	2.50	8.50	0.34	0.33	42
4 X 4	2.50	8.50	0.34	0.34	44
6 X 4	1.50	11.00	0.36	0.34	55
6 X 6	3.00	12.50	0.36	0.36	89
8 X 4	0.50	13.00	0.38	0.34	74
8 X 6	2.00	14.50	0.38	0.36	91
8 X 8	3.50	16.00	0.38	0.38	105
10 X 4	0.00	15.00	0.40	0.34	156
10 X 6	1.00	16.00	0.40	0.36	161
10 X 8	2.50	17.00	0.40	0.38	173
10 X 10	3.50	19.00	0.40	0.40	214
12 X 4	0.00	16.50	0.42	0.34	151
12 X 6	1.50	18.50	0.42	0.36	189
12 X 8	1.50	18.50	0.42	0.38	190
12 X 10	3.00	20.00	0.42	0.40	252
12 X 12	4.50	22.50	0.42	0.42	274
14 X 6	0.00	19.50	0.47	0.36	248
14 X 8	1.50	21.00	0.47	0.38	281
14 X 10	3.00	22.50	0.47	0.40	320
14 X 14	6.00	25.00	0.47	0.47	475
16 X 4	0.00	21.00	0.50	0.34	275
16 X 6	0.00	21.00	0.50	0.36	302
16 X 8	0.50	22.50	0.50	0.38	354
16 X 10	2.00	24.00	0.50	0.40	372
16 X 12	3.50	25.00	0.50	0.42	458
16 X 14	5.00	26.50	0.50	0.47	507
16 X 16	6.50	28.00	0.50	0.50	576

MJ OFFSETS



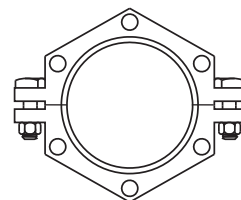
OFFSETS			MJ X MJ		MJ X PE	
SIZE	T	A	L	WT	L	WT
*3 x 6	0.33	6.00	9.00	23	---	---
*3 x 12	0.33	12.00	15.00	32	---	---
*3 x 18	0.33	18.00	21.00	42	---	---
*3 x 24	0.33	24.00	27.00	50	---	---
4 x 6	0.34	6.00	10.00	32	15.50	33
4 x 12	0.34	12.00	18.00	55	23.50	50
4 x 18	0.34	18.00	22.00	63	27.50	61
4 x 24	0.34	24.00	28.00	79	33.50	68
6 x 6	0.36	6.00	12.00	48	17.50	55
6 x 12	0.36	12.00	18.00	68	23.50	66
6 x 18	0.36	18.00	24.00	86	29.50	103
6 x 24	0.36	24.00	30.00	110	35.50	122
8 x 6	0.38	6.00	13.00	74	18.50	85
8 x 12	0.38	12.00	19.00	94	24.50	97
8 x 18	0.38	18.00	25.00	118	30.50	133
8 x 24	0.38	24.00	30.00	147	35.50	149
10 x 6	0.40	6.00	*15.00	113	20.50	127
10 x 12	0.40	12.00	21.00	144	26.50	174
10 x 18	0.40	18.00	27.00	192	32.50	202
10 x 24	0.40	24.00	33.00	244	35.50	245
12 x 6	0.42	6.00	17.00	150	22.50	132
12 x 12	0.42	12.00	23.00	192	28.50	197
12 x 18	0.42	18.00	27.00	226	32.50	273
12 x 24	0.42	24.00	35.00	272	40.50	347
*16 x 12	0.50	12.00	26.00	324	---	---
*16 x 18	0.50	18.00	36.00	406	---	---
*16 x 24	0.50	24.00	36.00	435	---	---
*20 x 12	0.57	12.00	28.00	439	---	---
*20 x 18	0.57	18.00	38.00	582	---	---

SWIVEL X SOLID HYDRANT ADAPTER* (WITH SWIVEL GLAND)



SIZE	L	T	WT
4 X 13	13.00	0.34	30
6 X 13	13.00	0.36	48
6 X 18	18.00	0.36	58
6 X 24	24.00	0.36	63
6 X 30	30.00	0.36	68
6 X 36	36.00	0.36	77
6 X 48	48.00	0.36	98
8 X 13	13.00	0.38	55
8 X 18	18.00	0.38	69
8 X 24	24.00	0.38	85
8 X 48	48.00	0.38	147
12X 13	13.00	0.42	118

SWIVEL GLAND*



SIZE	WT
4	8
6	10
8	12
10	16
12	24

2 Nos. T-Head Bolts Required

For 4 to 8 Size - 3/4" X 3 1/2"

For 12 Size - 3/4" x 4"

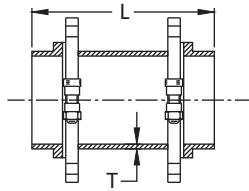
* not included in AWWA C153

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

SWIVEL X SWIVEL HYDRANT ADAPTER*

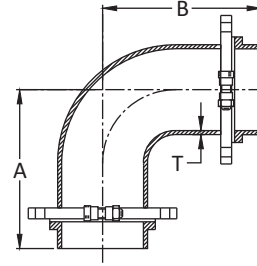
WITH TWO-SWIVEL GLANDS



SIZE	L	T	WT
6 X 12	12.00	0.36	51
6 X 18	18.00	0.36	64
6 X 24	24.00	0.36	75

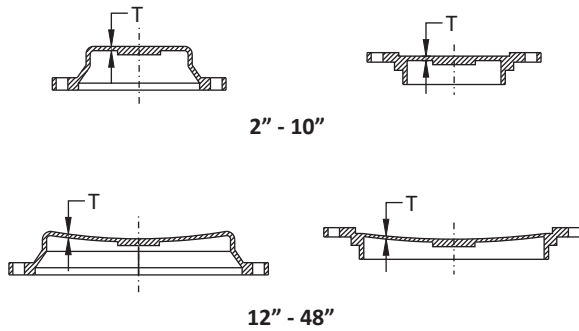
SWIVEL X SWIVEL HYDRANT ELL*

WITH TWO-SWIVEL GLANDS



SIZE	T	A	B	WT
6	0.36	10.50	16.00	52
8	0.38	12.50	18.00	75
10	0.40	13.00	20.00	105

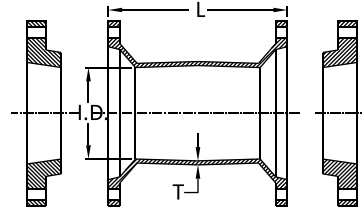
SOLID AND TAPPED CAPS & PLUGS



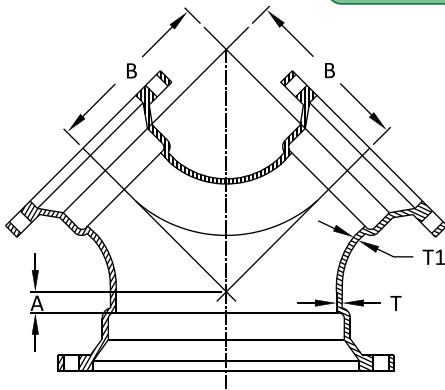
SIZE	T	MAX TAP	CAPS WT	PLUGS WT
*2	0.40	2	7	7
3	0.33	2	8	8
4	0.34	2	9	10
6	0.36	2	15	16
8	0.38	2	22	26
10	0.40	2	32	36
12	0.42	2	42	46
14	0.47	2	66	75
16	0.50	2	92	95
18	0.54	2	114	121
20	0.57	2	125	135
24	0.61	2	166	175
30	0.66	2 ½	345	355
36	0.74	2 ½	628	688
42	0.82	2 ½	890	965
48	0.90	2 ½	1110	1290

MJ X DUAL PURPOSE SLEEVES*
W/OVERSIZE GLANDS

SIZE	PIPE SIZE	T	I.D.	L	WT
4	4.80 - 5.00	0.34	5.10	12.00	20
6	6.90 - 7.10	0.36	7.20	12.00	36
8	9.05 - 9.30	0.38	9.40	12.00	46
10	11.10 - 11.40	0.40	11.50	12.00	62
12	13.20 - 13.50	0.42	13.60	12.00	76
16	17.40 - 17.80	0.50	17.94	12.00	172

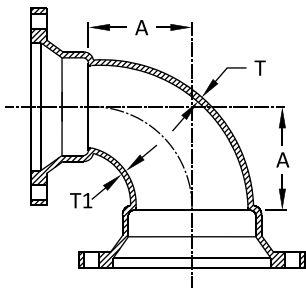


MJ X MJ TRUE WYES*

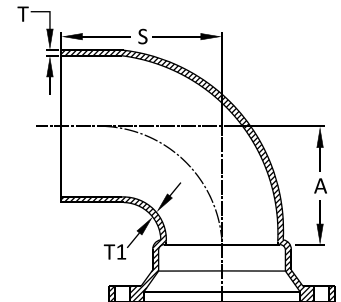


SIZE	T	T1	A	B	WT
20 X 20 X 20	0.57	0.57	7.50	15.00	550
24 X 14 X 14	0.61	0.47	9.00	11.50	395
30 X 24 X 24	0.66	0.61	8.00	17.00	815
30 X 30 X 30	0.66	0.66	10.00	21.50	1380

90° REDUCING BEND*



90° REDUCING BEND			MJ X MJ		PE X MJ		
SIZE	T	T1	A	WT	A	S	WT
20 X 16	0.57	0.50	15.00	348	---	---	---
48X 36	0.90	0.74	33.25	2500	33.25	42.25	2643



* not included in AWWA C153

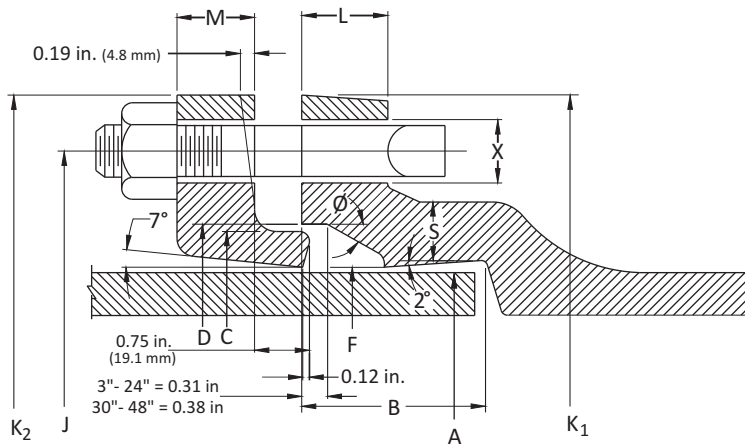
All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

3" - 64" DUCTILE IRON MECHANICAL JOINT FULL BODY FITTINGS

General Specifications

- Material** : Ductile Iron per ASTM A536
- Pressure** : 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
- Testing** : In accordance with ANSI/AWWA C110/A21.10 and UL, FM requirements
- Laying Length** : In accordance with ANSI/AWWA C110/A21.10
(fittings not listed in ANSI/AWWA have dimensions per SIP design as noted in the catalog)
- Deflection** : 2"- 4"= 8° | 6"= 7° | 8"-12"= 5° | 14"-16"= 3 ½° | 18"-24"= 3° | 30"-64"= 2°
- Flanges** : Flanged ends on fittings match ANSI/AWWA C110/A21.10 and ANSI B16.1 class 125 flanges
- Gaskets** : SBR in accordance with ANSI/AWWA C111/A21.11 (see fittings accessories catalog)
- T-Bolts / Nuts** : Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see fittings accessories catalog)
- Cement Lining** : In accordance with ANSI/AWWA C104/A21.4
- Coating** : Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C110/A21.10 and also available in Fusion-Bonded epoxy (FBE) power coated oxide red color in accordance with the ANSI/AWWA C116/A21.16
- Weight** : Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
- Dimensions** : All dimensions are in inches unless noted otherwise.
- Installations** : Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900
- Approvals** : 3" - 24" UL Listed | 3" - 24" FM Approved | 3" and higher UL/NSF Standards 61 | 3" and higher NSF/ANSI Standards 61 Approved for Drinking Water. Please consult SIP for detail listing and approvals.



Certified to
NSF/ANSI 61 & 372



ANSI/NSF 61
DRINKING WATER SYSTEM COMPONENTS

Technical Specifications

SIZE	A	B	C	D	F	J	K ₁	K ₂	M	S	L	Ø	X	BOLTS		
														NO.	SIZE	LENGTH
*2	2.50	2.50	3.39	3.50	2.61	4.75	6.25	6.25	0.62	0.44	0.75	28°	¾	2	⅝	3
3	3.96	2.50	4.84	4.94	4.06	6.19	7.69	7.69	0.62	0.52	0.94	28°	¾	4	⅝	3
4	4.80	2.50	5.92	6.02	4.90	7.50	9.12	9.12	0.75	0.65	1.00	28°	⅞	4	¾	3 ½
6	6.90	2.50	8.02	8.12	7.00	9.50	11.12	11.12	0.88	0.70	1.06	28°	⅞	6	¾	3 ½
8	9.05	2.50	10.17	10.27	9.15	11.75	13.37	13.37	1.00	0.75	1.12	28°	⅞	6	¾	4
10	11.10	2.50	12.22	12.34	11.20	14.00	15.69	15.62	1.00	0.80	1.19	28°	⅞	8	¾	4
12	13.20	2.50	14.32	14.44	13.30	16.25	17.94	17.88	1.00	0.85	1.25	28°	⅞	8	¾	4
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	1.25	0.89	1.31	28°	⅞	10	¾	4 ½
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	1.31	0.97	1.38	28°	⅞	12	¾	4 ½
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.38	1.05	1.44	28°	⅞	12	¾	4 ½
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.44	1.12	1.50	28°	⅞	14	¾	4 ½
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.56	1.22	1.62	28°	⅞	16	¾	5
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	2.00	1.50	1.81	20°	1 ⅛	20	1	6
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	2.00	1.80	2.00	20°	1 ⅛	24	1	6
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	2.00	1.95	2.00	20°	1 ⅜	28	1 ¼	6 ½
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	2.00	2.20	2.00	20°	1 ⅜	32	1 ¼	6 ½

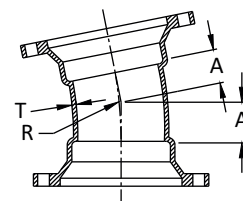
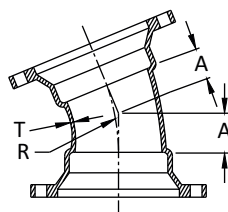
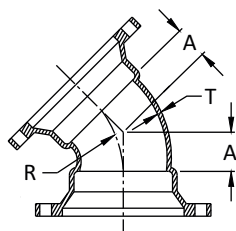
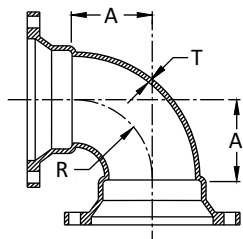
NB : Fittings & Dimensions for Size 54, 60 & 64 available on request only.

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

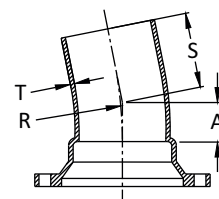
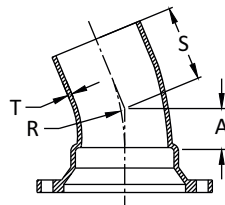
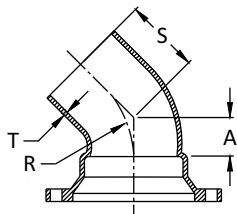
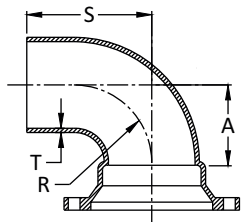
* not included in AWWA C110

MJ X MJ BENDS



MJ X MJ		90° BENDS ($\frac{1}{4}$)			45° BENDS ($\frac{1}{8}$)			22.5° BENDS ($\frac{1}{16}$)			11.25° BENDS ($\frac{1}{32}$)		
SIZE	T	A	R	WT	A	R	WT	A	R	WT	A	R	WT
*2	0.39	3.25	2.25	16	1.80	1.96	14	1.80	4.02	14	1.80	8.12	14
3	0.48	5.50	4.00	35	3.00	3.62	30	3.00	7.56	30	3.00	15.25	30
4	0.52	6.50	4.50	55	4.00	4.81	50	4.00	10.06	50	4.00	20.31	50
6	0.55	8.00	6.00	85	5.00	7.25	75	5.00	15.06	75	5.00	30.50	75
8	0.60	9.00	7.00	125	5.50	8.44	110	5.50	17.62	110	5.50	35.50	110
10	0.68	11.00	9.00	190	6.50	10.88	155	6.50	22.62	160	6.50	45.69	160
12	0.75	12.00	10.00	255	7.50	13.25	215	7.50	27.62	220	7.50	55.81	220
14	0.66	14.00	11.50	340	7.50	12.06	270	7.50	25.12	275	7.50	50.75	275
16	0.70	15.00	12.50	430	8.00	13.25	340	8.00	27.62	345	8.00	55.81	345
18	0.75	16.50	14.00	545	8.50	14.50	420	8.50	30.19	430	8.50	60.94	430
20	0.80	18.00	15.50	680	9.50	16.88	530	9.50	35.19	535	9.50	71.06	540
24	0.89	22.00	18.50	1025	11.00	18.12	755	11.00	37.69	765	11.00	76.12	770
30	1.03	25.00	21.50	1690	15.00	27.75	1380	15.00	57.81	1400	15.00	116.75	1410
36	1.15	28.00	24.50	2475	18.00	35.00	2095	18.00	72.88	2135	18.00	147.25	2145
42	1.28	31.00	27.50	3410	21.00	42.25	2955	21.00	88.00	3020	21.00	117.69	3035
48	1.42	34.00	30.50	4595	24.00	49.50	4080	24.00	103.06	4170	24.00	208.12	4190

MJ X PE BENDS



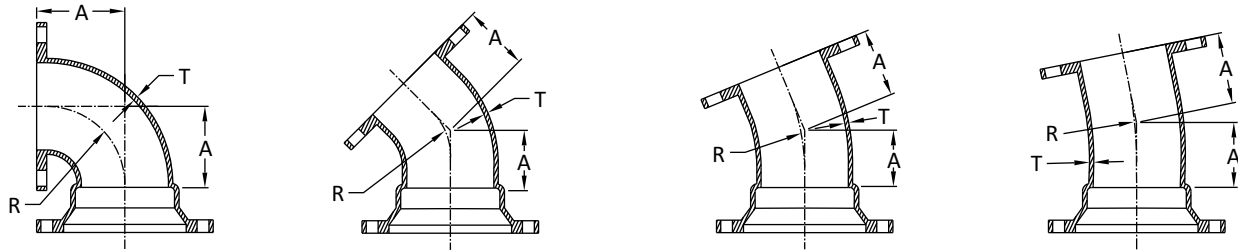
MJ X PE		90° BENDS ($\frac{1}{4}$)				45° BENDS ($\frac{1}{8}$)				22.5° BENDS ($\frac{1}{16}$)				11.25° BENDS ($\frac{1}{32}$)			
SIZE	T	A	S	R	WT	A	S	R	WT	A	S	R	WT	A	S	R	WT
3	0.48	5.50	13.50	4.00	35	3.00	11.00	3.62	30	3.00	11.00	7.56	30	3.00	11.00	15.25	30
4	0.52	6.50	14.50	4.50	50	4.00	12.00	4.81	45	4.00	12.00	10.06	45	4.00	12.00	20.31	45
6	0.55	8.00	16.00	6.00	80	5.00	13.00	7.25	70	5.00	13.00	15.06	70	5.00	13.00	30.50	70
8	0.60	9.00	17.00	7.00	120	5.50	13.50	8.44	105	5.50	13.50	17.62	105	5.50	13.50	35.50	105
10	0.68	11.00	19.00	9.00	190	6.50	14.50	10.88	155	6.50	14.50	22.62	160	6.50	14.50	45.69	160
12	0.75	12.00	20.00	10.00	255	7.50	15.50	13.25	215	7.50	15.50	27.62	220	7.50	15.50	55.81	220
14	0.66	14.00	22.00	11.50	325	7.50	15.50	12.06	255	7.50	15.50	25.12	260	7.50	15.50	50.75	260
16	0.70	15.00	23.00	12.50	410	8.00	16.00	13.25	320	8.00	16.00	27.62	325	8.00	16.00	55.81	325
18	0.75	16.50	24.50	14.00	520	8.50	16.50	14.50	395	8.50	16.50	30.19	405	8.50	16.50	60.94	405
20	0.80	18.00	26.00	15.50	650	9.50	17.50	16.88	500	9.50	17.50	35.19	505	9.50	17.50	71.06	510
24	0.89	22.00	30.00	18.50	985	11.00	19.00	18.12	715	11.00	19.00	37.69	725	11.00	19.00	76.12	730
30	1.03	25.00	33.00	21.50	1585	15.00	23.00	27.75	1275	15.00	23.00	57.81	1295	15.00	23.00	116.75	1305
36	1.15	28.00	36.00	24.50	2310	18.00	26.00	35.00	1930	18.00	26.00	72.88	1970	18.00	26.00	147.25	1980
42	1.28	31.00	39.00	27.50	3200	21.00	29.00	42.25	2745	21.00	29.00	88.00	2810	21.00	29.00	177.69	2825
48	1.42	34.00	42.00	30.50	4330	24.00	32.00	49.50	3815	24.00	32.00	103.06	3905	24.00	32.00	208.12	3925

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

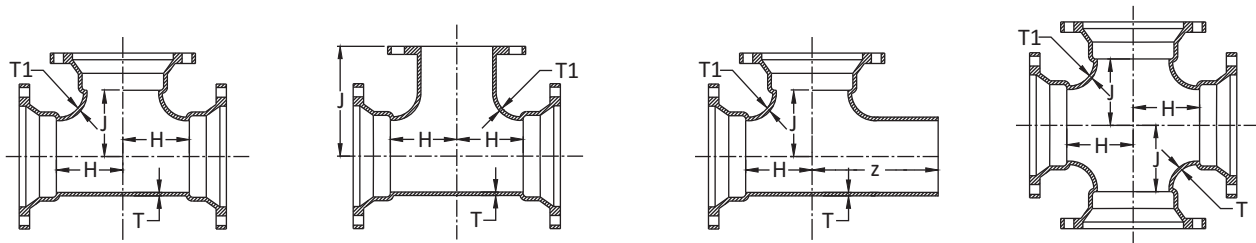
All weights are approximate in pounds unless noted otherwise.

