Submittal Transmittal

10830 E. 45TH ST. SUITE 104
TULSA, OK. 74146
P: (918) 459-9544
F: (918) 459-9555

Original Submittal: Yes ☐ No ☑

Revision #: 1

January 19, 2022

Project:	WICHITA NORTHWEST WATER TREATMENT FACILITY
Engineer:	BURNS & MCDONNELL

Transmitted To:	**Transmitted From:**
BURNS & MCDONNELL 4729 W. 21ST STREET N. WICHITA, KS. 67205	FERGUSON WATERWORKS 10830 E. 45TH ST. SUITE 4 TULSA, OK. 74146

Spec/Paragraph Section	Description	Page #
02 00 08-2	WATERLINE PVC AND DUCTILE IRON MATERIAL DATA,	139
	VALVES, AND FIRE HYDRANTS	

Product	Manufacturer	Page #
SEE ATTACHED	SEE ATTACHED	

Notes:

Products submitted with multiple manufacturers are only intended to provide equivalent options in the event that availability issues occur. When possible, only one manufacturer for each product type will be utilized throughout the project.

Any shop drawings required for this section will be submitted under a seperate cover.

WATERLINE SUBMITTAL TABLE OF CONTENTS

** NOTES **

* ALL ITEMS ARE PER CITY OF WICHITA SPECIFICATIONS / STANDARD DETAILS

PVC & C900 PVC PIPE

ERGUSON
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
WATERLINE #4				**REF: 048C401, 402**
4" X 20' C900 DR18 PVC PIPE	PVC	240	FT	
WATERLINE #1B				**REF: 048C416**
4" X 20' C900 DR18 PVC PIPE	PVC	160	FT	
WATERLINE #1C				**REF: 048C410, 414**
8" X 20' C900 DR18 PVC PIPE	PVC	120	FT	
WATERLINE #1D				**REF: 048C410, 414**
6" X 20' C900 DR18 PVC PIPE	PVC	460	FT	
8" X 20' C900 DR18 PVC PIPE	PVC	60	FT	
2" X 20' PVC SDR21 CL200 PIPE	PVC	20	FT	
WATERLINE #2A				**REF: 048C405**
8" X 20' C900 DR18 PVC PIPE	PVC	140	FT	
WATERLINE #2B				**REF: 048C405**
3" X 20' PVC SDR21 CL200 PIPE	PVC	40	FT	
WATERLINE #2C				**REF: 048C404**
8" X 20' C900 DR18 PVC PIPE	PVC	140	FT	
WATERLINE # 3E				**REF: 048C410**
8" X 20' C900 DR18 PVC PIPE	PVC	120	FT	
WATERLINE # 3F				**REF: 048C411**
8" X 20' C900 DR18 PVC PIPE	PVC	40	FT	
WATERLINE #3G				**REF: 048C411**
8" X 20' C900 DR18 PVC PIPE	PVC	100	FT	
WATERLINE #4A				**REF: 048C401**
6" X 20' C900 DR18 PVC PIPE	PVC	160	FT	
WATERLINE #5				**REF: 048C403, 404**
8" X 20' C900 DR18 PVC PIPE	PVC	580	FT	
WATERLINE #5A				**REF: 048C404**
8" X 20' C900 DR18 PVC PIPE	PVC	100	FT	
WATERLINE #5B				**REF: 048C404**
8" X 20' C900 DR18 PVC PIPE	PVC	140	FT	
WATERLINE #6				**REF: 048C403**
4" X 20' C900 DR18 PVC PIPE	PVC	100	FT	
3" X 20' PVC SDR21 CL200 PIPE	PVC	100	FT	
2" X 20' PVC SDR21 CL200 PIPE	PVC	60	FT	
WATERLINE #7				**REF: 048C418**
8" X 20' C900 DR18 PVC PIPE	PVC	100	FT	
WATERLINE #8				**REF: 048C405, 406, 411, 412**
3" X 20' PVC SDR21 CL200 PIPE	PVC	740	FT	
2" X 20' PVC SDR21 CL200 PIPE	PVC	60	FT	

ASTM D2241/IB PVC Pressure Pipe | Gasketed Integral Bell

NAPCO's ASTM D2241 Gasketed Integral Bell PVC Pipe product line is manufactured to meet the needs of water distribution and irrigation systems. With top quality raw materials and modern processing technology, our D2241 pipe meets all industry standards in addition to our own rigorous quality control requirements.

Our D2241 pipe utilizes Rieber style gaskets throughout the entire product offering to create a leak-free joint.

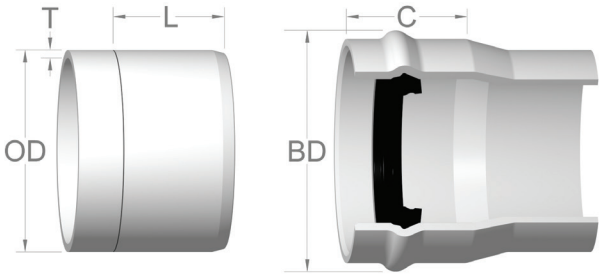
Short Form Specification		
Pipe Standard:	ASTM D2241	
Diameter Std.:	Iron Pipe Size (IPS)	
Nominal Sizes:	1½", 2", 2½", 3", 4", 6", 8", 10", 12"	
Dimension Ratios & Pressure Ratings:	SDR 41 – 100 psi SDR 32.5 – 125 psi SDR 26 – 160 psi	SDR 21 – 200 psi SDR 17 – 250 psi SDR 13.5 – 315 psi
Lay Length:	14' – Made-to-order 20' – All Sizes 40' and 42' – 2" to 6" Sizes	
Pipe Compound:	ASTM D1784 Cell Class 12454	
Pipe Joint Std.:	ASTM D3139	
Max. Angular Joint Deflection:‡	1°	
Gasket Standard:	ASTM F477	
Gasket Material Offerings:	Standard – SBR Optional – NBR or EPDM	
Installation Std.:	ASTM D2774	

Applications	Potable Water	Wastewater	Reclaimed Water
Color:	White	Green	Purple
Certifications:*	NSF 14 NSF 61	None	None

‡See Installation Guide for more information.

Only products bearing the NSF Mark are Certified

ASTM D2241/IB PVC Pressure Pipe | Gasketed Integral Bell



D2241/IB PIPE DIMENSIONS & PERFORMANCE								
Nom. Size	Outside Diameter (OD)	SDR	Pressure Rating (psi)	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	Insertion Mark (L)
1 1/2"	1.900	21	200	0.090	1.720	2.625	3.250	2.625
		17	250	0.112	1.676			
		13.5	315	0.141	1.618			
2"	2.375	26	160	0.091	2.193	3.250	3.500	2.750
		21	200	0.113	2.149			
		17	250	0.140	2.095			
		13.5	315	0.176	2.023			
2 1/2"	2.875	26	160	0.110	2.655	4.000	4.125	3.125
		21	200	0.137	2.601			
		17	250	0.169	2.537			
		13.5	315	0.213	2.449			
3"	3.500	41	100	0.085	3.330	4.750	4.125	3.625
		32.5	125	0.108	3.284			
		26	160	0.135	3.230			
		21	200	0.167	3.166			
		17	250	0.206	3.088			
		13.5	315	0.259	2.982			
4"	4.500	41	100	0.110	4.280	5.875	4.625	4.000
		32.5	125	0.138	4.224			
		26	160	0.173	4.154			
		21	200	0.214	4.072			
		17	250	0.265	3.970			
		13.5	315	0.333	3.834			

Notes:
1. These dimensions are for estimating purposes only. All dimensions are in inches unless otherwise specified.
2. SDR = Standard Dimension Ratio
3. ASTM Pressure Rating @ 73°F and includes 2:1 safety factor.
4. Internal diameter calculated using nominal outside diameter and minimum wall thickness.
5. Dimension given for Approx. Bell Diameter (BD) is for highest pressure rating.

AWWA C900/IB PVC Pressure Pipe | Gasketed Integral Bell

NAPCO's AWWA C900 Gasketed Integral Bell PVC Pipe product line is manufactured to meet the needs of modern municipal water, wastewater, and reclaimed water systems. With top quality raw materials and modern processing technology, our C900 pipe meets all industry standards in addition to our own rigorous quality control requirements.

Our C900 pipe utilizes Rieber style gaskets throughout the entire product offering to create a leak-free joint.

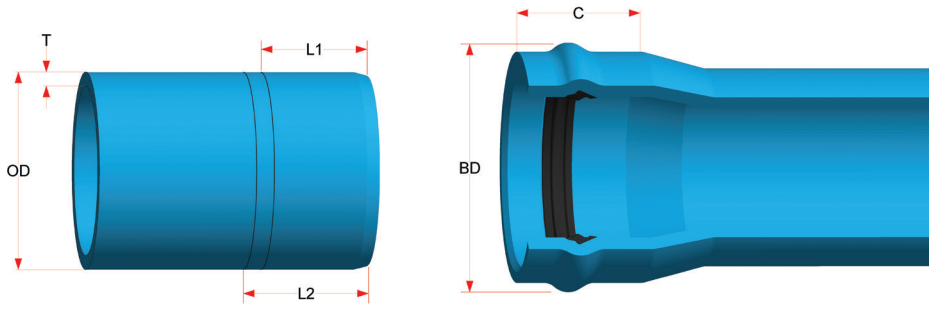
Short Form Specification		
Pipe Standard:	AWWA C900-16	
Diameter Std.:	Cast Iron Outside Diameter (CIOD)	
Nominal Sizes:	4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36"	
Dimension Ratios & Pressure Ratings"	DR 51 – 80 psi DR 41 – 100 psi DR 32.5 – 125 psi DR 25 – 165 psi DR 21 – 200 psi	DR 18 – 235 psi (185 psi)** DR 14 – 305 psi (250 psi)**
Lay Length:	20' [6.1m]	
Pipe Compound:	ASTM D1784 Cell Class 12454	
Pipe Joint Std.:	ASTM D3139	
Max. Angular Joint Deflection:‡	1°	
Gasket Standard:	ASTM F477, UL 157	
Gasket Material Offerings:	Standard – SBR Optional – NBR or EPDM	
Installation Std.:	AWWA C605	

Applications	Potable Water	Waste-water	Reclaimed Water
Color:	Blue	Green	Purple
Certifications:*	NSF 14, NSF 61 CSA B137.3* UL 1285 FM 1612** BNQ 3624-250 (24in)*, BNQ 3660-950 (24in)	CSA B137.3*	CSA B137.3*

**See Certification Letter for full explanation and list of exceptions.*
***FM 1612 calculates pressure ratings differently than AWWA for 4"-12" only with DR 18 as 185 psi and DR 14 as 250 psi.*
‡See Installation Guide for more information.

Only products bearing the NSF Mark are Certified

AWWA C900/IB PVC Pressure Pipe | Gasketed Integral Bell



C900/IB PIPE DIMENSIONS & PERFORMANCE									
Nom. Size	Outside Diameter (OD)	DR	Pressure Class psi [kPa]	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	1st Insertion Mark (L1)	2nd Insertion Mark (L2)
4" [100mm]	4.800 [121.9]	25	165 [1150]	0.192 [4.88]	4.416 [112.1]	6.250 [158.8]	5.000 [127]	3.375 [85.7]	4.375 [111.1]
		18	235 [1620]	0.267 [6.78]	4.266 [108.3]				
		14	305 [2130]	0.343 [8.70]	4.114 [104.5]				
6" [150mm]	6.900 [175.3]	25	165 [1150]	0.276 [7.00]	6.348 [161.3]	8.625 [219.1]	5.750 [146.1]	4.625 [117.5]	5.625 [135.3]
		18	235 [1620]	0.383 [9.72]	6.134 [155.9]				
		14	305 [2130]	0.493 [12.50]	5.914 [150.3]				
8" [200mm]	9.050 [229.9]	25	165 [1150]	0.362 [9.20]	8.326 [211.5]	11.500 [292.1]	7.000 [177.8]	5.625 [135.3]	6.625 [168.3]
		18	235 [1620]	0.503 [12.80]	8.044 [204.3]				
		14	305 [2130]	0.646 [16.40]	7.758 [197.1]				
10" [250mm]	11.100 [281.9]	25	165 [1150]	0.444 [11.30]	10.212 [259.3]	14.000 [355.6]	7.250 [184.2]	6.125 [155.6]	7.125 [181.0]
		18	235 [1620]	0.617 [15.70]	9.866 [250.3]				
		14	305 [2130]	0.793 [20.10]	9.514 [241.7]				
12" [300mm]	13.200 [335.3]	25	165 [1150]	0.528 [13.40]	12.144 [308.5]	16.563 [420.7]	8.000 [203.2]	6.875 [174.6]	7.875 [200]
		18	235 [1620]	0.733 [18.60]	11.734 [298.1]				
		14	305 [2130]	0.943 [23.90]	11.314 [287.5]				
14" [350mm]	15.300 [388.6]	32.5	125 [860]	0.471 [12.0]	14.358 [364.7]	19.063 [484.2]	9.000 [228.6]	7.500 [190.5]	8.500 [215.9]
		25	165 [1150]	0.612 [15.6]	14.076 [357.5]				
		21	200	0.729	13.842				
		18	235 [1620]	0.850 [21.6]	13.600 [345.4]				
		14	305	1.093	13.114				
16" [400mm]	17.400 [442.0]	41	100	0.424	16.552	21.750 [552.5]	10.000 [254.0]	8.500 [215.9]	9.500 [241.3]
		32.5	125 [860]	0.535 [13.6]	16.330 [414.8]				
		25	165 [1150]	0.696 [17.7]	16.008 [406.6]				
		21	200	0.829	15.742				
		18	235 [1620]	0.967 [24.6]	15.466 [392.8]				
		14	305	1.243	14.914				

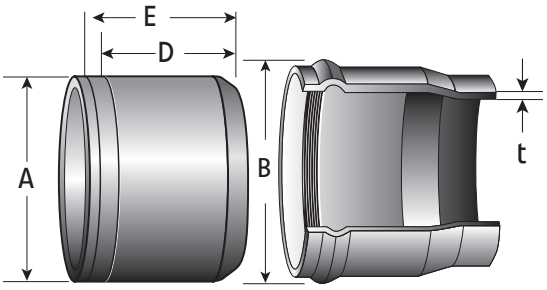
ASTM D2241 IPS SPECIFICATION DATA

Diamond IPS pressure-rated PVC pipe is made of compounds conforming to material requirements of ASTM D2241 in accordance with ASTM D1784. Pipe sizes (1 ½" through 12") are made with an integral bell to utilize the Rieber gasket system for sealing, and meeting specifications defined in ASTM F477 which conforms to the requirements of ASTM D3139.

