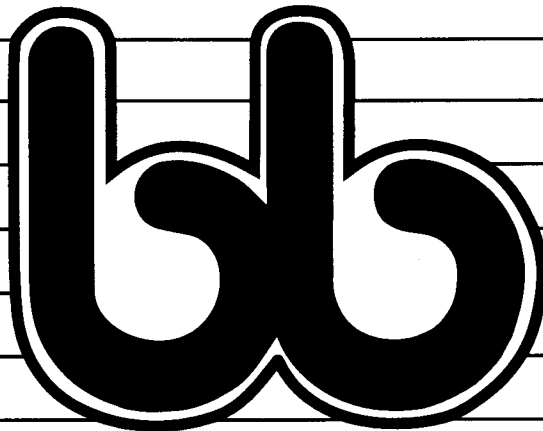


**PC-U972**  
Dated May 1, 2000

# **Bibby Utilities Catalog**



**UNION FOUNDRY  
COMPANY**

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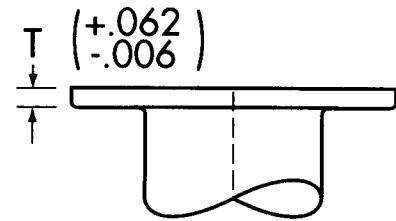
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**Flange Thickness of SSB D.I. Class 350 MJxFlange Fittings**

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 Canada and 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 Bibby Waterworks Divisions.

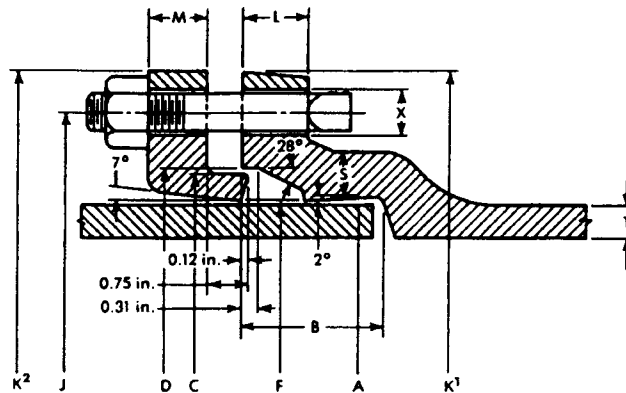
# Bibby Ste Croix

## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

### SAMPLE SPECIFICATIONS

3" THRU 24" MECHANICAL JOINT DUCTILE IRON FITTINGS shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11.

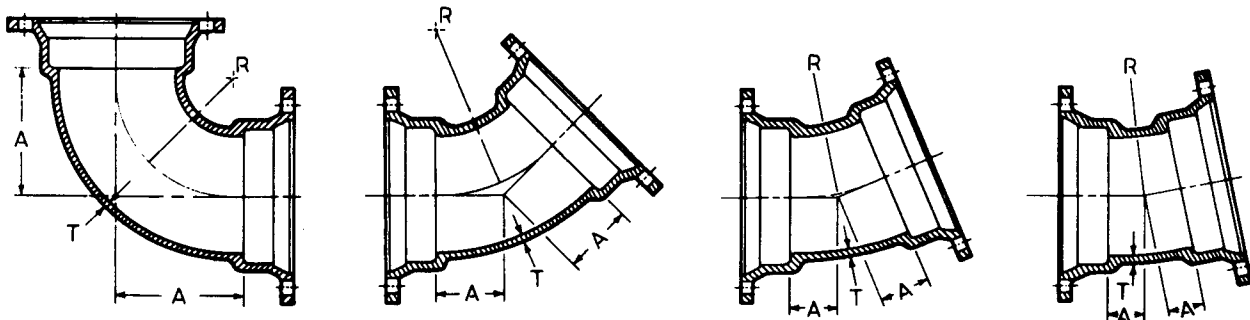
**NOTE:** Fittings are cement-lined and seal-coated in accordance with ANSI/AWWA C104/A21.4; also available double cement-lined or bare. See list price sheet for details.



### JOINT DIMENSIONS IN INCHES

Size	JOINT DIMENSIONS IN INCHES													BOLTS	
	A Dia.	B	C Dia.	D Dia.	F Dia.	J Dia.	K <sup>1</sup> Dia.	K <sup>2</sup> Dia.	L	M	S	T	X Dia.	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	<b>4.80</b>	<b>2.50</b>	<b>5.92</b>	<b>6.02</b>	<b>4.90</b>	<b>7.50</b>	<b>9.06</b>	<b>9.12</b>	.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	<b>9.05</b>	<b>2.50</b>	<b>10.17</b>	<b>10.27</b>	<b>9.15</b>	<b>11.75</b>	<b>12.31</b>	<b>13.37</b>	.66	<b>1.00</b>	.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	<b>13.20</b>	<b>2.50</b>	<b>14.32</b>	<b>14.44</b>	<b>13.30</b>	<b>16.25</b>	<b>17.88</b>	<b>17.88</b>	.73	<b>1.00</b>	.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	<b>17.40</b>	<b>3.50</b>	<b>18.50</b>	<b>18.64</b>	<b>17.54</b>	<b>21.00</b>	<b>22.56</b>	<b>22.50</b>	.85	<b>1.31</b>	.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	<b>21.60</b>	<b>3.50</b>	<b>22.70</b>	<b>22.84</b>	<b>21.74</b>	<b>25.50</b>	<b>27.08</b>	<b>27.08</b>	<b>1.02</b>	<b>1.44</b>	.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)

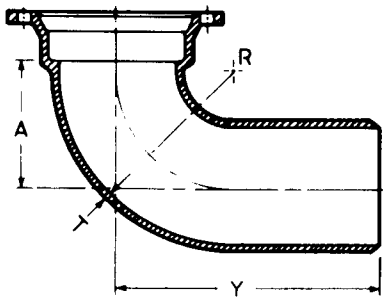
#### 11 1/4° (1/32)

Size	90° Bends (1/4)				45° Bends (1/8)				22 1/2° Bends (1/16)				11 1/4° (1/32)			
	T	A	R	Weight	A	R	Weight	A	R	Weight	A	R	Weight			
3	.34	4.5	4.0	20	2.00	3.62	16	1.50	4.98	15	1.25	7.62	15			
4	.35	5.0	4.5	26	2.49	4.81	22	1.82	6.66	21	1.55	10.70	20			
6	.37	6.5	6.0	48	3.50	7.25	38	2.59	10.50	37	1.81	13.26	33			
8	.39	7.5	7.0	68	4.00	8.44	59	2.85	11.80	51	2.06	15.80	48			
10	.41	9.5	9.0	107	5.01	10.88	81	3.35	14.35	67	2.32	18.36	61			
12	.43	10.5	10.0	141	5.98	13.25	111	3.86	16.90	80	2.56	20.90	79			
14	.51	12.0	11.5	220	5.50	12.06	164	3.93	17.25	148	2.59	21.25	131			
16	.52	13.0	12.5	264	5.98	13.25	202	3.98	17.50	179	2.62	21.50	159			
18	.59	15.5	14.0	410	7.50	14.50	289	7.50	30.19	292	7.50	60.94	287			
20	.60	17.0	15.5	505	8.00	16.88	348	8.50	35.19	364	8.50	71.07	346			
24	.62	20.0	18.5	695	9.00	18.12	475	9.00	37.69	460	9.00	76.12	457			

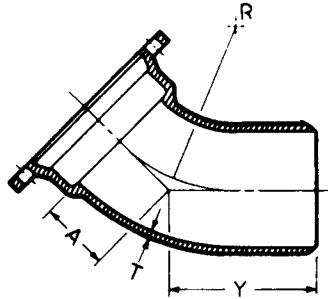
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## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

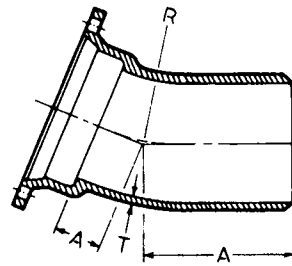
### BENDS



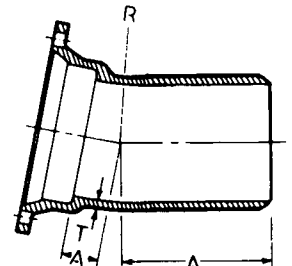
90° Bend MJ x PE (1/4)



45° Bend MJ x PE (1/8)

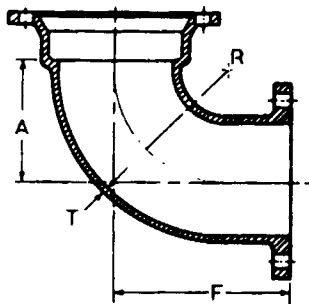


22 1/2° Bend MJ x PE (1/16)

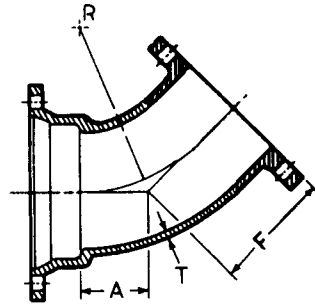


11 1/4° Bend MJ x PE (1/32)

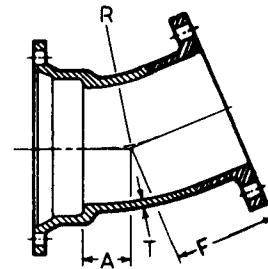
Size	Dimensions					Weight	Dimensions					Weight	Dimensions					Weight			
	T	A	Y	R			A	Y	R		A		Y	R		A	Y		R		
3	.34	4.5	10.0	4.0		20	2.0	7.5	3.62		16	1.50	7.00	4.98		16	1.25	6.75	7.62		15
4	.35	5.0	10.5	4.5		25	2.5	8.0	4.81		22	1.82	7.32	6.66		20	1.55	7.05	10.70		19
6	.37	6.5	12.0	6.0		45	3.5	9.0	7.25		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



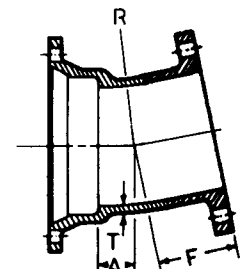
90° Bend MJ x Flange (1/4)



45° Bend MJ x Flange (1/8)



22 1/2° Bend MJ x Flange (1/16)



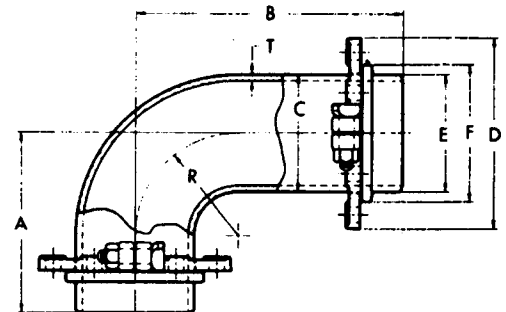
11 1/4° Bend MJ x Flange (1/32)

Size	Dimensions					Weight	Dimensions					Weight	Dimensions					Weight			
	T	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		71	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		121	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		155	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	Dimensions								*Weight
	T	A	B	C	D	E	F	R	
6	.37	10.5	15.5	7.10	11.2	6.90	8.02	6.0	86

\* Weight includes two swivel glands.

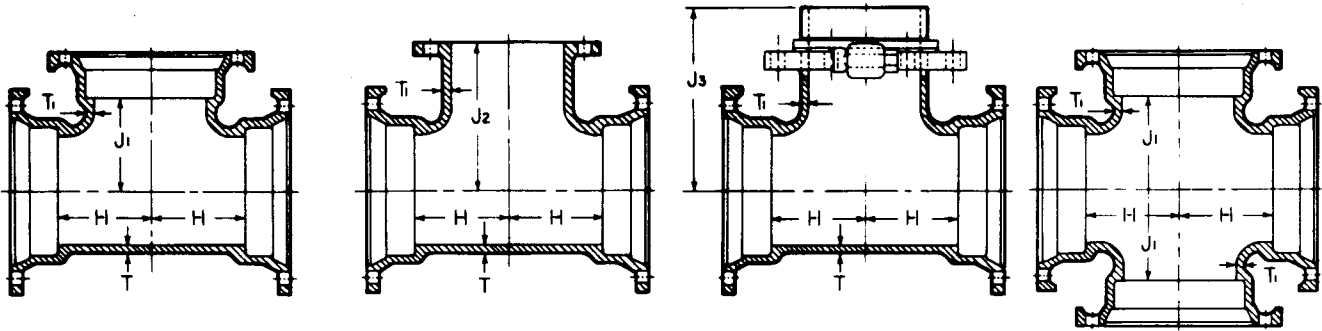


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## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