MJ X FLANGE BENDS*



MJ X FLANGE		90° BENDS (¼)			45° BENDS (⅛)			22.5° BENDS (⅙)			11.25° BENDS (⅓₂)		
SIZE	T	A	R	WT	A	R	WT	A	R	WT	A	R	WT
4	0.52	6.50	4.50	39	4.00	4.81	46	4.00	10.06	46	4.00	20.31	46
6	0.55	8.00	6.00	77	5.00	7.25	71	5.00	15.06	71	5.00	30.50	71
8	0.60	9.00	7.00	118	5.50	8.44	106	5.50	17.62	106	5.50	35.50	106
10	0.68	11.00	9.00	179	6.50	10.88	157	6.50	22.62	157	6.50	45.69	157
12	0.75	12.00	10.00	245	7.50	13.25	218	7.50	27.62	218	7.50	55.81	218
16	0.70	15.00	12.50	467	8.00	13.25	359	8.00	27.62	359	8.00	55.81	359
18	0.75	16.50	14.00	579	8.50	14.50	425	8.50	30.19	425	8.50	60.94	425
20	0.80	18.00	15.50	746	9.50	16.88	544	9.50	35.19	578	9.50	71.06	578
24	0.89	22.00	18.50	1152	11.00	18.12	803	11.00	37.69	803	11.00	76.12	803

TEES : MJ X MJ, MJ X FLANGE, MJ X PLAIN END & CROSSES



TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X PE				MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	Z	WT	H	J	WT
*2 X 2	0.39	0.39	3.25	3.25	22	---	---	---	---	---	---	---	---	---	---
*3 X 2	0.48	0.39	3.50	3.50	45	---	---	---	---	---	---	---	---	---	---
3 X 3	0.48	0.48	5.50	5.50	55	5.50	5.50	---	5.50	5.50	13.50	55	5.50	5.50	70
*4 X 2	0.52	0.39	4.00	4.00	59	4.80	4.80	53	---	---	---	---	---	---	---
4 X 3	0.52	0.48	6.50	6.50	75	6.50	6.50	---	6.50	6.50	14.50	70	6.50	6.50	90
4 X 4	0.52	0.52	6.50	6.50	80	6.50	6.50	80	6.50	6.50	14.50	75	6.50	6.50	105
*4 X 4 X 6	0.52	0.55	8.00	8.00	117	8.00	8.00	105	---	---	---	---	---	---	---
*6 X 2	0.55	0.39	8.00	8.00	81	---	---	---	---	---	---	---	---	---	---
6 X 3	0.55	0.48	8.00	8.00	110	8.00	8.00	---	8.00	8.00	16.00	105	8.00	8.00	125
6 X 4	0.55	0.52	8.00	8.00	115	8.00	8.00	115	8.00	8.00	16.00	110	8.00	8.00	140
6 X 6	0.55	0.55	8.00	8.00	125	8.00	8.00	128	8.00	8.00	16.00	120	8.00	8.00	160
*6 X 6 X 8	0.55	0.60	9.00	9.00	189	---	---	---	---	---	---	---	---	---	---
*8 X 2	0.60	0.39	9.00	9.00	127	---	---	---	---	---	---	---	---	---	---
*8 X 3	0.60	0.48	9.00	9.00	156	---	---	---	---	---	---	---	---	---	---
8 X 4	0.60	0.52	9.00	9.00	165	9.00	9.00	160	9.00	9.00	17.00	160	9.00	9.00	185
8 X 6	0.60	0.55	9.00	9.00	175	9.00	9.00	170	9.00	9.00	17.00	170	9.00	9.00	205
8 X 8	0.60	0.60	9.00	9.00	185	9.00	9.00	177	9.00	9.00	17.00	180	9.00	9.00	235
10 X 4	0.68	0.52	11.00	11.00	235	11.00	11.00	230	11.00	11.00	19.00	235	11.00	11.00	260
10 X 6	0.68	0.55	11.00	11.00	250	11.00	11.00	228	11.00	11.00	19.00	250	11.00	11.00	285
10 X 8	0.68	0.60	11.00	11.00	260	11.00	11.00	250	11.00	11.00	19.00	260	11.00	11.00	310
10 X 10	0.80	0.80	11.00	11.00	310	11.00	11.00	261	11.00	11.00	19.00	310	11.00	11.00	380
12 X 4	0.75	0.52	12.00	12.00	315	12.00	12.00	310	12.00	12.00	20.00	315	12.00	12.00	340

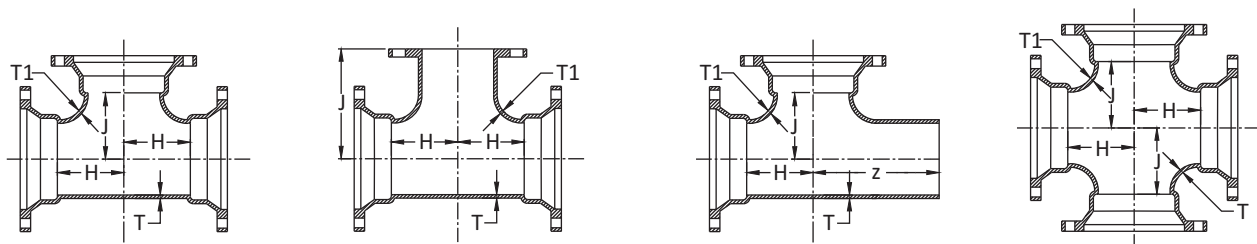
Con't

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

TEES : MJ X MJ, MJ X FLANGE, MJ X PLAIN END & CROSSES (Con't)



TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X PE				MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	Z	WT	H	J	WT
12 X 6	0.39	0.55	12.00	12.00	325	12.00	12.00	324	12.00	12.00	20.00	325	12.00	12.00	360
12 X 8	0.48	0.60	12.00	12.00	340	12.00	12.00	332	12.00	12.00	20.00	340	12.00	12.00	385
12 X 10	0.48	0.80	12.00	12.00	390	12.00	12.00	369	12.00	12.00	20.00	390	12.00	12.00	460
12 X 12	0.52	0.87	12.00	12.00	410	12.00	12.00	400	12.00	12.00	20.00	410	12.00	12.00	495
14 X 6	0.52	0.55	14.00	14.00	435	14.00	14.00	487	14.00	14.00	22.00	420	14.00	14.00	475
14 X 8	0.52	0.60	14.00	14.00	450	14.00	14.00	502	14.00	14.00	22.00	435	14.00	14.00	500
14 X 10	0.52	0.68	14.00	14.00	465	14.00	14.00	---	14.00	14.00	22.00	450	14.00	14.00	540
14 X 12	0.55	0.75	14.00	14.00	495	14.00	14.00	---	14.00	14.00	22.00	475	14.00	14.00	585
14 X 14	0.55	0.66	14.00	14.00	520	14.00	14.00	485	14.00	14.00	22.00	500	14.00	14.00	635
*16 X 4	0.55	0.52	15.00	15.00	530	15.00	15.00	578	---	---	---	---	---	---	---
16 X 6	0.55	0.55	15.00	15.00	540	15.00	15.00	607	15.00	15.00	23.00	520	15.00	15.00	575
16 X 8	0.55	0.60	15.00	15.00	550	15.00	15.00	616	15.00	15.00	23.00	530	15.00	15.00	605
16 X 10	0.60	0.68	15.00	15.00	570	15.00	15.00	638	15.00	15.00	23.00	550	15.00	15.00	645
16 X 12	0.60	0.75	15.00	15.00	590	15.00	15.00	650	15.00	15.00	23.00	570	15.00	15.00	685
16 X 14	0.60	0.66	15.00	15.00	620	15.00	15.00	---	15.00	15.00	23.00	600	15.00	15.00	735
16 X 16	0.60	0.70	15.00	15.00	650	15.00	15.00	732	15.00	15.00	23.00	625	15.00	15.00	790
18 X 6	0.60	0.55	13.00	15.50	590	13.00	15.50	667	13.00	15.50	21.00	565	13.00	15.50	625
18 X 8	0.68	0.60	13.00	15.50	605	13.00	15.50	678	13.00	15.50	21.00	580	13.00	15.50	655
18 X 10	0.68	0.68	13.00	15.50	620	13.00	15.50	---	13.00	15.50	21.00	595	13.00	15.50	685
18 X 12	0.68	0.75	13.00	15.50	640	13.00	15.50	706	13.00	15.50	21.00	615	13.00	15.50	725
18 X 14	0.80	0.66	16.50	16.50	755	16.50	16.50	---	16.50	16.50	24.50	730	16.50	16.50	870
18 X 16	0.75	0.70	16.50	16.50	785	16.50	16.50	---	16.50	16.50	24.50	760	16.50	16.50	930
18 X 18	0.75	0.75	16.50	16.50	820	16.50	16.50	917	16.50	16.50	24.50	795	16.50	16.50	995
20 X 6	0.80	0.55	14.00	17.00	725	14.00	17.00	710	14.00	17.00	22.00	695	14.00	17.00	760
20 X 8	0.80	0.60	14.00	17.00	735	14.00	17.00	735	14.00	17.00	22.00	705	14.00	17.00	790
20 X 10	0.80	0.68	14.00	17.00	755	14.00	17.00	---	14.00	17.00	22.00	725	14.00	17.00	820
20 X 12	0.80	0.75	14.00	17.00	775	14.00	17.00	769	14.00	17.00	22.00	745	14.00	17.00	860
20 X 14	0.80	0.66	14.00	17.00	795	14.00	17.00	---	14.00	17.00	22.00	765	14.00	17.00	905
20 X 16	0.80	0.70	18.00	18.00	945	18.00	18.00	1077	18.00	18.00	26.00	915	18.00	18.00	1085
20 X 18	0.80	0.75	18.00	18.00	985	18.00	18.00	---	18.00	18.00	26.00	950	18.00	18.00	1155
20 X 20	0.80	0.80	18.00	18.00	1020	18.00	18.00	1169	18.00	18.00	26.00	990	18.00	18.00	1230
24 X 6	0.89	0.55	15.00	19.00	985	15.00	19.00	1128	15.00	19.00	23.00	945	15.00	19.00	1025
24 X 8	0.89	0.60	15.00	19.00	1000	15.00	19.00	1142	15.00	19.00	23.00	960	15.00	19.00	1045
24 X 10	0.89	0.68	15.00	19.00	1020	15.00	19.00	1151	15.00	19.00	23.00	980	15.00	19.00	1085
24 X 12	0.89	0.75	15.00	19.00	1030	15.00	19.00	1168	15.00	19.00	23.00	990	15.00	19.00	1110
24 X 14	0.89	0.66	15.00	19.00	1055	15.00	19.00	1203	15.00	19.00	23.00	1,015	15.00	19.00	1155
24 X 16	0.89	0.70	15.00	19.00	1075	15.00	19.00	1220	15.00	19.00	23.00	1,035	15.00	19.00	1200
24 X 18	0.89	0.75	22.00	22.00	1400	22.00	22.00	1638	22.00	22.00	30.00	1,360	22.00	22.00	1590
24 X 20	0.89	0.80	22.00	22.00	1450	22.00	22.00	1708	22.00	22.00	30.00	1,410	22.00	22.00	1675
24 X 24	0.89	0.89	22.00	22.00	1535	22.00	22.00	1796	22.00	22.00	30.00	1,490	22.00	22.00	1835
30 X 6	1.03	0.55	18.00	23.00	1730	18.00	23.00	1708	18.00	23.00	26.00	1,615	18.00	23.00	1770
30 X 8	1.03	0.60	18.00	23.00	1745	18.00	23.00	1724	18.00	23.00	26.00	1,630	18.00	23.00	1795
30 X 10	1.03	0.68	18.00	23.00	1760	18.00	23.00	1615	18.00	23.00	26.00	1,645	18.00	23.00	1830
30 X 12	1.03	0.75	18.00	23.00	1780	18.00	23.00	1640	18.00	23.00	26.00	1,665	18.00	23.00	1865
30 X 14	1.03	0.66	18.00	23.00	1800	18.00	23.00	---	18.00	23.00	26.00	1,685	18.00	23.00	1905
30 X 16	1.03	0.70	18.00	23.00	1820	18.00	23.00	---	18.00	23.00	26.00	1,705	18.00	23.00	1950
30 X 18	1.03	0.75	18.00	23.00	1845	18.00	23.00	---	18.00	23.00	26.00	1,730	18.00	23.00	2000
30 X 20	1.03	0.80	18.00	23.00	1875	18.00	23.00	---	18.00	23.00	26.00	1,760	18.00	23.00	2060

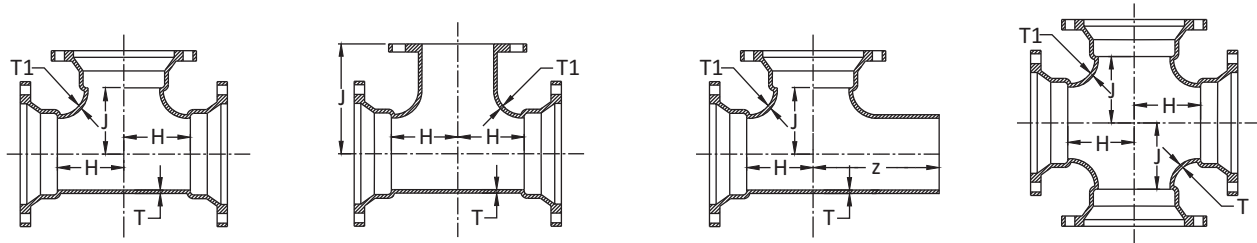
* not included in AWWA C110

Con't

All dimensions are in inches unless noted otherwise.

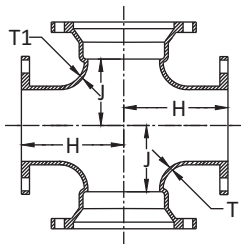
All weights are approximate in pounds unless noted otherwise.

TEES : MJ X MJ, MJ X FLANGE, MJ X PLAIN END & CROSSES (Con't)



TEES & CROSSES			TEES : MJ X MJ			TEES : MJ X FE*			TEES : MJ X PE				MJ CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	Z	WT	H	J	WT
30 X 24	1.03	0.89	25.00	25.00	2400	25.00	25.00	---	25.00	25.00	33.00	2,280	25.00	25.00	2675
30 X 30	1.03	1.03	25.00	25.00	2595	25.00	25.00	3081	25.00	25.00	33.00	2,480	25.00	25.00	3075
*36 X 6	1.15	0.55	20.00	26.00	2510	20.00	26.00	2400	---	---	---	---	---	---	---
36 X 8	1.15	0.60	20.00	26.00	2520	20.00	26.00	2495	20.00	26.00	28.00	2,345	20.00	26.00	2565
36 X 10	1.15	0.68	20.00	26.00	2535	20.00	26.00	2375	20.00	26.00	28.00	2,360	20.00	26.00	2600
36 X 12	1.15	0.75	20.00	26.00	2550	20.00	26.00	2391	20.00	26.00	28.00	2,375	20.00	26.00	2630
36 X 14	1.15	0.66	20.00	26.00	2570	20.00	26.00	---	20.00	26.00	28.00	2,395	20.00	26.00	2665
36 X 16	1.15	0.70	20.00	26.00	2585	20.00	26.00	2405	20.00	26.00	28.00	2,410	20.00	26.00	2705
36 X 18	1.15	0.75	20.00	26.00	2610	20.00	26.00	---	20.00	26.00	28.00	2,435	20.00	26.00	2750
36 X 20	1.15	0.80	20.00	26.00	2635	20.00	26.00	---	20.00	26.00	28.00	2,460	20.00	26.00	2805
36 X 24	1.15	0.89	20.00	26.00	2690	20.00	26.00	2468	20.00	26.00	28.00	2,515	20.00	26.00	2910
36 X 30	1.15	1.03	28.00	28.00	3545	28.00	28.00	3150	28.00	28.00	36.00	3,365	28.00	28.00	3965
36 X 36	1.15	1.15	28.00	28.00	3745	28.00	28.00	---	28.00	28.00	36.00	3,565	28.00	28.00	4370
42 X 12	1.28	0.75	23.00	30.00	3555	23.00	30.00	---	23.00	30.00	31.00	3,335	23.00	30.00	3640
42 X 14	1.28	0.66	23.00	30.00	3575	23.00	30.00	---	23.00	30.00	31.00	3,355	23.00	30.00	3675
42 X 16	1.28	0.70	23.00	30.00	3595	23.00	30.00	---	23.00	30.00	31.00	3,375	23.00	30.00	3715
42 X 18	1.28	0.75	23.00	30.00	3615	23.00	30.00	---	23.00	30.00	31.00	3,395	23.00	30.00	3755
42 X 20	1.28	0.80	23.00	30.00	3640	23.00	30.00	---	23.00	30.00	31.00	3,420	23.00	30.00	3810
42 X 24	1.28	0.89	23.00	30.00	3690	23.00	30.00	---	23.00	30.00	31.00	3,470	23.00	30.00	3910
42 X 30	1.28	1.03	31.00	31.00	4650	31.00	31.00	---	31.00	31.00	39.00	4,425	31.00	31.00	5040
42 X 36	1.78	1.58	31.00	31.00	6075	31.00	31.00	---	31.00	31.00	39.00	5,850	31.00	31.00	6655
42 X 42	1.78	1.78	31.00	31.00	6320	31.00	31.00	---	31.00	31.00	39.00	6,095	31.00	31.00	7145
48 X 12	1.42	0.75	26.00	34.00	4870	26.00	34.00	---	26.00	34.00	34.00	4,580	26.00	34.00	4955
48 X 14	1.42	0.66	26.00	34.00	4885	26.00	34.00	---	26.00	34.00	34.00	4,595	26.00	34.00	4985
48 X 16	1.42	0.70	26.00	34.00	4905	26.00	34.00	---	26.00	34.00	34.00	4,615	26.00	34.00	5025
48 X 18	1.42	0.75	26.00	34.00	4925	26.00	34.00	---	26.00	34.00	34.00	4,635	26.00	34.00	5065
48 X 20	1.42	0.80	26.00	34.00	4950	26.00	34.00	---	26.00	34.00	34.00	4,660	26.00	34.00	5115
48 X 24	1.42	0.89	26.00	34.00	4995	26.00	34.00	4979	26.00	34.00	34.00	4,705	26.00	34.00	5210
48 X 30	1.42	1.03	26.00	34.00	5140	26.00	34.00	---	26.00	34.00	34.00	4,855	26.00	34.00	5495
48 X 36	1.42	1.15	34.00	34.00	6280	34.00	34.00	---	34.00	34.00	42.00	5,995	34.00	34.00	6790
48 X 42	1.96	1.78	34.00	34.00	8130	34.00	34.00	---	34.00	34.00	42.00	7,845	34.00	34.00	8815
48 X 48	1.96	1.96	34.00	34.00	8420	34.00	34.00	---	34.00	34.00	42.00	8,135	34.00	34.00	9380
*48X36X48	1.42	1.15	34.00	34.00	6280	34.00	34.00	---	---	---	---	---	---	---	---

CROSS : MJ X FLANGE*



SIZE	T	T1	J	H	WT
6 X 6	0.55	0.55	8.00	8.00	142
8 X 4	0.60	0.52	9.00	9.00	179
8 X 6	0.60	0.55	9.00	9.00	186
8 X 8	0.60	0.60	9.00	9.00	217
10 X 10	0.80	0.80	11.00	11.00	356
12 X 6	0.75	0.55	12.00	12.00	343
12 X 8	0.75	0.60	12.00	12.00	366
12 X 12	0.87	0.87	12.00	12.00	490
16 X 8	0.70	0.60	15.00	15.00	587
16 X 16	0.70	0.70	15.00	15.00	771
24 X 16	0.89	0.70	19.00	15.00	990
30 X 10	1.03	0.68	23.00	18.00	1625
36 X 30	1.15	1.03	28.00	28.00	3150

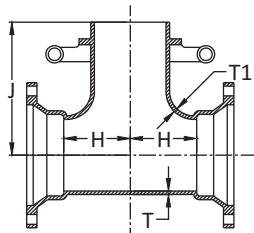
All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

MJ X SWIVEL HYDRANT TEES*

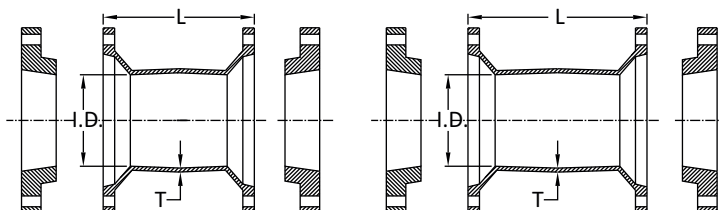
W/SWIVEL GLANDS



SIZE	T	T1	H	J	WT
6 X 6	0.55	0.55	8.00	10.50	152
8 X 6	0.60	0.55	9.00	11.50	205
8 X 8	0.60	0.60	9.00	11.50	213
10 X 6	0.68	0.55	11.00	13.50	269
12 X 6	0.75	0.55	12.00	14.50	342
16 X 6	0.70	0.55	15.00	17.50	621
16 X 8	0.70	0.60	15.00	17.50	654
20 X 6	0.80	0.55	14.00	19.50	830
30 X 6	1.03	0.55	18.00	24.50	2078