Diamond IPS pressure-rated PVC pipe meets all the dimensional, chemical, and physical requirements as outlined in ASTM D2241. Potable water pipe carries the mark of NSF, International in accordance with Standard 61. Some factory locations produce IPS pressure pipe bearing the mark of NSF-14.

Each male end shall be beveled to facilitate joining and reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

RIEBER JOINT ILLUSTRATION



D2241

PHYSICAL PROPERTIES OF PVC 12454:

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.

SHORT FORM Specification for Diamond PVC Water Pipe
Diamond PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond PVC Water Pipe must meet all the dimensional, chemical, and physical requirements as outlined in ASTM D2241 and will be supplied in 20 and 22 foot laying lengths. Joints shall be formed using Rieber Technology. Potable water pipe shall be manufactured from NSF listed ingredients.

ASTM D2241

SPECIFICATION DATA. DIAMOND IPS PRESSURE-RATED PIPE IS SUPPLIED IN 20 AND 22 FOOT LAYING LENGTHS.

Nominal Pipe Size in. (mm)	B Bell Socket Diameter Inches	D Insert Mark 1 Inches *	E Insert Mark 2 Inches *
2" (50)	3-1/8"	2-3/4"	3-3/4"
2.5" (62.5)	4-3/8"	2"	3"
3" (75)	4-7/16"	3-5/8"	4-5/8"
4" (100)	5-1/2"	4-1/4"	5-1/4"
6" (150)	8-1/4"	4-3/4"	5-3/4"
8" (200)	10-1/4"	4-7/8"	5-7/8"
10" (250)	12-7/8"	5-1/2"	6-1/2"
12" (300)	15-1/8"	5-7/8"	6-7/8"

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*Tolerance of +/- 1/4" allowed

ASTM D2241
SPECIFICATION DATA

Nominal Pipe Size in. (mm)	A Outside Diameter Inches	t SDR 13.5 315 psi Inches	t SDR 17 250 psi Inches	t SDR 21 200 psi Inches	t SDR 26 160 psi Inches	t SDR 32.5 125 psi Inches	t SDR 41 100 psi Inches
MINIMUM WALL THICKNESS = (t)							
1.5" (37.5)	1.900	0.141	0.112	0.090			
2" (50)	2.375	0.176	0.140	0.113	0.091		
2.5" (62.5)	2.875	0.213	0.169	0.137	0.110		
3" (75)	3.500	0.259	0.206	0.167	0.135		
4" (100)	4.500	0.333	0.265	0.214	0.173	0.138	0.110
6" (150)	6.625	0.491	0.390	0.316	0.255	0.204	0.162
8" (200)	8.625		0.508	0.410	0.332	0.265	0.210
10" (250)	10.750		0.632	0.511	0.413	0.331	0.262
12" (300)	12.750		0.750	0.606	0.490	0.392	0.311

ASTM D2241
ASTM D2241 LOADING CHART

Nominal Pipe Size in. (mm)	Outside Diameter	Joints Per Bundle	Feet Per Bundle 20' laying lengths	*Feet Per Truckload 20' laying lengths	Feet Per Bundle 22' laying lengths	*Feet Per Truckload 22' laying lengths
SDR-41 PRESSURE RATING 100 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-32.5 PRESSURE RATING 125 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-26 PRESSURE RATING 160 PSI						
2" (50)	2.375	215			4,730	75,680
2.5" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936\2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156

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ASTM D2241

LOADING CHART

Nominal Pipe Size in. (mm)	Outside Diameter	Joints Per Bundle	Feet Per Bundle 20' laying lengths	*Feet Per Truckload 20' laying lengths	Feet Per Bundle 22' laying lengths	*Feet Per Truckload 22' laying lengths
SDR-21 PRESSURE RATING 200 PSI						
1-1/2" (37.5)	1.900	215			4,730	75,680
2" (50)	2.375	215			4,730	75,680
2-1/2" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936/2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-17 PRESSURE RATING 250 PSI						
2" (50)	2.375	215			4,730	75,680
2-1/2" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936\2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-13.5 PRESSURE RATING 315 PSI						
2" (50)	2.375	215			4,730	75,680
2-1/2" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936\2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240

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4"-12" SPECIFICATION DATA

Diamond (C900) PVC Pipe (4" through 12") is made of 12454 compound per ASTM D1784, in accordance with the dimensional chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe bears the mark of NSF, International (NSF), the listing of Underwriters Laboratory, Inc. (UL), and (DR14 & DR18) bears the listing of Factory Mutual(FM). Some factory locations produce C900 bearing the mark of the Canadian Standards Association (CSA) and NSF14.

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D3139.) Each male end is beveled to facilitate joint assembly, and the spigot is referenced marked to ensure proper insertion depth. Diamond furnished lubricant is to be used in the joining process. Specialty gaskets may be available upon request.

PHYSICAL PROPERTIES OF PVC 12454:

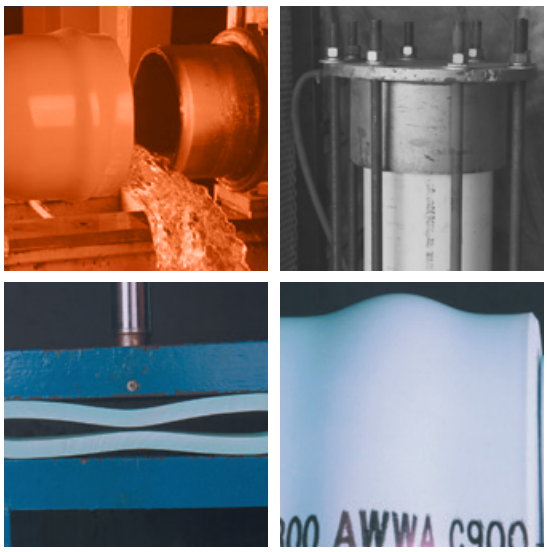
Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.

SHORT FORM Specification for Diamond C900 PVC Water Pipe
Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 and 22 foot laying lengths. Joints shall meet the requirements of ASTM D3139 and shall be formed using Rieber Technology. Gaskets shall meet the requirements of ASTM F477.

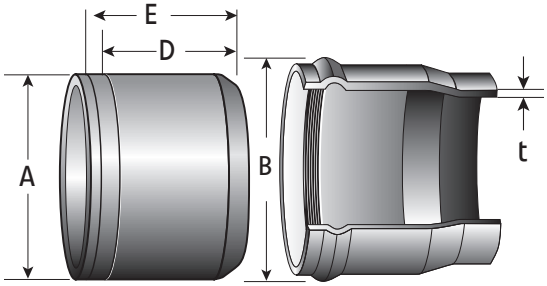
Potable water pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

EXTREME TESTING CONDITIONS

C900 PVC pressure pipe, available in pressure ratings for a wide range of water transfer applications (Available in sizes from 4" through 12")



RIEBER JOINT ILLUSTRATION



C900™

AWWA C900 SPECIFICATION DATA. SUPPLIED IN 20 AND 22 FOOT LAYING LENGTHS.

Nominal Pipe Size in. (mm)	A Outside Dia. Inches	B Bell Dia. Inches	D Assembly Mark 1 Inches *	E Assembly Mark 2 Inches *	t C900 DR-14 305 psi Min Wall Inches	t C900 DR-18 235 psi Min Wall Inches	t C900 DR-25 165 psi Min Wall Inches
4" (100)	4.800	6-1/2"	4-1/4"	5-1/4"	0.343	0.267	0.192
6" (150)	6.900	9-1/4"	4-5/8"	5-5/8"	0.493	0.383	0.276
8" (200)	9.050	11-3/4"	5-1/8"	6-1/8"	0.646	0.503	0.362
10" (250)	11.100	14-1/4"	5-3/4"	6-3/4"	0.793	0.617	0.444
12" (300)	13.200	16-3/4"	6-1/8"	7-1/8"	0.943	0.733	0.528

Prices are subject to a firm policy of "Price in effect at time of shipment on regular purchases"
"Possession of this page does not constitute an offer of sale"
*Tolerance of +/- 1/4" allowed

Underwriters Laboratories Inc.©

DUCTILE IRON PIPE

ERGUSON
nt Division

WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1

DOMESTIC REQUIREMENT: YES - AIS-DOMESTIC

Description	Grouping	QTY	UM	Comments
WATERLINE #1				**REF: 048C405, 406, 408, 409, 412, 413, 414, 415, 416**
24" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	1340	FT	
16" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	1760	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	80	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	100	FT	
WATERLINE #2				**REF: 048C402, 403, 404, 405,**
24" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	1340	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	
2" AIR RELEASE VALVE ASSEMBLY:				TAG: 152
WATERLINE #3				**REF: 048C409, 410, 411, 412**
24" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	1400	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	40	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
2" AIR RELEASE VALVE ASSEMBLY:				TAG: 245
WATERLINE #4				**REF: 048C401, 402**
24" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	500	FT	
36" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
WATERLINE # 1A				**REF: 048C405, 406**
4" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #1B				**REF: 048C416**
4" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #1C				**REF: 048C410, 414**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	
WATERLINE #1D				**REF: 048C410, 414**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #2A				**REF: 048C405**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	
WATERLINE #2B				**REF: 048C405**
3" CL54 TYTON JOINT DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #2C				**REF: 048C404**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	
WATERLINE #3A				**REF: 048C403, 409**
12" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	180	FT	
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
WATERLINE #3B				**REF: 048C410**

ERGUSON®
nt Division

WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1

NET ESTIMATED TOTAL: ##########
DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	QTY	UM	Comments
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #3C				**REF: 048C410**
16" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	80	FT	
WATERLINE #3D				**REF: 048C410**
16" CL250 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
WATERLINE # 3E				**REF: 048C410**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE # 3F				**REF: 048C411**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
WATERLINE #3G				**REF: 048C411**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
8" MJ C509 GATE VALVE - 2" NUT				
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #3H				**REF: 048C411**
12" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	60	FT	
WATERLINE #3I				**REF: 048C411**
12" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	60	FT	
WATERLINE #4A				**REF: 048C401**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #5				**REF: 048C403, 404**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
WATERLINE #5A				**REF: 048C404**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
WATERLINE #5B				**REF: 048C404**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	
WATERLINE #6				**REF: 048C403**
8" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	FT	
WATERLINE #7				**REF: 048C418**
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	5	EA	
WATERLINE #8				**REF: 048C405, 406, 411, 412**
3" CL54 TYTON JOINT DUCTILE IRON PIPE - CML/AC	DIP	40	FT	
HYDRANT ON 42" LINE				**REF: 048C405**
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	10	FT	VALVE BOX SHAFT
6" CL350 FASTITE DUCTILE IRON PIPE - CML/AC	DIP	20	FT	

McWANE DUCTILE | IRON STRONG

2266 South Sixth Street
Coshocton, OH 43812
o 740-622-6651
f 740-622-8551
mcwaneductile.com

December 7, 2021

Subject: American Iron and Steel Certification for McWane Ductile

Project: Wichita Northwest Water Treatment Facility – Water Line / Wichita, KS

Contractor: Wichita Water Partners

To whom it may concern:

I, Jeff Sycks, certify that the melting, coating, assembling, and cutting processes, etc. for manufacturing the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

- Ductile Iron Pipe – Tyton Joint

Such processes took place at the following locations

- Coshocton, OH
- Provo, UT
- Phillipsburg, NJ (3"-4" only)

If any of the above compliance statements change while providing material to this project, we will immediately notify the prime contractor and the engineer.

