



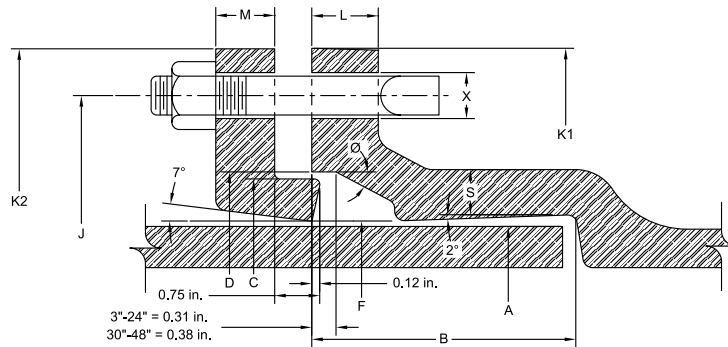
# Full Body MJ Fittings

ANSI/AWWA C110/A21.10

## 2" - 64" DUCTILE IRON MECHANICAL JOINT FULL BODY FITTINGS

### GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" and 150 PSI for 54"-64" or as noted
- TESTING:** In accordance with ANSI/AWWA C110/A21.10
- LAYING LENGTH:** In accordance with ANSI/AWWA C110/A21.10 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
- DEFLECTION:** 2"-4"=8° | 6"-7"=7° | 8"-12"=5° | 14"-16"=3 1/2° | 18"-24"=3° | 30"-48"=2°
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
- FLANGES:** Flanged ends on fittings match ANSI/AWW C110/A21.10 and ANSI B16.1 class 125 flanges.
- CEMENT LINING:** In accordance with ANSI/AWWA C104/A21.4 -- size 2" - 3" single thickness and sizes 4" - 64" double thickness. [Click here for a pressure jetting discussion](#) or visit [http://www.starpipeproducts.com/pressure\\_cleaning\\_guidelines.asp](http://www.starpipeproducts.com/pressure_cleaning_guidelines.asp).
- COATING:** Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C110/A21.10
- GASKETS:** SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 20)
- T-BOLTS/NUTS:** Low alloy steel in accordance with ANSI/AWWA C11/A21.11 (see pg. 22)
- APPROVALS:** Sizes 2" and greater are UL/ANSI/NSF Standards 61 and 372
- DIMENSIONS:** All dimensions are in inches unless noted otherwise. ([Click here for a short commentary on non-pressure sewer applications](#) or visit [http://www.starpipeproducts.com/non-pressure\\_sewer\\_applications.asp](http://www.starpipeproducts.com/non-pressure_sewer_applications.asp). Review commentary before ordering or installing fittings for this application.)
- INSTALLATION:** Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900



MECHANICAL JOINT DIMENSIONS															
NOM. SIZE	A DIA.	B	C DIA.	D DIA.	F DIA.	J DIA.	K1 DIA.	K2 DIA.	L	M	S	Ø	X DIA.	BOLTS	
														SIZE	NO.
2	2.50	2.50	3.39	3.50	2.61	4.75	6.25	6.25	0.75	0.62	0.44	28°	3/4	5/8 x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.69	7.69	0.94	0.62	0.52	28°	3/4	5/8 x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.12	9.12	1.00	0.75	0.65	28°	7/8	3/4 x 3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.12	11.12	1.06	0.88	0.70	28°	7/8	3/4 x 3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.37	13.37	1.12	1.00	0.75	28°	7/8	3/4 x 4	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.69	15.62	1.19	1.00	0.80	28°	7/8	3/4 x 4	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.94	17.88	1.25	1.00	0.85	28°	7/8	3/4 x 4	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	1.31	1.25	0.89	28°	7/8	3/4 x 4 1/2	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	1.38	1.31	0.97	28°	7/8	3/4 x 4 1/2	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.44	1.38	1.05	28°	7/8	3/4 x 4 1/2	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.50	1.44	1.12	28°	7/8	3/4 x 4 1/2	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.62	1.56	1.22	28°	7/8	3/4 x 5	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.81	2.00	1.50	20°	1 1/8	1 x 6	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	2.00	2.00	1.80	20°	1 1/8	1 x 6	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	2.00	2.00	1.95	20°	1 3/8	1 1/4 x 6 1/2	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	2.00	2.00	2.20	20°	1 3/8	1 1/4 x 6 1/2	32
54	{ Fittings & Dimensions Available On Request }														
60															
64															

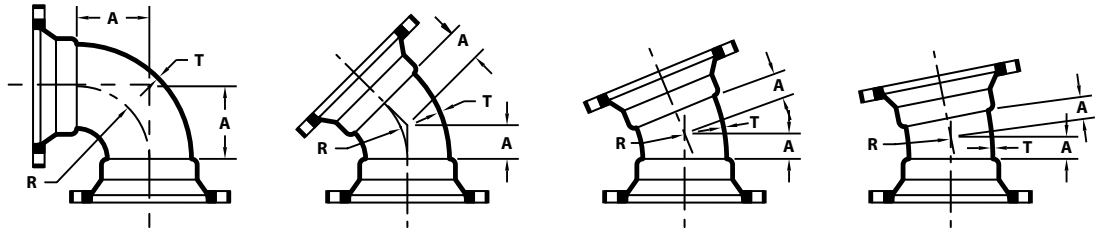
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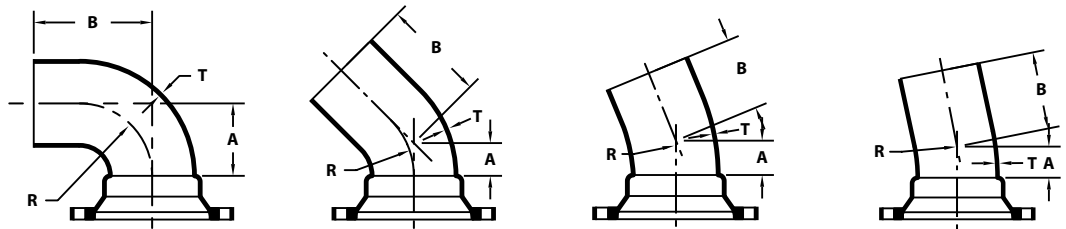


# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x MJ BENDS		90° MJ x MJ BENDS (1/4)			45° MJ x MJ BENDS (1/8)			22 1/2° MJ x MJ BENDS (1/16)			11 1/4° MJ x MJ BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
2	0.39	3.25	2.25	14	1.80	1.96	13	1.80	4.02	13	1.80	8.12	13
3	0.48	5.50	4.00	35	3.00	3.62	30	3.00	7.56	30	3.00	15.25	30
4	0.52	6.50	4.50	55	4.00	4.81	50	4.00	10.06	50	4.00	20.31	50
6	0.55	8.00	6.00	85	5.00	7.25	75	5.00	15.06	75	5.00	30.50	75
8	0.60	9.00	7.00	125	5.50	8.44	110	5.50	17.62	110	5.50	35.50	110
10	0.68	11.00	9.00	190	6.50	10.88	155	6.50	22.62	160	6.50	45.69	160
12	0.75	12.00	10.00	255	7.50	13.25	215	7.50	27.62	220	7.50	55.81	220
14	0.66	14.00	11.50	340	7.50	12.06	270	7.50	25.12	275	7.50	50.75	275
16	0.70	15.00	12.50	430	8.00	13.25	340	8.00	27.62	345	8.00	55.81	345
18	0.75	16.50	14.00	545	8.50	14.50	420	8.50	30.19	430	8.50	60.94	430
20	0.80	18.00	15.50	680	9.50	16.88	530	9.50	35.19	535	9.50	71.06	540
24	0.89	22.00	18.50	1025	11.00	18.12	755	11.00	37.69	765	11.00	76.12	770
30	1.03	25.00	21.50	1690	15.00	27.75	1380	15.00	57.81	1400	15.00	116.75	1410
36	1.15	28.00	24.50	2475	18.00	35.00	2095	18.00	72.88	2135	18.00	147.25	2145
42	1.28	31.00	27.50	3410	21.00	42.25	2955	21.00	88.00	3020	21.00	177.69	3035
48	1.42	34.00	30.50	4595	24.00	49.50	4080	24.00	103.06	4170	24.00	208.12	4190



MJ x PE BENDS		90° MJ x PE BENDS (1/4)				45° MJ x PE BENDS (1/8)				22 1/2° MJ x PE BENDS (1/16)				11 1/4° MJ x PE BENDS (1/32)			
NOM. SIZE	T	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)
3	0.48	5.50	13.50	4.00	35	3.00	11.00	3.62	30	3.00	11.00	7.56	30	3.00	11.00	15.25	30
4	0.52	6.50	14.50	4.50	50	4.00	12.00	4.81	45	4.00	12.00	10.06	45	4.00	12.00	20.31	45
6	0.55	8.00	16.00	6.00	80	5.00	13.00	7.25	70	5.00	13.00	15.06	70	5.00	13.00	30.50	70
8	0.60	9.00	17.00	7.00	120	5.50	13.50	8.44	105	5.50	13.50	17.62	105	5.50	13.50	35.50	105
10	0.68	11.00	19.00	9.00	190	6.50	14.50	10.88	155	6.50	14.50	22.62	160	6.50	14.50	45.69	160
12	0.75	12.00	20.00	10.00	255	7.50	15.50	13.25	215	7.50	15.50	27.62	220	7.50	15.50	55.81	220
14	0.66	14.00	22.00	11.50	325	7.50	15.50	12.06	255	7.50	15.50	25.12	260	7.50	15.50	50.75	260
16	0.70	15.00	23.00	12.50	410	8.00	16.00	13.25	320	8.00	16.00	27.62	325	8.00	16.00	55.81	325
18	0.75	16.50	24.50	14.00	517	8.50	16.50	14.50	395	8.50	16.50	30.19	401	8.50	16.50	60.94	402
20	0.80	18.00	26.00	15.50	644	9.50	17.50	16.88	493	9.50	17.50	35.19	501	9.50	17.50	71.06	502
24	0.89	22.00	30.00	18.50	985	11.00	19.00	18.12	715	11.00	19.00	37.69	725	11.00	19.00	76.12	730
30	1.03	25.00	33.00	21.50	1585	15.00	23.00	27.75	1275	15.00	23.00	57.81	1295	15.00	23.00	116.75	1305
36	1.15	28.00	36.00	24.50	2310	18.00	26.00	35.00	1930	18.00	26.00	72.88	1970	18.00	26.00	147.25	1980
42	1.28	31.00	39.00	27.50	3200	21.00	29.00	42.25	2745	21.00	29.00	88.00	2810	21.00	29.00	177.69	2825

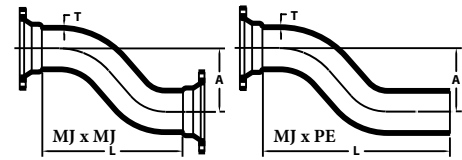
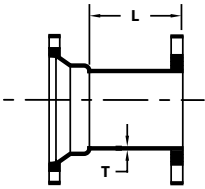
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 \* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

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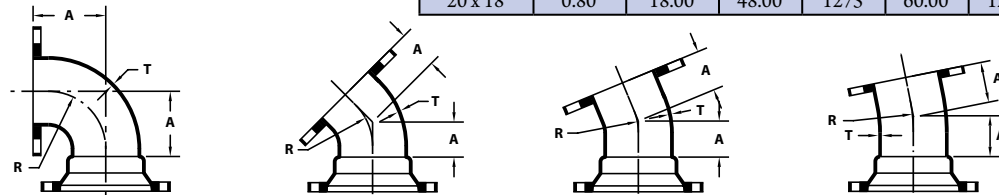
# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x FLANGE ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
3	0.48	8.00	30
4	0.52	8.00	40
6	0.55	8.00	60
8	0.60	8.00	85
10	0.68	8.00	115
12	0.75	8.00	155
14	0.66	8.00	195
16	0.70	8.00	240
18	0.75	8.00	280
20	0.80	8.00	340
24	0.89	8.00	455
30	1.03	10.00	760
36	1.15	10.00	1070