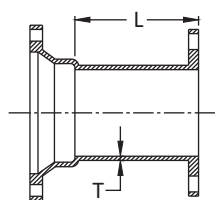
MJ X DUAL PURPOSE SLEEVES*

W/OVERSIZE GLANDS



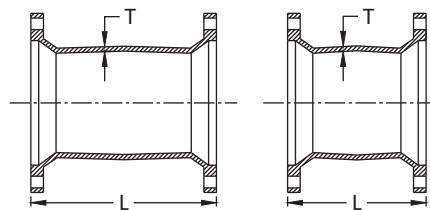
MJ DUAL PURPOSE SLEEVES				SHORT		LONG	
SIZE	PIPE SIZE	T	I.D.	L	WT	L	WT
4	4.80 - 5.00	0.52	5.10	7.50	37	12.00	38
6	6.90 - 7.10	0.55	7.20	7.50	48	12.00	69
8	9.05 - 9.30	0.60	9.40	7.50	70	12.00	90
10	11.10 - 11.40	0.68	11.50	7.50	86	12.00	121
12	13.20 - 13.50	0.75	13.60	7.50	118	12.00	153
16	17.40 - 17.80	0.70	17.94	---	---	15.00	242

ADAPTER : MJ X FLANGE



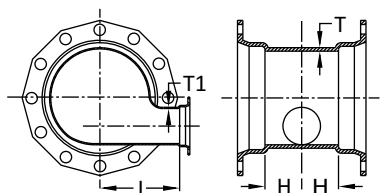
SIZE	L	T	WT
3	8.00	0.48	30
4	8.00	0.52	40
6	8.00	0.55	60
8	8.00	0.60	85
10	8.00	0.68	115
12	8.00	0.75	155
14	8.00	0.66	195
16	8.00	0.70	240
18	8.00	0.75	280
20	8.00	0.80	340
24	8.00	0.89	455
30	10.00	1.03	760
36	10.00	1.15	1070
42	12.00	1.28	1505
48	12.00	1.42	1885

MJ SLEEVES



MJ SLEEVES		LONG		SHORT	
SIZE	T	L	WT	L	WT
*2	0.39	12.00	18	7.50	12
3	0.48	12.00	30	7.50	25
4	0.52	12.00	45	7.50	35
6	0.55	12.00	65	7.50	45
8	0.60	12.00	85	7.50	65
10	0.68	12.00	115	7.50	85
12	0.75	12.00	145	7.50	110
14	0.66	15.00	195	9.50	150
16	0.70	15.00	235	9.50	180
18	0.75	15.00	285	9.50	215
20	0.80	15.00	325	9.50	240
24	0.89	15.00	425	9.50	320
30	1.03	24.00	885	15.00	635
36	1.15	24.00	1190	15.00	855
42	1.28	24.00	1550	15.00	1115
48	1.42	24.00	1940	15.00	1385

TEES : MJ X MJ TANGENTIAL*



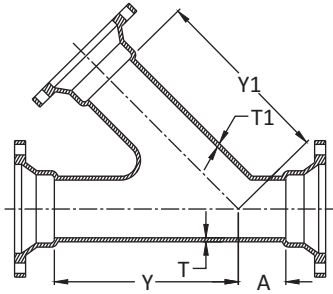
SIZE	T	T1	J	H	WT
20 x 4	0.80	0.52	17.00	14.00	826
20 x 8	0.80	0.60	17.00	14.00	851
24 x 4	0.89	0.52	19.00	15.00	1127
24 x 8	0.89	0.60	19.00	15.00	1153

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

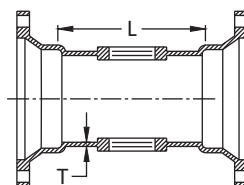
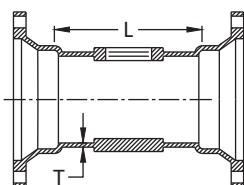
MJ LATERALS*



SIZE	T	T1	A	Y	Y1	WT
3 X 3	0.48	0.48	3.00	10.00	10.00	61
4 X 3	0.52	0.48	3.00	12.00	12.00	87
4 X 4	0.52	0.52	3.00	12.00	12.00	94
6 X 3	0.55	0.48	3.50	14.50	14.50	128
6 X 4	0.55	0.52	3.50	14.50	14.50	134
6 X 6	0.55	0.55	3.50	14.50	14.50	148
8 X 4	0.60	0.52	4.50	17.50	17.50	192
8 X 6	0.60	0.55	4.50	17.50	17.50	209
8 X 8	0.60	0.60	4.50	17.50	17.50	229
10 X 4	0.68	0.52	5.00	20.50	20.50	275
10 X 6	0.68	0.55	5.00	20.50	20.50	289
10 X 8	0.68	0.60	5.00	20.50	20.50	312
10 X 10	0.68	0.68	5.00	20.50	20.50	362
12 X 4	0.75	0.52	5.50	24.50	24.50	383
12 X 6	0.75	0.55	5.50	24.50	24.50	395
12 X 8	0.75	0.60	5.50	24.50	24.50	422
12 X 10	0.75	0.68	5.50	24.50	24.50	498
12 X 12	0.75	0.75	5.50	24.50	24.50	528
14 X 4	0.66	0.52	6.00	27.00	27.00	541
14 X 6	0.66	0.55	6.00	27.00	27.00	569
14 X 8	0.66	0.60	6.00	27.00	27.00	602
14 X 10	0.66	0.68	6.00	27.00	27.00	633
14 X 12	0.66	0.75	6.00	27.00	27.00	695
14 X 14	0.66	0.66	6.00	27.00	27.00	687
16 X 4	0.70	0.52	6.50	30.00	30.00	638
16 X 6	0.70	0.55	6.50	30.00	30.00	750
16 X 8	0.70	0.60	6.50	30.00	30.00	789
16 X 10	0.70	0.68	6.50	30.00	30.00	823
16 X 12	0.70	0.75	6.50	30.00	30.00	850
16 X 14	0.70	0.66	6.50	30.00	30.00	832
16 X 16	0.70	0.70	6.50	30.00	30.00	857
18 X 4	0.75	0.52	1.00	25.00	27.50	905
18 X 6	0.75	0.55	1.00	25.00	27.50	956
18 X 8	0.75	0.60	1.00	25.00	27.50	1005
18 X 10	0.75	0.68	7.00	32.00	32.00	1035
18 X 12	0.75	0.75	7.00	32.00	32.00	1092
18 X 14	0.75	0.66	7.00	32.00	32.00	1108

SIZE	T	T1	A	Y	Y1	WT
18 X 16	0.75	0.70	7.00	32.00	32.00	1147
18 X 18	0.75	0.75	7.00	32.00	32.00	1189
20 X 4	0.80	0.52	0.00	27.00	29.50	1235
20 X 6	0.80	0.55	0.00	27.00	29.50	1298
20 X 8	0.80	0.60	0.00	27.00	29.50	1355
20 X 10	0.80	0.68	1.00	27.00	29.50	1430
20 X 12	0.80	0.75	8.00	35.00	35.00	1295
20 X 14	0.80	0.66	8.00	35.00	35.00	1315
20 X 16	0.80	0.70	8.00	35.00	35.00	1380
20 X 18	0.80	0.75	8.00	35.00	35.00	1560
20 X 20	0.80	0.80	8.00	35.00	35.00	1827
24 X 6	0.89	0.55	0.50	31.50	31.50	975
24 X 8	0.89	0.60	0.00	31.50	34.50	1631
24 X 10	0.89	0.68	0.50	31.50	34.50	1670
24 X 12	0.89	0.75	0.50	31.50	34.50	1800
24 X 14	0.89	0.66	9.00	40.50	40.50	1771
24 X 16	0.89	0.70	9.00	40.50	40.50	1828
24 X 18	0.89	0.75	9.00	40.50	40.50	1890
24 X 20	0.89	0.80	9.00	40.50	40.50	1959
24 X 24	0.89	0.89	9.00	40.50	40.50	2132
30 X 8	1.03	0.60	10.00	49.00	49.00	---
30 X 12	1.03	0.75	10.00	49.00	49.00	2860
30 X 14	1.03	0.66	10.00	49.00	49.00	2935
30 X 16	1.03	0.70	10.00	49.00	49.00	2979
30 X 18	1.03	0.75	10.00	49.00	49.00	3062
30 X 20	1.03	0.80	10.00	49.00	49.00	3128
30 X 24	1.03	0.89	10.00	49.00	49.00	3287
30 X 30	1.03	1.03	18.25	52.50	52.50	3681
36 X 12	1.15	0.75	15.25	54.00	54.00	4912
36 X 14	1.15	0.66	15.25	54.00	54.00	4988
36 X 30	1.15	1.03	15.25	56.00	56.00	5823
36 X 36	1.15	1.15	19.50	60.00	60.00	6348
42 X 12	1.78	0.75	0.00	52.00	52.00	---
42 X 20	1.28	0.80	12.00	60.00	60.00	---
42 X 24	1.28	0.89	12.00	60.00	60.00	---
42 X 30	1.28	1.03	12.00	63.00	63.00	---
42 X 36	1.28	1.15	12.00	66.00	66.00	---
42 X 42	1.28	1.28	15.00	71.00	71.00	---
48 X 6	1.42	0.55	0.00	52.00	66.00	---
48 X 8	1.42	0.60	0.00	52.00	60.00	---
48 X 12	1.42	0.75	0.00	52.00	66.00	---
48 X 16	1.42	0.70	0.00	52.00	62.00	---
48 X 20	1.42	0.80	0.00	52.00	62.00	---
48 X 24	1.42	0.89	5.00	58.00	64.00	---
48 X 30	1.42	1.03	4.00	59.00	64.00	---
48 X 36	1.42	1.15	5.00	64.00	68.00	---
48 X 42	1.42	1.28	12.00	77.00	77.00	---
48 X 48	1.42	1.42	16.00	77.00	77.00	---

MJ X MJ TAPPED TEES & CROSSES



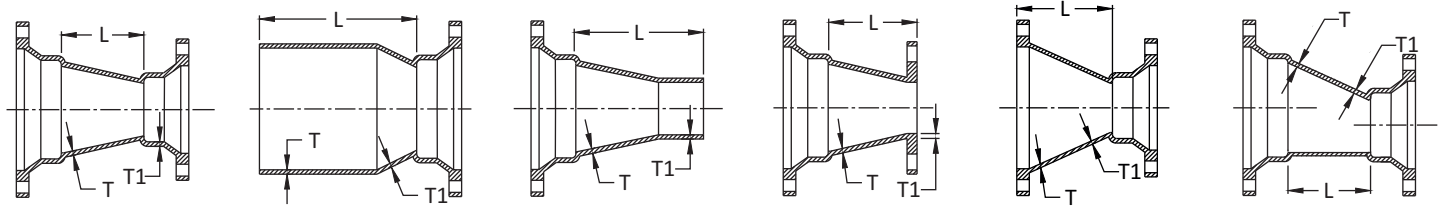
SIZE	T	L	TAP SIZE	WT
4 x 4	0.52	8.00	2.5	45
6 x 6	0.55	8.00	2.5	70
8 x 8	0.60	8.00	2.5	95
10 x 10	0.68	8.00	2.5	130
12 x 12	0.75	8.00	2.5	165
*16 x 16	0.70	8.00	2.5	270
*20 x 20	0.80	8.00	2.5	382
*24 x 24	0.89	9.00	2.5	519

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

REDUCERS : MJ X MJ, PE X SMALL END MJ, LARGE END MJ X PE, MJ X FE, FE x MJ, MJ ECENTRIC



REDUCERS			MJ X MJ		PE X MJ SEB		MJ LEB X PE		MJ X FLANGE*		FLANGE X MJ*		MJ ECENTRIC*	
SIZE	T	T1	L	WT	L	WT	L	WT	L	WT	L	WT	L	WT
*3 X 2	0.48	0.39	6.00	25	14.00	14	14.00	20	6.00	21	----	---	---	---
*4 X 2	0.52	0.39	7.00	30	15.00	18	15.00	30	7.00	27	----	---	---	---
4 X 3	0.52	0.48	7.00	40	15.00	35	15.00	40	7.00	36	7.00	35	---	---
*6 X 2	0.55	0.39	9.00	45	17.00	45	17.00	45	9.00	43	----	---	---	---
6 X 3	0.55	0.48	9.00	55	17.00	50	17.00	55	9.00	51	----	---	---	---
6 X 4	0.55	0.52	9.00	60	17.00	60	17.00	60	9.00	57	9.00	63	9.00	69
*8 X 3	0.60	0.48	11.00	75	19.00	70	19.00	70	----	---	----	---	---	---
8 X 4	0.60	0.52	11.00	80	19.00	80	19.00	80	11.00	78	11.00	82	---	---
8 X 6	0.60	0.55	11.00	95	19.00	90	19.00	90	11.00	82	11.00	90	11.00	103
10 X 4	0.68	0.52	12.00	105	20.00	100	20.00	100	----	---	----	---	---	---
10 X 6	0.68	0.55	12.00	115	20.00	115	20.00	115	12.00	109	12.00	117	---	---
10 X 8	0.68	0.60	12.00	135	20.00	130	20.00	130	12.00	134	12.00	132	12.00	148
12 X 4	0.75	0.52	14.00	135	22.00	130	22.00	130	----	---	----	---	---	---
12 X 6	0.75	0.55	14.00	150	22.00	150	22.00	145	14.00	146	14.00	155	---	---
12 X 8	0.75	0.60	14.00	165	22.00	165	22.00	165	14.00	178	14.00	189	---	---
12 X10	0.75	0.68	14.00	190	22.00	190	22.00	185	14.00	186	14.00	194	14.00	203
14 X 6	0.66	0.55	16.00	190	24.00	175	24.00	185	16.00	198	----	---	---	---
14 X 8	0.66	0.60	16.00	210	24.00	190	24.00	205	16.00	217	----	---	---	---
14 X10	0.66	0.68	16.00	230	24.00	215	24.00	230	----	---	----	---	---	---
14 X12	0.66	0.75	16.00	255	24.00	240	24.00	255	16.00	272	----	---	---	---
16 X 6	0.70	0.55	18.00	230	26.00	210	26.00	230	----	---	----	---	---	---
16 X 8	0.70	0.60	18.00	250	26.00	230	26.00	250	----	---	----	---	---	---
16 X10	0.70	0.68	18.00	280	26.00	255	26.00	275	----	---	----	---	---	---
16 X12	0.70	0.75	18.00	305	26.00	285	26.00	305	18.00	327	18.00	305	---	---
16 X14	0.70	0.66	18.00	335	26.00	310	26.00	315	----	---	----	---	---	---
18 X 8	0.75	0.60	19.00	295	27.00	270	27.00	295	19.00	301	----	---	---	---
18 X10	0.75	0.68	19.00	325	27.00	300	27.00	320	19.00	342	----	---	---	---
18 X12	0.75	0.75	19.00	350	27.00	325	27.00	350	19.00	363	----	---	---	---
18 X14	0.75	0.66	19.00	380	27.00	355	27.00	365	----	---	----	---	---	---
18 X16	0.75	0.70	19.00	415	27.00	390	27.00	395	19.00	405	----	---	---	---
*20 X 8	0.80	0.60	20.00	345	28.00	345	----	----	----	---	----	---	---	---
20 X10	0.80	0.68	20.00	375	28.00	345	28.00	375	----	---	----	---	---	---
20 X12	0.80	0.75	20.00	405	28.00	375	28.00	405	----	---	----	---	---	---
20 X14	0.80	0.66	20.00	430	28.00	400	28.00	415	----	---	----	---	---	---
20 X16	0.80	0.70	20.00	470	28.00	435	28.00	445	20.00	512	----	---	---	---
20 X18	0.80	0.75	20.00	510	32.00	475	28.00	485	----	---	----	---	---	---
24 X12	0.89	0.75	24.00	550	32.00	510	32.00	550	24.00	459	----	---	---	---
24 X16	0.89	0.70	24.00	615	32.00	575	32.00	595	----	---	----	---	---	---
24 X18	0.89	0.75	24.00	660	32.00	620	32.00	635	----	---	----	---	---	---
24 X20	0.89	0.80	24.00	705	38.00	665	32.00	675	----	---	----	---	24.00	721
*30 X12	1.03	0.75	30.00	920	----	----	----	----	----	---	----	---	---	---
*30 X16	1.03	0.70	30.00	945	38.00	830	----	----	----	---	----	---	---	---
30 X18	1.03	0.75	30.00	990	38.00	885	38.00	965	----	---	----	---	---	---
30 X20	1.03	0.80	30.00	1050	38.00	945	38.00	1020	----	---	----	---	---	---
30 X24	1.03	0.89	30.00	1165	38.00	1060	38.00	1125	----	---	----	---	30.00	1178
36 X20	1.15	0.80	36.00	1450	44.00	1285	44.00	1420	----	---	----	---	---	---
36 X24	1.15	0.89	36.00	1580	44.00	1410	44.00	1535	----	---	----	---	---	---
36 X30	1.15	1.03	36.00	1855	44.00	1690	44.00	1750	----	---	----	---	---	---
42 X20	1.28	0.80	42.00	1915	50.00	1705	50.00	1880	----	---	----	---	---	---

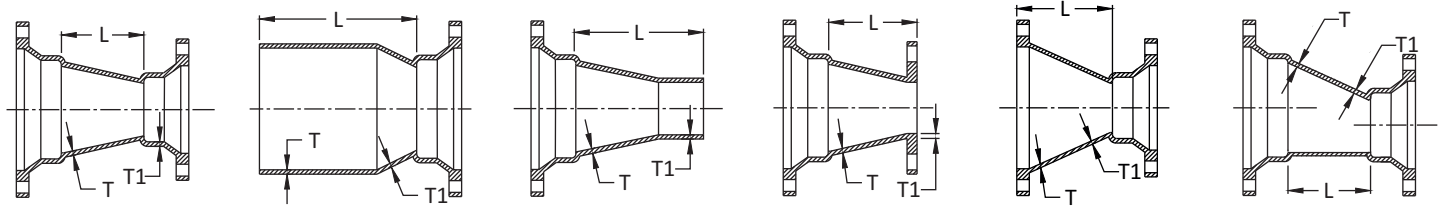
* not included in AWWA C110

Con't

All dimensions are in inches unless noted otherwise.

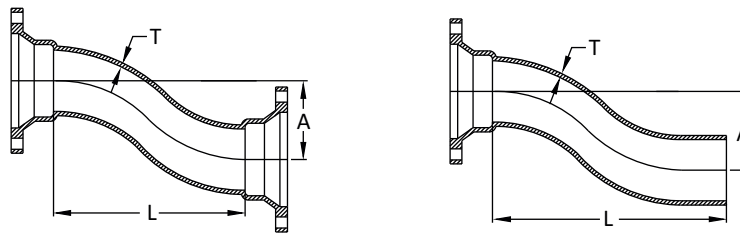
All weights are approximate in pounds unless noted otherwise.

REDUCERS : MJ X MJ, PE X SMALL END MJ, LARGE END MJ X PE, MJ X FE, FE x MJ, MJ ECENTRIC (Con't)



REDUCERS			MJ X MJ		PE X MJ SEB		MJ LEB X PE		MJ X FLANGE*		FLANGE X MJ*		MJ ECENTRIC*	
SIZE	T	T1	L	WT	L	WT	L	WT	L	WT	L	WT	L	WT
42 X 24	1.28	0.89	42.00	2060	50.00	1855	50.00	2020	---	---	---	---	---	---
42 X 30	1.28	1.03	42.00	2370	50.00	2165	50.00	2265	---	---	---	---	---	---
42 X 36	1.28	1.15	42.00	2695	50.00	2485	50.00	2530	---	---	---	---	---	---
48 X 30	1.42	1.03	48.00	3005	56.00	2740	56.00	2900	---	---	---	---	---	---
48 X 36	1.42	1.15	48.00	3370	56.00	3100	56.00	3205	---	---	---	---	---	---
48 X 42	1.42	1.28	48.00	3750	56.00	3480	56.00	3540	---	---	---	---	---	---

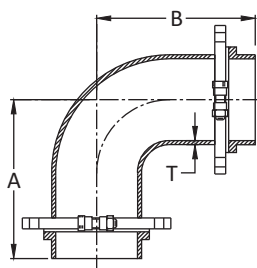
MJ OFFSETS



OFFSETS			MJ X MJ		MJ X PE	
SIZE	T	A	L	WT	L	WT
3 X 5	0.48	5.00	19.00	50	27.00	50
3 X12	0.48	12.00	22.00	60	30.00	60
3 X18	0.48	18.00	30.00	75	38.00	75
4 X 6	0.52	6.00	19.00	75	27.00	70
4 X12	0.52	12.00	22.00	85	30.00	80
4 X18	0.52	18.00	30.00	105	38.00	100
*4 X24	0.52	24.00	30.00	128	38.00	117
6 X 6	0.55	6.00	20.00	110	28.00	105
6 X12	0.55	12.00	26.00	135	34.00	130
6 X18	0.55	18.00	33.00	165	41.00	160
*6 X24	0.55	24.00	33.00	201	41.00	200
8 X 6	0.60	6.00	21.00	160	29.00	155
8 X12	0.60	12.00	28.00	200	36.00	195
8 X18	0.60	18.00	35.00	245	43.00	240
*8 X24	0.60	24.00	36.00	285	44.00	278
10X 6	0.68	6.00	22.00	220	30.00	220

OFFSETS			MJ X MJ		MJ X PE	
SIZE	T	A	L	WT	L	WT
10X12	0.68	12.00	30.00	250	38.00	280
10X18	0.68	18.00	38.00	340	46.00	340
*10X24	0.68	24.00	38.00	423	46.00	421
12X 6	0.75	6.00	26.00	320	34.00	320
12X12	0.75	12.00	37.00	420	45.00	420
12X18	0.75	18.00	48.00	520	56.00	520
*12X24	0.75	24.00	48.00	645	56.00	633
14X 6	0.66	6.00	27.00	380	35.00	365
14X12	0.66	12.00	38.00	480	46.00	465
14X18	0.66	18.00	49.00	585	57.00	570
16X 6	0.70	6.00	27.00	460	35.00	440
16X12	0.70	12.00	40.00	600	48.00	580
16X18	0.70	18.00	50.00	710	58.00	690
*20X12	0.80	12.00	40.00	1027	48.00	1018
*20X18	0.80	18.00	48.00	1276	60.00	1269

**SWIVEL X SWIVEL HYDRANT ELL*
WITH TWO-SWIVEL GLANDS**



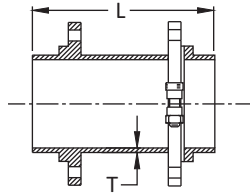
SIZE	T	A	B	WT
6	0.55	10.50	15.50	103
8	0.66	11.50	16.50	142

All dimensions are in inches unless noted otherwise.

