

PC-U2000

Dated November 15, 2000

Tyler/Union Utilities Catalog



**UNION FOUNDRY
COMPANY**

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Union Foundry Company • P.O.Box 309 • Anniston, Alabama 36202 • (256) 236-7601



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Item	Page
------	------

Pressure Pipe Fittings:

Compact Flanged.....	28-29
Flanged C110	30-35
Mechanical Joint C110	11-21
Mechanical Joint C153	2-9
Protecto 401 Lined Sewer Fittings	36-44
Swivel Hydrant Fittings.....	3-5, 20, 21, 25
Tapping Sleeves, MJ	10
Union-Tite Push-On C153	22-27

Sample Specifications:

Compact Flanged.....	28
Flanged C110	30
Mechanical Joint C110	11
Mechanical Joint C153	2
Protecto 401 Lined Sewer Fittings	36, 41
Tapping Sleeves	10
Union-Tite Push-On C153	22

Special Information:

Terms and Conditions of Sale	57, 58
Adapter Flange Assembly	59
Flange Data	1, 61
Questions Frequently Asked	62, 63
Tap Locations for Flanged Fittings.....	35
Tapping Sleeves, Excavation	65
Cutting-In Sleeve, Installation	8
MJ Gasket	64
MJ Transition Gasket	65
Offsets	60
Pipe O.D.'s	61
Retainer Gland Data	8, 20, 59
MJ Nuts and Bolt	64

Item	Page
------	------

Municipal Castings:

Boxes:

Service

Screw Type	45
------------------	----

Valve

Adjustable, O-Ring	52, 53
Two-Piece (Screw Type)	46, 47
Two-Piece (Slip Type)	48, 49
Three-Piece (Screw Type)	50, 51

Lids

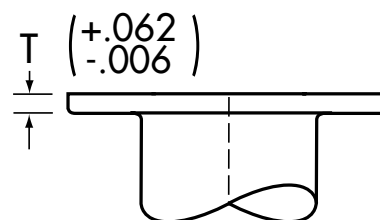
Drop & MWW	54
------------------	----

Covers

Meter Box	56
-----------------	----

Risers	55
--------------	----

Wrenches	47, 54, 56
----------------	------------



**Flange Thickness of SSB D.I. Class 350
MJxFlange Fittings**

Size	T	Size	T
3	.60	14	.87
4	.63	16	.90
6	.63	18	.93
8	.70	20	.96
10	.75	24	1.00
12	.81		

NOTICE: Weights published in this catalog are for shipping purposes only. Actual weights may vary because some fittings are produced in both foundries. All fittings are made in the USA and meet the AWWA standards to which they are designed.

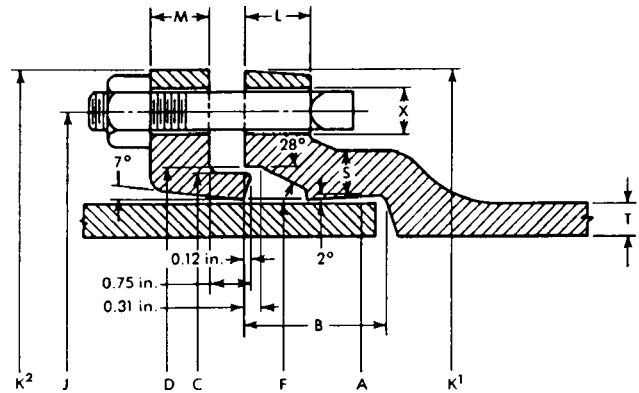
Compact flanged fittings are made to manufacturer's standards, incorporating AWWA C153 wall thickness and AWWA C110 laying lengths.

For weights of specific fittings, please contact Tyler Pipe or Union Foundry Company.

SAMPLE SPECIFICATIONS

3" THRU 24" MECHANICAL JOINT DUCTILE IRON FITTINGS shall be produced in the USA in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11. All Ductile Iron Mechanical Joint (Only) Fittings are rated for 350 PSI working pressure, unless otherwise indicated.

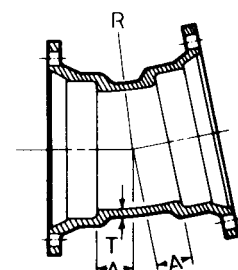
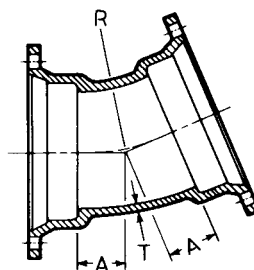
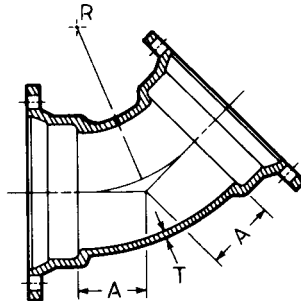
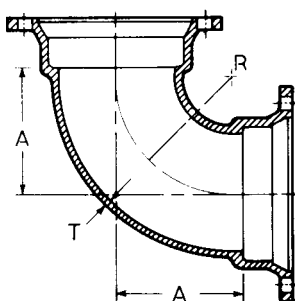
NOTE: Fittings are cement-lined and seal-coated in accordance with ANSI/AWWA C104/A21.4; also available double cement-lined or bare. All coated fittings meet requirements of NSF-61. See list price sheet for details.



JOINT DIMENSIONS IN INCHES

Size	A Dia.	B	C Dia.	D Dia.	F Dia.	J Dia.	K¹ Dia.	K² Dia.	L	M	S	T	X Dia.	BOLTS	
														Size	No.
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	.58	.62	.39	.33	3/4	5/8x3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	.60	.75	.39	.34	7/8	3/4x3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	.63	.88	.43	.36	7/8	3/4x3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	12.31	13.37	.66	1.00	.45	.38	7/8	3/4x3 1/2	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	.70	1.00	.47	.40	7/8	3/4x3 1/2	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	.73	1.00	.49	.42	7/8	3/4x3 1/2	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	.79	1.25	.56	.47	7/8	3/4x4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	.85	1.31	.57	.50	7/8	3/4x4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	.68	.54	7/8	3/4x4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.08	1.02	1.44	.69	.57	7/8	3/4x4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	.75	.61	7/8	3/4x4 1/2	16

BENDS



90° Bends (1/4)

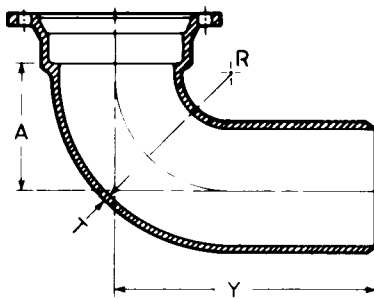
45° Bends (1/8)

22 1/2° Bends (1/16)

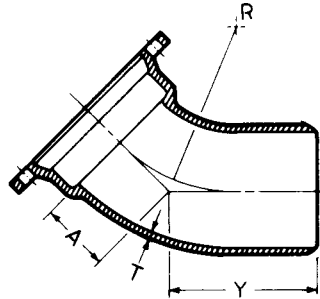
11 1/4° (1/32)

Size	Dimensions				Weight		Dimensions				Weight				Weight
	T	A	R				A	R							
3	.34	4.5	4.0		20		2.00	3.62		15		1.25	7.62		15
4	.35	5.0	4.5		26		2.49	4.81		21		1.55	10.70		20
6	.37	6.5	6.0		48		3.50	7.25		37		1.81	13.26		33
8	.39	7.5	7.0		68		4.00	8.44		51		2.06	15.80		48
10	.41	9.5	9.0		136		5.01	10.88		67		2.32	18.36		61
12	.43	10.5	10.0		141		5.98	13.25		90		2.56	20.90		79
14	.51	12.0	11.5		220		5.50	12.06		148		2.59	21.25		133
16	.52	13.0	12.5		264		5.98	13.25		179		2.62	21.50		159
18	.59	15.5	14.0		410		7.50	14.50		292		7.50	60.94		320
20	.60	17.0	15.5		505		8.00	16.88		364		8.50	71.07		346
24	.62	20.0	18.5		695		9.00	18.12		481		9.00	76.12		457

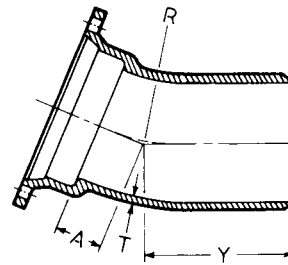
BENDS



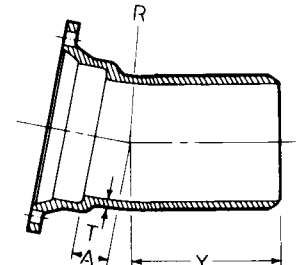
90° Bend MJ x PE (1/4)



45° Bend MJ x PE (1/8)

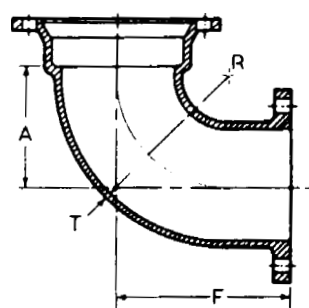


22 1/2° Bend MJ x PE (1/16)

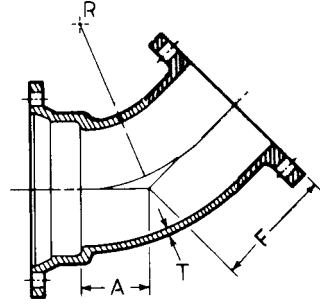


11 1/4° Bend MJ x PE (1/32)

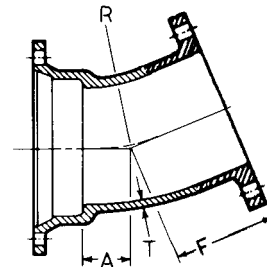
Size	T	Dimensions				Weight	Dimensions				Weight	Dimensions				Weight	Dimensions				Weight
		A	Y	R			A	Y	R			A	Y	R			A	Y	R		
3	.34	4.5	10.0	4.0	20	2.0	7.5	3.62	17	1.50	7.00	4.98	16	1.25	6.75	7.62	15				
4	.35	5.0	10.5	4.5	25	2.5	8.0	4.81	22	1.82	7.32	6.66	20	1.55	7.05	10.70	19				
6	.37	6.5	12.0	6.0	45	3.5	9.0	7.25	37	2.58	8.08	13.50	34	1.80	7.30	13.26	32				
8	.39	7.5	13.0	7.0	65	4.0	9.5	8.44	56	2.84	8.34	11.80	50	2.05	7.55	15.80	44				
10	.41	9.5	15.0	9.0	109	5.0	10.5	10.88	83	3.35	8.85	14.35	66	2.31	7.81	18.36	60				
12	.43	10.5	16.0	10.0	135	6.0	11.5	13.25	108	3.86	9.36	16.90	87	2.56	8.06	20.90	76				
14	.51	12.0	20.0	11.5	220	5.5	13.5	12.06	165	3.93	11.93	17.25	152	2.59	10.59	21.25	137				
16	.52	13.0	21.0	12.5	254	6.0	14.0	13.25	206	3.98	11.98	17.50	181	2.62	10.62	21.50	161				
24	.62	17.0	25.0	15.58	710	7.5	16.2	14.69	460	9.00	17.00	37.69	455	9.00	17.00	76.12	475				



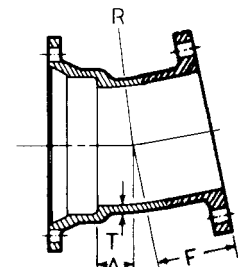
90° Bend MJ x Flange
(1/4)



45° Bend MJ x Flange
(1/8)



22 1/2° Bend MJ x Flange
(1/16)



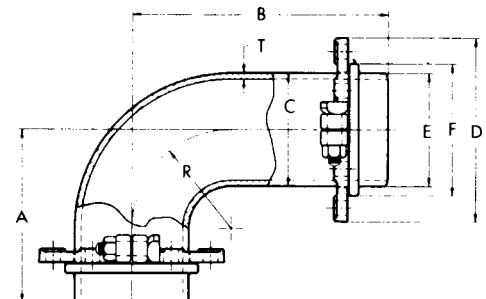
11 1/4° Bend MJ x Flange
(1/32)

Size	T	Dimensions				Weight	Dimensions				Weight	Dimensions				Weight	Dimensions				Weight
		A	R	F			A	R	F			A	R	F			A	R	F		
3	.34	4.5	4.0	5.5	21	...	...	..	..	...	...	..	..	...	...	..	..	...	...		
4	.35	5.0	4.5	6.5	28	2.50	3.56	4.0	34	1.75	3.81	4.0	34	1.50	5.12	4.0	19				
6	.37	6.5	6.0	8.0	46	3.25	5.49	5.0	57	2.25	6.35	5.0	57	1.50	5.12	5.0	30				
8	.39	7.5	7.0	9.0	73	4.25	7.93	5.5	83	2.50	7.62	5.5	83	1.75	7.70	5.5	50				
10	.41	9.5	9.0	11.0	111	5.00	9.76	6.5	122	3.00	10.16	6.5	122	2.00	10.25	6.5	75				
12	.43	10.5	10.0	12.0	153	6.00	12.19	7.5	159	3.50	12.70	7.5	159	2.25	12.82	7.5	88				
14	.51	12.0	11.5	14.0	227	5.50	10.85	8.5	207												
16	.52	13.0	12.5	15.0	280	6.00	12.02	9.5	290												

90° Swivel x Swivel Hydrant Ell

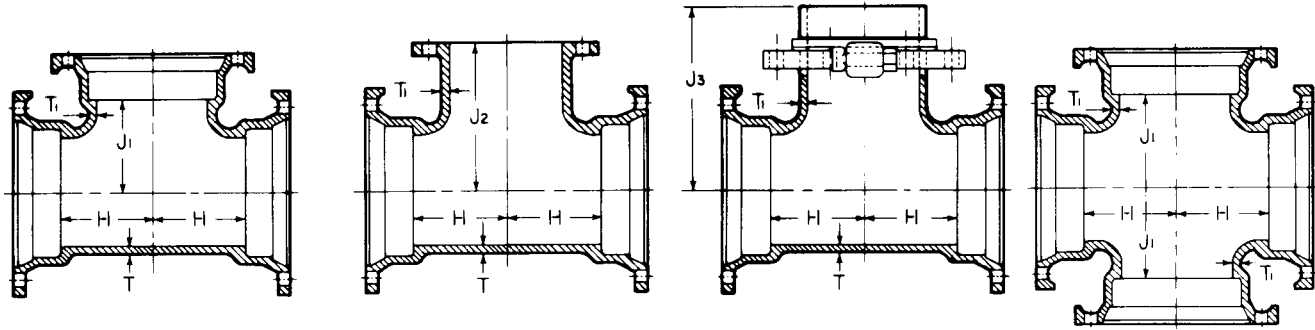
Size	T	A	B	C	Dimensions			R	*Weight
					D	E	F		
6	.37	10.5	15.5	6.90	11.2	6.81	7.98	6.0	69

* Weight includes two swivel glands.



TEES

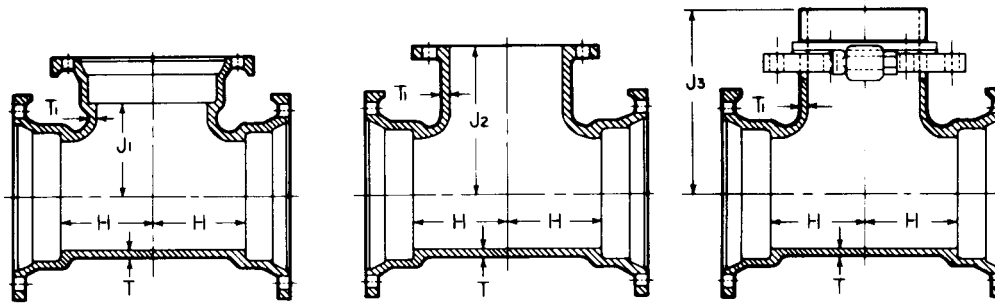
CROSS



MJ Tee		MJ x FE Tee				MJ x Swivel Tee			Cross	
Size	T	T¹	H	Dimensions		J³	MJ	MJxFE	Weights	Cross
				J¹	J²				MJxS†	
3	.34	.34	3.5	3.50	5.5	...	26	28	...	33
4x3	.35	.34	3.5	4.00	6.5	...	32	34	...	40
4	.35	.35	4.0	4.00	6.5	...	35	38	...	42
6x3	.37	.34	3.5	5.00	8.0	...	47	51	...	...
6x4	.37	.35	4.0	5.00	8.0	...	51	54	...	62
6	.37	.37	5.0	5.00	8.0	10.50	60	68	77	80
8x3	.39	.34	4.0	6.50	9.0	...	68	...	...	...
8x4	.39	.35	4.5	6.50	9.0	...	71	79	...	84
8x6	.39	.37	5.5	6.50	9.0	11.50	80	86	99	108
8	.39	.39	6.5	6.50	9.0	11.50	90	102	116	115
10x3	.41	.34	4.0	7.50	11.0	...	83	...	...	...
10x4	.41	.35	4.5	7.50	11.0	...	83	89	...	98
10x6	.41	.37	5.5	7.50	11.0	13.00	93	110	119	118
10x8	.41	.39	6.5	7.50	11.0	13.00	113	115	129	138
10	.41	.41	7.5	7.50	11.0	...	120	144	...	155
12x3	.43	.34	4.0	8.75	12.0	...	100	...	...	...
12x4	.43	.35	4.5	8.75	12.0	...	104	117	...	123
12x6	.43	.37	5.5	8.75	12.0	14.25	115	133	138	140
12x8	.43	.39	6.5	8.75	12.0	14.25	123	126	149	155
12x10	.43	.41	7.5	8.75	12.0	...	153	174	...	187
12	.43	.43	8.75	8.75	12.0	...	178	198	...	212
14x6	.51	.44	6.5	10.50	14.0	16.00	183	205	211	210
14x8	.51	.45	7.5	10.50	14.0	...	206	...	...	231
14x10	.51	.46	8.5	10.50	14.0	...	229	244	...	255
14x12	.51	.47	9.5	10.50	14.0	...	235	284	...	269
14	.51	.51	10.5	10.50	14.0	...	281	305	...	299
16x6	.52	.45	6.5	11.50	15.0	17.00	229	239	248	250
16x8	.52	.46	7.5	11.50	15.0	...	248	260	...	264
16x10	.52	.47	8.5	11.50	15.0	...	265	287	...	286
16x12	.52	.48	9.5	11.50	15.0	...	281	312	...	310
16x14	.52	.51	10.5	11.50	15.0	...	317	348	...	...
16	.52	.52	11.5	11.50	15.0	...	361	374	...	410

† Weights include swivel gland

TEES (Continued)



MJ Tee

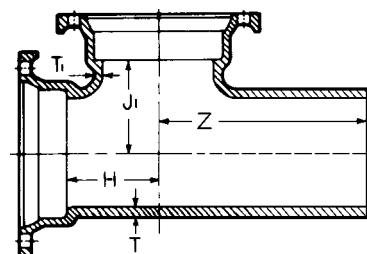
MJ x FE Tee

MJ x Swivel Tee

Size	T	T ¹	H	Dimensions			MJ	Weights	
				J ¹	J ²	J ³		MJxFE	†MJxS
18x6	.59	.44	6.5	12.5	15.5	18.0	275	261	278
18x8	.59	.45	7.5	12.5	...	...	280	351	...
18x10	.59	.47	8.5	12.5	...	...	286	...	...
18x12	.59	.49	9.5	12.5	...	...	370	...	...
18x14	.59	.56	10.5	12.5	...	...	415	...	...
18x16	.59	.57	11.5	12.5	...	...	445	...	...
18	.59	.59	12.5	12.5	...	...	490	...	...
20x6	.60	.44	7.0	14.0	17.0	19.5	335	362	358
20x8	.60	.45	8.0	14.0	...	...	383	...	...
20x10	.60	.47	9.0	14.0	...	...	410	...	...
20x12	.60	.49	10.0	14.0	...	...	432	...	...
20x14	.60	.56	11.0	14.0	...	...	475	...	...
20x16	.60	.57	12.0	14.0	...	...	530	...	...
20x18	.60	.59	13.0	14.0	...	...	560	...	...
20	.60	.60	14.0	14.0	...	...	605	...	...
24x6	.62	.44	7.0	16.0	19.0	21.5	448	451	461
24x8	.62	.45	8.0	16.0	...	...	475	...	...
24x10	.62	.47	9.0	16.0	...	...	516	...	...
24x12	.62	.49	10.0	16.0	...	...	549	580	...
24x14	.62	.56	11.0	16.0	...	...	585	...	...
24x16	.62	.57	12.0	16.0	...	...	625	744	...
24x18	.62	.59	13.0	16.0	...	...	675	...	...
24x20	.62	.60	15.0	17.0	...	...	740	...	...
24	.62	.62	17.0	17.0	...	...	947	...	...

† Weights include swivel gland.

MJ x FE Flange Dimensions are on Page 1.



MJ x PE x MJ Tee

Size	T	Dimensions				Weights
		T ¹	H	J ¹	Z	
6	.37	.37	5.0	5.0	11.5	57
8x6	.39	.37	5.5	6.5	11.5	79
8	.39	.39	6.5	6.5	12.5	83
10	.41	.41	7.5	7.5	13.0	133

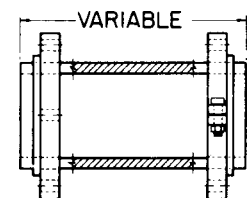
MJ GLANDS



Glands

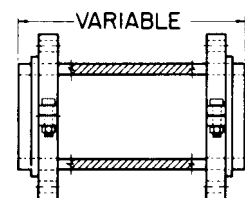
Size	Weight	Size	Weight
3	3	12	12
4	4	14	16
6	6	16	20
8	8	18	25
10	11	20	29
		24	38

Swivel Glands, page 21
Retainer Glands, page 8



Swivel x Solid Adapter
with Swivel Gland

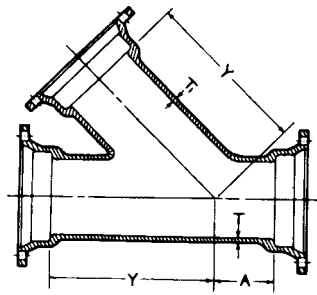
Size by Laying Length	Wall Thickness	Weight
6x13	.37	46
6x18	.37	58
6x24	.37	74
8x12	.39	52



Swivel x Swivel Adapter

Size by Laying Length	Wall Thickness	Weight
6x12	.37	28
6x18	.37	49
6x24	.37	52

WYES



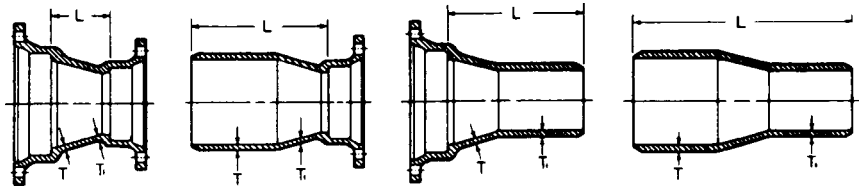
*Wyes

Size	A	Dimensions Y	T	T ¹	Weights
3	2.0	8.5	.34	.34	36
4x3	1.0	9.0	.35	.34	40
4	2.5	9.5	.35	.35	45
6x4	1.5	11.0	.37	.35	67
6	3.0	13.0	.37	.37	93
8x4	0.5	13.0	.39	.35	93
8x6	2.0	14.5	.39	.37	113
8	3.5	16.0	.39	.39	136
10x4	0.0	15.0	.41	.35	118
10x6	1.0	16.0	.41	.37	136
10x8	2.5	17.0	.41	.39	170
10	3.5	19.0	.41	.41	199
12x4	0.0	16.5	.43	.35	150
12x6	1.5	18.5	.43	.37	186
12x8	1.5	18.5	.43	.39	188
12x10	3.0	20.0	.43	.41	223
12	4.5	22.5	.43	.43	272
†14	6.0	25.0	.51	.51	474
16x6	0.0	21.0	.52	.45	300
16x8	0.5	22.5	.52	.46	349
†16x12	3.5	25.0	.52	.48	453
†16	6.5	28.0	.52	.52	575

* Not included in AWWA C153.

† Rated at 250 psi.

REDUCERS



MJ x MJ

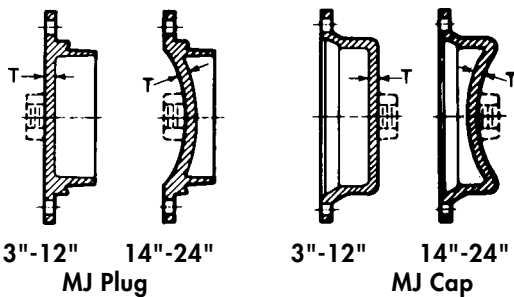
MJSEB x PE

MJLEB x PE

PE x PE

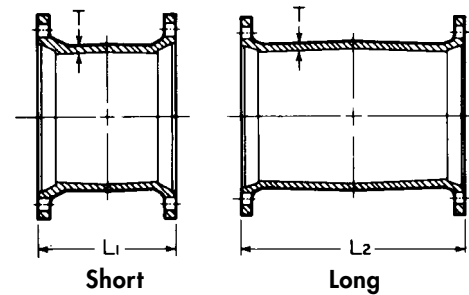
Size	T	T ¹	Dimensions		LEB L	PE L	MJ	Weights		PE
			MJ L	SEB L				SEB	LEB	
4x3	.35	.34	4.0	9.5	9.5	15.0	18	17	18	17
6x3	.37	.34	5.0	10.5	10.5	16.0	26	25	27	20
6x4	.37	.35	4.0	9.5	9.5	15.0	27	26	27	26
8x4	.39	.35	5.0	10.5	10.5	16.0	36	34	36	33
8x6	.39	.37	4.0	9.5	9.5	15.0	40	37	39	41
10x4	.41	.35	7.0	12.5	12.5	18.0	47	46	51	...
10x6	.41	.37	5.0	10.5	10.5	16.0	47	48	52	48
10x8	.41	.39	4.0	9.5	9.5	15.0	54	52	52	47
12x4	.43	.35	9.0	14.5	14.5	20.0	67	61	68	60
12x6	.43	.37	7.0	12.5	12.5	18.0	67	58	66	58
12x8	.43	.39	5.0	10.5	10.5	16.0	64	62	65	60
12x10	.43	.41	4.0	9.5	9.5	15.0	78	62	65	59
14x6	.51	.44	9.0	17.0	14.5	22.5	110	107	112	...
14x8	.51	.45	7.0	15.0	12.5	20.5	104	107	108	...
14x10	.51	.46	5.0	13.0	10.5	18.5	100	102	100	...
14x12	.51	.47	4.0	12.0	9.5	17.5	100	101	100	100
16x6	.52	.45	11.0	19.0	16.5	24.5	132	131	144	128
16x8	.52	.46	9.0	17.0	14.5	22.5	132	128	136	132
16x10	.52	.47	7.0	15.0	12.5	20.5	128	124	128	123
16x12	.52	.48	5.0	13.0	10.5	18.5	125	123	119	113
16x14	.52	.51	4.0	12.0	12.0	20.0	140	139	138	133
18x8	.59	.45	14.0	22.0	19.5	27.5	201	180	195	...
18x10	.59	.47	12.0	20.0	17.5	25.5	196	180	185	...
18x12	.59	.49	10.0	18.0	15.5	23.5	185	170	190	...
18x14	.59	.56	8.0	16.0	16.0	24.0	190	181	200	...
18x16	.59	.57	7.0	15.0	15.0	23.0	196	180	190	...
20x10	.60	.47	14.0	22.0	19.0	27.5	225	210	210	...
20x12	.60	.49	12.0	20.0	17.5	25.5	210	208	210	...
20x14	.60	.56	10.0	18.0	18.0	26.0	208	198	205	...
20x16	.60	.57	8.0	16.0	16.0	24.0	225	215	222	...
20x18	.60	.59	7.0	15.0	15.0	23.0	233	220	...	...
24x12	.62	.49	16.0	24.0	21.5	29.5	320	300	310	...
24x14	.62	.56	14.0	22.0	22.0	30.0	315	325	335	...
24x16	.62	.57	12.0	20.0	20.0	28.0	325	319	310	...
24x18	.62	.59	10.0	18.0	18.0	26.0	325	310	...	...
24x20	.62	.60	8.0	16.0	16.0	24.0	315	305	...	...

SOLID & TAPPED PLUGS & CAPS



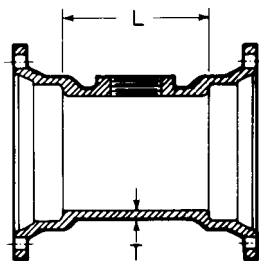
Size	Dimensions		Max. Tap	Weights	
	T			Plugs	Caps
3	.46		2	8	8
4	.46		2	8	10
6	.46		2	18	17
8	.46		2	26	25
10	.56		2	36	35
12	.56		2	46	44
14	.62		2	79	85
16	.62		2	100	93
18	.65		2	130	122
20	.66		2	160	152
24	.68		2	202	202

SOLID SLEEVES



Size	T	Dimensions		Weights	
		L ¹	L ²	Short	Long
3	.34	7.5	12	13	19
4	.35	7.5	12	17	24
6	.37	7.5	12	28	39
8	.39	7.5	12	38	53
10	.41	7.5	12	49	68
12	.43	7.5	12	56	82
14	.56	9.5	15	111	141
16	.57	9.5	15	137	172
18	.68	9.5	15	160	200
20	.69	9.5	15	212	269
24	.75	9.5	15	272	377

TAPPED TEE

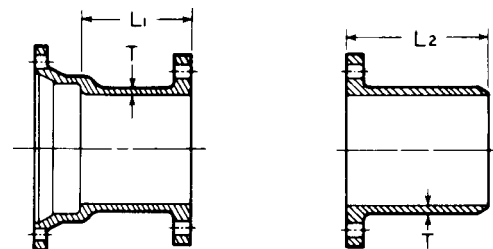


MJ Tapped Tee (2" Tap)

Size	Dimensions		Max. Tap	Weights
	T	L		
3	.34	6	2	19
4	.35	6	2	23
6	.37	6	2	37
8	.39	6	2	53
10	.41	6	2	68
12	.43	6	2	88
16	.52	6	2	164

MJ x FE Flange
Dimensions are
on Page 1.

ADAPTERS

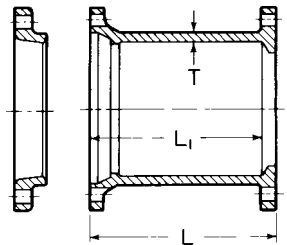


MJ x FE

FE x PE

Size	T	Dimensions		Weights	
		L ¹	L ²	MJxFE	FExPE
3	.34	6	12	20	...
4	.35	6	12	24	24
6	.37	6	12	36	36
8	.39	6	12	56	52
10	.41	6	12	75	69
12	.43	6	12	80	88
14	.51	6	12	126	...
16	.52	6	12	166	149
20	.60	6	...	275	...

DUAL PURPOSE CUTTING-IN SLEEVE

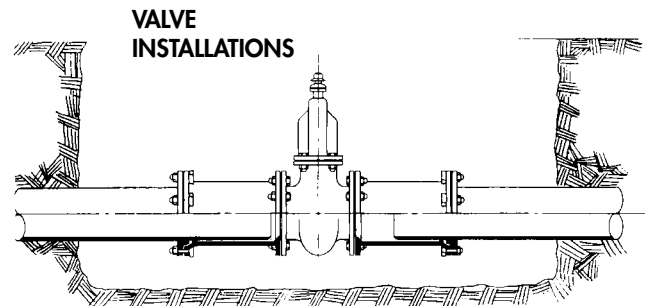
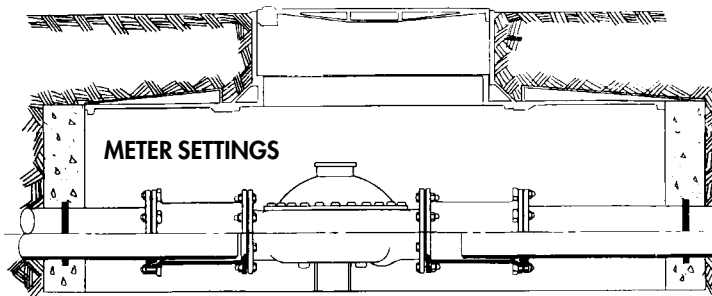


MJ x FE
Cutting-In Sleeve with Dual Purpose Accessories

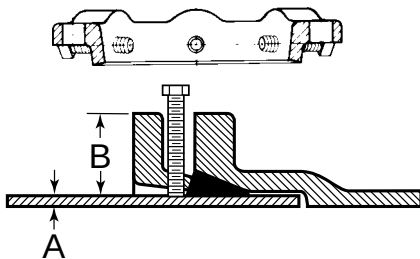
Size	For Pipe Size	Dimensions		T	Shipping Wt. Assembled
		L	L ¹		
4	4.80-5.00 O.D.	10	9.5	.35	33
6	6.90-7.10 O.D.	10	9.5	.37	50
8	9.05-9.30 O.D.	10	9.5	.39	67
10	11.10-11.40 O.D.	10	9.5	.41	122
12	13.20-13.50 O.D.	10	9.5	.43	157

Flanged ends are faced and drilled per ANSI/AWWA C110/A21.10. Mechanical joint ends are designed to receive both standard and oversize gray or ductile iron pipe as shown above.