### TEES

### CROSS



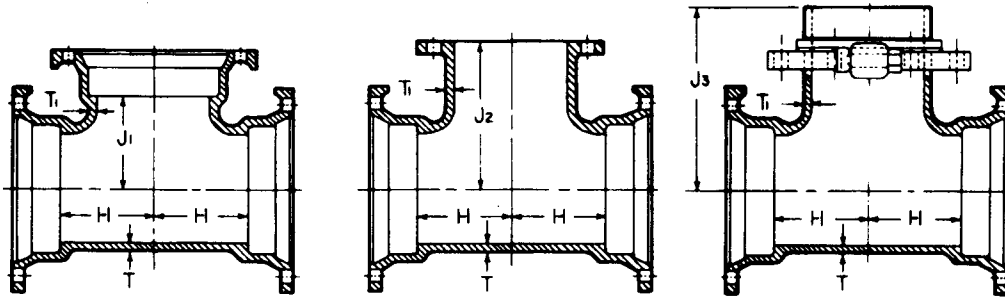
Size	Dimensions						Weights			
	T	T'	H	J <sup>1</sup>	J <sup>2</sup>	J <sup>3</sup>	MJ	MJxFE	MJxS†	Cross
3	.34	.34	3.5	3.50	5.5	...	26	28	...	33
4x3	.35	.34	3.5	4.00	6.5	...	32	34	...	38
4	.35	.35	4.0	4.00	6.5	...	35	38	...	42
6x3	.37	.34	3.5	5.00	8.0	...	47	51	...	...
6x4	.37	.35	4.0	5.00	8.0	...	51	54	...	62
6	.37	.37	5.0	5.00	8.0	10.50	60	64	77	80
8x3	.39	.34	4.0	6.50	9.0	...	68	...	...	...
8x4	.39	.35	4.5	6.50	9.0	...	71	72	...	84
8x6	.39	.37	5.5	6.50	9.0	11.50	80	83	89	108
8	.39	.39	6.5	6.50	9.0	11.50	90	94	116	120
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	107	113	118
10x8	.41	.39	6.5	7.50	11.0	13.00	111	115	129	138
10	.41	.41	7.5	7.50	11.0	...	120	130	...	155
12x3	.43	.34	4.0	8.75	12.0	...	100	...	...	...
12x4	.43	.35	4.5	8.75	12.0	...	104	115	...	123
12x6	.43	.37	5.5	8.75	12.0	14.25	115	120	128	140
12x8	.43	.39	6.5	8.75	12.0	14.25	123	146	149	162
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	276	...	269
14	.51	.51	10.5	10.50	14.0	...	281	302	...	299
16x6	.52	.45	6.5	11.50	15.0	17.00	229	213	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	...	323	374	...	410

† Weights include swivel gland

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## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

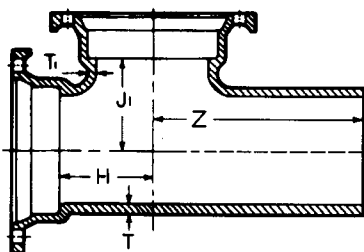
### TEES (Continued)



Size	MJ Tee			MJ x FE Tee			MJ x Swivel Tee		
	T	T'	H	Dimensions			MJ	Weights	
				J <sup>1</sup>	J <sup>2</sup>	J <sup>3</sup>		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	345	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	454	460	458
24x8	.62	.45	8.0	16.0	...	...	475	...	...
24x10	.62	.47	9.0	16.0	...	...	505	...	...
24x12	.62	.49	10.0	16.0	...	...	545	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	...	...	830	...	...

† Weights include swivel gland.

MJ x FE Flange Dimensions are on Page 2.



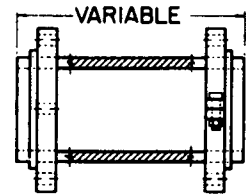
Size	MJ x PE x MJ Tee					Weights
	T	T'	H	J <sup>1</sup>	Z	
6	.37	.37	5.0	5.0	11.5	57

### MJ GLANDS



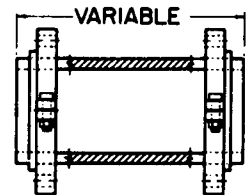
Glands			
Size	Weight	Size	Weight
3	3	12	12
4	4	14	16
6	6	16	20
8	8	18	25
10	10	20	31
		24	39

Swivel Glands, page 23  
Retainer Glands, page 9  
MJR Restraint, page 11



Swivel x Solid Adapter with Swivel Gland

Size by Laying Length	Wall Thickness	Weight
6x13	.37	47
6x18	.37	58
6x24	.37	69
8x12	.39	52



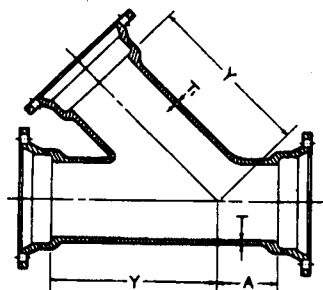
Swivel x Swivel Adapter

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

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## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

### WYES

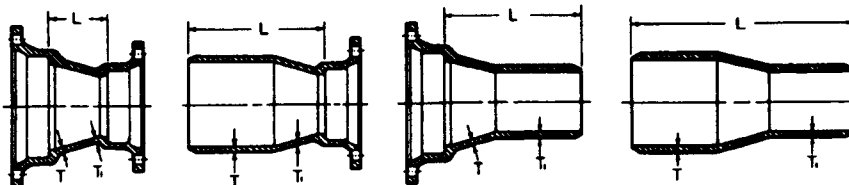


\*Wyes

Size	Dimensions				Weights
	A	Y	T	T'	
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	465
16x6	0.0	21.0	.52	.45	300
16x8	0.5	22.5	.52	.46	327
16x12	3.5	25.0	.52	.48	465
16	6.5	28.0	.52	.52	575

\* Not included in AWWA C153.

### REDUCERS



MJ x MJ

MJSEB x PE

MJLEB x PE

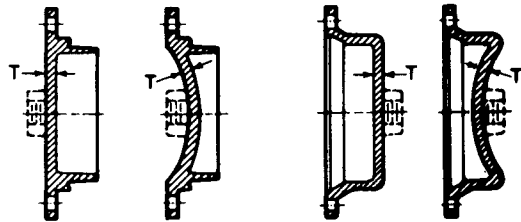
PE x PE

Size	Dimensions						Weights			
	T	T'	MJ L	SEB L	LEB L	PE L	MJ	SEB	LEB	PE
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	25
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	36
10x4	.41	.35	7.0	12.5	12.5	18.0	47	46	43	...
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	108	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	99
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	194	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	200	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	310	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	312	310	...	...
24x20	.62	.60	8.0	16.0	16.0	24.0	315	305	...	...

# Bibby Ste Croix

## MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

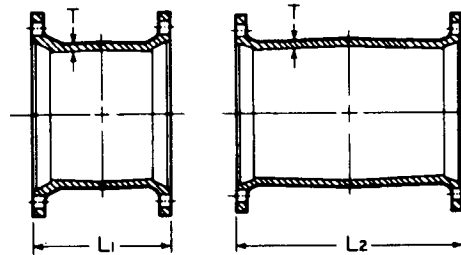
### SOLID & TAPPED PLUGS & CAPS



3"-12" 14"-24" 3"-12" 14"-24"  
MJ Plug MJ Cap

Size	Dimensions T	Max. Tap	Weights	
			Plugs	Caps
3	.46	2	8	8
<b>4.46</b>	<b>2</b>	<b>10</b>	<b>10</b>	
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	153	148
24	.68	2	202	202

### SOLID SLEEVES

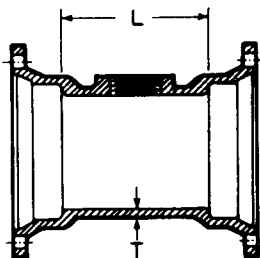


Short Long

Size	T	Dimensions		Weights	
		L <sup>1</sup>	L <sup>2</sup>	Short	Long
3	.34	7.5	12	13	19
4	.35	7.5	12	17	25
6	.37	7.5	12	28	39
8	.39	7.5	12	38	53
10	.41	7.5	12	49	64
12	.43	7.5	12	56	82
14	.56	9.5	15	111	141
16	.57	9.5	15	137	172
18	.68	9.0	15	160	200
20	.69	9.0	15	212	269
24	.75	9.0	15	272	368

MJ x FE Flange  
Dimensions are  
on Page 2.

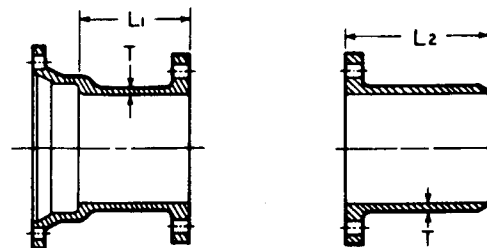
### TAPPED TEE



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

### ADAPTERS



MJ x FE

FE x PE

Size	T	Dimensions		Weights	
		L <sup>1</sup>	L <sup>2</sup>	MJxFE	FExPE
3	.34	6	12	18	...
4	.35	6	12	24	24
6	.37	6	12	36	33
8	.39	6	12	52	52
10	.41	6	12	67	...
12	.43	6	12	80	...
14	.51	6	12	126	...
16	.52	6	12	166	...
20	.60	6	...	275	...



# Bibby Ste Croix

## TYLER DUCTILE IRON MECHANICAL JOINT PIPE RESTRAINT



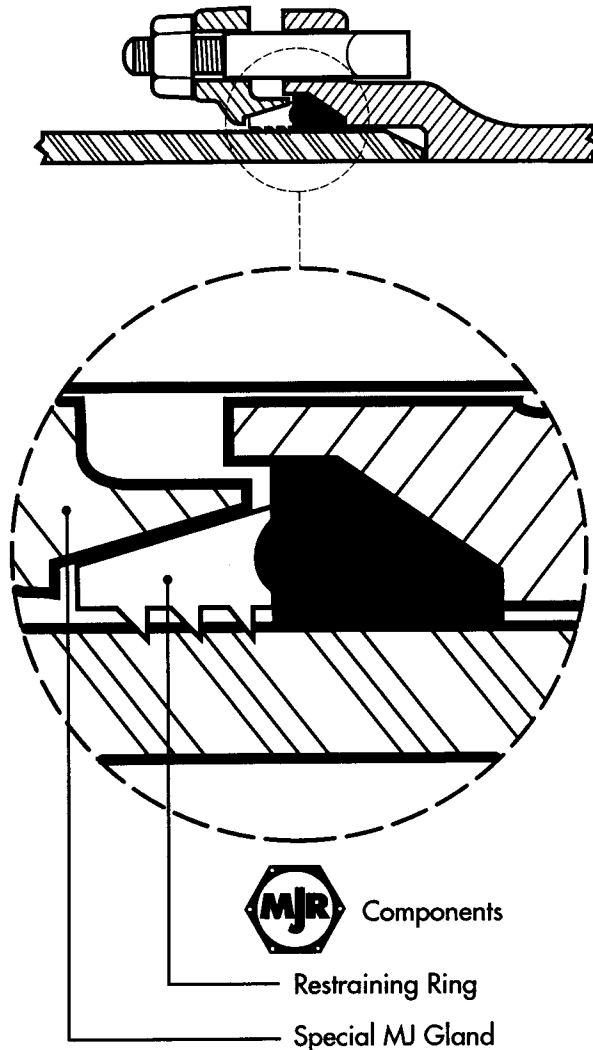
### Pressure Ratings:

- 200 psi (Plastic Pipe DR14)
- 150 psi (Plastic Pipe DR18)
- 350 psi (Ductile Iron Pipe) 4-10"
- 250 psi (Ductile Iron Pipe) 12"

### Materials:

- Gland** - Ductile Iron ASTM A536 Grade 70-50-05
- Restraining Ring** - Ductile Iron ASTM A536 Grade 70-50-05
- T-Bolts/Nuts** - Carbon Steel, Special Alloy for Corrosion-Resistance; Minimum Yield 45,000 psi per ANSI/AWWA C111/A21.11
- Gasket** - SBR per ANSI/AWWA C111/A21.11

Nominal Size	Pipe O.D.	Bolts/Nuts		Weight
		Quantity	Size x Length	
4	4.80	4	3/4 x 3 1/2	8
6	6.90	6	3/4 x 4	11
8	9.03	6	3/4 x 4	14
10	11.10	8	3/4 x 4	18
12	13.20	8	3/4 x 4	20



eliminates concrete blockings, tie rods and other costly, time consuming methods of positive fixed placement.



is used for restraint of mechanical joint pipe, valves, fittings and fire hydrants. It retains all characteristics of a standard Mechanical Joint - ease of assembly, effective seal, deflection & rotation, uses standard components (bolts/nuts/gasket); plus it securely anchors the pipe line at direction changes, valve and hydrant connections. A unique gasket retention quality prevents gasket extrusion at high pressures.

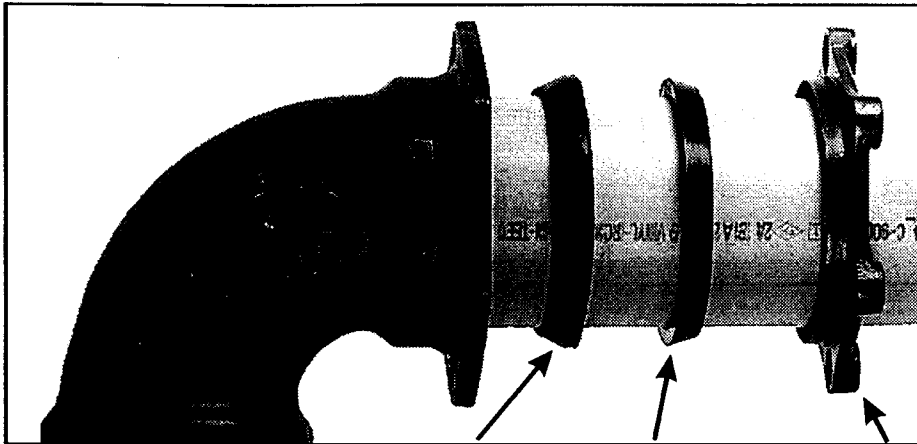


is much like a standard MJ gland, except that a tapered restraining ring is incorporated between the gasket and gland. The ring grips the pipe circumferentially. As internal line pressure increases, the grip becomes stronger as the taper seats into a recess in the gland. This is a positive metal-to-metal locked restraint. Additional devices such as cable bonding, or armor tipped gaskets are not required for electrical conductivity on Ductile Iron pipe.