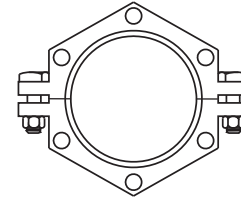
All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

SWIVEL X SOLID HYDRANT ADAPTER* (WITH SWIVEL GLAND)



SIZE	L	T	WT
4 X 13	13.00	0.52	30
6 X 13	13.00	0.55	57
6 X 18	18.00	0.55	69
6 X 24	24.00	0.55	83
6 X 36	36.00	0.55	112
6 X 48	48.00	0.55	141
8 X 13	13.00	0.60	70
8 X 18	18.00	0.60	91
8 X 24	24.00	0.60	115
8 X 48	48.00	0.60	209
12X 13	13.00	0.75	127



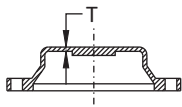
SIZE	WT
4	9
6	14
8	12
12	25

2 Nos. T-Head Bolts Required

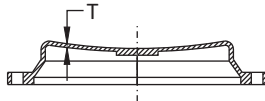
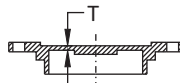
For 4 to 8 Size - $\frac{3}{4}$ " X $3\frac{1}{2}$ "

For 12 Size - $\frac{3}{4}$ " x 4"

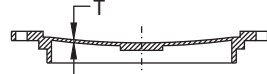
SOLID AND TAPPED CAPS & PLUGS



2" - 10"



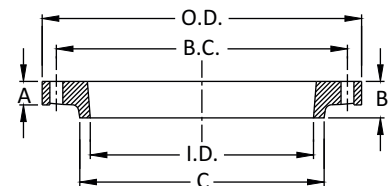
12" - 48"



SIZE	T	MAX TAP	CAPS WT	PLUGS WT
*2	0.39	1 1/2	6	5
3	0.50	2	12	10
4	0.60	3	15	15
6	0.65	4	25	25
8	0.70	4	45	45
10	0.75	4	60	65
12	0.75	4	80	85
14	0.82	5	120	115
16	0.89	6	155	145
18	0.96	6	195	185
20	1.03	6	240	225
24	1.16	6	345	335
30	1.03	6	590	573
36	1.15	6	850	815
42	1.28	6	1180	1110
48	1.42	6	1595	1455

MJ FULL BODY GLANDS*

SIZE	O.D.	A	B	C	I.D.	B.C.	BOLT HOLE	BOLT QTY.	WT
2	6.12	0.62	1.37	3.40	2.61	4.75	Ø0.75	2	1
3	7.69	0.62	1.50	4.84	4.06	6.19	Ø0.75	4	5
4	9.12	0.75	1.63	5.92	4.90	7.50	Ø0.88	4	6
6	11.12	0.88	1.75	8.02	7.00	9.50	Ø0.88	6	10
8	13.37	1.00	1.75	10.17	9.15	11.75	Ø0.88	6	14
10	15.62	1.00	1.75	12.22	11.20	14.00	Ø0.88	8	20
12	17.88	1.00	2.00	14.32	13.30	16.25	Ø0.88	8	24
14	20.25	1.25	2.06	16.40	15.44	18.75	Ø0.88	10	45
16	22.50	1.31	2.13	18.50	17.54	21.00	Ø0.88	12	55
18	24.75	1.38	2.19	20.60	19.64	23.25	Ø0.88	12	55
20	27.00	1.44	2.31	22.70	21.74	25.50	Ø0.88	14	66
24	31.50	1.56	2.75	26.90	25.94	30.00	Ø0.88	16	90
30	39.12	2.00	2.75	33.29	32.17	36.88	Ø1.13	20	220
36	46.00	2.00	2.75	39.59	38.47	43.75	Ø1.13	24	286
42	53.12	2.00	2.75	45.79	44.67	50.62	Ø1.38	28	288
48	60.00	2.00	1.12	52.09	50.97	57.50	Ø1.38	32	400



* not included in AWWA C110

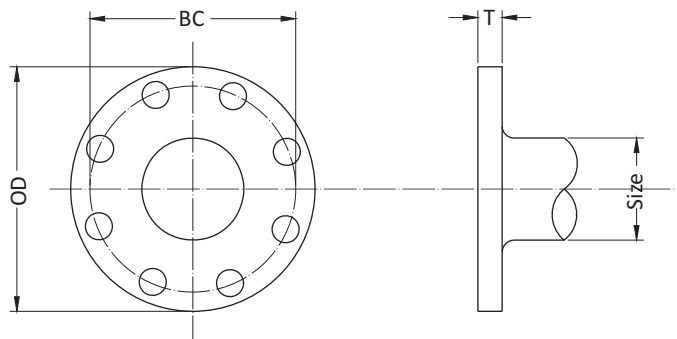
All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

1" - 64" DUCTILE IRON FLANGED FITTINGS

General Specifications

Material	: Ductile Iron per ASTM A536
Pressure	: 250 PSI rating for 1" - 48" sizes and 150 PSI rating for 54" - 64" sizes
Testing	: In accordance with ANSI/AWWA C110/A21.10 and UL, FM requirements
Laying Length	: 2" - 48" : In accordance with ANSI/AWWA C110/A21.10 ANSI B16.1 54" - 64" : In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per SIP design as noted in the catalog)
Drilling	: In accordance with ANSI/AWWA C110/A21.10 ANSI/AWWA C153/A21.53 ANSI B16.1 Class 125 Flanges
Cement Lining	: In accordance with ANSI/AWWA C104/A21.4
Coating	: Asphaltic seal coat inside in accordance with ANSI/AWWA C104/A21.4 and prime coat red color outside (other coatings and linings are available on request / specified at time of order)
Weight	: Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
Dimensions	: All dimensions are in inches unless noted otherwise.
Installations	: Per ANSI/AWWA C600 and C111
Approvals	: 2" - 24" UL Listed 2" - 24" FM Approved 2" and higher UL/NSF Standards 61 2" and higher NSF/ANSI Standards 61 Approved for Drinking Water. Please consult SIP for detail listing and approvals.



ANSI/NSF 61
DRINKING WATER SYSTEM COMPONENTS

Technical Specifications

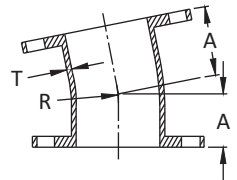
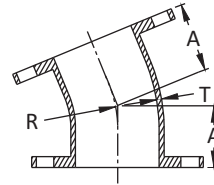
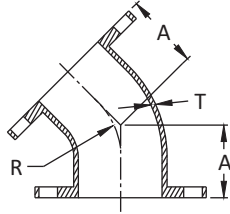
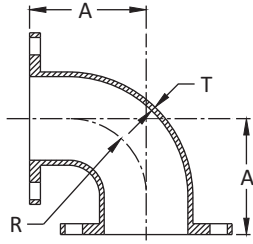
SIZE	O.D.	B.C.	T	B O L T S			
				HOLE DIA.	NO.	SIZE	LENGTH
*1	4.25	3.12	0.44	0.62	4	1/2	2
*1 1/2	5.00	3.88	0.56	0.62	4	1/2	2
*2	6.00	4.75	0.62	0.75	4	5/8	2 1/4
*2 1/2	7.00	5.50	0.69	0.75	4	5/8	2 1/2
3	7.50	6.00	0.75	0.75	4	5/8	2 1/2
4	9.00	7.50	0.94	0.75	8	5/8	3
*5	10.00	8.50	0.94	0.88	8	3/4	3
6	11.00	9.50	1.00	0.88	8	3/4	3 1/2
8	13.50	11.75	1.12	0.88	8	3/4	3 1/2
10	16.00	14.25	1.19	1.00	12	7/8	4
12	19.00	17.00	1.25	1.00	12	7/8	4
14	21.00	18.75	1.38	1.13	12	1	4 1/2
16	23.50	21.25	1.44	1.13	16	1	4 1/2
18	25.00	22.75	1.56	1.25	16	1 1/8	5
20	27.50	25.00	1.69	1.25	20	1 1/8	5
24	32.00	29.50	1.88	1.38	20	1 1/4	5 1/2
30	38.75	36.00	2.12	1.38	28	1 1/4	6 1/2
36	46.00	42.75	2.38	1.63	32	1 1/2	7
42	53.00	49.50	2.62	1.63	36	1 1/2	7 1/2
48	59.50	56.00	2.75	1.63	44	1 1/2	8
*54	66.25	62.75	3.00	2.00	44	1 3/4	8 1/2
*60	73.00	69.25	3.12	2.00	52	1 3/4	9
*64	80.00	76.00	3.38	2.00	52	1 3/4	9

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

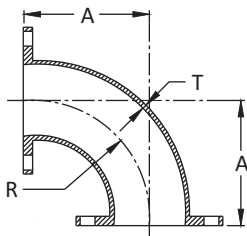
All weights are approximate in pounds unless noted otherwise.

FLANGED BENDS



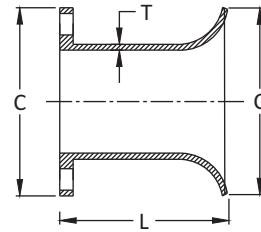
FLANGE		90° BENDS ($\frac{1}{4}$)			45° BENDS ($\frac{1}{8}$)			22.5° BENDS ($\frac{1}{16}$)			11.25° BENDS ($\frac{1}{32}$)		
SIZE	T	A	R	WT	A	R	WT	A	R	WT	A	R	WT
*2	0.31	4.50	3.00	15	2.50	2.41	14	2.50	6.04	14	2.50	12.69	14
*2½	0.31	5.00	3.50	23	3.00	3.62	22	---	---	---	---	---	---
3	0.48	5.50	4.00	25	3.00	3.62	20	3.00	7.56	20	3.00	15.25	20
4	0.52	6.50	4.50	45	4.00	4.81	40	4.00	10.06	40	4.00	20.31	40
*5	0.50	7.50	5.50	55	4.50	6.04	50	---	---	---	---	---	---
6	0.55	8.00	6.00	65	5.00	7.25	55	5.00	15.06	55	5.00	30.50	55
8	0.60	9.00	7.00	105	5.50	8.44	90	5.50	17.62	90	5.50	35.50	90
10	0.68	11.00	9.00	165	6.50	10.88	130	6.50	22.62	135	6.50	45.69	135
12	0.75	12.00	10.00	235	7.50	13.25	195	7.50	27.62	205	7.50	55.81	205
14	0.66	14.00	11.50	290	7.50	12.06	220	7.50	25.12	225	7.50	50.75	225
16	0.70	15.00	12.50	370	8.00	13.25	280	8.00	27.62	285	8.00	55.81	285
18	0.75	16.50	14.00	450	8.50	14.50	325	8.50	30.19	335	8.50	60.94	335
20	0.80	18.00	15.50	580	9.50	16.88	430	9.50	35.19	435	9.50	71.06	435
24	0.89	22.00	18.50	900	11.00	18.12	630	11.00	37.69	640	11.00	76.12	645
30	1.03	25.00	21.50	1430	15.00	27.75	1120	15.00	57.81	1135	15.00	116.75	1150
36	1.15	28.00	24.50	2135	18.00	35.00	1755	18.00	72.88	1790	18.00	147.25	1805
42	1.28	31.00	27.50	3055	21.00	42.25	2600	21.00	88.00	2665	21.00	177.69	2680
48	1.42	34.00	30.50	4095	24.00	49.50	3580	24.00	103.06	3665	24.00	208.12	3695
*54	0.90	39.00	35.42	3745	20.50	41.05	2738	14.00	32.42	2262	12.00	30.81	2104
*60	0.94	43.00	36.50	4968	23.50	---	3793	14.00	48.50	2987	10.50	62.41	2668
*64	0.99	48.00	38.80	6747	25.00	---	5107	13.50	---	3998	9.50	---	3587

90° LONG RADIUS BENDS*



SIZE	T	A	R	WT
3	0.48	7.75	6.25	32
4	0.52	9.00	7.00	53
6	0.55	11.50	9.50	81
8	0.60	14.00	12.00	145
10	0.68	16.50	14.50	217
12	0.75	19.00	17.00	328
14	0.66	21.50	19.00	402
16	0.70	24.00	21.50	526
18	0.75	26.50	24.00	751
20	0.80	29.00	26.50	875
24	0.89	34.00	30.50	1254
30	1.03	41.50	38.00	2109
36	1.15	49.00	45.50	3286
42	1.28	56.50	53.00	4868
48	1.42	64.00	60.50	7805
54	0.90	73.50	69.50	6207

STRAIGHT FLANGE X FLARE PIECES*



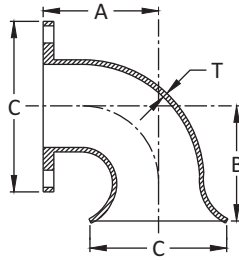
SIZE	T	L	C	WT
3	0.48	8.00	7.50	22
4	0.52	8.00	9.00	31
6	0.55	8.00	11.00	42
8	0.60	10.00	13.50	74
10	0.68	10.00	16.00	98
12	0.75	12.00	19.00	157
14	0.66	12.00	21.00	193
16	0.70	16.00	23.50	334
18	0.75	16.00	25.00	356
20	0.80	18.00	27.50	461
24	0.89	18.00	32.00	635
30	1.03	24.00	38.75	1029
36	1.15	24.00	46.00	1463
42	1.28	30.00	53.00	1906
48	1.42	30.00	59.50	2039
54	0.90	36.00	66.25	2358

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

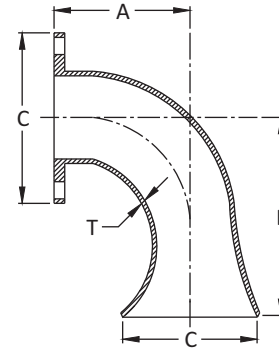
All weights are approximate in pounds unless noted otherwise.

90° FLANGE X FLARE BENDS*



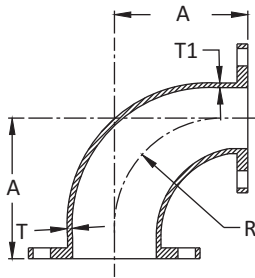
SIZE	T	A	B	C	WT
3	0.48	5.50	11.00	7.50	26
4	0.52	6.50	12.00	9.00	41
6	0.55	8.00	12.00	11.00	73
8	0.60	9.00	14.00	13.50	114
10	0.68	11.00	17.00	16.00	177
12	0.75	12.00	18.00	19.00	247
14	0.66	14.00	20.00	21.00	344
16	0.70	15.00	21.00	23.50	465
18	0.75	16.50	22.50	25.00	563
20	0.80	18.00	24.00	27.50	708
24	0.89	22.00	28.00	32.00	1107
30	1.03	25.00	32.00	38.75	1845
36	1.15	28.00	35.00	46.00	2706
42	1.28	31.00	38.00	53.00	3252
48	1.42	34.00	41.00	59.50	4218
54	0.90	39.00	46.00	66.25	3969
60	0.94	43.00	54.00	73.00	---

LONG RADIUS 90° FLANGE X FLARE BENDS*



SIZE	T	A	B	C	WT
3	0.48	7.75	13.25	7.50	32
4	0.52	9.00	14.50	9.00	53
6	0.55	11.50	15.50	11.00	96
8	0.60	14.00	19.00	13.50	159
10	0.68	16.50	22.50	16.00	252
12	0.75	19.00	25.00	19.00	375
14	0.66	21.50	29.00	21.00	410
16	0.70	24.00	32.00	23.50	550
18	0.75	26.50	35.00	25.00	700
20	0.80	29.00	38.00	27.50	880
24	0.89	34.00	44.00	32.00	1337
30	1.03	41.50	48.50	38.75	2192
36	1.15	49.00	56.00	46.00	3465
42	1.28	56.50	63.50	53.00	5151
48	1.42	64.00	71.00	59.50	6728

90° REDUCING BENDS*



SIZE	T	T1	A	R	WT
3 X 1 1/2	0.48	0.31	5.50	4.00	19
3 X 2	0.48	0.31	5.50	4.00	21
3 X 2 1/2	0.48	0.31	5.50	4.00	25
4 X 2	0.52	0.31	6.50	4.50	31
4 X 2 1/2	0.52	0.31	6.50	4.50	35
4 X 3	0.52	0.48	6.50	4.50	38
5 X 2	0.50	0.31	7.50	5.50	44
5 X 2 1/2	0.50	0.31	7.50	5.50	49
5 X 3	0.50	0.48	7.50	5.50	50
5 X 4	0.50	0.50	7.50	5.50	52
6 X 2	0.55	0.31	8.00	6.00	44
6 X 2 1/2	0.55	0.31	8.00	6.00	49
6 X 3	0.55	0.48	8.00	6.00	50
6 X 4	0.55	0.52	8.00	6.00	58
6 X 5	0.55	0.50	8.00	6.00	62
8 X 4	0.60	0.52	9.00	7.00	83
8 X 5	0.60	0.50	9.00	7.00	84

SIZE	T	T1	A	R	WT
8 X 6	0.60	0.55	9.00	7.00	95
10 X 4	0.68	0.52	11.00	9.00	107
10 X 6	0.68	0.55	11.00	9.00	128
10 X 8	0.68	0.60	11.00	9.00	153
12 X 4	0.75	0.52	12.00	10.00	146
12 X 6	0.75	0.55	12.00	10.00	165
12 X 8	0.75	0.60	12.00	10.00	191
12 X 10	0.75	0.68	12.00	10.00	223
14 X 6	0.66	0.55	14.00	11.50	148
14 X 8	0.66	0.60	14.00	11.50	208
14 X 10	0.66	0.68	14.00	11.50	262
14 X 12	0.66	0.75	14.00	11.50	274
16 X 6	0.70	0.55	15.00	12.50	225
16 X 8	0.70	0.60	15.00	12.50	242
16 X 10	0.70	0.68	15.00	12.50	347
16 X 12	0.70	0.75	15.00	12.50	378
16 X 14	0.70	0.66	15.00	12.50	331
18 X 6	0.75	0.55	16.50	14.00	260
18 X 8	0.75	0.60	16.50	14.00	281
18 X 10	0.75	0.68	16.50	14.00	322
18 X 12	0.75	0.75	16.50	14.00	368
18 X 14	0.75	0.66	16.50	14.00	373
18 X 16	0.75	0.70	16.50	14.00	411
20 X 6	0.80	0.55	18.00	15.50	322
20 X 8	0.80	0.60	18.00	15.50	348
20 X 10	0.80	0.68	18.00	15.50	387

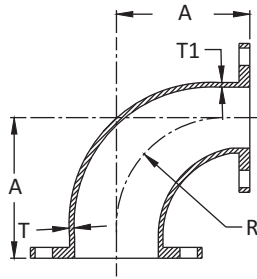
Con't

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

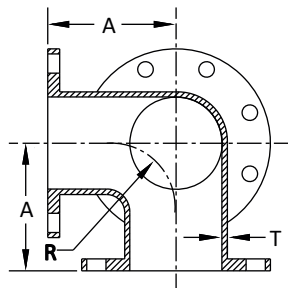
90° REDUCING BENDS (Con't)*



SIZE	T	T1	A	R	WT
20 X 12	0.80	0.75	18.00	15.50	417
20 X 14	0.80	0.66	18.00	15.50	521
20 X 16	0.80	0.70	18.00	15.50	535
20 X 18	0.80	0.75	18.00	15.50	516
24 X 6	0.89	0.55	22.00	18.50	482
24 X 8	0.89	0.60	22.00	18.50	505
24 X 10	0.89	0.68	22.00	18.50	546
24 X 12	0.89	0.75	22.00	18.50	798
24 X 14	0.89	0.66	22.00	18.50	840
24 X 16	0.89	0.70	22.00	18.50	636
24 X 18	0.89	0.75	22.00	18.50	677
24 X 20	0.89	0.80	22.00	18.50	743
30 X 12	1.03	0.75	25.00	21.50	842
30 X 14	1.03	0.66	25.00	21.50	864
30 X 16	1.03	0.70	25.00	21.50	907
30 X 18	1.03	0.75	25.00	21.50	942
30 X 20	1.03	0.80	25.00	21.50	1006
30 X 24	1.03	0.89	25.00	21.50	1205
36 X 12	1.15	0.75	28.00	24.50	1197
36 X 14	1.15	0.66	28.00	24.50	1216
36 X 16	1.15	0.70	28.00	24.50	1255