TYPICAL CUTTING-IN SLEEVE INSTALLATIONS



*RETAINER GLAND ASSEMBLY



See Installations Instructions Page 51

Size	Pressure Rating, psi	Gland O.D. B	Pipe O.D. A	D.I. Pipe Wall Class	No of Set Screws	Size of Set Screws	Gland Weight	Weight w/Access.
3	350	7.69	3.96	50-56	4	5/8x2	4	7
4	350	9.12	4.80	50-56	4	5/8x2	5	13
6	350	11.12	6.90	50-56	6	5/8x2	9	20
8	250	13.37	9.05	50-56	9	5/8x2	13	25
10	250	15.62	11.10	50-56	12	5/8x2	17	33
12	150	17.88	13.20	50-56	16	5/8x2	20	38
14	250	20.25	15.30	53-56	20	5/8x2 1/2	44	55
16	200	22.50	17.40	53-56	24	5/8x2 1/2	54	64
18	200	24.75	19.50	53-56	24	5/8x2 1/2	62	72
20	200	27.00	21.60	53-56	28	5/8x3	76	91
24	150	31.50	25.80	53-56	32	5/8x3	103	118

* Not included in AWWA C110

Pipe Wall Thickness:

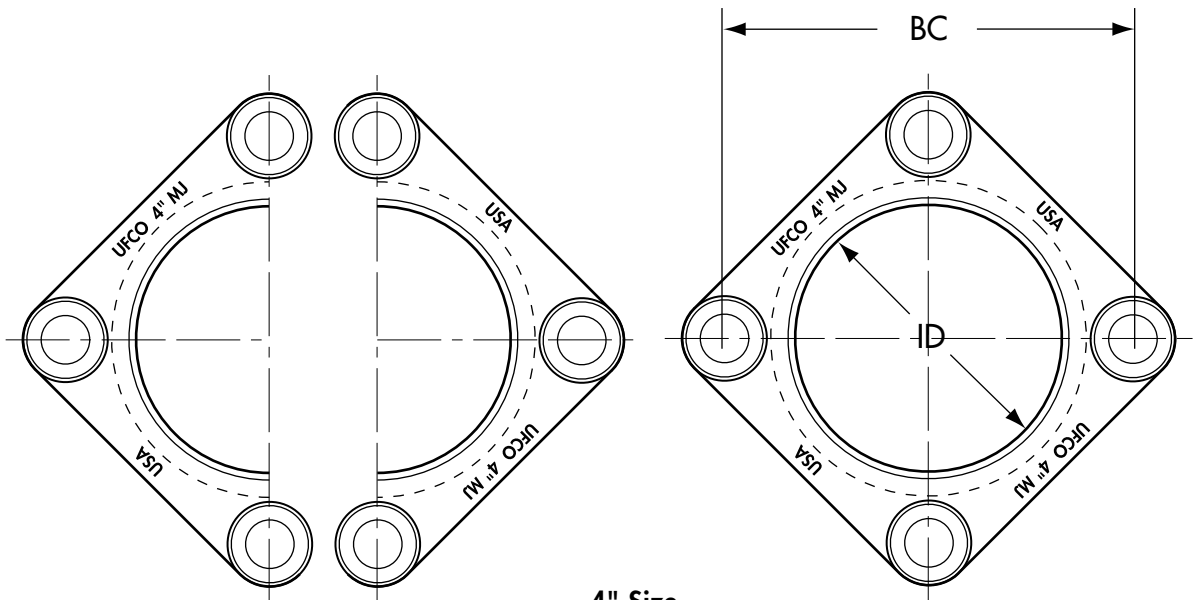
Sizes 3"-12" are recommended for ductile iron pipe class 50 thru 56. Sizes 14" thru 24" are recommended for ductile iron pipe class 53 thru 56.

DUCTILE IRON RETAINER GLANDS

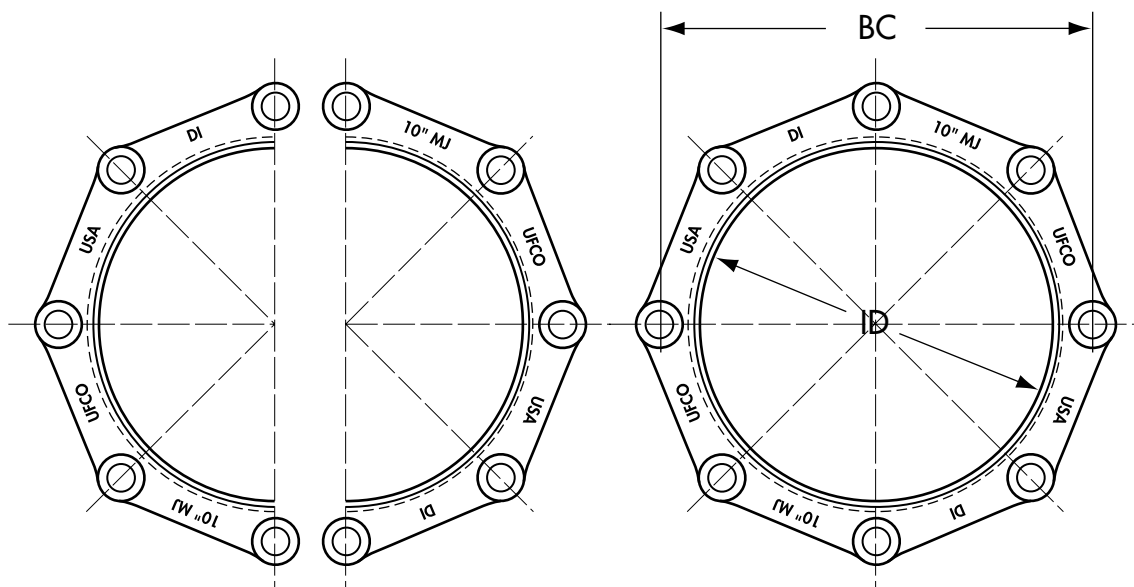
Mechanical Joint Retainer Glands are designed to provide a method for restraining mechanical joint pipe and fittings and other standardized mechanical joints against possible joint separation, rupture or blow-out caused by internal water pressure.

The set screws are square-headed with Type C knurled cup points, and are shipped already assembled in the Glands. They are manufactured of 4140 grade alloy steel, and are heat treated to a Rockwell "C" 45/53 case hardness. Tee-head bolts and gaskets are not included, but may be ordered separately. Recommended torque for set screws is 75 foot pounds, and set screws on opposite sides of the glands should be tightened alternately.

Tee-head bolt hole size and spacing are equal to MJ Glands as shown in AWWA C-111. Standard mechanical Joint gaskets as shown in C-111 should be used.



4" Size



6"-8"-10"-12" Sizes

MJ Compact Split Repair Glands

Size	Inside Diameter (+.07-.03)	Bolt Circle (+-.06)	Weight Lbs.
4	4.90	7.50	4.0
6	7.00	9.50	5.0
8	9.15	11.75	6.0
10	11.20	14.00	7.7
12	13.50	16.25	10.2

Split glands work with standard MJ gaskets and standard T-head bolts.

Glands are shipped in halves and do not need separate bolts.
T-head bolts alone hold the halves together.

SAMPLE SPECIFICATION

Ductile Iron Mechanical Joint Tapping Sleeves furnished by Tyler Pipe Company, Tyler, Texas are produced in accordance with manufacturer's standards. Chemical and physical properties of the ductile iron are in accordance with the requirements of ANSI/AWWA C110/A21.10-82.

Recess dimensions are per Manufacturer's Standardization Society standard practice SP-60.

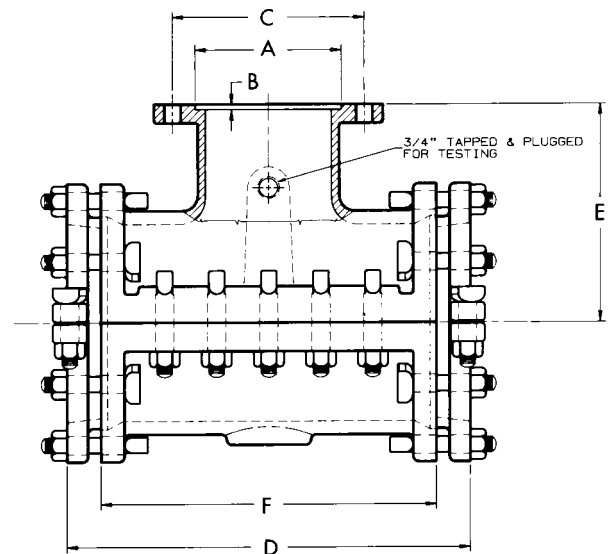
General Installation Instructions for Tyler MJ Tapping Sleeves

1. Clean pipe – insert side gasket into back half of gasket grooves. Make sure ends are flush with or slightly protrude into the end gasket seating area.
2. Bolt sleeve halves together and trim side gaskets as necessary. **MAKE SURE SLEEVE WILL ROTATE FREELY ON PIPE.**
3. Install end gaskets, locating cut ends 90° from side gasket. If pipe is maximum OD, stretch gasket to make certain cut ends match with no gap in between.
4. Install glands and bolts – rotate sleeve to desired position. Be sure pipe is centered inside the sleeve.
5. Tighten gland bolts alternately, using 80 to 90 foot pounds.
6. After assembly, **PRESSURE TEST ALL JOINTS BEFORE TAPPING.** If additional tightening is required, release pressure and relax tension on gland bolts before tightening side bolts.

For Cast Iron or Ductile Iron Pipe

Mechanical joint tapping sleeves – for 6" through 12" cast iron or ductile iron pipe.

- Outlet flange per ANSI/AWWA C110/A21.10
- Gaskets furnished.
- Working pressure—200 p.s.i.



See Excavation Dimensions, page 57

Tapping Sleeve for
Cast Iron/Ductile Iron

Size	A	B	Dimensions		E	F	O.D. Range DI		Weight DI
			C	D			Min.	Max.	
6x4	5.016	.250	7.50	17	9.00	14.00	6.85	7.15	220
6	7.016	.312	9.50	17	9.00	14.00	6.85	7.15	225
8x4	5.016	.250	7.50	19	10.50	16.00	9.00	9.35	275
8x6	7.016	.312	9.50	19	10.50	16.00	9.00	9.35	280
8	9.016	.312	11.75	19	10.50	16.00	9.00	9.35	295
10x4	5.016	.250	7.50	19	11.00	15.00	11.04	11.45	388
10x6	7.016	.312	9.50	19	11.00	15.00	11.04	11.45	392
10x8	9.016	.312	11.75	23	11.00	19.00	11.04	11.45	455
10	11.016	.312	14.25	23	11.00	19.00	11.04	11.45	470
12x4	5.016	.250	7.50	20	12.00	16.00	13.14	13.56	469
12x6	7.016	.312	9.50	20	12.00	16.00	13.14	13.56	471
12x8	9.016	.312	11.75	20	12.00	16.00	13.14	13.56	482
12x10	11.016	.312	14.25	26	12.00	22.00	13.14	13.56	595
12	13.016	.312	17.00	26	12.00	22.00	13.14	13.56	605

SAMPLE SPECIFICATION

Mechanical Joint watermain fittings with accessories, 2" through 36" shall be produced in the USA of Ductile Iron in accordance with and meet all applicable terms and provisions of standards ANSI/AWWA C110/A21.10 ANSI/AWWA C111/A21.11 (current revisions). All Ductile Iron Mechanical Joint Fittings 3" through 24" shall be rated for 350 PSI working pressure. All Ductile Iron Mechanical Joint Fittings 30" through 36" shall be rated for 250 PSI working pressure.

NOTE: Fittings are CEMENT-LINED and seal coated in accordance with ANSI/AWWA C104/A21.4; also available double cement-lined or bare. All coated fittings meet requirements of NSF-61. See list price sheet for details.

JOINT DIMENSIONS IN INCHES FOR MECHANICAL JOINT FITTINGS

DIMENSIONS IN INCHES

Size	A	B	C	D	F	Ø	X	J	K ¹	K ²	L	M	N	O	P	S
*2	2.50	2.50	3.39	3.50	2.61	28°	3/4	4.75	6.25	6.25	.75	.62	...	.31	.63	.44
3	3.96	2.50	4.84	4.94	4.06	28°	3/4	6.19	7.69	7.69	.94	.62	1.37	.31	.63	.52
4	4.80	2.50	5.92	6.02	4.90	28°	7/8	7.50	9.12	9.12	1.00	.75	1.50	.31	.75	.65
6	6.90	2.50	8.02	8.12	7.00	28°	7/8	9.50	11.12	11.12	1.06	.88	1.63	.31	.75	.70
8	9.05	2.50	10.17	10.27	9.15	28°	7/8	11.75	13.37	13.37	1.12	1.00	1.75	.31	.75	.75
10	11.10	2.50	12.22	12.34	11.20	28°	7/8	14.00	15.69	15.62	1.19	1.00	1.75	.31	.75	.80
12	13.20	2.50	14.32	14.44	13.30	28°	7/8	16.25	17.94	17.88	1.25	1.00	1.75	.31	.75	.85
14	15.30	3.50	16.40	16.54	15.44	28°	7/8	18.75	20.31	20.25	1.31	1.25	2.00	.31	.75	.89
16	17.40	3.50	18.50	18.64	17.54	28°	7/8	21.00	22.56	22.50	1.38	1.31	2.06	.31	.75	.97
18	19.50	3.50	20.60	20.74	19.64	28°	7/8	23.25	24.83	24.75	1.44	1.38	2.13	.31	.75	1.05
20	21.60	3.50	22.70	22.84	21.74	28°	7/8	25.50	27.08	27.00	1.50	1.44	2.19	.31	.75	1.12
24	25.80	3.50	26.90	27.04	25.94	28°	7/8	30.00	31.58	31.50	1.62	1.56	2.31	.31	.75	1.22
30	32.00	4.00	33.29	33.46	32.17	20°	1 1/8	36.88	39.12	39.12	1.81	2.00	2.75	.38	1.00	1.50
36	38.30	4.00	39.59	39.76	38.47	20°	1 1/8	43.75	46.00	46.80	2.00	2.00	2.75	.38	1.00	1.80

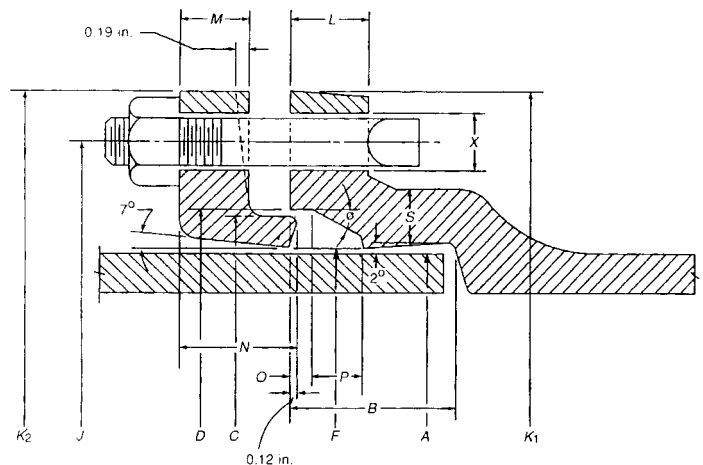
* Not included in AWWA C110.

ACCESSORIES AND WEIGHTS

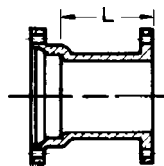
Size	No.	Bolt Size	Bolt Length	Bolt Torque Ft/Lbs.	Wt. of Gland, Bolts and Gasket, Lbs.	Pipe Barrel O.D.
*2	2	5/8	3	45-60	5	2.50
3	4	5/8	3	45-60	7	3.96
4	4	3/4	3 1/2	75-90	10	4.80
6	6	3/4	4	75-90	16	6.90
8	6	3/4	4	75-90	25	9.05
10	8	3/4	4	75-90	30	11.10
12	8	3/4	4	75-90	40	13.20
14	10	3/4	4 1/2	75-90	45	15.30
16	12	3/4	4 1/2	75-90	55	17.40
18	12	3/4	4 1/2	75-90	65	19.50
20	14	3/4	4 1/2	75-90	85	21.60
24	16	3/4	5	75-90	105	25.80
30	20	1	6	100-120	220	32.00
36	24	1	6	100-120	301	38.30

* Not included in AWWA C110.

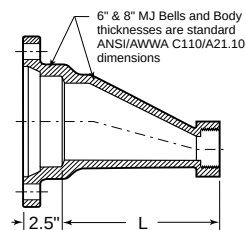
14" THRU 30"
GLANDS MAY
BE TAPERED



ADAPTERS



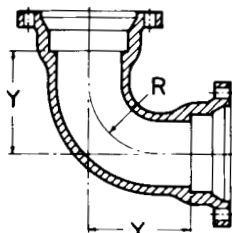
MJ x FE		
Dimensions		
Size	L	Weights
3	8	30
4	8	40
6	8	60
8	8	95
10	8	115
12	8	155
16	8	281
18	8	353
20	8	365
24	8	495



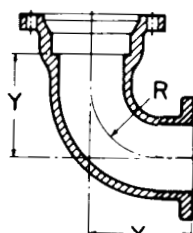
MJ x FIPT ECCENTRIC REDUCER

Dimensions		
Size	L	Weights
6x2	13	51
8x2	15	71

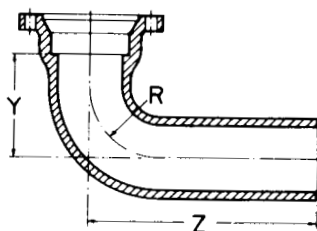
BENDS



90° MJ x MJ (1/4)



90° MJ x FE (1/4)



90° MJ x PE (1/4)

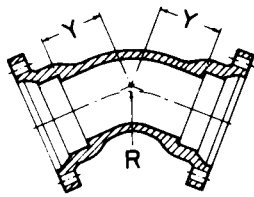
90° Bends (1/4)

Size	Dimensions				Weights		
	R	Y	Z	MJxMJ	MJxPE	MJxFE	
*2	2.25	3.25	...	14	...	...	
3	4.0	5.5	13.5	35	35	...	
4	4.5	6.5	14.5	55	54	53	
6	6.0	8.0	16.0	85	80	75	
8	7.0	9.0	17.0	125	120	115	
10	9.0	11.0	19.0	190	190	177	
12	10.0	12.0	20.0	272	255	246	
14	11.5	14.0	22.0	380	...	...	
16	12.5	15.0	23.0	490	470	465	
18	14.0	16.5	24.5	625	600	577	
20	15.5	18.0	26.0	790	775	...	
24	18.5	22.0	30.0	1215	1175	1150	
30	21.5	25.0	33.0	1942	1920	...	
36	24.5	28.0	36.0	2629	2310	...	

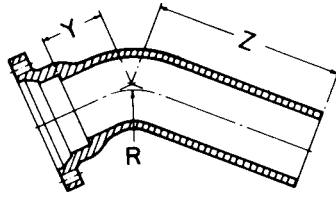
Mechanical Joint weights do not include Glands, Nuts, Bolts and Gaskets. See Joint Accessories.

For sizes not found in this section check MJ-SSB DI fittings, pages 2 thru 8.

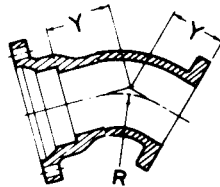
BENDS



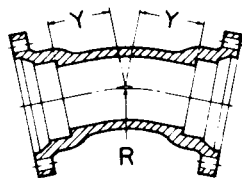
45° MJ (1/8)



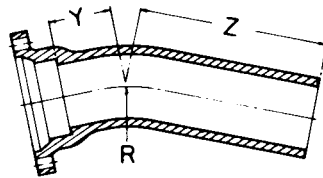
45° MJ x PE (1/8)



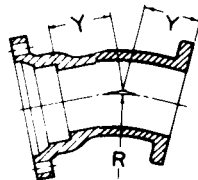
45° MJ x FE (1/8)



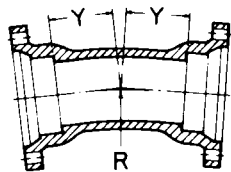
22 1/2° MJ (1/16)



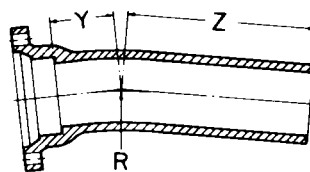
22 1/2° MJ x PE (1/16)



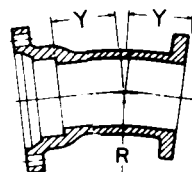
22 1/2° MJ x FE (1/16)



11 1/4° MJ (1/32)



11 1/4° MJ x PE (1/32)



11 1/4° MJ x FE (1/32)

45° Bends (1/8)

Size	Dimensions			MJ	Weights	
	R	Y	Z		MJxFE*	MJxPE
*2	1.96	1.8	...	13	...	...
3	3.62	3.0	11.0	30	...	...
4	4.81	4.0	12.0	50	45	46
6	7.25	5.0	13.0	75	69	77
8	8.44	5.5	13.5	110	105	105
10	10.88	6.5	14.5	169	155	155
12	13.25	7.5	15.5	224	215	215
14	12.06	7.5	15.5	300	...	...
16	13.25	8.0	16.0	380	360	360
18	14.50	8.5	16.5	470	422	455
20	16.88	9.5	17.5	595	543	664
24	18.12	11.0	19.0	865	903	825
30	27.75	15.0	23.0	1447	...	1510
36	35.00	18.0	26.0	2435	...	1930

22 1/2° Bends (1/16)

Size	Dimensions			MJ	Weights	
	R	Y	Z		MJxFE*	MJxPE
3	7.56	3.0	11.0	30	...	...
4	10.06	4.0	12.0	50	...	...
6	15.06	5.0	13.0	75	69	70
8	17.62	5.5	13.5	110	105	105
10	22.62	6.5	14.5	160	155	160
12	27.62	7.5	15.5	220	215	220
14	25.12	7.5	15.5	300	...	...
16	27.62	8.0	16.0	385	373	365
18	30.19	8.5	16.5	480	422	455
20	35.19	9.5	17.5	605	...	575
24	37.69	11.0	19.0	880	800	930
30	57.81	15.0	23.0	1400	...	1540
36	72.88	18.0	26.0	2372	...	1970

11 1/4° Bends (1/32)

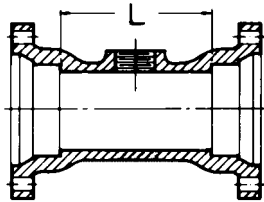
Size	Dimensions			MJ	Weights	
	R	Y	Z		MJxFE*	MJxPE
3	15.25	3.0	11.0	30	...	...
4	20.31	4.0	12.0	50	...	...
6	30.50	5.0	13.0	75	69	...
8	35.50	5.5	13.5	110	105	...
10	45.69	6.5	14.5	160	...	...
12	55.81	7.5	15.5	220	215	...
14	50.75	7.5	15.5	305	...	...
16	55.81	8.0	16.0	385	360	...
18	60.94	8.5	16.5	480	422	...
20	71.06	9.5	17.5	610	...	...
24	76.12	11.0	19.0	885	800	845
30	116.75	15.0	23.0	1410	...	1305
36	147.25	18.0	26.0	2397	...	2185

* Not included in AWWA C110.

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MJ TAPPED TEE

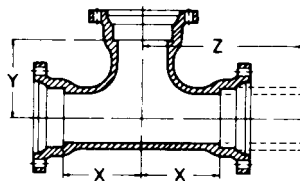


MJ Tapped Tee (2"Tap)

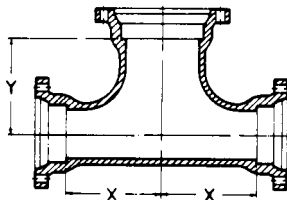
Size	Dimensions		Weights
	L	Max. Tap	
3	8	2	35
4	8	2	45
6	8	2	70
8	8	2	95
10	8	2	130
12	8	2	165

For sizes not found in this section check MJ-SSB DI fittings, pages 2 thru 8.

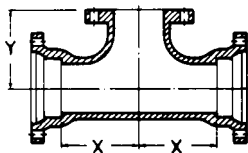
TEES



**Straight Tees and
Reducing on Branch Tees**



Bullhead



MJxMJxFE

Run	Size Run	Branch	Dimensions			Weights		
			X	Y	Z	MJ	**MJxPExMJ	**MJxMJxFE
*2	2	2	3.25	3.25	...	22	...	...
*3	3	2	3.25	3.25	...	43	...	...
3	3	3	5.5	5.5	13.5	55	...	...
*4	4	2	4.8	4.8	14.5	57	...	53
4	4	3	6.5	6.5	14.5	75	...	...
4	4	4	6.5	6.5	14.5	87	75	74
4	4	6	8.0	8.0	...	115	...	...
*6	6	2	8.0	8.0	...	78	...	...
6	6	3	8.0	8.0	16.0	110	...	...
6	6	4	8.0	8.0	16.0	115	...	109
6	6	6	8.0	8.0	16.0	125	120	115
6	6	8	9.0	9.0	...	159	...	...
8	8	3	9.0	9.0	17.0	155	...	...
8	8	4	9.0	9.0	17.0	165	...	159
8	8	6	9.0	9.0	17.0	175	170	180
8	8	8	9.0	9.0	17.0	185	180	194
10	10	4	11.0	11.0	19.0	...	...	229
10	10	6	11.0	11.0	19.0	266	...	237
10	10	8	11.0	11.0	19.0	260	...	250
10	10	10	11.0	11.0	19.0	310	250	...

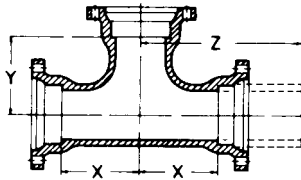
* Not included in AWWA C110

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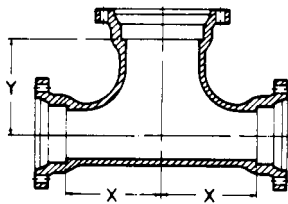
NOTICE: Weights published in this catalog are for shipping purposes only. Actual weights may vary because some fittings are produced in both foundries. All fittings are made in the USA and meet the AWWA standards to which they are designed.

For weights of specific fittings, please contact Tyler Pipe or Union Foundry Company.

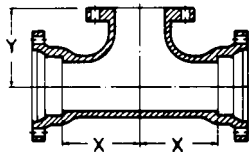
TEES (Con't)



**Straight Tees and
Reducing on Branch Tees**



Bullhead



MJxMJxFE

Run	Size		Dimensions			Weights		
	Run	Branch	X	Y	Z	MJ	**MJxPExMJ	**MJxMJxFE
12	12	4	12.0	12.0	20.0	315	315	323
12	12	6	12.0	12.0	20.0	325	325	331
12	12	8	12.0	12.0	20.0	340	340	342
12	12	10	12.0	12.0	20.0	390	390	...
12	12	12	12.0	12.0	20.0	410	410	401
*16	16	4	15.0	15.0	23.0	600	...	575
16	16	6	15.0	15.0	23.0	615	...	605
16	16	8	15.0	15.0	23.0	625	...	615
16	16	10	15.0	15.0	23.0	645	...	...
16	16	12	15.0	15.0	23.0	660	...	651
16	16	16	15.0	15.0	23.0	740	...	730
18	18	6	13.0	15.5	21.0	670	...	665
18	18	8	13.0	15.5	21.0	685	...	675
18	18	12	13.0	15.5	21.0	715	...	735
18	18	18	16.5	16.5	24.5	945	...	915
20	20	6	14.0	17.0	22.0	844	...	...
20	20	8	14.0	17.0	22.0	845	...	835
20	20	12	14.0	17.0	22.0	890	...	...
20	20	16	18.0	18.0	26.0	1095	...	...
20	20	20	18.0	18.0	26.0	1185	...	1165
24	24	6	15.0	19.0	23.0	1145	...	1125
24	24	8	15.0	19.0	23.0	1160	...	1140
24	24	12	15.0	19.0	23.0	1185	...	1165
24	24	14	15.0	19.0	23.0	1220	...	...
24	24	16	15.0	19.0	23.0	1245	...	...
24	24	18	22.0	22.0	30.0	1660	...	...
24	24	20	22.0	22.0	30.0	1720	...	...
24	24	24	22.0	22.0	30.0	1815	...	1795
30	30	6	18.0	23.0	26.0	2050	...	...
30	30	8	18.0	23.0	26.0	2060	...	...
30	30	10	18.0	23.0	26.0	2075	...	...
30	30	12	18.0	23.0	26.0	2090		...
30	30	16	18.0	23.0	26.0	2145	...	...
30	30	18	18.0	23.0	26.0	2170	...	...
30	30	20	18.0	23.0	26.0	2205	...	...
30	30	24	25.0	25.0	33.0	2880	...	...
30	30	30	25.0	25.0	33.0	3105	...	3080
36	36	6	20.0	26.0	28.0	2439	...	2430
36	36	8	20.0	26.0	28.0	2444	...	...
36	36	10	20.0	26.0	28.0	2535	...	...
36	36	12	20.0	26.0	28.0	2541	...	2550
36	36	14	20.0	26.0	28.0	2570	...	...
36	36	16	20.0	26.0	28.0	2585	...	2450
36	36	18	20.0	26.0	28.0	2610	...	...
36	36	20	20.0	26.0	28.0	2635	...	...
36	36	24	20.0	26.0	28.0	2792	...	2660
36	36	30	28.0	28.0	36.0	3545	...	...
36	36	36	28.0	28.0	36.0	3982	...	...

* Not included in AWWA C110

** Made to order only. Not Returnable

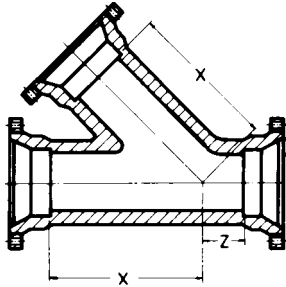
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WYES

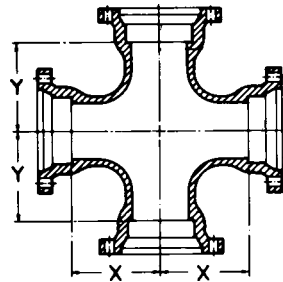
(Not included in AWWA C110.)



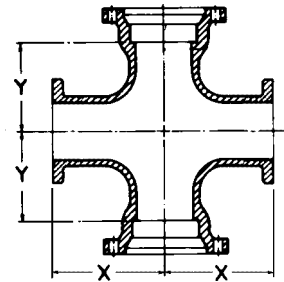
Size		Dimensions		Weights
Run	Branch	X	Z	
3	3	10.0	3.0	60
4	4	12.0	3.0	90
6	4	14.5	3.5	130
6	6	14.5	3.5	145
8	4	17.5	4.5	190
8	6	17.5	4.5	205
8	8	17.5	4.5	230
10	6	20.5	5.0	335
10	8	20.5	5.0	310
10	10	20.5	5.5	435
12	8	24.5	5.5	505
12	12	24.5	5.5	490
14	6	27.0	6.0	626
16	16	30.0	6.5	1079
18	8	32.0	7.0	968
18	10	32.0	7.0	975
18	12	32.0	7.0	1015
18	16	32.0	7.0	1135
18	18	32.0	7.0	1200
20	10	35.0	8.0	1220
20	12	35.0	8.0	1260
20	16	35.0	8.0	1375
20	20	35.0	8.0	1525
24	24	40.5	9.0	2372

For sizes not found in this section check MJ-SSB DI fittings, pages 2 thru 8.

CROSSES



ALL MJ

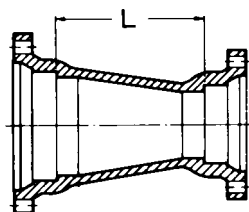


*MJ x MJ x FE x FE

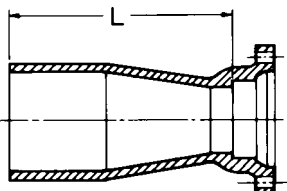
Size		Dimensions		Weights	
Run	Branch	X	Y	MJ	*MJxFE
6	6	8.0	8.0	160	140
8	4	9.0	9.0	185	...
8	6	9.0	9.0	205	185
8	8	9.0	9.0	255	240
10	6	11.0	11.0	285	...
10	8	11.0	11.0	310	...
10	10	11.0	11.0	380	354
12	6	12.0	12.0	360	340
12	8	12.0	12.0	385	365
12	12	12.0	12.0	495	487
14	8	14.0	14.0	550	...
14	14	14.0	14.0	779	...
16	6	15.0	15.0	650	...
16	8	15.0	15.0	675	655
16	16	15.0	15.0	895	875
18	8	13.0	15.5	730	...
18	10	13.0	15.5	760	...
18	12	13.0	15.5	790	...
18	18	16.5	16.5	1140	...
20	8	14.0	17.0	890	...
20	12	14.0	17.0	955	...
20	16	18.0	18.0	1245	...
20	20	18.0	18.0	1415	...
24	8	15.0	19.0	1200	...
24	12	15.0	19.0	1260	...
24	16	15.0	19.0	1400	...
24	20	22.0	22.0	1965	...
24	24	22.0	22.0	2155	...
30	6	18.0	23.0	2085	...
30	12	18.0	23.0	2165	...
30	24	25.0	25.0	3180	...
30	30	25.0	25.0	3640	...
36	36	28.0	28.0	4370	...

