

PRODUCT SUBMITTALS FOR:

VOGUS U3

CONTRACTOR:

V.K. KNOWLTON

UTILITY PROVIDER:

GVSUD / WATER

UNDERGROUND UTILITY MATERIAL SUPPLIED BY:

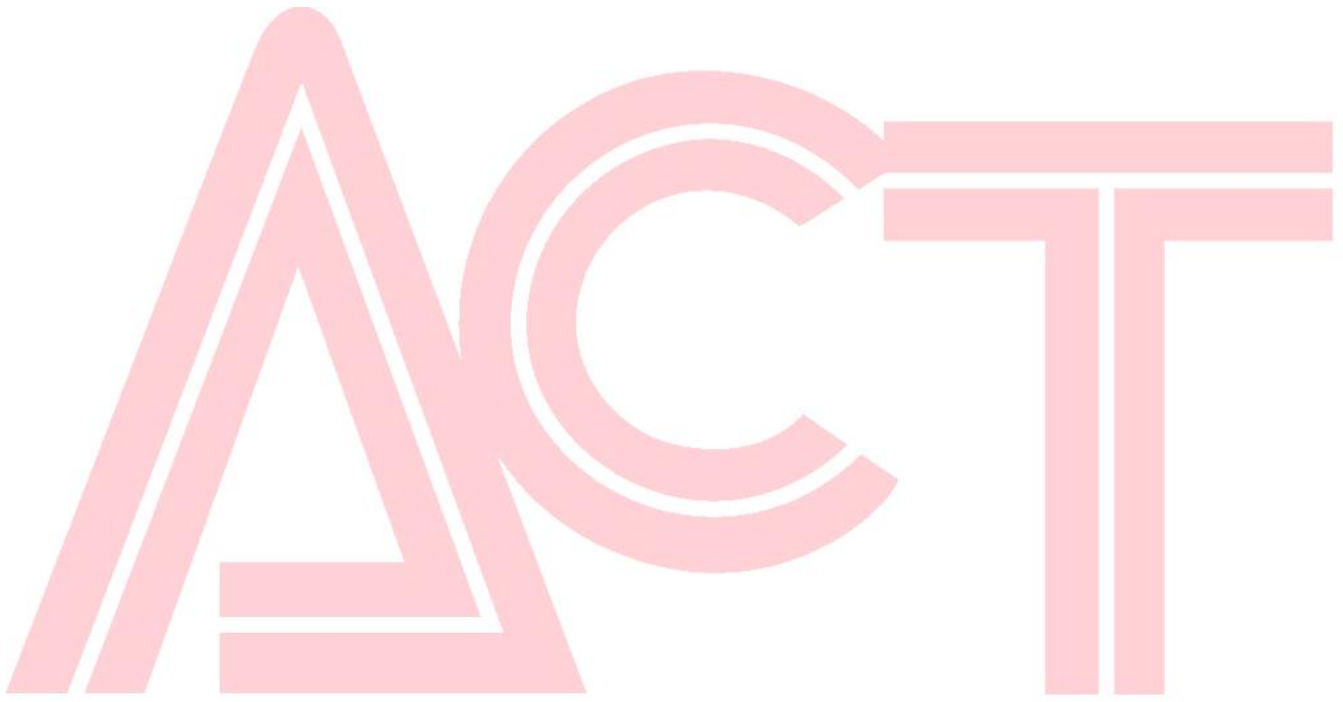
ACT PIPE & SUPPLY

4719 DODGE ST

SAN ANTONIO, TX 78217

210-946-6969

WATER



UNDERGROUND UTILITY MATERIAL SUPPLIED BY:

PIPE & SUPPLY

ACT PIPE & SUPPLY

4719 DODGE ST

SAN ANTONIO, TX 78217

210-946-6969



Building essentials
for a better tomorrow™

ULTRA BLUE™ PVCO

AWWA C909 PIPE

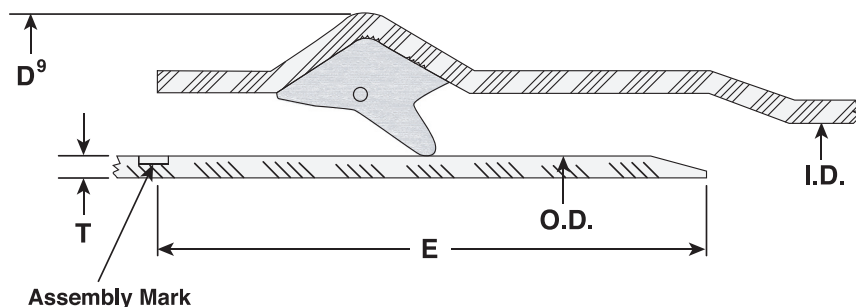


SUBMITTAL AND DATA SHEET

PIPE SIZE (IN)	APPROX. BELL O.D. (IN)	AVERAGE O.D. (IN)	MIN. T. (IN)	APPROX. ID (IN)	STOP LINE DISTANCE MIN. E (IN)	APPROX. WEIGHT (LBS/FT)	APPROX. WEIGHT (LBS/JNT)
Pressure Class 235*							
6	8.53	6.90	0.221	6.43	5 3/4	3.21	69
8	10.83	9.05	0.290	8.44	6 1/2	5.50	117
10	13.43	11.10	0.356	10.35	7 1/4	8.36	169
12	15.72	13.20	0.423	12.31	7 3/4	11.87	239
Pressure Class 165							
16	20.05	17.40	0.395	16.56	9 1/2	14.51	300

* UL 1285 Listed — 6"-12" PC 235

* Check for availability.



I.D. : Inside Diameter

O.D. : Outside Diameter

T. : Wall Thickness

D⁹ : Bell Outside Diameter

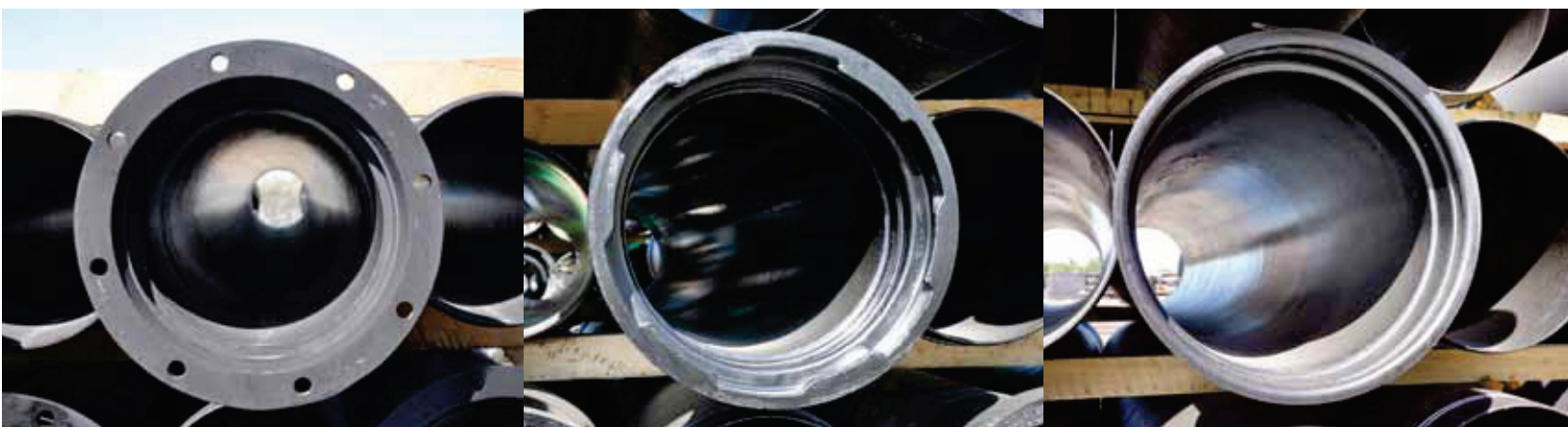
E : Distance between Assembly Mark to the end of spigot.

Product Standard:	ANSI/AWWA C909
	UL1285 6"-12" PC 235
Pipe Compound:	ASTM D1784 Cells Class 12454
Gasket:	ASTM F477
Integral Bell Joint:	ASTM D3139
Certifications:	ANSI/NSF Standard 61
	UL1285 6"-12" PC 235
Pipe Length:	20 feet (+/- 1") laying length
Installation:	AWWA C605
	JM Eagle™ Installation Guide



For Generations

MCWANE DUCTILE IRON PIPE



NSF 61



ISO 9001



DIPRA

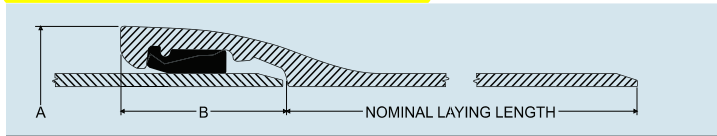


Boltless restrained joint systems • Multiple design options available from 3"–36" •
Fast and easy installation • 350 psi pressure rating • Independently tested



www.mcwane.com

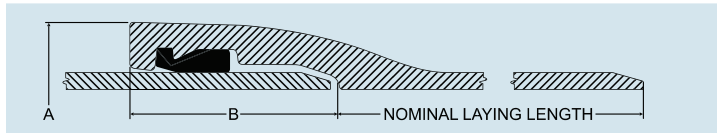
TYTON® AND FASTITE® JOINT PIPE



Tyton® Joint

Pipe Size In.	Pipe Thickness In.		Outside Diameter In.	*Dimensions In.	
	From	To		A	B
3	.25	.40	3.96	5.80	3.00
4	.25	.41	4.80	7.10	3.15
6	.25	.43	6.90	8.63	3.38
8	.25	.45	9.05	10.94	3.69
10	.26	.47	11.10	13.32	3.75
12	.28	.49	13.20	15.06	3.75
14	.28	.51	15.30	17.80	5.00
16	.30	.52	17.40	19.98	5.00
18	.31	.53	19.50	22.00	5.00
20	.33	.54	21.60	24.12	5.25
24	.33	.56	25.80	28.43	5.50
30	.34	.63	32.00	35.40	6.55
36	.38	.73	38.30	41.84	7.00

*Nominal laying length is 18 ft.

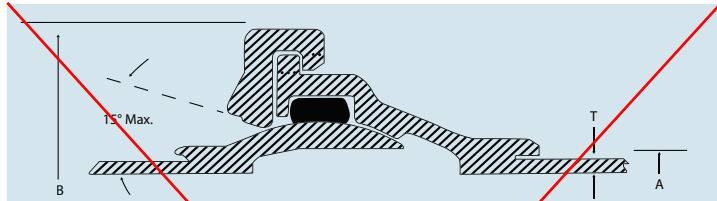


Fastite® Joint

Pipe Size In.	Pipe Thickness In.		Outside Diameter In.	*Dimensions In.	
	From	To		A	B
30	.34	.63	32.00	34.95	6.50
36	.38	.73	38.30	41.37	6.50

*Nominal laying length is 18 ft.

BALL AND SOCKET JOINT PIPE



Pipe Size In.	Thickness		A Pipe O.D.	B Retainer O.D.	Full Length Weight - Lb.**			Safe End Pull Lb.
	Class (A21.51)	T			As Shipped	Under Water		
						Full of Air	Full of Water	
6	55	.40	6.90	13.88	545	240	465	50,000
8	55	.42	9.05	16.63	770	240	655	70,000
10	55	.44	11.10	19.13	1005	220	860	95,000
12	55	.46	13.20	22.00	1270	155	1080	120,000
14	56	.51	15.30	24.50	1655	160	1410	145,000
16	56	.52	17.40	27.00	1990	45	1685	165,000
18	56	.53	19.50	30.00	2375	-70	2015	195,000
	58*	.59			2560	110	2170	
20	56	.54	21.60	32.75	2810	-200	2375	210,000
	59*	.63			3110	100	2635	
24	56	.56	25.80	38.25	3700	-620	3110	260,000
	62*	.74			4415	95	3715	
30	58	.71	32.00	46.25	5855	-900	4920	335,000
	61*	.83			6435	-180	5360	
36	57	.78	38.30	54.25	8145	-1300	6880	400,000
	59*	.88			8725	-725	7330	

* Thickness required to overcome buoyancy.

** Weights listed are for 18'-0" laying lengths. Nominal full lengths vary by size.

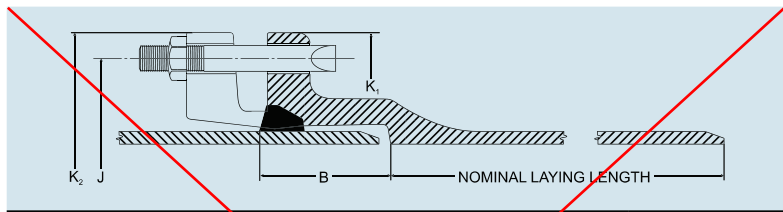
Pipe, Bell, Ball and Retainer are ductile iron.

Dimensions and weights are subject to manufacturing tolerances.

6"-24" pressure rating: 350 psi

30"-36" pressure rating: 250 psi

MECHANICAL JOINT PIPE



Pipe Size In.	Pipe Thickness In.		Outside Diameter	*Dimensions In.						Bolts		Bell Weight Lb.	Gland** Bolts Gasket Weight Lb.
	From	To		In.	B	J	K1	K2	No.	Size In.	Length In.		
3	.25	.40	3.96	2.50	6.19	7.62	7.69	4	5/8	3	11	7	
4	.26	.41	4.80	2.50	7.50	9.06	9.12	4	3/4	3-1/2	16	10	
6	.25	.43	6.90	2.50	9.50	11.06	11.12	6	3/4	3-1/2	18	16	
8	.27	.45	9.05	2.50	11.75	13.31	13.37	6	3/4	4	24	25	
10	.29	.47	11.10	2.50	14.00	15.62	15.62	8	3/4	4	31	30	
12	.31	.49	13.20	2.50	16.25	17.88	17.88	8	3/4	4	37	40	
14	.33	.51	15.30	3.50	18.75	20.25	20.25	10	3/4	4-1/2	61	45	
16	.34	.52	17.40	3.50	21.00	22.50	22.50	12	3/4	4-1/2	74	55	
18	.35	.53	19.50	3.50	23.25	24.75	24.75	12	3/4	4-1/2	85	65	
20	.36	.54	21.60	3.50	25.50	27.00	27.00	14	3/4	4-1/2	98	85	
24	.38	.56	25.80	3.50	30.00	31.50	31.50	16	3/4	5	123	105	

* Nominal laying length is 18 ft.

** Weight shown for regular grey cast iron follower gland, corton bolts, and rubber gasket.

STANDARD DIMENSIONS AND WEIGHTS OF 3" THROUGH 36" PUSH-ON JOINT DUCTILE IRON PIPE

Pipe Size In.	Pressure Class psi	Nominal Thickness In.	OD* In.	Wt. of Barrel Per Ft. † Lb.	Tyton® Joint		
					Wt. of Bell Lb.	Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft. ‡ Lb.
3	350	0.25	3.96	8.90	7.00	185	9.20
4	350	0.25	4.80	10.90	9.00	225	11.30
6	350	0.25	6.90	16.00	11.00	300	16.60
8	350	0.25	9.05	21.10	17.00	395	22.00
10	350	0.26	11.10	27.10	24.00	510	28.40
12	350	0.28	13.20	34.80	29.00	655	36.40
14	250	0.28	15.30	40.40	45.00	770	42.90
	300	0.30	15.30	43.30	45.00	825	45.80
	350	0.31	15.30	44.70	45.00	850	47.20
16	250	0.30	17.40	49.30	54.00	940	52.30
	300	0.32	17.40	52.50	54.00	1000	55.50
	350	0.34	17.40	55.80	54.00	1060	58.80
18	250	0.31	19.50	57.20	59.00	1090	60.50
	300	0.34	19.50	62.60	59.00	1185	65.90
	350	0.36	19.50	66.20	59.00	1250	69.50
20	250	0.33	21.60	67.50	74.00	1290	71.60
	300	0.36	21.60	73.50	74.00	1395	77.60
	350	0.38	21.60	77.50	74.00	1470	81.60
24	200	0.33	25.80	80.80	95.00	1550	86.10
	250	0.37	25.80	90.50	95.00	1725	95.80
	300	0.40	25.80	97.70	95.00	1855	103.00
	350	0.43	25.80	104.90	95.00	1985	110.20
30**	150	0.34	32.00	103.50	139.00	2000	111.20
	200	0.38	32.00	115.50	139.00	2220	123.20
	250	0.42	32.00	127.50	139.00	2435	135.20
	300	0.45	32.00	136.50	139.00	2595	144.20
36**	350	0.49	32.00	148.40	139.00	2810	156.10
	150	0.38	38.30	138.50	184.00	2675	148.70
	200	0.42	38.30	152.90	184.00	2935	163.10
	250	0.47	38.30	170.90	184.00	3260	181.10
	300	0.51	38.30	185.30	184.00	3520	195.50
	350	0.56	38.30	203.20	184.00	3840	213.40

† Including bell; calculated weight of pipe rounded off to the nearest 5 lb.