NOM. SIZE	MJ OFFSETS		MJ x MJ		MJ x PE	
	T	A	L	WT (LBS.)	L	WT (LBS.)
4 x 6	0.52	6.00	19.00	75	27.00	70
4 x 12	0.52	12.00	22.00	85	30.00	80
4 x 18	0.52	18.00	30.00	105	38.00	100
4 x 24	0.52	24.00	30.00	125	38.00	115
6 x 6	0.55	6.00	20.00	110	28.00	105
6 x 12	0.55	12.00	26.00	135	34.00	130
6 x 18	0.55	18.00	33.00	165	41.00	160
6 x 24	0.55	24.00	33.00	195	41.00	195
8 x 6	0.60	6.00	21.00	160	29.00	155
8 x 12	0.60	12.00	28.00	200	36.00	195
8 x 18	0.60	18.00	35.00	245	43.00	240
8 x 24	0.60	24.00	36.00	280	44.00	275
10 x 12	0.68	12.00	30.00	250	38.00	280
10 x 18	0.68	18.00	38.00	340	46.00	340
10 x 24	0.68	24.00	38.00	420	46.00	420
12 x 12	0.75	12.00	37.00	420	45.00	420
12 x 18	0.75	18.00	48.00	520	56.00	520
12 x 24	0.75	24.00	48.00	640	56.00	630
16 x 12	0.70	12.00	40.00	600	48.00	580
16 x 18	0.70	18.00	50.00	710	58.00	690
20 x 12	0.80	12.00	40.00	1025	48.00	1015
20 x 18	0.80	18.00	48.00	1275	60.00	1265



MJ x FE BENDS		90° MJ x FE BENDS (1/4)			45° MJ x FE BENDS (1/8)			22 1/2° MJ x FE BENDS (1/16)			11 1/4° MJ x FE BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
4	0.52	6.50	4.50	38	4.00	4.81	45	4.00	10.06	45	4.00	20.31	45
6	0.55	8.00	6.00	75	5.00	7.25	69	5.00	15.06	69	5.00	30.50	69
8	0.60	9.00	7.00	115	5.50	8.44	105	5.50	17.62	105	5.50	35.50	105
10	0.68	11.00	9.00	177	6.50	10.88	155	6.50	22.62	155	6.50	45.69	155
12	0.75	12.00	10.00	246	7.50	13.25	215	7.50	27.62	215	7.50	55.81	215
14	0.66	-	-	-	7.50	12.06	245	-	-	-	-	-	-
16	0.70	15.00	12.50	465	8.00	13.25	360	8.00	27.62	360	8.00	55.81	360
18	0.75	16.50	14.00	577	8.50	14.50	422	8.50	30.19	422	8.50	60.94	422
20	0.80	18.00	15.50	745	9.50	16.88	543	9.50	35.19	575	9.50	71.06	575
24	0.89	22.00	18.50	1150	11.00	18.12	800	11.00	37.69	800	11.00	76.12	800
30	1.03	25.00	21.50	1559	-	-	-	15.00	57.81	1270	-	-	-
36	1.15	28.00	24.50	2318	-	-	-	-	-	-	-	-	-
48	1.42	34.00	30.50	4378	-	-	-	-	-	-	-	-	-

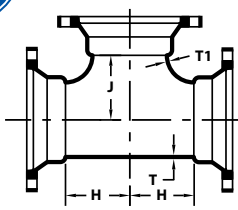
STAR<sup>®</sup> PIPE PRODUCTS





# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



STAR<sup>®</sup> PIPE PRODUCTS

MJ x MJ TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
2 x 2	0.39	0.39	3.25	3.25	20
3 x 2	0.48	0.39	3.50	3.50	43
3 x 3	0.48	0.48	5.50	5.50	55
4 x 2	0.52	0.39	4.00	4.00	57
4 x 3	0.52	0.48	6.50	6.50	75
4 x 4	0.52	0.52	6.50	6.50	80
4 x 4 x 6	0.52	0.55	8.00	8.00	115
6 x 2	0.55	0.39	8.00	8.00	78
6 x 3	0.55	0.48	8.00	8.00	110
6 x 4	0.55	0.52	8.00	8.00	115
6 x 6	0.55	0.55	8.00	8.00	125
6 x 6 x 8	0.55	0.60	9.00	9.00	185
8 x 2	0.60	0.39	9.00	9.00	125
8 x 3	0.60	0.48	9.00	9.00	155
8 x 4	0.60	0.52	9.00	9.00	165
8 x 6	0.60	0.55	9.00	9.00	175
8 x 8	0.60	0.60	9.00	9.00	185
8 x 8 x 12	0.60	0.75	12.00	12.00	280
10 x 4	0.68	0.52	11.00	11.00	235
10 x 6	0.68	0.55	11.00	11.00	250
10 x 8	0.68	0.60	11.00	11.00	260
10 x 10	0.80	0.80	11.00	11.00	310
12 x 4	0.75	0.52	12.00	12.00	315
12 x 6	0.75	0.55	12.00	12.00	325
12 x 8	0.75	0.60	12.00	12.00	340
12 x 10	0.87	0.80	12.00	12.00	390
12 x 12	0.87	0.87	12.00	12.00	410
14 x 6	0.66	0.55	14.00	14.00	435
16 x 4	0.70	0.52	15.00	15.00	525
16 x 6	0.70	0.55	15.00	15.00	540
16 x 8	0.70	0.60	15.00	15.00	550
16 x 10	0.70	0.68	15.00	15.00	570
16 x 12	0.70	0.75	15.00	15.00	590
16 x 16	0.70	0.70	15.00	15.00	650
18 x 6	0.75	0.55	13.00	15.50	590
18 x 8	0.75	0.60	13.00	15.50	605
18 x 12	0.75	0.75	13.00	15.50	640
18 x 18	0.75	0.75	16.50	16.50	820
20 x 6	0.80	0.55	14.00	17.00	725
20 x 8	0.80	0.60	14.00	17.00	735
20 X 10	0.80	0.68	14.00	17.00	755
20 x 12	0.80	0.75	14.00	17.00	775
20 x 16	0.80	0.70	18.00	18.00	945
20 x 20	0.80	0.80	18.00	18.00	1020
24 x 6	0.89	0.55	15.00	19.00	985
24 x 8	0.89	0.60	15.00	19.00	1000
24 x 10	0.89	0.68	15.00	19.00	958