* Not included in AWWA C110.

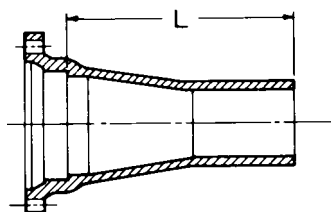
REDUCERS



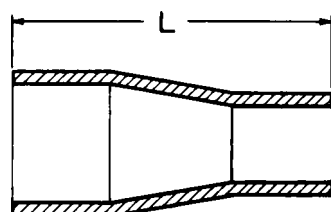
MJ Reducer



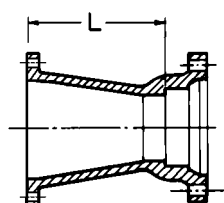
MJ Small End Bell Reducer



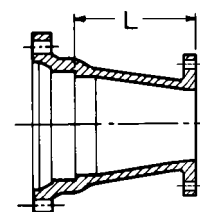
MJ Large End Bell Reducer



Plain End-Plain End Reducer



FExMJ Reducer



MJxFE Reducer

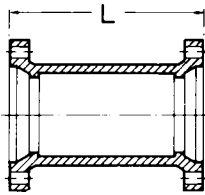
Size	Laying Lengths (L)						Weights					
	MJ	MJ-SEB	MJ-LEB	PExPE	FExMJ	MJxFE	MJ	MJ-SEB	MJ-LEB	PExPE	FExMJ	MJxFE
* 3x2	6	14	14	...	...	...	25	25	20	...	...	...
* 4x2	7	15	15	...	...	...	34	29	30	...	...	...
4x3	7	15	15	23	7	7	40	35	40	35	34	35
* 6x2	9	17	17	...	...	...	45	45	45	...	...	...
6x3	9	17	17	...	...	9	55	50	50	...	...	49
6x4	9	17	17	25	9	9	60	60	59	55	60	54
8x3	11	19	19	...	...	...	84	77	70	...	...	...
8x4	11	19	19	...	11	11	78	80	80	...	80	75
8x6	11	19	19	27	11	11	95	90	90	93	89	80
10x6	12	20	20	...	12	12	115	115	115	...	114	105
10x8	12	20	20	28	12	12	135	130	130	140	130	130
12x4	14	22	22	...	...	...	135	130	...	...	...	...
12x6	14	22	22	...	14	12	150	150	153	...	151	145
12x8	14	22	22	30	14	12	180	165	165	165	183	175
12x10	14	22	22	30	14	12	190	190	185	185	190	185
14x6	...	...	...	...	...	16	...	...	...	...	...	195
14x8	...	...	...	...	...	16	...	...	...	...	...	215
14x12	...	...	...	...	...	16	...	...	...	...	...	270
16x6	18	...	...	...	...	...	250	...	...	...	...	...
16x8	18	26	...	...	...	...	270	250	...	...	...	...
16x10	18	...	...	...	...	...	300	...	...	...	...	...
16x12	18	26	26	...	18	18	325	311	330	...	305	325
16x14	18	...	...	...	...	...	370	...	...	...	...	...
18x8	19	...	...	...	...	19	320	...	...	...	...	300
18x10	19	...	...	...	...	...	350	...	...	...	...	...
18x12	19	27	...	...	...	19	380	355	...	...	...	360
18x14	19	...	...	...	...	...	425	...	...	...	...	...
18x16	19	...	...	...	...	19	465	...	...	...	...	445
20x10	20	...	...	...	...	...	410	...	...	...	...	...
20x12	20	28	...	...	...	...	440	410	...	...	...	...
20x16	20	28	28	...	...	20	530	500	510	...	...	510
20x18	20	...	...	...	...	...	575	...	...	...	...	...
24x12	24	32	...	...	...	24	610	570	...	...	...	455
24x16	24	32	32	...	...	...	705	665	685	...	...	...
24x18	24	32	...	...	...	...	760	720	...	...	...	...
24x20	24	32	32	...	...	...	815	775	804	...	...	...
* 30x16	30	38	...	46	...	...	1150	1040	...	1015	...	...
30x18	30	38	...	46	...	...	1160	1050	...	1025	...	...
30x20	30	38	...	46	...	...	1225	1120	...	1090	...	...
30x24	30	38	38	46	...	...	1360	1255	1320	1215	...	...
36x20	36	...	44	...	...	...	1495	...	1466	...	...	...
36x24	36	...	44	52	...	...	1580	...	1535	1389	...	...
36x30	36	44	...	52	...	...	1919	1721	...	1585	...	...

* Not included in AWWA C110

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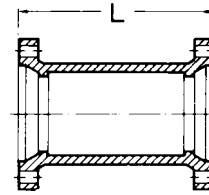
SOLID SLEEVES



Standard

Size	Pipe O.D.	Short L	Short Weight	Long L	Long Weight
*2	2.50	8.0	13	12	18
3	3.96	7.5	...	12	30
4	4.80	7.5	35	12	45
6	6.90	7.5	45	12	65
8	9.05	7.5	65	12	85
10	11.10	7.5	85	12	115
12	13.20	7.5	110	12	153
16	17.40	9.5	200	15	283
18	19.50	9.5	240	15	330
20	21.60	9.5	275	15	384
24	25.80	9.5	360	15	505
30	32.00	15.0	745	24	1085
36	38.30	15.0	1047	24	1502

*Not included in AWWA C110



* Dual Purpose †

Size	Pipe O.D.	Short L	Short Weight	Long L	Long Weight
4	4.80/5.00	7.5	35	12	45
6	6.90/7.10	7.5	45	12	65
8	9.05/9.30	7.5	65	12	85
10	11.10/11.40	...	...	12	115
†12	13.20/13.50	...	...	12	221
†16	17.40/17.80	...	...	15	385

†Uses MJ Dual Purpose Gland

*Not included in AWWA C110

Note: Sizes 4-10" use standard MJ Gaskets; 12" and 16" require special duo gaskets.

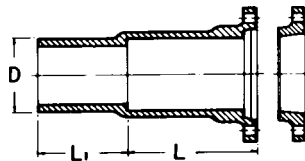
* MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE

With Dual-Purpose Accessories

(NOTES: Gland with cup-joint set screws available at extra cost when specified. NOT FOR RESTRAINT.)

Currently, Tyler and Union DP Glands are NOT interchangeable.

Cutting-In Sleeve & Gland

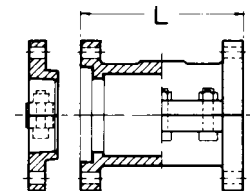


Size	For Use On Pipe O.D.	L	L1	D	Weight	
					Gland Only	Gland & Sleeve
4	4.80 - 5.00	12	8	4.80	9.5	72
6	6.90 - 7.10	12	8	6.90	13.0	94
8	9.05 - 9.30	12	8	9.05	20.0	122
10	11.10 - 11.40	12	8	11.10	24.0	175
12	13.20 - 13.50	12	8	13.20	30.0	235

* Not included in AWWA C110.

SPLIT REPAIR SLEEVE WITH ACCESSORIES

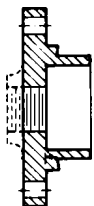
Gland and Split Sleeve



Size	L	*Weight	Gland Only
4	15	115	9
6	18	165	16
8	18	215	24

*Weights include all accessories assembled.

PLUGS

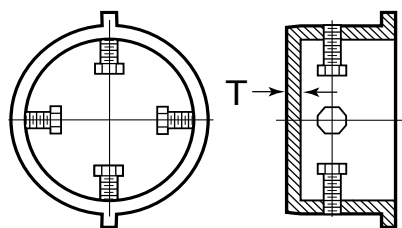


Solid or Tapped

Size	Tap	Weight	
		Solid	Tapped
*2	2	5	5
3	2	15	10
4	2	15	15
6	2	25	25
8	2	45	45
10	2	65	65
12	2	85	85
14	2	120	120
16	2	147	147
†18	2	190	190
†20	2	215	215
†24	2	350	350
†30	2	660	660
†36	2	838	838

† Dished – Not flat as shown.

* Not included in AWWA C110.



TYTON® Plug** Solid or Tapped

Size	Tap	T	Weight*
4	2	.60	18
6	2	.65	25
8	2	.70	46
10	2	.75	70
12	2	.75	95

* Weights do not include accessories

** Not included in AWWA C110.

TYTON® is a registered trademark of U.S. Pipe and Foundry Company.

CAPS

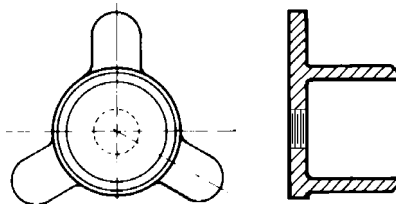


Solid or Tapped

Size	Tap	Weight	
		Solid	Tapped
*2	2	5	...
3	2	10	10
4	2	14	14
6	2	30	30
8	2	45	45
10	2	60	60
12	2	80	80
16	2	175	175
†18	2	215	215
†20	2	250	250
†24	2	370	370
†30	2	680	680
†36	2	850	850

† Dished – Not flat as shown.

* Not included in AWWA C110.



Solid

Tapped

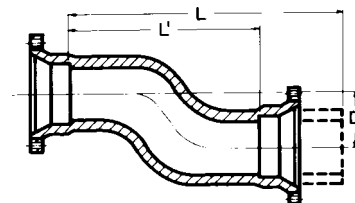
Push-In Plug with Ears (To be used with all push-in pipe and fittings)

Size	Tap	Weight
14	2.0	110
16	2.0	145
18	2.0	180
†20	2.0	242
†24	2.0	315

† Dished - Not flat as shown

NOTE: Blocking still required-ears for assembly only.

OFFSETS



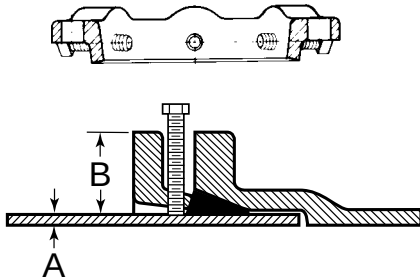
MJ x MJ

MJ x PE

Size	D	Dimensions		Weights	
		L'	L	MJxMJ	MJxPE
4	6	19	27	...	82
4	12	22	30	85	80
4	18	30	38	105	...
* 4	24	26	34	126	125
6	6	20	28	114	105
6	12	26	34	135	148
6	18	33	41	188	182
* 6	24	24	32	182	160
8	6	21	29	177	155
8	12	28	36	231	195
8	18	35	43	287	284
* 8	24	36	44	280	285
10	12	30	38	347	280
10	18	38	46	340	340
10	24	38	46	420	...
12	12	37	45	420	420
12	18	48	56	520	520
*12	24	48	56	649	630
16	12	40	48	715	...
16	18	50	58	850	830
*20	12	40	48	1025	...
*20	18	48	60	1362	...

* Not included in AWWA C110.

*RETAINER GLAND ASSEMBLY



See Installations Instructions Page 49

Size	Pressure Rating, psi	Gland O.D. B	Pipe O.D. A	D.I. Pipe Wall Class	No of Set Screws	Size of Set Screws	Gland Weight	Weight w/Access.
3	350	7.69	3.96	50-56	4	$5/8 \times 2$	4	8
4	350	9.12	4.80	50-56	4	$5/8 \times 2$	5	11
6	350	11.12	6.90	50-56	6	$5/8 \times 2$	9	16
8	250	13.37	9.05	50-56	9	$5/8 \times 2$	13	21
10	250	15.62	11.10	50-56	12	$5/8 \times 2$	17	26
12	150	17.88	13.20	50-56	16	$5/8 \times 2$	20	28
14	250	20.25	15.30	53-56	20	$5/8 \times 2^{1/2}$	44	55
16	200	22.50	17.40	53-56	24	$5/8 \times 2^{1/2}$	54	64
18	200	24.75	19.50	53-56	24	$5/8 \times 2^{1/2}$	62	72
20	200	27.00	21.60	53-56	28	$5/8 \times 3$	76	91
24	150	31.50	25.80	53-56	32	$5/8 \times 3$	103	118

* Not included in AWWA C110

Pipe Wall Thickness:

Sizes 3"-12" are recommended for ductile iron pipe class 50 thru 56. Sizes 14" thru 24" are recommended for ductile iron pipe class 53 thru 56.

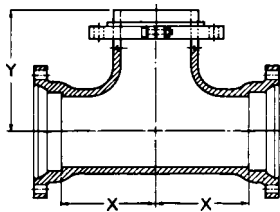
DUCTILE IRON RETAINER GLANDS

Mechanical Joint Retainer Glands are designed to provide a method for restraining mechanical joint pipe and fittings and other standardized mechanical joints against possible joint separation, rupture or blow-out caused by internal water pressure.

The set screws are square-headed with Type C knurled cup points, and are shipped already assembled in the Glands. They are manufactured of 4140 grade alloy steel, and are heat treated to a Rockwell "C" 45/53 case hardness. Tee-head bolts and gaskets are not included, but may be ordered separately. Recommended torque for set screws is 75 foot pounds, and set screws on opposite sides of the glands should be tightened alternately.

Tee-head bolt hole size and spacing are equal to MJ Glands as shown in AWWA C-111. Standard mechanical Joint gaskets as shown in C-111 should be used.

TEES



MJ x MJ x Swivel

Size	Dimensions		Weight
	X	Y	
6	8.0	10.5	145
8x6	9.0	11.5	195
8	9.0	11.5	210
10x6	11.0	13.5	270
12x6	12.0	14.5	345
16x6	15.0	17.5	619
16x8	15.0	17.5	649
30x6	18.0	24.5	2070

All weights shown include the Swivel Gland

MJ GLAND



Size	Gland Wt. Pack	Weight Gland Only
2	5	3
3	7	5
4	10	6
6	16	11
8	25	18
10	30	20
12	40	30
14	45	35
16	55	45
18	65	55
20	85	70
24	105	90
30	220	180
36	301	248

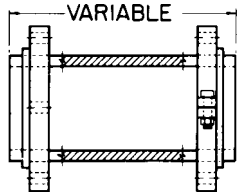
ANSI/AWWA C110/A21.10, ANSI/AWWA C111/A21.11

Tyler Pipe/Utilities Division • P.O. Box 2027 • Tyler, Texas 75710 • (903) 882-5511
Union Foundry Company • P.O. Box 309 • Anniston, Alabama 36202 • (256) 236-7601

ADAPTERS

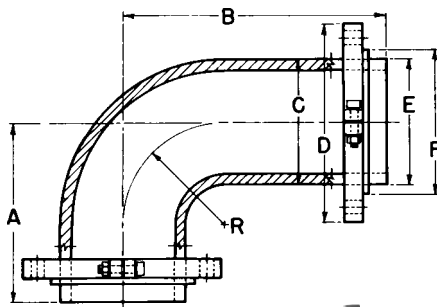
Swivel x Solid Adapter			
Size by Laying Length	Wall Thickness	Weight*	
4x13	.52	47	
6x12	.55	73	
6x18	.55	87	
6x24	.55	100	
6x36	.55	142	
8x13	.60	130	
12x13	.75	173	

*Weights with Gland.



**Other Swivel Hydrant
Fittings, Pages 3, 4 and 5.**

ELLS



***90° Swivel x Swivel Ell
(Not Included In AWWA C110)**

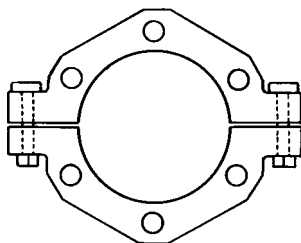
Size	Wall Thickness	Dimensions							*Weight
		A	B	C	D	E	F	R	
6	.55	10.5	15.5	7.10	11.12	6.90	8.02	6.0	87
8	.60	11.5	16.5	9.20	13.37	9.05	10.17	7.0	158

* With 2 Swivel Glands



SWIVEL GLAND ASSEMBLY

Used with swivel fittings, the TYLER Swivel Gland, with its rotating feature, permits the installer to meet any grade requirements regardless of bolt-hole alignment. In addition, the system permits stiff connections without braces, blocking or strapping.



Swivel Glands**

Size	Weight
4	12
6	17
8	24
12	33

** Not included in
AWWA C110.

NOTE: When ordering glands separately,
(1) Specify TYLER UPC Code Number,
(2) Description, and
(3) Size of fitting to be joined.

SAMPLE SPECIFICATIONS

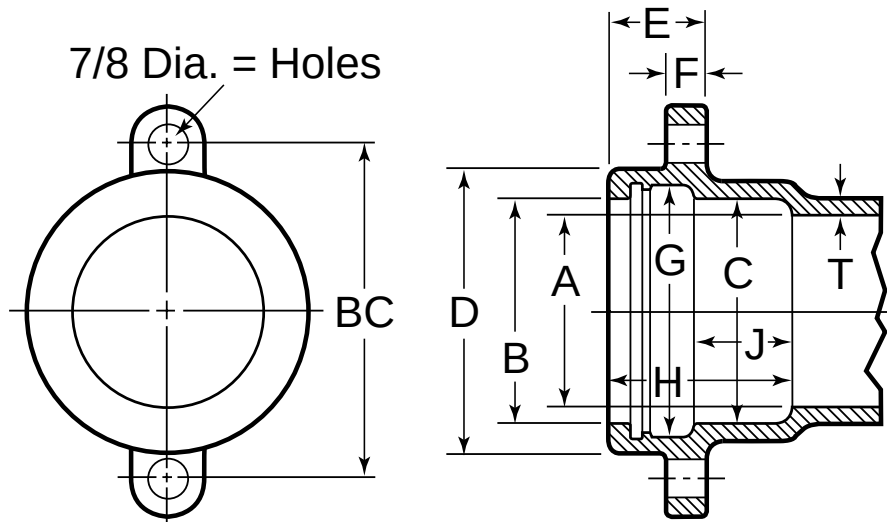
4" through 24" Push-On Joint Ductile Iron Fittings shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53. Fittings are cement-lined and seal-coated in accordance with ANSI/AWWA C104/A21.4. Joints shall be in accordance with ANSI/AWWA C111/A21.11 with bell sockets designed to receive pressure pipe O.D.'s as specified in ANSI/AWWA C151/A21.51 and AWWA C900 TABLE 2. The working pressure rating shall be 350 PSI, except for wyes and flanged-branch fittings. All coated fittings meet requirements of NSF-61.

Thicknesses and dimensions of bell sockets and gaskets shall be in accordance with the manufacturer's design. Rubber rings shall be furnished by the manufacturer. Working pressures apply to fittings only and do not apply to restraining lugs or external restraining devices.

Restraining lugs are provided only on sizes 12" and smaller. Restraining lugs for sizes 14"-24" can be provided at additional cost, given sufficient time to make pattern adaptations. The lug pattern for all sizes accommodate gripper-type restrainers manufactured by others.

ADVANTAGES AND FEATURES

- Push-on gasket joint uses **TYTON®** or **FIELD-LOK®** gaskets
- For use with Ductile Iron pipe, C-900 plastic pipe, and 4-12" pressure rated IPS diameter plastic pipe using transition gaskets
- Deep stab joint design accommodates taper on plastic pipes
- Slip joint installation eliminates T-bolts and nuts: MJ glands not needed
- Manufactured in the USA



BELL DIMENSIONS IN INCHES FOR UNION-TITE FITTINGS

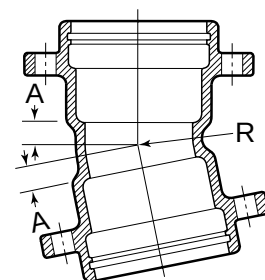
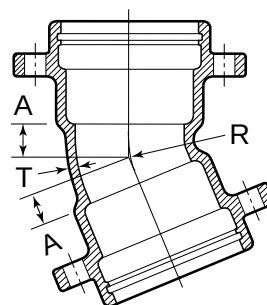
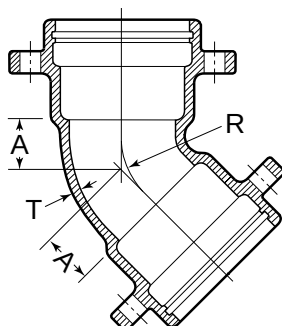
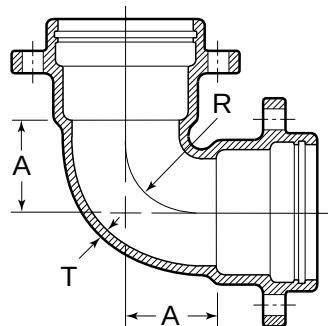
Pipe Size	A	B	C	D	B.C.*	H	J	E*	F	G	T
4	4.30	4.91	5.04	6.38	7.88	4.16	2.25	2.12	.87	5.64	.35
6	6.36	7.01	7.14	8.52	10.50	4.29	2.25	2.14	.87	7.74	.37
8	8.52	9.17	9.32	10.90	12.88	4.78	2.25	2.69	1.00	9.98	.39
10	10.58	11.22	11.37	12.91	14.69	4.98	2.25	2.89	1.12	12.03	.41
12	12.64	13.32	13.47	15.12	17.19	4.98	2.25	3.00	1.12	14.13	.43
14	14.28	15.41	15.64	18.12	...	5.40	2.25	...	...	16.64	.51
16	16.36	17.51	17.74	20.32	...	5.40	2.25	...	...	18.74	.52
18	18.32	19.61	19.83	22.52	...	5.40	2.25	...	...	20.84	.59
20	20.40	21.71	21.94	24.29	...	5.40	2.25	...	...	22.94	.60
24	24.56	25.91	26.14	29.14	...	5.65	2.50	...	...	27.18	.62

*** Restraining lugs are provided only on sizes 12" and smaller. Lugs can be provided on 14" and larger sizes upon request at additional cost.**

TYTON® and FIELD-LOK® are registered trademarks of U.S. Pipe and Foundry Company.

Maximum deflection for all sizes is 2¹/₂°.

BENDS



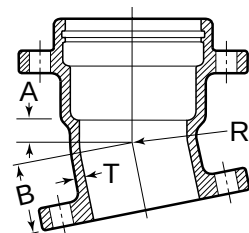
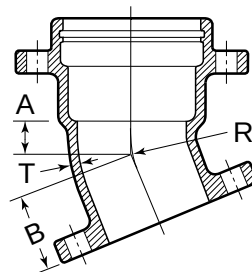
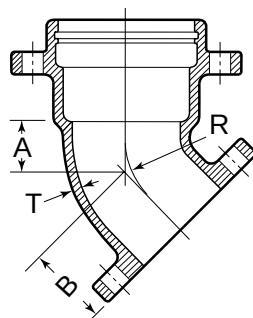
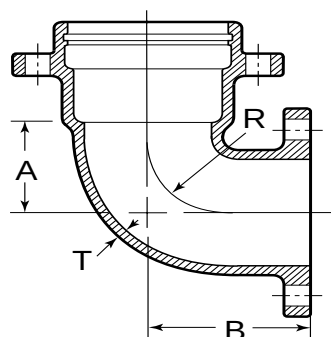
90° (1/4) UT Bends

45° (1/8) UT Bends

22 1/2° (1/16) UT Bends

11 1/4° (1/32) UT Bends

Size	T	Dimensions		Weight	Size	T	Dimensions		Weight	Size	T	Dimensions		Weight
		A	R				A	R				A	R	
4	.35	4.5	3.87	24	4	.35	4.5	3.87	24	4	.35	4.5	3.87	24
6	.37	6.0	5.37	52	6	.37	6.0	5.37	52	6	.37	6.0	5.37	52
8	.39	7.0	6.37	89	8	.39	7.0	6.37	89	8	.39	7.0	6.37	89
10	.41	9.0	8.36	121	10	.41	9.0	8.36	121	10	.41	9.0	8.36	121
12	.43	10.0	9.36	158	12	.43	10.0	9.36	158	12	.43	10.0	9.36	158
14	.51	12.0	10.98	254	14	.51	12.0	10.98	254	14	.51	12.0	10.98	254
16	.52	13.0	12.00	328	16	.52	13.0	12.00	328	16	.52	13.0	12.00	328
18	.59	15.5	14.00	482	18	.59	15.5	14.00	482	18	.59	15.5	14.00	482
20	.60	17.0	15.50	340	20	.60	17.0	15.50	340	20	.60	17.0	15.50	340
24	.62	17.0	15.59	674	24	.62	17.0	15.59	674	24	.62	17.0	15.59	674



**90° (1/4)
UT x Flange Bends**

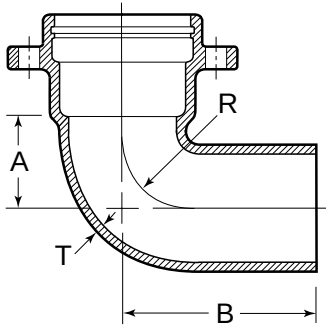
**45° (1/8)
UT x Flange Bends**

**22 1/2° (1/16)
UT x Flange Bends**

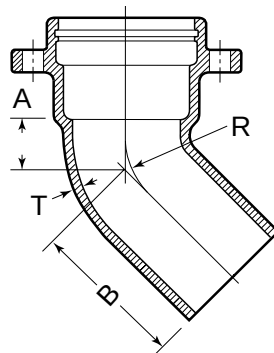
**11 1/4° (1/32)
UT x Flange Bends**

Size	T	Dimensions			Weight	Size	T	Dimensions			Weight	Size	T	Dimensions			Weight
		A	B	R				A	B	R				A	B	R	
4	.35	4.5	6.5	3.87	31	4	.35	4.5	6.5	3.87	21	4	.35	4.5	3.30	6.77	24
6	.37	6.0	7.0	5.37	49	6	.37	6.0	5.0	5.72	42	6	.37	6.0	3.50	9.38	30
8	.39	7.0	9.0	6.37	74	8	.39	7.0	5.5	6.93	60	8	.39	7.0	3.75	11.48	61
10	.41	9.0	10.0	8.36	130	10	.41	9.0	6.5	9.34	93	10	.41	9.0	4.00	13.95	80
12	.43	10.0	12.0	9.36	158	12	.43	10.0	7.5	11.75	122	12	.43	10.0	4.30	16.50	94
14	.51	12.0	15.5	10.98	231	14	.51	12.0	8.5	10.85	162	14	.51	12.0	5.75	14.26	170
16	.52	13.0	16.5	12.00	233	16	.52	13.0	9.5	12.02	275	16	.52	13.0	6.10	15.23	228

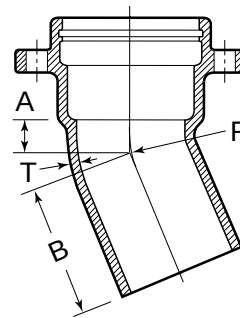
BENDS



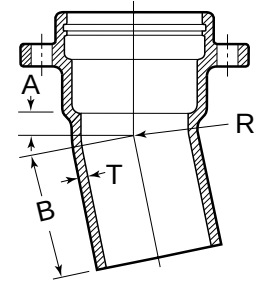
**90° (1/4)
UT x PE Bends**



**45° (1/8)
UT x PE Bends**



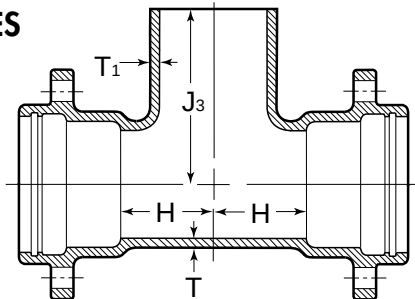
**22 1/2° (1/16)
UT x PE Bends**



**11 1/4° (1/32)
UT x PE Bends**

Size	T	Dimensions				Weight	Dimensions				Weight	Dimensions				Weight
		A	B	R			A	B	R			A	B	R		
4	.35	4.5	10.5	3.87		35	2.0	8.0	3.31		21	...	...	...		..
6	.37	6.0	12.0	5.37		70	3.0	9.0	5.72		38	2.25	8.08	8.16		35
8	.39	...	...	...		..	3.5	9.5	6.93		60	2.50	8.34	9.40		57
												1.50	7.30	9.38		36
												1.75	7.55	11.48		55

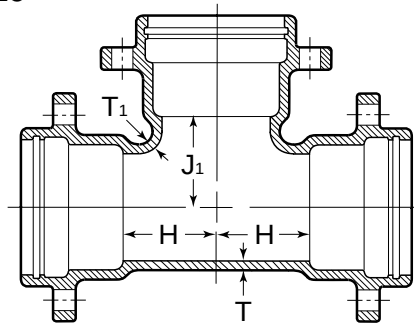
TEES



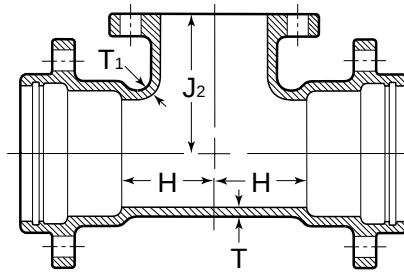
UT x UT x PE Tees

Size		T	Dimensions			Weight
Run	Branch		T1	H	J3	
6	6	.37	.37	6.0	11.5	60
8	6	.39	.37	6.0	12.5	80
12	6	.43	.37	7.0	15.5	140

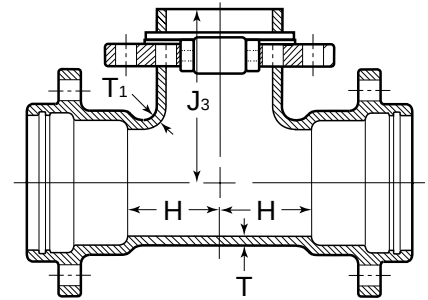
TEES



UT x UT Tees



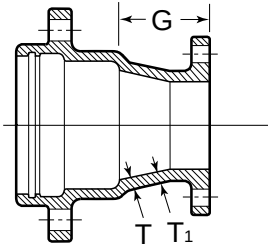
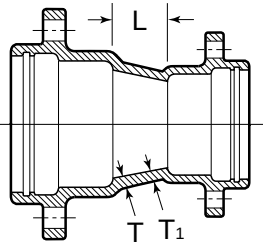
UT x Flange Tees



UT x Swivel Tees

Size	Dimensions						UT x UT	Weights UT x Flange	UT x Swivel
	T	T1	H	J1	J2	J3			
4	.35	.35	4.5	4.5	6.5	...	44	45	...
6x4	.37	.35	5.0	6.0	8.0	...	68	56	...
6	.37	.37	6.0	6.0	8.0	9.5	71	71	65
8x4	.39	.35	5.0	7.0	9.0	...	73	89	...
8x6	.39	.37	6.0	7.0	9.0	10.5	101	101	100
8	.39	.39	7.0	7.0	9.0	10.5	116	117	110
10x4	.41	.35	6.0	9.0	11.0	...	102	115	...
10x6	.41	.37	7.0	9.0	11.0	12.5	113	123	130
10x8	.41	.39	8.0	9.0	11.0	12.5	145	145	156
10	.41	.41	9.0	9.0	11.0	...	155	158	...
12x4	.43	.35	6.0	10.0	12.0	...	119	138	...
12x6	.43	.37	7.0	10.0	12.0	13.5	147	154	162
12x8	.43	.39	8.0	10.0	12.0	13.5	177	170	158
12x10	.43	.41	9.0	10.0	12.0	...	160	162	...
12	.43	.43	10.0	10.0	12.0	...	217	183	...
14x6	.51	.44	6.5	10.5	12.5	14.0	176	212	202
14x10	.51	.46	8.5	10.5	12.5	...	195	246	...
14x12	.51	.47	9.5	10.5	12.5	...	196	296	...
14	.51	.51	10.5	10.5	14.0	...	209	321	...
16x6	.52	.45	6.5	11.5	13.5	15.0	266	160	229
16x8	.52	.46	7.5	11.5	13.5	15.0	292	270	292
16x10	.52	.47	8.5	11.5	13.5	...	232	330	...
16x12	.52	.48	9.5	11.5	13.5	...	239	321	...
16x14	.52	.51	10.5	11.5	15.0	...	349	342	...
16	.52	.52	11.5	11.5	15.0	...	261	355	...
18x6	.59	.44	6.5	12.5	14.5	16.13	348	301	348
18x8	.59	.45	7.5	12.5	14.5	16.13	325	319	324
18x10	.59	.47	8.5	12.5	14.5	...	344	337	...
18x14	.59	.56	10.5	12.5	16.0	...	342	393	...
18x16	.59	.57	11.5	12.5	16.0	...	362	420	...
20x6	.60	.44	7.0	14.0	16.0	17.5	355	341	400
20x10	.60	.47	9.0	14.0	16.0	...	369	420	...
20x14	.60	.56	11.0	14.0	17.5	...	484	474	...
20x16	.60	.57	12.0	14.0	17.5	...	610	498	...
20x18	.60	.59	13.0	14.0	17.5	...	539	...	...
24x6	.62	.44	7.0	16.0	18.0	19.5	385	512	525
24x10	.62	.47	9.0	16.0	18.0	...	478	468	...
24x12	.62	.49	10.0	16.0	18.0	...	663	503	...
24x14	.62	.56	11.0	16.0	19.5	...	542	531	...
24x16	.62	.57	12.0	16.0	19.5	...	566	555	...
24x18	.62	.59	13.0	16.0	...	...	593	...	...
24x20	.62	.60	15.0	17.0	...	...	628	...	...
24	.62	.62	17.0	17.0	...	...	884	...	...