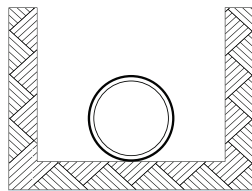
‡ Including bell; average weight per foot, based on calculated weight of pipe before rounding.

* Tolerances of OD of spigot end: 3-12 in. = +0.06 in. & -0.06 in.; 14-24 in. = +0.05 in. & -0.08 in.;

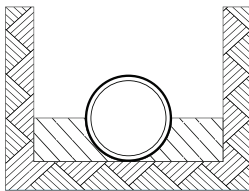
30-36 in. = +0.08 in. & -0.06 in.

** Fastite® Joint

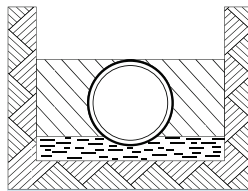
LAYING CONDITIONS



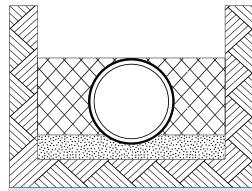
Type 1*
Flat-bottom trench.† Loose backfill.



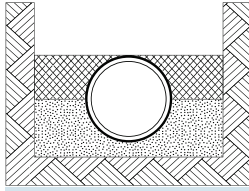
Type 2
Flat-bottom trench.† Backfill lightly consolidated to centerline of pipe.



Type 3
Pipe bedded in 4 in. (100 mm) minimum of loose soil.++ Backfill lightly consolidated to top of pipe.



Type 4
Pipe bedded in sand, gravel, or crushed stone to depth of 1/8 pipe diameter, 4 in. (100 mm) minimum. Backfill compacted to top of pipe. (Approximately 80 percent Standard Proctor, AASHTO T-99.)



Type 5
Pipe bedded in compacted granular material to centerline of pipe. Compacted granular or select material++ to top of pipe. (Approximately 90 percent Standard Proctor, AASHTO T-99.)

* For 14 in. (355-mm) and larger pipe, consideration should be given to the use of laying conditions other than Type 1.

† "Flat-bottom" is defined as undisturbed earth.

++ "Loose soil" or "select material" is defined as native soil excavated from the trench, free of rocks, foreign materials, and frozen earth.

Notes:

Consideration of the pipe-zone embedment conditions included in this figure may be influenced by factors other than pipe strength. For additional information on pipe bedding and backfill, see ANSI/AWWA C600.

American Association of State Highway and Transportation Officials, 444 N. Capitol St. N.W., Suite 225, Washington, DC 20001.

STANDARDS APPLICABLE TO DUCTILE IRON PIPE AND FITTINGS

THICKNESS DESIGN OF DUCTILE IRON PIPE	ANSI/AWWA C150/A21.50
DUCTILE IRON PIPE FOR WATER AND OTHER LIQUIDS	ANSI/AWWA C151/A21.51
	FEDERAL WWP421D, Grade C
DUCTILE IRON PIPE FOR GRAVITY FLOW SERVICE	ANSI/ASTM A746
DUCTILE IRON FITTINGS FOR WATER AND OTHER LIQUIDS	
3" through 36"	ANSI/AWWA C110/A21.10
DUCTILE IRON COMPACT FITTINGS	
3" through 24"	ANSI/AWWA C153/A21.53
FLANGED FITTINGS	ANSI/AWWA C110/A21.10
	ANSI B16.1
DUCTILE IRON PIPE WITH THREADED FLANGES	ANSI/AWWA C115/21.15
COATINGS AND LININGS	
Asphaltic	ANSI/AWWA C151/A21.51
	ANSI/AWWA C110/A21.10
	ANSI/AWWA C153/A21.53
Cement Lining	ANSI/AWWA C104/A21.4
Various Epoxy Linings and Coatings	MANUFACTURER'S STANDARD
Exterior Polyethylene Encasement	ANSI/AWWA C105/A21.5
JOINTS – PIPE AND FITTINGS	
Push-On and Mechanical Rubber-Gasket Joints	ANSI/AWWA C111/A21.11
	FEDERAL WWP421D
Flanged	ANSI/AWWA C115/A21.15
	ANSI B16.1
Grooved and Shouldered	ANSI/AWWA C606
PIPE THREADS	ANSI B2.1
INSTALLATION	ANSI/AWWA C600

DIMENSION AND WEIGHTS FOR SPECIAL CLASSES OF PUSH-ON JOINT AND MECHANICAL JOINT DUCTILE IRON PIPE

Pipe Size In.	Thickness Class	Nominal Thickness In.	OD* In.	Wt. of Barrel Per Ft. † Lb.	Tyton® Joint		
					Wt. of Bell Lb.	Wt. Per Lgth.† Lb.	Avg. Wt. Per Ft.± Lb.
3	52	.28	3.96	9.90	9	205	70.40
3	54	.34	3.96	11.80	9	245	12.20
4	51	.26	4.80	11.30	11	235	11.80
4	52	.29	4.80	12.60	11	265	13.20
4	53	.32	4.80	13.80	11	285	14.40
4	54	.35	4.80	15.00	11	310	15.60
6	50	.25	6.90	16.00	13	300	16.70
6	51	.28	6.90	17.80	13	335	18.50
6	52	.31	6.90	19.60	13	365	20.30
6	53	.34	6.90	21.40	13	400	22.10
6	54	.37	6.90	23.20	13	430	23.90
6	55	.40	6.90	25.00	13	465	25.70
6	56	.43	6.90	26.70	13	490	27.40
8	50	.27	9.05	22.80	20	430	23.90
8	51	.30	9.05	25.20	20	480	26.30
8	52	.33	9.05	27.70	20	525	28.80
8	53	.36	9.05	30.10	20	570	31.20
8	54	.39	9.05	32.50	20	610	33.60
8	55	.42	9.05	34.80	20	650	35.90
8	56	.45	9.05	37.20	20	695	38.30
10	50	.29	11.10	30.10	27	575	31.60
10	51	.32	11.10	33.20	27	630	34.70
10	52	.35	11.10	36.20	27	685	37.70
10	53	.38	11.10	39.20	27	740	40.70
10	54	.41	11.10	42.10	27	790	43.60
10	55	.44	11.10	45.10	27	845	46.60
10	56	.47	11.10	48.00	27	900	49.50
12	50	.31	13.20	38.40	31	735	40.10
12	51	.34	13.20	42.00	31	800	43.70
12	52	.37	13.20	45.60	31	865	47.30
12	53	.40	13.20	49.20	31	930	50.90
12	54	.43	13.20	52.80	31	995	54.50
12	55	.46	13.20	56.30	31	1055	58.00
12	56	.49	13.20	59.90	31	1120	61.60
14	50	.33	15.30	47.50	59	915	50.80
14	51	.36	15.30	51.70	59	990	55.00
14	52	.39	15.30	55.90	59	1065	59.20
14	53	.42	15.30	60.10	59	1140	63.40
14	54	.45	15.30	64.20	59	1215	67.50
14	55	.48	15.30	68.40	59	1290	71.70
14	56	.51	15.30	72.50	59	1365	75.80
16	50	.34	17.40	55.80	65	1070	59.40
16	51	.37	17.40	60.60	65	1155	64.20
16	52	.40	17.40	65.40	65	1240	69.00
16	53	.43	17.40	70.10	65	1325	73.70
16	54	.46	17.40	74.90	65	1415	78.50
16	55	.49	17.40	79.70	65	1500	83.30
16	56	.52	17.40	84.40	65	1585	88.00
18	50	.35	19.50	64.40	74	1235	68.50
18	51	.38	19.50	69.80	74	1330	73.90
18	52	.41	19.50	75.20	74	1430	79.30
18	53	.44	19.50	80.60	74	1525	84.70
18	54	.47	19.50	86.00	74	1620	90.10
18	55	.50	19.50	91.30	74	1715	95.40
18	56	.53	19.50	96.70	74	1815	100.80
20	50	.36	21.60	73.50	80	1405	77.90
20	51	.39	21.60	79.50	80	1510	83.90
20	52	.42	21.60	85.50	80	1620	89.90
20	54	.48	21.60	97.50	80	1835	101.90
20	55	.51	21.60	103.40	80	1940	107.80
20	56	.54	21.60	109.30	80	2045	113.70
24	50	.38	25.80	92.90	101	1775	98.50
24	51	.41	25.80	100.10	101	1905	105.70
24	52	.44	25.80	107.30	101	2030	112.90
24	53	.47	25.80	114.40	101	2160	120.00
24	54	.50	25.80	121.60	101	2290	127.20
24	55	.53	25.80	128.80	101	2420	134.40
24	56	.56	25.80	135.90	101	2545	141.50
30**	50	.39	32.00	118.50	170	2305	127.90
30**	51	.43	32.00	130.50	170	2520	139.90
30**	52	.47	32.00	142.50	170	2735	151.90
30**	53	.51	32.00	154.40	170	2950	163.80
30**	54	.55	32.00	166.30	170	3165	175.70
30**	55	.59	32.00	178.20	170	3380	187.60
30**	56	.63	32.00	190.00	170	3590	199.40
36**	50	.43	38.30	156.50	239	3055	169.80
36**	51	.48	38.30	174.50	239	3380	187.80
36**	52	.53	38.30	192.40	239	3700	205.70
36**	53	.58	38.30	210.30	239	4025	223.60
36**	54	.63	38.30	228.10	239	4345	241.40
36**	55	.68	38.30	245.90	239	4665	259.20
36**	56	.73	38.30	263.70	239	4985	277.00

†Including bell; calculated weight of pipe rounded off to the nearest 5lb.

±Including bell; average weight per foot, based on calculated weight of pipe before rounding.

*Tolerances of OD of spigot end; 3–12 in. ±0.06 in., 14–24 in. ±0.05 in., 30–36 in. ±0.08 in., 42–60 in. ±0.06 in.

**Fastite® Joint



**ATLANTIC STATES
CAST IRON PIPE CO.**
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
atlanticstates.com



**CLOW WATER
SYSTEMS
COMPANY**
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651
clowwater.com



**PACIFIC STATES
CAST IRON
PIPE CO.**
1401 E 2000 S.
Provo, UT 84603
801-373-6910
pscipco.com



**CANADA PIPE
COMPANY ULC**
1757 Burlington St. E.
Hamilton, ON L8N-3R5
905-547-3251
canadapipe.com



**MCWANE
CAST IRON PIPE CO.**
1201 Vanderbilt Road
Birmingham, AL 35234
205-322-3521
mcwanepipe.com



NSF 61



ISO 9001

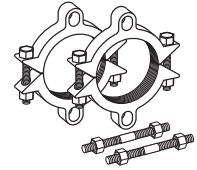


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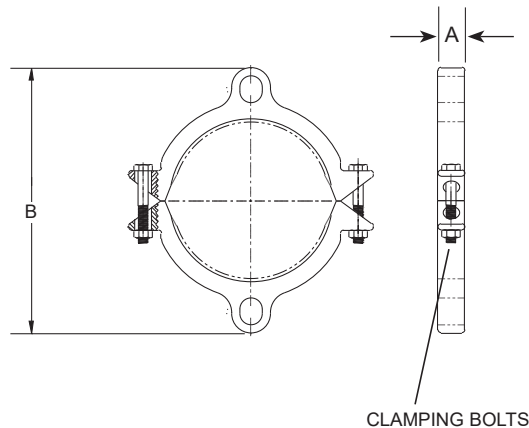
SUBMITTAL INFORMATION

Uni-Flange® Restraint - (UFR1390-C-x-I style)

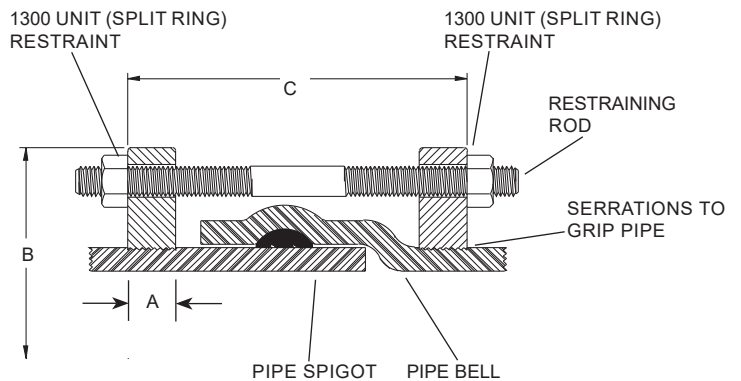


SERIES 1390-C RESTRAINT HARNESS FOR C900 PVC AND DUCTILE IRON PIPE BELL JOINTS CAST SIZES 4" - 12"

1300 SPLIT RESTRAINT



1390 ASSEMBLY



NOM PIPE SIZE	PVC PIPE WITH DI PIPE OD STYLE 1390-C		A	B APPROX	C MAX	RESTRAINT RODS		CLAMPING BOLTS PER GLAND		MAX. BELL CLEARANCE	APPROX. WEIGHT (Lbs.)	✓ SUBMITTED ITEMS
	OD (IN.)	CATALOG No.				No.	SIZE	No.	SIZE			
4"	4.80	UFR1390-C-4-I	1-1/8"	9-1/8"	15"	2	3/4" x 17"	2	5/8" x 3-1/2"	6.63"	17.0	
6"	6.90	UFR1390-C-6-I	1-1/8"	11-1/8"	15"	2	3/4" x 17"	2	5/8" x 3-1/2"	8.63"	18.5	
8"	9.05	UFR1390-C-8-I	1-1/4"	14-5/8"	15"	2	3/4" x 17"	2	3/4" x 4"	12.13"	29.0	
10"	11.10	UFR1390-C-10-I	1-3/8"	16-5/8"	22"	4	3/4" x 24"	2	7/8" x 5"	14.13"	53.0	
12"	13.20	UFR1390-C-12-I	1-3/8"	19-1/4"	22"	4	3/4" x 24"	2	7/8" x 5"	16.75"	56.5	

FEATURES

- Cast ductile iron per ASTM A536 grade 65-45-12
- Restraining Rods (included) - High strength, low alloy steel per ANSI / AWWA C111 / A21.11
- Side Clamping Bolts and Nuts - Grade 5, zinc-plated
- Rated at full rated pressure of any class of PVC pipe, minimum 2:1 safety factor
- Rated at 250 psi on ductile iron pipe in sizes 4" - 8" and 200 psi in size 10" and 12"
- 360° contact and support of the pipe wall
- Black Armorguard e-coat epoxy coating - NSF 61 approved

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.



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Phone: 260-563-3171 / Fax: 800-826-3487
Overseas Fax: 260-563-0167
www.fordmeterbox.com



09/02/21

Submitted By:

DETECTABLE TAPE (5.0 MIL)

Solid Aluminum Foil Core • Virgin Clear Polypropylene Film Laminated Top Structure
Virgin Clear Polyethylene Film Laminated Base Structure • Reverse Printed Polypropylene Structure
Acid, Alkali, Chemical, and Oil Resistant • Direct Burial Rated • Made in the USA



Applications and Information

- **Pro-Line's Detectable Marking Tape** is used for detecting, locating, identifying, and protecting buried utility lines for gas, water, sewer, telecommunication, and electrical markets. The width of tape used, is determined by the size of, and depth at which the underground utility line is buried. The depth at which detectable tape is buried, is determined by the width of the tape used.
- **DETECT:** Aluminum core is detected through means of inductive locating.
- **LOCATE:** Line is located and marked after inductive locating is performed.
- **IDENTIFY:** Utility type is identified by both the APWA color-code and utility legend printed on the marking tape.
- **PROTECT:** Detectable tape works 24 hours a day and year round, even if tape is not inductively located during excavation, the tape provides a "stop-sign" effect that is highly visible.

Standards and References

Pro-Line's Detectable Marking Tape meets or exceeds all applicable ASTM specifications.

- ASTM D2103-08: Standard Specification for Polyethylene Films and Sheeting.
- ASTM D882-09: Standard Test Method for Tensile Properties and Elongation of Thin Plastic Sheeting.
- ASTM D2578-08: Standard Test Method for Wetting Tension of Polyethylene and Polypropylene Films.
- ASTM D792-08: Standard Test Methods for Density of Plastics by Displacement.
- ASTM D671-93: Standard Test Method for Flexural Fatigue of Plastics.