MJ x MJ TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
24 x 12	0.89	0.75	15.00	19.00	1030
24 x 14	0.89	0.66	15.00	19.00	1055
24 x 16	0.89	0.70	15.00	19.00	1075
24 x 18	0.89	0.75	22.00	22.00	1400
24 x 20	0.89	0.80	22.00	22.00	1450
24 x 24	0.89	0.89	22.00	22.00	1535
30 x 6	1.03	0.55	18.00	23.00	1730
30 x 8	1.03	0.60	18.00	23.00	1745
30 x 10	1.03	0.68	18.00	23.00	1760
30 x 12	1.03	0.75	18.00	23.00	1780
30 x 14	1.03	0.66	18.00	23.00	1648
30 x 16	1.03	0.70	18.00	23.00	1820
30 x 18	1.03	0.75	18.00	23.00	1845
30 x 20	1.03	0.80	18.00	23.00	1875
30 x 24	1.03	0.89	25.00	25.00	2400
30 x 30	1.03	1.03	25.00	25.00	2595
36 x 6	1.15	0.55	20.00	26.00	2500
36 x 8	1.15	0.60	20.00	26.00	2520
36 x 10	1.15	0.68	20.00	26.00	2535
36 x 12	1.15	0.75	20.00	26.00	2550
36 x 14	1.15	0.66	20.00	26.00	2570
36 x 16	1.15	0.70	20.00	26.00	2585
36 x 18	1.15	0.75	20.00	26.00	2610
36 x 20	1.15	0.80	20.00	26.00	2635
36 x 24	1.15	0.89	20.00	26.00	2690
36 x 30	1.15	1.03	28.00	28.00	3545
36 x 36	1.15	1.15	28.00	28.00	3745
42 x 12	1.28	0.75	23.00	30.00	3555
42 x 14	1.28	0.66	23.00	30.00	3575
42 x 16	1.28	0.70	23.00	30.00	3595
42 x 18	1.28	0.75	23.00	30.00	3615
42 x 20	1.28	0.80	23.00	30.00	3640
42 x 24	1.28	0.89	23.00	30.00	3690
42 x 30	1.28	1.03	31.00	31.00	4650
42 x 36	1.28	1.15	31.00	31.00	4880
42 x 42	1.28	1.28	31.00	31.00	5085
48 x 12	1.42	0.75	26.00	34.00	4870
48 x 14	1.42	0.66	26.00	34.00	4885
48 x 16	1.42	0.70	26.00	34.00	4905
48 x 18	1.42	0.75	26.00	34.00	4925
48 x 20	1.42	0.80	26.00	34.00	4950
48 x 24	1.42	0.89	26.00	34.00	4995
48 x 30	1.42	1.03	26.00	34.00	5140
48 x 36	1.42	1.15	34.00	34.00	6280
48 x 42	1.42	1.28	34.00	34.00	6510
48 x 48	1.42	1.42	34.00	34.00	6765
48 x 36 x 48	1.42	1.15	34.00	34.00	6275

(Con't)

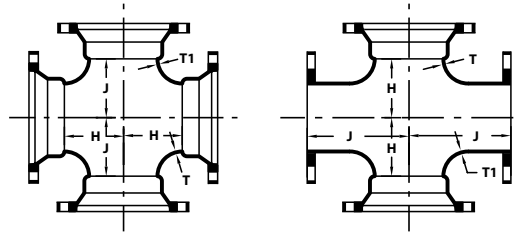
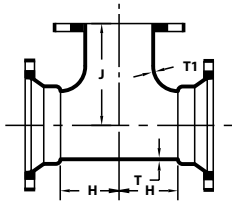
UCAT22.01-2  
 \* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS





# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x FE TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
4 x 4	0.52	0.52	6.50	6.50	74
4 x 4 x 6	0.52	0.55	8.00	8.00	103
6 x 4	0.55	0.52	8.00	8.00	109
6 x 6	0.55	0.55	8.00	8.00	115
8 x 4	0.60	0.52	9.00	9.00	159
8 x 6	0.60	0.55	9.00	9.00	165
8 x 8	0.60	0.60	9.00	9.00	175
10 x 4	0.68	0.52	11.00	11.00	231
10 x 6	0.68	0.55	11.00	11.00	237
10 x 8	0.68	0.60	11.00	11.00	249
12 x 4	0.75	0.52	12.00	12.00	309
12 x 6	0.75	0.55	12.00	12.00	315
12 x 8	0.75	0.60	12.00	12.00	330
12 x 10	0.87	0.68	12.00	12.00	360
12 x 12	0.87	0.87	12.00	12.00	401
14 x 6	0.66	0.55	14.00	14.00	485
14 x 14	0.66	0.66	14.00	14.00	465
16 x 4	0.70	0.52	15.00	15.00	575
16 x 6	0.70	0.55	15.00	15.00	605
16 x 8	0.70	0.60	15.00	15.00	615
16 x 12	0.70	0.75	15.00	15.00	651
16 x 16	0.70	0.70	15.00	15.00	596
18 x 6	0.75	0.55	13.00	15.50	665
18 x 8	0.75	0.60	13.00	15.50	675
18 x 12	0.75	0.75	13.00	15.50	705
18 x 18	0.75	0.75	16.50	16.50	915
20 x 6	0.80	0.55	14.00	17.00	677
20 x 8	0.80	0.60	14.00	17.00	688
20 x 12	0.80	0.75	14.00	17.00	722
20 x 20	0.80	0.80	18.00	18.00	1165
24 x 6	0.89	0.55	15.00	19.00	1125
24 x 8	0.89	0.60	15.00	19.00	1140
24 x 12	0.89	0.75	15.00	19.00	1165
24 x 16	0.89	0.70	15.00	19.00	988
24 x 24	0.89	0.89	22.00	22.00	1795
30 x 10	1.03	0.68	18.00	23.00	1606
30 x 12	1.03	0.75	18.00	23.00	1626
30 x 30	1.03	1.03	25.00	25.00	3080
36 x 6	1.15	0.55	20.00	26.00	2325
36 x 10	1.15	0.68	20.00	26.00	2345
36 x 12	1.15	0.75	20.00	26.00	2361
36 x 16	1.15	0.70	20.00	26.00	2373
36 x 24	1.15	0.89	20.00	26.00	2432
36 x 30	1.15	1.03	28.00	28.00	3133
48 x 24	1.42	0.89	26.00	34.00	4965