**NOTE:** Suitable for use with;  
**AWWA C900 Plastic Pipe DR14 & DR18 Only** (ductile pipe dimensions)  
**ANSI/AWWA C151/A21.51 Ductile Iron Pipe**

# Bibby Ste Croix

## TYLER MJR INSTALLATION INSTRUCTIONS



Standard MJ Fitting    Standard MJ Gasket    Ductile Restraining Ring     Gland

### NOTICE:

Tyler  Components Do Not Interchange With Other Restraint Devices

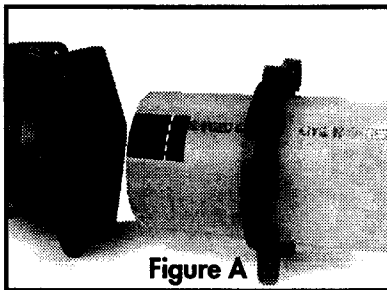


Figure A

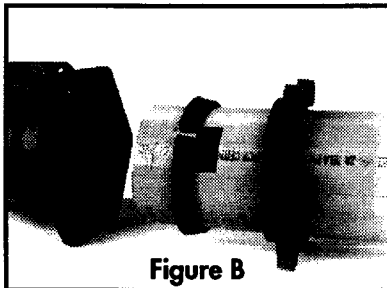


Figure B

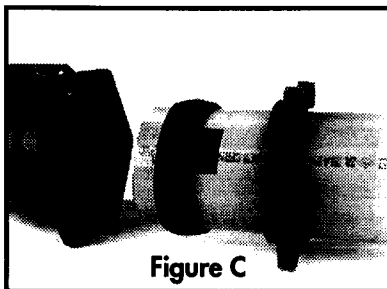


Figure C

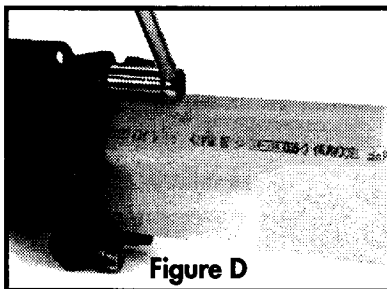






Figure D

1. Pipe end must be square within 1/8".
  2. Clean outside pipe surface six-inches from the end. Remove dirt, excess coating and corrosion.
  3. Slide  Gland over pipe (Figure A).
  4. Position tab guide and remove perforation.
  5. Slide Ductile Restraining Ring over pipe to edge of the guide (Figure B). **Taper on restraining ring faces gland!** The restraining ring may be opened slightly to slide it over the pipe.
  6. Slide standard MJ Gasket over the pipe end. **Gasket must be 1" from pipe end to work properly.** Position restraining ring just behind MJ gasket (Figure C).
  7. For proper gasket compression, **pipe must not bottom out in fitting bell,** before tightening bolts.
  8. Lubricant is recommended; coat gasket and gasket seat.
  9. Insert pipe into MJ Bell, maintaining 1" space from gasket to pipe end.
  10. Install "T" bolts in MJ fitting and  Gland. **NOTE: Passed UL (194 & 1285) and FM (1620.) Deflection tested at 5° (PVC) and 3°(D.I.).** Deflection must be done after assembly, with bolts loose.
  11. Tighten bolts alternately. Keep  Gland and MJ Fitting parallel according to AWWA standards.
- Torque to 90-lbs. ft.\* to assure that the restraining ring seats into the  Gland. (Figure D).

**CAUTION: Proper torque is required to assure restraint.**

\*Per appendix A of ANSI/AWWA C111/A21.11

# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT DIMENSIONS

### SAMPLE SPECIFICATION

2" THRU 30" MECHANICAL JOINT FITTINGS shall be ductile iron class 250, and shall be produced in accordance with ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11 and shall conform to details and dimensions published therein.

NOTE: Fittings are CEMENT-LINED and seal coated in accordance with ANSI/AWWA C104/A21.4; also available double cement-lined or bare. 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 <sup>1</sup>	K <sup>2</sup>	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

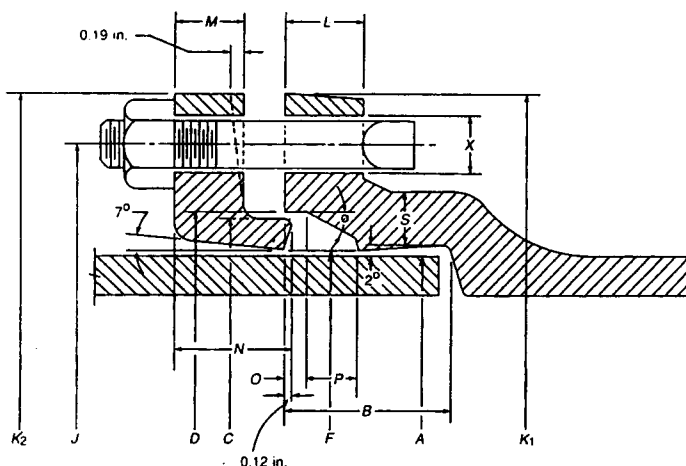
\* Not included in AWWA C110.

### 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.

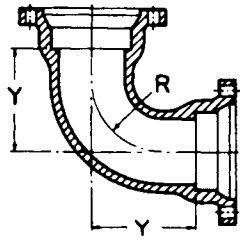
14" THRU 30"  
GLANDS MAY  
BE TAPERED



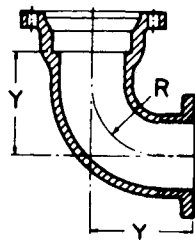
# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

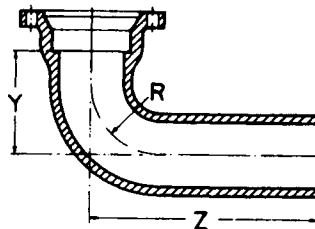
### BENDS



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	50	39
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	255	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	2030	1920	...
36	24.5	28.0	36.0	2629	2310	...

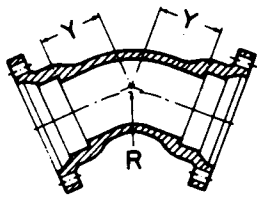
Mechanical Joint weights do not include Glands, Nuts, Bolts and Gaskets. See Joint Accessories.

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

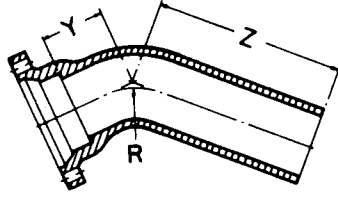
# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

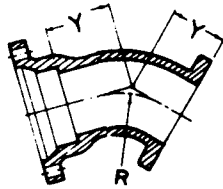
### BENDS



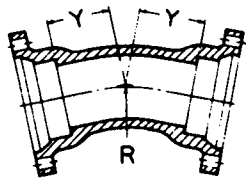
45° MJ (1/8)



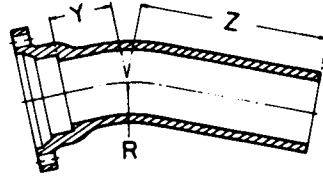
45° MJ x PE (1/8)



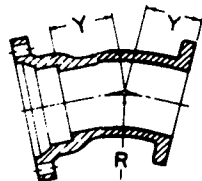
45° MJ x FE (1/8)



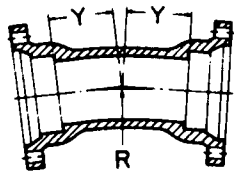
22 1/2° MJ (1/16)



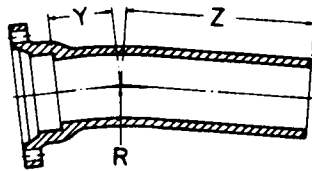
22 1/2° MJ x PE (1/16)



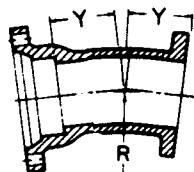
22 1/2° MJ x FE (1/16)



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	45
6	7.25	5.0	13.0	75	69	70
8	8.44	5.5	13.5	110	105	105
10	10.88	6.5	14.5	155	155	155
12	13.25	7.5	15.5	215	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	800	825
30	27.75	15.0	23.0	1620	...	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	360	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	840
30	57.81	15.0	23.0	1650	...	1540
36	72.88	18.0	26.0	2372	...	1970

### 11 1/4° Bends (1/32)

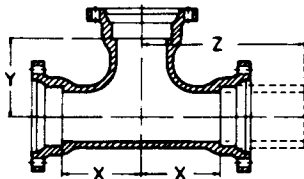
Size	Dimensions			MJ	Weights	
	R	Y	Z		MJxFE*	MJxPE
3	15.25	3.0	11.0	30	...	...
4	20.31	4.0	12.0	50	...	...
6	30.50	5.0	13.0	75	69	...
8	35.50	5.5	13.5	110	105	...
10	45.69	6.5	14.5	160	...	...
12	55.81	7.5	15.5	220	215	...
14	50.75	7.5	15.5	305	...	...
16	55.81	8.0	16.0	385	360	...
18	60.94	8.5	16.5	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	1655	...	1305
36	147.25	18.0	26.0	2397	...	2185

\* Not included in AWWA C110.

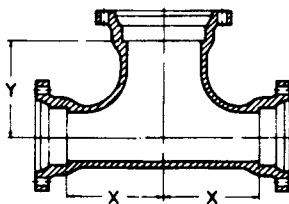
# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

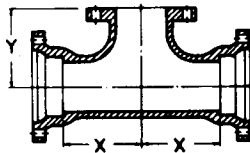
### TEES



**Straight Tees and Reducing on Branch Tees**



**Bullhead**



**MJxMJxFE**

Run	Size		Dimensions			Weights		
	Run	Branch	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	80	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	...	185	...	...
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	165
8	8	8	9.0	9.0	17.0	185	180	175
10	10	4	11.0	11.0	19.0	...	...	229
10	10	6	11.0	11.0	19.0	250	...	237
10	10	8	11.0	11.0	19.0	260	...	250
10	10	10	11.0	11.0	19.0	310	310	...

\* Not included in AWWA C110  
 \*\* Made to order only. Not Returnable

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

**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.

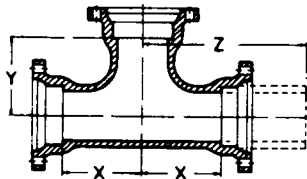
Compact flanged fittings are made to manufacturer's standards, incorporating AWWA C153 wall thickness and AWWA C110 laying lengths.

For weights of specific fittings, please contact Bibby Waterworks Divisions.

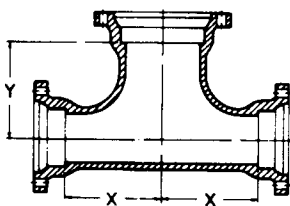
# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

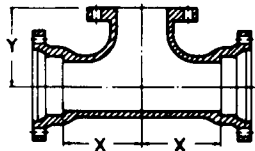
### TEES (Con't)



**Straight Tees and Reducing on Branch Tees**



**Bullhead**



**MJxMJxFE**

Run	Size		X	Dimensions			Weights		
	Run	Branch		Y	Z	MJ	**MJxPExMJ	**MJxMJxFE	
12	12	4	12.0	12.0	20.0	315	315	309	
12	12	6	12.0	12.0	20.0	325	325	315	
12	12	8	12.0	12.0	20.0	340	340	330	
12	12	10	12.0	12.0	20.0	390	390	...	
1212	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	
1616	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	...	705	
18	18	18	16.5	16.5	24.5	945	...	915	
20	20	6	14.0	17.0	22.0	830	...	...	
20	20	8	14.0	17.0	22.0	845	...	835	
20	20	12	14.0	17.0	22.0	875	...	...	
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

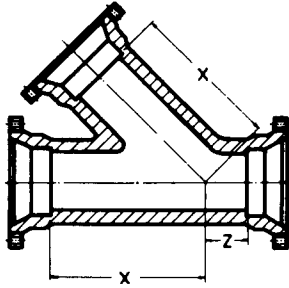
\*\* Made to order only. Not Returnable

# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

### WYES

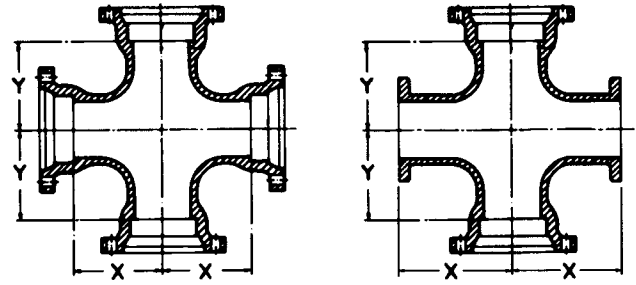
(Not included in AWWA C110.)



Run	Size Branch	Dimensions		Weights
		X	Z	
18	8	32.0	7.0	940
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.

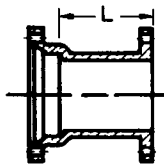
### CROSSES



Run	Size Branch	Dimensions		Weights	
		X	Y	MJ	*MJxFE
6	6	8.0	8.0	...	140
8	6	9.0	9.0	...	185
8	8	9.0	9.0	...	215
10	10	11.0	11.0	...	354
12	6	12.0	12.0	...	340
12	8	12.0	12.0	...	365
12	12	12.0	12.0	...	487
16	8	15.0	15.0	...	655
16	16	15.0	15.0	...	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	1130	...
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	1375	...
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	...