If there are further questions on the topic, please contact McWane Ductile.

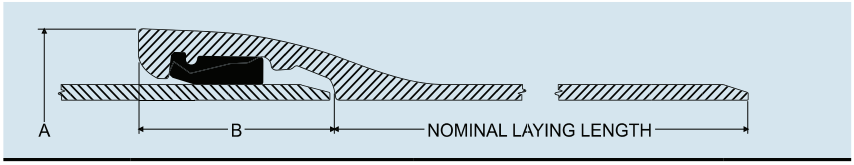
Yours truly,

Jeff Sycks

Jeff Sycks
Quality Systems Manager
McWane Ductile

TYTON® JOINT PIPE

For Generations



Tyton® Joint

Pipe Size In.	Pipe Thickness In.		Outside Diameter	*Dimensions In.	
	From	To	In.	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.

ASSEMBLY INSTRUCTIONS

Step 1. Thoroughly clean out the bell with special attention to the gasket recess. Remove any foreign material or excess paint. Clean the spigot or beveled plain end and remove any sharp edges with a standard file.

Step 2. After making sure that the correct gasket is being used, insert it into the recess in the bell with the small end of the gasket facing the bell face.

Step 3. Apply lubricant to the inside surface of the gasket, making sure that the entire surface is coated. Apply a generous coating of lubricant to the beveled portion of the plain end.

Step 4. Guide the plain end into the bell and, while maintaining straight alignment, push the plain end into the bell socket. Once the joint is assembled, necessary deflection can be accomplished. When assembly is complete, the bell face should be aligned between the two white depth rings, for Tyton® Joints. Fastite® Joints have only 1 assembly stripe.

McWANE DUCTILE | IRON STRONG

Canada Pipe Company ULC

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
mcwaneductile.com

OHIO
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651
mcwaneductile.com

UTAH
1401 E 2000 S.
Provo, UT 84603
801-373-6910
mcwaneductile.com

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

McWANE DUCTILE | IRON STRONG

DUCTILE IRON PIPE
INTERNAL DIAMETERS
3"–36"

Unlined (UNL) **Single Cement Lining** (SCL) **Double Cement Lining** (DCL)

All dimensions shown are nominal with units = inches Pipe classes listed in ascending order of thickness per diameter

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
3	350	0.25	3.46	3.34	3.21
	51	0.25	3.46	3.34	3.21
	52	0.28	3.40	3.28	3.15
	53	0.31	3.34	3.22	3.09
OD 3.96	54	0.34	3.28	3.16	3.03
	55	0.37	3.22	3.10	2.97
	56	0.40	3.16	3.04	2.91
6	350	0.25	6.40	6.28	6.15
	50	0.25	6.40	6.28	6.15
	51	0.28	6.34	6.22	6.09
	52	0.31	6.28	6.16	6.03
	53	0.34	6.22	6.10	5.97
OD 6.90	54	0.37	6.16	6.04	5.91
	55	0.40	6.10	5.98	5.85
	56	0.43	6.04	5.92	5.79
10	350	0.26	10.58	10.46	10.33
	50	0.29	10.52	10.40	10.27
	51	0.32	10.46	10.34	10.21
	52	0.35	10.40	10.28	10.15
	53	0.38	10.34	10.22	10.09
OD 11.10	54	0.41	10.28	10.16	10.03
	55	0.44	10.22	10.10	9.97
	56	0.47	10.16	10.04	9.91
14	250	0.28	14.74	14.55	14.36
	300	0.30	14.70	14.51	14.32
	350	0.31	14.68	14.49	14.30
	50	0.33	14.64	14.45	14.26
	51	0.36	14.58	14.39	14.20
	52	0.39	14.52	14.33	14.14
	53	0.42	14.46	14.27	14.08
OD 15.30	54	0.45	14.40	14.21	14.02
	55	0.48	14.34	14.15	13.97
	56	0.52	14.26	14.07	13.88
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
4	350	0.25	4.30	4.18	4.05
	51	0.26	4.28	4.16	4.03
	52	0.29	4.22	4.10	3.97
	53	0.32	4.16	4.04	3.91
OD 4.80	54	0.35	4.10	3.98	3.85
	55	0.38	4.04	3.92	3.79
	56	0.41	3.98	3.86	3.73
8	350	0.25	8.55	8.43	8.30
	50	0.27	8.51	8.39	8.26
	51	0.30	8.45	8.33	8.20
	52	0.33	8.39	8.27	8.14
	53	0.36	8.33	8.21	8.08
OD 9.05	54	0.39	8.27	8.15	8.02
	55	0.42	8.21	8.09	7.96
	56	0.45	8.15	8.03	7.90
12	350	0.28	12.64	12.52	12.39
	50	0.31	12.58	12.46	12.33
	51	0.34	12.52	12.40	12.27
	52	0.37	12.46	12.34	12.21
	53	0.40	12.40	12.28	12.15
OD 13.20	54	0.43	12.34	12.22	12.09
	55	0.46	12.28	12.16	12.03
	56	0.49	12.22	12.10	11.97
16	250	0.30	16.80	16.61	16.43
	300	0.32	16.76	16.57	16.39
	350	0.34	16.72	16.53	16.35
	50	0.34	16.72	16.53	16.35
	51	0.37	16.66	16.47	16.29
	52	0.40	16.60	16.41	16.23
	53	0.43	16.54	16.35	16.17
OD 17.40	54	0.46	16.48	16.29	16.11
	55	0.49	16.42	16.23	16.05
	56	0.52	16.36	16.17	15.99
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
18	250	0.31	18.88	18.69	18.51
	300	0.34	18.82	18.63	18.45
	50	0.35	18.80	18.61	18.43
	350	0.36	18.78	18.59	18.41
	51	0.38	18.74	18.55	18.37
	52	0.41	18.68	18.49	18.31
	53	0.44	18.62	18.43	18.25
OD 19.50	54	0.47	18.56	18.37	18.19
	55	0.50	18.50	18.31	18.13
	56	0.53	18.44	18.25	18.07
24	200	0.33	25.14	24.95	24.77
	250	0.37	25.06	24.87	24.69
	50	0.38	25.04	24.85	24.67
	300	0.40	25.00	24.81	24.63
	51	0.41	24.98	24.79	24.61
	350	0.43	24.94	24.75	24.57
	52	0.44	24.92	24.73	24.55
	53	0.47	24.86	24.67	24.49
OD 25.80	54	0.50	24.80	24.61	24.43
	55	0.53	24.74	24.55	24.37
	56	0.56	24.68	24.49	24.31
36	150	0.38	37.54	37.29	37.04
	200	0.42	37.46	37.21	36.96
	50	0.43	37.44	37.19	36.94
	250	0.47	37.36	37.11	36.86
	51	0.48	37.34	37.09	36.84
	300	0.51	37.28	37.03	36.78
	52	0.53	37.24	36.99	36.74
	350	0.56	37.18	36.93	36.68
	53	0.58	37.14	36.89	36.64
OD 38.30	54	0.63	37.04	36.79	36.54
	55	0.68	36.94	36.69	36.44
	56	0.73	36.84	36.59	36.34
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
20	250	0.33	20.94	20.75	20.57
	300	0.36	20.88	20.69	20.51
	50	0.36	20.88	20.69	20.51
	350	0.38	20.84	20.65	20.47
	51	0.39	20.82	20.63	20.45
	52	0.42	20.76	20.57	20.39
	53	0.45	20.70	20.51	20.33
OD 21.60	54	0.48	20.64	20.45	20.27
	55	0.51	20.58	20.39	20.21
	56	0.54	20.52	20.33	20.15
30	150	0.34	31.32	31.07	30.82
	200	0.38	31.24	30.99	30.74
	50	0.39	31.22	30.97	30.72
	250	0.42	31.16	30.91	30.66
	51	0.43	31.14	30.89	30.64
	300	0.45	31.10	30.85	30.60
	52	0.47	31.06	30.81	30.56
	350	0.49	31.02	30.77	30.52
	53	0.51	30.98	30.73	30.48
OD 32.00	54	0.55	30.90	30.65	30.40
	55	0.59	30.82	30.57	30.32
	56	0.63	30.74	30.49	30.24
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

NOMINAL LINING THICKNESS PER PIPE DIAMETER

3–12 inch	SCL = 1/16 inch	DCL = 1/8 inch
14–24 inch	SCL = 3/32 inch	DCL = 3/16 inch
30–36 inch	SCL = 1/8 inch	DCL = 1/4 inch

Inside diameters may vary slightly based on permitted casting tolerances within AWWA/ANSI C151, latest edition.

Check with pipe manufacturer to confirm availability of wall classes in selected diameter.

McWane Ductile

IRON STRONG

McWaneDuctile.com

SURE STOP 350® GASKET

3"-24"

McWane Ductile is a division of McWane, Inc.

For Generations

SURE STOP 350® GASKET FOR TYTON® JOINT FROM MCWANE DUCTILE

Sure Stop 350® Gaskets are available from 3" through 24" to provide instant and easy joint restraint for Tyton Joint® pipe.

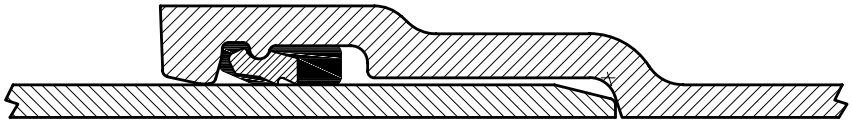
Sure Stop 350 Gaskets are rated for 350 psi working pressure with a 2:1 safey factor and allow up to a 5-degree deflection at each joint. McWane Ductile's Sure Stop 350 Gaskets are boltless, allowing quick, simple installation without special wrenches or tools, and are Underwriters Lab (UL) listed and Factory Mutual (FM) approved. McWane Ductile's Sure Stop 350 Gaskets can be furnished with various gasket compounds, including the standard SBR, Neoprene, EPDM, Nitrile and Viton. Please contact your local sales representative for more information.

APPLICATION NOTES

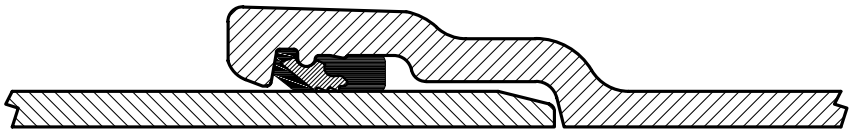
1. For Ductile iron applications utilizing Tyton pipe, valves and fittings are made to AWWA specifications.
2. In cold weather assembly, maintain the temperature of the gasket above 40° F.
3. The socket of the joint should be clean and free of debris or significant corrosion.
4. Gasket should be properly seated in the bell socket.
5. Keep the pipe and joint in alignment during assembly. If installed out of alignment, the gasket can be pushed out of position, creating the potential for leaks or failure.
6. If deflection is wanted in the joint, deflect before fully inserting the joint.
7. Some extension of the joint will occur when pressurized. To avoid this, the joint should be pulled out after assembly to "set" the stainless steel teeth in the inserted pipe.
8. Once assembled, the joint can be disassembled using steel shims.
9. When cut pipe is used, the following steps are required:
    a. Ensure that the spigot end is properly beveled.
    b. Mark the joint depth on the spigot so it is clear when the joint is fully inserted.
    c. Ensure that the pipe meets the required dimensional tolerances.
10. Do not reuse Sure Stop 350 Gaskets, as they may have been damaged during any previous installation or during removal.
11. Do not use Sure Stop 350 Gaskets to conduct electricity through the pipe joint, as they could be damaged and fail.
12. Do not use Sure Stop 350 Gaskets in above-ground applications.
13. Do not use Sure Stop 350 Gaskets with thick coating on the pipe exterior.
14. If Sure Stop 350 Gaskets are used in straight casings, you must pull the pipe through the casing. Do not push the pipe.

BELL DETAILS

3"-12"



14"-24"



DETAILS & DIMENSIONS

SIZE IN.	RATING PSI	DEFLECTION DEGREES
3	350	5
4	350	5
6	350	5
8	350	5
10	350	5
12	350	5
14	350	4
16	350	4
18	350	4
20	350	2.5
24	350	2.5

Sure Stop 350® Gaskets are available in sizes 3–24 inches, and with a rating of 350 psi, they will meet or exceed the capabilities of Ductile iron pipe, valves and fittings.

Sure Stop 350 Gaskets are NSF 61 approved, UL listed and FM approved.