MJ x MJ / MJ x FE CROSSES							
NOM. SIZE	T	T1	H	J	WT (LBS.)		
					MJ X MJ	MJ X FE	
6 x 4	0.55	0.52	8.00	8.00	140	---	
6 x 6	0.55	0.55	8.00	8.00	160	140	
8 x 4	0.60	0.52	9.00	9.00	185	176	
8 x 6	0.60	0.55	9.00	9.00	205	185	
8 x 8	0.60	0.60	9.00	9.00	235	215	
10 x 6	0.68	0.55	11.00	11.00	285	258	
10 x 8	0.68	0.60	11.00	11.00	310	---	
10 x 10	0.80	0.80	11.00	11.00	380	354	
12 x 4	0.75	0.52	12.00	12.00	340	---	
12 x 6	0.75	0.55	12.00	12.00	360	340	
12 x 8	0.75	0.60	12.00	12.00	385	365	
12 x 12	0.87	0.87	12.00	12.00	495	487	
14 x 8	0.66	0.60	14.00	14.00	500	---	
14 x 14	0.66	0.66	14.00	14.00	635	---	
16 x 6	0.70	0.55	15.00	15.00	575	---	
16 x 8	0.70	0.60	15.00	15.00	605	585	
16 x 16	0.70	0.70	15.00	15.00	790	770	
18 x 8	0.75	0.60	13.00	15.50	655	---	
18 x 10	0.75	0.68	13.00	15.50	685	---	
18 x 12	0.75	0.75	13.00	15.50	725	---	
18 x 18	0.75	0.75	16.50	16.50	995	846	
20 x 8	0.80	0.60	14.00	17.00	790	---	
20 x 12	0.80	0.75	14.00	17.00	860	---	
20 x 16	0.80	0.70	18.00	18.00	1085	---	
20 x 20	0.80	0.80	18.00	18.00	1230	---	
24 x 6	0.89	0.55	15.00	19.00	1025	---	
24 x 8	0.89	0.60	15.00	19.00	1045	---	
24 x 12	0.89	0.75	15.00	19.00	1110	---	
24 x 16	0.89	0.70	15.00	19.00	1200	988	
24 x 20	0.89	0.80	22.00	22.00	1675	---	
24 x 24	0.89	0.89	22.00	22.00	1835	---	
30 x 6	1.03	0.55	18.00	23.00	1770	---	
30 x 10	1.03	0.68	18.00	23.00	---	1606	
30 x 12	1.03	0.75	18.00	23.00	1865	1687	
30 x 24	1.03	0.89	25.00	25.00	2675	---	
30 x 30	1.03	1.03	25.00	25.00	3075	---	
36 x 24	1.15	0.89	20.00	26.00	2910	---	
36 x 30	1.15	1.03	28.00	28.00	---	3133	
36 x 36	1.15	1.15	28.00	28.00	4370	---	
42 x 24	1.28	0.89	23.00	30.00	3910	---	
42 x 42	1.28	1.28	31.00	31.00	5840	---	

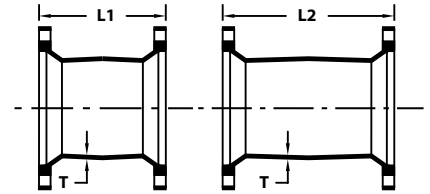
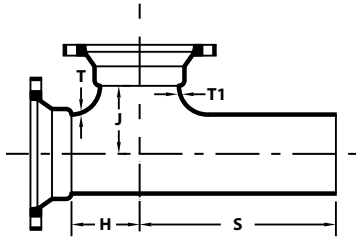
STAR<sup>®</sup> PIPE PRODUCTS





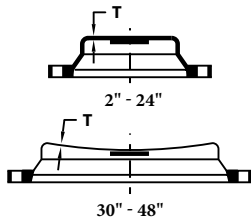
# Full Body MJ Fittings

ANSI/AWWA C110/A21.10

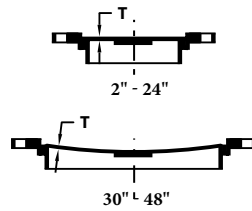


MJ x PE x MJ TEES						
NOM. SIZE	T	T1	H	J	S	WT (LBS.)
4 x 4	0.52	0.52	6.50	6.50	14.50	75
6 x 4	0.55	0.52	8.00	8.00	16.00	112
6 x 6	0.55	0.55	8.00	8.00	16.00	120
8 x 6	0.60	0.55	9.00	9.00	17.00	170
8 x 8	0.60	0.60	9.00	9.00	17.00	180
10 x 10	0.80	0.80	11.00	11.00	19.00	303
12 x 4	0.75	0.52	12.00	12.00	20.00	315
12 x 6	0.75	0.55	12.00	12.00	20.00	325
12 x 8	0.75	0.60	12.00	12.00	20.00	340
12 x 10	0.87	0.80	12.00	12.00	20.00	390
12 x 12	0.87	0.87	12.00	12.00	20.00	407

MJ SOLID SLEEVES					
NOM. SIZE	T	SHORT SLEEVES		LONG SLEEVES	
		L1	WT (LBS.)	L2	WT (LBS.)
2	0.39	7.50	12	12.00	18
3	0.48	7.50	25	12.00	30
4	0.52	7.50	35	12.00	45
6	0.55	7.50	45	12.00	65
8	0.60	7.50	65	12.00	85
10	0.68	7.50	85	12.00	115
12	0.75	7.50	110	12.00	145
14	0.66	9.50	150	15.00	195
16	0.70	9.50	180	15.00	235
18	0.75	9.50	215	15.00	285
20	0.80	9.50	240	15.00	325
24	0.89	9.50	320	15.00	425
30	1.03	15.00	635	24.00	885
36	1.15	15.00	855	24.00	1190
42	1.28	15.00	1115	24.00	1550
48	1.42	15.00	1385	24.00	1940



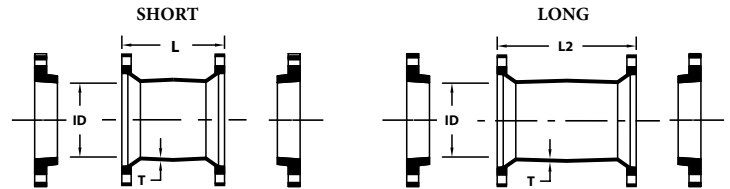
CAPS



PLUGS

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

\*Threads in Accordance with ANSI/ASME B1.20.1



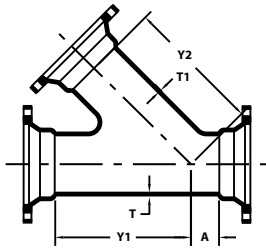
MJ DUAL PURPOSE SLEEVES W/ OVERSIZE GLANDS							
NOM. SIZE	PIPE SIZE	(I.D.)	T	SHORT		LONG	
				L1	WT (LBS.)	L2	WT (LBS.)
4	4.80 - 5.00	5.10	0.52	7.50	35	12.00	35
6	6.90 - 7.10	7.20	0.55	7.50	45	12.00	65
8	9.05 - 9.30	9.40	0.60	7.50	65	12.00	86
10	11.10 - 11.40	11.50	0.68	7.50	85	12.00	115
12	13.20 - 13.50	13.60	0.75	7.50	110	12.00	145
16	17.40 - 17.80	17.94	0.70	---	---	15.00	236