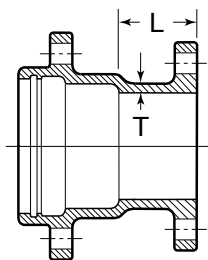
REDUCERS



UT x UT Reducers

UT x Flange Reducers

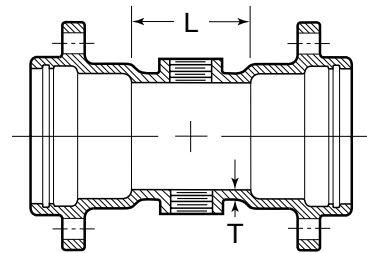
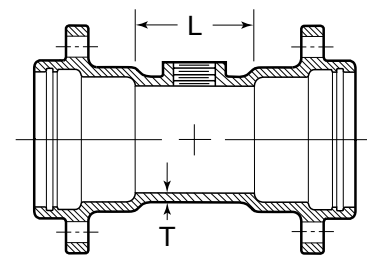
Size	T	Dimensions		G	Weights	
		T1	L		UT x UT	UT x Flange
6x4	.37	.35	4.0	6.0	33	32
8x4	.39	.35	5.0	7.0	46	46
8x6	.39	.37	4.0	6.0	53	47
10x4	.41	.35	7.0	9.0	47	55
10x6	.41	.37	5.0	7.0	47	59
10x8	.41	.39	4.0	6.0	53	61
12x4	.43	.35	9.0	11.0	74	78
12x6	.43	.37	7.0	9.0	58	73
12x8	.43	.39	5.0	7.0	74	74
12x10	.43	.41	4.0	6.0	82	95
14x6	.51	.44	9.0	11.0	84	121
14x8	.51	.45	7.0	9.0	85	128
14x10	.51	.46	5.0	7.0	87	127
14x12	.51	.47	4.0	6.0	104	144
16x6	.52	.45	11.0	13.0	94	133
16x8	.52	.46	9.0	11.0	104	141
16x10	.52	.47	7.0	9.0	130	158
16x12	.52	.48	5.0	7.0	152	172
16x14	.52	.51	4.0	6.0	139	196
18x8	.59	.45	14.0	16.0	142	157
18x10	.59	.47	12.0	14.0	151	175
18x12	.59	.49	10.0	12.0	167	215
18x14	.59	.56	8.0	11.5	217	234
18x16	.59	.57	7.0	10.5	202	246
20x10	.60	.47	14.0	16.0	180	234
20x12	.60	.49	12.0	...	205	...
20x14	.60	.56	10.0	13.5	233	249
20x16	.60	.57	8.0	11.5	250	272
20x18	.60	.59	7.0	...	248	...
24x12	.62	.49	16.0	18.0	246	262
24x14	.62	.56	14.0	17.5	281	315
24x16	.62	.57	12.0	15.5	380	328
24x18	.62	.59	10.0	...	390	...
24x20	.62	.60	8.0	...	421	...



UT x Flange Adaptor

Size	Dimensions		Weight
	T	L	
4	.35	6.0	30
6	.37	6.0	41
8	.39	6.0	63
10	.41	6.0	71
12	.43	6.0	110
14	.51	7.0	113
16	.52	7.0	115
20	.60	6.0	295

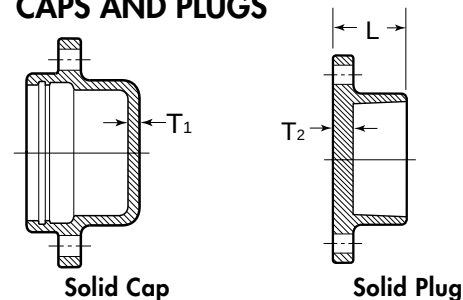
TAPPED TEE/CROSS



UT x Tapped Tee/Crosses

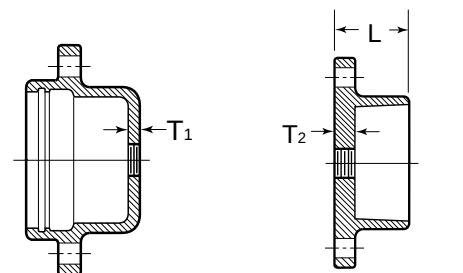
Size	T	Dimensions		Weight
		Max Tap	L	
4	.35	3.0	6.0	27
6	.37	3.5	6.0	38
8	.39	3.5	6.0	59
10	.41	3.5	6.0	72
12	.43	3.5	6.0	92

CAPS AND PLUGS



Solid Cap

Solid Plug



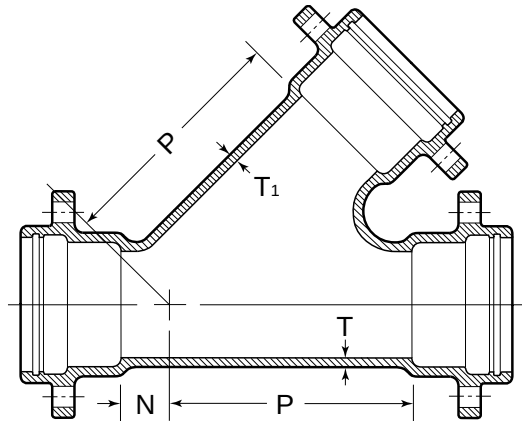
2" Tapt Cap

2" Tapt Plug

UT Caps and Plugs

Size	T1	Dimensions		Weights	
		T2	L	Cap	Plug
4	.48	.50	5.25	15	8
6	.48	.50	5.25	20	23
8	.51	.53	5.25	35	32
10	.53	.56	5.25	50	38
12	.55	.62	5.25	75	49

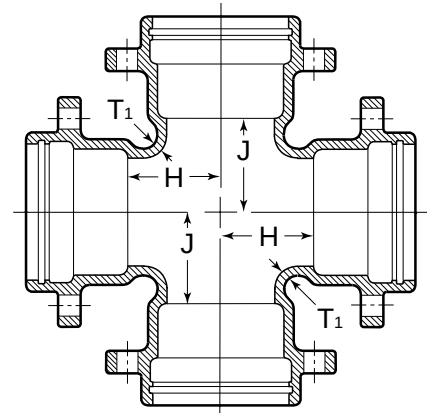
WYES



UT Wyes

Size	T	Dimensions		N	Weights
		T1	P		
8x4	.39	.35	13.5	.0	89
10x4	.41	.35	15.0	.0	141
10x6	.41	.37	16.0	1.0	151
10x8	.41	.39	17.0	2.5	175
10	.41	.41	18.0	4.0	200
12x4	.43	.35	16.5	.0	178
12x6	.43	.37	18.5	1.5	201
12x8	.43	.39	18.5	1.5	224
12x10	.43	.41	20.0	3.0	240
12	.43	.43	20.0	5.0	289
14x6	.51	.44	19.5	.0	236
14x8	.51	.45	21.0	1.5	255
14x10	.51	.46	22.5	3.0	325
14	.51	.51	25.0	6.0	475
16x6	.52	.45	21.0	.0	281
16x8	.52	.46	22.5	0.5	304
16x12	.52	.48	25.0	3.5	346
16	.52	.52	28.0	6.5	380

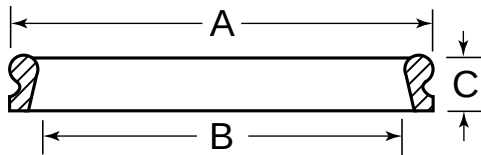
CROSSES



UT Crosses

Size	T1	Dimensions		Weights
		H	J	
6	.37	6.0	6.0	88
8x6	.37	6.0	7.0	117
8	.39	7.0	7.0	156
10x4	.35	6.0	9.0	116
12x8	.39	8.0	10.0	240
12	.43	10.0	10.0	241
14x6	.44	6.5	10.5	189
14x8	.45	7.5	10.5	204
14x10	.46	8.5	10.5	222
14x12	.47	9.5	10.5	239
14	.51	10.5	10.5	270
16x6	.45	6.5	11.5	234
16x8	.46	7.5	11.5	323
16x10	.47	8.5	11.5	268
16x12	.48	9.5	11.5	274
16x14	.51	10.5	11.5	322
16	.52	11.5	11.5	317

TYTON® GASKETS



TYTON® JOINT IPS Transition and Regular Gasket

Size	Dimensions			
	Transition (IPS)		Regular (Ductile)	
	A	B(±1%)	B*	C
4	5.74	4.18	4.68	1.00
6	7.86	6.31	6.73	1.10
8	10.15	8.32	8.85	1.29
10	12.10	10.30	10.87	1.36
12	14.31	12.70	12.95	1.45

TYTON® is a registered trademark of U.S. Pipe and Foundry Company.

NOTICE: Weights published in this catalog are for shipping purposes only. Actual weights may vary because some fittings are produced in both foundries. All fittings are made in the USA and meet the AWWA standards to which they are designed.

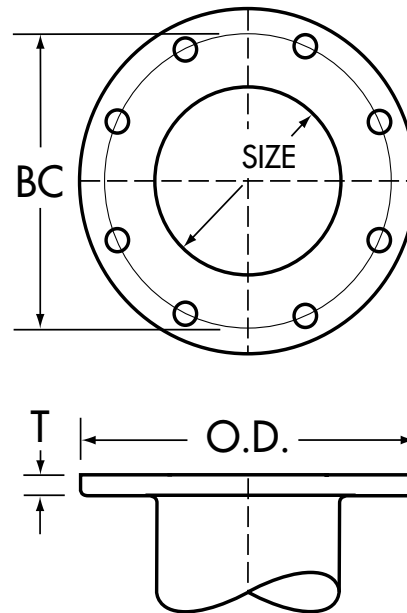
For weights of specific fittings, please contact Tyler Pipe or Union Foundry Company.

SAMPLE SPECIFICATIONS

3"-12" Compact Flanged Fittings shall be ductile iron and shall be produced in accordance with laying lengths specified in ANSI/AWWA C110/A21.10. Flange surface shall be faced and drilled in accordance with ANSI Class 125 B16.1. Nominal body thickness shall be Manufacturer's Standard, but shall not be less than those specified in ANSI/AWWA C153/A21.53 "Standards for Ductile Iron Compact Fittings". Flange thickness shall be in accordance with the Manufacturer's Standards. Working Pressure Rating shall be 250 PSI for water. Fittings shall be made in the United States of America and shall not have been refurbished or re-worked by anyone other than the manufacturer.

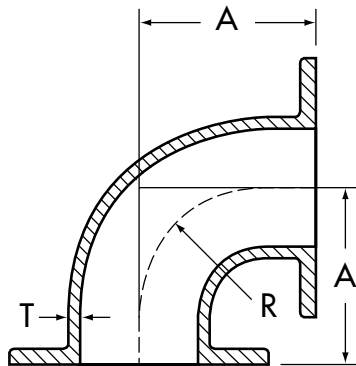
Standard Class 125 template for drilling shall be used for all flanges. Drilling templates shall be in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line and shall be equally spaced. Misalignment of bolt holes of two opposing flanges shall not exceed 0.12 inches.

All coated fittings meet requirements of NSF-61. Interiors shall be lined and seal coated in accordance with ANSI/AWWA C104/A21.04 "Cement-mortar Lining for Ductile Iron Pipe and Fittings for Water" unless otherwise specified by the user. Also available prime coated or bare. See list price sheet for details.



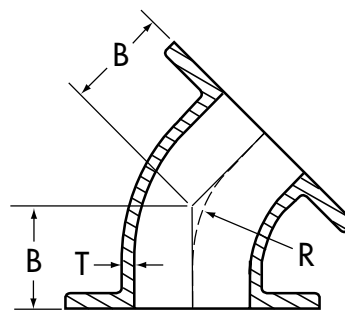
Joint Dimensions In Inches

Nominal Pipe Size	Flange O.D.	Flange Thickness T	Bolt Circle	Bolt Hole Diameter	Number of Bolts
3	7.5	0.60	6.00	3/4	4
4	9.0	0.63	7.50	3/4	8
6	11.0	0.63	9.50	7/8	8
8	13.5	0.70	11.75	7/8	8
10	16.0	0.75	14.25	1	12
12	19.0	0.81	17.00	1	12



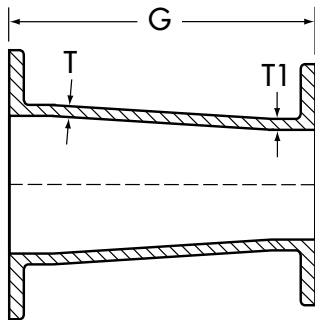
Flanged Compact 90° (1/4) Bend

Dimensions In Inches				
Size	T	A	R	Weight
3	0.34	5.50	4.00	23
4	0.35	6.50	4.50	32
6	0.37	8.00	6.00	56
8	0.39	9.00	7.00	78
10	0.41	11.00	9.00	125
12	0.43	12.00	10.00	178



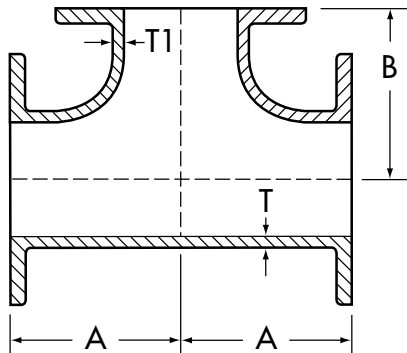
Flanged Compact 45° (1/8) Bend

Dimensions In Inches				
Size	T	B	R	Weight
4	0.35	4.00	4.81	28
6	0.37	5.00	7.25	41
8	0.39	5.50	8.44	69
10	0.41	6.50	10.88	98
12	0.43	7.50	13.25	139



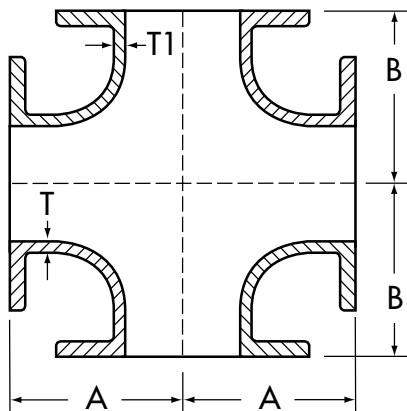
Flanged Compact Concentric Reducer

Dimensions In Inches				
Size	T	T1	G	Weight
6x4	0.37	.35	9.00	41
8x6	0.39	.37	11.00	54



Flanged Compact Tee

Dimensions In Inches					
Size	T	T1	A	B	Weight
4x3	0.35	0.34	6.50	6.50	47
4	0.35	0.35	6.50	6.50	48
6x4	0.37	.035	8.00	8.00	68
6	0.37	0.37	8.00	8.00	75
8x4	0.39	0.35	9.00	9.00	83
8x6	0.39	.037	9.00	9.00	101
8	0.39	0.39	9.00	9.00	105
10x6	0.41	0.37	11.00	11.00	158
10x8	0.41	0.39	11.00	11.00	165
10	0.41	0.41	11.00	11.00	170
12x6	0.43	0.37	12.00	12.00	187
12x8	0.43	0.39	12.00	12.00	205
12	0.43	0.43	12.00	12.00	245



Flanged Compact Cross

Dimensions In Inches					
Size	T	T1	A	B	Weight
8x8	0.39	.39	9.00	9.00	138

NOTICE: Weights published in this catalog are for shipping purposes only. Actual weights may vary because some fittings are produced in both foundries. All fittings are made in the USA and meet the AWWA standards to which they are designed.

Compact flanged fittings are made to manufacturer's standards, incorporating AWWA C153 wall thickness and AWWA C110 laying lengths.

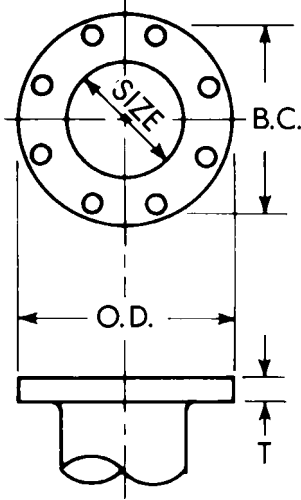
For weights of specific fittings, please contact Tyler Pipe or Union Foundry Company.

SAMPLE SPECIFICATION

Flanged Fittings, 2" through 30" shall be manufactured in the USA of Ductile Iron in accordance with all applicable terms and provisions of standards ANSI/AWWA C110/A21.10 (current revisions). Flange surface shall be faced and drilled in accordance with ANSI Class 125 B16.1. All Ductile Iron Flanged Fittings shall be rated for water pressure of 250 PSI. All coated fittings shall be in accordance with NSF-61. Interiors shall be lined and seal coated in accordance with ANSI/AWWA C104/A21.04

"Cement-mortar Lining for Ductile Iron Pipe and Fittings for Water" unless otherwise specified.

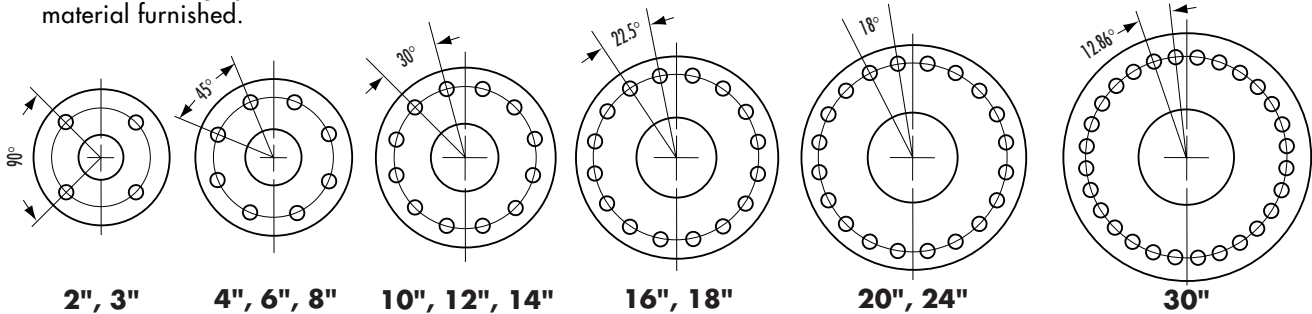
FLANGE DETAILS



Nominal Pipe Size Inch	Flange O.D.	Dia. of Bolt Circle	Flange Thickness T	Bolt Hole Diameter	Number of Bolts	Bolt Dia. and Lengths
2	6	4.75	.62	.75	4	$\frac{5}{8} \times 2\frac{1}{4}$
3	7.5	6	.75	.75	4	$\frac{5}{8} \times 2\frac{1}{2}$
4	9	7.5	.94	.75	8	$\frac{5}{8} \times 3$
6	11	9.5	1.00	.875	8	$\frac{3}{4} \times 3\frac{1}{2}$
8	13.5	11.75	1.12	.875	8	$\frac{3}{4} \times 3\frac{1}{2}$
10	16	14.25	1.19	1.00	12	$\frac{7}{8} \times 4$
12	19	17	1.25	1.00	12	$\frac{7}{8} \times 4$
14	21	18.75	1.38	1.125	12	$1 \times 4\frac{1}{2}$
16	23.5	21.25	1.44	1.125	16	$1 \times 4\frac{1}{2}$
18	25	22.75	1.56	1.25	16	$1\frac{1}{8} \times 5$
20	27.5	25	1.69	1.25	20	$1\frac{1}{8} \times 5$
24	32	29.5	1.88	1.375	20	$1\frac{1}{4} \times 5\frac{1}{2}$
30	38.75	36	2.12	1.375	28	$1\frac{1}{4} \times 6\frac{1}{2}$

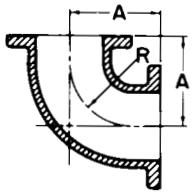
NOTE: Drilling templates are in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line.

NOTE: No flange joint material furnished.

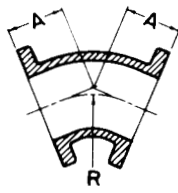


BENDS

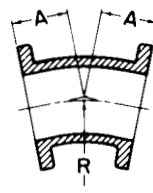
Note: Base Bends are on page 33 and 34, reducing and long radius 90° bends are on page 33.



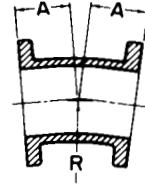
90° Bends (1/4)



45° Bends (1/8)



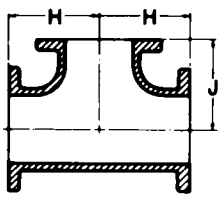
22 1/2° Bends (1/16)



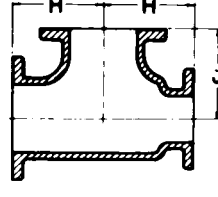
11 1/4° Bends (1/32)

Size	Dimensions			Dimensions			Dimensions			Dimensions		
	R	A	Weight	R	A	Weight	R	A	Weight	R	A	Weight
2	3.0	4.5	14	...	...	...	...	...	...	...	...	...
3	4	5.5	25	3.62	3	20	7.56	3	20	15.25	3	20
4	4.5	6.5	48	4.81	4	42	10.06	4	40	20.31	4	40
6	6	8	74	7.25	5	66	15.06	5	64	30.5	5	55
8	7	9	118	8.44	5.5	105	17.62	5.5	90	35.5	5.5	90
10	9	11	190	10.88	6.5	154	22.62	6.5	130	45.69	6.5	159
12	10	12	275	13.25	7.5	195	27.67	7.5	231	55.81	7.5	195
14	11.5	14	330	12.06	7.5	245	25.12	7.5	250	50.75	7.5	245
16	12.5	15	430	13.25	8	315	27.62	8	315	55.81	8	315
18	14	16.5	530	14.5	8.5	375	30.19	8.5	385	60.94	8.5	385
20	15.5	18	685	16.88	9.5	595	35.19	9.5	505	71.06	9.5	505
24	18.5	22	1085	18.12	11	730	37.69	11	755	76.12	11	760
30	21.5	25	1755	27.75	15	1335	57.81	15	1385	116.75	15	1395

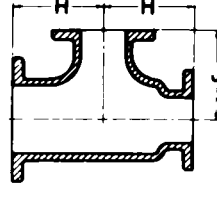
TEES, REDUCING TEES, CROSSES



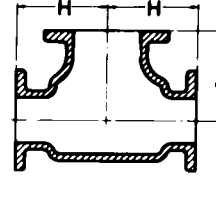
**Straight Tees, Reducing
on Branch Tees**



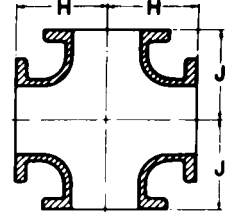
***Reducing
on Run**



***Reducing on
Run and Branch**



***Bullhead
Tees**



**Straight and
Reducing Crosses**

Size			Dimensions		Weights	
Run	Run	Branch	H	J	Tee	Cross
2	2	2	4.5	4.5	20	
3	3	2	5.5	5.5	35	...
3	3	3	5.5	5.5	40	50
4	3	3	6.5	5.5	55	...
*4	4	2	6.5	6.5	62	...
4	4	3	6.5	6.5	60	78
4	4	4	6.5	6.5	60	92
*4	4	6	8.0	8.0	90	...
*6	4	4	8.0	8.0	103	...
*6	4	6	8.0	8.0	108	...
*6	6	2	8.0	8.0	156	...
6	6	3	8.0	8.0	85	107
6	6	4	8.0	8.0	90	110
6	6	6	8.0	8.0	112	141
6	6	8	9.0	9.0	140	...
*8	6	4	9.0	9.0	146	...
*8	6	6	9.0	9.0	148	...
*8	6	8	9.0	9.0	145	...
8	8	3	9.0	9.0	130	140
8	8	4	9.0	9.0	150	155
8	8	6	9.0	9.0	183	191
8	8	8	9.0	9.0	179	195
*8	8	10	11.0	11.0	260	...
*8	8	12	12.0	12.0	291	...
*†10	6	6	13.0	13.0	275	...
*†10	6	10	13.0	13.0	305	...
*†10	8	6	13.0	13.0	280	...
*†10	8	8	13.0	13.0	302	...
*†10	8	10	13.0	13.0	325	...
10	10	4	11.0	11.0	239	220
10	10	6	11.0	11.0	215	240
10	10	8	11.0	11.0	254	292
10	10	10	11.0	11.0	291	330
10	10	12	12.0	12.0	355	...
*†12	6	6	14.0	14.0	340	...
*†12	6	8	14.0	14.0	360	...
*†12	8	6	14.0	14.0	355	...

Size			Dimensions		Weights	
Run	Run	Branch	H	J	Tee	Cross
*12	8	8	12.0	12.0	375	...
*12	8	12	12.0	12.0	420	...
*†12	10	6	14.0	14.0	390	...
12	10	8	12.0	12.0	400	...
12	10	10	12.0	12.0	420	...
12	10	12	12.0	12.0	440	...
12	12	4	12.0	12.0	322	310
12	12	6	12.0	12.0	295	355
12	12	8	12.0	12.0	346	383
12	12	10	12.0	12.0	394	415
12	12	12	12.0	12.0	408	494
*14	14	4	14.0	14.0	410	...
14	14	6	14.0	14.0	420	450
14	14	8	14.0	14.0	435	475
14	14	10	14.0	14.0	450	...
14	14	12	14.0	14.0	470	555
14	14	14	14.0	14.0	500	595
*16	16	4	15.0	15.0	525	...
16	16	6	15.0	15.0	540	565
16	16	8	15.0	15.0	555	590
16	16	10	15.0	15.0	565	620
16	16	12	15.0	15.0	590	665
16	16	14	15.0	15.0	610	...
16	16	16	15.0	15.0	635	755
18	18	6	13.0	15.5	641	...
18	18	8	13.0	15.5	652	...
18	18	10	13.0	15.5	585	...
18	18	12	13.0	15.5	605	670
18	18	14	16.5	16.5	740	...
18	18	16	16.5	16.5	760	...
18	18	18	16.5	16.5	870	915

* Not included in AWWA C110

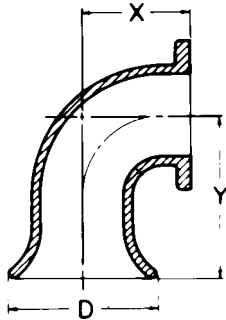
† H and J dimensions are two-inches longer than straight tees.

TEES, REDUCING TEES, CROSSES (Con't)

Run	Size Run	Branch	Dimensions		Tee	Weights Cross
			H	J		
20	20	6	14.0	17.0	804	...
20	20	8	14.0	17.0	720	...
20	20	10	14.0	17.0	735	...
20	20	12	14.0	17.0	755	820
20	20	14	14.0	17.0	770	...
20	20	16	18.0	18.0	950	1065
20	20	18	18.0	18.0	965	...
20	20	20	18.0	18.0	1005	1175
24	24	6	15.0	19.0	1000	...
24	24	8	15.0	19.0	1010	...
24	24	10	15.0	19.0	1020	...
24	24	12	15.0	19.0	1040	1100
24	24	14	15.0	19.0	1050	1125
24	24	16	15.0	19.0	1070	1160
24	24	18	22.0	22.0	1470	...
24	24	20	22.0	22.0	1510	1695
24	24	24	22.0	22.0	1585	1850
*30	30	6	18.0	23.0	1725	...
30	30	12	18.0	23.0	1780	...
30	30	18	18.0	23.0	1815	...
30	30	24	25.0	25.0	2475	2695
30	30	30	25.0	25.0	2615	2985

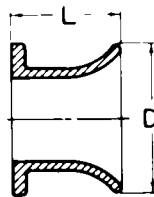
* Not included in AWWA C110

FLANGE AND FLARE



*Flange and Flare 90° Ell

Size	Dimensions			Weight
	D	X	Y	
3	7.5	5.5	8.5	25
4	9.0	6.5	9.5	40
6	11.0	8.0	12.0	82
8	13.5	9.0	13.0	110
10	16.0	11.0	15.0	175
12	19.0	12.0	16.0	245
14	21.0	14.0	22.0	450
16	23.5	15.0	23.0	545
18	25.0	16.5	24.5	675
20	27.5	18.0	26.0	860
24	32.0	22.0	30.0	1195

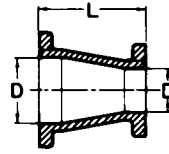


*Flange and Flare Piece

Size	Dimensions		Weight
	D	L	
3	7.25	8	20
4	9.00	8	30
6	11.00	8	40
8	13.50	10	70
10	16.00	10	113
12	19.00	12	155
14	21.00	16	225
16	23.50	16	330
18	25.00	16	355
20	27.50	18	460
24	32.00	18	635

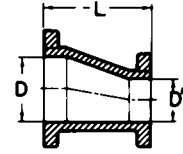
* Not included in AWWA C110

REDUCERS



Concentric Reducer

Size D	Size D'	Dimensions L	Wts
3	2	6	16
4	2	7	25
4	3	7	32
6	2	9	30
6	3	9	44
6	4	9	45
6	5	9	52
8	3	11	60
8	4	11	77
8	5	11	70
8	6	11	75
10	4	12	98
10	6	12	107
10	8	12	110
12	4	14	137
12	6	14	130
12	8	14	173
12	10	14	170
14	6	16	165
14	8	16	185
14	10	16	205
14	12	16	235
16	6	18	210
16	8	18	230
16	10	18	255
16	12	18	285
16	14	18	315
18	8	19	265
18	10	19	290
18	12	19	320
18	14	19	350
18	16	19	385
20	10	20	340
20	12	20	464
20	14	20	405
20	16	20	445
20	18	20	470
24	12	24	635
24	14	24	565
24	16	24	610
24	18	24	645
24	20	24	695
30	16	30	945
30	18	30	970
30	20	30	1035
30	24	30	1155



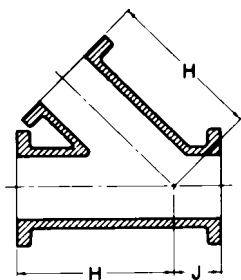
Eccentric Reducer

Size D	Size D'	Dimensions L	Wts
4	3	7	30
6	3	9	40
6	4	9	54
8	4	11	65
8	6	11	84
10	6	12	90
10	8	12	137
12	6	14	130
12	8	14	145
12	10	14	170
16	6	18	210
16	8	18	230
16	10	18	255
16	12	18	285
16	14	18	315
18	8	19	265
18	10	19	290
18	12	19	320
18	14	19	350
18	16	19	385
20	10	20	340
20	12	20	375
20	14	20	405
20	16	20	445
20	18	20	470
24	12	24	535
24	14	24	565
24	16	24	610
24	18	24	645
24	20	24	695

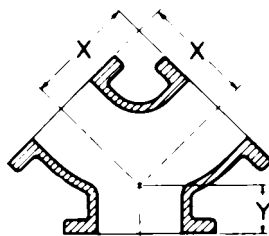
**NOTE: Eccentric Reducers
not included in AWWA
C110**

**NOTE: Eccentric Reducers
Offset**
 $\frac{1}{2} D \text{ minus } \frac{1}{2} D' = \text{Offset}$
Example:
 6x3 Ecc.Reducer
 $3 - 1\frac{1}{2} = 1\frac{1}{2}" \text{ Offset}$

* WYES



***45° Wye**

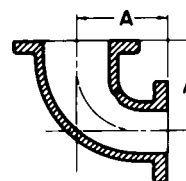


True Wye

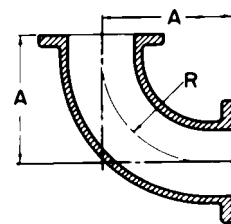
Size	Dimensions			
Run	Branch	H	J	Weight
3	3	10	3	45
4	3	12	3	65
4	4	12	3	75
6	4	14.5	3.5	105
6	6	14.5	3.5	131
8	4	17.5	4.5	165
8	6	17.5	4.5	175
8	8	17.5	4.5	200
10	4	20.5	5	240
10	6	20.5	5	302
10	8	20.5	5	330
10	10	20.5	5	300
12	4	24.5	5.5	355
12	6	24.5	5.5	370
12	8	24.5	5.5	395
12	10	24.5	5.5	420
12	12	24.5	5.5	460
14	6	27	6	500
14	8	27	6	525
14	10	27	6	555
14	12	27	6	600
14	14	27	6	640
16	6	30	6.5	655
16	8	30	6.5	680
16	10	30	6.5	715
16	12	30	6.5	755
16	14	30	6.5	800
16	16	30	6.5	850
18	8	32	7	820
18	10	32	7	855
18	12	32	7	1003
18	14	32	7	940
18	16	32	7	990
18	18	32	7	1035
20	10	35	8	1095
20	12	35	8	1130
20	14	35	8	1170
20	16	35	8	1220
20	20	35	8	1345
24	24	40.5	9	2020

* Not included in AWWA C110

BENDS



***90° Reducing Bend (1/4)**



***90° Long Radius Bend (1/4)**

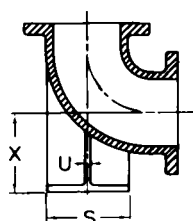
Dimensions		
Size	A	Weight
4x3	6.5	35
6x4	8	65
8x4	9	75
8x6	9	105
10x6	11	125
10x8	11	150
12x6	12	165
12x8	12	190
12x10	12	243

* Not included in AWWA C110

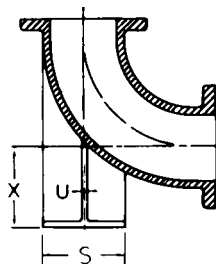
Dimensions			
Size	R	A	Weight
3	6.25	7.75	28
4	7	9	50
6	9.5	11.5	80
8	14	14	140
10	16.5	16.5	244
12	17	19	325
14	19	21.5	475
16	21.5	24	630

* Not included in AWWA C110

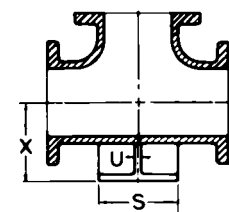
BASE BENDS, BASE TEES



90° Base Bend (1/4)



***90° Long Radius Base Bend (1/4)**



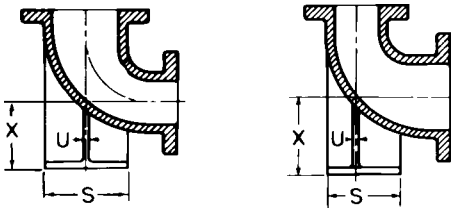
Base Tees

Base Bends are made to order only, not returnable. Bases are furnished faced and drilled.