Construction

Pro-Line's Detectable Marking Tape consists of a minimum 5.0 mil overall thickness. Construction is 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 solid aluminum foil core and then laminated to a 3.75 mil clear virgin polyethylene film. Tape is printed with our APWA Color-Coded, patented "Diagonally Striped" design with big, bold, black lettering to identify a specific buried utility line.

Specifications

DETECTABLE UNDERGROUND MARKING TAPE

Underground marking tape shall be a (2", 3", 4", 6", or 12" width), detectable marking tape, with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a **0.35 mil solid aluminum foil core**, and then laminated to a 3.75 mil clear virgin polyethylene film. Tape shall be printed using a diagonally striped design for maximum visibility, and meet the APWA Color-Code standard for identification of buried utilities. Detectable marking tape shall be **Pro-Line Safety Products** or approved equal and made in the USA.

TABLE 1: DETECTABLE TAPE CONSTRUCTION (Polypropylene, Aluminum Foil, and Polyethylene)

PROPERTY	2" WIDTH	3" WIDTH	4" WIDTH	6" WIDTH	12" WIDTH
Nominal Overall Thickness	5.0 mil	5.0 mil	5.0 mil	5.0 mil	5.0 mil
Aluminum Foil Core Thickness	0.35 mil	0.35 mil	0.35 mil	0.35 mil	0.35 mil
Polyethylene Film Thickness	3.75 mil	3.75 mil	3.75 mil	3.75 mil	3.75 mil
Polypropylene Film Thickness	0.80 mil	0.80 mil	0.80 mil	0.80 mil	0.80 mil
Polypropylene Print Method	Reverse Printed	Reverse Printed	Reverse Printed	Reverse Printed	Reverse Printed
Print Design #1 (Patented)	Diagonal Striped	Diagonal Striped	Diagonal Striped	Diagonal Striped	Diagonal Striped
Print Design #2 (Custom)	Solid Block	Solid Block	Solid Block	Solid Block	Solid Block
Print Design #3 (Custom)	Solid Flood	Solid Flood	Solid Flood	Solid Flood	Solid Flood
Print Design Color-Code	APWA Color-Code	APWA Color-Code	APWA Color-Code	APWA Color-Code	APWA Color-Code

**Diagonal striped design is a PATENTED design of Pro-Line Safety Products that enhances tape visibility for superior protection.*

**Please note that there may be a nominal + or - 10% difference throughout the overall thickness.*

TABLE 2: TESTING SPECIFICATIONS (Physical and Mechanical Properties)

TEST DESCRIPTION	STANDARD	2" WIDTH	3" WIDTH	4" WIDTH	6" WIDTH	12" WIDTH
Aluminum Foil Core	MFG. SPECS	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade
Polyethylene Film	MFG. SPECS	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade
Polypropylene Film	MFG. SPECS	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade	Virgin Grade
Adhesive Type	MFG. SPECS	AV1257/CA100	AV1257/CA100	AV1257/CA100	AV1257/CA100	AV1257/CA100
Adhesive Bond Strength	BOILING WATER	5 hrs W/O Peel	5 hrs W/O Peel	5 hrs W/O Peel	5 hrs W/O Peel	5 hrs W/O Peel
Printed Inks	MFG. SPECS	Chromabond	Chromabond	Chromabond	Chromabond	Chromabond
Print Repeat	MFG. SPECS	Varies by Legend	Varies by Legend	Varies by Legend	Varies by Legend	Varies by Legend
Coefficient Friction	ASTM D4521-96	0.247 Static	0.247 Static	0.247 Static	0.247 Static	0.247 Static
Density	ASTM D792-66	1.09 g/cm ³	1.09 g/cm ³	1.09 g/cm ³	1.09 g/cm ³	1.09 g/cm ³
Elongation (MD)	ASTM D882-80A	139%	139%	139%	139%	139%
Elongation (TD)	ASTM D882-80A	80%	80%	80%	80%	80%
Flexural Fatigue	ASTM D671-93	Pliable Hand	Pliable Hand	Pliable Hand	Pliable Hand	Pliable Hand
Printability	ASTM D2578-08	45 Dynes	45 Dynes	45 Dynes	45 Dynes	45 Dynes
Tensile Strength	ASTM D882-09	15,000 psi	15,000 psi	15,000 psi	15,000 psi	15,000 psi

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT PART NO.	SIZE (WIDTH)	NOMINAL OVERALL THICKNESS	NOMINAL THICKNESS OF STRUCTURAL MATERIALS			RECOMMENDED BURIAL DEPTHS FOR DETECTION	PRODUCT WEIGHT PER ROLL	STANDARD PACKAGING
			ALUMINUM FOIL THICKNESS	POLYETHYLENE THICKNESS	POLYPROPYLENE THICKNESS			
10311XXX3	2" x 1000'	5.0 MIL	0.35 MIL	3.75 MIL	0.80 MIL	6-9 inches	4.75 lbs	9 / CARTON
10312XXX3	3" x 1000'	5.0 MIL	0.35 MIL	3.75 MIL	0.80 MIL	9-12 inches	7.13 lbs	6 / CARTON
10313XXX3	4" x 1000'	5.0 MIL	0.35 MIL	3.75 MIL	0.80 MIL	12-15 inches	9.50 lbs	4 / CARTON
10314XXX3	6" x 1000'	5.0 MIL	0.35 MIL	3.75 MIL	0.80 MIL	15-18 inches	14.25 lbs	3 / CARTON
10316XXX3	12" x 1000'	5.0 MIL	0.35 MIL	3.75 MIL	0.80 MIL	18-24 inches	28.50 lbs	1 / CARTON

FOR CUSTOM LEGENDS OR SIZES CALL 800.554.3424

PRINT LEGEND	PART #
CAUTION BURIED CHILLED WATER LINE BELOW	103
CAUTION BURIED GEOTHERMAL LINE BELOW	128
CAUTION BURIED POTABLE WATER LINE BELOW	115
CAUTION BURIED WATER LINE BELOW	125
CAUTION BURIED FORCE MAIN BELOW	208
CAUTION BURIED FORCE MAIN BELOW	308
CAUTION BURIED SANITARY SEWER LINE BELOW	318
CAUTION BURIED SEWER LINE BELOW	319
CAUTION BURIED STORM DRAIN LINE BELOW	321
CAUTION BURIED STORM SEWER LINE BELOW	322

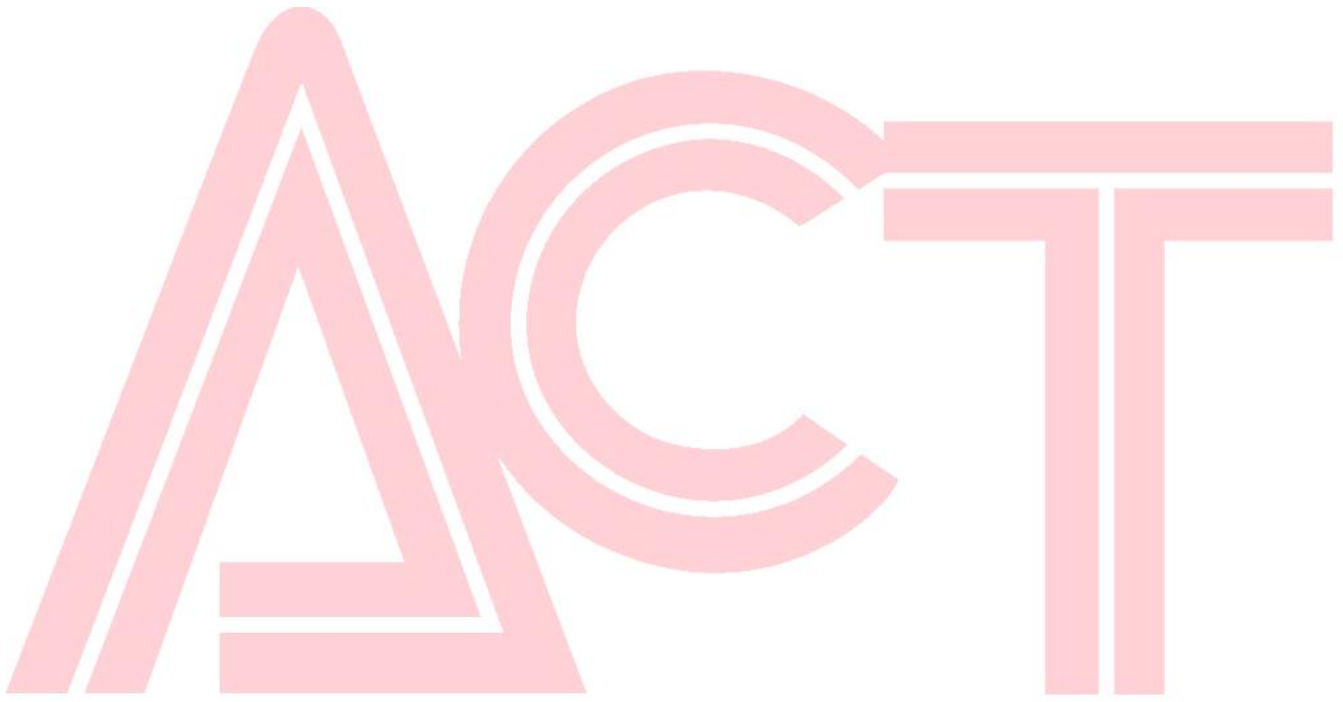
PRINT LEGEND	PART #
CAUTION BURIED CATV LINE BELOW	402
CAUTION BURIED COMMUNICATION LINE BELOW	404
CAUTION BURIED FIBER OPTIC CABLE BELOW	406
CAUTION BURIED TELEPHONE LINE BELOW	423
CAUTION BURIED NON-POTABLE WATER LINE	512
CAUTION BURIED RECLAIMED WATER LINE BELOW	517
CAUTION BURIED ELECTRIC LINE BELOW	605
CAUTION BURIED HIGH VOLTAGE LINE BELOW	610
CAUTION BURIED GAS LINE BELOW	809
CAUTION BURIED PIPELINE BELOW	814



PRO-LINE SAFETY PRODUCTS COMPANY
1099 ATLANTIC DRIVE, UNIT 1 • WEST CHICAGO, IL 60185
TOLL FREE: 800.554.3424



FITTINGS



PIPE & SUPPLY

UNDERGROUND UTILITY MATERIAL SUPPLIED BY:

ACT PIPE & SUPPLY

4719 DODGE ST

SAN ANTONIO, TX 78217

210-946-6969



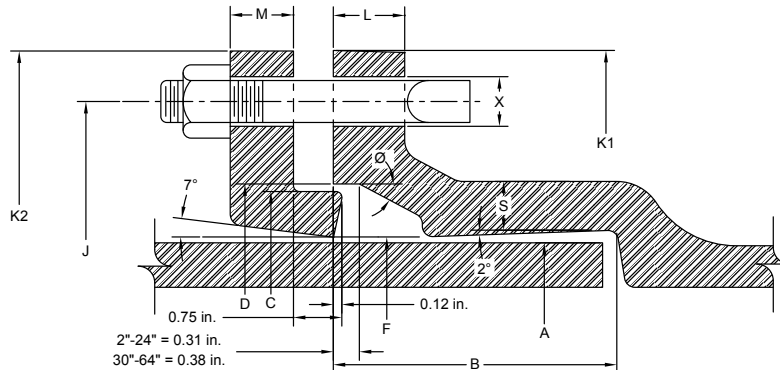
Compact MJ Fittings

ANSI/AWWA C153/A21.53

2" - 64" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

GENERAL SPECIFICATIONS

MATERIAL:	Ductile Iron per ASTM A536
PRESSURE:	350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
TESTING:	In accordance with ANSI/AWWA C153/A21.53, ANSI/AWWA C111/A21.11, UL and FM requirements
LAYING LENGTH:	In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
DEFLECTION:	2" - 4"=8° 6"=7° 8"-12"=5° 14"-16"=3 1/2° 18"-24"=3° 30"-64"=2°
WEIGHTS:	Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
FLANGES:	Flanged ends on fittings match ANSI/AWWA C115/A21.15 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 .
COATING:	Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
GASKETS:	SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 20)
T-BOLTS/NUTS:	Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see pg. 22)
APPROVALS:	3" - 12" UL/ULC Listed 2" and greater are UL/ANSI/NSF Standards 61 and 372 3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
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 . 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/C905



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	6.19	6.25	0.58	0.62	0.36	28°	3/4	5/8 x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	28°	3/4	5/8 x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	28°	7/8	3/4 x 3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	28°	7/8	3/4 x 3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	28°	7/8	3/4 x 3 1/2	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	28°	7/8	3/4 x 3 1/2	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	28°	7/8	3/4 x 3 1/2	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	1.25	0.55	28°	7/8	3/4 x 4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	1.31	0.58	28°	7/8	3/4 x 4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	28°	7/8	3/4 x 4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	28°	7/8	3/4 x 4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	28°	7/8	3/4 x 4 1/2	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	20°	1 1/8	1 x 5 1/2	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	20°	1 1/8	1 x 5 1/2	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	20°	1 3/8	1 1/4 x 6	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	20°	1 3/8	1 1/4 x 6	32
54	57.56	4.00	58.82	59.02	57.73	63.20	65.70	65.70	1.88	2.00	1.50	20°	1 3/8	1 1/4 x 6 1/2	36
60	61.61	4.00	62.87	63.07	61.78	67.72	70.22	70.22	1.88	2.00	1.55	20°	1 3/8	1 1/4 x 6 1/2	36
64	65.67	4.00	66.96	67.13	65.84	71.86	74.36	74.36	1.88	2.00	1.62	20°	1 3/8	1 1/4 x 6 1/2	38

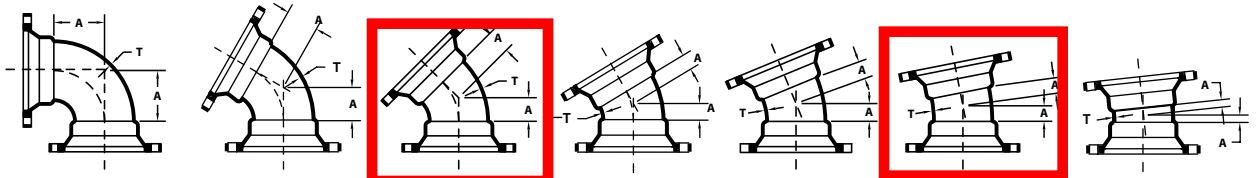
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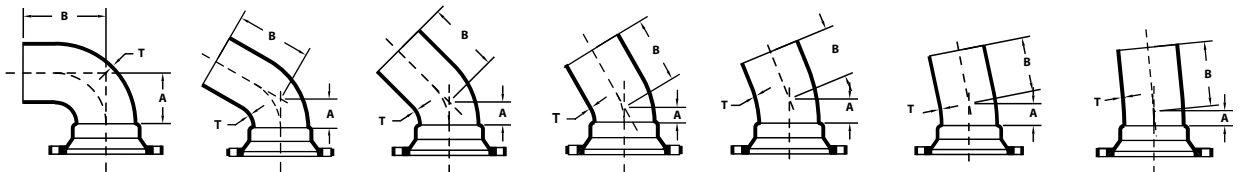