FM Rating: 3–16 in. = 250 psi | 18–24 in. = 200 psi

PIPE SIZE NOMINAL IN.	CIRCUMFERENCE		DIAMETER	
	MIN.	MAX.	MIN.	MAX.
3	12-1/4"	12-5/8"	3.90"	4.02"
4	14-29/32"	15-9/32"	4.74"	4.86"
6	21-1/2"	21-7/8"	6.84"	6.96"
8	28-1/4"	28-5/8"	8.99"	9.11"
10	34-11/16"	35-1/16"	11.04"	11.16"
12	41-9/32"	41-21/32"	13.14"	13.26"
14	47-13/16"	48-7/32"	15.22"	15.35"
16	54-13/32"	54-13/16"	17.32"	17.45"
18	61"	61-13/32"	19.42"	19.55"
20	67-19/32"	68"	21.52"	21.65"
24	80-13/16"	81-7/32"	25.72"	25.85"

COMPATIBILITY NOTE

McWane Ductile's Sure Stop 350® Gasket is designed for use in Tyton Joint Ductile iron pipe products manufactured by McWane Ductile to conform to the latest licensed Tyton Joint drawings and parameters. Sure Stop 350 Gaskets may also be used in any other Tyton Joint provided it conforms to the latest licensed Tyton Joint drawings and parameters. Sure Stop 350 Gaskets are not warrantied for use in any other products or non-licensed push-on joints. Additionally, gaskets not provided by McWane Ductile, whether restrained or non-restrained, are not warrantied for use in McWane Ductile products.

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 in. through 36 in.)	ANSI/AWWA C110/A21.10
DUCTILE IRON COMPACT FITTINGS (3 in. through 24 in.)	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

McWANE DUCTILE

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161

OHIO
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651

UTAH
1401 E. 2000 South
Provo, UT 84606
801-373-6910

mcwaneductile.com

CANADA PIPE

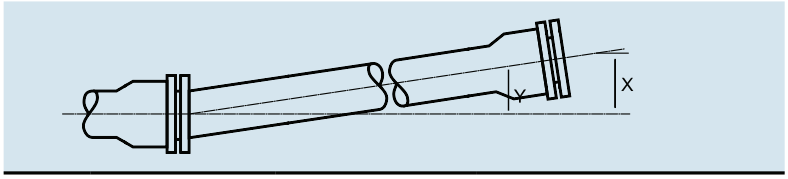
CANADA
Suite 1, 55 Frid Street,
Hamilton, Ontario, Canada
L8P 4M3

canadapipe.com

Rev. June 2021

MAXIMUM DEFLECTION FOR FULL LENGTH PIPE

For Generations



MECHANICAL JOINT PIPE
Maximum Allowable Joint Deflection

Pipe Size In.	Y-Maximum Joint Deflection in Degrees	X Deflection in Inches 18 ft. Length	Approximate Radius in ft. of Curve Produced by Succession of Joints 18 ft. Length
6	7°–7′	27	145
8	5°–21′	20	195
10	5°–21′	20	195
12	5°–21′	20	195
14	3°–35′	13.5	285
16	3°–35′	13.5	285
18	3°–0′	11	340
20	3°–0′	11	340
24	2°–23′	9	450

McWANE DUCTILE | IRON STRONG

Canada Pipe Company ULC

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
mcwaneductile.com

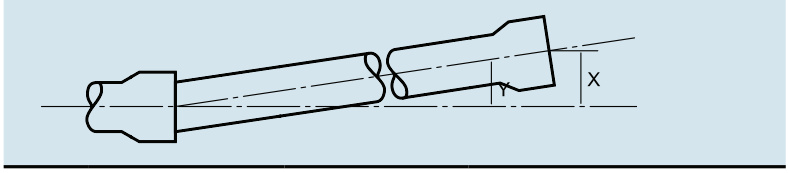
OHIO
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651
mcwaneductile.com

UTAH
1401 E 2000 S.
Provo, UT 84603
801-373-6910
mcwaneductile.com

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

JOINT DEFLECTION CHART

For Generations



PUSH-ON JOINT PIPE
Maximum Allowable Joint Deflection

Pipe Size In.	Y-Maximum Joint Deflection in Degrees	X Deflection in Inches 18 ft. Length	Approximate Radius in ft. of Curve Produced by Succession of Joints 18 ft. Length
3	5°	19	205
4	5°	19	205
6	5°	19	205
8	5°	19	205
10	5°	19	205
12	5°	19	205
14	5°	19	205
16	5°	19	205
18	5°	19	205
20	5°	19	205
24	5°	19	205
30	5°	19	205
36	4°	15	260

McWANE DUCTILE | IRON STRONG

Canada Pipe Company ULC

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
mcwaneductile.com

OHIO
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651
mcwaneductile.com

UTAH
1401 E 2000 S.
Provo, UT 84603
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CANADA
1757 Burlington St. E
Hamilton, ON L8N-3R5
905-547-3251
canadapipe.com

FIELD CUT PIPE

For Generations

When pipe is cut in the field, the cut end may be readily conditioned so that it can be used to make up the next joint. The outside of the cut end should be beveled about 1/4–inch at an angle of about 30 degrees (Figure 1). This can be quite easily done with a coarse file or a portable grinder. The operation removes any sharp, rough edges which otherwise might damage the gasket.

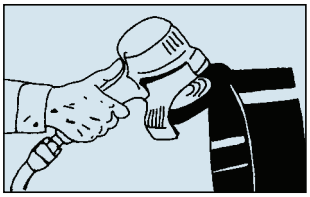

Figure 1

When ductile iron pipe 14 in. and larger is to be cut in the field, the material should be ordered as "GAUGED FULL LENGTH". Pipe that is "gauged full length" is specially marked to avoid confusion. The ANSI/AWWA standard for ductile iron pipe requires factory gauging of the spigot end. Accordingly, pipe selected for field cutting should also be field gauged in the location of the cut and found to be within the tolerances shown in Table 1. In the field, a mechanical joint gland can be used as a gauging device.

TABLE 1: SUITABLE PIPE DIAMETERS FOR FIELD CUTS AND RESTRAINED JOINT FIELD FABRICATION

Pipe Size In.	Min. Pipe Diameter In.	Max. Pipe Diameter In.	Min. Pipe Circumference In.	Max. Pipe Circumference In.
3	3.9	4.02	12-1/4	12-5/8
4	4.74	4.86	14-29/32	15-9/32
6	6.84	6.96	21-1/2	21-7/8
8	8.99	9.11	28-1/4	28-5/8
10	11.04	11.16	34-11/16	35-1/16
12	13.14	13.26	41-9/32	41-21/32
14	15.22	15.35	47-13/16	48-7/32
16	17.32	17.45	54-13/32	54-13/16
18	19.42	19.55	61	61-13/32
20	21.52	21.65	67-19/32	68
24	25.72	25.85	80-13/16	81-7/32
30	31.94	32.08	100-11/32	100-25/32
36	38.24	38.38	120-1/8	120-9/16

Above Table Based on ANSI/AWWA C151/A21.51 Guidelines for Push-On Joints.

THE BACKHOE METHOD OF ASSEMBLY

A backhoe may be used to assemble pipe of intermediate and larger sizes. The plain end of the pipe should be carefully guided by hand into the bell of the previously assembled pipe. The bucket of the backhoe may then be used to push the pipe until fully seated. A timber header should be used between the pipe and backhoe bucket to avoid damage to the pipe.

McWANE DUCTILE | IRON STRONG

Canada Pipe Company ULC

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
mcwaneductile.com

OHIO
2266 S. 6th St.
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1401 E 2000 S.
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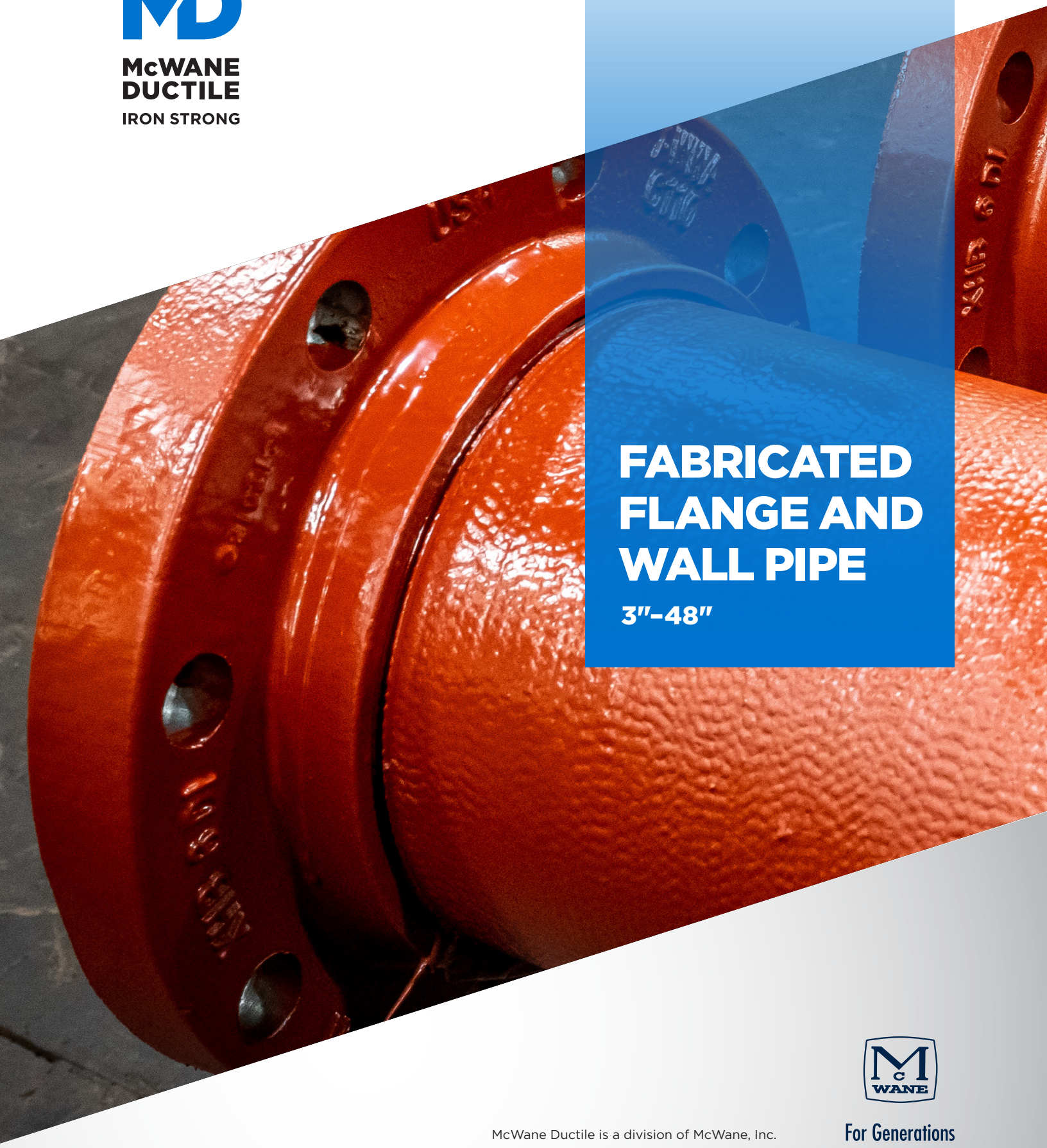
CANADA
1757 Burlington St. E
Hamilton, ON L8N-3R5
905-547-3251
canadapipe.com

DUCTILE IRON FAB

McWane Ductile
IRON STRONG

McWaneDuctile.com



FABRICATED FLANGE AND WALL PIPE

3"–48"

McWane Ductile is a division of McWane, Inc.

For Generations

FABRICATED PIPE FROM MCWANE DUCTILE

Fabricated Flange & Wall Pipe is manufactured by McWane Ductile in 3″ up to 48″ diameters with a variety of joint combinations available.

Fabricated pipe is made to custom lengths to meet specific project needs. Fabricated pipe can be cement, glass, or Protecto 401 lined to meet all applications.

FABRICATED PIPE JOINT

Exterior coatings available include standard Bituminous, Tnemec primers and epoxies, as well as other specialty coatings as required.

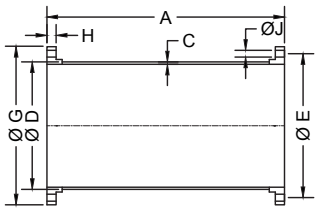
McWane Ductile Treatment plant division can also provide customized take-offs, line drawings, and lay schedules as required for your projects.

McWane Ductile has the ability to manufacture and provide fabricated products that meet all domestic USA-only requirements.