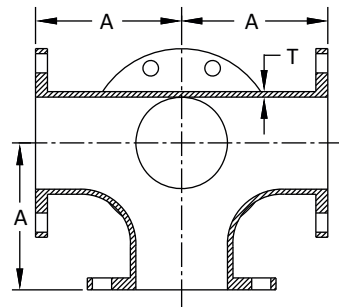
SIZE	T	T1	A	R	WT
36 X 18	1.15	0.75	28.00	24.50	1300
36 X 20	1.15	0.80	28.00	24.50	1316
36 X 24	1.15	0.89	28.00	24.50	1521
36 X 30	1.15	1.03	28.00	24.50	1788
42 X 12	1.28	0.75	31.00	27.50	1656
42 X 14	1.28	0.66	31.00	27.50	1677
42 X 16	1.28	0.70	31.00	27.50	1714
42 X 18	1.28	0.75	31.00	27.50	1758
42 X 20	1.28	0.80	31.00	27.50	1823
42 X 24	1.28	0.89	31.00	27.50	1985
42 X 30	1.28	1.03	31.00	27.50	2247
42 X 36	1.28	1.15	31.00	27.50	2602
48 X 12	1.42	0.75	34.00	30.50	2177
48 X 14	1.42	0.66	34.00	30.50	2199
48 X 16	1.42	0.70	34.00	30.50	2238
48 X 18	1.42	0.75	34.00	30.50	2276
48 X 20	1.42	0.80	34.00	30.50	2343
48 X 24	1.42	0.89	34.00	30.50	2500
48 X 30	1.42	1.03	34.00	30.50	3006
48 X 36	1.42	1.15	34.00	30.50	3117
48 X 42	1.42	1.28	34.00	30.50	3582
54 X 12	0.90	0.75	39.00	35.29	1997
54 X 14	0.90	0.66	39.00	35.29	2018
54 X 16	0.90	0.70	39.00	35.29	2059
54 X 18	0.90	0.75	39.00	35.29	2100
54 X 20	0.90	0.80	39.00	35.29	2165
54 X 24	0.90	0.89	39.00	35.29	2328
54 X 30	0.90	0.90	39.00	35.29	2591
54 X 36	0.90	0.90	39.00	35.29	2984
54 X 42	0.90	0.90	39.00	35.29	3396
54 X 48	0.90	0.90	39.00	35.29	3565

90° FLANGED SIDE OUTLET BENDS*



SIZE	T	A	R	WT
3	0.48	5.50	4.00	37
4	0.52	6.50	4.50	65
6	0.55	8.00	6.00	96
8	0.60	9.00	7.00	148
10	0.68	11.00	9.00	243
12	0.75	12.00	10.00	347
14	0.66	14.00	11.50	450

90° FLANGED SIDE OUTLET TEES*



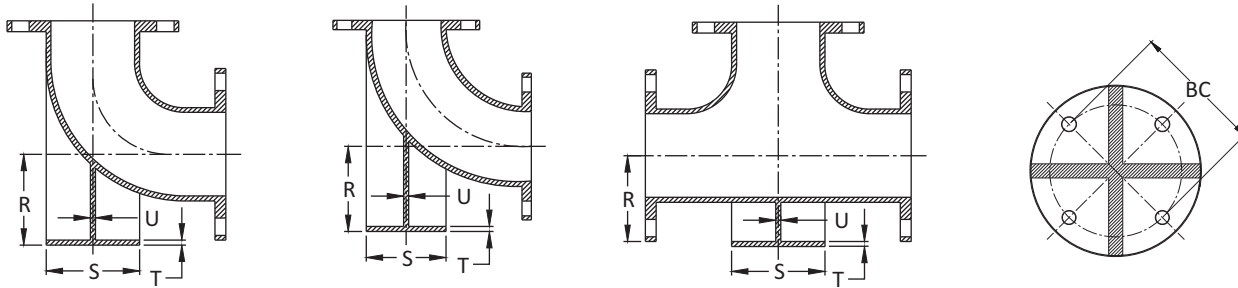
SIZE	T	A	WT
4 X 4	0.52	6.50	85
6 X 6	0.55	8.00	127
8 X 8	0.60	9.00	199
10 X 10	0.80	11.00	321
16 X 16	0.70	15.00	630
20 X 20	0.80	18.00	955
24 X 24	0.89	22.00	1482

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

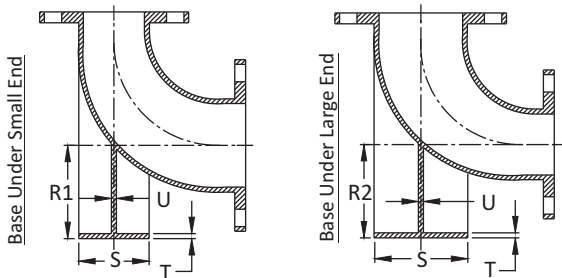
All weights are approximate in pounds unless noted otherwise.

90° LONG RADIUS BASE BENDS & BASE TEES



90° LONG RADIUS BASE BENDS & TEES					W E I G H T			BASE DRILLING DETAILS			BASE WEIGHT	
SIZE	R	S	T	U	BASE BENDS	LONG RADIUS BASE BENDS*	BASE TEES	B.C.	BOLT HOLE DIA.	NO. OF BOLTS	BENDS	TEES
*2	4.12	4.62	0.50	0.50	17	---	23	3.50	0.63	4	---	---
*2½	4.50	4.62	0.50	0.50	25	---	34	3.50	0.63	4	---	---
3	4.88	5.00	0.56	0.50	35	42	45	3.88	0.63	4	10	5
4	5.50	6.00	0.62	0.50	55	65	75	4.75	0.75	4	10	10
5	6.25	7.00	0.69	0.62	70	87	95	5.50	0.75	4	---	---
6	7.00	7.00	0.69	0.62	85	106	110	5.50	0.75	4	20	15
8	8.38	9.00	0.94	0.88	145	183	185	7.50	0.75	4	40	30
10	9.75	9.00	0.94	0.88	210	265	300	7.50	0.75	4	45	30
12	11.25	11.00	1.00	1.00	300	392	430	9.50	0.88	4	65	45
14	12.50	11.00	1.00	1.00	360	497	485	9.50	0.88	4	70	50
16	13.75	11.00	1.00	1.00	445	610	600	9.50	0.88	4	75	50
18	15.00	13.50	1.12	1.12	565	792	740	11.75	0.88	4	115	75
20	16.00	13.50	1.12	1.12	700	1208	930	11.75	0.88	4	120	75
24	18.50	13.50	1.12	1.12	1030	1775	1410	11.75	0.88	4	130	80
30	23.00	16.00	1.19	1.15	1625	2312	2270	14.25	1.00	4	190	120
36	26.00	19.00	1.25	1.15	2385	3538	3320	17.00	1.00	4	250	160
42	30.00	23.50	1.44	1.28	3465	5276	5850	21.25	1.13	4	410	270
48	34.00	25.00	1.56	1.42	4610	7305	7720	22.75	1.25	4	515	335
*54	38.00	27.50	1.69	1.55	4415	6888	6465	25.00	1.25	4	---	---

90° REDUCING BASE BENDS*



• See Base Drilling Details on the above

SIZE	R1	R2	S	T	U	WT
4 x 3	5.50	4.88	6.00	0.62	0.50	46
5 x 4	6.25	5.50	7.00	0.69	0.62	71
6 x 3	7.00	4.88	7.00	0.69	0.62	68
6 x 4	7.00	5.50	7.00	0.69	0.62	77
6 x 5	7.00	6.25	7.00	0.69	0.62	83
8 x 4	8.38	5.50	9.00	0.94	0.88	124
8 x 6	8.38	7.00	9.00	0.94	0.88	135
10 x 6	9.75	7.00	9.00	0.94	0.88	172
10 x 8	9.75	8.38	9.00	0.94	0.88	200
12 x 6	11.25	7.00	11.00	1.00	1.00	236
12 x 8	11.25	8.38	11.00	1.00	1.00	255
12 x 10	11.25	9.75	11.00	1.00	1.00	287
14 x 6	12.50	7.00	11.00	1.00	1.00	219
14 x 8	12.50	8.38	11.00	1.00	1.00	273

SIZE	R1	R2	S	T	U	WT
14 x 10	12.50	9.75	11.00	1.00	1.00	312
14 x 12	12.50	11.25	11.00	1.00	1.00	342
16 x 6	13.75	7.00	11.00	1.00	1.00	297
16 x 8	13.75	8.38	11.00	1.00	1.00	316
16 x 10	13.75	9.75	11.00	1.00	1.00	355
16 x 12	13.75	11.25	11.00	1.00	1.00	387
16 x 14	13.75	12.50	11.00	1.00	1.00	408
18 x 6	15.00	7.00	13.50	1.12	1.12	379
18 x 8	15.00	8.38	13.50	1.12	1.12	400
18 x 10	15.00	9.75	13.50	1.12	1.12	436
18 x 12	15.00	11.25	13.50	1.12	1.12	465
18 x 14	15.00	12.50	13.50	1.12	1.12	487
18 x 16	15.00	13.75	13.50	1.12	1.12	528
20 x 6	16.00	7.00	13.50	1.12	1.12	442
20 x 8	16.00	8.38	13.50	1.12	1.12	466
20 x 10	16.00	9.75	13.50	1.12	1.12	505
20 x 12	16.00	11.25	13.50	1.12	1.12	538
20 x 14	16.00	12.50	13.50	1.12	1.12	557
20 x 16	16.00	13.75	13.50	1.12	1.12	596
20 x 18	16.00	15.00	13.50	1.12	1.12	638
24 x 6	18.50	7.00	13.50	1.12	1.12	615
24 x 8	18.50	8.38	13.50	1.12	1.12	636
24 x 10	18.50	9.75	13.50	1.12	1.12	678

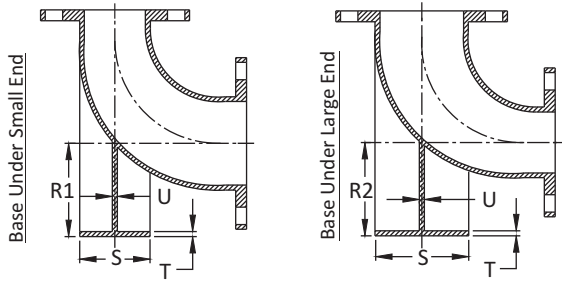
Con't

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

90° REDUCING BASE BENDS (Con't)*

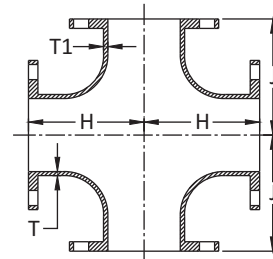
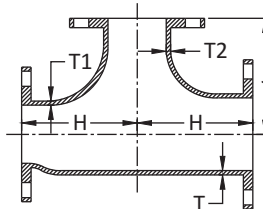
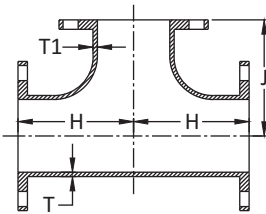


* See Base Drilling Details on the above

SIZE	R1	R2	S	T	U	WT
24 x 12	18.50	11.25	13.50	1.12	1.12	706
24 x 14	18.50	12.50	13.50	1.12	1.12	728
24 x 16	18.50	13.75	13.50	1.12	1.12	770
24 x 18	18.50	15.00	13.50	1.12	1.12	808
24 x 20	18.50	16.00	13.50	1.12	1.12	872
30 x 12	23.00	11.25	16.00	1.19	1.15	1034
30 x 14	23.00	12.50	16.00	1.19	1.15	1053
30 x 16	23.00	13.75	16.00	1.19	1.15	1095
30 x 18	23.00	15.00	16.00	1.19	1.15	1131
30 x 20	23.00	16.00	16.00	1.19	1.15	1195
30 x 24	23.00	18.50	16.00	1.19	1.15	1357
36 x 12	26.00	11.25	19.00	1.25	1.15	1448
36 x 14	26.00	12.50	19.00	1.25	1.15	1464
36 x 16	26.00	13.75	19.00	1.25	1.15	1509
36 x 18	26.00	15.00	19.00	1.25	1.15	1546
36 x 20	26.00	16.00	19.00	1.25	1.15	1612
36 x 24	26.00	18.50	19.00	1.25	1.15	1771
36 x 30	26.00	23.00	19.00	1.25	1.15	2040

SIZE	R1	R2	S	T	U	WT
42 x 12	30.00	11.25	23.50	1.44	1.28	2067
42 x 14	30.00	12.50	23.50	1.44	1.28	2085
42 x 16	30.00	13.75	23.50	1.44	1.28	2132
42 x 18	30.00	15.00	23.50	1.44	1.28	2168
42 x 20	30.00	16.00	23.50	1.44	1.28	2234
42 x 24	30.00	18.50	23.50	1.44	1.28	2393
42 x 30	30.00	23.00	23.50	1.44	1.28	2659
42 x 36	30.00	26.00	23.50	1.44	1.28	3011
48 x 12	34.00	11.25	25.00	1.56	1.42	2692
48 x 14	34.00	12.50	25.00	1.56	1.42	2713
48 x 16	34.00	13.75	25.00	1.56	1.42	2754
48 x 18	34.00	15.00	25.00	1.56	1.42	2793
48 x 20	34.00	16.00	25.00	1.56	1.42	2857
48 x 24	34.00	18.50	25.00	1.56	1.42	3018
48 x 30	34.00	23.00	25.00	1.56	1.42	3282
48 x 36	34.00	26.00	25.00	1.56	1.42	3635
48 x 42	34.00	30.00	25.00	1.56	1.42	4098
54 x 12	38.00	11.25	27.50	1.69	1.55	2665
54 x 14	38.00	12.50	27.50	1.69	1.55	2692
54 x 16	38.00	13.75	27.50	1.69	1.55	2733
54 x 18	38.00	15.00	27.50	1.69	1.55	2775
54 x 20	38.00	16.00	27.50	1.69	1.55	2840
54 x 24	38.00	18.50	27.50	1.69	1.55	3000
54 x 30	38.00	23.00	27.50	1.69	1.55	3266
54 x 36	38.00	26.00	27.50	1.69	1.55	3618
54 x 42	38.00	30.00	27.50	1.69	1.55	4074
54 x 48	38.00	34.00	27.50	1.69	1.55	4243

FLANGED TEES & CROSSES



FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
*1½ X 1½ X 2	0.31	0.31	0.31	4.50	4.50	16	---
*2 X 1½ X 1½	0.31	0.31	0.31	4.50	4.50	18	---
*2 X 2	0.31	0.31	---	4.50	4.50	21	---
*2½ X 2 X 2	0.31	0.31	0.31	5.00	5.00	29	---
*2½ X 2 X 2½	0.31	0.31	0.31	5.00	5.00	30	---
*2½ X 1	0.31	0.31	---	5.00	5.00	26	---
*2½ X 1½	0.31	0.31	---	5.00	5.00	28	---
*2½ X 2½	0.31	0.31	---	5.00	5.00	32	---
*3 X 1	0.48	0.31	---	5.50	5.50	33	---
*3 X 1½	0.48	0.31	---	5.50	5.50	35	---
*3 X 2	0.48	0.31	---	5.50	5.50	38	47

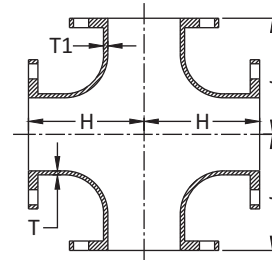
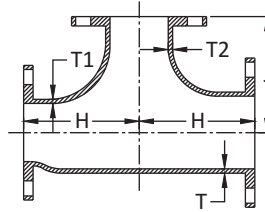
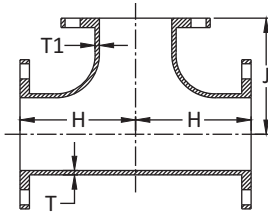
FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
*3 X 2½	0.48	0.31	---	5.50	5.50	39	---
3 X 3	0.48	0.48	---	5.50	5.50	40	50
*4 X 3 X 3	0.52	0.48	0.48	6.50	6.50	57	---
*4 X 2	0.52	0.31	---	6.50	6.50	53	63
*4 X 2 X 4	0.52	0.31	0.52	6.50	6.50	54	---
*4 X 2½	0.52	0.31	---	6.50	6.50	57	66
*4 X 2½ X 4	0.52	0.31	0.52	6.50	6.50	58	---
4 X 3	0.52	0.48	---	6.50	6.50	60	70
4 X 4	0.52	0.52	---	6.50	6.50	65	80
*4 X 4 X 5	0.50	0.50	0.50	7.50	7.50	76	---
*4 X 4 X 6	0.52	0.52	0.55	8.00	8.00	94	---

* not included in AWWA C110

Con't

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

FLANGED TEES & CROSSES (Con't)


FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
*5 X 2½	0.50	0.31	---	7.50	7.50	76	---
*5 X 4	0.50	0.50	---	7.50	7.50	79	95
*5 X 5	0.50	0.50	---	7.50	7.50	82	---
*5 X 5 X 6	0.50	0.50	0.55	8.00	8.00	91	---
*6 X 3 X 3	0.55	0.48	0.48	8.00	8.00	77	---
*6 X 3 X 5	0.55	0.48	0.50	8.00	8.00	85	---
*6 X 4 X 4	0.55	0.52	0.52	8.00	8.00	88	---
*6 X 4 X 5	0.55	0.50	0.50	8.00	8.00	89	---
*6 X 4 X 6	0.55	0.52	0.55	8.00	8.00	94	---
*6 X 5 X 2½	0.55	0.50	0.31	8.00	8.00	76	---
*6 X 5 X 3	0.55	0.50	0.48	8.00	8.00	84	---
*6 X 5 X 5	0.55	0.50	0.50	8.00	8.00	89	---
*6 X 2	0.55	0.31	---	8.00	8.00	83	92
*6 X 2½	0.55	0.31	---	8.00	8.00	84	94
6 X 3	0.55	0.48	---	8.00	8.00	85	95
6 X 4	0.55	0.52	---	8.00	8.00	90	110
6 X 5	0.55	0.50	---	8.00	8.00	91	115
6 X 6	0.55	0.55	---	8.00	8.00	95	120
*6 X 6 X 8	0.55	0.55	0.60	9.00	9.00	144	---
*8 X 4 X 8	0.60	0.52	0.60	9.00	9.00	141	---
*8 X 5 X 4	0.60	0.50	0.50	9.00	9.00	129	---
*8 X 6 X 4	0.60	0.55	0.52	9.00	9.00	134	---
*8 X 6 X 6	0.60	0.55	0.55	9.00	9.00	138	---
*8 X 6 X 8	0.60	0.55	0.60	9.00	9.00	147	---
*8 X 2½	0.60	0.31	---	9.00	9.00	132	---
*8 X 3	0.60	0.48	---	9.00	9.00	134	144
8 X 4	0.60	0.52	---	9.00	9.00	140	155
*8 X 5	0.60	0.50	---	9.00	9.00	146	163
8 X 6	0.60	0.55	---	9.00	9.00	148	167
8 X 8	0.60	0.60	---	9.00	9.00	157	198
*8 X 8 X 10	0.60	0.60	0.68	11.00	11.00	265	---
*8 X 8 X 12	0.60	0.60	0.75	12.00	12.00	310	---
*10 X 4 X 10	0.68	0.52	0.68	11.00	11.00	250	---
*10 X 6 X 4	0.68	0.55	0.52	11.00	11.00	195	---
*10 X 6 X 6	0.68	0.55	0.55	11.00	11.00	206	---
*10 X 6 X 10	0.68	0.55	0.68	11.00	11.00	257	---
*10 X 8 X 6	0.68	0.60	0.55	11.00	11.00	214	---
*10 X 8 X 8	0.68	0.60	0.60	11.00	11.00	222	---
*10 X 8 X 10	0.68	0.60	0.68	11.00	11.00	268	---
*10 X 2	0.68	0.31	---	11.00	11.00	201	---
*10 X 3	0.68	0.48	---	11.00	11.00	203	---
10 X 4	0.68	0.52	---	11.00	11.00	205	220
*10 X 5	0.68	0.50	---	11.00	11.00	213	233
10 X 6	0.68	0.55	---	11.00	11.00	215	240

FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
10 X 8	0.68	0.60	---	11.00	11.00	225	265
10 X 10	0.80	0.80	---	11.00	11.00	270	330
*10 X 10 X 12	0.68	0.68	0.75	12.00	12.00	357	---
*10 X 10 X 14	0.68	0.68	0.66	14.00	14.00	375	---
*12 X 6 X 6	0.75	0.55	0.55	12.00	12.00	328	---
*12 X 6 X 8	0.75	0.55	0.60	12.00	12.00	346	---
*12 X 8 X 6	0.75	0.60	0.55	12.00	12.00	344	---
*12 X 8 X 8	0.75	0.60	0.60	12.00	12.00	292	---
*12 X 8 X 12	0.75	0.60	0.75	12.00	12.00	366	---
*12 X 10 X 6	0.75	0.68	0.55	12.00	12.00	380	---
*12 X 10 X 8	0.75	0.68	0.60	12.00	12.00	384	---
*12 X 10 X 10	0.75	0.68	0.68	12.00	12.00	349	---
*12 X 10 X 12	0.75	0.68	0.75	12.00	12.00	375	---
12 X 4	0.75	0.52	---	12.00	12.00	290	310
*12 X 5	0.75	0.50	---	12.00	12.00	292	316
12 X 6	0.75	0.55	---	12.00	12.00	295	320
12 X 8	0.75	0.60	---	12.00	12.00	310	345
12 X 10	0.87	0.80	---	12.00	12.00	360	415
12 X 12	0.87	0.87	---	12.00	12.00	385	460
*14 X 4	0.66	0.52	---	14.00	14.00	373	---
14 X 6	0.66	0.55	---	14.00	14.00	375	400
14 X 8	0.66	0.60	---	14.00	14.00	390	425
14 X 10	0.66	0.68	---	14.00	14.00	400	460
14 X 12	0.66	0.75	---	14.00	14.00	425	505
14 X 14	0.66	0.66	---	14.00	14.00	435	530
*16 X 4	0.70	0.52	---	15.00	15.00	462	---
16 X 6	0.70	0.55	---	15.00	15.00	465	490
16 X 8	0.70	0.60	---	15.00	15.00	475	520
16 X 10	0.70	0.68	---	15.00	15.00	495	555
16 X 12	0.70	0.75	---	15.00	15.00	520	605
16 X 14	0.70	0.66	---	15.00	15.00	530	620
16 X 16	0.70	0.70	---	15.00	15.00	550	665
18 X 6	0.75	0.55	---	13.00	15.50	480	505
18 X 8	0.75	0.60	---	13.00	15.50	495	535
18 X 10	0.75	0.68	---	13.00	15.50	510	560
18 X 12	0.75	0.75	---	13.00	15.50	535	610
18 X 14	0.75	0.66	---	16.50	16.50	630	720
18 X 16	0.75	0.70	---	16.50	16.50	650	765
18 X 18	0.75	0.75	---	16.50	16.50	665	795
20 X 6	0.80	0.55	---	14.00	17.00	610	635
20 X 8	0.80	0.60	---	14.00	17.00	620	665
20 X 10	0.80	0.68	---	14.00	17.00	635	685
20 X 12	0.80	0.75	---	14.00	17.00	660	735
20 X 14	0.80	0.66	---	14.00	17.00	665	745