Size	Dimensions	Support			
	X	S	U	Pipe Size	90° Weight 90°LR Tee
3	4.88	5	.50	1.5	35 38 50
4	5.5	6	.50	2	55 60 70
6	7	7	.62	2.5	85 100 115
8	8.38	9	.88	4	145 180 195
10	9.75	9	.88	4	210 315 315
12	11.25	11	1.00	6	300 427 450
14	12.5	11	1.00	6	400 580 570
16	13.75	11	1.00	6	505 740 710
18	15	13.5	1.12	8	645 ... 900
20	16	13.5	1.12	8	805 ... 1125
24	18.5	13.5	1.12	8	1453 ... 1927
30	23	16	1.15	10	1945

* Not included in AWWA C110

* REDUCING BASE BENDS



Base Under
Large End

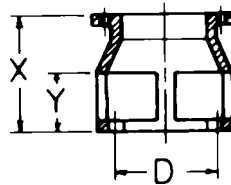
Base Under
Small End

Dimensions		U	Weight
Size	X S		
4x3	5.5 6	.50	45
6x4	7 7	.62	75
8x4	8.38 9	.88	115
8x6	8.38 9	.88	135
10x6	9.75 9	.88	170
10x8	9.75 9	.88	195
12x6	11.25 11	1.00	230
12x8	11.25 11	1.00	255
12x10	11.25 11	1.00	285

* Not included in AWWA C110

NOTE: "X" dimensions are identical on Base-under-large-end and Base-under-small-end.
"S" dimensions are determined by the largest fitting opening.

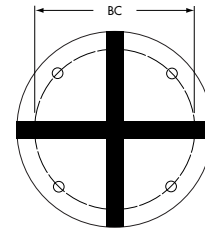
* FLANGE SLUDGE SHOE



Flange Sludge Shoe

Dimensions		Y	Weight
Size	D X		
3	5.75 12	6	25
4	7.00 12	6	35
6	7.87 12	6	45
8	10.12 12	6	65
10	12.25 12	6	85
12	15.25 12	6	120

* Not included in AWWA C110



Base Drilling Details

Nom. Diameter Inches	Dimensions - Inches		
	BC	Bolt Hole Diameter	Number of Bolts
3	3.88	5/8	4
4	4.75	3/4	4
6	5.50	3/4	4
8	7.50	3/4	4
10	7.50	3/4	4
12	9.50	7/8	4
14	9.50	7/8	4
16	9.50	7/8	4
18	11.75	7/8	4
20	11.75	7/8	4
24	11.75	7/8	4
30	14.25	1	4
36	17.00	1	4
42	21.25	1-1/8	4
48	22.75	1-1/4	4

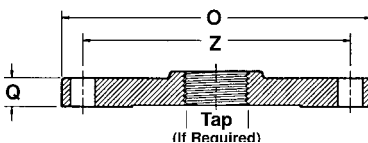
FLANGES



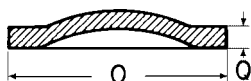
Flange for Steel Pipe
Reducing Flange for Steel Pipe



Flange for DI Pipe
Reducing Flange for DI Pipe



Under 12" Blind Flange
With Optional 2" Taps



12" and Larger Blind Flange
With Optional 2" Taps

Size	Dimensions					Weight			
	O	Q	X	Y	Z	Steel	DI	Blind	Blind Tap
2	6	.62	...	1	4.75	6	...	...	...
2 1/2	7	.69	...	1.13	5.50	7	...	...	...
3	7.5	.75	1.8	1.19	6.00	9	6	8	8
4	9	.94	1.89	1.31	7.50	12	12	14	14
6	11	1.00	2.1	1.56	9.50	21	14	28	28
8	13.5	1.12	2.31	1.75	11.75	25	34	43	43
10	16	1.19	2.52	1.94	14.25	49	33	62	62
12	19	1.25	2.73	2.19	...	55	52	87	87
14	21	1.38	2.875	2.25	...	...	72	110	110
16	23.5	1.44	3.188	2.5	...	...	90	165	165
18	25	1.56	3.125	2.69	...	...	105	190	190
20	27.5	1.69	3.5	2.88	...	...	115	250	250
24	32	1.88	3.687	3.25	...	...	160	370	370
30	38.75	2.12	4.875	...	...	...	255*	580	580

* Mfg. at Tyler Pipe; all others from Union Foundry

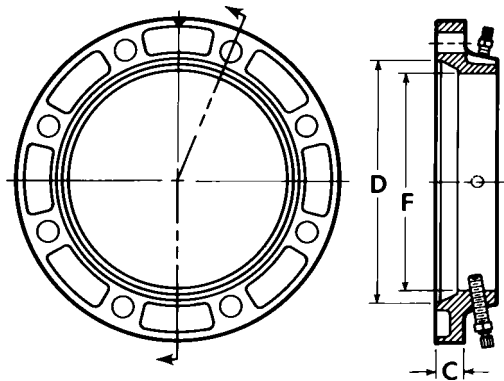
NOTE: All flanges conform to ANSI/AWWA C110/A21.10 Standards and ASME/ANSI B16.1.

DI Reducing Flange
Threaded For Steel Pipe

Size	Tap x O.D.	Weight
4x3	3x9	16
6x4	4x11	25
8x4	4x13 1/2	44
8x6	6x13 1/2	31
10x6	6x16	50
12x6	6x19	60
10x8	8x16	55
12x10	10x19	72

DI Reducing Flange
Threaded For Cast Iron Pipe

Size	Tap x O.D.	Weight
4x3	3x9	16
6x4	4x11	25
8x4	4x13 1/2	40
8x6	6x13 1/2	35
10x8	8x16	50
12x8	8x19	85



DUCTILE IRON ADAPTER FLANGE

Size	Ductile Iron Pipe OD +.06 or -.06	D +.06 -.04	F +.07 -.03	C	Weight
3	3.96	4.94	4.06	.94	7
4	4.80	6.02	4.90	1.00	10
6	6.90	8.12	7.00	1.06	14
8	9.05	10.27	9.15	1.12	22
10	11.10	12.34	11.20	1.19	30
12	13.20	14.44	13.30	1.25	40

All set screws are $\frac{5}{8}$ " 80 lb. torque head.

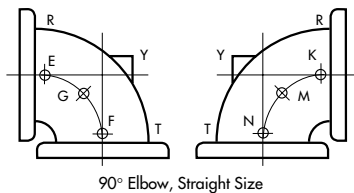
Wall Thickness Note: Recommended for Ductile Iron Pipe Class 53 thru Class 56.

See Installation Instructions Page 59

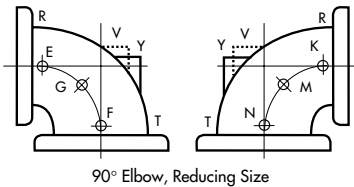
Size	Rated Working Pressure	No. of Set Screws	Bolt Circle	No. of Bolt & Nuts	Size of Bolt	Bolt Hole Dia.
3	250	4	6.00	4	$\frac{5}{8} \times 2\frac{1}{2}$	$\frac{3}{4}$
4	250	4	7.50	8	$\frac{5}{8} \times 3$	$\frac{3}{4}$
6	250	8	9.50	8	$\frac{3}{4} \times 3\frac{1}{2}$	$\frac{7}{8}$
8	250	8	11.75	8	$\frac{3}{4} \times 3\frac{1}{2}$	$\frac{7}{8}$
10	250	12	14.25	12	$\frac{7}{8} \times 4$	1
12	150	12	17.00	12	$\frac{7}{8} \times 4$	1

LOCATION OF TAPPED HOLES FOR DRAINS AWWA C110 Flanged Fittings

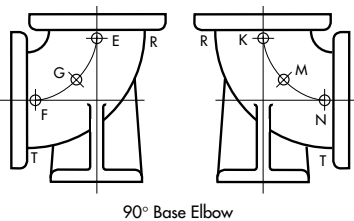
Fittings can be supplied with taps sized and located to ANSI B16.1 and MSS-SP-45. Specify fitting size, tap location by letter (refer to drawings) and tap size by NPT dimension, on order.



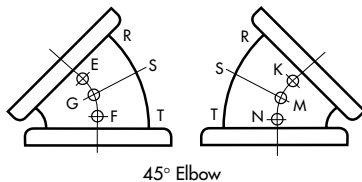
90° Elbow, Straight Size



90° Elbow, Reducing Size

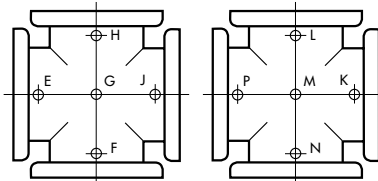


90° Base Elbow

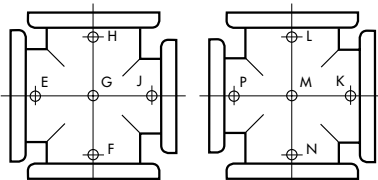


45° Elbow

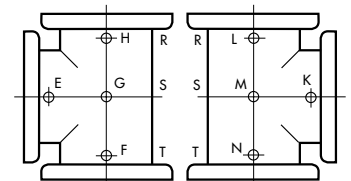
Fitting Size	Maximum Tap Without Boss
3"	1/2"
4" - 6"	3/4"
8"	1-1/4"
10" - 16"	1-1/2"
18" - 30"	2"



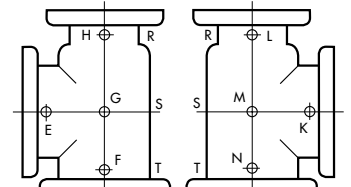
Cross, Straight Size



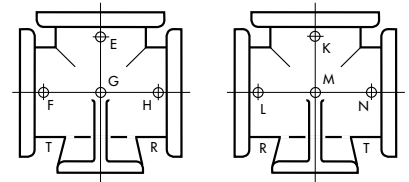
Cross, Reducing Size



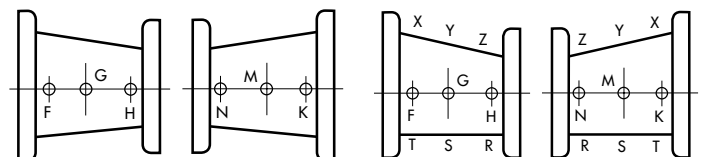
Tee, Straight Size



Tee, Reducing Size



Base Tee



Concentric Reducer

Eccentric Reducer

SPECIAL TAP PRICING POLICY

Special taps in fittings apply to C-110 Flanged Fittings only. Flanged Fittings that require a tapping boss will have a one time \$200.00 (net) set up charge per boss per position. The price of each special tap, regardless of the tap size, is \$50.00 (net). For more details consult your Customer Service Representative.

SAMPLE SPECIFICATION FOR LINED DUCTILE IRON FITTINGS FOR SEWER SERVICE

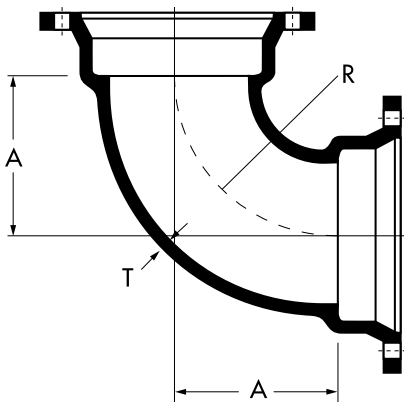
3" through 24" Compact Mechanical Joint Ductile Iron Fittings shall be manufactured in the USA in accordance with applicable terms and provisions of standards ANSI/AWWA C153/A21.53, current revision.

18" through 24" Mechanical Joint Crosses and Wyes shall be manufactured in the USA in accordance with all applicable terms and provisions of ANSI/AWWA C110/A21.10, current revision.

All Ductile Iron Mechanical Joint Fittings are rated for 350 psi working pressure, unless otherwise indicated. Mechanical joint fittings with flanged branched are rated for water pressure of 250 psi.

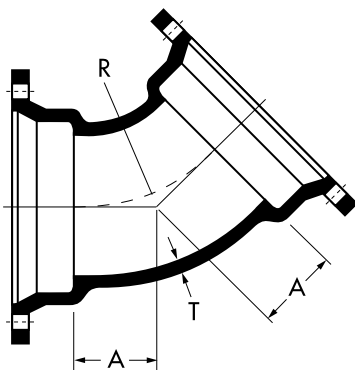
NOTE: Ductile Iron Mechanical Joint Fittings shall include a factory applied amine cured novalac epoxy lining of nominal 40 mils thickness, containing at least 20% by volume of ceramic quartz pigment.

Exteriors shall be seal-coated in accordance with ANSI/AWWA C104/A21.4, current revision.



PROTECTO 90° BENDS (1/4)

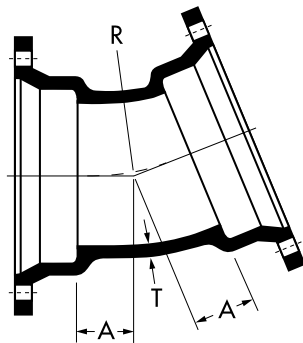
UPC # 670610	Ship Code	Size	T	Dimensions A	R	Weight
383642	S	3	.34	4.5	4.0	20
383659	S	4	.35	5.0	4.5	26
383666	S	6	.37	6.5	6.0	48
383857	S	8	.39	7.5	7.0	68
383758	S	10	.41	9.5	9.0	136
383765	S	12	.43	10.5	10.0	141
384472	N	14	.51	12.0	11.5	220
384489	N	16	.52	13.0	12.5	264
384441	N	18	.59	15.5	14.0	410
384458	N	20	.60	17.0	15.5	505
384465	N	24	.62	20.0	18.5	695



PROTECTO 45° BENDS (1/8)

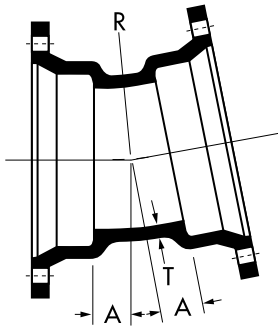
UPC # 670610	Ship Code	Size	T	Dimensions A	R	Weight
383673	S	3	.34	2.00	3.62	16
383680	S	4	.35	2.49	4.81	22
383864	S	6	.37	3.50	7.25	40
383871	S	8	.39	4.00	8.44	59
383772	S	10	.41	5.01	10.88	86
383789	S	12	.43	5.98	13.25	109
384878	N	14	.51	5.50	12.06	164
384885	N	16	.52	5.98	13.25	202
384892	N	18	.59	7.50	14.50	325
384908	N	20	.60	8.00	16.88	368
384915	N	24	.62	9.00	18.12	481

Pricing Note: "With Accessories" prices are shown for assistance in preparing quotations only. For your convenience, we will calculate the appropriate accessories on orders. However, all invoices will list fittings and accessories net prices separately.



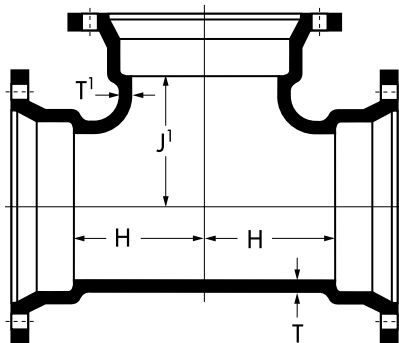
PROTECTO 22° BENDS (1/16)

UPC # 670610	Ship Code	Size	T	Dimensions A R		Weight
384809	N	3	.34	1.50	4.98	15
383697	S	4	.35	1.82	6.66	21
383703	S	6	.37	2.59	10.50	37
383949	S	8	.39	2.85	11.80	51
383796	S	10	.41	3.35	14.35	67
383802	S	12	.43	3.86	16.90	90
384922	N	14	.51	3.93	17.25	148
384939	N	16	.52	3.98	17.50	179
385011	N	18	.59	7.50	30.19	292
384946	N	20	.60	8.50	35.19	364
384953	N	24	.62	9.00	37.69	481



PROTECTO 11° BENDS (1/32)

UPC # 670610	Ship Code	Size	T	Dimensions A R		Weight
384816	N	3	.34	1.25	7.62	15
384823	N	4	.35	1.55	10.70	20
384830	N	6	.37	1.81	13.26	33
384847	N	8	.39	2.06	15.80	48
384854	N	10	.41	2.32	18.36	61
384861	N	12	.43	2.56	20.90	79
384960	N	14	.51	2.59	21.25	133
384977	N	16	.52	2.62	21.50	159
384984	N	18	.59	7.50	60.94	320
384991	N	20	.60	8.50	71.07	346
385004	N	24	.62	9.00	76.12	457

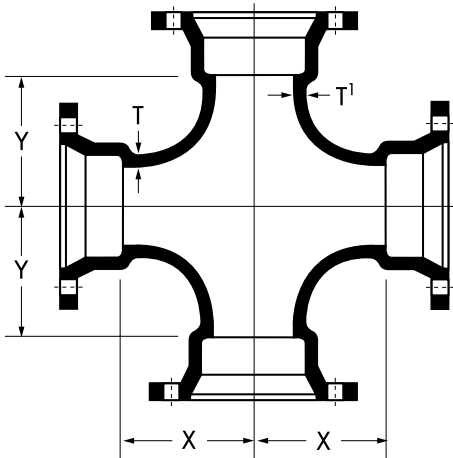
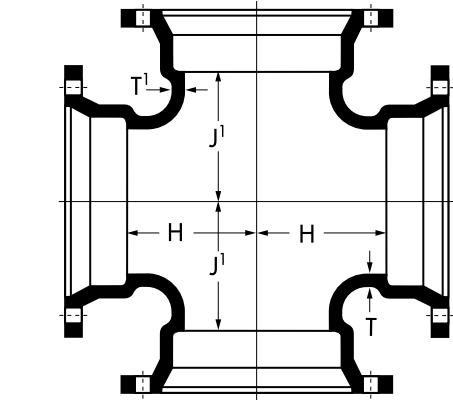


PROTECTO TEES

UPC # 670610	Ship Code	Size	T	Dimensions T1 H J1			Weight
385134	N	3	.34	.34	3.5	3.50	26
385141	N	4x3	.35	.34	3.5	4.00	32
383741	S	4	.35	.35	4.0	4.00	35
383925	S	6x4	.37	.35	4.0	5.00	51
383932	S	6	.37	.37	5.0	5.00	60
383888	S	8x4	.39	.35	4.5	6.50	71
383826	S	8x6	.39	.37	5.5	6.50	80
383833	S	8	.39	.39	6.5	6.50	90
385158	N	10x6	.41	.37	5.5	7.50	93
385165	N	10x8	.41	.39	6.5	7.50	113
385172	N	10	.41	.41	7.5	7.50	120
385189	N	12x6	.43	.37	5.5	8.75	115
385196	N	12x8	.43	.39	6.5	8.75	123
385202	N	12x10	.43	.41	7.5	8.75	153
383840	S	12	.43	.43	8.75	8.75	178
385219	N	14	.51	.51	10.5	10.50	281
385226	N	16x6	.52	.45	6.5	11.50	229
385233	N	16x8	.52	.46	7.5	11.50	248
385240	N	16x10	.52	.47	8.5	11.50	265
385257	N	16x12	.52	.48	9.5	11.50	281
385264	N	16	.52	.52	11.5	11.50	361
385271	N	18	.59	.59	12.5	12.50	490
385288	N	20x12	.60	.49	10.0	14.00	432
385295	N	20x16	.60	.57	12.0	14.00	530
385301	N	20	.60	.60	14.0	14.00	605
385318	N	24	.62	.62	17.0	17.00	947

PROTECTO CROSSES

UPC # 670610	Ship Code	Size	T	Dimensions T ¹	H	J ¹	Weight
386322	N	3	.34	.34	3.50	3.50	33
386339	N	4x3	.35	.34	3.50	4.00	40
386346	N	4	.35	.35	4.00	4.00	42
386353	N	6x4	.37	.35	4.00	5.00	62
386360	N	6	.37	.37	5.00	5.00	80
386377	N	8x4	.39	.35	4.50	6.50	84
386384	N	8x6	.39	.37	5.50	6.50	108
386391	N	8	.39	.39	6.50	6.50	115
386407	N	10x6	.41	.37	5.50	7.50	118
386414	N	10x8	.41	.39	6.50	7.50	138
386421	N	10	.41	.41	7.50	7.50	155
386438	N	12x6	.43	.37	5.50	8.75	140
386445	N	12x8	.43	.39	6.50	8.75	155
386452	N	12x10	.43	.41	7.50	8.75	187
386469	N	12	.43	.43	8.750	8.75	212
386537	N	14	.51	.51	10.50	10.50	299
386544	N	16x6	.52	.45	6.50	11.50	250
386551	N	16x8	.52	.46	7.50	11.50	264
386568	N	16x10	.52	.47	8.50	11.50	286
386575	N	16x12	.52	.48	9.50	11.50	310
386582	N	16	.52	.52	11.50	11.50	410



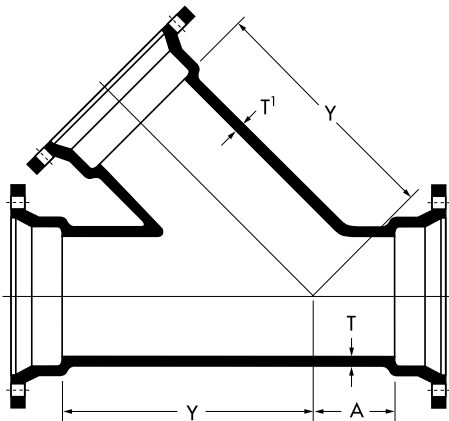
PROTECTO C110 CROSSES

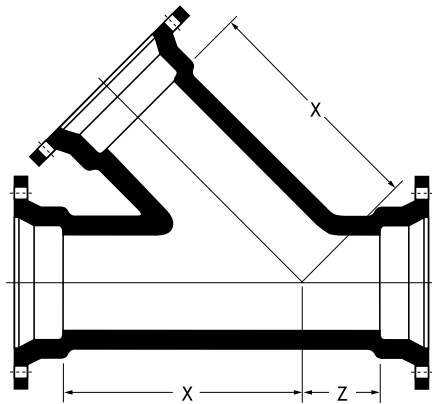
UPC # 670610	Ship Code	Size	T	Dimensions T ¹	X	Y	Weight
386599	N	18x18	.75	.75	16.5	16.5	1140
386605	N	20x12	.80	.75	14.0	17.0	955
386612	N	20x16	.80	.70	18.0	18.0	1245
386629	N	20x20	.80	.80	18.0	18.0	1415
386636	N	24x24	.89	.89	22.0	22.0	2155

PROTECTO WYES (Not included in AWWA C153)

UPC # 670610	Ship Code	Size	A	Dimensions Y	T	T ¹	Weight
383710	S	3	2.0	8.5	.34	.34	36
387770	N	4x3	1.0	9.0	.35	.34	40
383727	S	4	2.5	9.5	.35	.35	45
383734	S	6x4	1.5	11.0	.37	.35	67
383819	S	6	3.0	13.0	.37	.37	93
383895	S	8x4	0.5	13.0	.39	.35	93
383901	S	8x6	2.0	14.5	.39	.37	113
387787	N	8	3.5	16.0	.39	.39	136
387794	N	10x6	1.0	16.0	.41	.37	136
387800	N	10x8	2.5	17.0	.41	.39	170
385455	N	10	3.5	19.0	.41	.41	199
385462	N	12x6	1.5	18.5	.43	.37	186
385479	N	12x8	1.5	18.5	.43	.39	188
385486	N	12x10	3.0	20.0	.43	.41	223
383918	S	12	4.5	22.5	.43	.43	272
385615	N	†14	6.0	25.0	.51	.51	474
385622	N	16x6	0.0	21.0	.52	.45	300
385639	N	16x8	0.5	22.5	.52	.46	349
385646	N	†16x12	3.5	25.0	.52	.48	453
385653	N	†16	6.5	28.0	.52	.52	575

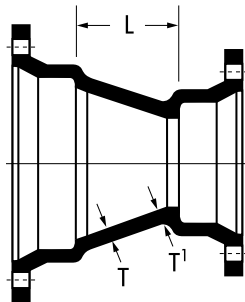
† Rated for 250 psi





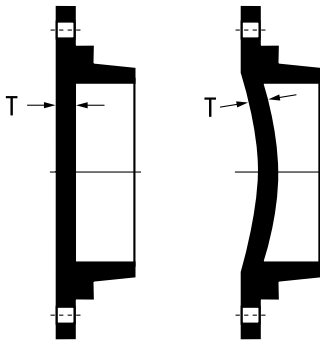
PROTECTO WYES, FULL BODY (Not included in AWWA C110)

UPC # 670610	Ship Code	Size	Dimensions		Weight
			X	Y	
385554	N	18x18	32.0	7.0	1200
335861	N	20x10	35.0	8.0	1220
385578	N	20x12	35.0	8.0	1260
385585	N	20x16	35.0	8.0	1375
385592	N	20x20	35.0	8.0	1525
385608	N	24x24	40.5	9.0	2372



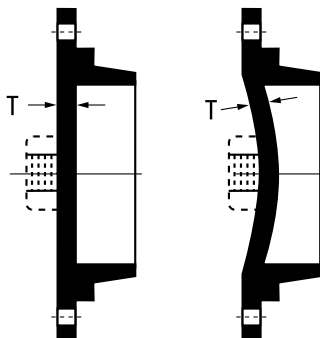
PROTECTO MJxMJ REDUCERS

UPC # 670610	Ship Code	Size	T	Dimensions T ¹	L	Weight
383970	S	4x3	.35	.34	4.0	18
383987	S	6x4	.37	.35	4.0	27
383994	S	8x4	.39	.35	5.0	36
384007	S	8x6	.39	.37	4.0	40
386278	N	10x6	.41	.37	5.0	47
386285	N	10x8	.41	.39	4.0	54
386292	N	12x6	.43	.37	7.0	67
386308	N	12x8	.43	.39	5.0	64
386315	N	12x10	.43	.41	4.0	78
386476	N	16x6	.52	.45	11.0	132
386483	N	16x8	.52	.46	9.0	132
386490	N	16x10	.52	.47	7.0	128
386506	N	16x12	.52	.48	5.0	125
386513	N	20x12	.60	.49	12.0	210
386520	N	20x16	.60	.57	8.0	225



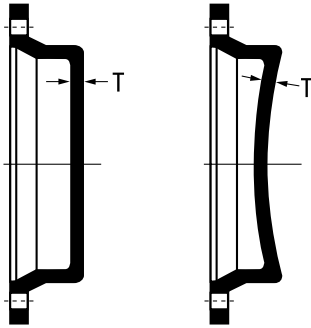
PROTECTO SOLID PLUGS

UPC # 670610	Ship Code	Size	Dimensions T	Weight
384038	S	3	.46	8
384045	S	4	.46	8
384052	S	6	.46	18
385493	N	8	.46	26
385509	N	10	.56	36
385516	N	12	.56	46
385660	N	14	.62	79
385677	N	16	.62	100
385684	N	18	.65	130
385691	N	20	.66	160
385707	N	24	.68	202



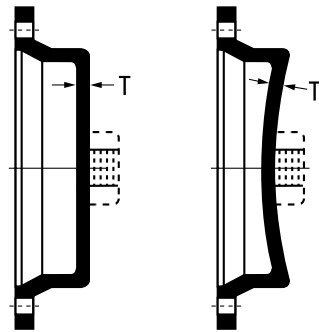
PROTECTO TAPPED PLUGS

UPC # 670610	Ship Code	Size	Dimensions T	Top Size	Weight
385028	N	3	.46	2	8
385035	N	4	.46	2	8
385042	N	6	.46	2	18
385059	N	8	.46	2	26
385066	N	10	.56	2	36
385073	N	12	.56	2	46
385325	N	14	.62	2	79
385332	N	16	.62	2	100
385349	N	18	.65	2	130
385356	N	20	.66	2	160
385363	N	24	.68	2	202



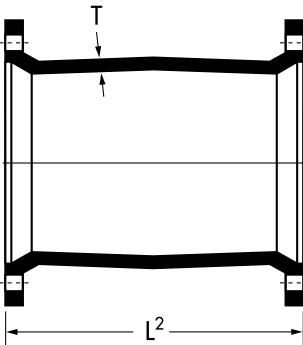
PROTECTO SOLID CAPS

UPC # 670610	Ship Code	Size	Dimensions T	Weight
385523	N	3	.46	8
384069	S	4	.46	10
384076	S	6	.46	17
384083	S	8	.46	25
385530	N	10	.56	35
384090	S	12	.56	44
385714	N	14	.62	85
385721	N	16	.62	93
385738	N	18	.65	122
383956	S	20	.66	152
385745	N	24	.68	202



PROTECTO TAPPED CAPS

UPC # 670610	Ship Code	Size	Dimensions T	Top Size	Weight
385547	N	3	.46	2	8
385080	N	4	.46	2	10
385097	N	6	.46	2	17
385103	N	8	.46	2	25
385110	N	10	.56	2	35
385127	N	12	.56	2	44
385370	N	14	.62	2	85
385387	N	16	.62	2	93
385394	N	18	.65	2	122
385400	N	20	.66	2	152
385417	N	24	.68	2	202



PROTECTO SOLID SLEEVES

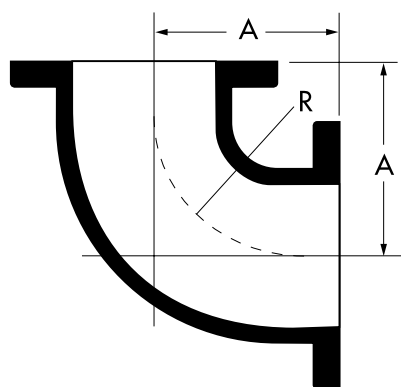
UPC # 670610	Ship Code	Size	Dimensions T	T ¹	Weight
384106	S	3	.34	12	19
384113	S	4	.35	12	24
384120	S	6	.37	12	39
384137	S	8	.39	12	53
384014	S	10	.41	12	68
384021	S	12	.43	12	82
385424	N	14	.56	15	141
385431	N	16	.57	15	172
385448	N	18	.68	15	200
385752	N	20	.69	15	269
385769	N	24	.75	15	377

SAMPLE SPECIFICATION FOR LINED DUCTILE IRON FITTINGS FOR SEWER SERVICE

3" through 24" Flanged Ductile Iron Fittings shall be manufactured in the USA in accordance with applicable terms and provisions of standards ANSI/AWWA C110/A21.10, current revision. Flange surfaces shall be faced and drilled in accordance with ANSI Class 125 B16.1 All Ductile Iron Flanged Fittings shall be rated for water pressure of 250 psi.

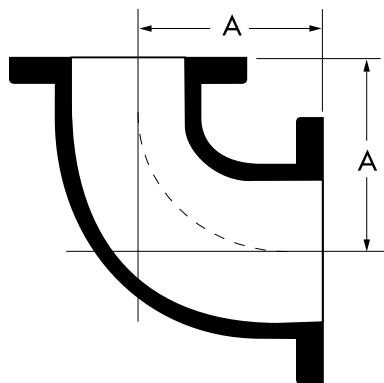
NOTE: Ductile Iron Flanged Fittings shall include a factory applied amine cured novalac epoxy lining of nominal 40 mils thickness, containing at least 20% by volume of ceramic quartz pigment.

Exteriors shall be seal-coated in accordance with ANSI/AWWA C104/A21.4, current revision.