Compact MJ Fittings

ANSI/AWWA C153/A21.53



MJ x MJ BENDS		90° MJ x MJ BENDS (1/4)		60° MJ x MJ BENDS (1/6)		45° MJ x MJ BENDS (1/8)		30° MJ x MJ BENDS (1/12)		22 1/2° MJ x MJ BENDS (1/16)		11 1/4° MJ x MJ BENDS (1/32)		5 5/8° MJ x MJ BENDS (1/64)	
NOM. SIZE	T	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)
2	0.30	3.25	14	-	-	1.80	13	-	-	1.00	9	1.00	8	-	-
3	0.33	3.50	23	-	-	1.50	21	-	-	1.00	16	1.00	14	1.00	13
4	0.34	4.00	27	3.00	21	2.00	23	-	-	1.50	18	1.25	16	1.25	16
6	0.36	5.00	39	4.00	35	3.00	32	-	-	2.00	32	1.50	30	1.50	27
8	0.38	6.50	57	4.50	50	3.50	46	3.00	44	2.50	46	1.75	42	1.75	38
10	0.40	7.50	89	-	-	4.50	70	-	-	3.00	64	2.00	58	2.00	56
12	0.42	9.00	108	6.50	104	5.50	98	4.00	87	3.50	84	2.25	74	2.25	73
14	0.47	11.50	180	-	-	5.00	145	-	-	3.75	140	2.50	128	2.50	121
16	0.50	12.50	264	7.50	210	5.50	202	4.50	177	3.75	178	2.50	148	2.50	150
18	0.54	14.00	335	-	-	6.00	250	-	-	4.50	255	3.00	205	3.00	204
20	0.57	15.00	400	10.50	365	7.00	305	-	-	4.50	262	3.00	245	3.00	239
24	0.61	17.00	565	10.50	479	7.50	405	6.00	385	4.50	412	3.00	315	3.00	317
30	0.66	21.50	1005	13.50	843	11.50	798	9.75	692	6.75	665	4.75	568	4.75	568
36	0.74	24.50	1562	17.00	1350	11.50	1164	11.00	1080	7.75	960	5.00	840	5.00	825
42	0.82	29.25	2506	19.00	2150	14.00	1792	12.00	1465	9.00	1350	6.00	1319	6.00	1125
48	0.90	33.25	3045	21.00	2650	15.00	2390	13.25	2075	10.00	1886	6.50	1700	6.50	1600
54	1.05	37.00	4023	-	-	20.25	3062	-	-	10.25	2198	5.00	1711	-	-
60	1.10	39.50	4714	24.00	3673	21.25	3487	19.00	3307	10.75	2434	7.00	2033	-	-
64	1.16	42.00	5508	-	-	22.25	4000	18.50	3620	11.00	2727	7.00	2245	7.00	2247

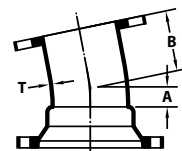
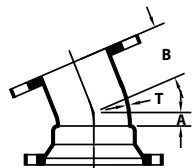
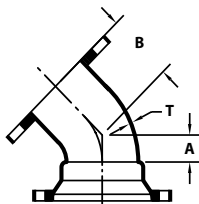
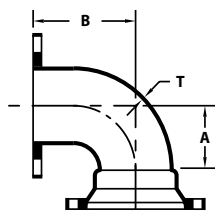


MJ x PE BENDS		90° MJ x PE BENDS (¼)			60° MJ x PE BENDS (⅙)			45° MJ x PE BENDS (⅛)			30° MJ x PE BENDS (¹⁄₁₂)			22 ½° MJ x PE BENDS (¹⁄₁₆)			11 ¼° MJ x PE BENDS (¹⁄₃₂)			5 5⁄8° MJ x PE BENDS (¹⁄₆₄)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
3	0.33	3.50	8.50	16	-	-	-	1.50	7.00	13	-	-	-	1.00	6.50	12	1.00	6.50	12	-	-	-
4	0.34	4.00	9.50	22	-	-	-	2.00	7.50	19	-	-	-	1.50	7.00	18	1.25	6.25	17	-	-	-
6	0.36	5.00	12.00	40	-	-	-	3.00	8.50	31	-	-	-	2.00	7.50	29	1.50	7.00	27	-	-	-
8	0.38	6.50	12.50	61	-	-	-	3.50	9.00	46	-	-	-	2.50	8.00	43	1.75	7.25	39	-	-	-
10	0.40	7.50	13.00	83	-	-	-	4.50	10.00	68	-	-	-	3.00	8.50	61	2.00	7.50	52	-	-	-
12	0.42	9.00	14.50	114	-	-	-	5.50	11.00	95	-	-	-	3.50	9.00	81	2.25	7.75	70	-	-	-
14	0.47	11.50	19.50	197	-	-	-	5.00	13.00	148	-	-	-	3.75	11.25	133	2.50	10.50	122	-	-	-
16	0.50	12.50	20.50	248	-	-	-	5.50	13.50	184	-	-	-	3.75	11.75	166	2.50	10.50	148	-	-	-
18	0.54	14.00	21.00	325	-	-	-	6.00	13.00	235	-	-	-	6.00	13.00	235	6.00	13.00	235	-	-	-
20	0.57	15.00	22.50	390	-	-	-	7.00	14.00	300	-	-	-	7.00	14.00	300	7.00	14.00	300	-	-	-
24	0.61	17.00	25.00	575	-	-	-	7.50	14.50	390	-	-	-	7.50	14.50	395	7.50	14.50	400	-	-	-
30	0.66	22.75	31.75	865	13.50	22.50	846	10.50	19.50	715	9.75	18.75	762	6.75	15.75	600	4.75	13.75	535	4.75	13.75	505
36	0.74	24.50	33.50	1355	-	-	-	12.00	21.00	1040	-	-	-	7.75	16.75	865	5.00	14.00	725	-	-	-
42	0.82	29.25	38.25	2055	-	-	-	14.00	23.00	1460	-	-	-	9.00	18.00	1200	6.00	15.00	1030	-	-	-
48	0.90	33.25	42.25	2805	-	-	-	15.00	24.00	1905	-	-	-	10.00	19.00	1575	6.50	15.50	1290	-	-	-

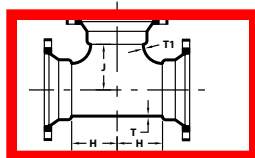
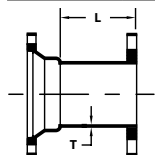


Compact MJ Fittings

ANSI/AWWA C153/A21.53



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	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
3	0.33	3.50	5.50	20	1.50	3.00	17	1.00	3.00	17	1.00	3.00	15
4	0.34	4.00	6.50	26	2.00	4.00	24	1.50	4.00	26	1.25	4.00	19
6	0.36	5.00	8.00	47	3.50	5.00	40	2.00	5.00	36	1.50	5.00	30
8	0.38	6.50	9.00	68	3.50	5.50	57	2.50	5.50	53	1.75	5.50	50
10	0.40	7.50	11.00	102	4.50	6.50	83	3.00	6.50	102	2.00	6.50	75
12	0.42	9.00	12.00	134	5.50	7.50	110	3.50	7.50	134	2.25	7.50	88
14	0.47	11.50	14.00	227	5.00	7.50	207	3.75	7.50	166	---	---	---
16	0.50	12.50	15.00	306	5.50	8.00	239	3.75	8.00	228	2.50	8.00	201
18	0.54	14.00	16.50	357	6.00	8.50	268	4.50	8.50	259	3.00	8.50	247
20	0.57	15.00	18.00	445	7.00	9.50	339	4.50	9.50	321	3.00	9.50	307
24	0.61	17.00	22.00	650	7.50	11.00	474	4.50	11.00	444	3.00	11.00	427
30	0.66	21.50	25.00	1070	10.50	15.00	858	6.75	15.00	764	4.75	15.00	733
36	0.74	24.50	28.00	1554	11.50	18.00	1240	7.75	18.00	1176	5.00	18.00	1118
42	0.82	29.25	31.00	2190	14.00	21.00	1820	---	---	---	6.00	21.00	1627
48	0.90	33.25	34.00	3015	15.00	24.00	2421	---	---	---	---	---	---



MJ x FLANGE ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
3	0.33	3.50	13
4	0.34	3.50	22
6	0.36	3.50	32
8	0.38	3.50	47
10	0.40	4.00	66
12	0.42	4.00	91
14	0.47	5.00	141
16	0.50	5.00	170
18	0.54	5.00	176
20	0.57	5.00	252
24	0.61	5.00	320
30	0.66	7.00	558
36	0.74	8.50	796
42	0.82	12.00	1180
48	0.90	12.00	1499
54	1.05	13.00	1889
60	1.10	13.00	2148

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	0.33	0.33	3.00	3.00	28
4 x 2	.034	0.30	3.00	4.00	29
4 x 3	0.34	0.33	3.50	4.00	30
4 x 4	0.34	0.34	4.00	4.00	32
6 x 3	0.36	0.33	3.50	5.00	42
6 x 4	0.36	0.34	4.00	5.00	46
6 x 4 x 6	0.36	0.36	5.00	5.00	50
6 x 6	0.36	0.36	5.00	5.00	56
6 x 6 x 8	0.36	0.38	6.50	6.50	62
8 x 3	0.38	0.33	4.00	6.50	52
8 x 4	0.38	0.34	4.00	6.50	60
8 x 6	0.38	0.36	5.00	6.50	72
8 x 6 x 6	0.38	0.38	5.00	6.50	62
8 x 6 x 8	0.38	0.38	6.00	6.50	85
8 x 8	0.38	0.38	6.50	6.50	86
10 x 3	0.40	0.33	4.00	7.50	75
10 x 4	0.40	0.34	4.00	7.50	78
10 x 6	0.40	0.36	5.00	7.50	90
10 x 8	0.40	0.38	6.50	7.50	105
10 x 10	0.40	0.40	7.50	7.50	120
12 x 3	0.42	0.33	4.00	8.75	90
12 x 4	0.42	0.34	4.00	8.75	94

(Con't)

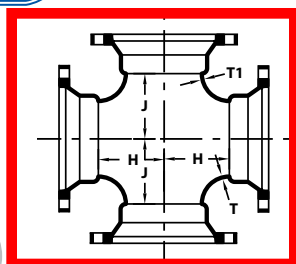
UCAT:22.01

* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



Compact MJ Fittings

ANSI/AWWA C153/A21.53

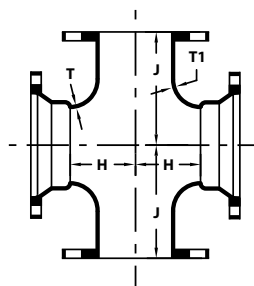


MJ CROSSES

NOM. SIZE	T	T1	H	J	WT (LBS.)
3 x 3	0.33	0.33	3.00	3.00	35
4 x 3	0.34	0.33	3.50	4.00	38
4 x 4	0.34	0.34	4.00	4.00	40
6 x 3	0.36	0.33	3.50	5.00	48
6 x 4	0.36	0.34	4.00	5.00	57
6 x 6	0.36	0.36	5.00	5.00	80
8 x 4	0.38	0.34	4.00	6.00	68
8 x 6	0.38	0.36	5.00	6.00	74
8 x 8	0.38	0.38	6.00	6.00	105
10 x 4	0.40	0.34	4.00	7.00	112
10 x 6	0.40	0.36	5.00	7.00	119
10 x 8	0.40	0.38	6.50	7.00	124
10 x 10	0.40	0.40	7.00	7.00	145
12 x 4	0.42	0.34	4.00	8.50	119
12 x 6	0.42	0.36	5.00	8.50	126
12 x 8	0.42	0.38	6.00	8.50	149
12 x 10	0.42	0.40	7.50	8.50	179
12 x 12	0.42	0.42	8.50	8.50	200
14 x 6	0.47	0.36	6.50	10.50	200
14 x 8	0.47	0.38	7.50	10.50	228
14 x 10	0.47	0.40	8.50	10.50	255
14 x 12	0.47	0.42	9.50	10.50	269
14 x 14	0.47	0.47	10.50	10.50	335
16 x 6	0.50	0.36	6.50	11.50	240
16 x 8	0.50	0.38	7.50	11.50	260
16 x 10	0.50	0.40	8.50	11.50	317
16 x 12	0.50	0.42	9.50	11.50	320
16 x 16	0.50	0.50	11.50	11.50	385
18 x 12	0.54	0.42	9.50	12.50	348
18 x 18	0.54	0.54	12.50	12.50	478
20 x 8	0.57	0.38	8.00	14.00	379
20 x 10	0.57	0.40	9.00	14.00	395
20 x 12	0.57	0.42	10.00	14.00	413
20 x 16	0.57	0.50	12.00	14.00	527
20 x 18	0.57	0.54	13.00	14.00	554
20 x 20	0.57	0.57	14.00	14.00	590
24 x 6	0.61	0.36	7.00	16.00	481
24 x 8	0.61	0.38	8.00	16.00	500
24 x 10	0.61	0.40	9.00	16.00	499
24 x 12	0.61	0.42	10.00	16.00	529
24 x 16	0.61	0.50	12.00	16.00	641
24 x 18	0.61	0.54	13.00	16.00	868
24 x 20	0.61	0.57	14.00	16.00	757
24 x 24	0.61	0.61	16.00	16.00	881

MJ CROSSES (Con't)

NOM. SIZE	T	T1	H	J	WT (LBS.)
30 x 12	0.66	0.42	10.00	20.00	882
30 x 20	0.66	0.57	15.00	20.00	1074
30 x 24	0.66	0.61	16.00	20.00	1246
30 x 30	0.66	0.66	22.00	22.00	1691
36 x 16	0.74	0.50	12.50	23.50	1262
36 x 24	0.74	0.61	16.00	23.50	1785
36 x 36	0.74	0.74	26.00	26.00	2811
42 x 24	0.82	0.61	20.00	27.50	2668
42 x 30	0.82	0.66	22.00	29.50	2950
42 x 36	0.82	0.74	30.00	30.00	3607
42 x 42	0.82	0.82	30.00	30.00	3725
48 x 20	0.90	0.57	20.00	32.00	2636
48 x 24	0.90	0.61	23.00	32.00	2921
48 x 30	0.90	0.66	23.00	32.00	4505
48 x 36	0.90	0.74	33.50	32.25	4700
48 x 48	0.90	0.90	33.50	33.50	5827
54 x 54	1.05	1.05	35.80	35.80	5844



MJ x FLANGE CROSS

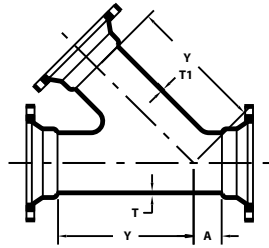
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.36	0.36	5.00	8.00	84
8 x 6	0.38	0.36	5.00	9.00	100
8 x 8	0.38	0.38	6.50	9.00	130
10 x 10	0.40	0.40	7.50	11.00	185
12 x 6	0.42	0.36	5.00	12.00	140
12 x 8	0.42	0.38	6.50	12.00	175
12 x 10	0.42	0.40	7.50	12.00	206
12 x 12	0.42	0.42	8.75	12.00	256
16 x 12	0.50	0.42	9.50	15.00	371

(Con't)➡



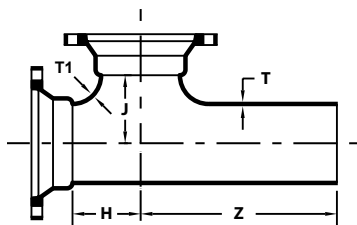
Compact MJ Fittings

ANSI/AWWA C153/A21.53



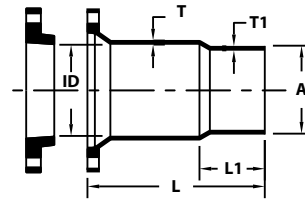
45° MJ LATERALS

NOM. SIZE	T	T1	A	Y	WT (LBS.)
3 x 3	0.33	0.33	2.50	8.50	36
4 x 3	0.34	0.33	2.50	8.50	40
4 x 4	0.34	0.34	2.50	8.50	41
6 x 4	0.36	0.34	1.50	11.00	53
6 x 6	0.36	0.36	3.00	12.50	85
8 x 3	0.38	0.33	0.50	13.00	74
8 x 4	0.38	0.34	0.50	13.00	77
8 x 6	0.38	0.36	2.00	14.50	90
8 x 8	0.38	0.38	3.50	16.00	102
10 x 4	0.40	0.34	0.00	15.00	150
10 x 6	0.40	0.36	1.00	16.00	158
10 x 8	0.40	0.38	2.50	17.00	172
10 x 10	0.40	0.40	3.50	19.00	210
12 x 4	0.42	0.34	0.00	16.50	150
12 x 6	0.42	0.36	1.50	18.50	186
12 x 8	0.42	0.38	1.50	18.50	188
12 x 10	0.42	0.40	3.00	20.00	250
12 x 12	0.42	0.42	4.50	22.50	272
14 x 6	0.47	0.36	0.00	19.50	245
14 x 8	0.47	0.38	1.50	21.00	279
14 x 10	0.47	0.40	3.00	22.50	316
14 x 14	0.47	0.47	6.00	25.00	474
16 x 4	0.50	0.34	0.00	21.00	272
16 x 6	0.50	0.36	0.00	21.00	300
16 x 8	0.50	0.38	0.50	22.50	349
16 x 10	0.50	0.40	2.00	24.00	370
16 x 12	0.50	0.42	3.50	25.00	453
16 x 14	0.50	0.47	5.00	26.50	500
16 x 16	0.50	0.50	6.50	28.00	575