STAR<sup>®</sup> PIPE PRODUCTS



# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



45° MJ LATERALS						
NOM. SIZE	T	T1	A	Y1	Y2	WT (LBS.)
3 x 3	0.48	0.48	3.00	10.00	10.00	60
4 x 3	0.52	0.48	3.00	12.00	12.00	85
4 x 4	0.52	0.52	3.00	12.00	12.00	90
6 x 3	0.55	0.48	3.50	14.50	14.50	125
6 x 4	0.55	0.52	3.50	14.50	14.50	130
6 x 6	0.55	0.55	3.50	14.50	14.50	145
8 x 3	0.60	0.48	4.50	17.50	17.50	185
8 x 4	0.60	0.52	4.50	17.50	17.50	190
8 x 6	0.60	0.55	4.50	17.50	17.50	205
8 x 8	0.60	0.60	4.50	17.50	17.50	230
10 x 6	0.68	0.55	5.00	20.50	20.50	285
10 x 8	0.68	0.60	5.00	20.50	20.50	310
10 x 10	0.68	0.68	5.00	20.50	20.50	340
12 x 8	0.75	0.60	5.50	24.50	24.50	425
12 x 12	0.75	0.75	5.50	24.50	24.50	490
14 x 6	0.66	0.55	6.00	27.00	27.00	570
14 x 14	0.66	0.66	6.00	27.00	27.00	645
16 x 4	0.70	0.52	6.50	30.00	30.00	585
16 x 10	0.70	0.68	6.50	30.00	30.00	665
16 x 12	0.70	0.75	6.50	30.00	30.00	700
16 x 14	0.70	0.66	6.50	30.00	30.00	750
16 x 16	0.70	0.70	6.50	30.00	30.00	770
18 x 4	0.75	0.52	7.00	32.00	32.00	560
18 x 8	0.75	0.60	7.00	32.00	32.00	766
18 x 10	0.75	0.68	7.00	32.00	32.00	801
18 x 12	0.75	0.75	7.00	32.00	32.00	840
18 x 16	0.75	0.70	7.00	32.00	32.00	905
18 x 18	0.75	0.75	7.00	32.00	32.00	953
20 x 4	0.80	0.52	0	27.00	29.50	673
20 x 6	0.80	0.55	0	27.00	29.50	691
20 x 8	0.80	0.60	0	27.00	29.50	710
20 x 10	0.80	0.68	8.00	35.00	35.00	985
20 x 12	0.80	0.75	8.00	35.00	35.00	1025
20 x 14	0.80	0.66	8.00	35.00	35.00	1047
20 x 16	0.80	0.70	8.00	35.00	35.00	1089
20 x 20	0.80	0.80	8.00	35.00	35.00	1203
24 x 4	0.89	0.52	0.50	31.50	31.50	980
24 x 6	0.89	0.55	0.50	31.50	31.50	994
24 x 8	0.89	0.60	0	31.50	34.50	1007
24 x 10	0.89	0.68	9.00	40.50	40.50	1399
24 x 12	0.89	0.75	9.00	40.50	40.50	1442
24 x 14	0.89	0.66	9.00	40.50	40.50	1458
24 x 16	0.89	0.70	9.00	40.50	40.50	1503
24 x 18	0.89	0.75	9.00	40.50	40.50	1556
24 x 20	0.89	0.80	9.00	40.50	40.50	1615
24 x 24	0.89	0.89	9.00	40.50	40.50	1755

(Con't)➔

45° MJ LATERALS (Con't)						
NOM. SIZE	T	T1	A	Y1	Y2	WT (LBS.)
30 x 12	1.37	0.75	10.00	49.00	49.00	2836
30 x 16	1.37	0.89	10.00	49.00	49.00	2959
30 x 20	1.37	1.03	10.00	49.00	49.00	3089
30 x 24	1.37	1.16	10.00	49.00	49.00	3260
30 x 30	1.37	1.37	10.00	49.00	49.00	3710
36 x 6	1.58	0.55	1.00	40.00	40.00	2868
36 x 8	1.58	0.60	15.25	54.00	54.00	4301
36 x 12	1.58	0.75	15.25	54.00	54.00	4376
36 x 14	1.58	0.82	15.25	54.00	54.00	4434
36 x 16	1.58	0.89	15.25	54.00	54.00	4488
36 x 18	1.58	0.96	15.25	54.00	54.00	4549
36 x 20	1.58	1.03	15.25	54.00	54.00	4615
36 x 24	1.58	1.16	15.25	54.00	54.00	4761
36 x 30	1.58	1.37	15.25	56.00	56.00	5266
36 x 36	1.58	1.58	19.50	60.00	60.00	6306
42 x 12	1.78	0.75	0	52.00	52.00	4495
42 x 20	1.78	1.03	12.00	60.00	60.00	6064
42 x 24	1.78	1.16	12.00	60.00	60.00	6203
42 x 30	1.78	1.37	12.00	63.00	63.00	6820
★ 42 x 36	1.78	1.58	12.00	66.00	66.00	7604
★ 42 x 42	1.78	1.78	15.00	71.00	71.00	9018
48 x 14	1.96	0.82	0	52.00	62.00	5723
48 x 18	1.96	0.96	---	52.00	62.00	5810
48 x 20	1.96	1.03	---	52.00	62.00	5861
48 x 24	1.96	1.16	5.00	58.00	64.00	6897
48 x 30	1.96	1.37	4.00	59.00	64.00	7183
48 x 36	1.96	1.58	6.00	64.00	68.00	8294
★ 48 x 42	1.96	1.78	12.00	77.00	77.00	10862
★ 48 x 48	1.96	1.96	16.00	77.00	77.00	11940