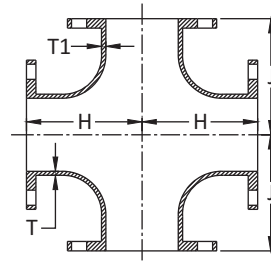
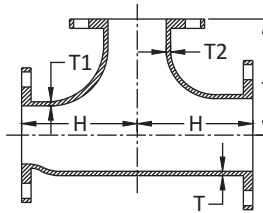
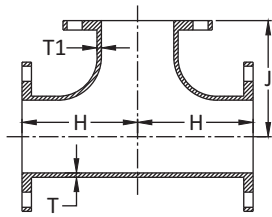
Con't

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

FLANGED TEES & CROSSES (Con't)



FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
20 X 16	0.80	0.70	---	18.00	18.00	810	915
20 X 18	0.80	0.75	---	18.00	18.00	820	945
20 X 20	0.80	0.80	---	18.00	18.00	855	1015
24 X 6	0.89	0.55	---	15.00	19.00	845	875
24 X 8	0.89	0.60	---	15.00	19.00	860	895
24 X 10	0.89	0.68	---	15.00	19.00	880	930
24 X 12	0.89	0.75	---	15.00	19.00	890	960
24 X 14	0.89	0.66	---	15.00	19.00	900	975
24 X 16	0.89	0.70	---	15.00	19.00	915	1010
24 X 18	0.89	0.75	---	22.00	22.00	1220	1365
24 X 20	0.89	0.80	---	22.00	22.00	1255	1430
24 X 24	0.89	0.89	---	22.00	22.00	1330	1570
*30 X 6	1.03	0.55	---	18.00	23.00	1731	---
*30 X 8	1.03	0.60	---	18.00	23.00	1465	---
*30 X 10	1.03	0.68	---	18.00	23.00	1474	---
30 X 12	1.03	0.75	---	18.00	23.00	1490	1565
30 X 14	1.03	0.66	---	18.00	23.00	1490	1570
30 X 16	1.03	0.70	---	18.00	23.00	1505	1605
30 X 18	1.03	0.75	---	18.00	23.00	1515	1615
30 X 20	1.03	0.80	---	18.00	23.00	1540	1670
30 X 24	1.03	0.89	---	25.00	25.00	2025	2245
30 X 30	1.03	1.03	---	25.00	25.00	2150	2500
*36 X 8	1.15	0.60	---	20.00	26.00	1980	---
*36 X 10	1.15	0.68	---	20.00	26.00	2159	---
36 X 12	1.15	0.75	---	20.00	26.00	2170	2240
36 X 14	1.15	0.66	---	20.00	26.00	2175	2240
36 X 16	1.15	0.70	---	20.00	26.00	2185	2270
36 X 18	1.15	0.75	---	20.00	26.00	2190	2280
36 X 20	1.15	0.80	---	20.00	26.00	2210	2325
36 X 24	1.15	0.89	---	20.00	26.00	2255	2405
*36 X 24 X 24	1.15	0.89	0.89	28.00	28.00	2674	---
36 X 30	1.15	1.03	---	28.00	28.00	3000	3300
36 X 36	1.15	1.15	---	28.00	28.00	3160	3620
*36 X 30 X 30	1.15	1.03	1.03	28.00	28.00	2888	---
*36 X 36 X 48	1.15	1.15	1.42	34.00	34.00	4358	---
42 X 12	1.28	0.75	---	23.00	30.00	3165	3240

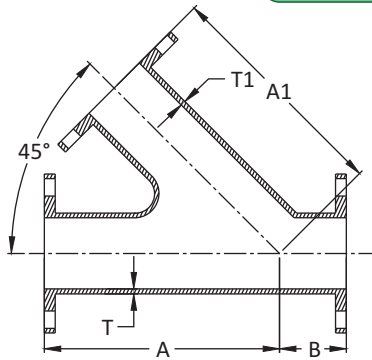
FLANGED TEES AND CROSSES						WEIGHT	
SIZE	T	T1	T2	H	J	TEE	CROSS
42 X 14	1.28	0.66	---	23.00	30.00	3170	3240
42 X 16	1.28	0.70	---	23.00	30.00	3180	3270
42 X 18	1.28	0.75	---	23.00	30.00	3185	3275
42 X 20	1.28	0.80	---	23.00	30.00	3205	3320
42 X 24	1.28	0.89	---	23.00	30.00	3245	3395
42 X 30	1.28	1.03	---	31.00	31.00	4125	4375
42 X 36	1.78	1.58	---	31.00	31.00	5360	5720
42 X 42	1.78	1.78	---	31.00	31.00	5580	6155
48 X 12	1.42	0.75	---	26.00	34.00	4315	4390
48 X 14	1.42	0.66	---	26.00	34.00	4315	4385
48 X 16	1.42	0.70	---	26.00	34.00	4330	4415
48 X 18	1.42	0.75	---	26.00	34.00	4330	4420
48 X 20	1.42	0.80	---	26.00	34.00	4350	4460
48 X 24	1.42	0.89	---	26.00	34.00	4385	4535
48 X 30	1.42	1.03	---	26.00	34.00	4455	4670
48 X 36	1.42	1.15	---	34.00	34.00	5555	5880
48 X 42	1.96	1.78	---	34.00	34.00	7195	7630
48 X 48	1.96	1.96	---	34.00	34.00	7385	8005
*54 X 12	1.05	0.75	---	29.00	37.00	4435	4576
*54 X 14	1.05	0.66	---	29.00	37.00	4435	4578
*54 X 16	1.05	0.70	---	29.00	37.00	4450	4606
*54 X 18	1.05	0.75	---	29.00	37.00	4460	4627
*54 X 20	1.05	0.80	---	29.00	37.00	4480	4669
*54 X 24	1.05	0.89	---	29.00	37.00	4515	4704
*54 X 30	1.05	0.72	---	31.00	37.00	4615	4803
*54 X 36	1.05	0.77	---	31.00	37.00	4695	4956
*54 X 42	1.05	0.88	---	39.00	39.00	5461	6211
*54 X 48	1.05	0.94	---	39.00	39.00	5850	6426
*54 X 54	1.05	1.05	---	39.00	39.00	6025	6782
*60 X 24	1.10	0.89	---	29.00	42.00	4990	6285
*60 X 36	1.10	0.77	---	33.00	42.00	6015	6338
*60 X 48	1.10	0.94	---	43.00	43.00	6923	7532
*60 X 60	1.10	1.10	---	43.00	43.00	7334	8351
*64 X 42	1.16	0.88	---	48.00	45.00	9610	10090
*64 X 64	1.16	1.16	---	48.00	48.00	10995	12863

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

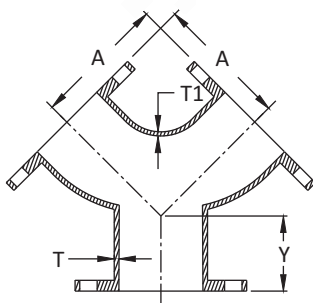
FLANGED LATERAL WYES (Con't)*



SIZE	T	T1	A	A1	B	WT
3 X 3	0.48	0.48	10.00	10.00	3.00	47
4 X 3	0.52	0.48	12.00	12.00	3.00	66
4 X 4	0.52	0.52	12.00	12.00	3.00	78
6 X 4	0.55	0.52	14.50	14.50	3.50	108
6 X 6	0.55	0.55	14.50	14.50	3.50	122
8 X 4	0.60	0.52	17.50	17.50	4.50	165
8 X 6	0.60	0.55	17.50	17.50	4.50	177
8 X 8	0.60	0.60	17.50	17.50	4.50	203
10 X 4	0.68	0.52	20.50	20.50	5.00	244
10 X 6	0.68	0.55	20.50	20.50	5.00	252
10 X 8	0.68	0.60	20.50	20.50	5.00	337
10 X 10	0.68	0.68	20.50	20.50	5.00	337
12 X 4	0.75	0.52	24.50	24.50	5.50	352
12 X 6	0.75	0.55	24.50	24.50	5.50	430
12 X 8	0.75	0.60	24.50	24.50	5.50	456
12 X 10	0.75	0.68	24.50	24.50	5.50	425
12 X 12	0.75	0.75	24.50	24.50	5.50	521
14 X 6	0.66	0.55	27.00	27.00	6.00	479
14 X 8	0.66	0.60	27.00	27.00	6.00	506
14 X 10	0.66	0.68	27.00	27.00	6.00	527
14 X 12	0.66	0.75	27.00	27.00	6.00	571
14 X 14	0.66	0.66	27.00	27.00	6.00	605
16 X 6	0.70	0.55	30.00	30.00	6.50	624
16 X 8	0.70	0.60	30.00	30.00	6.50	646
16 X 10	0.70	0.68	30.00	30.00	6.50	738
16 X 12	0.70	0.75	30.00	30.00	6.50	792
16 X 14	0.70	0.66	30.00	30.00	6.50	757
16 X 16	0.70	0.70	30.00	30.00	6.50	806
18 X 8	0.75	0.60	32.00	32.00	7.00	784
18 X 10	0.75	0.68	32.00	32.00	7.00	813
18 X 12	0.75	0.75	32.00	32.00	7.00	853
18 X 14	0.75	0.66	32.00	32.00	7.00	887
18 X 16	0.75	0.70	32.00	32.00	7.00	938
18 X 18	0.75	0.75	32.00	32.00	7.00	982

SIZE	T	T1	A	A1	B	WT
20 X 10	0.80	0.68	35.00	35.00	8.00	1027
20 X 12	0.80	0.75	35.00	35.00	8.00	1068
20 X 14	0.80	0.66	35.00	35.00	8.00	1114
20 X 16	0.80	0.70	35.00	35.00	8.00	1159
20 X 20	0.80	0.80	35.00	35.00	8.00	1268
24 X 8	0.89	0.60	40.50	40.50	9.00	1427
24 X 10	0.89	0.68	40.50	40.50	9.00	1460
24 X 12	0.89	0.75	40.50	40.50	9.00	1553
24 X 14	0.89	0.66	40.50	40.50	9.00	1561
24 X 16	0.89	0.70	40.50	40.50	9.00	1619
24 X 18	0.89	0.75	40.50	40.50	9.00	1682
24 X 20	0.89	0.80	40.50	40.50	9.00	1754
24 X 24	0.89	0.89	40.50	40.50	9.00	1905
30 X 12	1.37	0.75	49.00	49.00	10.00	2547
30 X 14	1.37	0.66	49.00	49.00	10.00	2593
30 X 16	1.37	0.70	49.00	49.00	10.00	2646
30 X 18	1.37	0.96	49.00	49.00	10.00	2690
30 X 20	1.37	1.03	49.00	49.00	10.00	2764
30 X 24	1.37	1.16	49.00	49.00	10.00	2918
30 X 30	1.37	1.37	52.50	52.50	18.25	4131
36 X 12	1.58	0.75	60.00	60.00	19.50	4494
36 X 14	1.58	0.66	60.00	60.00	19.50	4547
36 X 16	1.58	0.89	60.00	60.00	19.50	4008
36 X 18	1.58	0.96	60.00	60.00	19.50	4675
36 X 20	1.58	1.03	60.00	60.00	19.50	4754
36 X 24	1.58	1.16	60.00	60.00	19.50	4926
36 X 30	1.58	1.37	56.00	56.00	15.25	5255
36 X 36	1.58	1.58	60.00	60.00	19.50	5742
42 X 20	1.78	1.03	60.00	60.00	11.75	6683
42 X 24	1.78	1.16	60.00	60.00	11.75	6851
42 X 30	1.78	1.37	63.00	63.00	11.75	7189
42 X 36	1.78	1.58	66.00	66.00	12.00	7671
42 X 42	1.78	1.78	71.00	71.00	15.00	9186
48 X 18	1.96	0.96	65.00	65.00	9.00	7006
48 X 24	1.96	1.16	58.00	64.00	5.00	8700
48 X 30	1.96	1.37	63.00	68.00	9.00	5581
48 X 36	1.96	1.58	72.00	72.00	7.00	9517
48 X 42	1.96	1.78	77.00	77.00	12.00	11032
48 X 48	1.96	1.96	77.00	77.00	16.00	12117
54 X 24	1.55	0.89	67.00	67.00	5.00	6228
54 X 30	1.55	1.03	72.00	74.00	9.00	7484
54 X 36	1.55	1.15	76.00	76.00	9.00	7606
54 X 42	1.55	1.28	81.00	81.00	14.00	8938
54 X 48	1.55	1.42	86.00	86.00	18.00	9489
54 X 54	1.55	1.55	90.00	90.00	20.00	11782
60 X 30	1.67	1.03	76.00	79.00	5.00	9048
64 X 36	1.96	1.58	80.00	86.00	5.00	12635

FLANGED TRUE WYES*



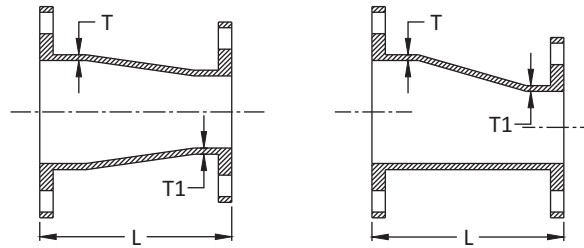
SIZE	T	T1	A	Y	WT
3 X 3 X 3	0.48	0.48	5.50	2.50	34
4 X 4 X 4	0.52	0.52	6.50	3.00	53
6 X 4 X 4	0.55	0.52	8.00	3.50	77
6 X 6 X 6	0.55	0.55	8.00	3.50	81
8 X 6 X 6	0.60	0.55	9.00	4.50	122
8 X 8 X 8	0.60	0.60	9.00	4.50	126
10 X 8 X 8	0.68	0.60	11.00	5.00	158
12 X 12 X 12	0.75	0.75	12.00	5.50	303
16 X 16 X 16	0.70	0.70	15.00	6.50	458

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C110

FLANGED REDUCERS



SIZE	T	T1	L	WT
*2 X 1½	0.31	0.31	5.50	11
*2½ X 2	0.31	0.31	5.50	15
*3 X 2	0.48	0.31	6.00	18
*3 X 2½	0.48	0.31	6.00	23
*4 X 2	0.52	0.31	7.00	27
*4 X 2½	0.52	0.31	7.00	29
4 X 3	0.52	0.48	7.00	30
*5 X 2	0.50	0.31	8.00	34
*5 X 2½	0.50	0.31	8.00	36
*5 X 3	0.50	0.48	8.00	39
*5 X 4	0.50	0.50	8.00	42
*6 X 1½	0.55	0.31	9.00	35
*6 X 2	0.55	0.31	9.00	38
*6 X 2½	0.55	0.31	9.00	41
*6 X 3	0.55	0.48	9.00	43
6 X 4	0.55	0.52	9.00	45
*6 X 5	0.55	0.52	9.00	55
*8 X 3	0.60	0.48	11.00	63
8 X 4	0.60	0.52	11.00	65
*8 X 5	0.60	0.52	11.00	72
8 X 6	0.60	0.55	11.00	75
10 X 3	0.68	0.48	12.00	81
10 X 4	0.68	0.52	12.00	85
10 X 6	0.68	0.55	12.00	90
10 X 8	0.68	0.60	12.00	110
12 X 4	0.75	0.52	14.00	120
*12 X 5	0.75	0.50	14.00	125
12 X 6	0.75	0.55	14.00	130
12 X 8	0.75	0.60	14.00	145
12 X 10	0.75	0.68	14.00	170
14 X 6	0.66	0.55	16.00	155
14 X 8	0.66	0.60	16.00	175
14 X 10	0.66	0.68	16.00	190
14 X 12	0.66	0.75	16.00	220
16 X 6	0.70	0.55	18.00	190
16 X 8	0.70	0.60	18.00	210
16 X 10	0.70	0.68	18.00	235
16 X 12	0.70	0.75	18.00	265
16 X 14	0.70	0.66	18.00	280
18 X 8	0.75	0.60	19.00	240

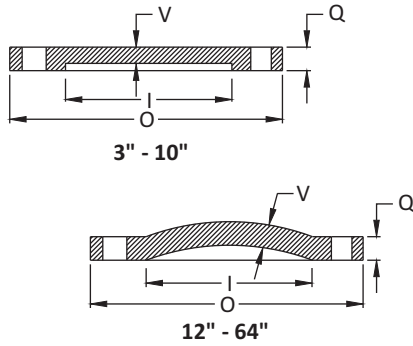
SIZE	T	T1	L	WT
18 X 10	0.75	0.68	19.00	265
18 X 12	0.75	0.75	19.00	295
18 X 14	0.75	0.66	19.00	310
18 X 16	0.75	0.70	19.00	340
*20 X 8	0.80	0.60	20.00	293
20 X 10	0.80	0.68	20.00	310
20 X 12	0.80	0.75	20.00	345
20 X 14	0.80	0.66	20.00	355
20 X 16	0.80	0.70	20.00	390
20 X 18	0.80	0.75	20.00	410
*24 X 10	0.89	0.68	24.00	454
24 X 12	0.89	0.75	24.00	480
24 X 14	0.89	0.66	24.00	490
24 X 16	0.89	0.70	24.00	525
24 X 18	0.89	0.75	24.00	550
24 X 20	0.89	0.80	24.00	590
*30 X 8	1.03	0.60	30.00	706
*30 X 12	1.03	0.75	30.00	734
*30 X 14	1.03	0.66	30.00	758
*30 X 16	1.03	0.70	30.00	775
30 X 18	1.03	0.75	30.00	810
30 X 20	1.03	0.80	30.00	870
30 X 24	1.03	0.89	30.00	970
*36 X 16	1.15	0.70	36.00	1112
36 X 20	1.15	0.80	36.00	1230
36 X 24	1.15	0.89	36.00	1345
36 X 30	1.15	1.03	36.00	1555
*42 X 20	1.28	0.80	42.00	1719
42 X 24	1.28	0.89	42.00	1820
42 X 30	1.28	1.03	42.00	2060
42 X 36	1.28	1.15	42.00	2345
48 X 30	1.42	1.03	48.00	2625
48 X 36	1.42	1.15	48.00	2950
48 X 42	1.42	1.28	48.00	3320
*54 X 24	0.90	0.89	32.00	1823
*54 X 30	0.90	0.61	32.00	1627
*54 X 36	0.90	0.66	28.00	1681
*54 X 42	0.90	0.76	25.00	1808
*54 X 48	0.90	0.80	18.00	1705
*60 X 54	0.94	0.90	15.00	2059

* not included in AWWA C110

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

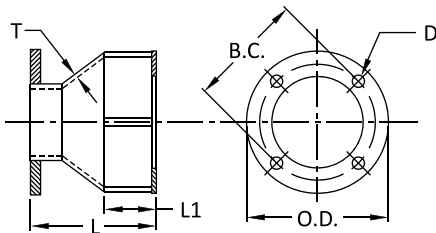
BLIND FLANGES*



SIZE	O	Q	V	I	WT
3	7.50	0.75	0.69	3.00	10
4	9.00	0.94	0.88	4.00	18
6	11.00	1.00	0.94	6.00	27
8	13.50	1.12	1.06	8.00	45

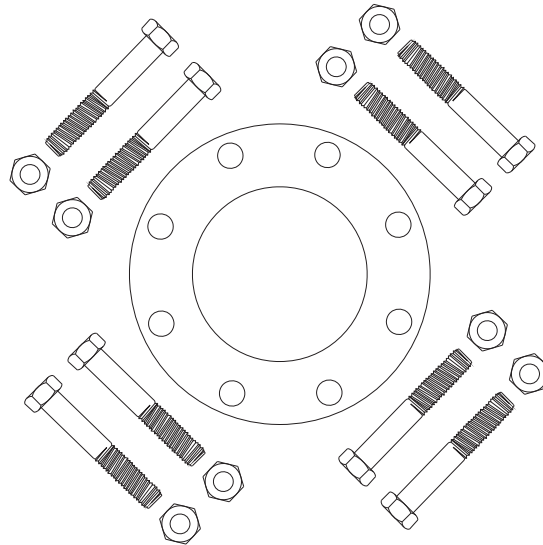
SIZE	O	Q	V	I	WT
10	16.00	1.19	1.12	10.00	65
12	19.00	1.25	0.81	12.00	86
14	21.00	1.38	0.88	14.00	123
16	23.50	1.44	1.00	16.00	146
18	25.00	1.56	1.06	18.00	167
20	27.50	1.69	1.12	20.00	249
24	32.00	1.88	1.25	24.00	321
30	38.75	2.12	1.44	30.00	504
36	46.00	2.38	1.62	36.00	962
42	53.00	2.62	1.81	42.00	1305
48	59.50	2.75	2.00	48.00	1742
54	66.25	3.00	2.25	54.00	2233
60	73.00	3.12	2.38	60.00	2847
64	80.00	3.38	2.56	64.00	3746