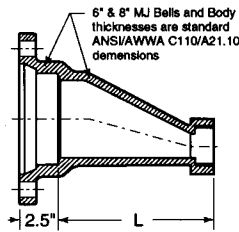
\* Not included in AWWA C110.

### ADAPTERS



MJ x FE

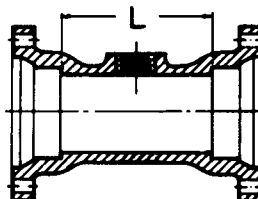
Size	Dimensions	
	L	Weights
3	8	30
4	8	40
6	8	60
8	8	85
10	8	115
12	8	155
16	8	260
18	8	305
20	8	365
24	8	495



MJ x FIPT ECCENTRIC REDUCER

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

### MJ TAPPED TEE



### MJ Tapped Tee (2"Tap)

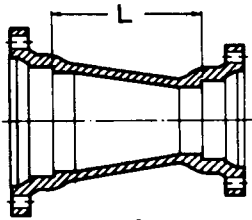
Size	Dimensions		Weights
	L	Max. Tap	
3	8	2	35
4	8	2	45
6	8	2	70
8	8	2	95
10	8	2	130
12	8	2	165



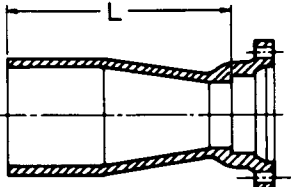
# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

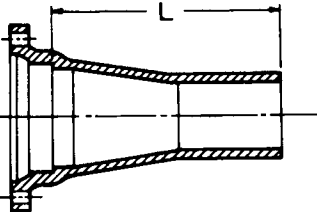
### REDUCERS



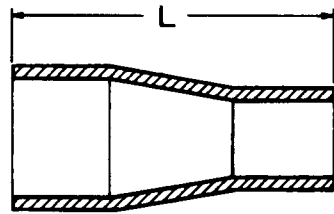
MJ Reducer



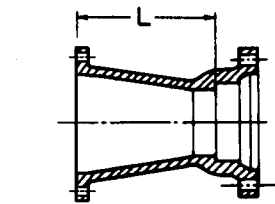
MJ Small End Bell Reducer



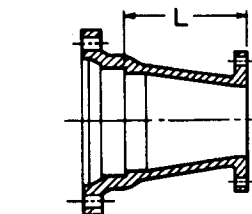
MJ Large End Bell Reducer



Plain End-Plain End Reducer



FExMJ Reducer



MJxFE Reducer

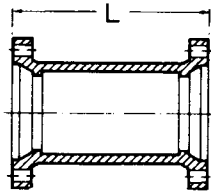
Size	Laying Lengths (L)						Weights					
	MJ	MJ-SEB	MJ-LEB	PExPE	FExMJ	MJxFE	MJ	MJ-SEB	MJ-LEB	PExPE	FExMJ	MJxFE
* 3x2	6	14	14	...	...	...	25	25	20	...	...	...
* 4x2	7	15	15	...	...	...	30	30	30	...	...	...
4x3	7	15	15	23	7	7	40	35	40	35	34	35
* 6x2	9	17	17	25	...	...	45	45	45	...	...	...
6x3	9	17	17	...	...	9	55	50	50	...	...	49
6x4	9	17	17	25	9	9	60	60	60	55	60	54
8x3	11	19	19	...	...	...	75	70	70	...	...	...
8x4	11	19	19	...	11	11	80	80	80	...	80	75
8x6	11	19	19	27	11	11	95	90	90	85	89	80
10x6	12	20	20	28	12	12	115	115	115	...	114	105
10x8	12	20	20	28	12	12	135	130	130	...	130	130
12x4	14	22	22	30	...	...	135	130	...	...	...	...
12x6	14	22	22	...	14	12	150	150	145	...	149	145
12x8	14	22	22	30	14	12	165	165	165	165	165	175
12x10	14	22	22	30	14	12	190	190	185	185	190	185
14x6	...	...	...	...	...	...	...	...	...	...	...	195
14x8	...	...	...	...	...	...	...	...	...	...	...	215
14x12	...	...	...	...	...	...	...	...	...	...	...	270
16x6	18	26	26	34	...	...	250	...	...	...	...	...
16x8	18	26	26	34	...	...	270	250	...	...	...	...
16x10	18	26	26	34	...	...	300	...	...	...	...	...
16x12	18	26	26	34	18	18	325	305	330	...	305	325
16x14	18	26	26	34	...	...	370	...	...	...	...	...
18x8	19	27	27	35	...	19	320	...	...	...	...	300
18x10	19	27	27	35	...	...	350	...	...	...	...	...
18x12	19	27	27	35	...	19	380	355	...	...	...	360
18x14	19	27	27	35	...	...	425	...	...	...	...	...
18x16	19	27	27	35	...	19	465	...	...	...	...	445
20x10	20	28	28	36	...	...	410	...	...	...	...	...
20x12	20	28	28	36	...	...	440	410	...	...	...	...
20x16	20	28	28	36	...	20	530	500	510	...	...	510
20x18	20	28	28	36	...	...	575	...	...	...	...	...
24x12	24	32	32	40	...	24	610	570	...	...	...	455
24x16	24	32	32	40	...	...	705	665	685	...	...	...
24x18	24	32	32	40	...	...	760	720	...	...	...	...
24x20	24	32	32	40	...	...	815	775	785	...	...	...
* 30x16	30	38	38	46	...	...	1150	1040	...	1015	...	...
30x18	30	38	38	46	...	...	1160	1050	...	1025	...	...
30x20	30	38	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

# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

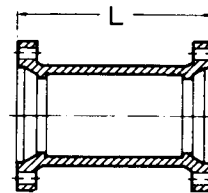
### SOLID SLEEVES



Standard

Size	Pipe O.D.	Short L	Short Weight	Long L	Long Weight
*2	2.50	8.0	12	...	...
3	3.96	7.5	25	12	30
4	4.80	7.5	35	12	45
6	6.90	7.5	45	12	65
89.05	7.5	65	12	85	
10	11.10	7.5	85	12	115
12	13.20	7.5	110	12	145
16	17.40	9.5	200	15	275
18	19.50	9.5	240	15	330
20	21.60	9.5	275	15	380
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	145
16	17.40/17.80	...	...	15	275

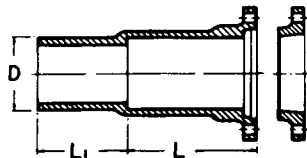
†Uses MJ Dual Purpose Gland  
\*Not included in AWWA C110

### \* MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE

With Dual-Purpose Accessories

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

Cutting-In Sleeve & Gland

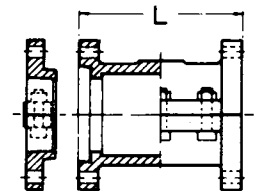


Size	For Use On Pipe O.D.	L	L'	D	Weight	
					Gland Only	Gland & Sleeve
4	4.80 - 5.00	12	8	4.80	9.5	72
6	6.90 - 7.10	12	8	6.90	13.0	98
8	9.05 - 9.30	12	8	9.05	20.0	136
10	11.10 - 11.40	12	8	11.10	25.0	175
12	13.20 - 13.50	12	8	13.20	30.0	235

\* Not included in AWWA C110.

### SPLIT REPAIR SLEEVE WITH ACCESSORIES

Gland and Split Sleeve



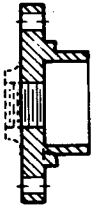
Size	L	*Weight	Gland Only
4	15	115	9
6	18	165	16
8	18	215	24

\*Weights include all accessories assembled.

# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

### PLUGS



#### Solid or Tapped

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

† Dished - Not flat as shown.  
\* Not included in AWWA C110.

### CAPS

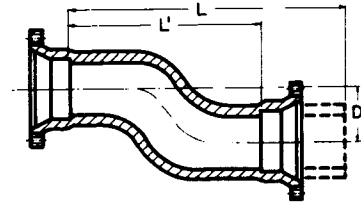


#### Solid or Tapped

Size	Tap	Weight	
		Solid	Tapped
*2	2	5	...
3	2	10	10
4	2	20	20
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

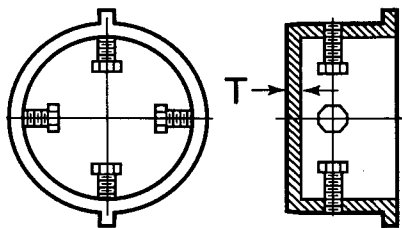
† Dished - Not flat as shown.  
\* Not included in AWWA C110.

### OFFSETS



MJ x MJ				MJ x PE	
Size	D	Dimensions		Weights	
		L'	L	MJxMJ	MJxPE
4	6	19	27	...	70
4	12	22	30	85	80
4	18	30	38	105	...
* 4	24	26	34	120	115
6	6	20	28	110	105
6	12	26	34	135	130
6	18	33	41	165	160
* 6	24	24	32	165	160
8	6	21	29	160	155
8	12	28	36	200	195
8	18	35	43	245	240
* 8	24	36	44	280	275
10	12	30	38	280	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	640	630
16	12	40	48	715	...
16	18	50	58	850	830
*20	12	40	48	1025	...
*20	18	48	60	1275	...

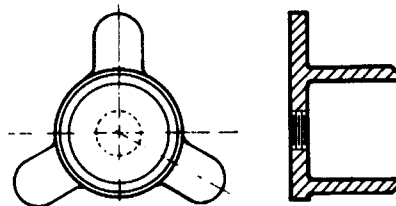
\* Not included in AWWA C110.



#### Tyton® Plug\*\*

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

\* Weights do not include accessories  
\*\* Not included in AWWA C110.



#### Solid Tapped

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

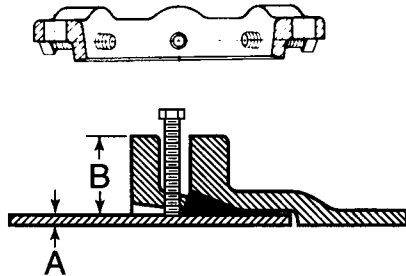
Size	Tap	Weight
14	2.0	110
16	2.0	145
18	2.0	180
†20	2.0	220
†24	2.0	315

† Dished - Not flat as shown  
NOTE: Blocking still required-ears for assembly only.

# Bibby Ste Croix

## DUCTILE IRON C110 FULL BODY MECHANICAL JOINT FITTINGS

### \*RETAINER GLAND ASSEMBLY



Size	Gland O.D. B	Pipe O.D. A	No of Set Screws	Size of Set Screws	Gland Weight	Weight w/Access.
3	7.69	3.96	4	5/8x2	4	7
4	9.12	4.80	4	5/8x2	5	13
6	11.12	6.90	6	5/8x2	9	20
8	13.37	9.05	9	5/8x2	13	25
10	15.62	11.10	12	5/8x2	17	33
12	17.88	13.20	16	5/8x2	20	38
14	20.25	15.30	20	5/8x2 1/2	44	55
16	22.50	17.40	24	5/8x2 1/2	46	64
18	24.75	19.50	24	5/8x2 1/2	62	72
20	27.00	21.60	28	5/8x3	76	91
24	31.50	25.80	32	5/8x3	103	118

\* Not included in AWWA C110

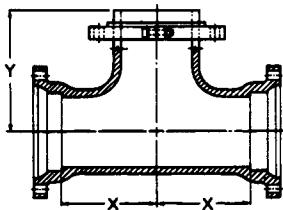
### DUCTILE IRON RETAINER GLANDS

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 core 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

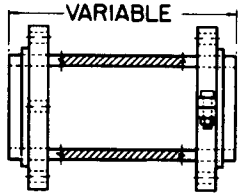


Size	Gland Wt. Pack	Weight Gland Only
2	5	4
3	7	5
4	10	6
6	16	11
8	25	18
10	30	20
12	40	30
14	45	35
16	55	45
18	65	55
20	85	70
24	105	90
30	220	180
36	301	248

# Bibby Ste Croix

**DUCTILE IRON C110 FULL BODY  
MECHANICAL JOINT  
ELLS, ADAPTERS AND GLANDS  
For Valve and Hydrant Connections**

## ADAPTERS

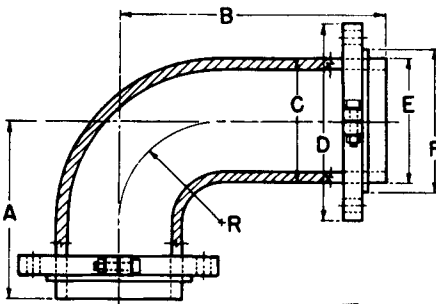


Swivel x Solid Adapter		
Size by Laying Length	Wall Thickness	Weight*
4x13	.52	61
6x12	.55	73
<b>6x18</b>	<b>.55</b>	<b>87</b>
6x24	.55	100
<b>6x36</b>	<b>.55</b>	<b>129</b>
8x12	.60	130
12x13	.75	173

\*Weights with Gland.

Other Swivel Hydrant Fittings, Pages 4, 5 and 6.