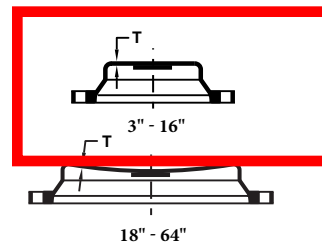
MJ x PE x MJ TEES

NOM. SIZE	T	T1	H	J	Z	WT (LBS.)
6 x 4	0.36	0.34	4.00	5.00	12.00	49
6 x 6	0.36	0.36	5.00	5.00	12.00	57
8 x 6	0.38	0.36	5.50	6.50	11.50	74
8 x 8	0.38	0.38	6.50	6.50	15.00	91
10 x 10	0.40	0.40	7.50	7.50	13.00	115
12 x 12	0.42	0.42	8.75	8.75	14.50	155
16 x 16	0.50	0.50	11.50	11.50	20.63	337

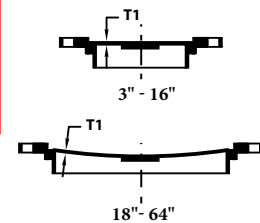


MJ x PE CUTTING IN SLEEVE W/ OVER SIZE GLAND

NOM. SIZE	ID	T	T1	A	L	L1	WT (LBS.)
4	5.10	0.36	0.34	4.80	20.00	9.00	50
6	7.20	0.38	0.36	6.90	20.00	9.00	62
8	9.40	0.40	0.38	9.05	20.00	9.00	70
10	11.50	0.42	0.40	11.10	20.00	9.00	105
12	13.60	0.47	0.42	13.20	20.00	9.00	128
16	17.94	0.54	0.50	17.40	20.00	9.00	275



CAP



PLUG

MJ CAPS & PLUGS (SOLID OR TAPPED)

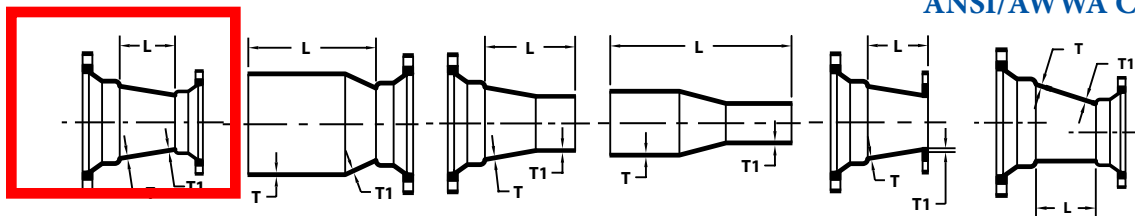
NOM. SIZE	T	T1	MAX. TAP	WT (LBS.)	
				PLUGS	CAPS
3	0.46	0.50	2	9	8
4	0.34	0.40	2	13	9
6	0.42	0.42	2	20	15
8	0.44	0.44	2	30	23
10	0.46	0.46	2	39	33
12	0.48	0.48	2	52	44
14	0.55	0.55	2 1/2	93	64
16	0.56	0.56	2 1/2	116	79
18	0.54	0.54	2 1/2	135	121
20	0.57	0.57	2 1/2	161	140
24	0.61	0.65	3	239	199
30	0.70	0.66	4	387	361
36	1.03	1.00	4	689	635
42	1.13	1.13	4	965	896
48	1.43	1.25	4	1291	1329
54	2.16	2.19	6	2050	2167
60	2.25	2.38	6	2446	2571
64	2.38	2.56	6	2850	3018

Threads in Accordance with ANSI/ASME B1.20.1



Compact MJ Fittings

ANSI/AWWA C153/A21.53



REDUCERS			MJ x MJ		SEB		LEB		PE x PE		MJ x FE		ECCENTRIC	
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
4 x 3	0.34	0.33	3.00	16	8.50	17	8.50	16	14.00	14	5.00	19	3.00	15
6 x 2	0.36	0.30	---	---	---	---	---	---	---	---	7.00	23	---	---
6 x 3	0.36	0.33	5.00	22	10.62	24	10.50	19	16.00	19	6.00	25	---	---
6 x 4	0.36	0.34	4.00	24	9.50	23	9.50	23	15.00	22	5.00	30	4.00	24
8 x 4	0.38	0.34	5.00	32	10.50	30	10.50	34	16.00	30	7.00	38	5.00	31
8 x 6	0.38	0.36	4.00	36	9.50	35	9.50	32	15.00	33	6.00	41	---	---
10 x 4	0.40	0.34	7.00	46	12.50	44	12.50	43	---	---	---	---	---	---
10 x 6	0.40	0.36	5.00	47	10.50	46	10.50	46	16.00	46	7.00	54	5.00	46
10 x 8	0.40	0.38	4.00	50	9.50	49	9.50	50	15.00	47	6.00	62	4.00	48
12 x 4	0.42	0.34	9.00	58	14.50	60	14.50	57	20.00	58	11.00	66	---	---
12 x 6	0.42	0.36	7.00	60	12.50	53	12.50	57	18.00	57	9.00	69	7.00	60
12 x 8	0.42	0.38	5.00	60	10.50	61	10.50	59	16.00	54	7.00	82	5.00	59
12 x 10	0.42	0.40	4.00	64	9.50	53	9.50	58	15.00	54	7.00	85	4.00	61
14 x 6	0.47	0.36	9.00	110	16.90	100	14.50	105	---	---	---	---	---	---
14 x 8	0.47	0.38	7.00	122	14.90	99	12.40	98	20.30	91	---	---	---	---
14 x 10	0.47	0.40	5.00	120	12.90	96	10.40	92	18.30	88	8.00	112	---	---
14 x 12	0.47	0.42	4.00	132	11.90	90	9.40	92	17.30	89	---	---	4.00	94
16 x 6	0.50	0.36	11.00	120	21.00	125	16.50	144	24.30	93	13.00	128	---	---
16 x 8	0.50	0.38	9.00	118	18.00	124	14.50	136	22.30	119	11.00	133	9.00	119
16 x 10	0.50	0.40	7.00	118	15.00	124	12.50	125	20.50	119	9.00	136	9.00	129
16 x 12	0.50	0.42	5.00	115	12.90	122	10.50	116	18.30	99	7.00	145	5.00	115
16 x 14	0.50	0.47	4.00	131	12.00	133	12.00	135	19.70	129	---	---	---	---
18 x 8	0.54	0.38	13.00	201	20.00	170	19.50	195	---	---	16.00	190	13.00	165
18 x 10	0.54	0.40	10.00	196	18.00	165	17.40	185	25.50	160	12.00	179	---	---
18 x 12	0.54	0.42	7.00	180	15.50	150	14.00	150	19.50	150	12.00	198	---	---
18 x 14	0.54	0.47	6.00	200	15.00	175	15.00	200	---	---	---	---	6.00	168
18 x 16	0.54	0.50	5.00	196	12.50	170	12.50	192	---	---	---	---	5.00	174
20 x 6	0.57	0.36	---	---	24.00	182	---	---	---	---	18.00	203	---	---
20 x 8	0.57	0.38	16.00	227	24.00	191	---	---	---	---	---	---	---	---
20 x 10	0.57	0.40	16.00	220	22.12	200	19.00	210	---	---	---	---	---	---
20 x 12	0.57	0.42	12.00	227	17.50	170	16.00	205	21.50	164	14.00	234	8.00	183
20 x 14	0.57	0.47	10.00	200	18.00	190	17.90	205	---	---	---	---	---	---
20 x 16	0.57	0.50	7.00	231	13.50	185	13.50	200	---	---	9.00	237	8.00	217
20 x 18	0.57	0.54	4.00	225	12.00	200	12.00	215	---	---	---	---	8.00	235
24 x 6	0.61	0.36	22.00	279	---	---	---	---	---	---	22.00	284	---	---
24 x 8	0.61	0.38	20.00	263	---	---	---	---	22.50	201	---	---	20.00	287
24 x 10	0.61	0.40	18.00	286	21.50	235	---	---	---	---	20.00	306	18.00	287
24 x 12	0.61	0.42	16.00	263	21.50	275	21.00	290	22.50	213	18.00	318	16.00	285
24 x 14	0.61	0.47	14.00	310	22.00	310	21.90	315	25.00	238	16.00	323	14.00	298
24 x 16	0.61	0.50	13.00	279	21.00	285	17.50	285	23.10	323	---	---	12.00	299
24 x 18	0.61	0.54	10.00	284	18.00	300	18.00	310	21.00	228	---	---	---	---
24 x 20	0.61	0.57	7.00	328	15.00	276	13.50	275	24.00	271	---	---	7.00	370
30 x 12	0.66	0.42	30.00	530	---	---	39.00	565	---	---	---	---	---	---
30 x 14	0.66	0.47	30.00	585	---	---	39.00	598	---	---	---	---	30.00	583
30 x 16	0.66	0.50	30.00	633	39.00	565	39.00	623	48.00	690	---	---	30.00	613
30 x 18	0.66	0.54	28.00	658	37.00	654	37.00	635	---	---	---	---	28.00	800
30 x 20	0.66	0.57	24.00	628	33.00	590	33.00	603	---	---	---	---	24.00	630
30 x 24	0.66	0.61	10.00	478	24.50	536	24.50	526	---	---	---	---	10.00	570
36 x 4	0.74	0.34	36.00	712	---	---	---	---	---	---	---	---	---	---

(Cont)➡

UCAT:22.01

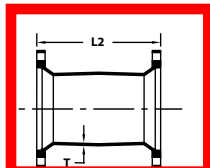
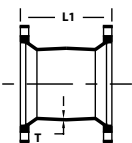
* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



Compact MJ Fittings

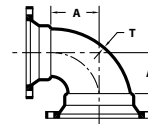
ANSI/AWWA C153/A21.53

REDUCERS (Con't)			MJ x MJ		SEB		LEB		PE x PE		MJ x FE		★ ECCENTRIC	
NOM. SIZE	T	TI	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
36 x 6	0.74	0.36	36.00	731	---	---	---	---	---	---	---	---	---	---
36 x 8	0.74	0.38	36.00	750	---	---	---	---	---	---	---	---	36.00	7.52
36 x 10	0.74	0.40	36.00	775	---	---	---	---	---	---	---	---	---	---
36 x 12	0.74	0.42	36.00	1058	---	---	---	---	---	---	---	---	36.00	797
36 x 16	0.74	0.50	40.00	1016	27.00	595	45.00	901	---	---	---	---	---	---
36 x 18	0.74	0.54	38.00	983	37.00	800	---	---	---	---	---	---	38.00	963
36 x 20	0.74	0.57	36.00	1165	45.00	850	45.00	950	54.00	876	---	---	---	---
36 x 24	0.74	0.61	19.00	822	33.12	746	33.00	810	42.00	747	21.00	807	19.00	765
36 x 30	0.74	0.66	15.50	811	24.62	788	24.50	758	33.50	667	17.50	846	15.50	811
42 x 24	0.82	0.61	40.00	1356	49.00	1204	49.00	1320	58.00	1210	42.00	1410	40.00	1782
42 x 30	0.82	0.66	20.00	1083	29.12	1150	29.00	1015	38.00	889	---	---	20.00	1435
42 x 36	0.82	0.74	15.50	1114	24.62	962	24.50	1013	33.50	875	---	---	15.50	1114
48 x 20	0.90	0.57	40.00	1580	49.00	1320	---	---	---	---	---	---	---	---
48 x 24	0.90	0.61	40.00	1761	---	---	---	---	---	---	---	---	40.00	1800
48 x 30	0.90	0.66	40.00	1779	49.00	1594	49.00	1711	58.00	1554	---	---	40.00	1960
48 x 36	0.90	0.74	28.00	1641	37.00	1456	37.00	1540	46.00	1375	---	---	28.00	1668
48 x 42	0.90	0.82	15.50	1426	24.50	1241	24.50	1275	33.50	1112	---	---	15.50	1470
54 x 36	1.05	0.74	27.50	1916	37.25	1754	---	---	---	---	---	---	---	---
54 x 42	1.05	0.82	19.25	1817	29.25	1669	---	---	---	---	---	---	---	---
60 x 48	1.10	0.90	18.00	2038	29.50	1974	---	---	---	---	---	---	---	---



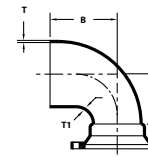
MJ SLEEVES

NOM. SIZE	T	SHORT SLEEVES		LONG SLEEVES	
		L1	WT (LBS.)	L2	WT (LBS.)
2	0.30	7.50	10	12.00	11
3	0.33	7.50	12	12.00	17
4	0.34	7.50	15	12.00	22
6	0.36	7.50	23	12.00	33
8	0.38	7.50	31	12.00	45
10	0.40	7.50	45	12.00	63
12	0.42	7.50	57	12.00	79
14	0.47	9.50	94	15.00	128
16	0.50	9.50	118	15.00	159
18	0.54	9.00	145	15.00	200
20	0.57	9.00	173	15.00	236
24	0.61	9.00	226	15.00	306
30	0.66	15.00	472	24.00	634
36	0.74	15.00	673	24.00	889
42	0.82	15.00	887	24.00	1114
48	0.90	15.00	1059	24.00	1406
54	1.05	21.00	1534	24.00	1687
60	1.10	21.00	1758	24.00	1930
64	1.16	21.00	1974	24.00	2167



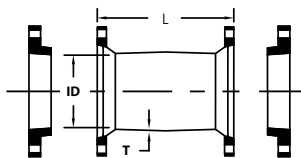
MJ x MJ RED 90°

Nom. SIZE	T	TI	A	WT (LBS.)
20 x 16	0.57	0.50	15.00	348
48 x 36	0.90	0.74	33.25	2500



PE x MJ RED 90°

Nom. SIZE	T	TI	A	B	WT (LBS.)
48 x 36	0.90	0.74	33.25	42.25	2643



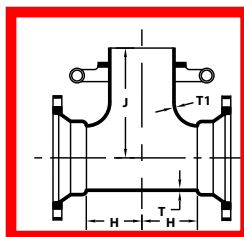
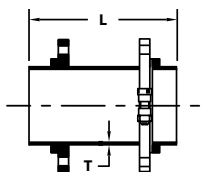
MJ DUAL PURPOSE SLEEVES W/ OVERSIZE GLANDS

NOM. SIZE	PIPE SIZE	T	L	(I.D.)	WT (LBS.)
4	4.80 - 5.00	0.34	12.00	5.10	20
6	6.90 - 7.10	0.36	12.00	7.20	36
8	9.05 - 9.30	0.38	12.00	9.40	46
10	11.10 - 11.40	0.40	12.00	11.50	62
12	13.20 - 13.50	0.42	12.00	13.60	76
16	17.40 - 17.80	0.50	15.00	17.94	172



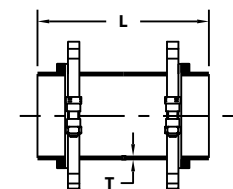
Compact MJ Fittings

ANSI/AWWA C153/A21.53

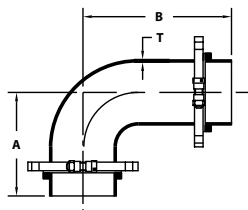


SWIVEL x SOLID HYDRANT ADAPTERS W/ SWIVEL GLAND			
NOM. SIZE	T	L	WT (LBS.)
4 x 13	0.34	13.00	32
6 x 13	0.36	11.50	47
6 x 18	0.36	18.00	60
6 x 24	0.36	24.00	71
6 x 36	0.36	36.00	94
6 x 48	0.36	48.00	122
8 x 13	0.38	13.00	54
8 x 18	0.38	18.00	80
8 x 24	0.38	24.00	97
8 x 48	0.38	48.00	161
12 x 13	0.42	13.00	113

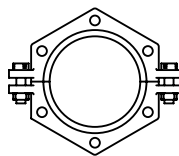
MJ x SWIVEL HYDRANT TEES W/ SWIVEL GLAND					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 4	0.36	0.34	4.00	10.00	54
6 x 6	0.36	0.36	5.00	10.25	65
8 x 4	0.38	0.34	4.00	11.00	69
8 x 6	0.38	0.36	5.00	11.25	85
8 x 8	0.38	0.38	6.50	11.50	100
10 x 4	0.40	0.34	4.00	12.50	86
10 x 6	0.40	0.36	5.00	12.75	105
10 x 8	0.40	0.38	6.50	12.75	118
12 x 4	0.42	0.34	4.00	13.50	104
12 x 6	0.42	0.36	5.00	13.75	126
12 x 8	0.42	0.38	6.50	13.75	128
14 x 6	0.47	0.36	6.50	15.00	211
16 x 4	0.50	0.34	5.50	16.00	207
16 x 6	0.50	0.36	6.50	16.00	279
18 x 6	0.54	0.36	6.50	18.00	278
20 x 6	0.57	0.36	6.50	18.50	358
20 x 8	0.57	0.38	8.00	18.50	362
24 x 6	0.61	0.36	7.00	19.00	430
24 x 8	0.61	0.38	8.00	19.00	459
36 x 6	0.74	0.36	8.00	22.50	980
42 X 6	0.82	0.36	9.00	30.00	1371