SLUDGE SHOE*



SIZE	T	O.D.	B.C.	L	L1	BOLT HOLE DIA (D)	WT
6	0.55	9.50	7.88	12.00	6.00	0.88	47
8	0.60	11.75	10.12	12.00	6.00	0.88	66

FLANGE ACCESSORIES PACK*



- Hex Bolts** : Per ANSI/ASME B18.2.1
Material Per ASTM A307 Grade B, Zinc Plated
- Hex Nuts** : Per ANSI/ASME B18.2.2
Material Per ASTM A563 Grade A or B, Zinc Plated
- Gaskets** : 1/8" Thick Full Face Per ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11
Material Per ASTM D 1330 Grade II or ASTM D 2000 AA, Color RED (Temperature : 20° F to 170° F)

SIZE	BOLTS	QTY.	WT
1½	½ X 2	4	1.1
2	⅝ X 2 ¼	4	1.6
2½	⅝ X 2 ½	4	1.9
3	⅝ X 2 ½	4	2.5
4	⅝ X 3	8	3.3
5	¾ X 3	8	5.2
6	¾ X 3 ½	8	6
8	¾ X 3 ½	8	7
10	7/8 X 4	12	14
12	7/8 X 4	12	16
14	1 X 4 ½	12	20
16	1 X 4 ½	16	27
18	1 ⅛ X 5	16	38
20	1 ⅛ X 5	20	46
24	1 ¼ X 5 ½	20	64
30	1 ¼ X 6 ½	28	98
36	1 ½ X 7	32	173
42	1 ½ X 7 ½	36	216
48	1 ½ X 8	44	265
54	1 ¾ X 8 ½	44	393
60	1 ¾ X 9	52	504
64	1 ¾ X 9	52	507

* not included in AWWA C110

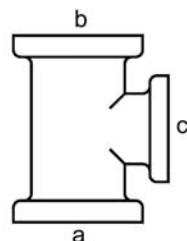
All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

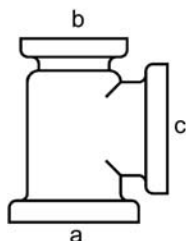
DESIGNATING OUTLETS OF REDUCING FITTINGS

METHOD OF DESIGNATING OUTLETS OF REDUCING FITTINGS FOR SPECIFICATIONS

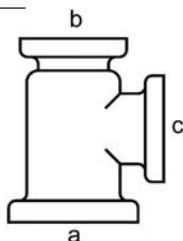
Reducing Tees



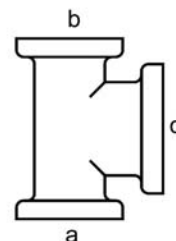
Reducing on Outlet



Reducing on One Run

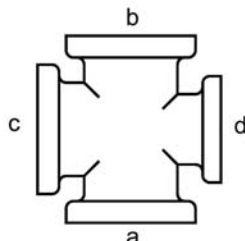


Reducing on One Run and Outlet

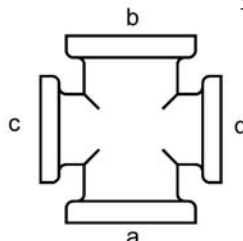


Reducing on Both Runs (Bull Head)

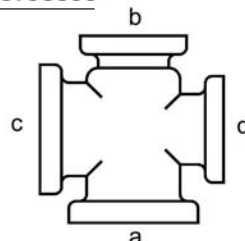
Reducing Crosses



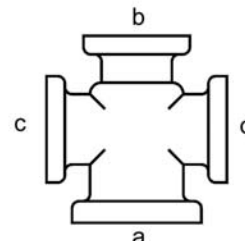
Reducing on One Outlet



Reducing on Both Outlets

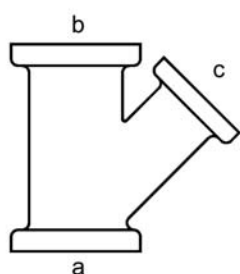


Reducing on One Run and Outlet

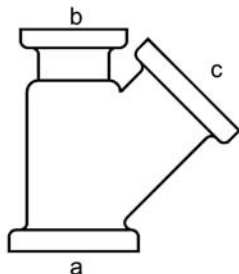


Reducing on One Run and Both Outlets

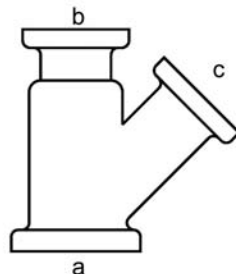
Reducing Laterals



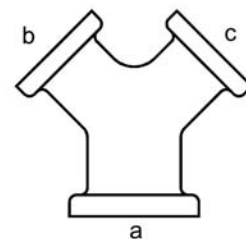
Reducing on Branch



Reducing on One Run

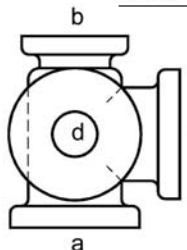


Reducing on One Run and Branch

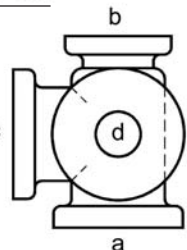


True Y

Side Outlet Tee

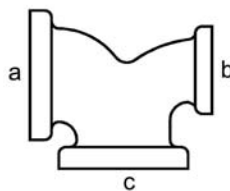


Right Hand

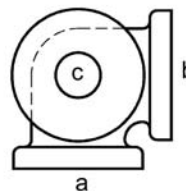


Left Hand

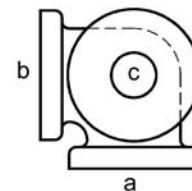
Double Branch Elbow



Side Outlet 90 deg. Elbow



Right Hand



Left Hand

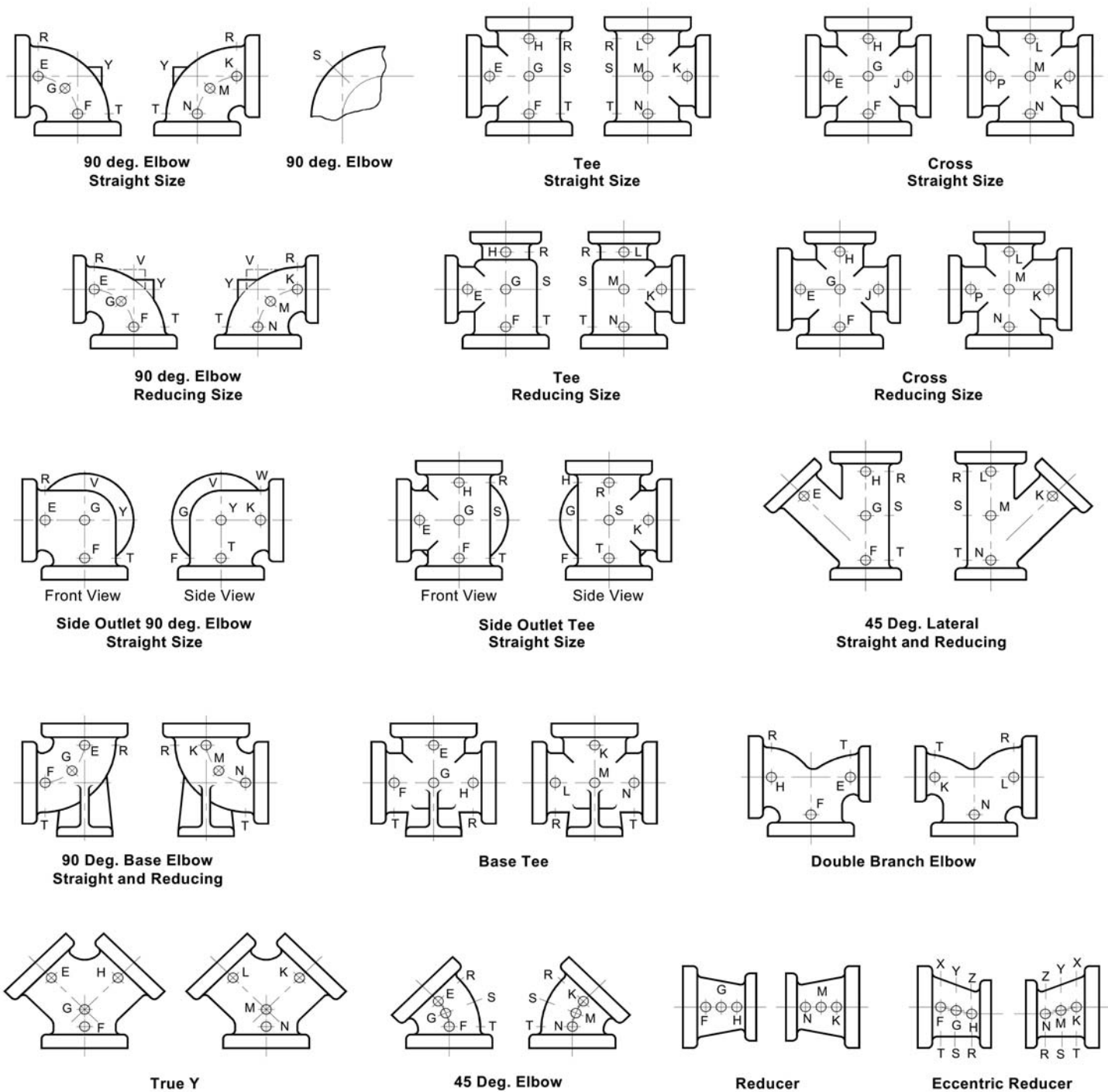
The Largest opening establishes the basic size of a reducing fitting. The largest opening is named first, except for bull head tees which are reducing on both runs and double branch elbows where both branches are reducing; the outlet is the largest opening and named last in both cases.

In designating the openings of reducing fittings, they should be read in the order indicated by the sequence of the letters, a, b, c and d. In designating the outlets of side outlet reducing fittings, the side outlet is named last; and in the case of the cross which is not shown, the side outlet is designated by the letter.

* not included in AWWA C110

DESIGNATING LOCATION OF TAPPED HOLES AND/OR BOSSES

METHOD OF DESIGNATING LOCATION OF TAPPED HOLES AND/OR BOSSES WHEN SPECIFIED



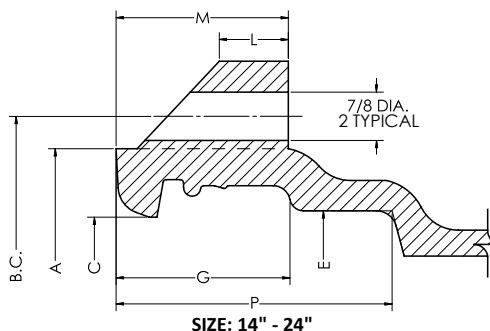
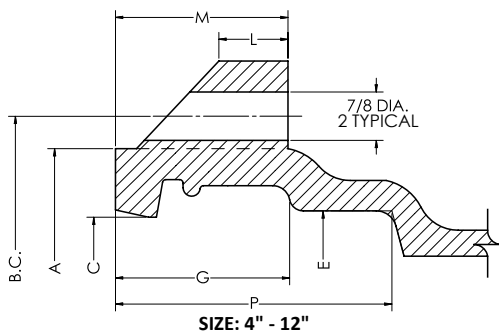
The above illustrations show two views of the same fitting and represent fittings with symmetrical shapes, with the exception of the side outlet elbow and the side outlet tee (straight sizes).

SIZE	MAX. TAP SIZE WITHOUT BOSS
3	$\frac{1}{2}$
4 - 6	$\frac{3}{4}$
8	$1 \frac{1}{4}$
10 - 16	$1 \frac{1}{2}$
18 - 64	2

4" - 24" DUCTILE IRON PUSH-ON JOINT COMPACT FITTINGS

General Specifications

Material	: Ductile Iron per ASTM A536
Pressure	: 350 PSI rating for 4"- 24"sizes Pressure rating applies to fittings only, does not apply to Restraining Lugs or External Restrainers
Testing	: In accordance with ANSI/AWWA C153/A21.53 and UL, FM requirements
Laying Length	: In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per SIP design as noted in the catalog)
Joint	: TRIM TYTON® push-on bell joint design, manufactured by SIP Industries, under license from US Pipe TRIM TYTON® is a registered trademark of United States Pipe and Foundry Company, LLC. Note: Push-On End Ears are for installation purposes
Flanges	: Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
Gaskets	: Dual hardness SBR in accordance with ANSI/AWWA C111/A21.11 (see fittings accessories catalog)
Cement Lining	: In accordance with ANSI/AWWA C104/A21.4 -- size 4" - 24" double thickness
Coating	: Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
Weight	: Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
Dimensions	: All dimensions are in inches unless noted otherwise.
Installations	: Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900
Approvals	: 4" - 24" UL Listed 4" - 24" FM Approved 4" and higher UL/NSF Standards 61 4" and higher NSF/ANSI Standards 61 Approved for Drinking Water. Please consult SIP for detail listing and approvals.



Certified to
NSF/ANSI 61 & 372



ANSI/NSF 61
DRINKING WATER SYSTEM COMPONENTS

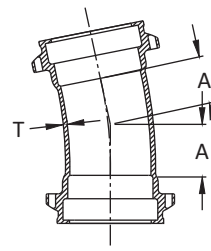
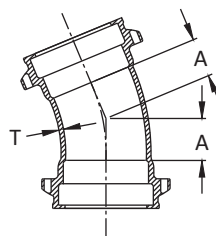
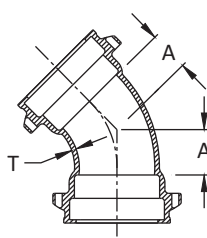
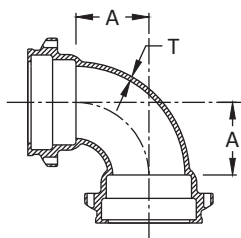
Technical Specifications

SIZE	C	E	A	B.C.	P	G	M	L
4	4.91	5.04	6.47	7.50	4.02	1.85	2.17	0.87
6	7.01	7.14	8.67	9.56	4.02	1.98	2.17	0.87
8	9.17	9.32	10.93	11.82	4.49	2.47	2.72	1.00
10	11.22	11.37	13.04	14.00	4.49	2.67	2.91	1.12
12	13.32	13.47	15.18	16.25	5.00	2.67	2.99	1.12
14	15.41	15.64	17.89	19.06	5.00	3.15	3.12	1.25
16	17.51	17.74	20.05	21.25	5.50	3.15	3.25	1.25
18	19.61	19.84	22.35	23.50	5.50	3.15	3.25	1.25
20	21.71	21.94	24.47	25.75	6.00	3.15	3.25	1.25
24	25.91	26.14	28.79	30.09	6.00	3.15	3.25	1.25

All dimensions are in inches unless noted otherwise.

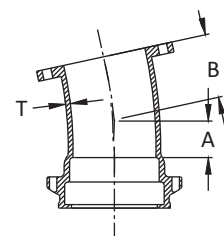
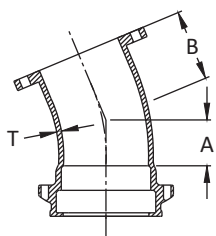
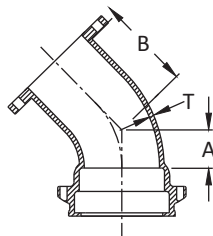
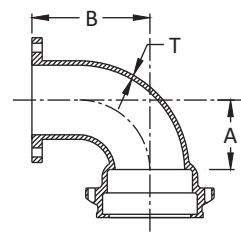
All weights are approximate in pounds unless noted otherwise.

PO X PO BENDS



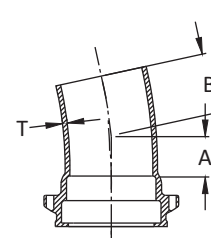
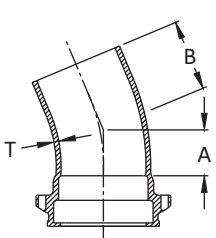
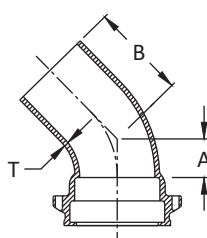
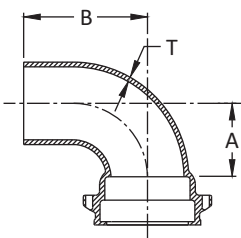
PO X PO		90° BENDS ($\frac{1}{4}$)		45° BENDS ($\frac{1}{8}$)		22.5° BENDS ($\frac{1}{16}$)		11.25° BENDS ($\frac{1}{32}$)	
SIZE	T	A	WT	A	WT	A	WT	A	WT
4	0.34	4.00	26	2.00	23	1.50	22	1.25	21
6	0.36	5.00	41	3.00	38	2.00	34	1.50	32
8	0.38	6.50	71	3.50	54	2.50	55	1.75	52
10	0.40	7.50	98	4.50	87	3.00	75	2.00	67
12	0.42	9.00	139	5.50	110	3.50	105	2.25	95
14	0.47	11.50	254	5.00	143	3.75	162	2.50	113
16	0.50	12.50	275	5.50	206	3.75	168	2.50	172
18	0.54	14.00	400	6.00	309	4.50	209	3.00	209
20	0.57	15.00	480	7.00	397	4.50	400	3.00	265
24	0.61	16.75	704	7.50	414	7.50	410	3.00	315

PO X FLANGE BENDS*



PO X FLANGE		90° BENDS ($\frac{1}{4}$)			45° BENDS ($\frac{1}{8}$)			22.5° BENDS ($\frac{1}{16}$)			11.25° BENDS ($\frac{1}{32}$)		
SIZE	T	A	B	WT	A	B	WT	A	B	WT	A	B	WT
4	0.34	4.00	6.50	33	2.00	4.00	21	1.50	4.00	25	1.25	4.00	24
6	0.36	5.00	8.00	47	3.00	5.00	42	2.00	5.00	44	1.50	5.00	30
8	0.38	6.50	9.00	76	3.50	5.50	60	2.50	5.50	64	1.75	5.50	61
10	0.40	7.50	11.00	130	4.50	6.50	93	3.00	6.50	90	2.00	6.50	80
12	0.42	9.00	12.00	158	5.50	7.50	122	3.50	7.50	112	2.25	7.50	94
14	0.47	11.50	14.00	231	5.00	7.50	162	3.75	7.50	174	2.50	7.50	170
16	0.50	12.50	15.00	350	5.50	8.00	275	3.75	8.00	228	2.50	8.00	228
18	0.54	14.00	16.50	409	6.00	8.50	350	4.50	8.50	340	3.00	8.50	350
20	0.57	15.00	18.00	480	7.00	9.50	420	4.50	9.00	380	3.00	9.00	390
24	0.61	16.75	22.00	630	7.50	11.00	450	4.50	11.00	420	3.00	11.00	430

PO X PE BENDS



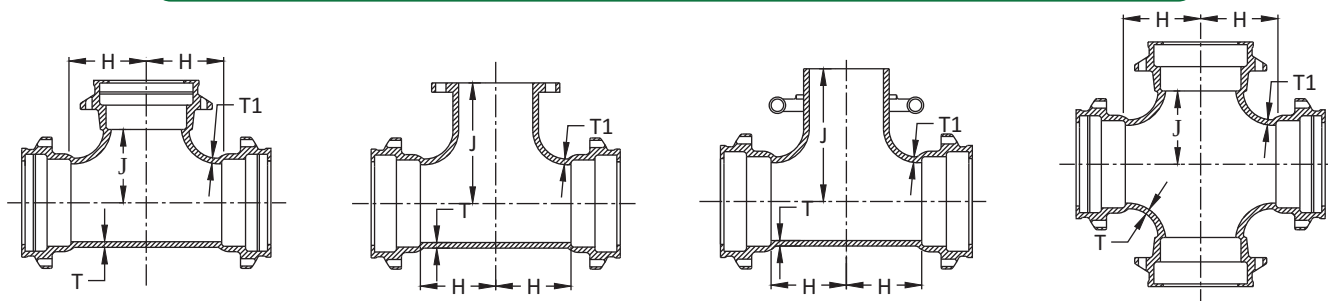
PO X PE		90° BENDS ($\frac{1}{4}$)			45° BENDS ($\frac{1}{8}$)			22.5° BENDS ($\frac{1}{16}$)			11.25° BENDS ($\frac{1}{32}$)		
SIZE	T	A	B	WT	A	B	WT	A	B	WT	A	B	WT
4	0.34	4.00	10.50	24	2.00	8.00	21	1.50	8.00	19	1.25	7.00	18
6	0.36	5.00	12.00	47	3.00	9.00	38	2.00	8.00	35	1.50	7.25	34
8	0.38	6.50	13.00	75	3.50	9.50	60	2.50	8.40	57	1.75	7.50	55