## ELLS



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

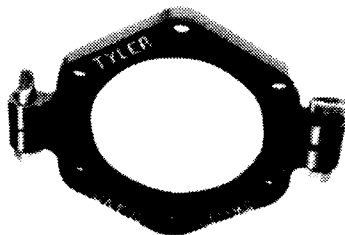
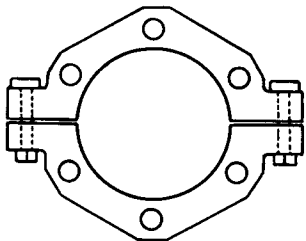
Size	Wall Thickness	Dimensions							*Weight
		A	B	C	D	E	F	R	
6	.55	10.5	15.5	7.10	11.12	6.90	8.02	6.0	100
8	.60	11.5	16.5	9.20	13.37	9.05	10.17	7.0	140

\* 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	9
6	16
8	24
12	33

\*\* Not included in AWWA C110.

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

# Bibby Ste Croix

## UNION-TITE DUCTILE IRON CLASS 350 COMPACT FITTINGS

### SAMPLE SPECIFICATIONS

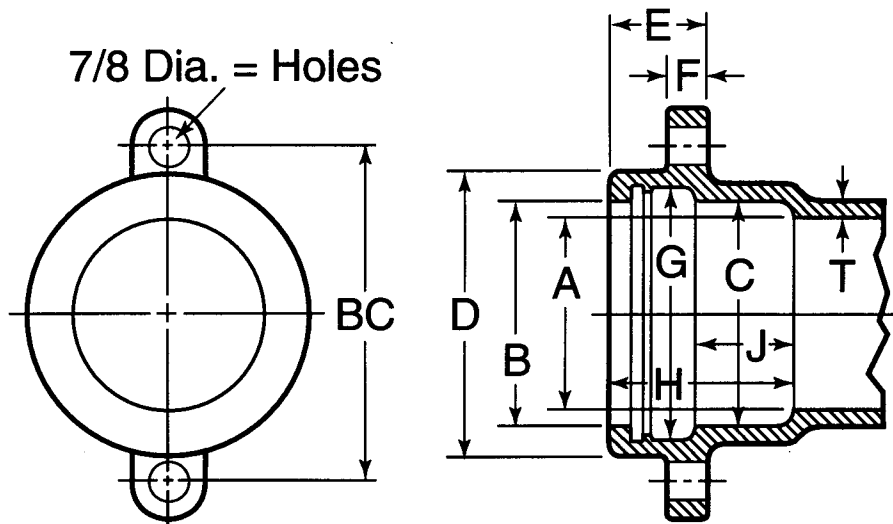
4" through 24" Push-On Joint Ductile Iron Fittings shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53. Joints shall be in accordance with ANSI/AWWA C111/A21.11 with bell sockets designed to receive pressure pipe O.D.'s as specified in ANSI/AWWA C151/A21.51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

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 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-Loc 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

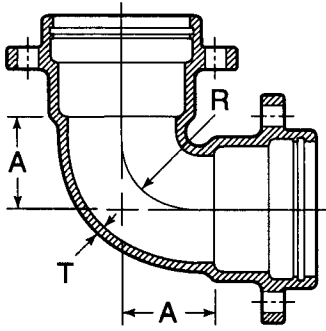
Pipe Size	A	B	C	D	B.C.*	H	J	E*	F	G	T
4	4.30	4.91	5.04	6.38	7.88	4.16	2.25	2.12	.87	5.64	.35
6	6.36	7.01	7.14	8.52	10.50	4.29	2.25	2.14	.87	7.74	.37
8	8.52	9.17	9.32	10.90	12.88	4.78	2.25	2.69	1.00	9.98	.39
10	10.58	11.22	11.37	12.91	14.69	4.98	2.25	2.89	1.12	12.03	.41
12	12.64	13.32	13.47	15.12	17.19	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. Maximum deflection for all sizes is 2<sup>1</sup>/<sub>2</sub>°.

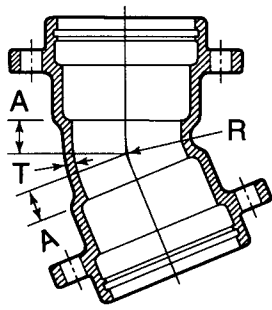
# Bibby Ste Croix

## UNION-TITE DUCTILE IRON CLASS 350 COMPACT FITTINGS

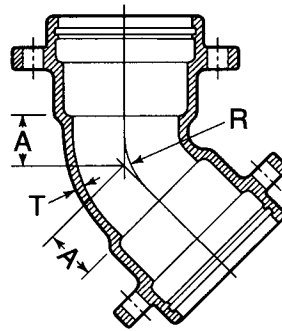
### BENDS



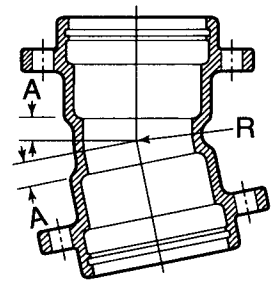
90° (1/4) UT Bends



45° (1/8) UT Bends

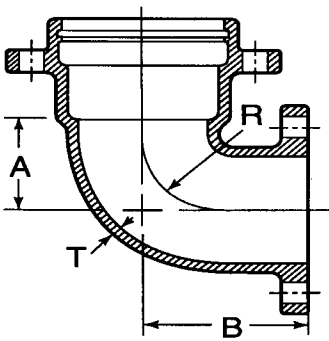


22 1/2° (1/16) UT Bends

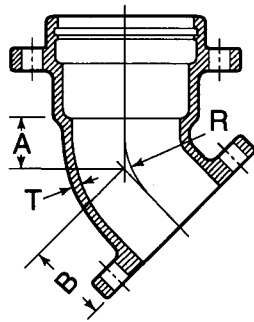


11 1/4° (1/32) UT Bends

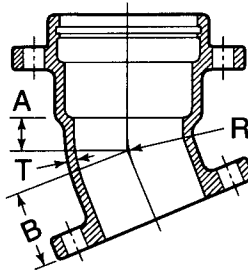
Size	T	Dimensions			Weight	Size	T	Dimensions			Weight	Size	T	Dimensions			Weight
		A	R	Weight				A	R	Weight				A	R	Weight	
4	.35	4.5	3.87	24	2.0	3.31	25	1.50	4.38	18	1.25	6.77	18				
6	.37	6.0	5.37	51	3.0	5.72	42	2.25	8.16	39	1.50	9.38	40				
8	.39	7.0	6.37	79	3.5	6.93	64	2.50	9.40	61	1.75	11.48	59				
10	.41	9.0	8.36	121	4.5	9.34	89	3.00	13.17	67	2.00	13.95	77				
12	.43	10.0	9.36	145	5.5	11.75	120	3.50	14.42	106	2.25	16.50	94				
14	.51	12.0	10.98	254	5.5	10.85	143	3.75	13.82	162	2.60	14.26	113				
16	.52	13.0	12.00	328	6.0	12.02	225	4.00	14.97	195	2.60	15.23	172				
18	.59	15.5	14.00	482	6.5	12.36	209	7.50	30.19	209	3.00	60.94	209				
20	.60	17.0	15.50	340	7.0	13.59	398	8.50	35.19	414	3.50	71.07	265				
24	.62	17.0	15.59	674	7.5	14.69	492	9.00	37.69	596	...	...	...				



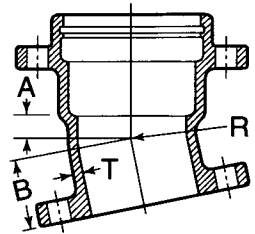
90° (1/4)  
UT x Flange Bends



45° (1/8)  
UT x Flange Bends



22 1/2° (1/16)  
UT x Flange Bends



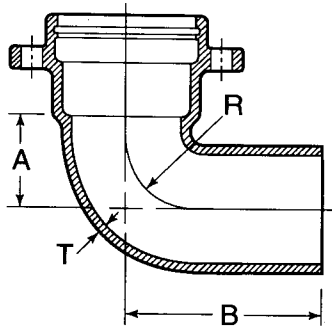
11 1/4° (1/32)  
UT x Flange Bends

Size	T	Dimensions				Weight	Size	T	Dimensions				Weight	Size	T	Dimensions				Weight
		A	B	R	Weight				A	B	R	Weight				A	B	R	Weight	
4	.35	4.5	6.5	3.87	31	2.0	4.0	3.31	21	1.50	3.5	4.38	25	1.25	3.30	6.77	24			
6	.37	6.0	7.0	5.37	49	3.0	5.0	5.72	42	2.25	4.3	8.16	44	1.50	3.50	9.38	30			
8	.39	7.0	9.0	6.37	74	3.5	5.5	6.93	60	2.50	4.5	9.40	64	1.75	3.75	11.48	61			
10	.41	9.0	10.0	8.36	130	4.5	6.5	9.34	93	3.00	5.3	13.17	90	2.00	4.00	13.95	80			
12	.43	10.0	12.0	9.36	158	5.5	7.5	11.75	122	3.50	5.5	14.42	112	2.25	4.30	16.50	94			
14	.51	12.0	15.5	10.98	159	5.5	8.5	10.85	162	3.75	6.8	13.82	174	2.60	5.75	14.26	170			
16	.52	13.0	16.5	12.00	233	6.0	9.5	12.02	275	4.00	7.5	14.97	228	2.60	6.10	15.23	228			

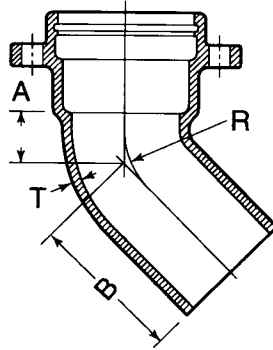
# Bibby Ste Croix

**UNION-TITE DUCTILE IRON  
CLASS 350 COMPACT FITTINGS**

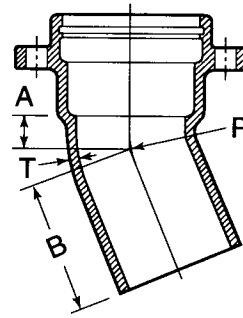
## BENDS



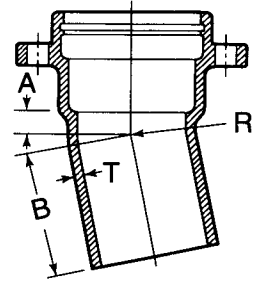
**90° (1/4)  
UT x PE Bends**



**45° (1/8)  
UT x PE Bends**



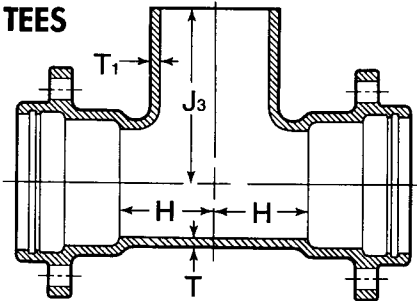
**22 1/2° (1/16)  
UT x PE Bends**



**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	23	2.0	8.0	3.31	25	...	...	...	..	...	...	...	..
6	.37	6.0	12.0	5.37	48	3.0	9.0	5.72	43	2.25	8.08	8.16	37	1.50	7.30	9.38	39
8	.39	...	...	...	..	3.5	9.5	6.93	61	2.50	8.34	9.40	58	1.75	7.55	11.48	56

## TEES



**UT x UT x PE Tees**

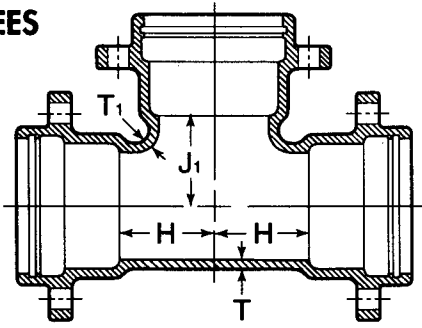
Size		T	Dimensions			Weight
Run	Branch		T1	H	J3	
6	6	.37	.37	6.0	11.5	60
8	6	.39	.37	6.0	12.5	80
12	6	.43	.37	7.0	15.5	140



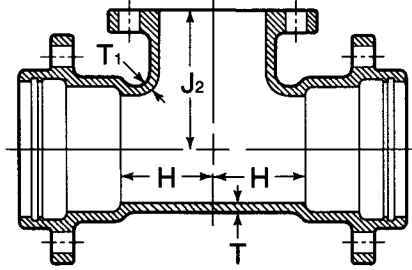
# Bibby Ste Croix

## UNION-TITE DUCTILE IRON CLASS 350 COMPACT FITTINGS

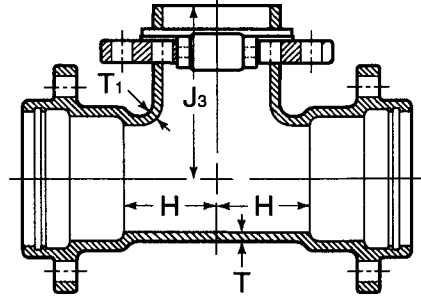
### TEES



UT x UT Tees



UT x Flange Tees



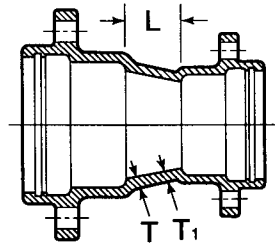
UT x Swivel Tees

Size	Dimensions						Weights		
	T	T1	H	J1	J2	J3	UT x UT	UT x Flange	UT x Swivel
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	70	65
8x4	.39	.35	5.0	7.0	9.0	...	73	89	...
8x6	.39	.37	6.0	7.0	9.0	10.5	96	97	100
8	.39	.39	7.0	7.0	9.0	10.5	111	111	110
10x4	.41	.35	6.0	9.0	11.0	...	102	115	...
10x6	.41	.37	7.0	9.0	11.0	12.5	113	127	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	159	166	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	528	...
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	...	...

