22U - ANSI/AWWA C110/A21.10
Mechanical Joint Full Body
Ductile Iron Fittings
Revised 4/2018

☐ **DOMESTIC** ☐ **NON-DOMESTIC**

SUBMITTAL: C110 MECHANICAL JOINT PRODUCT

(Current revisions for the noted Standards apply)

SIZES: 2" - 48"

STANDARDS: ANSI/AWWA C110/A21.10, NFPA 13/24, 3" - 12" UL listed and approved (File - Tyler Union)

MATERIAL: Cast of ASTM A536 qualified ductile iron. Date code is cast on and required for traceability.

PRESSURE RATING: *Flanged fittings rated at 250 psi. Mechanical joints 2" – 24" rated at 350 psi and 30" – 48" at 250 psi.
*Note: With rubber annular ring flange gasket, 2" – 24" Flanged fittings can be rated at 350 psi.
Note: Wyes over 12" are not pressure rated. Contact Tyler Union for rating in your application.

DEFLECTION: Joint deflection 5° max for 2"– 12" and 3° max for 14"– 48". Reduces by 50% at nominal pipe & fitting diameters

NSF-61 & NSF372: Meets all requirements including Annex G, Tyler Union's Underwriters Laboratory listing MH16439.

ASPHALT COATING: Per ANSI/AWWA C104/A21.4 and ANSI/AWWA C110/A21.10.

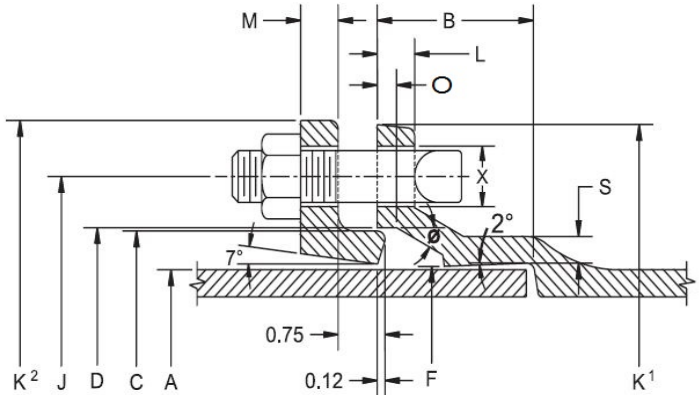
CEMENT LINING: Per ANSI/AWWA C104/A21.4, with double cement lining available upon request.

EPOXY COATING: Fusion bonded epoxy per ANSI/AWWA C116/A21.16. Additional coatings available upon request.

BARE FITTINGS: Available upon request.

FASTNERS: High strength low alloy weathering steel per ANSI/AWWA C111/A21.11 and ASTM A242

INSTALLATION: Install per AWWA C600/C651 using pipe conforming to ANSI/AWWA C151/A21.51 or AWWA C900/905.



NOMINAL JOINT DIMENSIONS IN INCHES

Size Inches	A Dia. DI Pipe	B Hub Depth	C Dia. GLAND	D Dia.	F Dia.	Ø	X	J Dia. GLAND	K¹ Dia.	K² Dia. GLAND	L	M GLAND	O	S	Qty. BOLTS
2	2.51	2.50	3.39	3.50	2.61	28°	3/4	4.75	6.25	6.25	0.73	0.62	0.31	0.44	2
3	3.96	2.50	4.84	4.94	4.06	28°	3/4	6.19	7.69	7.69	0.94	0.62	0.31	0.52	4
4	4.80	2.50	5.92	6.02	4.90	28°	7/8	7.50	9.12	9.12	1.00	0.75	0.31	0.65	4
6	6.90	2.50	8.02	8.12	7.00	28°	7/8	9.50	11.12	11.12	1.06	0.88	0.31	0.70	6
8	9.05	2.50	10.17	10.27	9.15	28°	7/8	11.75	13.37	13.37	1.12	1.00	0.31	0.75	6
10	11.10	2.50	12.22	12.34	11.20	28°	7/8	14.00	15.69	15.62	1.19	1.00	0.31	0.80	8
12	13.20	2.50	14.32	14.44	13.30	28°	7/8	16.25	17.94	17.88	1.25	1.00	0.31	0.85	8
14	15.30	3.50	16.40	16.54	15.44	28°	7/8	18.75	20.31	20.25	1.31	1.25	0.31	0.89	10
16	17.40	3.50	18.50	18.64	17.54	28°	7/8	21.00	22.56	22.50	1.38	1.31	0.31	0.97	12
18	19.50	3.50	20.60	20.74	19.64	28°	7/8	23.25	24.83	24.75	1.44	1.38	0.31	1.05	12
20	21.60	3.50	22.70	22.84	21.74	28°	7/8	25.50	27.08	27.00	1.56	1.44	0.31	1.12	14
24	25.80	3.50	26.90	27.04	25.94	28°	7/8	30.00	31.58	31.50	1.62	1.56	0.31	1.22	16
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	0.38	1.50	20
36	38.30	4.00	39.59	39.76	38.47	20°	1-1/8	43.75	46.00	46.00	2.00	2.00	0.38	1.80	24
42	44.50	4.00	45.79	45.96	44.67	20°	1-3/8	50.62	53.12	53.12	2.00	2.00	0.38	1.95	28
48	50.80	4.00	52.09	52.26	50.97	20°	1-3/8	57.50	60.00	60.00	2.00	2.00	0.38	2.20	32