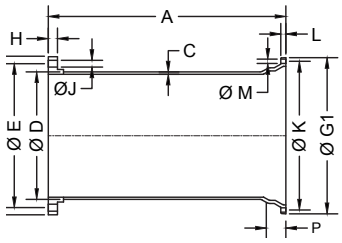
FLANGE PIPE DETAILS & DIMENSIONS

SIZE	A	B	C	Ø D	Ø E	Ø G	Ø G1	H	NO FLG BOLT HOLES	Ø J	Ø K	L	NO MJ BOLT HOLES	M	P
3			0.31	3.96	6.00	7.50	7.69	0.63	4	0.75	6.19	0.88	4	0.75	2.50
4			0.32	4.80	7.50	9.00	9.12	0.82	8	0.75	7.50	0.94	4	0.88	2.50
6	AS REQUIRED	AS REQUIRED	0.34	6.90	9.50	11.00	11.12	0.88	8	0.88	9.50	1.00	6	0.88	2.50
8			0.36	9.05	11.75	13.50	13.37	1.00	8	0.88	11.75	1.04	6	0.88	2.50
10			0.38	11.10	14.25	16.00	15.69	1.07	12	1.00	14.00	1.11	8	0.88	2.50
12			0.40	13.20	17.00	19.00	17.94	1.13	12	1.00	16.25	1.17	8	0.88	2.50
14			0.42	15.30	18.75	21.00	20.31	1.19	12	1.13	18.75	1.19	10	0.88	3.50
16			0.43	17.40	21.25	23.50	22.56	1.25	16	1.13	21.00	1.26	12	0.88	3.50
18			0.44	19.50	22.75	25.00	24.83	1.37	16	1.25	23.25	1.32	12	0.88	3.50
20			0.45	21.60	25.00	27.50	27.08	1.50	20	1.25	25.50	1.38	14	0.88	3.50
24			0.47	25.80	29.50	32.00	31.58	1.69	20	1.38	30.00	1.50	16	0.88	3.50
30			0.51	32.00	36.00	38.75	39.12	1.87	28	1.38	36.88	1.69	20	1.13	4.00
36			0.58	38.30	42.75	46.00	46.00	2.13	32	1.63	43.75	1.88	24	1.13	4.00
42			0.65	44.50	49.50	53.00	53.12	2.37	36	1.63	50.62	1.88	28	1.38	4.00
48			0.72	50.80	56.00	59.50	60.00	2.50	44	1.63	57.50	1.88	32	1.38	4.00

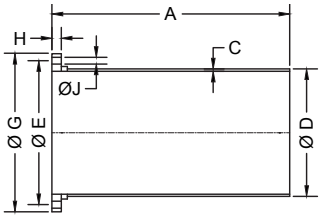
PE X PE



FLG X PE



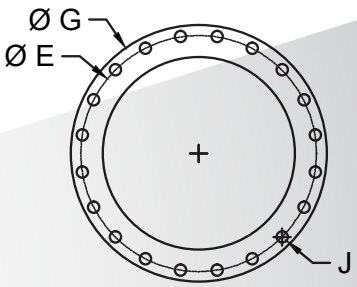
FLG X FLG



- Tolerance on length of FE x FE and FE x MJ pipe shall be +/- .125".
- Tolerance on length of F.E x P.E shall be +/- .025".
- Above material shall meet all applicable sections of ANSI A21.10, A21.15, A21.50, A21.51, B2.1, B16.1 / AWWA C110, C115, C150, C151 and all revisions thereto.
- Flanged pipe shall be ductile iron pipe with ductile iron flanges threaded on.
- Linings, if required, shall be in accordance with ANSI/AWWA A21.4/C104

- The mechanical joint bell for 30" & 36" sizes of ductile iron pipe have thicknesses different from those shown in ANSI A21.11, which are based on grey iron pipe. The reduced thickness provided a lighter-weight bell, which is compatible with the wall thickness of ductile iron pipe.
- Submitted material only. Consult engineer for application.
- 250 lb. faced and drilled flanges available upon request.

FLANGE DETAIL



Additional configurations for joint connections are available. Contact a Sales Representative for details.

POLYWRAP & PIPE TAPE

ERGUSON®
nt Division

WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 -

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	QTY	UM	Comments
37" X 200' 8-MIL POLYWRAB TUBING - 16" DIP	PW	10	ROLL	
52" X 200' 8-MIL POLYWRAP TUBING - 24" DIP	PW	8	ROLL	
52" X 200' 8-MIL POLYWRAP TUBING - 24" DIP	PW	7	ROLL	
52" X 200' 8-MIL POLYWRAP TUBING - 24" DIP	PW	3	ROLL	
18" X 200' 8-MIL POLYWRAP TUBING - 3"-6" DIP	PW	2	ROLL	
18" X 200' 8-MIL POLYWRAP TUBING - 3"-6" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
18" X 200' 8-MIL POLYWRAP TUBING - 3"-6" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	2	ROLL	
37" X 200' 8-MIL POLYWRAB TUBING - 16" DIP	PW	1	ROLL	
37" X 200' 8-MIL POLYWRAB TUBING - 16" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
29" X 200' 8-MIL POLYWRAP TUBING - 8"-12" DIP	PW	1	ROLL	
18" X 200' 8-MIL POLYWRAP TUBING - 3"-6" DIP	PW	1	ROLL	

AA Thread Seal Tape, Inc.

PTFE Thread Seal Tapes | PTFE Universal Joint Sealants

Polyethylene Encasements for Ductile Iron Pipe

PVC Pipe Wrapping Tapes | Industrial Tapes & Supplies

SINCE 1979

Linear Low Density Polyethylene – Black (8MIL) Polywrap Pipe Sleeves

Specifications

Application: Barrier encasement of pipe to prevent corrosion in varying soil conditions

Product Specifications

Raw Material: Linear Low Density Polyethylene

Group: 2 (Linear)

Finished Material: Linear Low Density Polyethylene Film

Color: Black

Standard: ANSI/AWWA C105/A21.5

Test	AWWA C105 Min. Req.	AA Thread's Film*
Tensile Strength	3600psi MD/TD (ASTM D882)	MD-4495psi TD-4410psi
Elongation	800% Minimum MD/TD (ASTM D882)	MD-1073% TD-1126%
Dielectric Strength	800 V/MIL (ASTM D149)	1946V/MIL
Impact Resistance	600 grams (ASTM D1709)	1189 grams
Propagation Tear Resistance	2550 grams force MD/TD (ASTM D1922)	MD-4462 grams force TD-5539 grams force
Minimum Thickness	0.008" (8MIL)	0.008" (8 MIL)

*Tests are averages performed by independent lab results.

Markings: Material printed with AWWA Spec No., Pipe Diameter, Year of manufacturing, Manufacturing Mark, Warning of Corrosion Protection/Repair Damage.

AA Thread Seal Tape, Inc. | 1275 Kyle Court | Wauconda, IL 60084 | sales@aathread.com
Phone: (847) 526-2120 | Fax: (847) 526-2209 | Toll Free: (800) 537-7139 | www.aathread.com

PROSELECT™

Product Specifications

PIPE WRAP TAPE

Product Features

- Used for industrial identification, color coding and pipe wrap purposes
- Suitable use at not more than 140° F (60° C)
- Pipe wrapping tape is moisture resistant
- Adheres to metal and plastic
- Non-corrosive pressure-sensitive adhesive
- Does not require heat, moisture or other manner of preparation to apply
- No known hazards
- Approved for above or below ground use as a rust preventer and UV inhibitor
- Approved for use on all types of pipe including gas and oil pipe

PSPWT110

Model Numbers

PSPWT110	1 x 100 10 mil pipe wrap
PSPWT210	2 x 100 10 mil pipe wrap
PSPWT210Y	2 x 100 10 mil pipe wrap, yellow
PSPWT220	2 x 100 20 mil pipe wrap
PSPWT410	4 x 100 10 mil pipe wrap
PSPWT410Y	4 x 100 10 mil pipe wrap, yellow

Application

NO PRIMER REQUIRED.

Surface preparation: Steel surfaces should be cleaned of rust and other contaminants by wire brushing, blasting or other methods. Pipe surface should be free of frost and moisture. Pipe heated by welding should be allowed to cool to 120° F to 140° F. Wrap is applied by spiral wrapping with a minimall overlap so no pipe is exposed. Tension in wrapping should be enough to obtain conformability to the surface being coated.

Backfilling: No delay is necessary. Backfilling may be done immediately after wrapping.

Technical Performance

(Applies to PSPWT110, PSPWT210, PSPWT410, PSPWT210Y, PSPWT410Y)

DESCRIPTION	UNITS	VALUE	TEST METHOD
Tape thickness	mm/mils	0.25 / 10	ASTM D-1000
Adhesion to steel	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Adhesion to backing	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Elongation at break	%	200	ASTM D-1000
Tensile strength	kg/cm , lbs/in	4.6 / 25.7	ASTM D-1000
Dielectric strength	volts/mil	1250	ASTM D-1000

(Applies to PSPWT220)

DESCRIPTION	UNITS	VALUE	TEST METHOD
Tape thickness	mm/mils	0.50 / 20	ASTM D-1000
Adhesion to steel	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Adhesion to backing	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Elongation at break	%	250	ASTM D-1000
Tensile strength	kg/cm , lbs/in	8 / 44.7	ASTM D-1000

Warranty and Codes

This product meets MIL. SPEC.T27730A. It is recommended that the buyer determine the suitability through for his own best purpose.

Distributed Exclusively by Ferguson and Wolseley Canada

DUCTILE IRON FITTINGS & RESTRAINTS

ERGUSON®
nt Division

WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 -

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	QTY	UM	Comments
42" X 24" MJ C153 DI CROSS L/ACC - CML/AC	DIFT	1	EA	TAG # 4
24" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG # 65
24" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	3	EA	TAG # 114, 161, 162
24" X 24" MJ C153 DI TEE L/ACC - CML/AC	DIFT	3	EA	TAG # 66, 83, 115
24" X 6" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG # 140
24" X 16" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	2	EA	TAG # 239, 240
16" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG # 70
16" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	2	EA	TAG # 116, 117
16" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	DIFT	4	EA	TAG # 169, 170, 172, 173
16" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG #119
16" X 6" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG # 206
24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	4	EA	TAG: 046-FH-0101, 0102, 0103, 0106
16" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	2	EA	TAG: 046-FH-0104, 1015
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	3	EA	BURY DEPTH GREATER THAN 7-FT
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	6	EA	BURY DEPTH GREATER THAN 7-FT
6" MJ GASKET & T-BOLT PACK	DIFT	12	EA	ANCHOR TEE CONNECTION
24" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	3	EA	TAG: 93, 159, 160
24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	DIFT	4	EA	TAG: 194, 195, 259. 260
24" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	2	EA	TAG: 002, 154
24" X 6" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 96
24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0203
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
24" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 241
24" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 242, 314
24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 248, 249
24" X 16" MJ C153 DI TEE L/ACC - CML/AC	DIFT	2	EA	TAG: 244, 331
24" X 12" MJ C153 DI TEE L/ACC - CML/AC	DIFT	3	EA	TAG: 136, 255, 305
24" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	4	EA	TAG: 245, 247, 252, 270
24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	3	EA	TAG: 046-FH-0301, 0303, 0305
6" MJ GASKET & T-BOLT PACK	DIFT	7	EA	
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	2	EA	
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	4	EA	
36" X 36" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 113
36" MJ C153 DI LONG SLEEVE L/ACC	DIFT	2	EA	TAG: 113
36" X 24" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 155
24" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 110
24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	DIFT	6	EA	TAG: 190, 191, 192, 193, 319, 320
24" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 262
24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0402
6" MJ GASKET & T-BOLT PACK	DIFT	3	EA	
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	1	EA	
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	1	EA	
6" X 4" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 184
4" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 180
4" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DIP X PVC TRANS AT HIGH SVC PS
6" X 4" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 207
4" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	3	EA	TAG: 208, 209, 238
4" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DIP FLEX COUP AT STORM WATER PS
4" MJ C153 DI LONG SLEEVE L/ACC	DIFT	2	EA	DIP X PVC TRANSITION

ERGUSON
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WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 -

NET ESTIMATED TOTAL: ##########
DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	QTY	UM	Comments
8" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 303, 304
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DI X PVC TRANS COUP AT PUMP STATION
8" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 292
8" X 6" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	2	EA	TAG: 294, 295
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DIP X PVC TRANS COUP AT PUMP STATION
6" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	8	EA	TAG: 282, 296, 297, 298, 299, 300, 301, 302
8" X 2" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 045-YH-0104
6" X 2" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 045-YH-0105
8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 315, 316
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DI X PVC TRANS COUP AT FILTER BLDG
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0201
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	1	EA	
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	2	EA	
6" X 3" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 187
3" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 257
3" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 317, 318
3" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DI X PVC TRANS COUP AT OPERATIONS BLDG
8" MJ C153 DI PLUG	DIFT	1	EA	IN RUN OF TEE
8" MJ GASKET & T-BOLT SET	DIFT	1	EA	FOR PLUG
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0202
6" MJ GASKET & T-BOLT PACK	DIFT	3	EA	
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	1	EA	
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	2	EA	
12" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 158
12" X 8" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 311
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUPLING AT PUMP STATION
8" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DI X PVC FLEX COUP AT STRUCTURE
16" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 332
16" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT STRUCTURE
16" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 329, 330
16" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT STRUCTURE
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0302
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
8" MJ C153 DI PLUG	DIFT	1	EA	END OF THE LINE IN TEE
8" MJ GASKET & T-BOLT SET	DIFT	1	EA	FOR MJ PLUG
8" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 253, 254
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0304
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
8" MJ C153 DI PLUG	DIFT	1	EA	END OF THE LINE IN TEE
12" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT DISINFECTION BLDG
12" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT DISINFECTION BLDG
8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 322, 323
8" X 6" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 269
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 267
6" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DI X PVC FLEX COUP AT ADMIN BLDG
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 046-FH-0401
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	