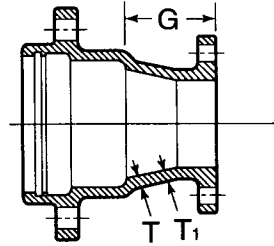
# Bibby Ste Croix

## UNION-TITE DUCTILE IRON CLASS 350 COMPACT FITTINGS

### REDUCERS



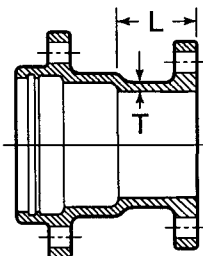
UT x UT Reducers



UT x Flange Reducers

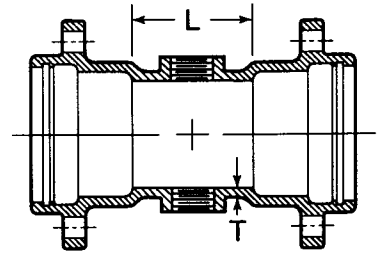
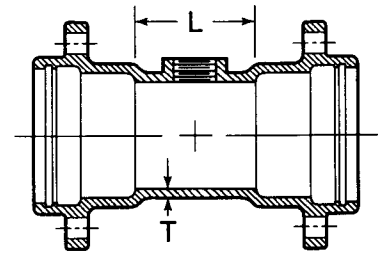
Size	T	Dimensions			Weights	
		T1	L	G	UT x UT	UT x Flange
6x4	.37	.35	4.0	6.0	37	32
8x4	.39	.35	5.0	7.0	46	46
8x6	.39	.37	4.0	6.0	52	47
10x4	.41	.35	7.0	9.0	47	55
10x6	.41	.37	5.0	7.0	47	59
10x8	.41	.39	4.0	6.0	53	61
12x4	.43	.35	9.0	11.0	80	78
12x6	.43	.37	7.0	9.0	58	73
12x8	.43	.39	5.0	7.0	74	74
12x10	.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	36
8	.39	6.0	54
10	.41	6.0	71
12	.43	6.0	92
14	.51	7.0	173
16	.52	7.0	115
20	.60	6.0	295

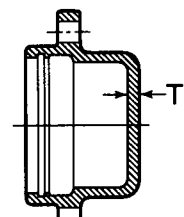
### TAPPED TEE/CROSS



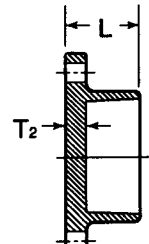
UT x Tapped Tee/Crosses

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

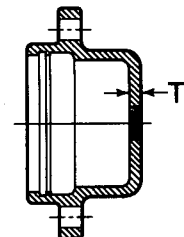
### CAPS AND PLUGS



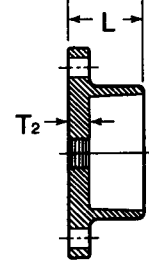
Solid Cap



Solid Plug



2" Tapt Cap



2" Tapt Plug

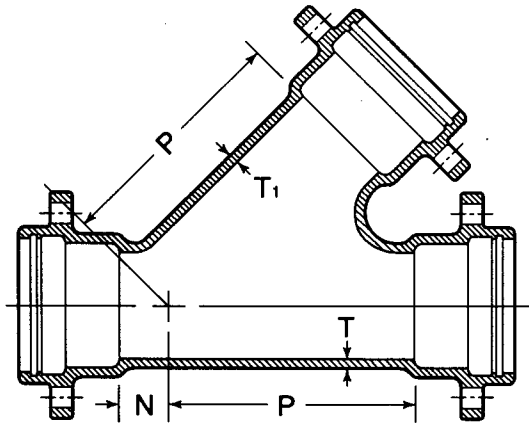
UT Caps and Plugs

Size	T1	T2	Dimensions		Weights	
			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	

# Bibby Ste Croix

## UNION-TITE DUCTILE IRON CLASS 350 COMPACT FITTINGS

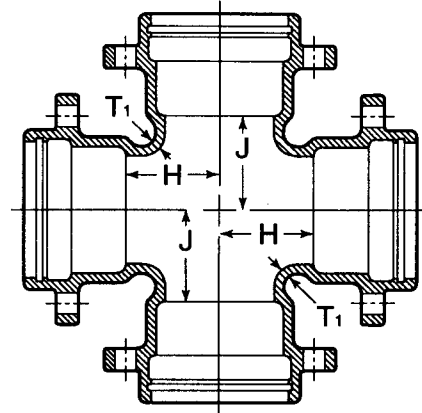
### WYES



UT Wyes

Size	T	Dimensions			Weights
		T1	P	N	
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

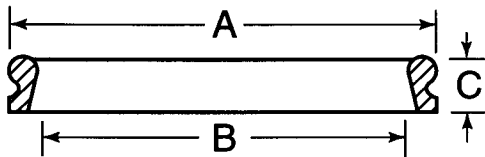
### CROSSES



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	A	Dimensions		C
		Transition (IPS) B*	Regular (Ductile) B*	
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

**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 Bibby Waterworks Divisions.

# Bibby Ste Croix

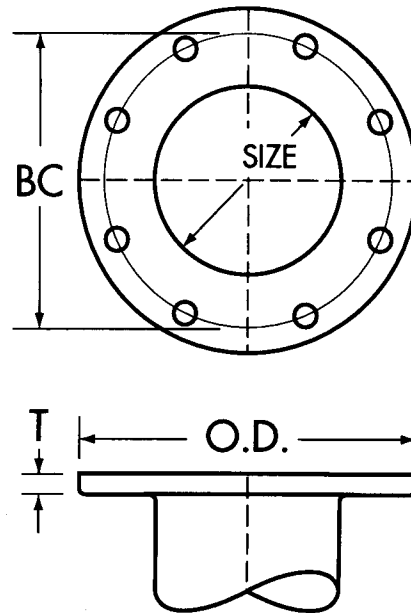
## DUCTILE IRON COMPACT FLANGED FITTINGS, 250 P.S.I. RATING

### 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.

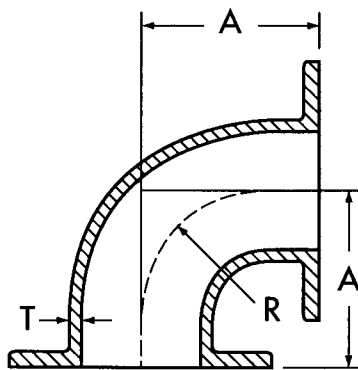
Standard Class 125 template for drilling shall be used for all flanges. Drilling templates shall be in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line and shall be equally spaced. Misalignment of bolt holes of two opposing flanges shall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

All 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 by the user.



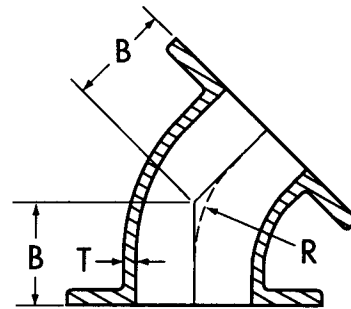
Joint Dimensions In Inches

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

Size	Dimensions In Inches				Weight
	T	A	R		
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

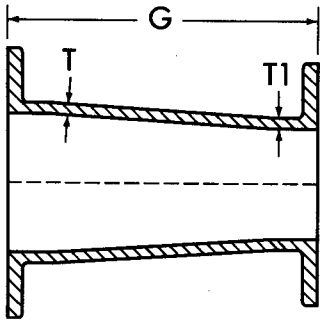


Flanged Compact 45° (1/8) Bend

Size	Dimensions In Inches				Weight
	T	B	R		
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

# Bibby Ste Croix

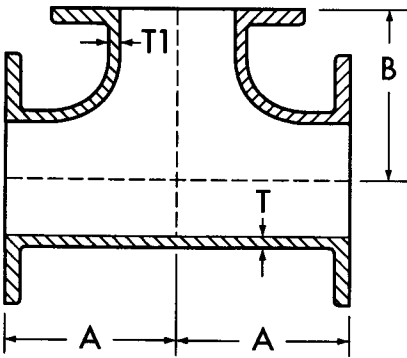
## DUCTILE IRON COMPACT FLANGED FITTINGS, 250 P.S.I. RATING



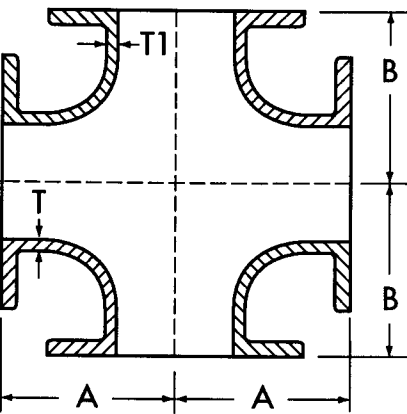
**Flanged Compact Concentric Reducer**

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	38
4	<b>0.35</b>	<b>0.35</b>	<b>6.50</b>	<b>6.50</b>	<b>41</b>
6x4	0.37	.035	8.00	8.00	68
6	<b>0.37</b>	<b>0.37</b>	<b>8.00</b>	<b>8.00</b>	<b>75</b>
8x4	0.39	0.35	9.00	9.00	83
8x6	<b>0.39</b>	<b>.037</b>	<b>9.00</b>	<b>9.00</b>	<b>90</b>
8	0.39	0.39	9.00	9.00	105
10x6	<b>0.41</b>	<b>0.37</b>	<b>11.00</b>	<b>11.00</b>	<b>145</b>
10x8	0.41	0.39	11.00	11.00	152
10	<b>0.41</b>	<b>0.41</b>	<b>11.00</b>	<b>11.00</b>	<b>170</b>
12x6	0.43	0.37	12.00	12.00	187
12x8	<b>0.43</b>	<b>0.39</b>	<b>12.00</b>	<b>12.00</b>	<b>205</b>
12	0.43	0.43	12.00	12.00	245



**Flanged Compact Cross**

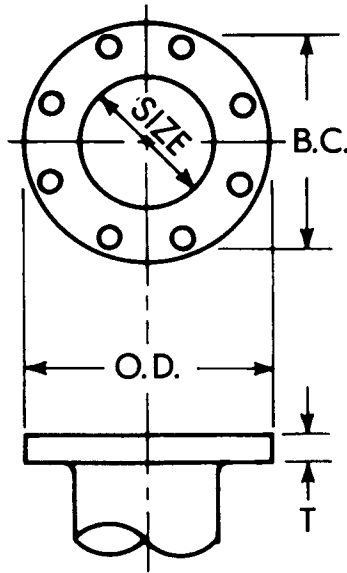
Dimensions In Inches					
Size	T	T1	A	B	Weight
8x8	0.39	.39	9.00	9.00	138

# Bibby Ste Croix

## DUCTILE IRON C110 FLANGED FITTINGS

### SAMPLE SPECIFICATION

DUCTILE IRON FITTINGS shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C110. They shall conform to details and dimensions published therein and shall be adequate for water pressure of 250 lbs. P.S.I.



**NOTE:** No flange joint material furnished.

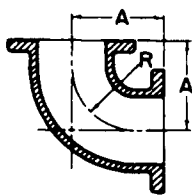
### FLANGE DETAILS

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	5/8 x 2 1/4
3	7.5	6	.75	.75	4	5/8 x 2 1/2
4	9	7.5	.94	.75	8	5/8 x 3
6	11	9.5	1.00	.875	8	3/4 x 3 1/2
8	13.5	11.75	1.12	.875	8	3/4 x 3 1/2
10	16	14.25	1.19	1.00	12	7/8 x 4
12	19	17	1.25	1.00	12	7/8 x 4
14	21	18.75	1.38	1.125	12	1 x 4 1/2
16	23.5	21.25	1.44	1.125	16	1 x 4 1/2
18	25	22.75	1.56	1.25	16	1 1/8 x 5
20	27.5	25	1.69	1.25	20	1 1/8 x 5
24	32	29.5	1.88	1.375	20	1 1/4 x 5 1/2
30	38.75	36	2.12	1.375	28	1 1/4 x 6 1/2

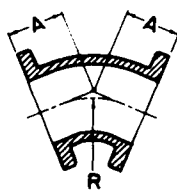
**NOTE:** Drilling templates are in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line.

### BENDS

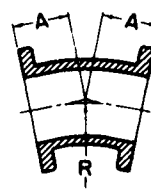
**Note:** Base Bends are on page 35 and 36, reducing and long radius 90° bends are on page 35.