* not included in AWWA C153

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

TEES : PO X PO, PO X FLANGE, PO X SWIVEL HYDRANT & CROSSES



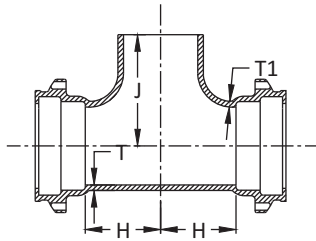
TEES & CROSSES			TEES : PO X PO			TEES : PO X FE*			TEES : PO X ST*			PO CROSSES		
SIZE	T	T1	H	J	WT	H	J	WT	H	J	WT	H	J	WT
4 X 4	0.34	0.34	4.00	4.00	40	4.50	6.50	47	---	---	---	4.00	4.00	55
6 X 4	0.36	0.34	4.00	5.00	50	4.50	8.00	60	---	---	---	---	---	---
6 X 6	0.36	0.36	5.00	5.00	59	5.50	8.00	69	6.00	9.50	71	5.00	5.00	74
8 X 4	0.38	0.34	4.00	6.50	75	4.50	9.00	81	---	---	---	---	---	---
8 X 6	0.38	0.36	5.00	6.50	88	5.50	9.00	87	6.00	10.50	87	5.00	6.50	103
8 X 8	0.38	0.38	6.50	6.50	99	6.50	9.00	115	---	---	---	6.50	6.50	115
10 X 4	0.40	0.34	4.00	7.50	95	4.50	11.00	97	---	---	---	4.00	7.50	116
10 X 6	0.40	0.36	5.00	7.50	103	5.50	11.00	114	7.00	12.50	100	---	---	---
10 X 8	0.40	0.38	6.50	7.50	122	6.50	11.00	133	---	---	---	6.50	7.50	150
10 X 10	0.40	0.40	7.50	7.50	134	7.50	11.00	165	---	---	---	7.50	7.50	160
12 X 4	0.42	0.34	4.00	8.75	122	4.50	12.00	125	---	---	---	---	---	---
12 X 6	0.42	0.36	5.00	8.75	126	5.50	12.00	131	7.00	13.50	138	---	---	---
12 X 8	0.42	0.38	6.50	8.75	148	6.50	12.00	166	---	---	---	6.50	8.75	171
12 X 10	0.42	0.40	7.50	8.75	161	7.50	12.00	142	---	---	---	7.50	8.75	176
12 X 12	0.42	0.42	8.75	8.75	192	8.75	12.00	210	---	---	---	8.75	8.75	216
14 X 6	0.47	0.36	6.50	10.50	176	---	---	---	---	---	---	6.50	10.50	189
14 X 8	0.47	0.38	---	---	---	---	---	---	---	---	---	7.50	10.50	204
14 X 10	0.47	0.40	8.50	10.50	195	---	---	---	---	---	---	8.50	10.50	222
14 X 12	0.47	0.42	9.50	10.50	196	---	---	---	---	---	---	9.50	10.50	239
14 X 14	0.47	0.47	10.50	10.50	209	---	---	---	---	---	---	10.50	10.50	270
16 X 6	0.50	0.36	6.50	11.50	221	6.50	15.00	236	6.50	15.00	229	6.50	11.50	234
16 X 8	0.50	0.38	7.50	11.50	257	7.50	15.00	269	---	---	---	7.50	11.50	245
16 X 10	0.50	0.40	8.50	11.50	232	8.50	15.00	310	---	---	---	8.50	11.50	268
16 X 12	0.50	0.42	9.50	11.50	288	9.50	15.00	348	---	---	---	9.50	11.50	274
16 X 14	0.50	0.47	10.50	11.50	349	10.50	15.00	342	---	---	---	10.50	11.50	322
16 X 16	0.50	0.50	12.50	12.50	460	11.50	15.00	355	---	---	---	12.50	12.50	417
18 X 6	0.54	0.36	6.50	12.50	320	6.50	15.50	301	6.00	17.00	260	---	---	---
18 X 8	0.54	0.38	7.50	12.50	325	7.50	15.50	319	---	---	---	7.50	12.50	363
18 X 10	0.54	0.40	8.50	12.50	344	8.50	15.50	337	---	---	---	---	---	---
18 X 12	0.54	0.42	9.50	12.50	385	---	---	---	---	---	---	---	---	---
18 X 14	0.54	0.47	10.50	12.50	352	10.50	15.50	393	---	---	---	---	---	---
18 X 16	0.54	0.50	11.50	12.50	362	11.50	15.50	420	---	---	---	---	---	---
18 X 18	0.54	0.54	14.00	14.00	550	---	---	---	---	---	---	---	---	---
20 X 6	0.57	0.36	6.50	14.00	355	6.50	17.00	341	7.00	17.50	400	---	---	---
20 X 10	0.57	0.40	9.00	14.00	369	9.00	17.00	420	---	---	---	---	---	---
20 X 12	0.57	0.42	10.00	14.00	457	---	---	---	---	---	---	---	---	---
20 X 14	0.57	0.47	11.00	14.00	484	11.00	17.00	474	---	---	---	---	---	---
20 X 16	0.57	0.50	12.00	14.00	610	12.00	18.00	498	---	---	---	---	---	---
20 X 18	0.57	0.54	13.00	14.00	639	13.00	18.00	528	---	---	---	---	---	---
20 X 20	0.57	0.57	15.00	15.00	644	---	---	---	---	---	---	---	---	---
24 X 6	0.61	0.36	7.00	16.00	450	7.00	19.00	420	7.00	19.50	525	---	---	---
24 X 8	0.61	0.38	8.00	16.00	492	---	---	---	---	---	---	---	---	---
24 X 10	0.61	0.40	9.00	16.00	520	9.00	19.00	468	---	---	---	---	---	---
24 X 12	0.61	0.42	10.00	16.00	541	10.00	19.00	503	---	---	---	---	---	---
24 X 14	0.61	0.47	11.00	16.00	715	11.00	19.00	531	---	---	---	---	---	---
24 X 16	0.61	0.50	12.00	16.00	755	12.00	19.00	555	---	---	---	---	---	---
24 X 18	0.61	0.54	13.00	16.00	708	---	---	---	---	---	---	---	---	---
24 X 20	0.61	0.57	14.00	16.00	845	---	---	---	---	---	---	---	---	---
24 X 24	0.61	0.61	17.00	17.00	884	---	---	---	---	---	---	17.00	17.00	1056

All dimensions are in inches unless noted otherwise.

All weights are approximate in pounds unless noted otherwise.

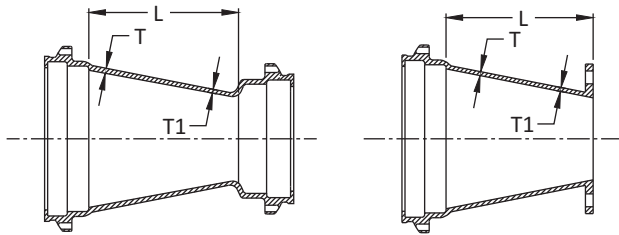
* not included in AWWA C153

TEES : PO X PE*



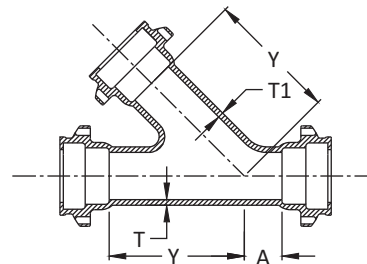
SIZE	T	T1	H	J	WT
6 X 6	0.36	0.36	5.00	11.50	55
8 X 6	0.38	0.36	5.00	12.50	75
12 X 6	0.42	0.36	5.50	15.50	130

REDUCERS : PO X PO, PO X FE



REDUCERS			PO X PO		PO X FE*	
SIZE	T	T1	L	WT	L	WT
6 x 4	0.36	0.34	4.00	30	6.00	32
8 x 4	0.38	0.34	5.00	42	7.00	46
8 x 6	0.38	0.36	4.00	43	6.00	47
10 x 4	0.40	0.34	7.00	53	9.00	55
10 x 6	0.40	0.36	5.00	58	7.00	59
10 x 8	0.40	0.38	4.00	62	6.00	61
12 x 4	0.42	0.34	9.00	70	11.00	78
12 x 6	0.42	0.36	7.00	77	9.00	73
12 x 8	0.42	0.38	5.00	80	7.00	74
12 x 10	0.42	0.40	4.00	82	6.00	95
14 x 6	0.47	0.36	9.00	84	11.00	121
14 x 8	0.47	0.38	7.00	85	9.00	128
14 x 10	0.47	0.40	5.00	87	7.00	127
14 x 12	0.47	0.42	4.00	104	6.00	144
16 x 6	0.50	0.36	11.00	138	13.00	133
16 x 8	0.50	0.38	9.00	137	11.00	141
16 x 10	0.50	0.40	7.00	130	9.00	158
16 x 12	0.50	0.42	5.00	135	7.00	172
16 x 14	0.50	0.47	4.00	139	6.00	196
18 x 8	0.54	0.38	13.00	140	16.00	157
18 x 10	0.54	0.40	10.00	142	14.00	175
18 x 12	0.54	0.42	7.00	167	12.00	215
18 x 14	0.54	0.47	6.00	217	11.50	234
18 x 16	0.54	0.50	5.00	202	10.50	246
20 x 10	0.57	0.40	14.00	180	16.00	234
20 x 12	0.57	0.42	12.00	205	---	---
20 x 14	0.57	0.47	10.00	233	13.50	249
20 x 16	0.57	0.50	7.00	250	11.50	272
20 x 18	0.57	0.54	4.00	248	---	---
24 x 12	0.61	0.42	16.00	308	18.00	262
24 x 14	0.61	0.47	14.00	340	17.50	315
24 x 16	0.61	0.50	12.00	324	15.50	328
24 x 18	0.61	0.54	10.00	390	---	---
24 x 20	0.61	0.57	7.00	421	---	---

45° PO LATERALS*



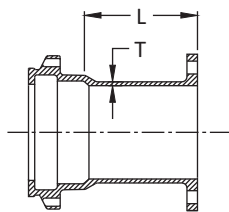
SIZE	T	T1	A	Y	WT
4 X 4	0.34	0.34	2.50	11.00	55
6 X 4	0.36	0.34	3.00	13.00	76
6 X 6	0.36	0.36	3.00	13.00	85
8 X 4	0.38	0.34	3.50	16.00	89
8 X 6	0.38	0.36	3.50	16.00	125
8 X 8	0.38	0.38	3.50	16.00	140
10 X 4	0.40	0.34	3.50	19.00	144
10 X 6	0.40	0.36	3.50	19.00	154
10 X 8	0.40	0.38	3.50	19.00	160
10 X 10	0.40	0.40	3.50	19.00	170
12 X 4	0.42	0.34	4.50	22.50	224
12 X 6	0.42	0.36	4.50	22.50	236
12 X 8	0.42	0.38	4.50	22.50	259
12 X 10	0.42	0.40	4.50	22.50	282
12 X 12	0.42	0.42	4.50	22.50	300
14 X 6	0.47	0.36	0.00	19.50	236
14 X 8	0.47	0.38	1.50	21.00	255
14 X 10	0.47	0.40	3.00	22.50	325
14 X 14	0.47	0.47	6.00	25.00	475
16 X 6	0.50	0.36	0.00	21.00	281
16 X 8	0.50	0.38	1.00	22.50	305
16 X 12	0.50	0.42	3.50	25.00	346
16 X 16	0.50	0.50	6.00	28.00	380
18 X 18	0.75	0.75	7.00	29.00	812

* not included in AWWA C153

All dimensions are in inches unless noted otherwise.

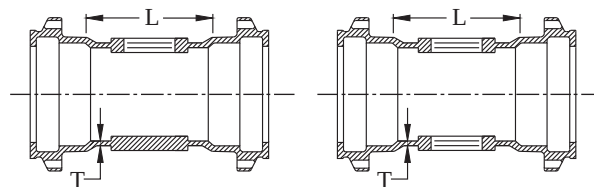
All weights are approximate in pounds unless noted otherwise.

ADAPTER : PO X FLANGE*



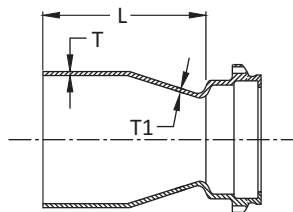
SIZE	L	T	WT
4	3.50	0.34	22
6	3.50	0.36	34
8	3.50	0.38	46
10	3.50	0.40	59
12	3.50	0.42	98
14	5.00	0.47	113
16	5.00	0.50	180
24	5.00	0.61	308

PO TAPPED TEES & CROSSES



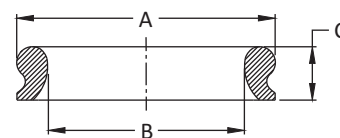
SIZE	T	L	TAP SIZE	WT
4	0.34	6.00	2.0	35
6	0.36	6.00	2.0	45
8	0.38	6.00	2.0	61
10	0.40	6.00	2.0	100
12	0.42	6.00	2.0	140

REDUCERS : PE X SMALL END PO*



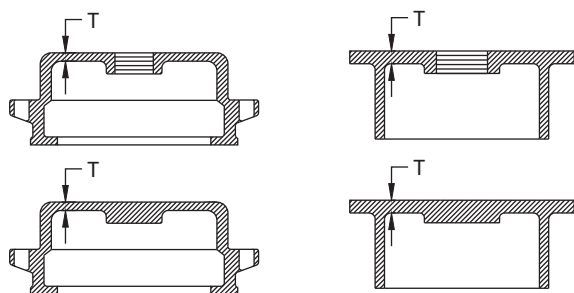
SIZE	T	T1	L	WT
6 x 4	0.37	0.35	9.50	27
8 x 4	0.39	0.35	9.50	29
8 x 6	0.39	0.37	9.50	37
12 x 6	0.43	0.37	12.50	63
12 x 8	0.43	0.39	10.50	64

PO TRANSITION GASKETS*



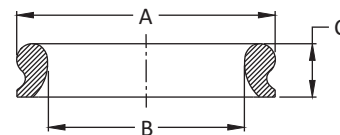
SIZE	A	B	C	WT
4	5.74	4.18	1.00	0.50
6	7.86	6.31	1.10	0.70
8	10.15	8.32	1.29	0.80
10	12.22	10.30	1.36	1.00
12	14.34	12.70	1.45	1.20

PO SOLID & TAPPED CAPS & PLUGS*



SIZE	T	MAX TAP	CAPS WT	PLUGS WT
4	0.37	2	13	12
6	0.39	2	20	17
8	0.41	2	30	29
10	0.44	2	40	36
12	0.46	2	62	47
14	0.60	2 ½	70	74
16	0.83	2 ½	156	144
24	0.90	3	212	202

PO GASKETS*



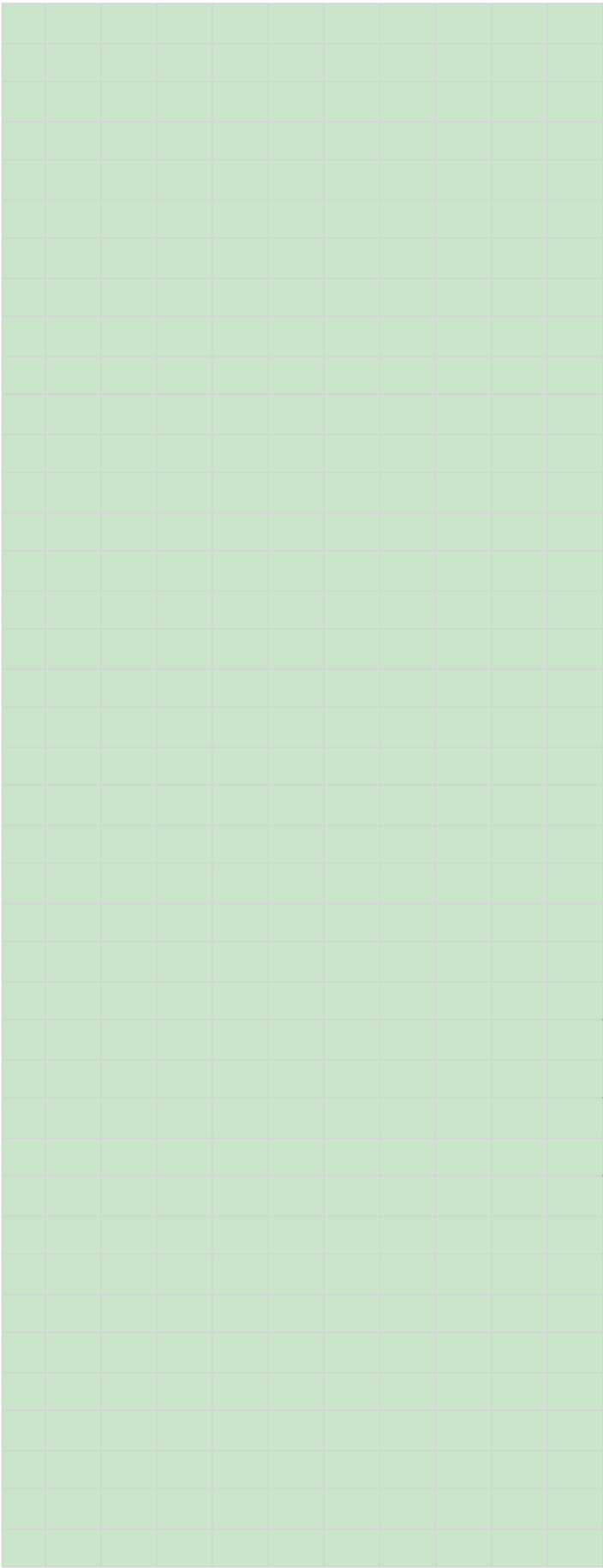
SIZE	A	B	C	WT
4	5.74	4.54	1.00	0.40
6	7.86	6.64	1.00	0.60
8	10.15	8.73	1.21	0.70
10	12.22	10.80	1.30	0.90
12	14.34	12.92	1.30	1.00
14	16.90	15.90	1.65	1.30
16	19.01	17.01	1.65	1.45
18	21.13	19.13	1.65	1.60
20	23.25	21.25	1.65	1.75
24	27.48	25.48	1.65	1.95

All dimensions are in inches unless noted otherwise.

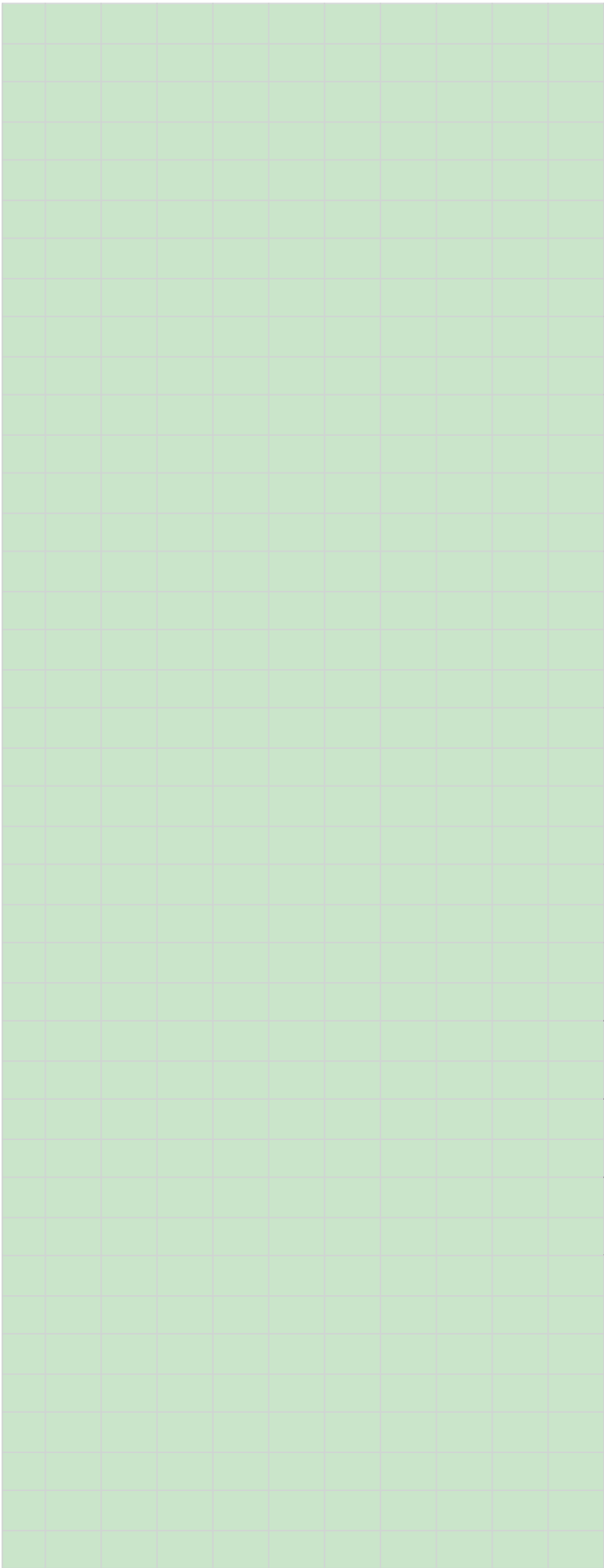
All weights are approximate in pounds unless noted otherwise.

* not included in AWWA C153

GENERAL NOTES

GENERAL NOTES



SIP Industries

Quality Manufacturers Since 1960



PRODUCT LINE

AWWA DI Fittings & Accessories

- C153 Compact MJ Fittings and Acc. 2" - 64"
- C110 Full Body MJ Fittings 2" - 64"
- C153 Trim Tyton® Push-On Fittings 4" - 24"
- C110 Flange Fittings 2" - 64"
- MJ x MJ Adapter for Connecting MJ Bells 3" - 24"
- Stainless Steel & Blue T-Bolts
- Made in India, China & Mexico
- Bare, Cement, Zinc, FBE & Other Linings

Joint Restraint System

- EZD Joint Restraint for DI Pipe 3" - 48"
- EZDTP Joint Restraint Tandem for DI Pipe 3" - 48"
- EZDPTP Joint Restraint for Push-On Joints DI Pipe 3" - 48"
- Ductile Iron Retainer Glands 3" - 30"
- FAR / FAH Flange Adapter for DI Pipe 3" - 48"
- EZFA Restrained Flange Adapter for DI and PVC Pipe 3" - 36"
- EZPVC Joint Restraint for PVC Pipe 3" - 36"
- ULTRA Joint Restraint for PVC Pipe 4" - 12"
- EZPVCPTP Joint Restraint for Push-On Joints PVC Pipe 14" - 36"
- PTPVC Pipe to Pipe Restraint 4" - 48"
- PTPDF Pipe to MJ Fittings Restraint 4" - 48"
- PTPFC Pipe to PVC Fittings Restraint 4" - 12"
- Made in China & USA
- EZ Shield or Shop Coating

Municipal Construction Castings

- Manhole Rings and Cover
- Frames and Grates
- Valve Boxes and Service Boxes
- Water Meter Covers and Boxes
- Cleanout and Monument Boxes
- Detectable Warning Plates
- Extension Rings
- Trench Grates and Tree Grates
- Made in India & USA

Fabrication Products for DI Pipe

- High Hub Flanges Class 150 and 250. 3" - 64"
- Threaded Bell Flanges 3" - 48"
- Anchor Flanges 3" - 60"
- Filler Flanges 4" - 30"

Other Products and Services

- All Thread Rod
- Pipe Lube and Hydraulic Cement
- Socket Clamps and Lugs
- Flange Packs
- OEM Castings



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