ERGUSON®
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WICHITA, KS.
JOB NAME: NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 -

NET ESTIMATED TOTAL: ##########
DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	QTY	UM	Comments
8" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	2	EA	TAG: 198, 231
8" MJ C153 DI 45 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 196, 197
8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	2	EA	TAG: 326, 327
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT LIME RES PUMP STA
8" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 205
8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 199
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT LIME RES PUMP STA
8" X 2" MJ C153 DI TAP CAP L/ACC - CML/AC	DIFT	1	EA	AT YARD HYDRANT
8" X 8" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 203
8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	1	EA	TAG: 200
8" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	FLEX COUP AT LIME RES PUMP STA
8" X 2" MJ C153 DI TAP CAP L/ACC - CML/AC	DIFT	1	EA	AT YARD HYDRANT
8" X 4" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 233
4" X 3" MJ C153 DI REDUCER L/ACC - CML/AC	DIFT	1	EA	TAG: 234
4" X 2" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	POST HYDRANT TEE
3" X 2" MJ C153 DI TEE L/ACC - CML/AC	DIFT	1	EA	POST HYDRANT TEE
3" MJ C153 DI PLUG	DIFT	1	EA	
3" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
8" MJ C153 DI PLUG	DIFT	1	EA	
8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	DIFT	1	EA	TAG: 308 (FH ASSEMBLY)
6" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
3" MJ C153 DI 90 BEND L/ACC - CML/AC	DIFT	3	EA	TAG: 335, 336, 337
3" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC	DIFT	6	EA	TAG: 338, 339, 340, 341, 344, 345
3" MJ C153 DI LONG SLEEVE L/ACC	DIFT	1	EA	DIP X PVC TRANS COUP AT HSPS
3" MJ C153 DI PLUG	DIFT	1	EA	IN END OF MJ TEE
3" X 2" MJ C153 DI TEE L/ACC - CML/AC	DIFT	4	EA	YARD HYDRANTS
3" MJ GASKET & T-BOLT PACK	DIFT	1	EA	
6" MJ GASKET & T-BOLT PACK	DIFT	2	EA	
6" X 13" DI C153 SWIVEL X SOLID HYD ADAPTER - CML/AC	DIFT	1	EA	
6" MJ C153 90 BEND L/ACC - CML/AC	DIFT	2	EA	

ERGUSON®
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JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

NET ESTIMATED TOTAL: $1,310,371.14
DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
24" DIP MEGALUG RESTRAINT W/ACC	REST	43	EA	
16" DIP MEGALUG RESTRAINT W/ACC	REST	26	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	1	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	20	EA	
24" DIP MEGALUG RESTRAINT W/ACC	REST	26	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
24" DIP MEGALUG RESTRAINT W/ACC	REST	42	EA	
16" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
12" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	10	EA	
24" DIP MEGALUG RESTRAINT W/ACC	REST	23	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	1	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
4" DIP MEGALUG RESTRAINT W/ACC	REST	1	EA	
4" PVC MEGALUG RESTRAINT W/ACC	REST	4	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
4" DIP MEGALUG RESTRAINT W/ACC	REST	7	EA	
4" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	
4" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
4" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	6	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	4	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
6" PVC MEGALUG RESTRAINT W/ACC	REST	18	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	6	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
3" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
3" PVC MEGALUG RESTRAINT W/ACC	REST	3	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
12" DIP MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	4	EA	
16" DIP MEGALUG RESTRAINT W/ACC	REST	6	EA	
16" DIP MEGALUG RESTRAINT W/ACC	REST	8	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	1	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	1	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	

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JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

NET ESTIMATED TOTAL: $1,310,371.14
DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
12" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
12" DIP MEGALUG RESTRAINT W/ACC	REST	4	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	9	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	1	EA	
6" PVC MEGALUG RESTRAINT W/ACC	REST	4	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	8	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	10	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	5	EA	
8" DIP MEGALUG RESTRAINT W/ACC	REST	3	EA	
4" PVC MEGALUG RESTRAINT W/ACC	REST	4	EA	
3" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	
8" PVC MEGALUG RESTRAINT W/ACC	REST	2	EA	
3" DIP MEGALUG RESTRAINT W/ACC	REST	8	EA	
3" PVC MEGALUG RESTRAINT W/ACC	REST	19	EA	
6" DIP MEGALUG RESTRAINT W/ACC	REST	6	EA	

TYLER UNION®
Quality Waterworks Products

Address: 1501 W 17th St. – Anniston, Al 36201
Telephone No.: (800) 226-7601
Fax Number: (800) 226-0806
www.tylerunion.com

Date	12/7/2021
RE:	American Iron and Steel Step Certification
Project	Wichita Northwest Water Treatment Facility
Location	Wichita, KS
Contractor	Wichita Water Partners Engineer: Burns & McDonnell
TU Distributor	McWane Plant & Industrial

I, Jack Lewis, certify the Melting, Casting and Finishing of following products for the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

ANSI/AWWA Ductile Iron			
1	EA	42	42" X 24" MJ C110 DI CROSS L/ACC - CML/AC
1	EA	24	24" MJ C153 DI 90 BEND L/ACC - CML/AC
3	EA	24	24" MJ C153 DI 45 BEND L/ACC - CML/AC
3	EA	24	24" X 24" MJ C153 DI TEE L/ACC - CML/AC
1	EA	24	24" X 6" MJ C153 DI TEE L/ACC - CML/AC
2	EA	24	24" X 16" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	16	16" MJ C153 DI 90 BEND L/ACC - CML/AC
2	EA	16	16" MJ C153 DI 45 BEND L/ACC - CML/AC
4	EA	16	16" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC
1	EA	16	16" X 8" MJ C153 DI TEE L/ACC - CML/AC
1	EA	16	16" X 6" MJ C153 DI TEE L/ACC - CML/AC
4	EA	24	24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
2	EA	16	16" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
6	EA	6	6" MJ GASKET & T-BOLT PACK
3	EA	24	24" MJ C153 DI 45 BEND L/ACC - CML/AC
4	EA	24	24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC

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Corona: (866) 527-8471
Tyler: (800) 527-8478
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2	EA	24	24" X 8" MJ C153 DI TEE L/ACC - CML/AC	
1	EA	24	24" X 6" MJ C153 DI TEE L/ACC - CML/AC	
1	EA	24	24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	
1	EA	6	6" MJ GASKET & T-BOLT PACK	
1	EA	24	24" MJ C153 DI 90 BEND L/ACC - CML/AC	
2	EA	24	24" MJ C153 DI 45 BEND L/ACC - CML/AC	
2	EA	24	24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	
2	EA	24	24" X 16" MJ C153 DI TEE L/ACC - CML/AC	
3	EA	24	24" X 12" MJ C153 DI TEE L/ACC - CML/AC	
4	EA	24	24" X 8" MJ C153 DI TEE L/ACC - CML/AC	
3	EA	24	24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	
3	EA	6	6" MJ GASKET & T-BOLT PACK	
1	EA	36	36" X 36" MJ C153 DI TEE L/ACC - CML/AC	
2	EA	36	36" MJ C153 DI LONG SLEEVE L/ACC	
1	EA	36	36" X 24" MJ C153 DI REDUCER L/ACC - CML/AC	
1	EA	24	24" MJ C153 DI 45 BEND L/ACC - CML/AC	
6	EA	24	24" MJ C153 DI 11-1/4 BEND L/ACC - CML/AC	
1	EA	24	24" X 8" MJ C153 DI TEE L/ACC - CML/AC	
1	EA	24	24" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC	
1	EA	6	6" MJ GASKET & T-BOLT PACK	
1	EA	6	6" X 4" MJ C153 DI REDUCER L/ACC - CML/AC	
1	EA	4	4" MJ C153 DI 90 BEND L/ACC - CML/AC	
1	EA	4	4" MJ C153 DI LONG SLEEVE L/ACC	
1	EA	6	6" X 4" MJ C153 DI REDUCER L/ACC - CML/AC	
3	EA	4	4" MJ C153 DI 45 BEND L/ACC - CML/AC	
1	EA	4	4" MJ C153 DI LONG SLEEVE L/ACC	

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Quality Waterworks Products

2	EA	4	4" MJ C153 DI LONG SLEEVE L/ACC
3	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
2	EA	8	8" MJ C153 DI 45 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
3	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
1	EA	8	8" X 8" MJ C153 DI TEE L/ACC - CML/AC
2	EA	8	8" X 6" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
8	EA	6	6" MJ C153 DI 45 BEND L/ACC - CML/AC
1	**EA**	**8**	**8" X 3" MJ C110 DI TEE L/ACC - CML/AC**
1	**EA**	**3**	**3" X 2" MJ C110 DI REDUCER (SEB) L/ACC - CML/AC**
1	EA	6	6" X 2" MJ C110 DI TEE L/ACC - CML/AC
2	EA	8	8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
1	EA	6	6" X 3" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	3	3" MJ C153 DI 90 BEND L/ACC - CML/AC
2	EA	3	3" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	3	3" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" MJ C153 DI PLUG
1	EA	8	8" MJ GASKET & T-BOLT SET
1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
1	EA	12	12" MJ C153 DI 90 BEND L/ACC - CML/AC

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1	EA	12	12" X 8" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" MJ C153 DI 90 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	16	16" MJ C153 DI 90 BEND L/ACC - CML/AC
1	EA	16	16" MJ C153 DI LONG SLEEVE L/ACC
2	EA	16	16" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	16	16" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
1	EA	8	8" MJ C153 DI PLUG
1	EA	8	8" MJ GASKET & T-BOLT SET
1	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
2	EA	8	8" MJ C153 DI 45 BEND L/ACC - CML/AC
1	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
1	EA	8	8" MJ C153 DI PLUG
1	EA	12	12" MJ C153 DI LONG SLEEVE L/ACC
1	EA	12	12" MJ C153 DI LONG SLEEVE L/ACC
2	EA	6	6" PVC BELL JOINT RESTRAINT F/C900
2	EA	8	8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC

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Corona: (866) 527-8471
Tyler: (800) 527-8478
www.tylerunion.com

TYLER UNION®
Quality Waterworks Products

1	EA	8	8" X 6" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	6	6" MJ DI 90 BEND L/ACC - CML/AC
1	EA	6	6" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
4	EA	8	8" PVC BELL JOINT RESTRAINT F/C900
2	EA	8	8" X 8" MJ C153 DI TEE L/ACC - CML/AC
2	EA	8	8" MJ C153 DI 45 BEND L/ACC - CML/AC
2	EA	8	8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" X 8" MJ C153 DI TEE L/ACC - CML/AC
1	EA	8	8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" X 2" MJ C153 DI TAP CAP L/ACC - CML/AC
1	EA	8	8" X 8" MJ C153 DI TEE L/ACC - CML/AC
1	EA	8	8" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	8	8" MJ C153 DI LONG SLEEVE L/ACC
1	EA	8	8" X 2" MJ C153 DI TAP CAP L/ACC - CML/AC
1	EA	8	8" X 4" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	4	4" X 3" MJ C153 DI REDUCER L/ACC - CML/AC
1	EA	4	4" X 2" MJ C110 DI TEE L/ACC - CML/AC
1	EA	3	3" X 2" MJ C110 DI TEE L/ACC - CML/AC
1	EA	3	3" MJ C153 DI PLUG
1	EA	3	3" MJ GASKET & T-BOLT PACK
1	EA	8	8" MJ C153 DI PLUG

Tyler Union Waterworks Contact Information
Anniston: (800) 226-7601
Corona: (866) 527-8471
Tyler: (800) 527-8478
www.tylerunion.com

1	EA	8	8" X 6" MJ C153 DI ANCHOR TEE L/ACC - CML/AC
1	EA	6	6" MJ GASKET & T-BOLT PACK
3	EA	3	3" MJ C153 DI 90 BEND L/ACC - CML/AC
6	EA	3	3" MJ C153 DI 22-1/2 BEND L/ACC - CML/AC
1	EA	3	3" MJ C153 DI LONG SLEEVE L/ACC
1	EA	3	3" MJ C153 DI PLUG
4	EA	3	3" X 2" MJ C110 DI TEE L/ACC - CML/AC
1	EA	3	3" MJ GASKET & T-BOLT PACK
1	EA	6	6" MJ GASKET & T-BOLT PACK

Certification is for **Submittal Only** no PO has been issued.
Melting, Casting, Finishing and Shipping took place at 1501 W. 17th St. Anniston, AL 36201 USA

If any of the above compliance statements change while providing material to this project, we will immediately notify the prime contractor and the engineer.