SWIVEL x SWIVEL HYDRANT ADAPTERS W/ 2 SWIVEL GLANDS			
NOM. SIZE	T	L	WT (LBS.)
6 x 12	0.36	12.00	50
6 x 18	0.36	18.00	62
6 x 24	0.36	24.00	74



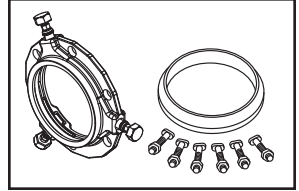
SWIVEL x SWIVEL HYDRANT ELL W/ 2 SWIVEL GLANDS				
NOM. SIZE	T	A	B	WT (LBS.)
6	0.36	10.50	16.00	71



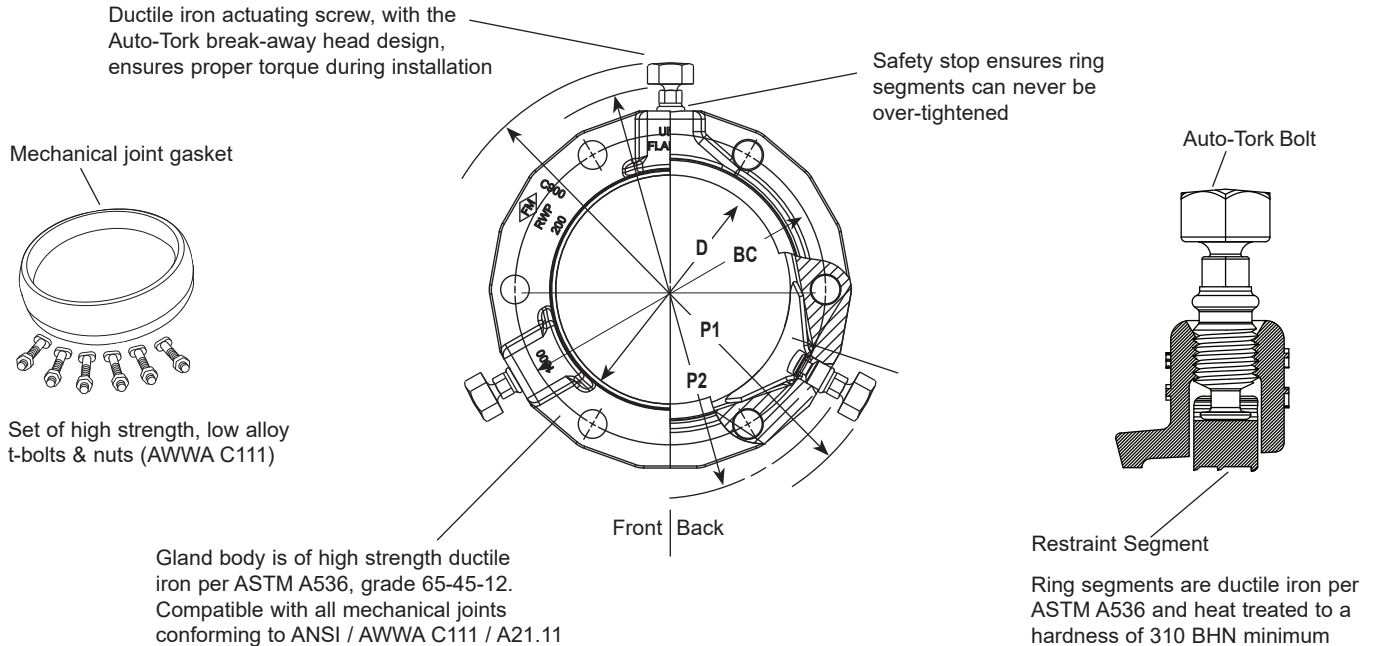
SWIVEL GLANDS		
NOM. SIZE	WT (LBS.)	T-HEAD BOLTS
4	8	(2) 3/4" x 3 1/2"
6	11	(2) 3/4" x 3 1/2"
8	13	(2) 3/4" x 3 1/2"
12	25	(2) 3/4" x 4"

SUBMITTAL INFORMATION

Uni-Flange® Mechanical Joint Restraint (UFR1500-CA-x-I style)



4" - 12" SERIES UFR1500 MECHANICAL JOINT RESTRAINT FOR C900, C909 OR HDPE PACKAGED WITH ACCESSORIES



NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	No. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)	P1*	P2** APPROX.	BC	D	PRESSURE RATING					✓ SUBMITTED ITEM(S)
									C900			C909		
									DR-14	DR-18	DR-25	PC-165	PC-235	
4"	4.80	UFR1500-CA-4-I	2	12.5	13.00"	9.40"	7.50"	4.90"	305 PSI	235 PSI	165 PSI	165 PSI	235 PSI	
6"	6.90	UFR1500-CA-6-I	3	18.0	15.13"	11.60"	9.50"	7.00"	305 PSI	235 PSI	165 PSI	165 PSI	235 PSI	
8"	9.05	UFR1500-CA-8-I	4	23.0	17.25"	13.75"	11.75"	9.15"	305 PSI	235 PSI	165 PSI	165 PSI	235 PSI	
10"	11.10	UFR1500-CA-10-I	8	33.0	19.38"	16.00"	14.00"	11.20"	305 PSI	235 PSI	165 PSI	165 PSI	235 PSI	
12"	13.20	UFR1500-CA-12-I	8	38.0	21.50"	18.05"	16.25"	13.30"	305 PSI	235 PSI	165 PSI	165 PSI	235 PSI	

*Maximum O.D. of gland on pipe before Auto-Tork heads are removed (as shipped)

**Maximum O.D. of gland on pipe after Auto-Tork heads are removed

Note: Ford recommends the use of a properly sized insert stiffener when using UFR1500 on HDPE

FEATURES

- Full circle contact and support of the pipe wall. The Series 1500 can be used on AWWA C900, AWWA C909 PVC or HDPE without any point loading.
- Auto-Tork actuating screws with heads specially designed to twist off at the correct installation torque, leaving a hex head for future system maintenance or removal
- Set of high strength, low alloy t-bolts and nuts (AWWA C111)
- Mechanical joint gasket (AWWA C111)
- Series 1500 eliminates the need to pour expensive and time consuming concrete thrust blocks
- Restraining segments are mechanically retained in pockets
- Gland, screws and segments are protected with black Armorguard e-coat
- Gland colored red for identification purposes

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.



The Ford Meter Box Company, Inc.

P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443

Phone: 260-563-3171 / Fax: 800-826-3487

Overseas Fax: 260-563-0167

www.fordmeterbox.com

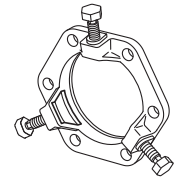


06/29/21

Submitted By:

SUBMITTAL INFORMATION

Uni-Flange® Restraint - (UFR1400-DA-x-I style)



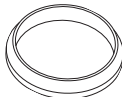
WEDGE ACTION SERIES 1400-D RESTRAINT GLAND FOR DUCTILE IRON PIPE WITH ACCESSORIES

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation.

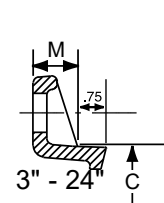
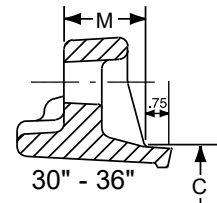
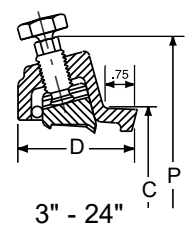
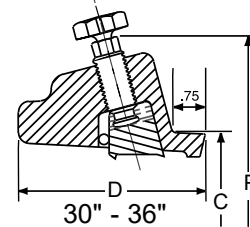
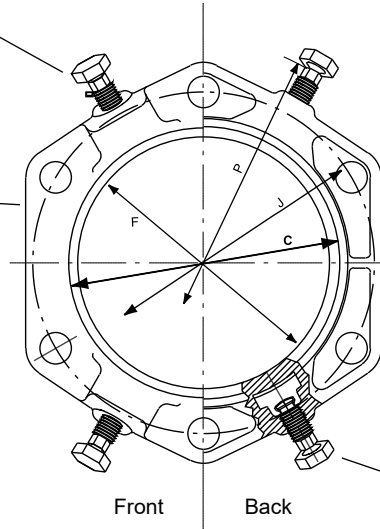
Gland body is of high strength ductile iron per ASTM A536, Grade 65-45-12. Compatible with all mechanical joints conforming to ANSI/AWWA C111/A21.11.



High strength low alloy T-bolts and nuts AWWA C111



Mechanical joint gasket AWWA C111



Wedges are ductile iron and heat treated to a hardness of 370 BHN minimum.

NOM. PIPE SIZE	O.D. (IN.)	CATALOG NUMBER	PRESSURE RATING (PSI)	NO. OF WEDGES	APPROX. WEIGHT (LBS.)	P* (IN.)	C (IN.)	D (IN.)	F (IN.)	M (IN.)	J (IN.)	✓ SUBMITTED ITEM(S)
3	3.96	UFR1400-DA-3-I	350	2	8.6	9.06	4.84	2.65	4.06	0.68	6.19	
4	4.80	UFR1400-DA-4-I	350	2	11.7	10.0	5.92	2.65	4.90	0.88	7.50	
6	6.90	UFR1400-DA-6-I	350	3	17.6	12.1	8.02	2.65	7.00	0.88	9.50	
8	9.05	UFR1400-DA-8-I	350	4	21.7	14.3	10.17	2.65	9.15	1.10	11.75	
10	11.10	UFR1400-DA-10-I	350	6	31.9	16.3	12.22	2.75	11.20	1.10	14.00	
12	13.20	UFR1400-DA-12-I	350	8	41.5	18.4	14.32	2.75	13.30	1.10	16.25	
14	15.30	UFR1400-DA-14-I	350	10	57.0	20.9	16.40	3.00	15.50	1.50	18.75	
16	17.40	UFR1400-DA-16-I	350	12	64.0	23.0	18.50	3.00	17.60	1.56	21.00	
18	19.50	UFR1400-DA-18-I	250	12	81.0	25.8	20.60	3.05	19.70	1.65	23.25	
20	21.60	UFR1400-DA-20-I	250	14	90.0	27.9	22.70	3.10	21.82	1.70	25.50	
24	25.80	UFR1400-DA-24-I	250	16	107.0	32.1	26.90	3.20	26.04	1.85	30.00	
30	32.00	UFR1400-DA-30-I	250	20	264.0	38.6	33.29	4.30	32.29	2.25	36.88	
36	38.30	UFR1400-DA-36-I	250	24	318.0	44.9	39.59	4.50	38.62	2.25	43.75	

* Maximum O.D. of gland on pipe after wedges have been activated and break-away heads have been removed.

FEATURES

- Eliminates the need of costly and time consuming concrete thrust blocks and corrosion susceptible steel tie rods
- Auto-Tork wedge actuating screws assure proper installation
- Wedges are contoured to fit the pipe
- Set of high strength, low alloy t-bolts and nuts (AWWA C111)
- Mechanical joint gasket (AWWA C111) 3"-24" sizes, Uni-Seal gasket 30" and 36" sizes
- Gland, screws and segments are protected with black Armorguard e-coat
- FM Approved (4"-12") and UL Listed (4"- 48")

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.



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07/27/21

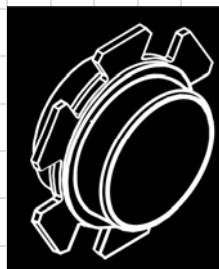
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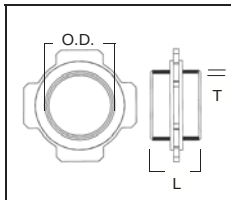
ENGINEERING DATA / CAD DRAWINGS

FOSTER ADAPTOR

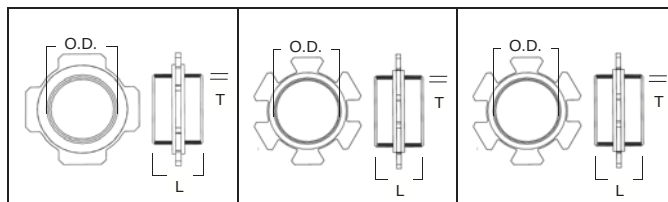


BOLT-THRU MECHANICAL JOINT RESTRAINT

RESTRAIN MJ VALVES AND FITTINGS TO EACH OTHER



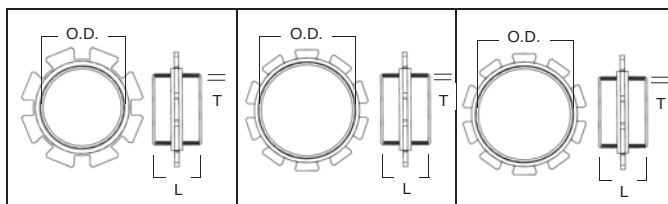
3-INCH



4-INCH

6-INCH

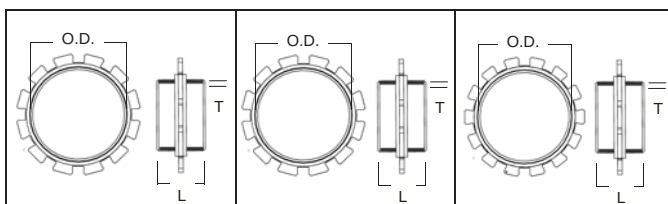
8-INCH



10-INCH

12-INCH

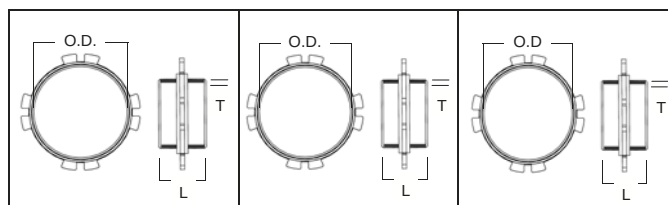
14-INCH



16-INCH

18-INCH

20-INCH



24-INCH

30-INCH

36-INCH

LATEST SIZES ADDED: 3-inch, 30-inch, and 36-inch

SIZE, inches	DIMENSIONS, inches			ADAPTOR Weight	PAK Weight	TOTAL Weight
	O. D.	T	L	lbs.	lbs.	lbs.
3	3.96	.34	4	6	5	11
4	4.80	.35	4	8	8	16
6	6.90	.37	4	16	9	25
8	9.05	.39	4	19	10	29
10	11.10	.40	4	29	13	42
12	13.20	.43	4.5	31	15	46
14	15.30	.48	6.75	55	16	71
16	17.40	.51	6.75	60	20	80
18	19.50	.55	6.75	92	16	108
20	21.60	.58	6.75	101	20	121
24	25.80	.62	6.75	117	28	135
30	32.00	.66	7.75	153	68	221
36	38.30	.75	7.75	220	86	306

Adaptor sizes, dimensions and weights are nominal



IN FACT

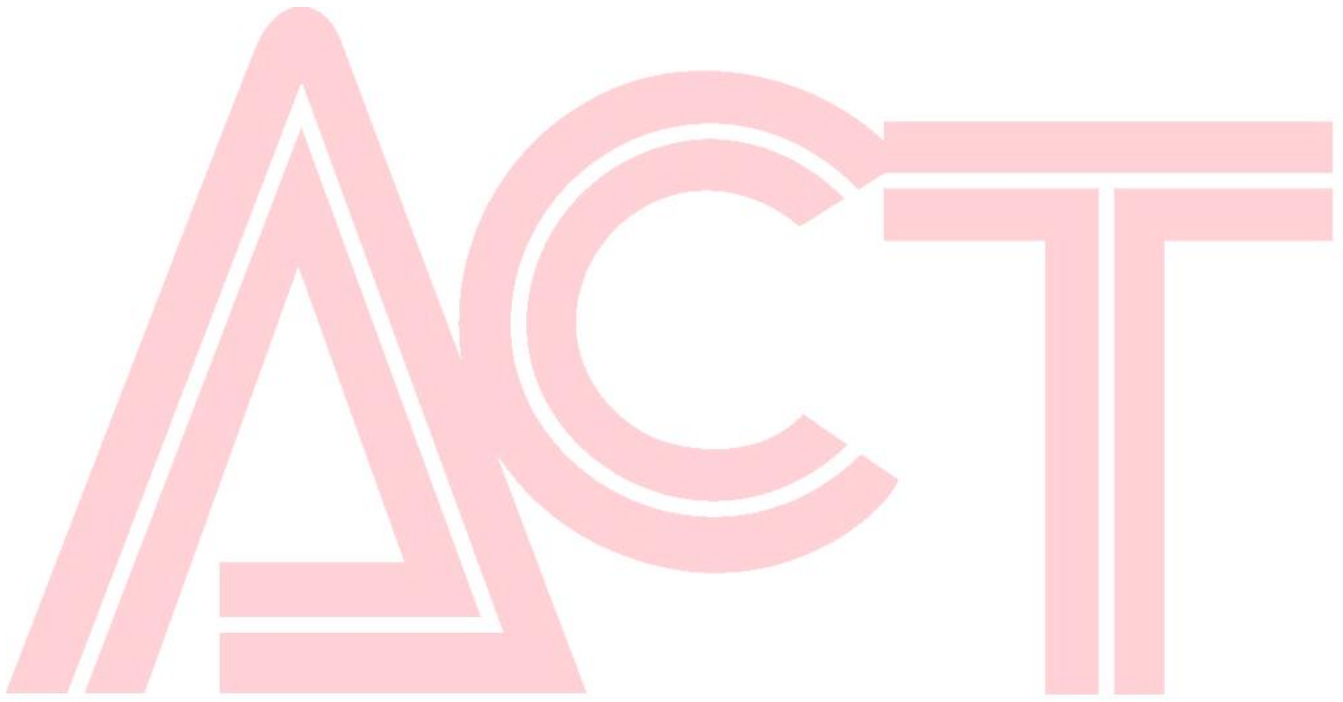
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GATE VALVES



PIPE & SUPPLY

UNDERGROUND UTILITY MATERIAL SUPPLIED BY:

ACT PIPE & SUPPLY

4719 DODGE ST

SAN ANTONIO, TX 78217

210-946-6969



ClowValve.com

RESILIENT WEDGE GATE VALVES

2" THROUGH 12"
MODEL 2639 / 2640

AWWA C509 250 PSI • UL/FM APPROVED 200 PSI • NSF
61 CERTIFIED • FULL WATER WAY • FUSION BONDED
EPOXY COATED • 10-YEAR LIMITED WARRANTY



Clow Valve, A Division of McWane, Inc.