★ 150 PSI pressure rating

STAR<sup>®</sup> PIPE PRODUCTS

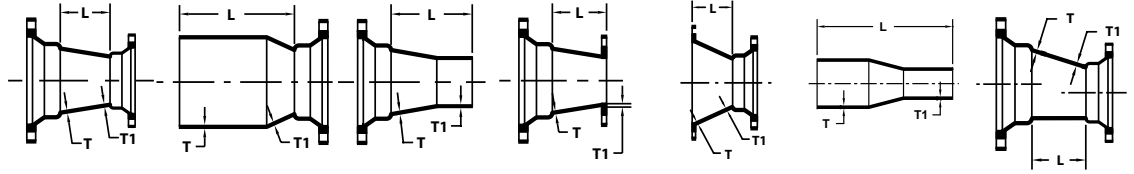






# Full Body MJ Fittings

ANSI/AWWA C110/A21.10



REDUCERS			MJ x MJ		SEB		LEB		MJ x FE		FE x MJ		PE x PE		ECCENTRIC	
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
3 x 2	0.48	0.39	6.00	25	14.00	14	14.00	20	6.00	20	---	---	---	---	---	---
4 x 2	0.52	0.39	7.00	30	15.00	18	15.00	30	7.00	25	---	---	---	---	---	---
4 x 3	0.52	0.48	7.00	40	15.00	35	15.00	40	7.00	35	7.00	34	---	---	---	---
6 x 2	0.55	0.39	9.00	45	17.00	45	17.00	45	9.00	40	---	---	---	---	---	---
6 x 3	0.55	0.48	9.00	55	17.00	50	17.00	55	9.00	49	---	---	---	---	---	---
6 x 4	0.55	0.52	9.00	60	17.00	60	17.00	60	9.00	53	9.00	60	---	---	9.00	65
8 x 3	0.60	0.48	11.00	75	19.00	70	19.00	70	11.00	65	---	---	---	---	---	---
8 x 4	0.60	0.52	11.00	80	19.00	80	19.00	80	11.00	75	11.00	80	---	---	---	---
8 x 6	0.60	0.55	11.00	95	19.00	90	19.00	90	11.00	80	11.00	89	27.00	85	11.00	100
10 x 4	0.68	0.52	12.00	105	20.00	100	20.00	100	---	---	---	---	---	---	---	---
10 x 6	0.68	0.55	12.00	115	20.00	115	20.00	115	12.00	105	12.00	114	---	---	---	---
10 x 8	0.68	0.60	12.00	135	20.00	130	20.00	130	12.00	130	12.00	130	---	---	12.00	140
12 x 4	0.75	0.52	14.00	135	22.00	130	22.00	130	14.00	125	---	---	---	---	---	---
12 x 6	0.75	0.55	14.00	150	22.00	150	22.00	145	14.00	145	14.00	151	---	---	---	---
12 x 8	0.75	0.60	14.00	165	22.00	165	22.00	165	14.00	175	14.00	183	30.00	165	---	---
12 x 10	0.75	0.68	14.00	190	22.00	190	22.00	185	14.00	185	14.00	190	---	---	14.00	195
14 x 6	0.66	0.55	16.00	190	24.00	175	24.00	185	16.00	195	---	---	32.00	170	---	---
14 x 8	0.66	0.60	16.00	210	24.00	190	24.00	205	16.00	215	---	---	---	---	---	---
14 x 10	0.66	0.68	16.00	230	---	---	---	---	16.00	216	---	---	---	---	---	---
14 x 12	0.66	0.75	16.00	255	24.00	240	24.00	255	16.00	246	---	---	---	---	---	---
16 x 6	0.70	0.55	18.00	230	26.00	210	26.00	230	---	---	---	---	---	---	---	---
16 x 8	0.70	0.60	18.00	250	26.00	230	26.00	250	---	---	---	---	---	---	---	---
16 x 10	0.70	0.68	18.00	280	26.00	255	26.00	275	---	---	---	---	---	---	18.00	275
16 x 12	0.70	0.75	18.00	305	26.00	285	26.00	305	18.00	325	18.00	305	---	---	18.00	302
16 x 14	0.70	0.66	18.00	335	26.00	310	26.00	315	---	---	---	---	---	---	---	---
18 x 8	0.75	0.60	19.00	295	27.00	270	27.00	295	19.00	300	---	---	---	---	---	---
18 x 10	0.75	0.68	19.00	325	27.00	300	27.00	320	19.00	340	---	---	---	---	---	---
18 x 12	0.75	0.75	19.00	350	27.00	325	27.00	350	19.00	360	---	---	---	---	---	---
18 x 14	0.75	0.66	19.00	380	27.00	355	27.00	365	---	---	---	---	---	---	---	---
18 x 16	0.75	0.70	19.00	415	27.00	390	27.00	395	19.00	405	---	---	---	---	---	---
20 x 8	0.80	0.60	20.00	345	28.00	345	---	---	---	---	---	---	---	---	---	---
20 x 10	0.80	0.68	20.00	375	28.00	345	28.00	375	---	---	---	---	---	---	---	---
20 x 12	0.80	0.75	20.00	405	28.00	375	28.00	405	---	---	---	---	---	---	20.00	404
20 x 14	0.80	0.66	20.00	430	---	---	---	---	---	---	---	---	---	---	---	---
20 x 16	0.80	0.70	20.00	470	28.00	435	28.00	445	20.00	510	---	---	---	---	---	---
20 x 18	0.80	0.75	20.00	510	28.00	475	28.00	485	---	---	---	---	---	---	---	---
24 x 8	0.89	0.60	24.00	482	---	---	---	---	---	---	---	---	---	---	---	---
24 x 12	0.89	0.75	24.00	550	32.00	510	32.00	550	24.00	535	---	---	---	---	---	---
24 x 14	0.89	0.66	24.00	---	---	---	---	---	24.00	543	---	---	---	---	---	---
24 x 16	0.89	0.70	24.00	615	32.00	575	32.00	595	---	---	---	---	---	---	---	---
24 x 18	0.89	0.75	24.00	660	32.00	620	32.00	635	---	---	---	---	---	---	---	---
24 x 20	0.89	0.80	24.00	705	32.00	665	32.00	675	24.00	648	---	---	---	---	24.00	710
30 x 12	1.03	0.75	30.00	920	---	---	---	---	---	---	---	---	---	---	---	---
30 x 16	1.03	0.70	30.00	945	38.00	830	---	---	---	---	---	---	---	---	---	---
30 x 18	1.03	0.75	30.00	990	38.00	885	38.00	965	---	---	---	---	---	---	---	---
30 x 20	1.03	0.80	30.00	1050	38.00	945	38.00	1020	---	---	---	---	---	---	---	---
30 x 24	1.03	0.89	30.00	1165	38.00	1060	38.00	1125	---	---	---	---	---	---	30.00	1170
36 x 20	1.15	0.80	36.00	1450	44.00	1285	44.00	1420	---	---	---	---	---	---	---	---
36 x 24	1.15	0.89	36.00	1580	44.00	1410	44.00	1535	---	---	---	---	---	---	---	---