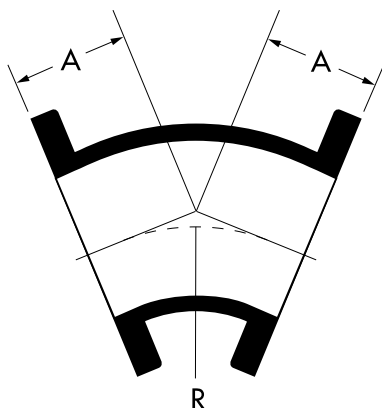
PROTECTO 90° BENDS (1/4)

UPC # 670610	Ship Code	Size	Dimensions		Weight
			R	A	
384243	S	3	4.0	5.5	25
384267	S	4	4.5	6.5	48
384281	S	6	6.0	8.0	74
384342	S	8	7.0	9.0	118
384359	S	10	9.0	11.0	190
384366	S	12	10.0	12.0	275
387190	N	14	11.5	14.0	330
387206	N	16	12.5	15.0	430
387213	N	18	14.0	16.5	530
387220	N	20	15.5	18.0	685
387237	N	24	18.5	22.0	1085



PROTECTO 90° REDUCING BENDS (1/4)

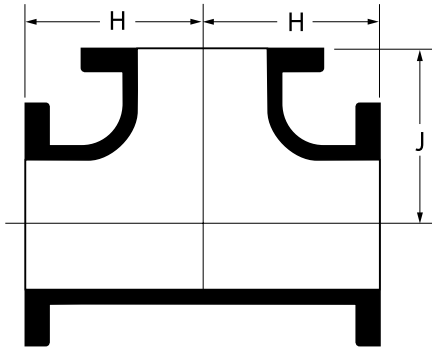
UPC # 670610	Ship Code	Size	Dimensions		Weight
			A		
384250	S	4x3	6.5		35
384274	S	6x4	8.0		65
386643	N	8x4	9.0		75
384335	S	8x6	9.0		105
386650	N	10x6	11.0		125
386667	N	10x8	11.0		150



PROTECTO 45° BENDS (1/8)

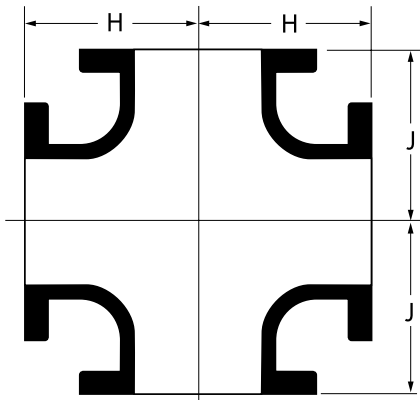
UPC # 670610	Ship Code	Size	Dimensions		Weight
			R	A	
386674	N	3	3.62	3.0	20
384298	S	4	4.81	4.0	42
384373	S	6	7.25	5.0	66
384380	S	8	8.44	5.5	105
384397	S	10	10.88	6.5	154
384403	S	12	13.25	7.5	195
387244	N	14	12.06	7.5	245
387251	N	16	13.25	8.0	315
387268	N	18	14.50	8.5	375
387275	N	20	16.88	9.5	595
387282	N	24	18.12	11.0	730

PROTECTO TEES



UPC # 670610	Ship Code	Run	Size Run	Branches	Dimensions		Weight
					H	J	
384304	S	3	3	3	5.5	5.5	40
387169	N	4	4	3	6.5	6.5	60
384311	S	4	4	4	6.5	6.5	60
384328	S	6	6	4	8.0	8.0	90
384410	S	6	6	6	8.0	8.0	112
387176	N	8	8	4	9.0	9.0	150
387183	N	8	8	6	9.0	9.0	183
384427	S	8	8	8	9.0	9.0	179
386971	N	10	10	6	11.0	11.0	215
386988	N	10	10	8	11.0	11.0	254
384434	S	10	10	10	11.0	11.0	291
386995	N	12	12	6	12.0	12.0	295
387008	N	12	12	8	12.0	12.0	346
387015	N	12	12	10	12.0	12.0	394
384182	S	12	12	12	12.0	12.0	408
387404	N	14	14	14	14.0	14.0	500
387411	N	16	16	6	15.0	15.0	540
387428	N	16	16	8	15.0	15.0	555
387435	N	16	16	10	15.0	15.0	565
387442	N	16	16	12	15.0	15.0	590
387459	N	16	16	16	15.0	15.0	635
387466	N	18	18	18	16.5	16.5	870
387473	N	20	20	20	18.0	18.0	1005
387480	N	24	24	24	22.0	22.0	1585

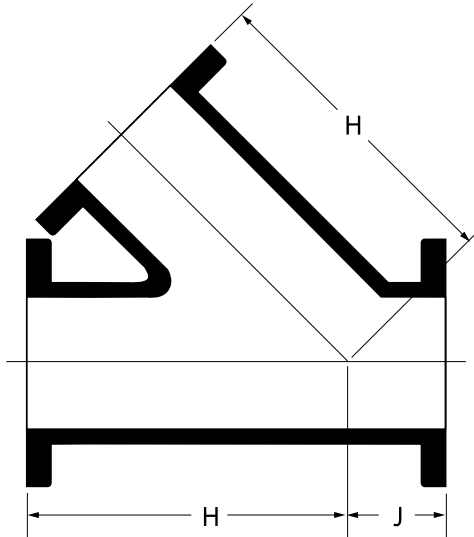
PROTECTO STRAIGHT & REDUCING CROSSES



UPC # 670610	Ship Code	Run	Size Run	Branches	Dimensions		Weight
					H	J	
387022	N	3	3	3	5.5	5.5	50
387039	N	4	4	3	6.5	6.5	78
384199	S	4	4	4	6.5	6.5	92
387046	N	6	6	4	8.0	8.0	110
384205	S	6	6	6	8.0	8.0	141
387053	N	8	8	4	9.0	9.0	155
387060	N	8	8	6	9.0	9.0	191
387077	N	8	8	8	9.0	9.0	191
386865	N	10	10	6	11.0	11.0	240
386872	N	10	10	8	11.0	11.0	292
386889	N	10	10	10	11.0	11.0	330
386896	N	12	12	6	12.0	12.0	355
386902	N	12	12	8	12.0	12.0	383
386919	N	12	12	10	12.0	12.0	415
386926	N	12	12	12	12.0	12.0	494
387497	N	14	14	14	14.0	14.0	595
387503	N	16	16	6	15.0	15.0	565
387510	N	16	16	8	15.0	15.0	590
387527	N	16	16	10	15.0	15.0	620
387534	N	16	16	12	15.0	15.0	665
387541	N	16	16	16	15.0	15.0	755
387558	N	18	18	18	16.5	16.5	915
387565	N	20	20	12	14.0	17.0	820
387572	N	20	20	16	18.0	18.0	1065
387589	N	20	20	20	18.0	18.0	1175
387596	N	24	24	24	22.0	22.0	1850

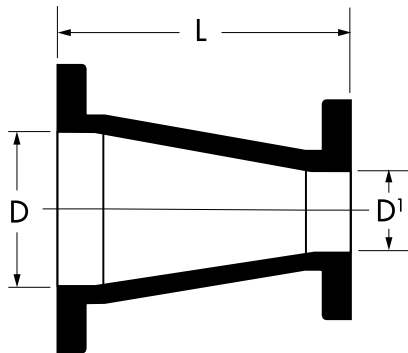
PROTECTO WYE

UPC # 670610	Ship Code	Size Run	Branches	Dimensions		Weight
				H	J	
386681	N	3	3	10.0	3.0	45
386698	N	4	3	12.0	3.0	65
386704	N	4	4	12.0	3.0	75
386711	N	6	4	14.5	3.5	105
386728	N	6	6	14.5	3.5	131
386735	N	8	4	17.5	4.5	165
386742	N	8	6	17.5	4.5	175
387084	N	8	8	17.5	4.5	200
387091	N	10	6	20.5	5.0	302
387107	N	10	8	20.5	5.0	330
387114	N	10	10	20.5	5.0	300
387121	N	12	6	24.5	5.5	370
387138	N	12	8	24.5	5.5	395
387145	N	12	10	24.5	5.5	420
387152	N	12	12	24.5	5.5	460
387299	N	14	14	27.0	6.0	640
387305	N	16	6	30.0	6.5	655
387312	N	16	8	30.0	6.5	680
387329	N	16	10	30.0	6.5	715
387336	N	16	12	30.0	6.5	755
387343	N	16	16	30.0	6.5	850
387350	N	18	18	32.0	7.0	1035
387367	N	20	12	35.0	8.0	1130
387374	N	20	16	35.0	8.0	1220
387381	N	20	20	35.0	8.0	1345
387398	N	24	24	40.5	9.0	2020



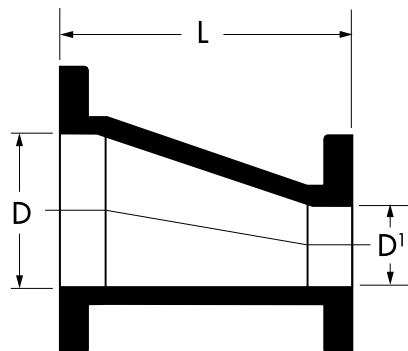
PROTECTO CONCENTRIC REDUCER

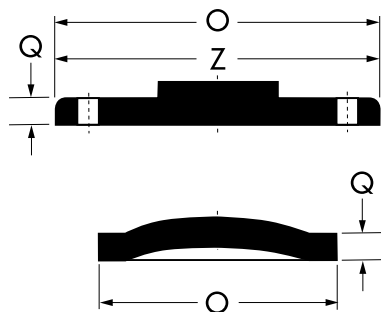
UPC # 670610	Ship Code	Size D	D ¹	Dimension L	Weight
386797	N	4	3	7	32
384236	S	6	4	9	45
386803	N	8	4	11	77
384212	S	8	6	11	75
386810	N	10	6	12	107
386827	N	10	8	12	110
386834	N	12	6	14	130
386841	N	12	8	14	173
386858	N	12	10	14	170



PROTECTO ECCENTRIC REDUCER

UPC # 670610	Ship Code	Size D	D ¹	Dimension L	Weight
386933	N	4	3	7	30
384229	S	6	4	9	54
386940	N	8	4	11	65
386957	N	8	6	11	84
386964	N	10	6	12	90
386759	N	10	8	12	137
386766	N	12	6	14	130
386773	N	12	8	14	145
386780	N	12	10	14	170

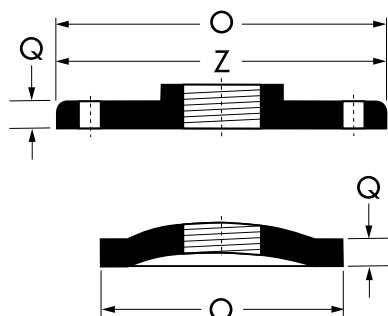




PROTECTO BLIND FLANGES

UPC # 670610	Ship Code	Size	O	Dimensions		Z	Weight
				Q			
387602	N	3	7.5	.75		6.00	8
383963	S	4	9.0	.94		7.50	14
384144	S	6	11.0	1.00		9.50	28
384151	S	8	13.5	1.12		11.75	43
384168	S	10	16.0	1.19		14.25	62
384175	S	12	19.0	1.25		...	87
387619	N	14	21.0	1.38		...	110
387626	N	16	23.5	1.44		...	165
387633	N	18	25.0	1.56		...	190
387640	N	20	27.5	1.69		...	250
387657	N	24	32.0	1.88		...	370

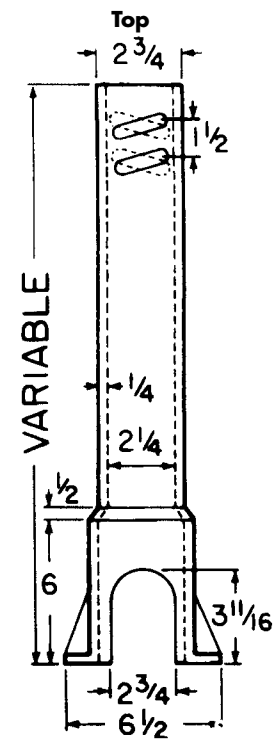
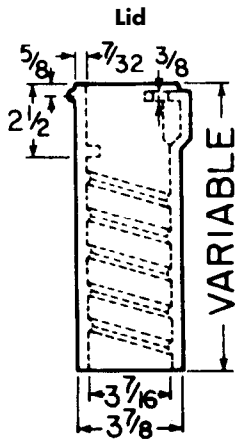
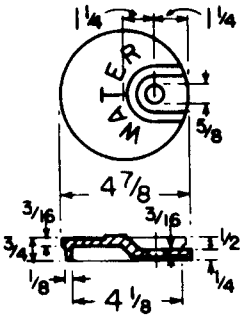
NOTE: All flanges conform to ANSI/AWWA C110/A21.10 Standards and ASME/ANSI B16.1.



PROTECTO TAPPED BLIND FLANGES

UPC # 670610	Ship Code	Size	O	Dimensions		Z	Weight
				Q			
387664	N	3x2	7.5	.75		6.00	8
387671	N	4x2	9.0	.94		7.50	14
387688	N	6x2	11.0	1.00		9.50	25
387695	N	8x2	13.5	1.12		11.75	40
387701	N	10x2	16.0	1.19		14.25	60
387718	N	12x2	19.0	1.25		...	80
387725	N	14x2	21.0	1.38		...	110
387732	N	16x2	23.5	1.44		...	165
387749	N	18x2	25.0	1.56		...	190
387756	N	20x2	27.5	1.69		...	250
387763	N	24x2	32.0	1.88		...	370

6500 SERIES, SCREW TYPE WITH WATER LID



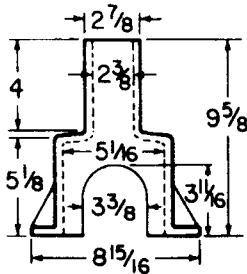
Box (Components)	UPC 67610	Ship Code	Extension In Inches	Weight
89-A (12T & 12B)	146681	S	15-21	20
90-B (12T & 15B)	146742	S	18-24	21
90-C (15T & 15B)	146803	S	21-27	22
91-C (15T & 21B)	146865	S	24-33	24
92-C (15T & 27B)	146926	S	30-39	26
92-D (18T & 27B)	146988	S	30-42	28
93-D (18T & 33B)	147046	S	36-48	32
93-E (24T & 33B)	147114	S	36-54	37
94-E (24T & 39B)	147183	S	42-60	41
95-E (30T & 39B)	147251	S	41-64	44
100-E (24T & 21B & #154 Ext)	147312	S	54-72	50
100-F (30T & 21B & #154 Ext)	147381	S	54-78	53
101-F (30T & 27B & #154 Ext)	147459	S	60-84	55

TOP SECTION WITH WATER LID

Item	UPC 67610	Ship Code	Weight
12T	147510	S	11
15T	147589	S	12
18T	147640	S	14
24T	147701	S	19
30T	147763	S	22

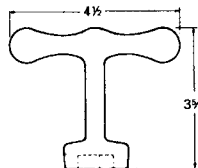
BOTTOM ONLY

Item	UPC 67610	Ship Code	Weight
12B	144670	S	9
15B	144687	S	10
21B	144694	S	12
27B	144700	S	14
33B	144717	S	18
39B	144724	S	22



ENLARGED BASE For 2" Curbstop

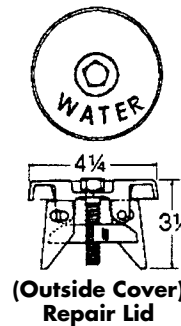
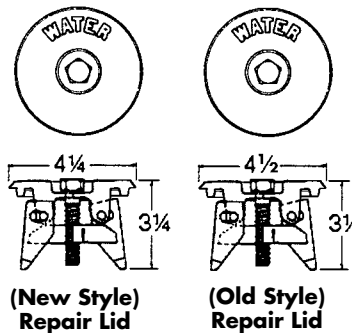
Item	Height Increase
6500	6"



Wrench

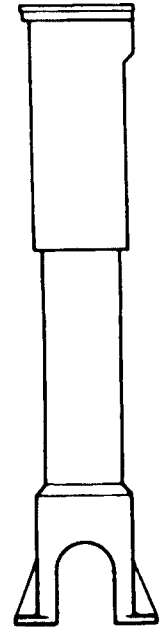


Brass Screw Std. WW Pentagon

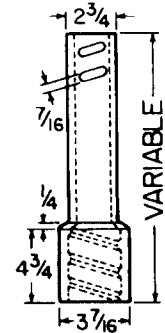


6500 SERIES PARTS

Item	UPC 67610	Ship Code	Wt.
151 Ext	144762	S	7.0
152 Ext	144779	S	12.0
153 Ext	144786	S	17.0
154 Ext	144793	S	19.0
Enlarged Base	144809	S	8.0
2 1/2" "Water Lid"	144830	S	1.0
Brass Screw (Std. WW Pentagon)	144816	S	...
Wrench (Std. WW Pentagon)	144908	S	0.5
2 1/2" "Repair Lid Old"	144915	S	4.5
2 1/2" "Repair Lid New"	144922	S	4.5
2 1/2" "Repair Lid Outside Cover"	381518	S	4.5



Box Assembled



EXTENSION

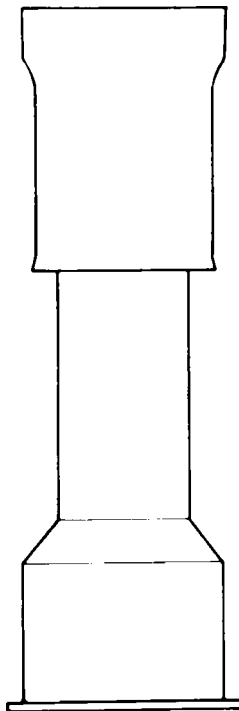
Item	Height Increase
151	9
152	16
153	28
154	30

New ways to save on valve boxes. Eliminate extra handling by buying pre-assembled units. Save on single parts and accessories. Lower unit cost by purchasing Valu-Paks of 30 to 80 pieces of tops and bottoms in crates. **See list price sheet for pricing details.**

THREE WAYS TO SAVE 6850 VALVE BOX		
Level 1 Boxes Assembled	Level 2 Individual Parts Not Assembled	Level 3 VALU-PAK Parts Not Assembled
Note: A "BOX" is one top and one bottom		

LEVEL ONE

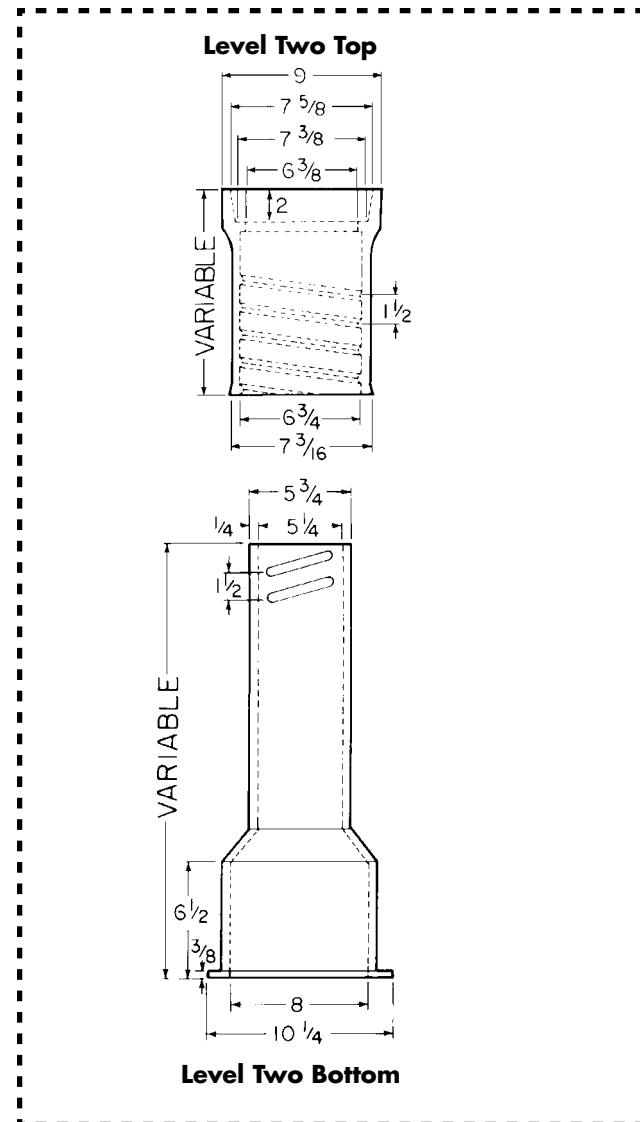
Boxes Assembled/Less Lid



Box Assembled

LEVEL ONE: BOXES ASSEMBLED LESS LIDS

Box (Components)	Extension Height	UPC No. 670610	Weight
461-S (10T + 15B)	19-22	(Not Offered Assembled)	
462-S (10T + 24B)	27-32	(Not Offered Assembled)	
562-S (16T + 24B)	27-37	145790	71
563-S (16T + 30B)	33-43	145752	78
564-S (16T + 36B)	39-50	145806	85
662-S (26T + 30B)	36-52	145769	93
664-S (26T + 36B)	39-60	145813	100
666-S (26T + 24B + #60 Ext)	51-71	(Not Offered Assembled)	
668-S (26T + 36B + #60 Ext)	62-82	(Not Offered Assembled)	



Lids marked "WATER" will ship
 unless otherwise specified:
 Also available 5 1/4" Drop Lids"

WATER OMA
SEWER
MWW
(PLAIN)
GAS

LEVEL TWO - Parts Not Assembled/Less Lids

TOPS & BOTTOMS

Box (Components)	Assy Height	Tops (less lids)			Bottoms			Extensions	
		UPC No. 670610	Lgt	Wt	UPC No. 670610	Lgt	Wt	UPC No. 670610	
461-S (10T + 15B)	19-22	144939	10T	22	145004	15B	27		
462-S (10T + 24B)	27-32	144939	10T	22	145011	24B	35		
562-S (16T + 24B)	27-37	144946	16T	36	145011	24B	35		
563-S (16T + 30B)	33-43	144946	16T	36	144991	30B	42		
564-S (16T + 36B)	39-50	144946	16T	36	145028	36B	49		
662-S (26T + 30B)	36-52	144953	26T	51	144991	30B	42		
664-S (26T + 36B)	39-60	144953	26T	51	145028	36B	49		
666-S (26T + 24B + #60 Ext)	51-71	144953	26T	51	145011	24B	35	145059	
668-S (26T + 36B + #60 Ext)	62-82	144953	26T	51	145028	36B	49	145059	

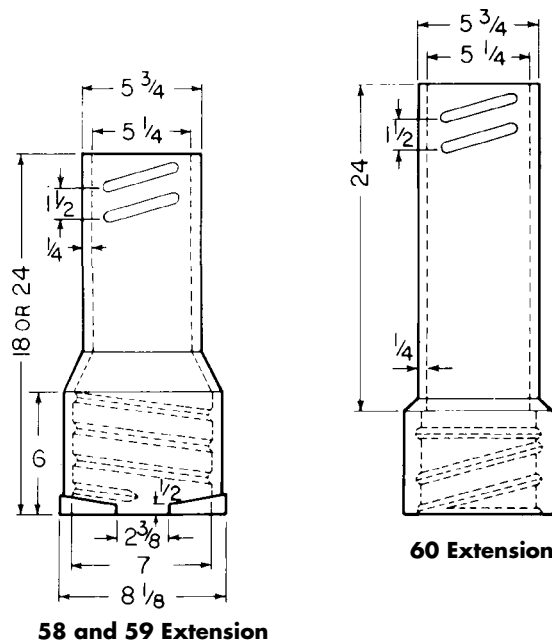
LIDS & RISERS

All Lids Page 46

All Risers Page 47

EXTENSIONS

Item/Description	UPC No. 670610	Height Increase	Wt
#58 Screw-Type	145141	14	29
#59 Screw-Type	145158	18	30
#60 Screw-Type	145059	24	37



58 and 59 Extension

60 Extension

LEVEL THREE - Crates of tops and bottoms, not assembled, less lids. Easy to handle, ships from stock.

TOPS OR BOTTOMS

Box (Components)	Assy Height	Tops (less lids)				Bottoms			
		UPC No. 670610	Lgt	Wt	Qty	UPC No. 670610	Lgt	Wt	Qty
461-S (10T + 15 B)	19-22	376910	10T	1760	80	376941	15B	1080	40
462-S (10T + 24B)	27-32	376910	10T	1760	80	376958	24B	1050	30
562-S (16T + 24B)	27-37	376927	16T	2160	60	376958	24B	1050	30
563-S (16T + 30B)	33-43	376927	16T	2160	60	376965	30B	1260	30
564-S (16T + 36B)	39-50	376927	16T	2160	60	376972	36B	1470	30
662-S (26T + 30B)	36-52	376934	26T	1530	30	376965	30B	1260	30
664-S (26T + 36B)	39-60	376934	26T	1530	30	376972	36B	1470	30
666-S (26T + 24B + #60 Ext)	*51-71	376934	26T	1530	30	376958	24B	1050	30
668-S (26T + 36B + #60 Ext)	*62-82	376934	26T	1530	30	376972	36B	1470	30

*Extensions (Required on 666-S & 668-S)

#60 Screw-Type

24" Height Increase

376989

1080

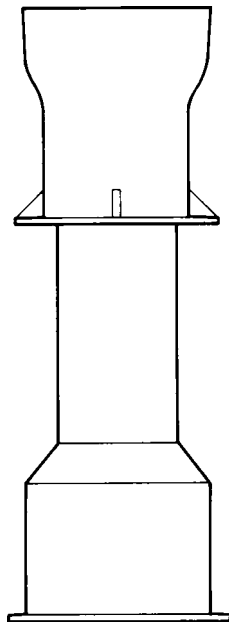
30

NOTES: To get equal numbers, order two crates of bottoms for each crate of tops for 461S, 562S, 563S and 564S. Order lids separately, see above.

New ways to save on valve boxes. Eliminate extra handling by buying pre-assembled units. Save on single parts and accessories. Lower unit cost by purchasing Valu-Paks of 30 to 80 pieces of tops and bottoms in crates. **See list price sheet for pricing details.**

THREE WAYS TO SAVE 6855 VALVE BOX		
Level 1 Boxes Assembled	Level 2 Individual Parts Not Assembled	Level 3 VALU-PAK Parts Not Assembled
Note: A "BOX" is one top and one bottom		

LEVEL ONE Boxes Assembled/Less Lid

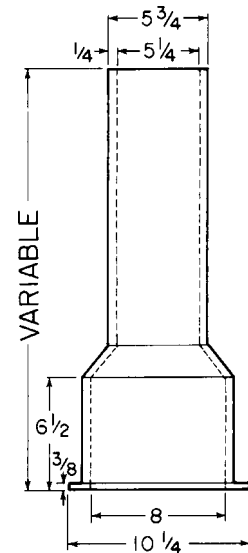
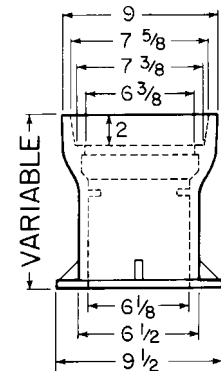


Box Assembled

LEVEL ONE: BOXES ASSEMBLED LESS LIDS

Box (Components)	Extension Height	UPC No. 670610	Weight
461-A (10T + 15B)	19-22	(Not Offered Assembled)	
462-A (10T + 24B)	27-32	(Not Offered Assembled)	
562-A (16T + 24B)	27-37	145868	72
563-A (16T + 30B)	33-43	145714	81
564-A (16T + 36B)	39-50	145875	83
662-A (26T + 30B)	36-52	145721	97
664-A (26T + 36B)	39-60	145882	99
666-A (26T + 24B + #60 Ext)	51-71	(Not Offered Assembled)	
668-A (26T + 36B + #60 Ext)	62-82	(Not Offered Assembled)	

Level Two Top



Level Two Bottom

Lids marked "WATER" will ship unless otherwise specified:
Also available 5 1/4" Drop Lids"

**WATER OMA
SEWER
MWW
(PLAIN)
GAS**

LEVEL TWO - Parts Not Assembled/Less Lids

TOPS & BOTTOMS

Box (Components)	Assy Height	Tops (less lids)			Bottoms			Extensions
		UPC No. 670610	Lgt	Wt	UPC No. 670610	Lgt	Wt	
461-A (10T + 15B)	19-22	144960	10T	29	145073	15B	26	145066
462-A (10T + 24B)	27-32	144960	10T	29	145080	24B	36	
562-A (16T + 24B)	27-37	144977	16T	36	145080	24B	36	
563-A (16T + 30B)	33-43	144977	16T	36	145127	30B	45	
564-A (16T + 36B)	39-50	144977	16T	36	145097	36B	47	
662-A (26T + 30B)	36-52	144984	26T	52	145127	30B	45	
664-A (26T + 36B)	39-60	144984	26T	52	145097	36B	47	
666-A (26T + 24B + #60 Ext)	51-71	144984	26T	52	*145011	24B	35	
668-A (26T + 36B + #60 Ext)	62-82	144984	26T	52	*145028	36B	49	

NOTE: These are 6850 Bottoms used to accommodate the interior threads of the applicable extensions.

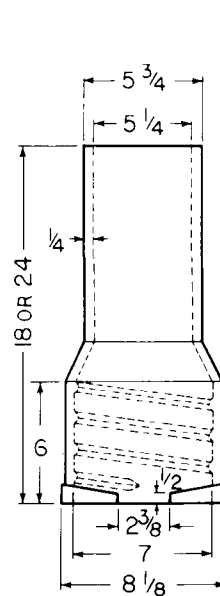
LIDS & RISERS

All Lids Page 46

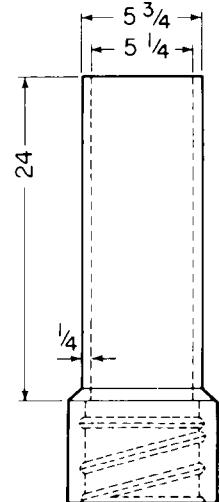
All Risers Page 47

EXTENSIONS

Item/Description	UPC No. 670610	Height Increase	Wt
#58-A Slip-Type	145233	14	29
#59-A Slip-Type	145240	18	30
#60-A Slip-Type	145066	24	37



58-A and 59-A Extension



60-A Extension

LEVEL THREE - Crates of tops and bottoms, not assembled, less lids. Easy to handle, ships from stock.

TOPS OR BOTTOMS

Box (Components)	Assy Height	Tops (less lids)				Bottoms			
		UPC No. 670610	Lgt	Wt	Qty	UPC No. 670610	Lgt	Wt	Qty
461-A (10T + 15 B)	19-22	376996	10T	2320	80	372023	15B	1040	40
462-A (10T + 24B)	27-32	376996	10T	2320	80	377030	24B	1080	30
562-A (16T + 24B)	27-37	377009	16T	1080	30	377030	24B	1080	30
563-A (16T + 30B)	33-43	377009	16T	1080	30	377047	30B	1350	30
564-A (16T + 36B)	39-50	377009	16T	1080	30	377054	36B	1410	30
662-A (26T + 30B)	36-52	377016	26T	1560	30	377047	30B	1350	30
664-A (26T + 36B)	39-60	377016	26T	1560	30	377054	36B	1410	30
666-A (26T + 24B + #60 Ext)	*51-71	377016	26T	1560	30	*376958	24B	1050	30
668-A (26T + 36B + #60 Ext)	*62-82	377016	26T	1560	30	*376972	36B	1470	30

*Extensions (Required on 666-A & 668-A)

* See Note Above.

#60-A Slip-Type

24" Height Increase

377061

1080

30

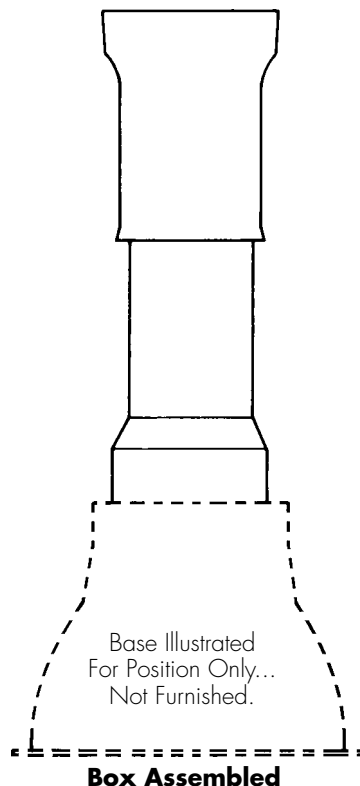
NOTES: To get equal numbers, order two crates of bottoms for each crate of tops for 461A, 562A, 563A and 564A. Order lids separately, see above.