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New Lenox: 2200 West Haven● New Lenox, IL 60451
Portland: 15670 N. Lombard St. ● Portland, OR 97203
Oxford: 1800 Greenbrier Dear Road ●Anniston, AL 36207

SAMPLE SPECIFICATIONS

(Current ANSI/AWWA revisions apply)

Mechanical joint watermain fittings with accessories 2" through 48" shall be manufactured from ductile iron in accordance with and meet all applicable terms and provisions of standards ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11. Ductile iron mechanical joint fittings 2" through 24" shall be rated for 350 psi working pressure. All ductile iron mechanical joint fittings 30" through 48" shall be rated for 250 psi working pressure. Flanged ductile iron fittings in 24" (610 mm) and smaller sizes may be rated for 350 psi (2,413 kPa) with the use of special (annular ring or comparable) gaskets.

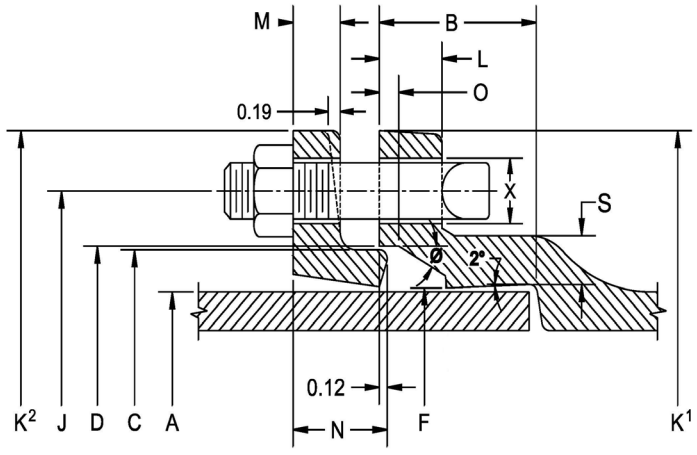
NOTE: EXCEPTIONS: Mechanical joint fittings with flanged branches and 14" and larger caps and plugs are rated for water pressure of 250 PSI.

NOTE: Installation per AWWA C600 and AWWA C651, current revision.

NOTE: Fittings are cement lined and seal coated in accordance with ANSI/AWWA C104/A21.4. Fittings are also available double cement lined, bare or epoxy coated. Coated and lined fittings meet requirements of NSF-61, NSF-372 & Annex G.

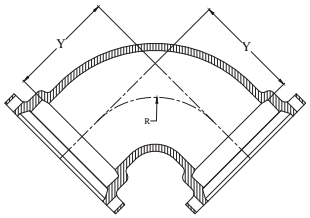
Nominal Joint Dimensions in Inches															
Size	A	B	C	D	F	ø	X	J	K1	K2	L	M	N	O	S
*2	2.50	2.50	3.39	3.50	2.61	28°	3/4	4.75	6.25	6.25	0.75	0.62	1.12	0.31	0.44
3	3.96	2.50	4.84	4.94	4.06	28°	3/4	6.19	7.69	7.69	0.94	0.62	1.37	0.31	0.52
4	4.80	2.50	5.92	6.02	4.90	28°	7/8	7.50	9.12	9.12	1.00	0.75	1.50	0.31	0.65
6	6.90	2.50	8.02	8.12	7.00	28°	7/8	9.50	11.12	11.12	1.06	0.88	1.63	0.31	0.70
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	0.31	0.75
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	0.31	0.80
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	0.31	0.85
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	0.31	0.89
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	0.31	0.97
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	0.31	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	0.31	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	0.31	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	0.38	1.50
36	38.30	4.00	39.59	39.76	38.47	20°	1 1/8	43.75	46.00	46.00	2.00	2.00	2.75	0.38	1.80
42	44.50	4.00	45.79	45.96	44.67	20°	1 3/8	50.62	53.12	53.12	2.00	2.00	2.75	0.38	1.95
48	50.80	4.00	52.09	52.26	50.97	20°	1 3/8	57.50	60.00	60.00	2.00	2.00	2.75	0.38	2.20

*Not included in AWWA C110.