Best Regards,

Jack Lewis
Sales Engineer
Tyler Union Waterworks
(800) 226-7601
Jack.lewis@tylerUnion.com
File: Sub Tyler Union AIS EPA Cert Submittal.pdf

TYLER UNION®
Quality Waterworks Products

Address: 1501 W 17th St. – Anniston, Al 36201
Telephone No.: (800) 226-7601
Fax Number: (800) 226-0806
www.tylerunion.com

Date	12/14/2021
RE:	American Iron and Steel Step Certification
Project	Wichita Northwest Water Treatment Facility – Water Line
Location	Wichita, KS
Contractor	Wichita Water Partners Engineer: Burns & McDonnell
TU Distributor	McWane Plant & Industrial

I, Jack Lewis, certify the Melting, Casting and Finishing of following products for the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

ANSI/AWWA Ductile Iron Series 1000 & Series 2000 TUFGrips

Certification is for **Submittal Only** no PO has been issued.
Melting, Casting, Finishing and Shipping took place at 1501 W. 17th St. Anniston, AL 36201 USA

If any of the above compliance statements change while providing material to this project, we will immediately notify the prime contractor and the engineer.

Best Regards,

Jack Lewis
Sales Engineer
Tyler Union Waterworks
(800) 226-7601
Jack.lewis@tylerUnion.com
File: Sub Tyler Union AIS EPA Cert Submittal.pdf

C153 DUCTILE IRON COMPACT FITTINGS

SAMPLE SPECIFICATIONS

(Current ANSI/AWWA revisions apply)

Mechanical joint watermain fittings with accessories, 2" through 64" shall be manufactured from ductile iron in accordance with and meet all applicable terms and provisions of standards ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11. Ductile iron mechanical joint fittings 2" through 24" shall be rated for 350 psi working pressure. Ductile iron 30" through 48" shall be rated for 250 psi working pressure. Flanged ductile iron fittings in 4" (610 mm) and smaller sizes may be rated for 350 psi (2,413 kPa) with the use of special (annular ring or comparable) gaskets. All coated and lined fittings meet requirements of NSF-61, NSF-372 and Annex G.

NOTE: EXCEPTIONS: Mechanical joint fittings with flanged branches are rated for water pressure of 250 psi.

NOTE: Wyes over 12" are not pressure rated. Contact manufacturer for rating in your application.

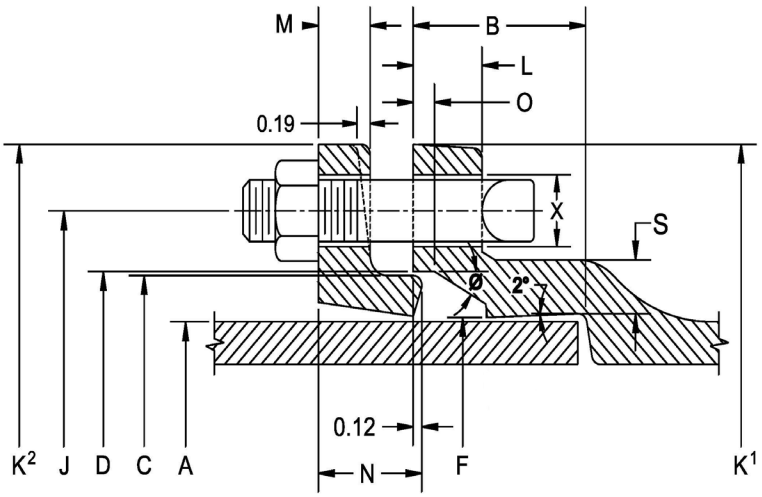
NOTE: Fittings are cement lined and seal coated in accordance with ANSI/AWWA C104/A21.4. Fittings are available double cement-lined, bare, or epoxy coated upon request. Epoxy coating per ANSI/AWWA C116.

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

Nominal Joint Dimensions in Inches

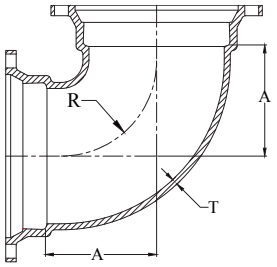
Size	A	B	C	D	F	ø	X	J	K1	K2	L	M	O	S
2	2.51	2.50	3.50	3.60	2.61	28°	3/4	4.75	6.19	6.89	0.58	0.62	0.31	0.36
3	3.96	2.50	4.84	4.94	4.06	28°	3/4	6.19	7.62	7.69	0.58	0.62	0.31	0.39
4	4.80	2.50	5.92	6.02	4.90	28°	7/8	7.50	9.06	9.12	0.60	0.75	0.31	0.39
6	6.90	2.50	8.02	8.12	7.00	28°	7/8	9.50	11.06	11.12	0.63	0.88	0.31	0.43
8	9.05	2.50	10.17	10.27	9.15	28°	7/8	11.75	13.31	13.37	0.66	1.00	0.31	0.45
10	11.10	2.50	12.22	12.34	11.20	28°	7/8	14.00	15.62	15.62	0.70	1.00	0.31	0.47
12	13.20	2.50	14.32	14.44	13.30	28°	7/8	16.25	17.88	17.88	0.73	1.00	0.31	0.49
14	15.30	3.50	16.40	16.54	15.44	28°	7/8	18.75	20.25	20.25	0.79	1.25	0.31	0.55
16	17.40	3.50	18.50	18.64	17.54	28°	7/8	21.00	22.50	22.50	0.85	1.31	0.31	0.58
18	19.50	3.50	20.60	20.74	19.64	28°	7/8	23.25	24.75	24.75	1.00	1.38	0.31	0.68
20	21.60	3.50	22.70	22.84	21.74	28°	7/8	25.50	27.00	27.00	1.02	1.44	0.31	0.69
24	25.80	3.50	26.90	27.04	25.94	28°	7/8	30.00	31.50	31.50	1.02	1.56	0.31	0.75
30	32.00	4.00	33.29	33.46	32.17	20°	1 1/8	36.88	39.12	39.12	1.31	2.00	0.38	0.82
36	38.30	4.00	39.59	39.76	38.47	20°	1 1/8	43.75	46.00	46.00	1.45	2.00	0.38	1.00
42	44.50	4.00	45.79	45.96	44.67	20°	1 3/8	50.62	53.12	53.12	1.45	2.00	0.38	1.35
48	50.80	4.00	52.09	52.26	50.97	20°	1 3/8	57.50	60.00	60.00	1.45	2.00	0.38	1.35
54	57.56	4.00	58.82	59.02	57.73	20°	1 3/8	63.20	65.70	65.70	1.55	2.00	0.38	1.45
60	61.61	4.00	62.87	63.07	61.78	20°	1 3/8	67.72	70.22	70.22	1.75	2.00	0.38	1.50
64	65.67	4.00	66.96	67.13	65.84	20°	1 3/8	71.86	74.36	74.36	1.75	2.00	0.38	1.50

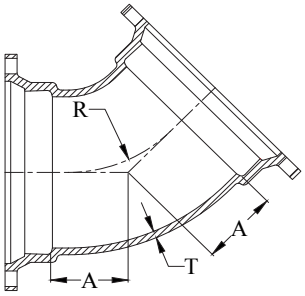
NOTE: For projects where product weights, specifications or dimensions are critical, advise upon order placement



ANSI/AWWA
C153 Mechanical Joint Fittings

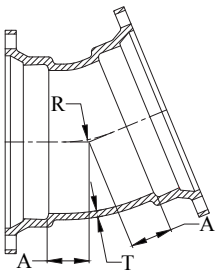
C153 DUCTILE IRON COMPACT FITTINGS

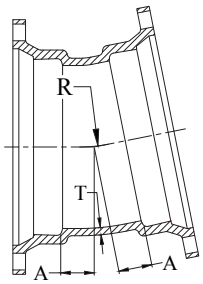


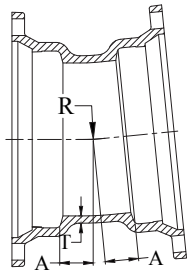


90° Bends (1/4)								45° Bends (1/8)				
Domestic					Import			Domestic			Import	
Size	T	A	R	Weight	T	A	Weight	A	R	Weight	A	Weight
3	0.34	3.50	2.50	26	0.33	3.50	19	2.00	2.41	17	1.50	16
4	0.35	4.00	3.00	26	0.34	4.00	24	2.50	3.56	22	2.00	22
6	0.37	6.00	5.00	45	0.36	5.00	39	3.50	7.25	38	3.00	32
8	0.39	7.00	6.00	62	0.38	6.50	57	4.00	8.44	51	3.50	46
10	0.41	7.50	6.50	89	0.40	7.50	89	5.00	10.88	75	4.50	70
12	0.43	9.00	8.00	114	0.42	9.00	108	5.98	13.25	108	5.50	101
14	0.51	12.00	11.50	210	0.47	11.50	210	5.50	12.06	156	5.00	160
16	0.52	13.00	12.50	268	0.50	12.50	264	5.50	10.42	191	5.50	202
18	0.59	14.00	13.00	375	0.54	14.00	335	6.00	11.18	252	6.00	250
20	0.60	17.00	15.50	443	0.57	15.00	400	7.00	13.59	303	7.00	305
24	0.62	17.00	15.50	663	0.61	16.75	565	7.50	14.89	398	7.50	405
30	0.66	21.50	19.00	1005	0.66	21.50	930	10.50	9.31	850	10.50	780
36	0.74	24.50	22.00	1540	0.74	24.50	1450	11.50	21.73	1135	11.50	1135
42	0.82	29.25	26.70	2380	0.82	29.25	2205	14.00	27.76	1675	14.00	1610
48	0.90	33.25	30.80	3084	0.90	33.25	2990	15.00	30.17	2196	15.00	2090

****NOTE:** Other sizes available, contact Tyler Union for information



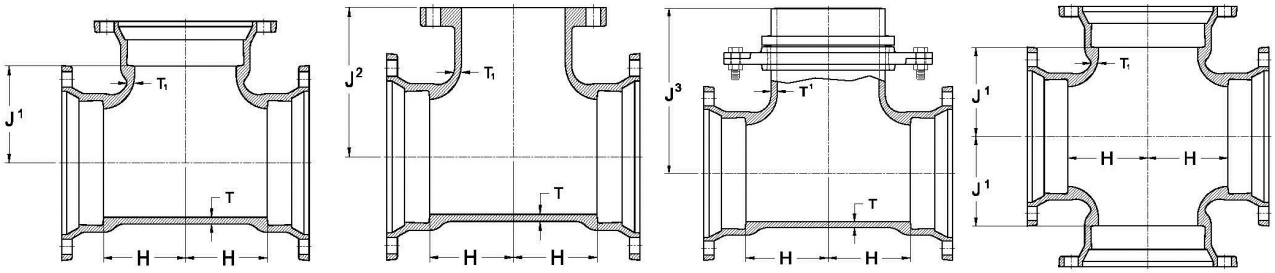




22½° Bends (1/16)						11¼° Bends (1/32)					5 - 5/8 Bends (1/64) MJ x MJ		
Domestic				Import		Domestic			Import		Import		
Size	A	R	Weight	A	Weight	A	R	Weight	A	Weight	A	R	Weight
3	1.50	2.51	16	1.00	15	1.25	2.53	15	1.00	14	1.25	5.08	16
4	1.75	3.81	21	1.50	18	1.50	5.12	21	1.30	16	1.50	7.61	18
6	2.25	6.35	31	2.00	31	1.50	5.12	30	1.50	30	1.50	10.15	29
8	2.85	11.80	44	2.50	46	2.06	15.80	43	1.80	42	1.75	12.69	45
10	3.35	14.35	67	3.00	64	2.32	18.36	58	2.00	58	2.00	15.23	59
12	3.86	16.90	81	3.50	80	2.56	20.90	68	2.30	67	2.30	17.77	82
14	3.93	17.25	139	3.75	136	2.59	21.25	123	2.50	93	2.50	20.31	136
16	3.98	17.50	172	3.75	172	2.62	21.50	145	2.50	148	2.50	20.31	157
18	4.50	15.11	275	4.50	255	3.00	16.52	205	3.00	205	3.00	25.38	283
20	4.50	15.07	341	4.50	310	3.00	15.23	245	3.00	245	3.00	25.38	374
24	4.50	15.51	333	4.50	366	3.00	16.10	304	3.00	315	3.00	25.38	487
30	6.75	21.36	670	6.75	665	4.75	22.84	551	4.80	600	3.75	32.97	600
36	7.75	26.39	978	7.75	960	5.00	25.38	870	5.00	820	4.00	34.55	820
42	9.00	32.68	1352	9.00	1350	6.00	35.54	1163	6.00	1180	5.00	42.71	1180
48	10.00	27.70	1757	10.00	1760	6.50	40.61	1474	6.50	1475	5.50	47.35	1475

NOTE: Contact Tyler Union for details on 54" through 64" **NOTE:** For projects where product weights, specifications or dimensions are critical, advise upon order placement.