New ways to save on valve boxes. Eliminate extra handling by buying pre-assembled units. Save on single parts and accessories. Lower unit cost by purchasing Valu-Paks of 30 to 80 pieces of tops and bottoms in crates. **See list price sheet for pricing details.**

THREE WAYS TO SAVE 6860 VALVE BOX		
Level 1 Boxes Assembled	Level 2 Individual Parts Not Assembled	Level 3 VALU-PAK Parts Not Assembled
Note: A "BOX" is one top and one bottom		

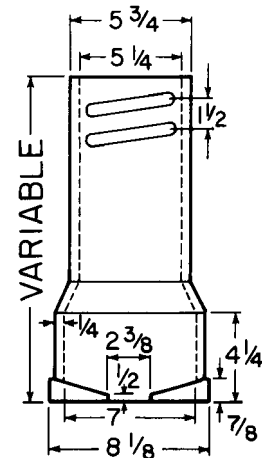
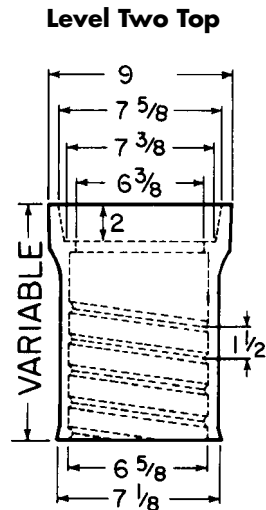
LEVEL ONE

Boxes Assembled/Less Base and Lid



LEVEL ONE: BOXES ASSEMBLED LESS BASES AND LIDS

Box (Components)	Extension Height	UPC No. 670610	Weight
AA (10T + 15B)	27-37	(Not Offered Assembled)	
A (16T + 18B)	33-42	(Not Offered Assembled)	
B (16T + 24B)	39-49	145936	69
C (16T + 30B)	45-54	145943	73
CC (16T + 36B)	51-60	145950	75
D (26T + 30B)	45-66	145967	88
DD (26T + 36B)	51-72	145974	90
E (16T + 24B + #60 Ext)	63-72	(Not Offered Assembled)	
F (26T + 24B + #60 Ext)	63-84	(Not Offered Assembled)	
G (26T + 36B + #60 Ext)	74-94	(Not Offered Assembled)	



Level Two Bottom

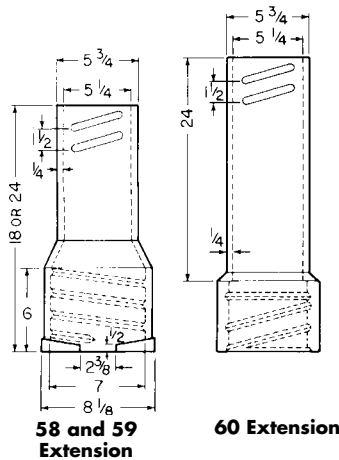
Lids marked "WATER" will ship unless otherwise specified:
 Also available 5 1/4" Drop Lids"

WATER OMA
SEWER
MWW
(PLAIN)
GAS

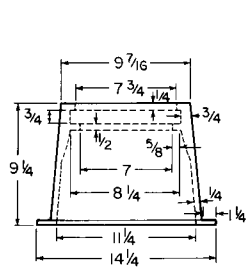
LEVEL TWO - Parts Not Assembled/Less Lids

TOPS & BOTTOMS

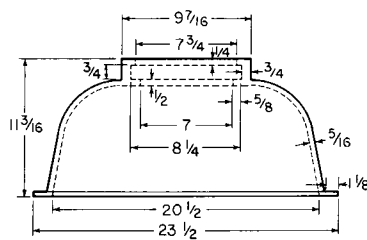
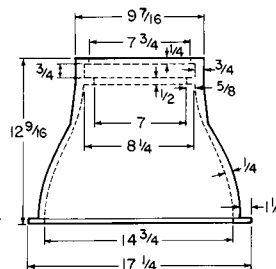
Box (Components)	Assy Height	Tops (less lids)			Bottoms			Extensions
		UPC No.	Lgt	Wt	UPC No.	Lgt	Wt	UPC No.
		670610			670610			670610
AA (10T + 12B)	27-31	144939	10T	22	145134	12B	16	
A (10T + 18B)	33-42	144946	10T	36	145141	18B	29	
B (16T + 24B)	39-49	144946	16T	36	145158	24B	30	
C (16T + 30B)	45-54	144946	16T	36	145165	30B	37	
CC (16T - 36B)	51-60	144946	16T	36	145172	36B	41	
D (26T - 30B)	45-66	144953	26T	51	145165	30B	37	
DD (26T + 36B)	51-72	144953	26T	51	145172	36B	41	
E (16T + 24B + #60 Ext)	63-72	144946	26T	36	145158	24B	30	
F (26T + 24B + #60 Ext)	63-84	144953	26T	51	145158	24B	30	145059
G (26T + 36B + #60)	74-94	144953	26T	51	145172	36B	41	145059



60 Extension



#6 Base (Standard)



EXTENSIONS

Item/Description	UPC No.	Height Increase	Wt
670610			
#58 Screw-Type	145141	14	29
#59 Screw-Type	145158	18	30
#60 Screw-Type	145059	24	37

LIDS & EXTENSIONS

Lids Page 46
 Extensions Page 47

BASES

Item/Description	UPC No.	Wt
670610		
#4, 11 1/4" Wide	145653	34
#6, 14 3/4" Wide	145660	45
#160, 20 1/2" Wide	145684	68

LEVEL THREE - Crates of tops and bottoms, not assembled, less lids. Easy to handle, ships from stock.

TOPS OR BOTTOMS

Box (Components)	Tops (less lids)				Bottoms			
	UPC No.	Lgt	Wt	Qty	UPC No.	Lgt	Wt	Qty
	670610				670610			
AA (10T + 12 B)	376910	10T	1760	80	377078	12B	1520	80
A (16T + 18B)	376927	16T	2160	60	377085	18B	1740	60
B (16T + 24B)	376927	16T	2160	60	377092	24B	900	30
C (16T + 30B)	376927	16T	2160	60	377108	30B	1110	30
CC (16T + 36B)	376927	16T	2160	60	377115	36B	1230	30
D (26T + 30B)	376934	26T	1530	30	377108	30B	1100	30
DD (26T + 36B)	376934	26T	1530	30	377115	36B	1230	30
E (16T + 24B + #60 Ext)	376927	16T	2160	60	371092	24B	900	30
F (26T + 24B + #60 Ext)	376934	26T	1530	30	377092	24B	900	30
G (26T + 36B + #60 Ext)	376934	26T	1530	30	377115	36B	1230	30

Extensions

#60 Screw-Type

24" Height Increase

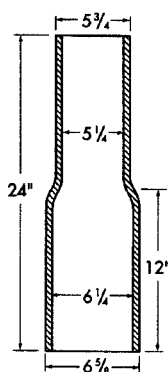
376989

1080

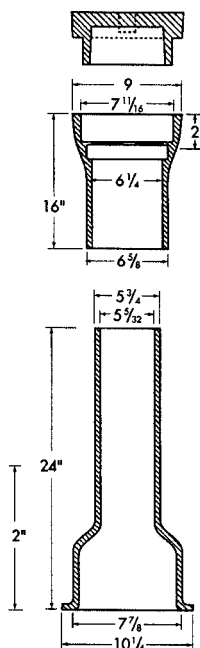
30

NOTES: To get equal numbers, order two crates of bottoms for each crate of tops for B, C, CC and E only.

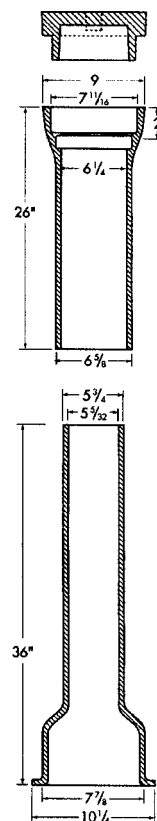
Order bases and lids separately, see above.



**Optional
Extension**



**7016
(27"-39")**



**7026
(40"-60")**

7016-7026 STANDARD (Individual Box)

Item	Assembly Height	UPC No. 670610	Each	Weight Each
7016 (16T + 24B)	27-39	376224	1	79
7026 (26T + 36B)	40-60	376231	1	106

VALU-PAKS (12 per pack)

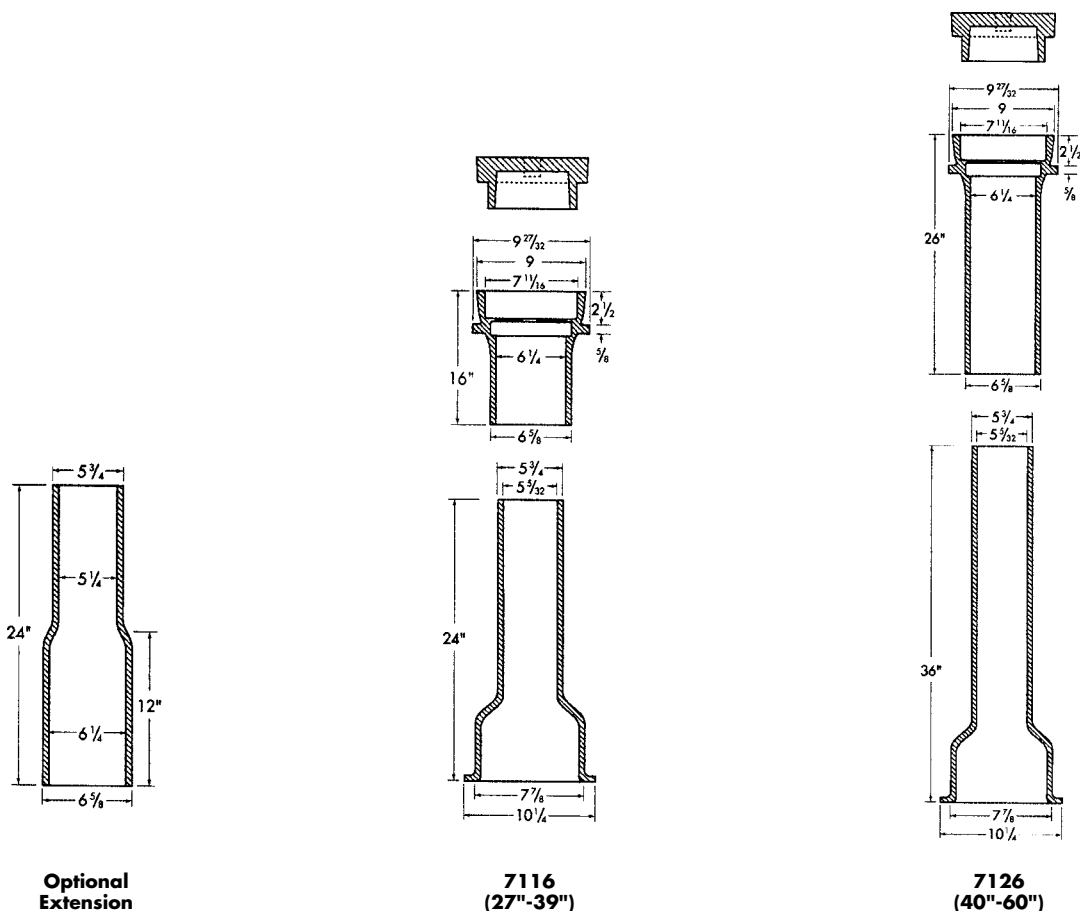
Item	Assembly Height	UPC No. 670610	Weight Bndl. (12)
7016 (16T) Top	16	382706	444
7026 (26T) Top	26	382737	588
7000 (24B) Bottom	24	382720	360
7000 (36B) Bottom	36	382751	540

7000 SERIES PARTS

Item	Height Increase	UPC No. 670610	Weight
Extension	24"	372981	28.0
*O-Ring	...	370390	0.2

*O-Ring must be shipped with each extension piece.

Optional Lidspage 46
Riserspage 47



7116-7126 STANDARD (Individual Box)

Item	Assembly Height	UPC No. 670610	Each	Weight Each
7116 (16T + 24B)	27-39	376781	1	79
7126 (26T + 36B)	40-60	376798	1	106

VALU-PAKS (12 per pack)

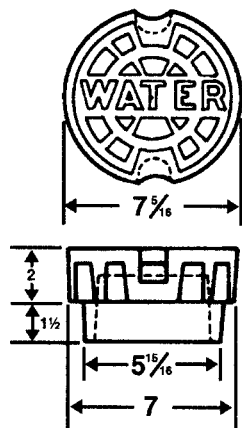
Item	Assembly Height	UPC No. 670610	Weight Bndl. (12)
7116 (16T) Top	16	382713	444
7126 (26T) Top	26	382744	588
7100 (24B) Bottom	24	382720	360
7100 (36B) Bottom	36	382751	540

7000 SERIES PARTS

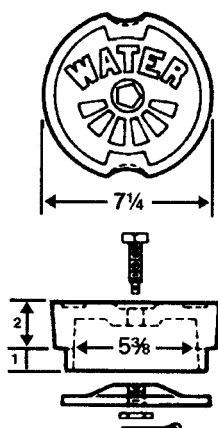
Item	Height Increase	UPC No. 670610	Weight
Extension	24"	372981	28.0
*O-Ring	...	370390	0.2

*O-Ring must be shipped with each extension piece.

Optional Lids page 46
Risers page 47



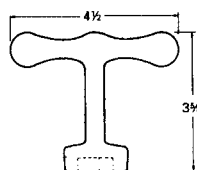
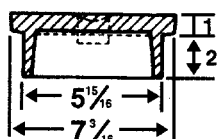
Drop Lid



Lock Lid

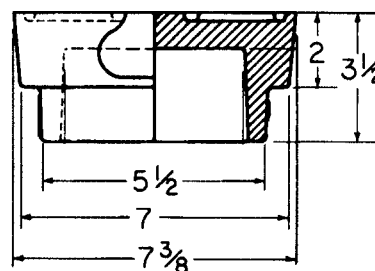


1 1/8" Lid



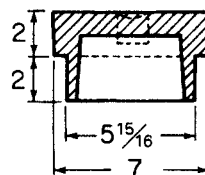
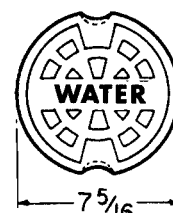
WRENCH
For Standard WW Pentagon Head
27/32" Brass Screws

UPC No	Ship Code	Description	Weight
670610	S	Wrench	0.5
144908			



5-1/4" MWW DROP LID

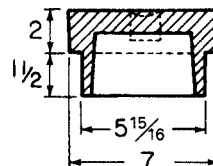
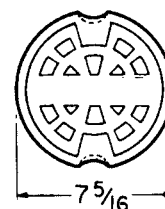
UPC No	Weight
670610	14
145370	



5-1/4" OMA DROP LID

UPC No.	Special Markings	Weight
670610		
145301	WATER OMA*	14

*OMA marking is inside lid.



5-1/4" DROP LID W/SPECIAL MARKINGS*

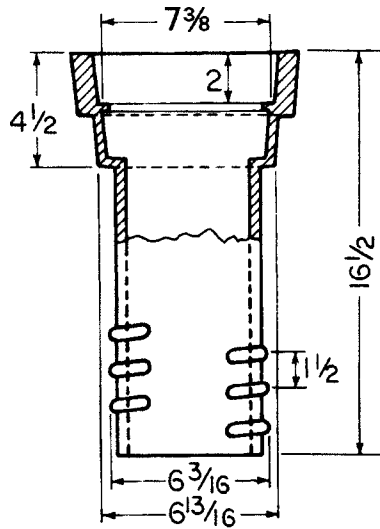
UPC No.	Special Mark	Weight
670610		
145332	GAS	13
145349	SEWER	13
145356	PLAIN	13

*Lids marked with "WATER" will be shipped unless otherwise specified.

LIDS ("WATER")

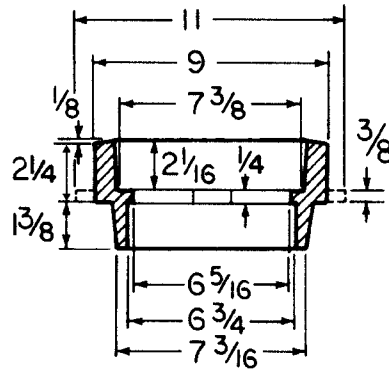
Item/Description	UPC No.	Weight
	670610	
5 1/4 Drop Lid	145325	13
5 1/4 Lock Lid	145462	18
1 1/8 Lid*	145509	11

*Use with 1 1/8" Riser Only.

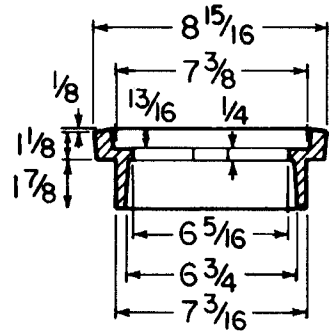


**#69 SCREW TYPE ADJUSTABLE RISER
FOR 6850/60 SERIES
(Uses Standard Drop Lid)**

UPC No. 670610	Height Increase	Weight
148197	2 1/2" - 9"	29



**5 1/4" x 2 1/4" Riser
(Uses Standard 5 1/4"
Drop Lid)**

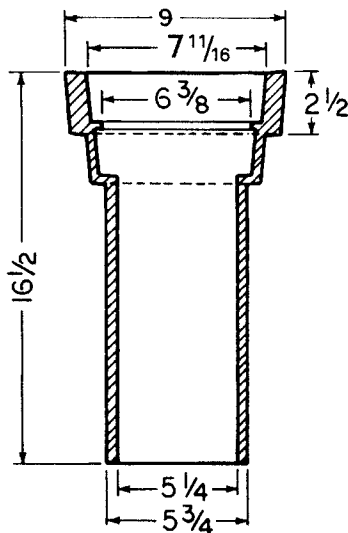


**5 1/4" x 1 1/8" Riser
(Requires 1 1/8" Riser Lid)**

RISERS

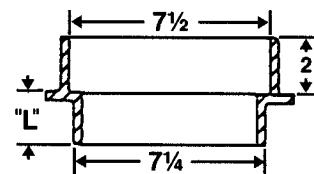
Item/Description	UPC No. 670610	Height Increase	Weight
5 1/4 x 1 1/8 Slip-In*	145554	1 1/8"	9
5 1/4 x 2 1/4 Slip-In	145547	2 1/4"	16

*Use with 1 1/8" Lid Only.



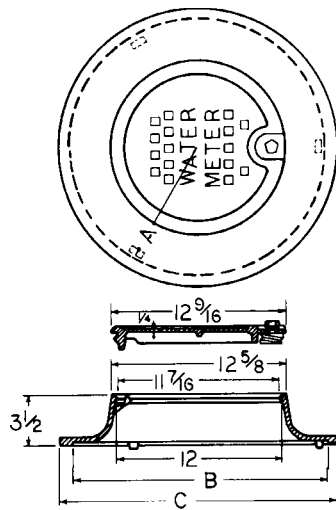
**#69-A SLIP TYPE ADJUSTABLE RISER
FOR 6855 SERIES
(Uses Standard Drop Lid)**

UPC No. 670610	Height Increase	Weight
148241	2 1/2" - 12"	29

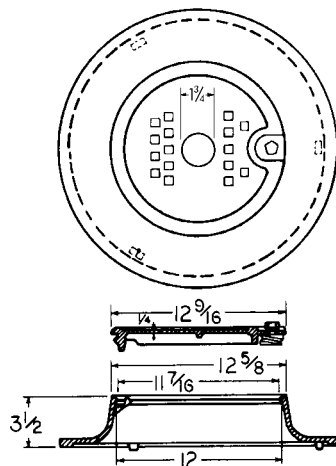


**FIXED RISER
(Uses Standard 5 1/4" Drop Lid)**

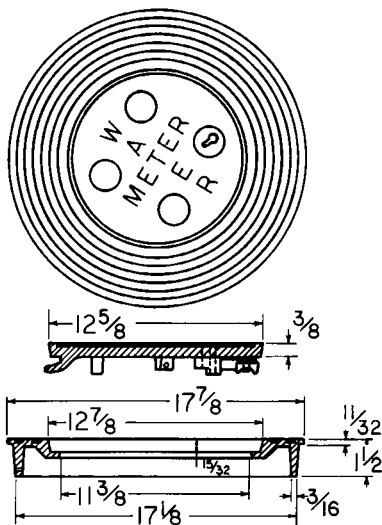
UPC No. 670610	"L"	Weight
378860	1"	6
378877	2"	9
378884	3"	13



6150 Meter Box Cover



6150TR Meter Cover



6200 Meter Cover

6150 & 6150TR METER COVERS, CAST IRON

Description	A	B	C
18-in. 6150 Series	8 3/4	18	20
20-in. 6150	9 3/4	20	22

UPC No	Ship Code	Description	Weight
670610			
148449	S	6150-18 Ring & Lid B/L*	39
148456	S	6150-18 Ring & Lid B/S	39
148647	S	6150-18 Ring Only	27
148494	S	6150-18/20 Lid With Lock B/L*	13
148593	S	61 50-L-1 8/20 Lid Less Lock	13
148500	S	6150-18/20 Lid With Lock B/S*	13
148463	S	6150-20 Ring & Lid B/L*	41
148470	S	6150-20 Ring & Lid B/S*	41
148630	S	6150-R-20 Ring Only	30

*B/L = Large Bolts (1-1/32"); B/S = Small Bolts (27/32") Std WW Pentagon Heads

6150TR (TOUCH-READER) METER COVERS CAST IRON

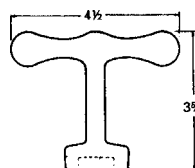
UPC No	Ship Code	Description	Weight
670610			
148531	S	6150-18 TR Ring & Lid B/L"	39
148524	S	6150-18 TR Ring & Lid B/S*	39
148579	S	6150-18/20 TR Lid With Lock B/L*	13
148562	S	6150-18/20 TR Lid With Lock B/S*	13
148586	S	6150-18/20 TR Lid Less Lock	13
148555	S	6150-20 TR Ring & Lid B/L*	41
148548	S	6150-20 TR Ring & Lid B/S*	41

*B/L = Large Bolts (1-1/32"); B/S = Small Bolts (27/32")

NOTE: 6150TR - Same dimensions as 6150, plus a 1-27/32" access hole in lid.

6200 METER COVER, CAST IRON

UPC No	Ship Code	Description	Weight
670610			
148708	S	6200 Ring & Lid Less Lock	28
148760	S	6200-R Ring Only	17
148739	S	6200-L Lid Less Lock	11
148722	S	6200-L Lid With Lock	11



WRENCH For Standard WW Pentagon Head 27/32" Brass Screws

UPC No	Ship Code	Description	Weight
670610			
144908	S	Wrench	0.5

TERMS AND CONDITIONS OF SALE - Ransom Industries, LP

1. ENTIRE AGREEMENT. Ransom Industries, LP, agrees to sell the goods covered herein (the "Goods") to Buyer on the following terms and conditions of sale (the "Terms and Conditions") which supersede any other or inconsistent terms of Buyer. This contract constitutes the entire agreement between parties with respect to the Goods, and this Agreement may not be modified, amended or waived in any way except in writing signed by an authorized representative of Seller. No representation, promise or term not set forth herein has been nor may be relied upon by Buyer. All references by Seller to Buyer's specifications and similar requirements are only to describe the products and work covered hereby and no warranties or other terms therein shall have any force or effect.

2. QUOTATIONS. Where this form is used by Seller to place a bid, the quotation stated herein is for prompt acceptance and is subject to change and/or withdrawal without notice. Prompt acceptance of all quotations and adherence to delivery schedules are material terms of the bid and any subsequent agreement. In cases where freight allowance is included in the quotation, Buyer is liable for any rate increase and/or additional expense over the calculated allowance resulting from compliance with Buyer's shipping instructions.

3. ACCEPTANCE. This order shall not be binding upon Seller until accepted by an authorized representative of Seller at its home office. Acceptance of orders, whether oral or written, is based on the express condition that Buyer agrees to all of these Terms and Conditions. Acceptance of delivery by Buyer will constitute Buyer's assent to these Terms and Conditions in their entirety.

4. DELIVERY. All prices are F.O.B. Seller's plant, unless otherwise specified by Seller. All shipping dates are approximate, and any time period indicated for a shipment shall not commence until receipt of Seller's information. Acceptance of shipment by designated shipper, allocation of Goods to Buyer at premises other than Seller's, delivery to Buyer's representative or designee, or mailing of an invoice to Buyer, whichever first occurs, shall constitute tender of delivery. Upon tender of delivery, title shall pass to Buyer, subject to Seller's right of stoppage in transit and to any interest of Seller reserved to secure Buyer's payment or performance, irrespective of any freight allowance or prepayment of freight. Goods held subject to Buyer's instructions, Goods for which Buyer has failed to supply shipping instructions, or in any case where Seller, in its sole discretion, determines any part of the Goods should be held for Buyer's account, Seller may invoice the Goods and Buyer agrees to make payment at the maturity of the invoice rendered. Goods invoiced and held at any location for whatever reason shall be at Buyer's risk and Seller may charge for (but is not obligated to carry) insurance, storage and other expenses incident to such delay at its prevailing rates. Partial deliveries shall be accepted by Buyer and paid for at contract prices and terms. When Buyer has declared or manifested an intention not to accept delivery, no tender shall be necessary but Seller may, at its option, give notice in writing to Buyer that Seller is ready and willing to deliver and such notice shall constitute a valid tender of delivery. In no event shall Buyer be entitled to make any deduction from any payment due hereunder by reason of loss or damage in transit. Upon the written request of Buyer, Seller, at its sole discretion, may agree as a service to Buyer to process Buyer's claim against the carrier for any loss or damage in transit, provided that such claim is received by Seller within five (5) days of the receipt of Goods. Any such claims must be accompanied by a delivery receipt, signed by carrier's agent at time of delivery, on which receipt the loss or damage has been noted. In the absence of directions, goods will be shipped by the method and via carrier Seller believes dependable. Delivery by truck will be made to nearest points reasonably accessible by truck as determined by the driver. Buyer will furnish and pay for necessary labor to unload and store Goods. Buyer shall note loss or damage on truck shipments upon delivery ticket returned to Seller. All materials received from Seller must be counted upon receipt and compared to the Seller's packing list. Any shortage must be noted on the carrier's official freight bill and be confirmed with the signature of the driver representing the delivering carrier. A copy of the freight bill listing the shortage must be forwarded to Seller within three working days to receive credit for any

shortage. If the freight bill is signed without exception, the packing list will be deemed correct and no shortage claim will be honored. Contact Seller's sales correspondent immediately if no packing list is present.

5. TERMS OF PAYMENT. Terms to Buyers whose credit has been approved in writing by Seller are specified on the face of the applicable invoice. Seller shall have the right to make partial shipments. If, at any time or for any reason, Seller shall have cause to question Buyer's ability to perform, Seller may demand such assurances of Buyer's performance as Seller shall deem necessary in its discretion, including payment in advance for all shipments. If Buyer fails within 10 days of Seller's demand to provide Seller with such assurance, Seller shall be entitled to cancel any order then outstanding, receive reimbursement for its reasonable and proper cancellation charges and may proceed to collect, without limitation, any sums due and owing, its reasonable cancellation charges and all damage resulting from Buyer's default. In the event of bankruptcy or insolvency of Buyer, or in the event of any proceeding brought against Buyer, voluntarily or involuntarily, under bankruptcy or any insolvency laws, Seller shall be entitled to cancel any order then outstanding at any time and shall receive reimbursement for its reasonable and proper cancellation charges. If Buyer fails to make payment for the Goods when due, Buyer's account shall be deemed delinquent and Buyer shall be liable to Seller for a service charge of eighteen percent (18%) per annum or the maximum allowed by law, whichever is greater, on any unpaid amount. Buyer shall be liable to Seller for all costs and expenses of collection, including court costs and reasonable attorney's fees.

6. CANCELLATION, CHANGES AND RETURNS. This order is not subject to cancellation, change or return unless agreed to in writing by an authorized representative of Seller. At Seller's option, Buyer may be charged for any costs incurred by Seller prior to or as a result of such cancellation, change or return. In this event, the seller shall be entitled to revise its prices and delivery dates to reflect such change. When Seller's agreement is obtained, Seller will accept returned material for credit if, in its sole discretion, it finds such material to be standard stock and in good condition. Such credit shall be the invoice price less 25% on acceptable goods, and less all shipping and handling charges. In all other cases, the credit in Seller's sole discretion shall be the scrap value of the Goods, less shipping and handling charges.

7. DELAY IN OR PREVENTION OF PERFORMANCE. Seller shall not be liable for any expense, loss or damage resulting from delay in delivery or prevention of performance caused by fires, floods, acts of God, strikes, labor disputes, labor shortages, lack of or inability to obtain materials, fuels, supplies or equipment, riots, accidents, transportation delays, acts or failures to act of any government or of Buyer, or any other cause whatsoever, provided that such cause is beyond the reasonable control of Seller; and Seller shall have such additional time for performance as may be reasonably necessary under the circumstances and may adjust the price to reflect increases occasioned by such delay. Acceptance by Buyer of any Goods shall constitute a waiver by Buyer of any claim for damages on account of any delay in delivery of such Goods. If delivery is delayed or interrupted for any such cause, Seller may store the Goods at Buyer's expense and risk, and Seller may charge Buyer therefor a reasonable storage rate. If Seller is delayed in proceeding with production or otherwise because it is awaiting Buyer's approval or acceptance of designs, drawings, prints, engineering or technical data, or is awaiting Buyer's approval or acceptance of the Goods, Seller shall be entitled to an adjustment in price commensurate with any increase in Seller's cost of production and any other losses and expenses incurred by Seller attributable to such delays.

8. DEFERRED DELIVERY. Any deferred delivery request by Buyer shall be subject to Seller's written approval. If such approval is given, Seller shall have the right to charge Buyer for the completed portion of the order and to warehouse all completed Goods at Buyer's expense and risk of loss. Seller also reserves the right, at its option, as to any uncompleted portion of the order to cancel said uncompleted portion in accordance with Paragraph 6 above, or to revise its prices and delivery schedules on the portion not completed to reflect its increased costs and expenses attributable to the delay.

TERMS AND CONDITIONS OF SALE - Ransom Industries, LP

9. WARRANTY AND LIMITATION OF LIABILITIES AND BUYER'S REMEDIES.

Seller warrants that the Goods delivered hereunder will be of the kind described in the within agreement and shall be free from defects in material and workmanship under conditions of normal use. Seller reserves the right to make any modifications required by production conditions to the information set forth in Seller's catalogues and advertising literature. Seller shall not be liable or responsible, however, for (A) any defects attributed to normal wear and tear, erosion or corrosion or improper storage, use or maintenance, or (B) defects in any portion or part of the Goods manufactured by others. If (B) above is applicable, Seller will, as an accommodation to Buyer, assign to Buyer any warranties given to it by any such other manufacturers. Any claim by Buyer with reference to the Goods for any cause shall be deemed waived by Buyer unless submitted to Seller in writing within ten (10) days from the date Buyer discovered, or should have discovered, any claimed breach. Buyer shall give Seller an opportunity to investigate.

Provided that Seller is furnished prompt notice by Buyer of any defect and an opportunity to inspect the alleged defect as provided herein, Seller shall, at its option and in its sole discretion either: (i) repair the defective or non-conforming Goods, (ii) replace the nonconforming Goods, or part thereof, which are sent to Seller by Buyer within sixty days after receipt of the Goods at Buyer's plant or storage facilities, or (iii) if Seller is unable or chooses not to repair or replace, return the purchase price that has been paid and cancel any obligation to pay unpaid portions of the purchase price of nonconforming Goods. In no event shall any obligation to pay or refund exceed the purchase price actually paid. Repair and/or replacement as provided above shall be at Seller's plant and shipped FOB Plant unless otherwise agreed to by Seller. Transportation charges for the return of the Goods or part thereof to Seller shall be prepaid by Buyer unless otherwise agreed to by the Seller in writing. Seller shall, in no event, be responsible for any labor, removal or installation charges that may result from the above-described repair and/or replacement of any Goods. The foregoing warranty does not cover failure of any part or parts manufactured by others, the failure of any part or parts from external forces, including but not limited to earthquake, installation, vandalism, vehicular or other impact, application of excessive torque to the operating mechanism or frost heave. The exclusive remedy of Buyer and the sole liability of Seller, for any loss, damage, injury or expense of any kind arising from the manufacture, delivery, sale, installation, use or shipment of the Goods and whether based on contract, warranty, tort or any other basis of recovery whatsoever, shall be, at the election of Seller, the remedies described above. The foregoing is intended as a complete allocation of the risks between the parties and Buyer understands that it will not be able to recover consequential damages even though it may suffer such damages in substantial amounts. Because this Agreement and the price paid reflect such allocation, this limitation will not have failed of its essential purpose even if it operates to bar recovery for such consequential damages.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED BY LAW. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE) OR STRICT LIABILITY, SHALL SELLER BE LIABLE FOR ANY PUNITIVE, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFIT, LOSS OF USE OF THE GOODS OR OTHER PROPERTY EQUIPMENT, DAMAGE TO OTHER PROPERTY, COST OF CAPITAL, COST OF SUBSTITUTE GOODS, DOWNTIME, OR THE CLAIMS OF BUYER'S CUSTOMERS FOR ANY OF THE AFORESAID DAMAGES. SELLER SHALL NOT BE LIABLE FOR AND BUYER AGREES TO INDEMNIFY SELLER FOR ALL PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LIABILITY RESULTING IN WHOLE OR IN PART FROM THE NEGLIGENCE OF BUYER.