(Con't)➔

UCAT22.01-2  
 \* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



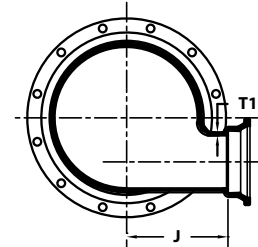
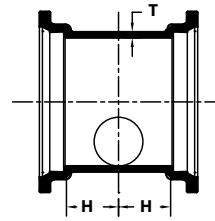
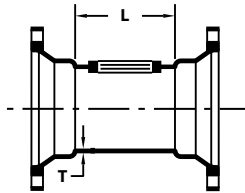




# Full Body MJ Fittings

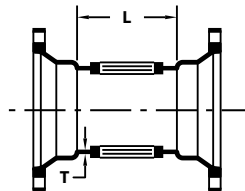
ANSI/AWWA C110/A21.10

REDUCERS (con't)			MJ x MJ		SEB		LEB		MJ x FE		FE x MJ		PE x PE		ECCENTRIC	
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
36 x 30	1.15	1.03	36.00	1855	44.00	1690	44.00	1750	---	---	---	---	---	---	36.00	1865
42 x 24	1.28	0.89	42.00	2060	50.00	1855	50.00	2020	---	---	---	---	---	---	---	---
42 x 30	1.28	1.03	42.00	2370	50.00	2165	50.00	2265	---	---	---	---	---	---	---	---
48 x 30	1.42	1.03	48.00	3005	56.00	2740	56.00	2900	---	---	---	---	---	---	---	---
48 x 36	1.42	1.15	48.00	3370	56.00	3100	56.00	3205	---	---	---	---	---	---	48.00	3439
48 x 42	1.42	1.28	---	---	---	---	---	---	---	---	---	---	---	---	48.00	3815

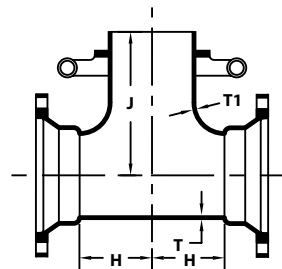


MJ TAPPED TEE				
NOM. SIZE	T	L	MAX TAP	WT (LBS.)
4 x 4	0.52	8.00	3	45
6 x 6	0.55	8.00	3	70
8 x 8	0.60	8.00	3	95
10 x 10	0.68	8.00	3	127
12 x 12	0.75	8.00	3	165
16 x 16	0.70	8.00	3	267
20 x 20	0.80	8.00	3	381
24 x 24	0.89	9.00	3	516

Threads in Accordance with ANSI/ASME B1.20.1



TANGENTIAL TEE					
NOM. SIZE	T	T1	H	J	WT (LBS.)
20 x 4	0.80	0.52	14.00	17.00	820
20 x 8	0.80	0.60	14.00	17.00	846
24 x 4	0.89	0.52	15.00	19.00	1120
24 x 8	0.89	0.60	15.00	19.00	1148



MJ TAPPED CROSS				
NOM. SIZE	T	L	MAX TAP	WT (LBS.)
4 x 4	0.52	8.00	3	45
6 x 6	0.55	8.00	3	70
8 x 8	0.60	8.00	3	95
10 x 10	0.68	8.00	3	130
12 x 12	0.75	8.00	3	165
16 x 16	0.70	8.00	3	267
20 x 20	0.80	8.00	3	381
24 x 24	0.89	9.00	3	516

Threads in Accordance with ANSI/ASME B1.20.1

MJ x SWIVEL HYDRANT TEES W/ SWIVEL GLAND					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.55	0.55	8.00	10.50	150
8 x 6	0.60	0.55	9.00	11.50	200
8 x 8	0.60	0.60	9.00	11.50	210
10 x 6	0.68	0.55	11.00	13.50	239
12 x 6	0.75	0.55	12.00	14.50	341
16 x 6	0.70	0.55	15.00	17.50	619
16 x 8	0.70	0.60	15.00	17.50	649
20 x 6	0.80	0.55	14.00	19.50	829
30 x 6	1.03	0.55	18.00	24.50	2070



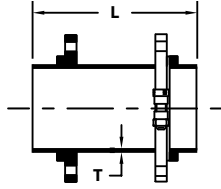
STAR<sup>®</sup> PIPE PRODUCTS



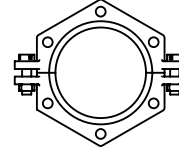
# Full Body MJ Fittings

ANSI/AWWA C110/A21.10

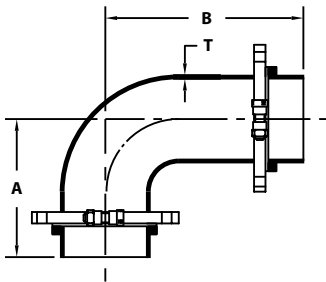
STAR<sup>®</sup> PIPE PRODUCTS



SWIVEL x SOLID HYDRANT ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
4 x 13	0.52	13.00	28
6 x 13	0.55	13.00	54
6 x 18	0.55	18.00	68
6 x 24	0.55	24.00	81
6 x 36	0.55	36.00	110
6 x 48	0.55	48.00	139
8 x 13	0.60	13.00	68
8 x 18	0.60	18.00	88
8 x 24	0.60	24.00	112
8 x 48	0.60	48.00	208
12 x 13	0.75	13.00	123



SWIVEL GLANDS		
NOM. SIZE	WT (LBS.)	T-HEAD BOLTS
4	8	(2) 3/4" x 3 1/2"
6	11	(2) 3/4" x 3 1/2"
8	13	(2) 3/4" x 3 1/2"
12	25	(2) 3/4" x 4"



SWIVEL x SWIVEL HYDRANT ELL W/ 2 SWIVEL GLANDS				
NOM. SIZE	T	A	B	WT (LBS.)
6	0.55	10.50	15.50	100
8	0.60	11.50	16.50	140