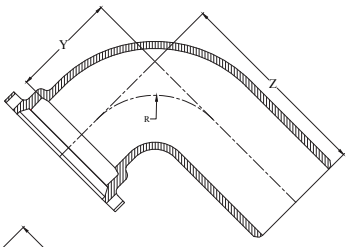


ANSI/AWWA C110 Mechanical Joint Fittings

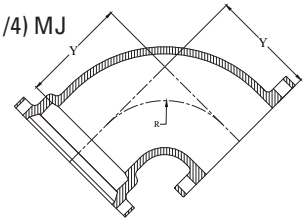
C110 DUCTILE IRON FULL BODY FITTINGS



90° (1/4) MJ



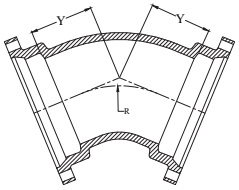
90° (1/4) MJxPE



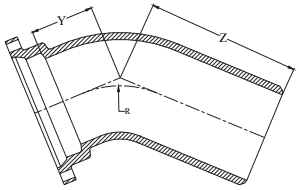
90° (1/4) MJxFE

90° (1/4) BENDS

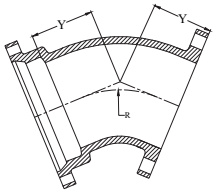
Domestic							Import	
Size	R	Y	Z	Weight			Weight	
				MJxMJ	MJxPE	MJxFE	MJ	MJxPE
*2	2.30	3.30	–	16	–	–	–	–
3	4.00	5.50	13.50	26	36	–	35	35
4	4.50	6.50	14.50	56	53	47	55	50
6	6.00	8.00	16.00	88	80	75	88	97
8	7.00	9.00	17.00	123	119	118	136	153
10	9.00	11.00	19.00	182	181	170	190	190
12	10.00	12.00	20.00	280	252	246	255	255
14	11.50	14.00	22.00	380	–	–	400	–
16	12.50	15.00	23.00	552	–	465	480	410
18	14.00	16.50	24.50	625	600	591	641	577
20	15.50	18.00	26.00	862	775	–	725	650
24	18.50	22.00	30.00	1423	1301	1150	1020	985
30	21.50	25.00	33.00	1942	1920	–	1843	1585
36	24.50	28.00	36.00	2629	2310	–	2513	2310
42	27.50	31.00	–	3410	–	–	3410	–
48	30.50	34.00	–	4595	–	–	4595	–



45° (1/8) MJ



45° (1/8) MJxPE

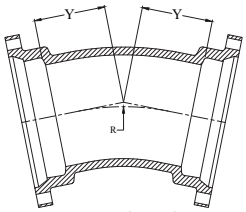


45° (1/8) MJxFE

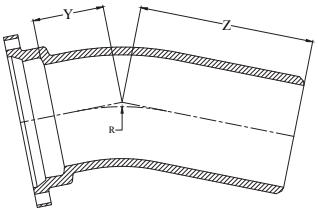
45° (1/8) BENDS

Domestic							Import	
Size	R	Y	Z	Weight			Weight	
				MJ	MJXFE	MJXPE	MJ	MJxPE
*2	1.96	1.80	–	12	–	–	–	–
3	3.62	3.00	11.00	30	–	–	30	30
4	4.81	4.00	12.00	53	48	45	49	48
6	7.25	5.00	13.00	77	60	69	77	81
8	8.44	5.50	13.50	110	107	111	117	123
10	10.88	6.50	14.50	156	148	167	155	168
12	13.25	7.50	15.50	214	215	196	223	215
14	12.06	7.50	15.50	300	–	–	270	–
16	13.25	8.00	16.00	391	–	349	335	320
18	14.50	8.50	16.50	527	416	455	467	395
20	16.88	9.50	17.50	631	543	537	527	500
24	18.12	11.00	19.00	880	1099	825	754	715
30	27.75	15.00	23.00	1898	–	1510	1451	1275
36	35.00	18.00	26.00	2372	–	1930	2176	1930
42	42.25	21.00	–	3020	–	–	2955	–
48	49.50	24.00	–	4170	–	–	4080	–

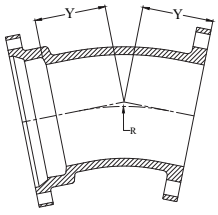
*Not included in ASSA C110.



22½° (1/16) MJ



22½° (1/16) MJxPE



22½° (1/16) MJxFE

22 1/2° (1/16) BENDS

Domestic							Import	
Size	R	Y	Z	Weight			Weight	
				MJ	MJXFE*	MJXPE	MJ	MJxPE
3	7.56	3.00	11.00	30	–	–	30	–
4	10.06	4.00	12.00	52	–	–	51	45
6	15.06	5.00	13.00	77	71	70	75	70
8	17.62	5.50	13.50	110	107	163	108	108
10	22.62	6.50	14.50	156	155	163	159	160
12	27.62	7.50	15.50	214	215	212	199	220
14	25.12	7.50	15.50	300	–	–	275	–
16	27.62	8.00	16.00	391	344	334	318	325
18	30.19	8.50	16.50	527	422	423	430	405
20	35.19	9.50	17.50	631	–	575	545	505
24	37.69	11.00	19.00	880	800	930	758	725
30	57.81	15.00	23.00	1898	–	1540	1400	1400
36	72.88	18.00	26.00	2372	–	1970	2121	1970
42	88.00	21.00	–	3020	–	–	3020	–
48	103.06	24.00	–	4170	–	–	4170	–

Tyler Union does not recommend the use of wedge action restraints on plain end fittings

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