In any contract by Buyer for resale of goods, buyer shall effectively disclaim, as against Seller, any implied warranty of merchantability and all liability for property damage or personal injury resulting from the handling, possession or use of the Goods, and shall

exclude, as against Seller, any liability for special or consequential damages.

10. PATENTS. If any claim is made against Buyer based on a claim that any of the Goods constitute an infringement of any U.S. Letter Patent, Buyer shall notify Seller immediately. Seller shall have the right, with Buyer's assistance, if required, but at Seller's expense, to conduct settlement negotiations of any litigation. If any of the Goods are held to infringe any U.S. Letter Patent, and their use is enjoined or, if as a result of a settlement, Seller deems their continued use unadvisable and provided that Buyer has given Seller the immediate notice provided for above and has used the Goods only in accordance with the provisions of this order and shall not have altered or changed them in any material way, Seller shall, at its option and expense, procure for Buyer the right to continue using the Goods, modify the Goods so that they become non-infringing, replace the Goods with non-infringing Goods of substantially equal quality, or replace the Goods and refund the purchase price, less reasonable depreciation. The foregoing states Seller's entire liability for patent infringement.

11. CONTROLLING LAW. This Agreement and all rights and obligations hereunder shall be governed by the laws of the State of Alabama. or Texas **Any claim by Buyer arising hereunder shall be tried in the courts of Alabama or Texas to which jurisdiction Buyer hereby submits.**

12. ARBITRATION; DISPUTE RESOLUTION; PRESERVATION OF FORECLOSURE REMEDIES. At the option or election of Seller, any dispute, claim or controversy ("Dispute") between Seller or Buyer relating to the transactions contemplated by this agreement, including without limitation any claim based on or arising from an alleged tort, shall be resolved by binding arbitration in accordance with Title 9 of the U.S. Code and the Commercial Arbitration Rules of the American Arbitration Association (the "AAA"). Defenses based on statutes of limitation and similar doctrines shall be applicable in any such proceeding, and the commencement of an arbitration proceeding under this Agreement shall be deemed the commencement of an action for such purposes. The arbitrator shall be selected in accordance with the Commercial Arbitration Rules of the AAA. The AAA shall designate a panel of ten (10) potential arbitrators knowledgeable in the subject matter of the Dispute. Each Seller and Buyer shall designate, within thirty (30) days of the receipt of the list of potential arbitrators, one of the potential arbitrators to serve, and the two arbitrators so designated shall select a third arbitrator from the eight remaining candidates.

13. WAIVER. No delay or failure by Seller to exercise any right or remedy under these Terms and Conditions shall be construed to be a waiver thereof. Waiver by Seller of any breach shall be limited to the specific breach so waived and shall not be construed as a waiver of any subsequent breach of this order or any rights hereunder without the prior written consent of Seller. This Agreement, and the Terms and Conditions contained herein, are enforceable, however, against the successors and assigns of Buyer.

14. ASSIGNMENT. Buyer may not assign this order or any rights hereunder without the prior written consent of seller. This agreement and the Terms and Conditions contained herein, are enforceable, however, against the successors and assigns of Buyer.

15. TAXES. Seller's prices do not include sales, use, excise or other similar taxes. Consequently, in addition to the price specified herein, the amount of any present or future such tax shall be paid by Buyer, or in lieu thereof, Buyer shall provide Seller with all tax-exemption certificates required by the taxing authorities, at the time of sale.

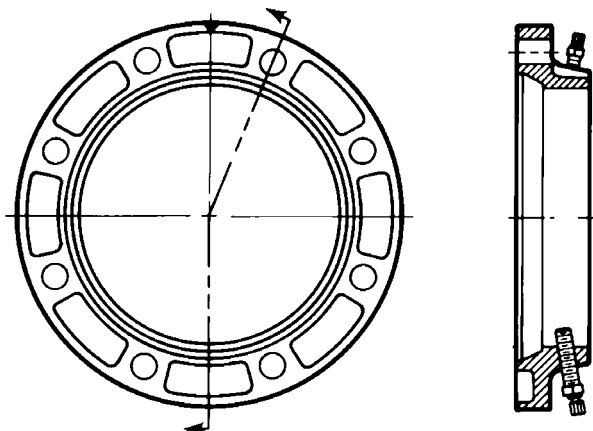
16. CUMULATIVE NATURE OF REMEDIES. All remedies of Seller set forth herein shall be cumulative and shall be in addition to any other remedies available to Seller, whether at law, equity or otherwise.

ADAPTER FLANGE



FM APPROVED

Wall Thickness Note:
Recommended for
ductile iron pipe Class
53 thru Class 56.



1. Place adapter flange and MJ gasket over the plain end of the pipe with the small side of the MJ gasket facing the flange side of the adapter flange.
2. Place the pipe end against flange to be joined and slip the MJ gasket into position against the flange. Make sure the gasket is evenly seated against the flange.
3. Slide adapter flange into position against the small (tapered) side of the MJ gasket and align the bolt holes. Insert the bolts and finger tighten the nuts to maintain position and alignment.
4. Snug up all nuts evenly. Alternating @ 180°, tighten the nuts to a torque of: **3" - 60 foot pounds; 4" thru 12" - 90 foot pounds.**
5. Snug up all set screws evenly around the pipe. Tighten the Torque Head Set Screws evenly, alternating at 180 degrees.

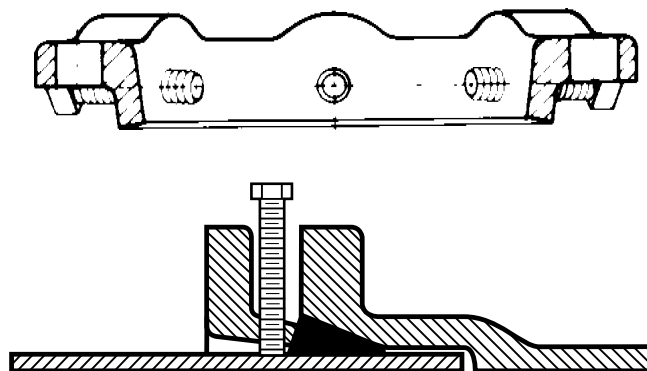
NOTE: THE TORQUE HEAD TOP WILL BREAK OFF AT THE RECOMMENDED SETTING OF 80-90 FT. LBS.
MAXIMUM DEFLECTION OF JOINT (2°)

RETAINER GLAND



Pipe Wall Thickness: Sizes 3"-12" are recommended for ductile iron pipe class 50 thru 56.
Sizes 14" thru 24" are recommended for ductile iron pipe class 53 thru 56.

1. Wash bell and plain end with soapy water, then slip gland and gasket over plain end with the small side of the gasket and ring side of the gland facing the bell.
2. Slip plain end into bell. Brush soapy water on gasket. This lubricates the gasket and allows it to slip easily into place. Push gasket into bell making sure it is evenly in the bell gasket landing.
3. Slide the gland into position against the back of the gasket. Align bolt holes, insert T-bolts and tighten nuts to finger tight.
4. Snug up all T-bolt nuts evenly. Alternating at 180°, tighten the T-bolt nuts to a torque of:
3" - 60 foot pounds 4" thru 24" - 90 foot pounds.
5. Snug up all set screws evenly. Using a torque wrench, tighten the set screws alternating at 180° to the recommended torque value of 75 foot pounds. If required double check set screws immediately.



Maximum recommended deflection of joints

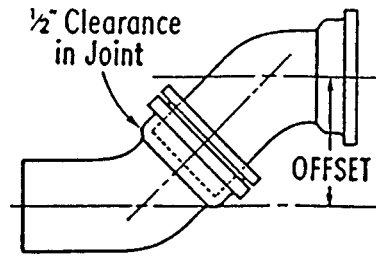
3" thru 12"-2°; 14" thru 30" - 1°

Using Two Bonds—Offset in Inches

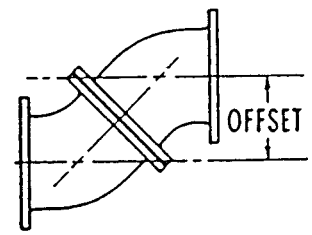
Nominal Diameter Inches	C153 -A21.53 Mechanical Joint			
	90°	45°	22-1/2°	11-1/4°
3	14.00	6.36	3.06	1.46
4	15.00	7.07	3.31	1.58
6	18.00	8.48	3.89	1.68
8	20.00	9.19	4.09	1.77
10	24.00	10.61	4.48	1.88
12	26.00	12.02	4.87	1.97
14	31.50	13.08	5.88	2.47
16	33.50	13.79	5.92	2.48
24	41.50	16.40	9.76	4.97
30	N/A	N/A	N/A	N/A

Nominal Diameter Inches	C110 -A21.10 Mechanical Joint			
	90°	45°	22-1/2°	11-1/4°
3	19.60	10.25	5.56	2.63
4	21.50	11.69	6.31	3.02
6	24.50	13.06	7.08	3.41
8	26.60	13.76	7.50	3.61
10	30.50	15.19	8.25	4.00
12	32.50	16.62	9.00	4.39
14	36.50	16.62	8.99	4.39
16	38.50	17.32	9.38	4.58
18	41.50	18.03	9.76	4.78
20	44.50	19.45	10.52	5.17
24	52.50	21.57	11.67	5.75
30	58.50	27.23	14.73	7.32

Nominal Diameter Inches	C110 -A21.10 Standard Flange				Long Radius 90°
	90°	45°	22-1/2°	11-1/4°	
3	11.00	4.24	2.30	1.17	15.50
4	13.00	5.66	3.06	1.56	18.00
6	16.00	7.07	3.83	1.95	23.00
8	18.00	7.78	4.21	2.15	28.00
10	22.00	9.19	4.98	2.54	33.00
12	24.00	10.61	5.74	2.93	38.00
14	28.00	10.61	6.74	2.93	43.00
16	30.00	11.31	6.12	3.12	48.00
18	33.00	12.02	6.51	3.32	53.00
20	36.00	13.44	7.27	3.71	58.00
24	44.00	15.56	8.42	7.29	68.00
30	50.00	21.22	11.48	5.85	N/A

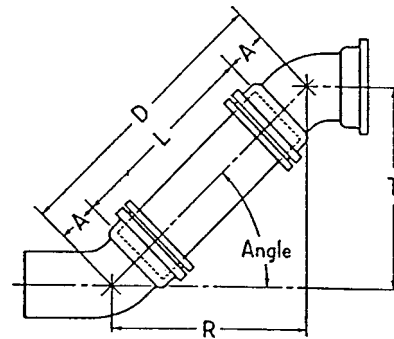


Mechanical Joint



Flanged Joint*
No allowance is made in offset figures for gasket thickness.

DETERMINING LENGTH OF PIPE IN OFFSETS



Mechanical Joint

Angle	D Equals	R Equals	L† Equals
45°	T x 1.414	T x 1.000	D-2A
22-1/2°	T x 2.613	T x 2.414	D-2A
11-1/4°	T x 5.126	T x 5.027	D-2A

†Cut the Pipe somewhat shorter to allow for clearance in the joints.

Example:

A 14-inch Mechanical Joint line is to be offset 12 feet on an angle of 45-degrees using two C110 full-body Mechanical Joint bends. What is the laying length (L) of pipe required to make the connection between the two bends?

Solution:

$D = 12'0" \times 1.414 = 16.968'$
 $R = 12' \times 1.000 = 12.000'$
 $A = 7.5" \text{ or } .625'$
 $L = 16.968' - 1.250 = 15.718' \text{ or approximately } 15' 8 \frac{5}{8}"$

PIPE O.D.'S AND FLANGE DATA

Because many items listed are not made by Tyler Pipe, we cannot be certain that all data is current or accurate. Please check with the product manufacturer for their most recent information.

PIPE O.D. CHART

PIPE SIZE	GRAY/DI IRON			CAST IRON/DWV			ASBESTOS - CEMENT			PVC	PVC	PVC	STEEL	
	CLASSES		O.D.	SV	NH	XH	CLASS	MACHINED	ROUGH	C-900	C-905	STEEL O.D	TYPE	O.D.
	PIT	SPUN						END O.D.	BARREL O.D.	DI O.D.	DI O.D.	SCH. PIPE		
									MIN. - MAX.		DR 41 32.5 25.18	40, 80, 120 C 905 IPS DIA. 14 - 24		
1-1/2"					1.90±.06							1.90	STD.	1.90
2"			2.50	2.30±.09	2.35±.09	2.38				2.50		2.38	STD.	2.38
2-1/2"												2.88	STD.	2.88
3"	A		3.80	3.30±.09	3.35±.09	3.50	100	3.74	4.00			3.50	STD.	3.50
	B,C,D	50-350	3.96				150	3.84	4.10					
							200	3.84	4.29					
4"	A	50-350	4.80	4.30±.09	4.38±.09	4.50	100	4.64	4.79-5.14	4.80		4.50	O.D.	4.00
	B,C,D		5.00		-.05		150	4.81	4.97-5.27				STD.	4.50
							200	4.81	5.22-5.57					
5"				5.30±.09	5.30±.09	5.50						5.56	STD.	5.56
					-.05									
6"	A	50-350	6.90	6.30±.09	6.30±.09	6.50	100	6.91	7.05-7.40	6.90		6.63	O.D.	6.00
	B,C,D		7.10		-.05		150	6.91	7.07-7.37				STD.	6.63
	E,F		7.22				200	6.91	7.26-7.56					
8"	A,B	50-300	9.05	8.38±.13	8.38±.13	8.62	100	9.11	9.22-9.57	9.05		8.63	O.D.	8.00
	C,D	350	9.30		-.09		150	9.11	9.27-9.57				STD.	8.63
	E,F		9.42				200	9.11	9.39-9.74					
10"	A,B	50-200	11.10	10.50±.13	10.56±.09	10.75	100	11.24	11.42-11.77	11.10		10.75	O.D.	10.00
	C,D	250-350	11.40				150	11.66	11.82-12.12				STD.	10.75
	E,F		11.60				200	11.66	11.77-12.12					
12"	A,B	50-200	13.20	12.50±.19	12.50±.09	12.75	100	13.44	13.69-14.04	13.20		12.75	O.D.	12.00
	C,D	250-350	13.50				150	13.92	14.08-14.38				STD.	12.75
	E,F		13.76				200	13.92	14.03-14.38					
14"	A,B	50-100	15.30				100	15.07	15.40-15.80		15.30		O.D.	14.00
	C,D	150-300	15.65				150	16.22	16.38-16.73					
	E,F		16.98				200	16.22	16.48-16.88					
15"				15.88±.19	15.83±.09	15.88								
16"	A,B	50-100	17.40				100	17.14	17.54-17.94		17.40		O.D.	16.00
	C,D	150-300	17.80				150	18.46	18.62-18.97					
	E,F		18.16				200	18.46	18.79-19.19					
18"	A,B	50-100	19.50				100	19.90	20.44		19.50		STD.	18.00
	C,D	150-250	19.92				150	20.94	21.20					
20"	A,B	50-100	21.60				100	22.12	22.50		21.60		STD.	20.00
	C,D	50-250	22.06				150	23.28	23.54					
24"	A,B	50-100	25.80				100	26.48	27.17		25.80		STD.	24.00
	C,D	150-250	26.32				150	27.96	28.22					

125/150 LB. Flanges And Bolts						250/300 L.B. Flanges And Bolts					
Size	Diam of Flange	Bolt Circle	Number of Bolts	Diam Of Bolts	Length Of Bolts	Pipe Sizes	Diam of Flanges	Diam of Wt Circle	Number of Bolts	Diam of Bolts	Length of Bolts
2	6	4-3/4	4	5/8	2	2	6-1/2	5	8	5/8	2-1/2
2-1/2	7	5-1/2	4	5/8	2-1/4	2-1/2	7-1/2	5-7/8	8	3/4	3
3	7-1/2	6	4	5/8	2-1/2	3	8-1/4	6-5/8	8	3/4	3-1/4
3-1/2	8-1/2	7	8	5/8	2-1/2	3-1/2	9	7-1/4	8	3/4	3-1/4
4	9	7-1/2	8	5/8	2-3/4	4	10	7-7/8	8	3/4	3-1/2
5	10	8-1/2	8	3/4	3	5	11	9-1/4	8	3/4	3-3/4
6	11	9-1/2	8	3/4	3	6	12-1/2	10-5/8	12	3/4	3-3/4
8	13-1/2	11-3/4	8	3/4	3-1/4	8	15	13	12	7/8	4-1/4
10	16	14-1/4	12	7/8	3-1/2	10	17-1/2	15-1/4	16	1	5
12	19	17	12	7/8	3-3/4	12	20-1/2	17-3/4	16	1-1/8	5-1/2
14	21	18-3/4	12	1	4-1/4	14	23	20-1/4	20	1-1/8	5-3/4
16	23-1/2	21-1/4	16	1	4-1/4	16	25-1/2	22-1/2	20	1-1/4	6
18	25	22-3/4	16	1-1/8	4-3/4	18	28	24-3/4	24	1-1/4	6-1/4
20	27-1/2	25	20	1-1/8	5	20	30-1/2	27	24	1-1/4	6-3/4
24	32	29-1/2	20	1-1/4	5-1/2	24	36	32	24	1-1/2	7-1/2

Question: From what compound is the standard MJ gasket made and what is the highest water temperature it will allow? Are the TYTON® gaskets made from the same compound?

Answer: The standard MJ gasket is made of vulcanized styrene butadiene rubber (SBR) in accordance with ANSI/AWWA C111/A21.11. The recommended temperature range for SBR gaskets is from 20°F to 180°F. SBR gaskets are suitable for water and wastewater, most moderate chemicals, wet or dry organic acids, alcohols, ketones and aldehydes. The gaskets furnished for the push on fittings are made from the same elastomer. SBR GASKETS ARE NOT RECOMMENDED FOR HYDROCARBON SERVICE.

Question: Does Tyler offer any other gaskets that will withstand temperatures greater than 180°F or special service applications?

Answer: Yes! Tyler offers three other special services gaskets for MJ connections only. Identification, temperature range and applications are listed below:

EPDM (Ethylene Propylene) -10°F to 250°F Ideal for water and wastewater, ozone and strong oxidizing chemicals. May be used on steam within given temperature range and on hot air without hydrocarbons.

NOT RECOMMENDED FOR HYDROCARBON SERVICE.

NEOPRENE (CR) -10°F to 225°F Recommended for moderate chemicals and acids, oil fats, many solvents and air with hydrocarbons. Will not support combustion.

Nitrile (NBR) (Buna - N) (Hycar) -40°F to 250°F Ideally suited for gasoline, petroleum products, hydrocarbons, water and mineral and vegetable oils.

Question: According to AWWA, how much torque should be applied to Mechanical Joint T-Bolts?

Answer: The recommended torque range, as stated in ANSI/AWWA C600 are:

Joint Size		Range of Torque	
in.	(mm)	ft/lb	N/m
3	(76)	45-60	(61-81)
4-24	(102-610)	75-90	(102-122)
30-36	(762-914)	100-120	(136-163)
42-48	(1067-1219)	120-150	(163-203)

Question: What type of Mechanical Joint T-Bolt does Tyler furnish?

Answer: Tyler supplies Cor-Ten® T-Bolts as part of all standard C153 (Compact) and C110 (Full Body) accessory packs.

Anti-Rotation T-Bolts and Cor-Blue T-Bolts are also available on request for special applications.

®Registered Trademark of US Steel Corporation.

Question: Of what material are the Standard T-Bolts, Anti-Rotation and Cor-Blue T-Bolts made?

Answer: The Standard T-Bolts and Anti-Rotation T-Bolts and Nuts are manufactured from corrosion resistant, high strength, low alloy steel in accordance with ANSI/AWWA C111/A21.11 (Current Revision). Cor-Blue T-Bolts and Nuts are manufactured from the same high quality material but also have a ceramic-filled, baked on fluorocarbon resin coating developed to handle the needs of highly corrosive conditions. Cor-Blue T-Bolts and Nuts are also in compliance with ANSI/AWWA C111/A21.11 (Current Revision).

Question: How is the torque range for Flanged fittings gaskets determined?

Answer: The range of torque settings for Flanged fittings is not addressed in the ANSI/AWWA C600 Standard. Generally, this torque range is determined by the flanged gasket manufacturer because of various durometers of different gaskets.

Question: What purpose does cement mortar lining serve?

Answer: Cement mortar lining serves to prevent tuberculation while improving flow characteristics.

Question: What is the function of the seal coating?

Answer: In soft water systems, the seal coating serves to prevent the water from becoming hard. The seal coating also helps in the curing process of the cement lining by minimizing the loss of moisture during hydration, which results in controlled curing of the mortar. Tyler Pipe applies a seal coat that is NSF 61 approved for potable water systems on the entire casting. The exterior is seal coated also for aesthetic and corrosion retarding purposes.

Question: Are the fittings furnished by Tyler Pipe UL/FM approved?

Answer: The Tyler Ductile-Iron Watermain Fittings ANSI/AWWA C110/A21.10 for MJ and Flange and ANSI/AWWA C153/A21.53 for MJ in sizes 3" through 12" are UL listed for **Fire Main Equipment**. (Listing #EX2111).

Question: Does Tyler offer fittings with any coatings other than an asphaltic seal coat?

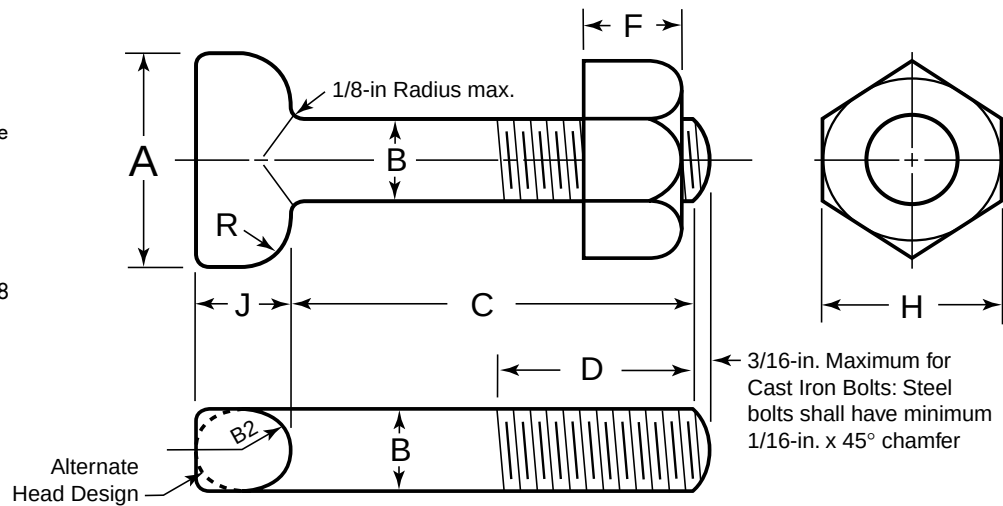
Answer: Yes. For Flanged Full Body and Compact Fittings, Tyler offers an exterior prime coat of Tnemec N140-1211 Pota-Pox Plus that is NSF 61 approved for potable water systems in conjunction with the cement mortar/seal coated lining. Tyler also offers double cement lining with the entire casting seal coated for MJ Full Body (C110) and MJ Compact (C153) fittings. Totally bare castings (for consumer's special coating requirements) are also available in Full Body MJ, Full Body and Compact Flanged and MJ Compact fittings. Tyler has also added a full line of fusion bonded epoxy coated fittings for drinking water service applications. The epoxy coating is applied with 6-8 mil thickness inside and out, has a red oxide color and meets or exceeds the ANSI/AWWA C116/A21.16 and ANSI/AWWA C550 specifications.

Question: Does Tyler offer any interior coating for wastewater treatment lines?

Answer: Yes. Tyler provides Protecto 401 lining for select C153 and C110 MJ and Flanged Fittings. Designed for use as protection for ductile iron sanitary sewer systems, Protecto 401 provides the reliability of cement mortar lining with the excellent corrosive protection of novalac epoxy. A nominal 40 mil thickness is applied to each fitting. Exteriors are seal-coated on accordance with ANSI/AWWA C104/A21.4 (Current Revision).

NOTES:

1. Dimension "B" is unthreaded shank.
2. Draft, when required to be 6 degree maximum, may be deducted from bolt head dimensions, and radius (B/2) may be changed to suit draft.
3. Gates, if required, may protrude a maximum of 1/8 inch above the top of the bolt head.
4. Chamfer is optional if threads are rolled.



T-Head Cor-ten (Low alloy steel) Bolts and Nuts
Dimensions in Inches

Size Inches	A ±0.05	B +0.030 -0.074	C +0.25 -0.06	D†	Threads per Inch E††	F	H	J +0.15 -0.03	R Max.
5/8 x 3	1.50	0.625	3.0	2.00	11	0.625±.04	1.062-.04	0.625	0.312
3/4 x 3 1/2	1.75	0.750	3.5	2.50	10	0.750±.06	1.250-.06	0.750	0.375
3/4 x 4	1.75	0.750	4.0	3.00	10	0.750±.06	1.250-.06	0.750	0.375
3/4 x 4 1/2	1.75	0.750	4.5	3.00	10	0.750±.06	1.250-.06	0.750	0.375
3/4 x 5	1.75	0.750	5.0	3.00	10	0.750±.06	1.250-.06	0.750	0.375
1 x 6	2.25	1.000	6.0	3.00	8	1.000±.08	1.625-.08	1.000	0.500

* The tolerance for cast iron bolts is ±0.03 in. If threads are rolled, the body diameter may be reduced to the approximate pitch diameter of the thread.

† Tolerance: +3, — 0 threads.

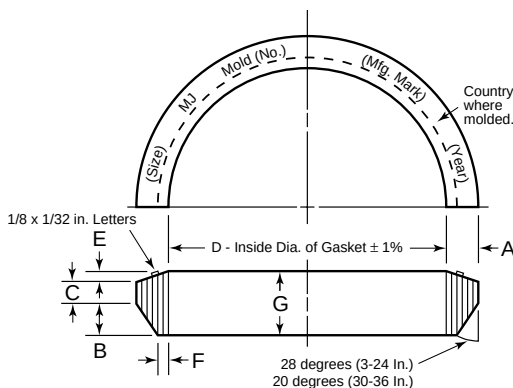
†† Number of threads per inch - course-thread series (ANSI/ASME B1.1), Class 2A, external fit UNC2A and Class 2B, UNC2B (ANSI/ASME B1.2).

MECHANICAL JOINT GASKETS

ANSI/AWWA C111/A21.11

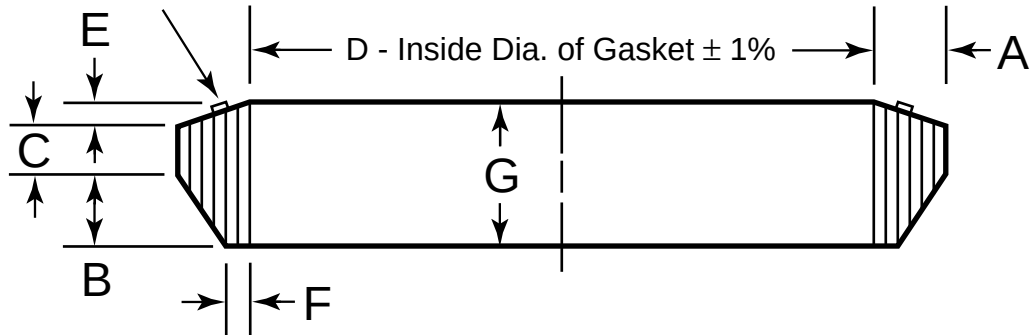
Mechanical Joint Gasket Dimensions in Inches

Pipe Size	Pipe OD	A ±0.01"	B	C	D ±1%	E ±0.01%	F ±0.01"	G ±0.02"
2*	2.50	.48	.62	.31	2.48	.12	.15	1.05
3	3.96	.48	.62	.31	3.86	.12	.15	1.05
4	4.80	.62	.75	.31	4.68	.16	.22	1.22
6	6.90	.62	.75	.31	6.73	.16	.22	1.22
8	9.05	.62	.75	.31	8.85	.16	.22	1.22
10	11.10	.62	.75	.31	10.87	.16	.22	1.22
12	13.20	.62	.75	.31	12.95	.16	.22	1.22
14	15.30	.62	.75	.31	14.99	.16	.22	1.22
16	17.40	.62	.75	.31	17.07	.16	.22	1.22
18	19.50	.62	.75	.31	19.13	.16	.22	1.22
20	21.60	.62	.75	.31	21.20	.16	.22	1.22
24	25.80	.62	.75	.31	25.34	.16	.22	1.22
30	32.00	.73	1.00	.38	31.47	.16	.37	1.54
36	38.30	.73	1.00	.38	37.67	.16	.37	1.54



* Not included in AWWA C111. Manufacturer's Standard.

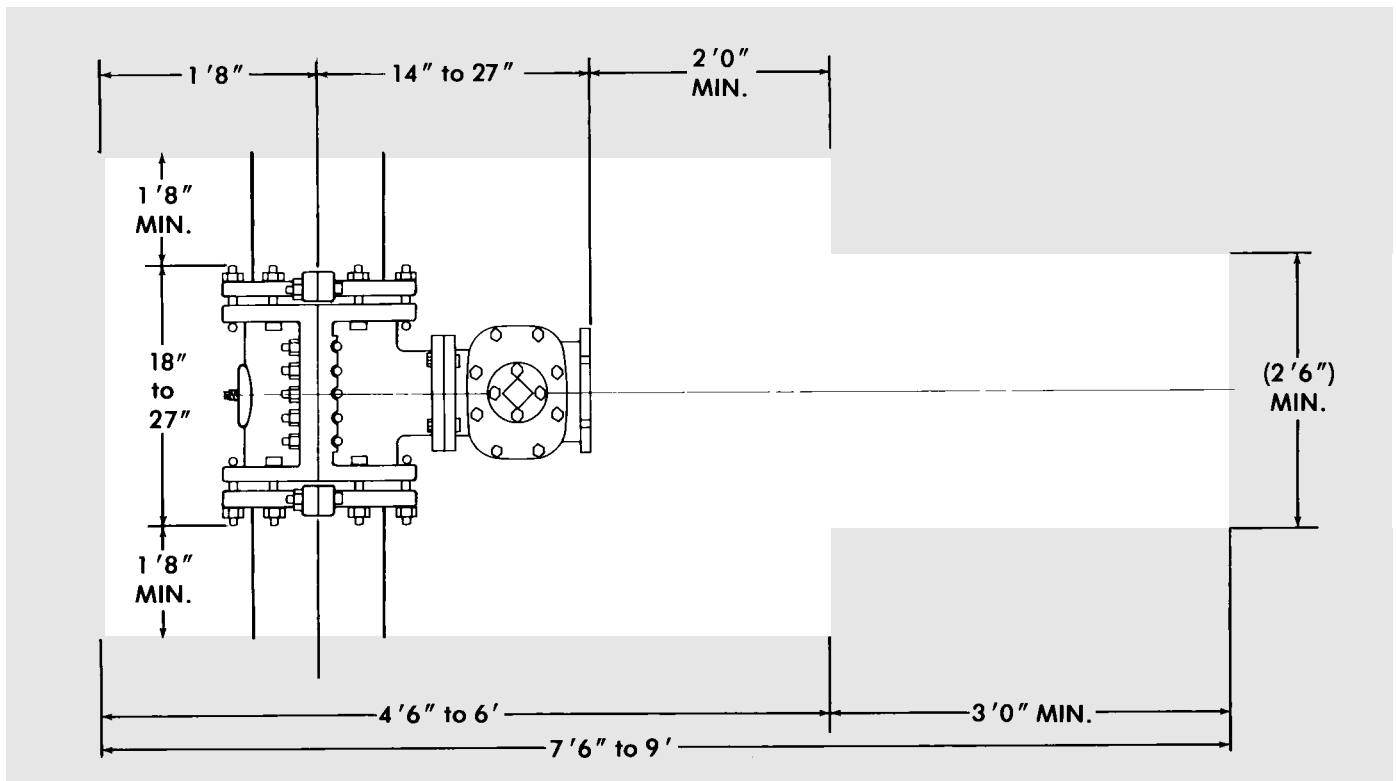
1/8 x 1/32 in. Letters



Mechanical Joint Transition Gasket Dimensions in Inches

Pipe Size	A ± 0.01"	B	C	D ±1%	E	F ± 0.01"	G ± 0.02"
4	.77	.75	.31	4.43	.16	.37	1.26
6	.76	.75	.31	6.53	.16	.36	1.25
8	.82	.75	.31	8.50	.16	.42	1.27
10	.79	.75	.31	10.59	.16	.39	1.26
12	.84	.75	.31	12.56	.16	.44	1.28

Excavation dimensions - MJ 4" through 12" Tapping Sleeves for Ductile Pipe



Other TYLER Products Include:

Ductile Iron C153 Fittings in MJ and Union-Tite

Ductile Iron C110 Fittings in MJ and Flanged

Ductile Iron Compact Flanged Fittings

Swivel MJ Fittings For Hydrants

Tapping Sleeves For MJ

Protecto 401 Ceramic Epoxy Lined C153

Mechanical Joint and C110 Flanged Fittings

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