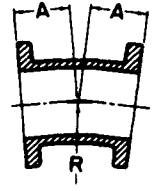
90° Bends (1/4)



45° Bends (1/8)



22 1/2° Bends (1/16)



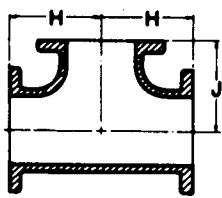
11 1/4° Bends (1/32)

Size	90° Bends (1/4)			45° Bends (1/8)			22 1/2° Bends (1/16)			11 1/4° Bends (1/32)		
	Dimensions R	A	Weight	Dimensions R	A	Weight	Dimensions R	A	Weight	Dimensions R	A	Weight
3	4	5.5	25	3.62	3	20	7.56	3	20	15.25	3	20
4	4.5	6.5	45	4.81	4	40	10.06	4	40	20.31	4	40
6	6	8	65	7.25	5	55	15.06	5	55	30.5	5	55
8	7	9	105	8.44	5.5	90	17.62	5.5	90	35.5	5.5	90
10	9	11	165	10.88	6.5	130	22.62	6.5	130	45.69	6.5	130
12	10	12	235	13.25	7.5	195	27.67	7.5	195	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	485	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	...	...	...	116.75	15	1395

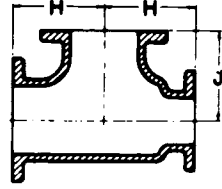
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**DUCTILE IRON C110  
FLANGED FITTINGS**

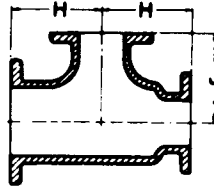
## TEES, REDUCING TEES, CROSSES



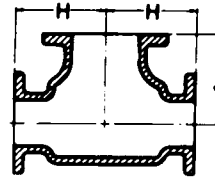
**Straight Tees, Reducing  
on Branch Tees**



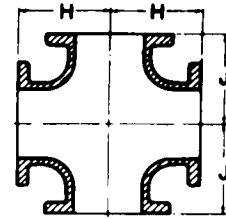
**\*Reducing  
on Run**



**\*Reducing on  
Run and Branch**



**\*Bullhead  
Tees**



**Straight and  
Reducing Crosses**

Run	Size		Dimensions		Weights	
	Run	Branch	H	J	Tee	Cross
3	3	2	4.5	4.5	35	...
<b>3</b>	<b>3</b>	<b>3</b>	<b>5.5</b>	<b>5.5</b>	<b>40</b>	<b>50</b>
4	3	3	6.5	5.5	55	...
*4	<b>4</b>	<b>2</b>	<b>6.5</b>	<b>6.5</b>	<b>50</b>	...
4	4	3	6.5	6.5	60	70
<b>4</b>	<b>4</b>	<b>4</b>	<b>6.5</b>	<b>6.5</b>	<b>60</b>	<b>80</b>
4	4	6	8.0	8.0	90	...
<b>6</b>	<b>4</b>	<b>4</b>	<b>8.0</b>	<b>8.0</b>	<b>85</b>	...
6	4	6	8.0	8.0	90	...
*6	<b>6</b>	<b>2</b>	<b>8.0</b>	<b>8.0</b>	<b>85</b>	...
6	6	3	8.0	8.0	85	95
<b>6</b>	<b>6</b>	<b>4</b>	<b>8.0</b>	<b>8.0</b>	<b>90</b>	<b>110</b>
6	6	6	8.0	8.0	95	120
<b>6</b>	<b>6</b>	<b>8</b>	<b>9.0</b>	<b>9.0</b>	<b>140</b>	...
8	6	4	9.0	9.0	130	...
<b>8</b>	<b>6</b>	<b>6</b>	<b>9.0</b>	<b>9.0</b>	<b>135</b>	...
8	6	8	9.0	9.0	145	...
*8	<b>8</b>	<b>3</b>	<b>9.0</b>	<b>9.0</b>	<b>130</b>	<b>140</b>
8	8	4	9.0	9.0	140	155
<b>8</b>	<b>8</b>	<b>6</b>	<b>9.0</b>	<b>9.0</b>	<b>145</b>	<b>165</b>
8	8	8	9.0	9.0	155	195
<b>8</b>	<b>8</b>	<b>10</b>	<b>11.0</b>	<b>11.0</b>	<b>260</b>	...
8	8	12	12.0	12.0	310	...
†10	<b>6</b>	<b>6</b>	<b>13.0</b>	<b>13.0</b>	<b>275</b>	...
†10	6	10	13.0	13.0	305	...
†10	<b>8</b>	<b>6</b>	<b>13.0</b>	<b>13.0</b>	<b>280</b>	...
†10	8	8	13.0	13.0	295	...
†10	<b>8</b>	<b>10</b>	<b>13.0</b>	<b>13.0</b>	<b>325</b>	...
10	10	4	11.0	11.0	205	220
<b>10</b>	<b>10</b>	<b>6</b>	<b>11.0</b>	<b>11.0</b>	<b>215</b>	<b>240</b>
10	10	8	11.0	11.0	225	265
<b>10</b>	<b>10</b>	<b>10</b>	<b>11.0</b>	<b>11.0</b>	<b>270</b>	<b>330</b>
10	10	12	12.0	12.0	355	...
†12	<b>6</b>	<b>6</b>	<b>14.0</b>	<b>14.0</b>	<b>340</b>	...
†12	6	8	14.0	14.0	360	...
†12	<b>8</b>	<b>6</b>	<b>14.0</b>	<b>14.0</b>	<b>355</b>	...

Run	Size		Dimensions		Weights	
	Run	Branch	H	J	Tee	Cross
†12	8	8	14.0	14.0	375	...
†12	<b>8</b>	<b>12</b>	<b>14.0</b>	<b>14.0</b>	<b>420</b>	...
†12	10	6	14.0	14.0	390	...
†12	<b>10</b>	<b>8</b>	<b>14.0</b>	<b>14.0</b>	<b>400</b>	...
†12	10	10	14.0	14.0	420	...
†12	<b>10</b>	<b>12</b>	<b>14.0</b>	<b>14.0</b>	<b>440</b>	...
12	12	4	12.0	12.0	290	310
12	<b>12</b>	<b>6</b>	<b>12.0</b>	<b>12.0</b>	<b>295</b>	<b>320</b>
12	12	8	12.0	12.0	310	345
<b>12</b>	<b>12</b>	<b>10</b>	<b>12.0</b>	<b>12.0</b>	<b>360</b>	<b>415</b>
12	12	12	12.0	12.0	385	460
*14	<b>14</b>	<b>4</b>	<b>14.0</b>	<b>14.0</b>	<b>410</b>	...
14	14	6	14.0	14.0	420	450
<b>14</b>	<b>14</b>	<b>8</b>	<b>14.0</b>	<b>14.0</b>	<b>435</b>	<b>475</b>
14	14	10	14.0	14.0	450	...
<b>14</b>	<b>14</b>	<b>12</b>	<b>14.0</b>	<b>14.0</b>	<b>470</b>	<b>555</b>
14	14	14	14.0	14.0	500	595
*16	<b>16</b>	<b>4</b>	<b>15.0</b>	<b>15.0</b>	<b>525</b>	...
16	16	6	15.0	15.0	540	565
<b>16</b>	<b>16</b>	<b>8</b>	<b>15.0</b>	<b>15.0</b>	<b>555</b>	<b>590</b>
16	16	10	15.0	15.0	565	620
<b>16</b>	<b>16</b>	<b>12</b>	<b>15.0</b>	<b>15.0</b>	<b>590</b>	<b>665</b>
16	16	14	15.0	15.0	610	...
<b>16</b>	<b>16</b>	<b>16</b>	<b>15.0</b>	<b>15.0</b>	<b>635</b>	<b>755</b>
18	18	6	13.0	15.5	560	...
<b>18</b>	<b>18</b>	<b>8</b>	<b>13.0</b>	<b>15.5</b>	<b>570</b>	...
18	18	10	13.0	15.5	585	...
<b>18</b>	<b>18</b>	<b>12</b>	<b>13.0</b>	<b>15.5</b>	<b>605</b>	<b>670</b>
18	18	14	16.5	16.5	740	...
<b>18</b>	<b>18</b>	<b>16</b>	<b>16.5</b>	<b>16.5</b>	<b>760</b>	...
18	18	18	16.5	16.5	785	915

\* Not included in AWWA C110

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

# Bibby Ste Croix

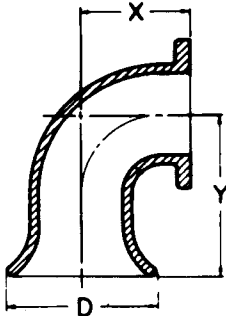
## DUCTILE IRON C110 FLANGED FITTINGS

### TEES, REDUCING TEES, CROSSES (Con't)

Run	Size		Dimensions		Tee	Weights Cross
	Run	Branch	H	J		
20	20	6	14.0	17.0	710	...
<b>20</b>	<b>20</b>	<b>8</b>	<b>14.0</b>	<b>17.0</b>	<b>720</b>	...
20	20	10	14.0	17.0	735	...
<b>20</b>	<b>20</b>	<b>12</b>	<b>14.0</b>	<b>17.0</b>	<b>755</b>	<b>820</b>
20	20	14	14.0	17.0	770	...
<b>20</b>	<b>20</b>	<b>16</b>	<b>18.0</b>	<b>18.0</b>	<b>950</b>	<b>1065</b>
20	20	20	18.0	18.0	1005	1175
<b>24</b>	<b>24</b>	<b>6</b>	<b>15.0</b>	<b>19.0</b>	<b>1000</b>	...
24	24	8	15.0	19.0	1010	...
<b>24</b>	<b>24</b>	<b>10</b>	<b>15.0</b>	<b>19.0</b>	<b>1020</b>	...
24	24	12	15.0	19.0	1040	1100
<b>24</b>	<b>24</b>	<b>14</b>	<b>15.0</b>	<b>19.0</b>	<b>1050</b>	<b>1125</b>
24	24	16	15.0	19.0	1070	1160
<b>24</b>	<b>24</b>	<b>18</b>	<b>22.0</b>	<b>22.0</b>	<b>1470</b>	...
24	24	20	22.0	22.0	1510	1695
<b>24</b>	<b>24</b>	<b>24</b>	<b>22.0</b>	<b>22.0</b>	<b>1585</b>	<b>1850</b>
*30	30	6	18.0	23.0	1725	...
<b>30</b>	<b>30</b>	<b>12</b>	<b>18.0</b>	<b>23.0</b>	<b>1780</b>	...
30	30	18	18.0	23.0	1815	...
<b>30</b>	<b>30</b>	<b>24</b>	<b>25.0</b>	<b>25.0</b>	<b>2475</b>	<b>2695</b>
30	30	30	25.0	25.0	2615	2985

\* Not included in AWWA C110

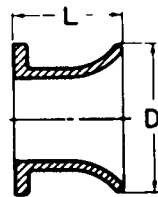
### FLANGE AND FLARE



\*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	70
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

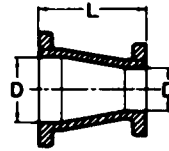
\* Not included in AWWA C110



\*Flange and Flare Piece

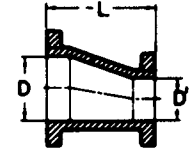
Size	Dimensions			Weight
	D	L	Weight	
3	7.25	8	20	
4	9.00	8	30	
6	11.00	8	40	
8	13.50	10	70	
10	16.00	10	95	
12	19.00	12	155	
14	21.00	12	225	
16	23.50	16	330	
18	25.00	16	355	
20	27.50	18	460	
24	32.00	18	635	

### REDUCERS



Concentric Reducer

Size D	Size D'	Dimensions L	Wts
4	2	7	25
4	3	7	30
6	2	9	30
6	3	9	40
6	4	9	45
6	5	9	52
8	3	11	60
8	4	11	65
8	5	11	70
8	6	11	75
10	4	12	85
10	6	12	90
10	8	12	110
12	4	14	120
12	6	14	130
12	8	14	145
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	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
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
6	3	9	40
6	4	9	45
8	4	11	65
8	6	11	75
10	6	12	90
10	8	12	110
12	6	14	120
12	8	14	145
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	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

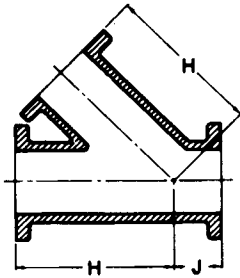
NOTE: Eccentric Reducers not included in AWWA C110



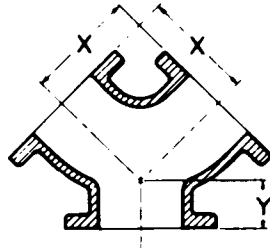
# Bibby Ste Croix

## DUCTILE IRON C110 FLANGED FITTINGS

### \* WYES



\*45° Wye

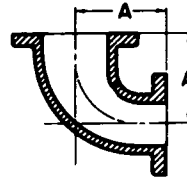


True Wye

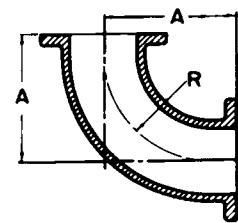
Size Run	Branch	Dimensions		Weight
		H	J	
3	3	10	3	45
4	3	12	3	65
4	4	12	3	75
6	4	14.5	3.5	105
6	6	14.5	3.5	115
8	4	17.5	4.5	165
8	6	17.5	4.5	175
8	8	17.5	4.5	200
10	4	20.5	5	240
10	6	20.5	5	250
10	8	20.5	5	275
10	10	20.5	5	300
12	4	24.5	5.5	355
12	6	24.5	5.5	370
12	8	24.5	5.5	395
12	10	24.5	5.5	420
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	895
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)

Size Stem	Branches	Dimensions		Weight
		X	Y	
4	4	6.5	3.0	50
6	4	8.0	3.5	75
6	6	8.0	3.5	80
8	6	9.0	4.5	120
8	8	9.0	4.5	125

\* Not included in AWWA C110

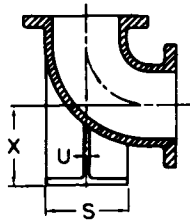
Size	A	Weight
6x4	8	55
8x4	9	75
8x6	9	90
10x6	11	125
10x8	11	150
12x6	12	165
12x8	12	190
12x10	12	220

\* Not included in AWWA C110

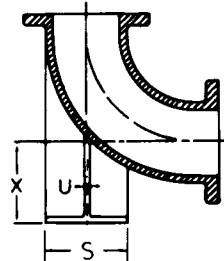
Size	Dimensions		Weight
	R	A	
3	6.25	7.75	28
4	7	9	50
6	9.5	11.5	80
8	14	14	140
10	16.5	16.5	230
12	17	19	325
14	19	21.5	475
16	21.5	24	630

\* Not included in AWWA C110

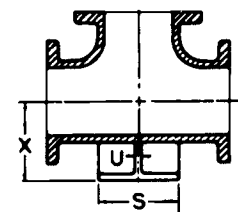
### BASE BENDS, BASE TEES



90° Base Bend (1/4)



\*90° Long Radius Base Bend (1/4)



Base Tees

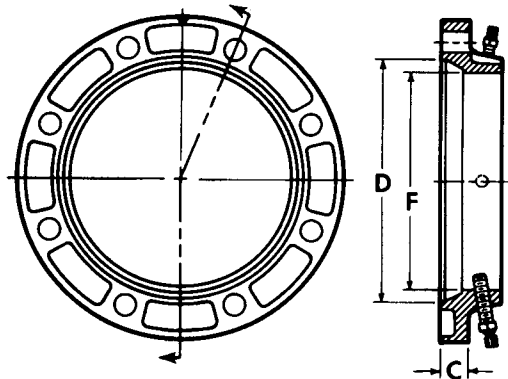
Base Bends are made to order only, not returnable. Bases are furnished faced and drilled.