For Generations

RESILIENT WEDGE VALVE

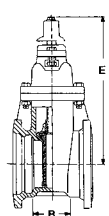
In 1975, Clow recognized the increased requirements and escalating maintenance cost of water systems in the United States.

Clow responded by introducing the first R/W (Resilient Wedge) Gate Valve in America. This introduction revolutionized the valve market in the U.S.

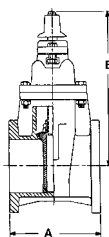
Clow was the first to introduce and still leads

in the design and technical development of the bubble-tight resilient seating valve.

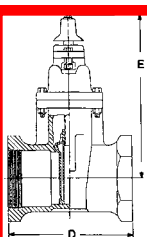
The Clow Resilient Wedge Valve, with its unique features and benefits, was the first to be manufactured with both AWWA and UL/FM approval for all water system requirements.



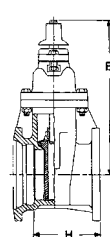
F-6100
MECHANICAL JOINT
2"– 12"



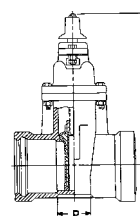
F-6102
FLANGED
2"– 12"



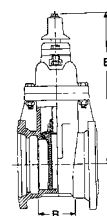
F-6103
THREADED ENDS
2"– 3"



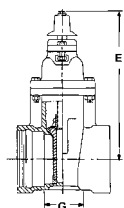
F-6106
FLANGED X MJ
3"– 12"



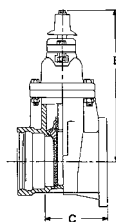
F-6110
PUSH ON FOR SDR PVC
2"– 12"



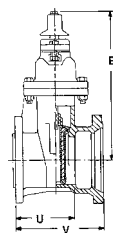
F-6111
MECHANICAL CUTTING
IN JOINT
4"– 12"



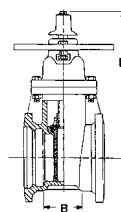
F-6112
TYTON ENDS FOR DUCTILE
IRON AND C900 PVC PIPE
4"– 12"



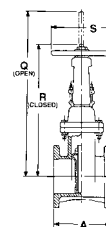
F-6113
FLANGED X TYTON
4"– 12"



F-6114
MECHANICAL JOINT
FOR TAPPING
3"– 12"



F-6120
MECHANICAL JOINT POST
INDICATOR VALVE
2"– 12"



F-6136
FLANGED OS & Y
CONSTRUCTION
2"– 12"

VALVE SIZE	A	B	C	D	E	G	H	P	Q	R	S	U	V	NO. OF TURNS TO FULL OPEN
2"	7	3-1/4	—	5-3/8	10-7/8	—	—	3	10	12	7-1/4	—	—	6-1/2
2-1/2"	7-1/2	—	—	7-1/8	11-3/8	—	—	3-1/4	16-3/8	13-7/8	7-1/4	—	—	8
3"	8	3-1/2	—	7-1/8	12-3/8	—	5-3/4	3-1/2	18-7/8	15-5/8	10	5-3/4	8-1/4	10
4"	9	4-1/2	6-3/4	—	14-3/4	4-5/8	6-3/4	4-1/2	22-3/4	18-1/4	10	6-3/4	9-1/4	13-1/2
6"	10-1/2	5-1/2	7-7/8	—	19	5-1/4	8	5	30-1/8	23-3/4	12	8	10-1/2	19-1/2
8"	11-1/2	8-1/8	8-1/2	—	22-1/2	5-5/8	9-3/4	5-1/2	37-3/4	29-1/4	14	10-3/4	13-1/4	25-1/2
10"	13	10-1/2	10	—	26-1/2	7	11-3/4	7	45-2/4	35-3/8	18	12-1/2	14-7/8	31-1/2
12"	14	10-3/4	11-1/4	—	30	8-1/2	12	8-1/2	53-1/8	40-5/8	18	12-1/2	15	37-3/4

NOTE: It is recommended that valves be installed with stems vertical when used in raw sewage, or sludge applications, or in water with excessive sediment. Flanged end connections are not recommended for buried service.

ENGINEERING FEATURES

THRUST BEARINGS

Acetal thrust bearings above and below the thrust collar reduce friction and minimize operating torque.

COPPER ALLOY STEM

Long, trouble-free life with high-strength, non-corrosive copper alloy stem and stem nut.

STAINLESS STEEL HARDWARE

Stainless steel nuts and bolts provide long-life corrosion protection.

100% COATED WEDGE

A fully encapsulated wedge ensures a bubble-tight seal every time, up to rated pressure (250 PSI), with its twin seal design.

ELLIPTICAL BOLT HOLES

Hole design on MJ connection permits the use of both standard hex bolts and anti-rotation bolts.

MINIMAL FLOW LOSS

A smooth, unobstructed waterway, which is free of pockets, cavities, and depressions, allows for minimal flow loss and lower pumping costs. All valves accept a full-size tapping cutter.

LIFTING LUG

Integrated lifting lugs on follower plate for setting the valve into position. Available 4"–12".



REPLACEABLE O-RINGS

Upper O-rings are replaceable with the valve fully open and subjected to full-rated working pressure.

NO FLAT GASKETS

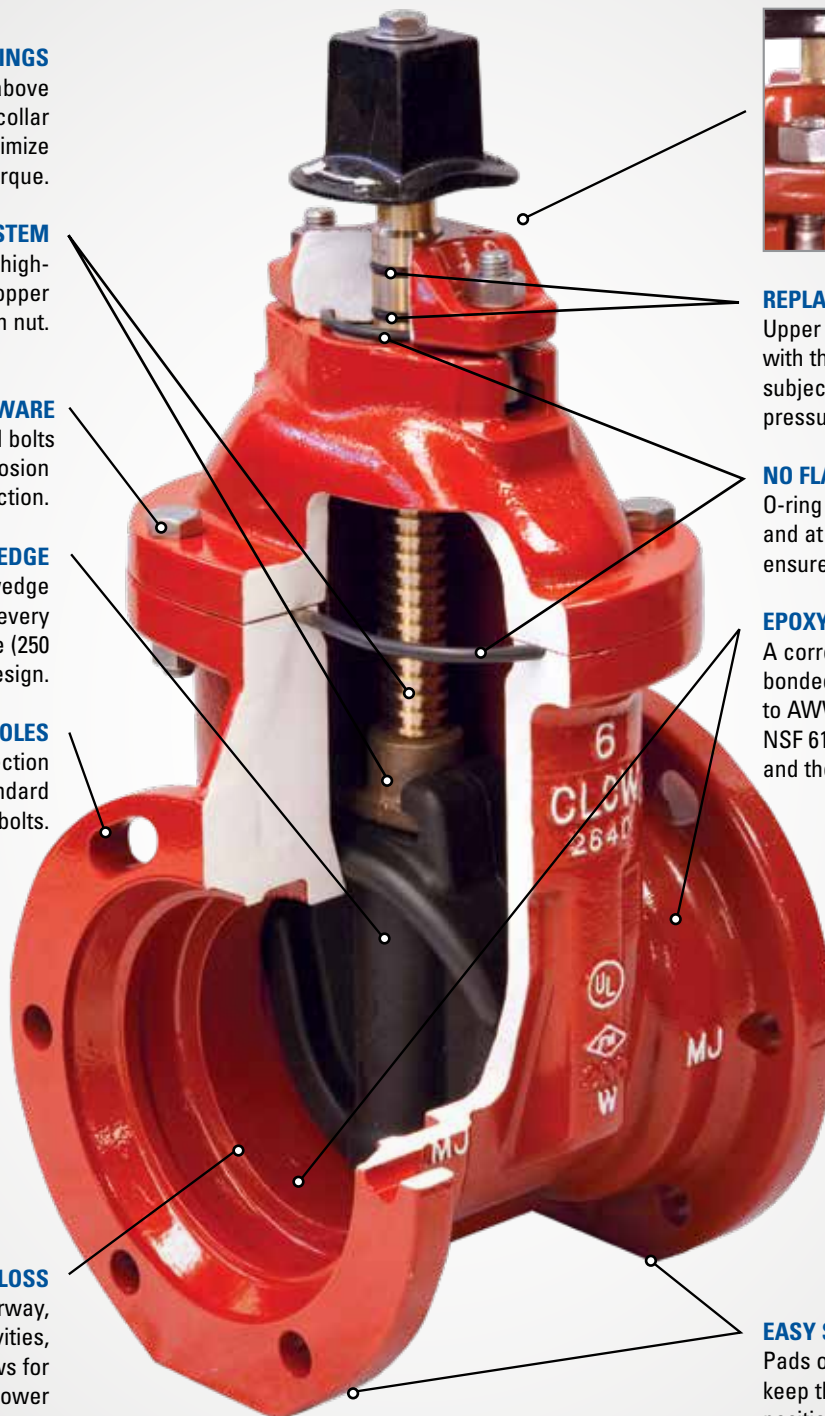
O-ring seals at the stuffing box and at the bonnet to body flange ensure the best possible seal.

EPOXY COATING

A corrosion resistant fusion-bonded epoxy coating, conforming to AWWA C550 and certified by NSF 61, protects both the interior and the exterior of the valve.

EASY STORAGE

Pads on the bottom of all valves keep the valve in an upright position for easier storage and protection from the elements.



VALVE RATING: All valves are rated at 250 PSI for AWWA service and 200 PSI for UL/FM service. All valves are hydrostatically tested to 500 PSI.

RECOMMENDED SPECIFICATIONS

1. Valves shall conform to the latest revision of AWWA Standard C509 covering resilient seated gate valves for water supply service.
2. The valves shall have an iron body, bonnet, and O-ring plate. The wedge shall be fully encapsulated with rubber.
3. The sealing rubber shall be permanently bonded to the wedge per ASTM D249.
4. Valves shall be supplied with O-ring seals at all pressure retaining joints. No flat gaskets shall be allowed.
5. The valves shall be either non-rising stem (NRS) or rising stem (OS&Y), opened by turning left or right, and provided with 2" square operating nut or a handwheel. The operating nut and the handwheel shall be marked indicating the direction to open with the word "OPEN" and an arrow.
6. NRS stems shall be cast copper alloy with integral collars in full compliance with AWWA C509. All stems shall operate with copper alloy stem nuts independent of the wedge.
7. All NRS stems shall have two O-rings located above thrust collar and one below. The upper o-rings shall be replaceable with valve fully opened and subjected to full pressure. The stems on 2"-12" NRS valves shall have a low torque thrust bearing located both above and below the stem collar to reduce friction during operation.
8. The waterway shall be smooth, unobstructed and free of all pockets, cavities and depressions in the seat area. Valves made with a tapping flange shall accept a full size tapping cutter.
9. The body, bonnet and O-ring plate shall be coated both on the interior and exterior with fusion bonded epoxy. Epoxy shall be applied in accordance with AWWA C550 and certified per NSF 61.
10. Each valve shall have the manufacturer's name, the pressure rating, country of origin and the year in which it was manufactured cast on the body. Prior to shipment from the factory, each valve shall be hydrostatically pressure tested according to the requirements of AWWA C509 (and UL/FM where applicable).
11. Valves shall have all component parts cast and assembled in the USA and shall be manufactured by the Clow Valve Company.

COMMITTED TO ENVIRONMENTAL RESPONSIBILITY

Clow Valve Company is committed to protecting our natural resources through environmentally responsible manufacturing practices, including the use of 80+% recycled content in our hydrants and valves.



CLOW
VALVE CO.

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Oskaloosa, IA 52577
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Fx 641-673-8269



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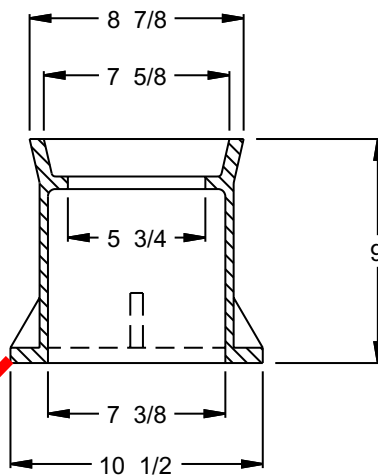
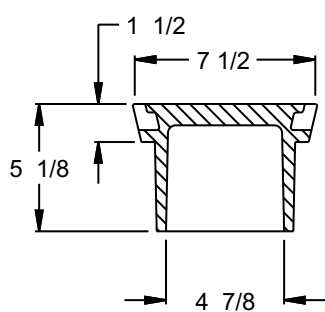
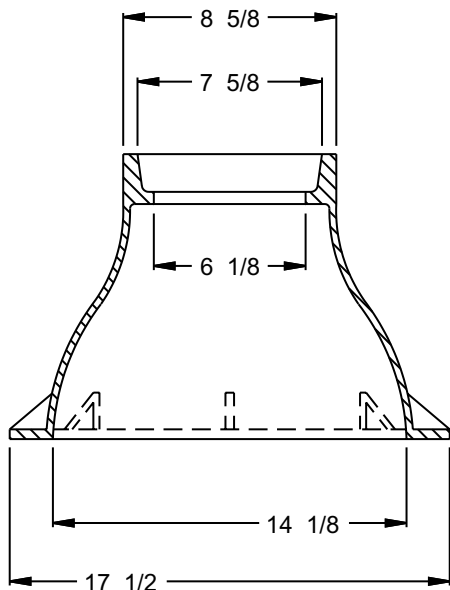


*PATENT PENDING
REVISION B-2022



ClowValve.com

ITEM NO. : 4200-4213



AVAILABLE MARKINGS	
4207	WATER
4208	SEWER
4209	GAS
4213	OPEN LEFT

ITEM NO	DESCRIPTION
4200	COMPLETE SET
4202	BASE ONLY
4204	EXTN. 10"
4205	EXTN. 13"
4206	EXTN. 15"
4207	LID ONLY

DESCRIPTION : SAN ANTONIO VBX EQ. #71.
MATERIAL : Cast Iron, ASTM A48, Class 30B.