Size	Dimensions			Support Pipe Size	Weight		
	X	S	U		90°	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	275	315
12	11.25	11	1.00	6	300	390	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	1215	...	1715
30	23	16	1.15	10	1945	...	...

\* Not included in AWWA C110

# Bibby Ste Croix

## DUCTILE IRON C110 FLANGED FITTINGS



### DUCTILE IRON ADAPTER FLANGE

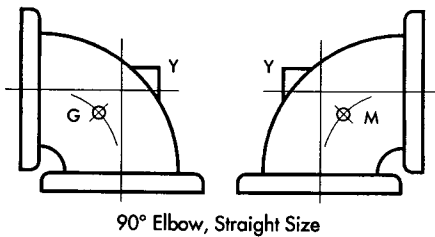
Size	Cast Iron Pipe OD +.06 or -.06	D +.06 -.04	F +.07 -.03	C	Weight
3	3.96	4.94	4.06	.94	7
4	<b>4.80</b>	<b>6.02</b>	<b>4.90</b>	<b>1.00</b>	<b>10</b>
6	6.90	8.12	7.00	1.06	14
8	<b>9.05</b>	<b>10.27</b>	<b>9.15</b>	<b>1.12</b>	<b>22</b>
10	11.10	12.34	11.20	1.19	30
12	<b>13.20</b>	<b>14.44</b>	<b>13.30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

All set screws are  $\frac{5}{8}$ " 90 lb. torque head.

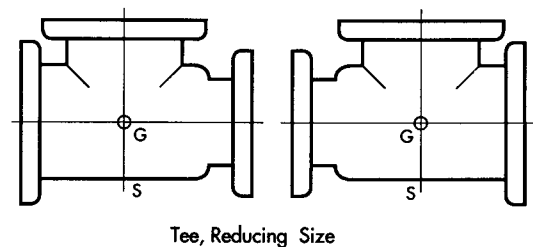
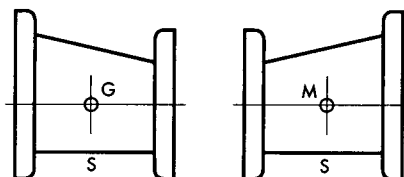
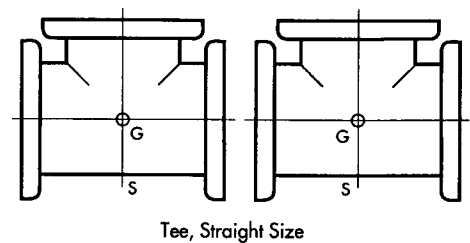
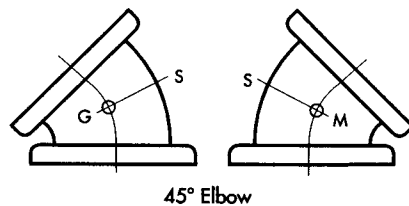
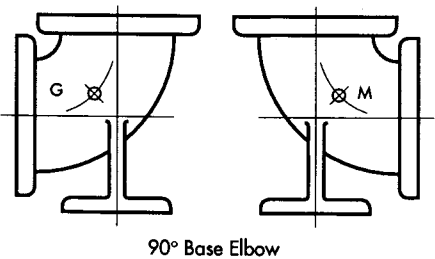
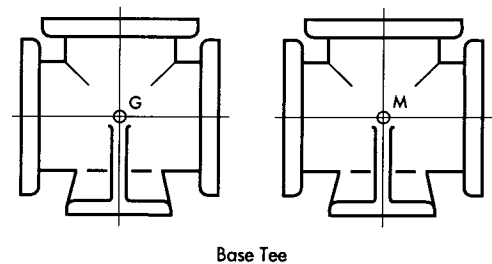
**Wall Thickness Note:** Installations suggestions are based on use with class 53 ductile iron pipe; results may vary if different classes or other pipe is used.

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 WHEN SPECIFIED AWWA C110 Flanged Fittings



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"



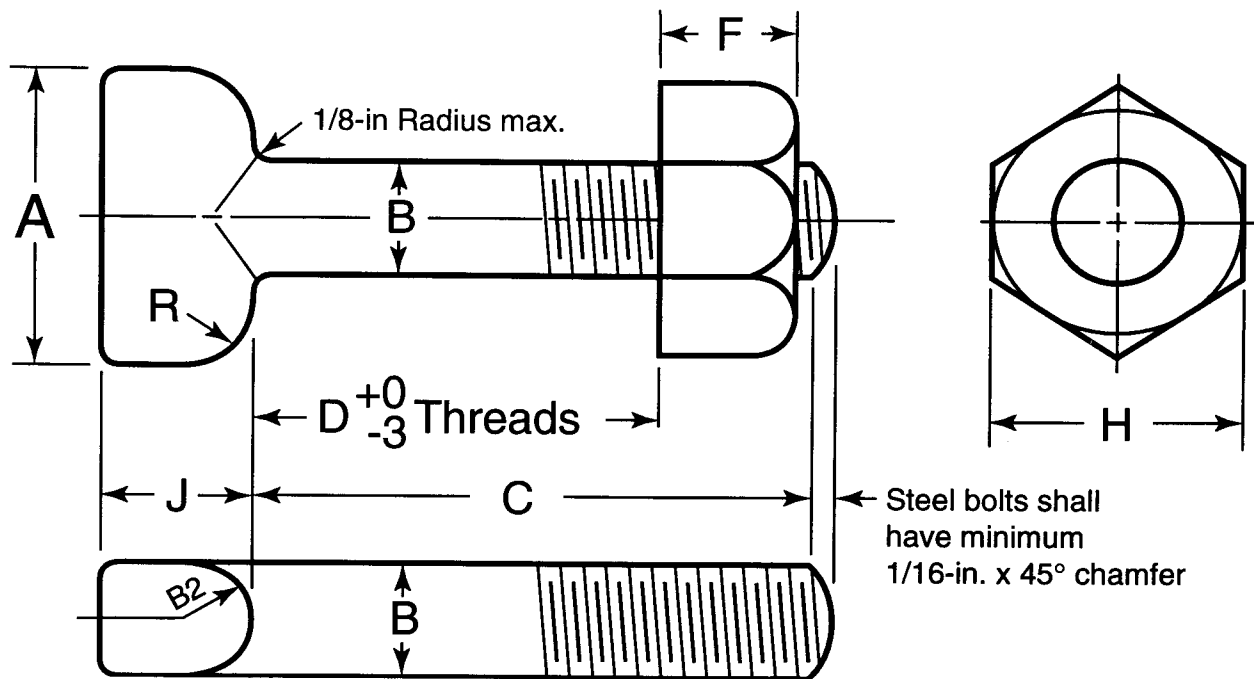
### TAP LOCATIONS

#### Fittings Tapped to ANSI B16.1

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.

# Bibby Ste Croix

## BOLTS AND NUTS FOR MECHANICAL JOINTS ANSI/AWWA C110/A21.10 MECHANICAL JOINT FITTINGS

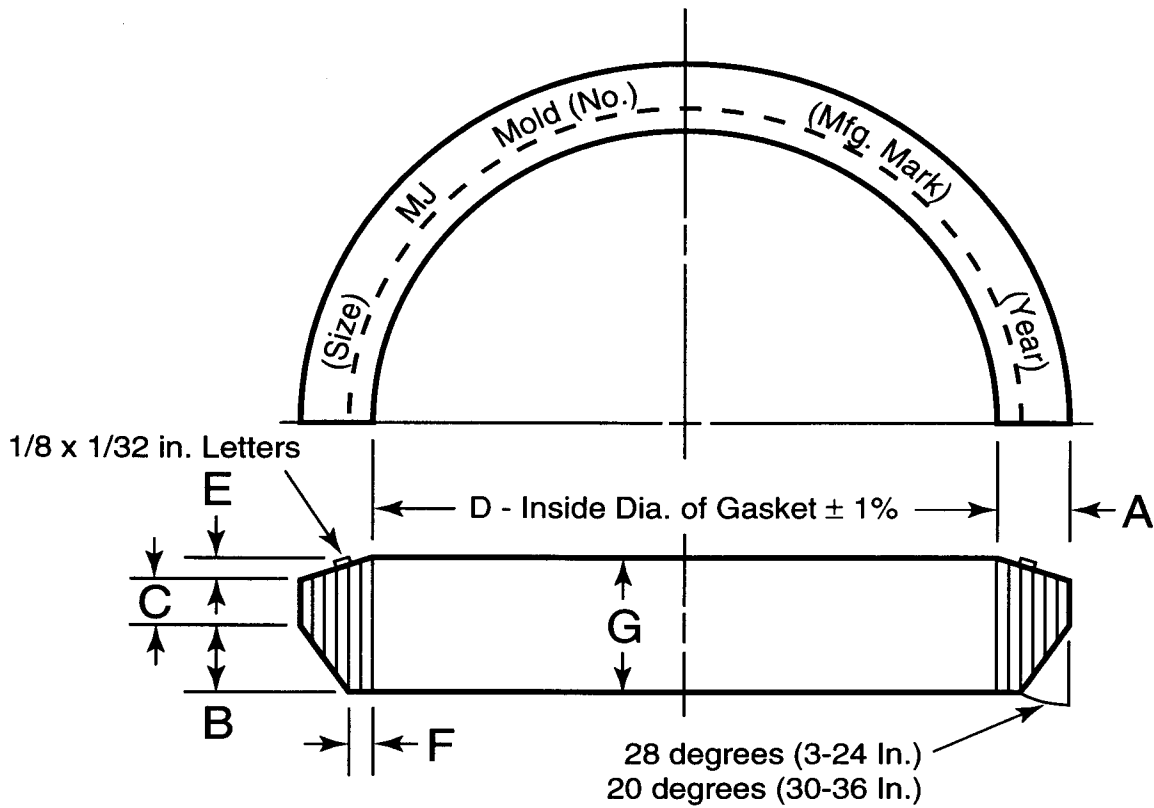


**T-Head Cor-ten (Low alloy steel) Bolts and Nuts**  
Dimensions in Inches

Nominal Size	A (± 0.05)	B (± 0.03)	C (+.25-.06)	D	E*	F	H	J (+ .15-.03)	R Max.
<sup>5</sup> / <sub>8</sub> × 3	1.50	.625	3.0	1.50	11	.625±.04	1.062-.04	.625	.312
<sup>3</sup> / <sub>4</sub> × 3 <sup>1</sup> / <sub>2</sub>	1.75	.750	3.5	1.50	10	.750±.06	1.250-.06	.750	.375
<sup>3</sup> / <sub>4</sub> × 4	1.75	.750	4.0	2.25	10	.750±.06	1.250-.06	.750	.375
<sup>3</sup> / <sub>4</sub> × 4 <sup>1</sup> / <sub>2</sub>	1.75	.750	4.5	2.50	10	.750±.06	1.250-.06	.750	.375
<sup>3</sup> / <sub>4</sub> × 5	1.75	.750	5.0	3.00	10	.750±.06	1.250-.06	.750	.375
1 × 6	2.25	1.000	6.0	3.75	8	1.000±.08	1.625-.08	1.000	.500

\* Number of threads per inch [Course-Thread Series (ANSI B1.1 - Unified Standard for Screw Threads) Class 2A, External Fit UNC2A and Class 2B, (ANSI B1.2 - Standard for Gages and Gaging)].

**Note:** Dimension "B" is unthreaded shank. Dimension "D" is measured to face of nut run up finger tight. Draft, when required to be 6 degree maximum, may be deducted from bolt head dimensions, and radius (B2) may be changed to suit draft. Gates, if required, may protrude a maximum of 1/8 inch above the top of the bolt head.



**Mechanical Joint Gasket Dimensions in Inches**

Pipe Size	Pipe OD	A ( $\pm 0.01$ )	B	C	D ( $\pm 1\%$ )	E ( $\pm 0.01\%$ )	F ( $\pm 0.01\%$ )	G ( $\pm 0.02\%$ )
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.

# NOTES