71 Valve Box Cover



Product Number

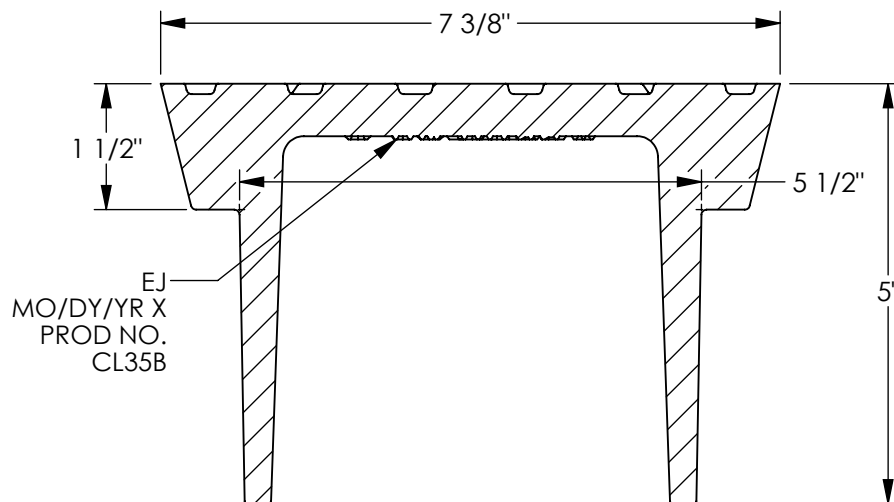
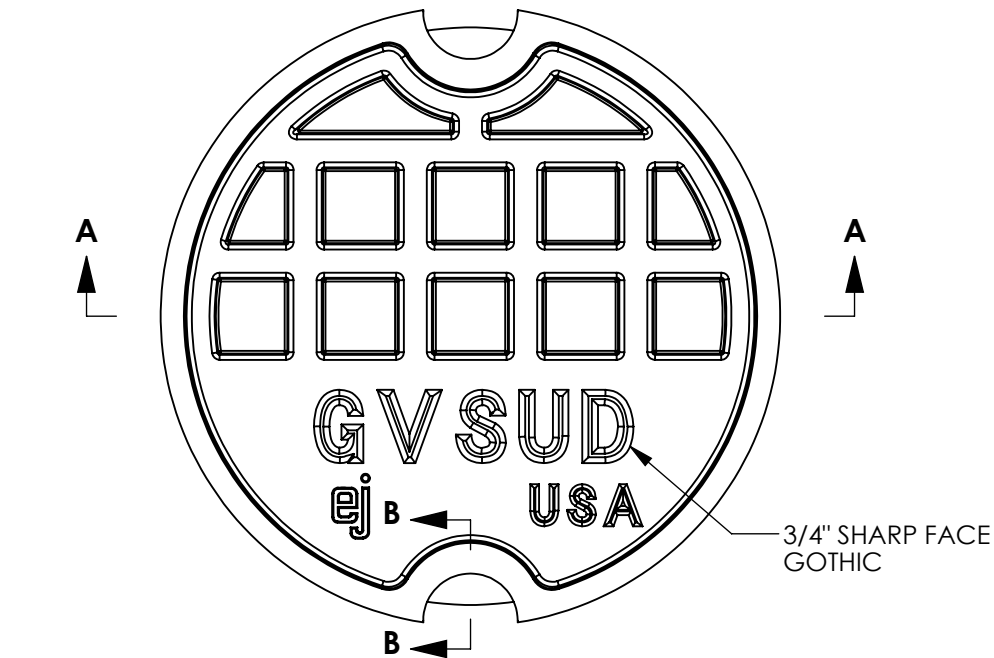
33171011

Design Features

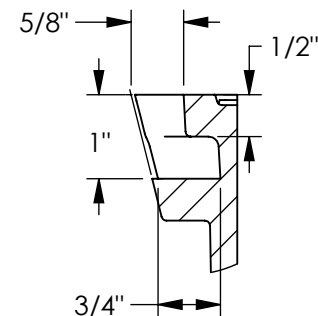
- Materials
Gray Iron (CL35B)
- Load Rating
Extra Heavy Duty
- Open Area
n/a
- Coating
Dipped
- √ Designates Machined Surface

Certification

- ASTM A48
-
- Country of Origin: USA



SECTION A-A



SECTION B-B

Drawing Revision

- 4/25/2023 Designer: MAH
- 4/26/2023 Revised By: MAH

Disclaimer

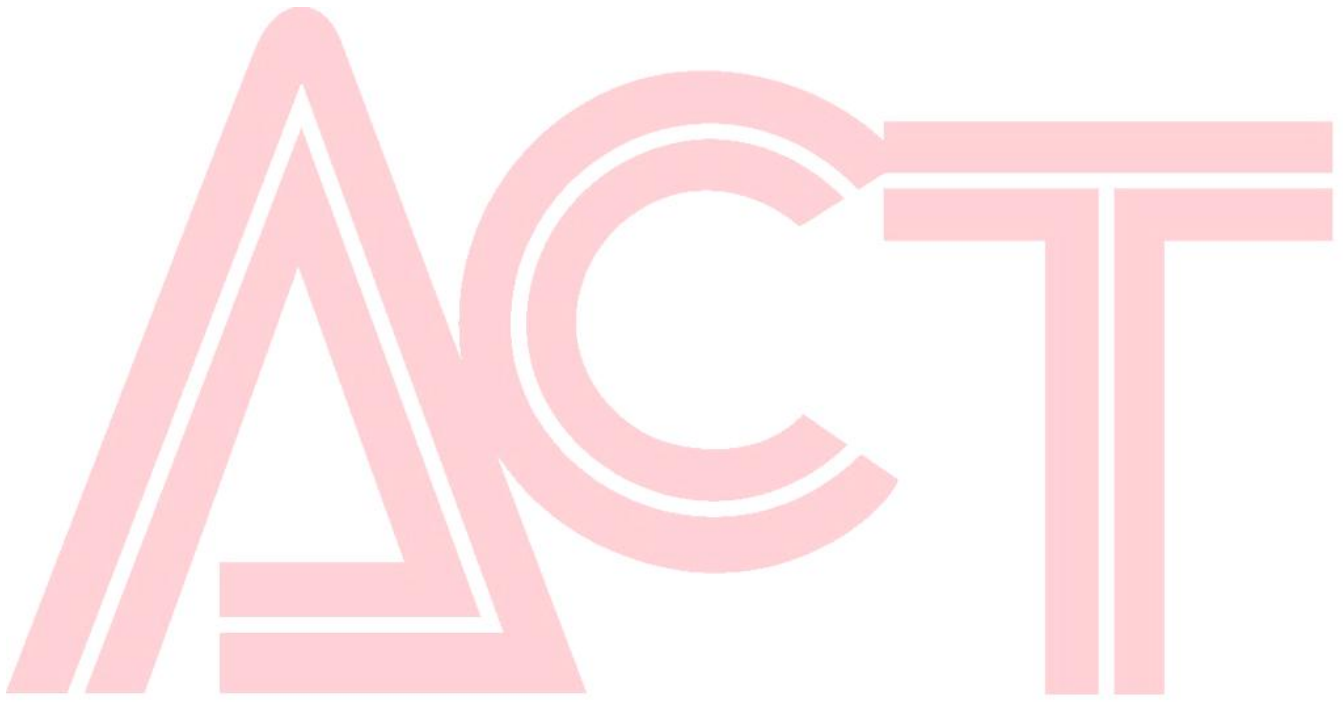
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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Contact

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FIRE HYDRANTS



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UNDERGROUND UTILITY MATERIAL SUPPLIED BY:

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4719 DODGE ST

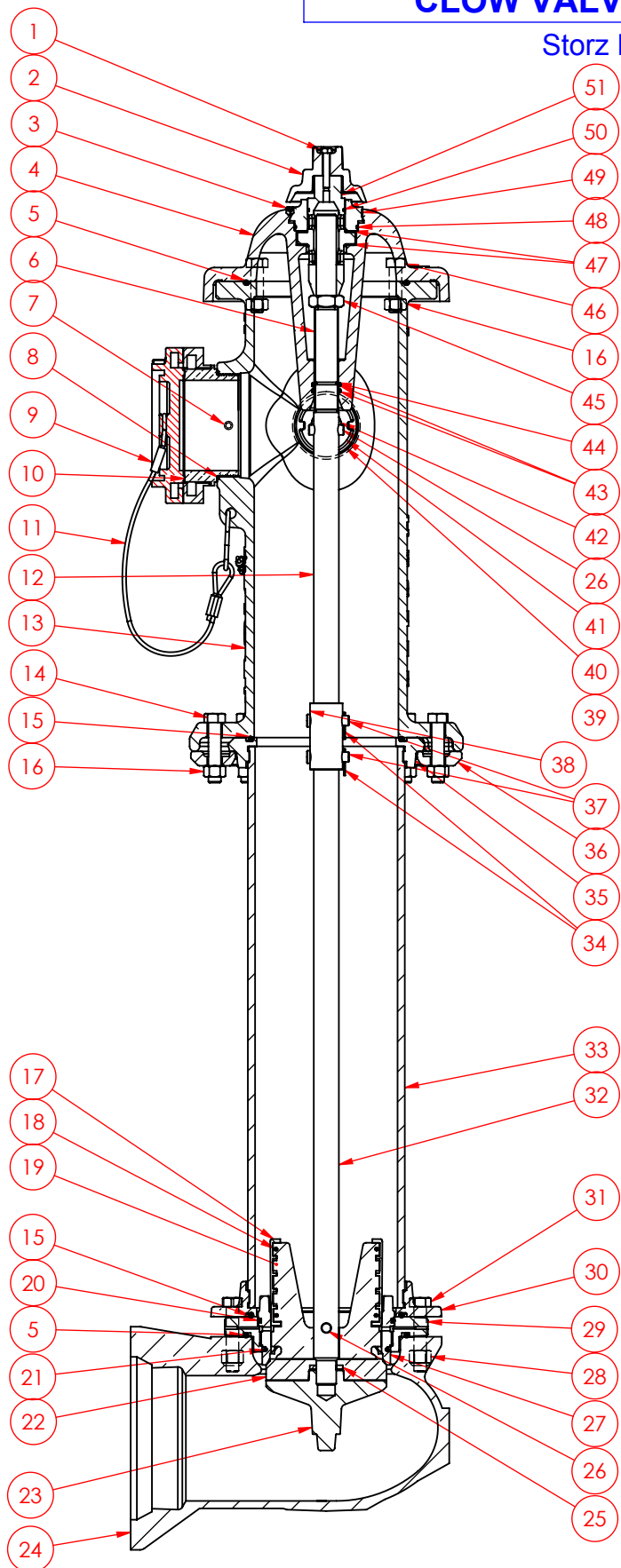
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CLOW VALVE COMPANY

Storz Nozzle

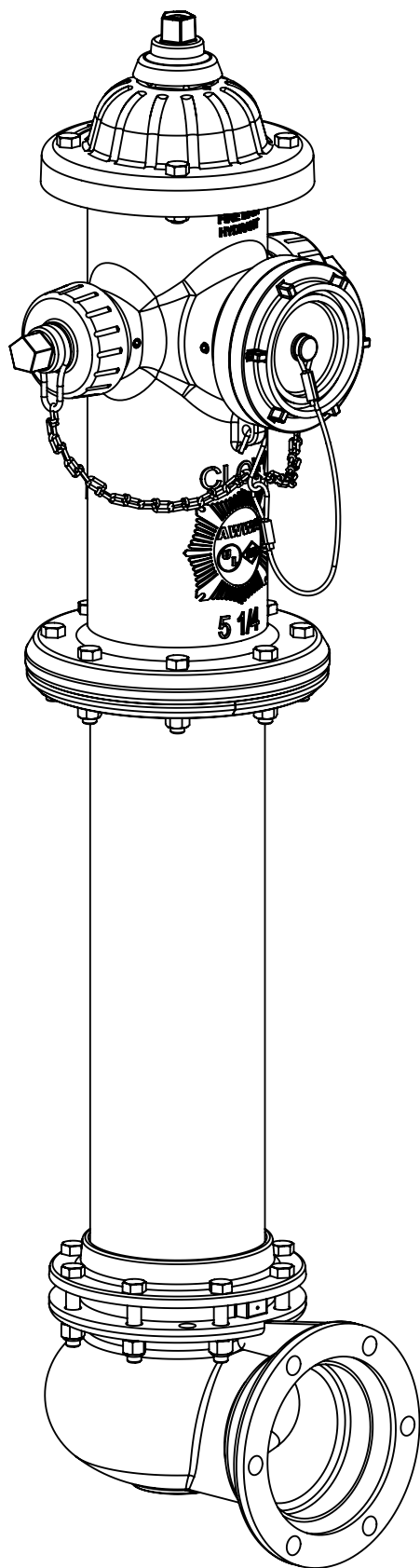
Used In Open Right Only



MEDALLION HYDRANT
Bill of Material

CLOW VALVE COMPANY

Storz Nozzle



ITEM NO.	DESCRIPTION	Material	Material Spec	QTY.
1	Hex Head Bolt	Stainless Steel	ASTM F593 304	1
2	Weather Cap	Ductile Iron	ASTM A536 65-45-12	1
* 3	Socket Set Screw	Stainless Steel	AISI 304	1
4	Bonnet	Ductile Iron	ASTM A536 65-45-12	1
5	O-Ring #444	Rubber	EPDM	2
6	Upper Stem Sleeve	Bronze	ASTM B135 Alloy 330	1
7	1/2" Set Screw	Stainless Steel	AISI 316	3
8	O-Ring #250	Rubber	Buna-N	1
9	Storz Nozzle Cap	Aluminum	AISI 6061-T6	1
10	Storz Nozzle	Bronze / Aluminum	ASTM B584 C83600 / 6061-T6	1
11	Storz Nozzle Cap Cable	-----		1
12	Upper Stem	Steel	AISI 1045 CDS	1
13	Nozzle Section - 3 Ports	Ductile Iron	ASTM A536 65-45-12	1
14	Hex Head Bolt	Stainless Steel	ASTM F593 304	8
15	O-Ring #442	Rubber	EPDM	2
16	Hex Nut	Stainless Steel	ASTM F594 304	12
17	Drain Valve Facing	Rubber	Urethane	2
18	Pin	Stainless Steel	AISI 316	4
19	Upper Valve Plate	Bronze	ASTM B584 C83600	1
20	O-Ring #361	Rubber	EPDM	1
21	O-Ring #360	Rubber	EPDM	1
22	Main Valve Seat	Rubber	EPDM	1
23	Lower Valve Plate	Bronze	ASTM B584 C83600	1
24	Shoe, Mechanical Joint End	Ductile Iron	ASTM A536 65-45-12	1
25	Lock Washer	Stainless Steel	AISI 304	1
26	Pin	Stainless Steel	AISI 303	2
27	Seat Ring	Bronze	ASTM B584 C83600	1
28	Lock Nut	Stainless Steel	ASTM F594 304	8
29	Drain Ring	Bronze	ASTM B584 C83600	1
30	Barrel Lower Flange	Ductile Iron	ASTM A536 65-45-12	1
31	Hex Head Bolt	Stainless Steel	ASTM F593 304	8
32	Lower Stem	Steel	AISI 1018 CRS	1
33	Barrel	Ductile Iron	ANSI A21.51 CI 53	1
34	Cotter Pin	Stainless Steel	AISI 304	2
35	Barrel Upper Flange	Ductile Iron	ASTM A536 65-45-12	1
36	Safety Flange	Gray Iron	ASTM A126 Class B	2
37	Safety Coupling Pin	Stainless Steel	AISI 302	2
38	Safety Stem Coupling	Steel Tubing	AISI C1026	1
39	O-Ring #235	Rubber	EPDM	2
40	Hose Nozzle	Bronze	ASTM B584 C83600	2
41	Hose Nozzle Gasket	Rubber	EPDM	2
42	Hose Nozzle Cap	Gray Iron	ASTM A126 Class B	2
43	O-Ring #217	Rubber	EPDM	2
44	O-Ring #119	Rubber	EPDM	1
45	Jam Nut	Zinc Plated Steel	ASTM A307 Gr B	1
46	Hex Head Bolt	Stainless Steel	ASTM F593 304	4
47	Thrust Bearing	Plastic	Delrin	2
48	O-Ring #151	Rubber	EPDM	1
49	Thrust Nut	Bronze	ASTM B584 C83600	1
50	O-Ring #131	Rubber	EPDM	1
51	Operating Nut	Bronze	ASTM B584 C86700	1

* Used in Open Right Hydrants Only

DOMESTIC WATER

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AIR RELEASE MATERIALS



PIPE & SUPPLY

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