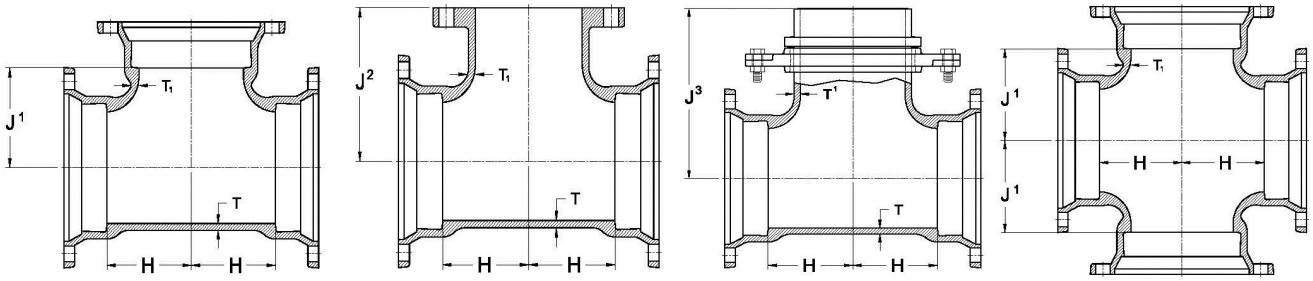
C153 DUCTILE IRON COMPACT FITTINGS



MJ Tee							MJxFE Tee		MJxSwivel Tee		Cross					
Domestic							Weight				Import				Weight	
Size	T	T1	H	J1	J2	J3	MJ	MJ x FE	†MJ x S	Cross	T	T1	H	J1	MJ	Cross
3	0.34	0.34	3.50	3.50	5.50	–	26	29	–	31	0.33	0.33	3.00	3.00	28	35
4x3	0.35	0.34	3.50	4.00	6.50	–	35	34	–	39	0.34	0.33	3.50	4.00	30	34
4	0.35	0.35	4.00	4.00	6.50	–	37	39	–	45	0.34	0.34	4.00	4.00	32	40
6x3	0.37	0.34	4.00	4.00	6.50	–	51	54	–	–	0.36	0.33	3.50	5.00	42	–
6x4	0.37	0.35	5.00	6.00	8.00	–	52	57	–	62	0.36	0.34	4.00	5.00	46	57
6	0.37	0.37	6.00	6.00	8.00	10.50	62	69	61	72	0.36	0.36	5.00	5.00	56	75
8x3	0.39	0.34	4.00	6.50	9.00	–	56	–	–	–	–	–	–	–	–	–
8x4	0.39	0.35	5.00	6.50	9.00	–	68	82	–	84	0.38	0.34	4.00	6.50	60	68
8x6	0.39	0.37	5.50	6.50	9.00	11.50	79	87	74	98	0.38	0.36	5.00	6.50	72	74
8	0.39	0.39	6.50	6.50	9.00	11.50	89	101	116	112	0.38	0.38	0.38	6.50	86	105
10x3	0.41	0.34	4.00	7.50	11.00	–	80	–	–	–	–	–	–	–	–	–
10x4	0.41	0.35	4.50	7.50	11.00	–	82	92	–	98	0.40	0.34	4.00	7.50	78	84
10x6	0.41	0.37	5.50	7.50	11.00	13.00	99	116	114	121	0.40	0.36	5.00	7.50	90	119
10x8	0.41	0.39	6.50	7.50	11.00	13.00	116	128	138	135	0.40	0.38	6.50	7.50	105	124
10	0.41	0.41	7.50	7.50	11.00	–	132	144	–	156	0.40	0.40	7.50	7.50	120	145
12x3	0.43	0.34	4.00	8.75	12.00	–	99	–	–	–	–	–	–	–	–	–
12x4	0.43	0.35	4.00	9.00	12.00	–	108	118	–	119	0.42	0.34	4.00	8.75	94	119
12x6	0.43	0.37	5.00	9.00	12.00	14.25	119	133	132	138	0.42	0.34	4.00	8.75	110	126
12x8	0.43	0.39	6.50	9.00	12.00	14.25	126	146	149	149	0.42	0.38	6.50	8.75	125	149
12x10	0.43	0.41	7.50	8.75	12.00	–	159	174	–	187	0.42	0.40	7.50	8.75	140	179
12	0.43	0.43	8.75	8.75	12.00	–	171	198	–	202	0.42	0.42	8.75	8.75	160	213
14x6	0.51	0.44	6.50	10.50	14.00	16.00	183	205	211	210	0.47	0.36	6.50	10.50	182	200
14x8	0.51	0.45	7.50	10.50	14.00	–	211	–	–	231	0.47	0.38	7.50	10.50	206	228
14x10	0.51	0.46	8.50	10.50	14.00	–	229	244	–	255	0.47	0.40	8.50	10.50	228	–
14x12	0.51	0.47	9.50	10.50	14.00	–	245	284	–	269	0.47	0.42	9.50	10.50	234	–
14	0.51	0.51	10.50	10.50	14.00	–	281	291	–	299	0.47	0.47	10.50	10.50	280	299
16x6	0.52	0.45	6.50	11.50	14.00	16.00	222	230	243	250	0.50	0.36	6.50	11.50	228	240
16x8	0.52	0.46	7.50	11.50	15.00	–	245	248	–	264	0.50	0.38	7.50	11.50	248	385
16x10	0.52	0.47	8.50	11.50	15.00	–	265	287	–	286	0.50	0.40	8.50	11.50	264	–
16x12	0.52	0.48	9.50	11.50	15.00	–	277	312	–	312	0.50	0.42	9.50	11.50	280	–
16x14	0.52	0.51	10.50	11.50	15.00	–	317	348	–	–	0.50	0.47	10.50	11.50	316	–
16	0.52	0.52	11.50	11.50	15.00	–	337	324	–	451	0.50	0.50	11.50	11.50	322	–
18x6	0.59	0.44	6.50	14.50	15.50	18.00	275	261	279	–	0.54	0.36	6.50	12.50	275	–
18x8	0.59	0.45	7.50	14.50	14.50	–	280	351	–	–	0.54	0.38	7.50	12.50	295	–
18x10	0.59	0.47	8.50	12.50	–	–	286	–	–	–	0.54	0.40	8.50	12.50	315	–
18x12	0.59	0.49	9.50	12.50	–	–	372	–	–	–	0.54	0.42	9.50	12.50	335	348
18x14	0.59	0.56	10.50	12.50	–	–	415	–	–	–	0.54	0.47	10.50	12.50	380	–
18x16	0.59	0.57	11.50	12.50	–	–	445	–	–	–	0.54	0.50	11.50	12.50	405	–
18	0.59	0.59	13.00	12.50	–	–	490	–	–	–	0.54	0.54	12.50	12.50	435	348
20x6	0.60	0.44	7.00	14.00	16.00	19.50	335	362	358	–	0.57	0.36	6.50	14.00	315	–
20x8	0.60	0.45	8.00	14.00	–	–	390	–	–	–	0.57	0.38	8.00	14.00	345	379
20x10	0.60	0.47	9.00	14.00	–	–	417	–	–	–	0.57	0.40	9.00	14.00	370	–
20x12	0.60	0.49	10.00	14.00	–	–	460	–	–	–	0.57	0.42	10.00	14.00	395	413
20x14	0.60	0.56	11.00	14.00	–	–	475	–	–	–	0.57	0.47	11.00	14.00	440	–
20x16	0.60	0.57	12.00	14.00	–	–	530	–	–	–	0.57	0.50	12.00	14.00	465	–
20x18	0.60	0.59	13.00	14.00	–	–	560	–	–	–	0.57	0.54	13.00	14.00	505	–
20	0.60	0.60	14.00	14.00	–	–	605	–	–	–	0.57	0.57	14.00	14.00	535	–

NOTE: Contact TU Inside Sales representative for MJ Crosses larger than 16 inch. †MJxSwl Weights include swivel gland
**NOTE: Other sizes available, contact Tyler Union for information.

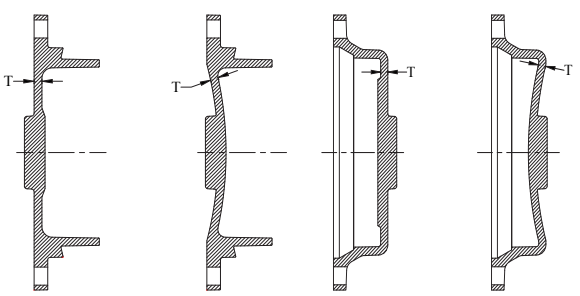
C153 DUCTILE IRON COMPACT FITTINGS



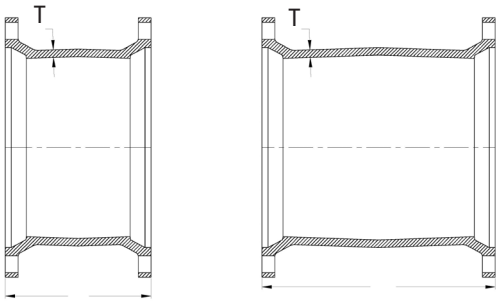
MJ Tee							MJxFE Tee			MJxSwivel Tee				Cross	
Domestic							Weight			Import				Weight	
Size	T	T1	*H	*J1	*J2	*J3	MJ	MJ x FE	†MJ x S	T	T1	H	J1	MJ	Cross
24x6	0.62	0.44	7.00	16.00	19.00	21.50	465	451	457	0.61	0.36	7.00	16.00	415	–
24x8	0.62	0.45	8.00	16.00	–	–	475	–	–	0.61	0.38	8.00	16.00	445	481
24x10	0.62	0.47	9.00	16.00	–	–	516	–	–	0.61	0.40	9.00	16.00	470	–
24x12	0.62	0.49	10.00	16.00	–	–	549	580	–	0.61	0.42	10.00	16.00	500	529
24x14	0.62	0.56	11.00	16.00	–	–	585	–	–	0.61	0.47	11.00	16.00	550	–
24x16	0.62	0.57	12.00	16.00	–	–	625	744	–	0.61	0.50	12.00	16.00	580	576
24x18	0.62	0.59	13.00	16.00	–	–	675	–	–	0.61	0.54	13.00	16.00	625	–
24x20	0.62	0.60	14.00	16.00	–	–	740	–	–	0.61	0.57	14.00	16.00	660	1589
24	0.62	0.62	16.00	16.00	–	–	844	–	–	0.61	0.61	16.00	16.00	720	–
30x6	0.66	0.36	8.00	20.00	–	–	700	–	–	0.66	0.36	8.00	20.00	685	–
30x8	0.66	0.38	8.50	20.00	–	–	739	–	–	0.66	0.38	8.50	20.00	739	–
30x12	0.66	0.42	10.00	20.00	–	–	739	–	–	0.66	0.42	10.00	20.00	830	882
30x16	0.66	0.50	12.50	20.00	–	–	959	–	–	0.66	0.50	12.50	20.00	959	–
30x18	0.66	0.52	13.00	20.00	–	–	975	–	–	0.66	0.54	13.00	20.00	1039	–
30x20	0.66	0.57	15.00	20.00	–	–	995	–	–	0.66	0.57	15.00	20.00	995	–
30x24	0.66	0.61	16.00	20.00	–	–	1160	–	–	0.66	0.61	16.00	20.00	1060	1246
30	0.66	0.66	20.00	20.00	–	–	1323	–	–	0.66	0.66	20.00	20.00	1323	1840
36x6	0.74	0.36	7.00	23.50	–	–	630	–	–	0.74	0.36	8.00	23.50	685	–
36x8	0.74	0.38	9.00	23.50	–	–	739	–	–	0.74	0.38	8.50	23.50	739	–
36x10	0.74	0.47	10.00	23.50	–	–	739	–	–	0.74	0.40	10.00	23.50	830	882
36x12	0.74	0.49	10.00	23.50	–	–	959	–	–	0.74	0.42	12.50	23.50	959	–
36x14	0.74	0.56	12.50	23.50	–	–	1103	–	–	0.74	0.47	10.00	23.50	1146	–
36x16	0.74	0.57	12.50	23.50	–	–	1385	–	–	0.74	0.50	12.50	23.50	1190	–
36x18	0.74	0.59	13.00	23.50	–	–	1400	–	–	0.74	0.54	12.50	23.50	1410	–
36x20	0.74	0.60	15.00	23.50	–	–	1521	–	–	0.74	0.57	12.50	23.50	1365	–
36x24	0.74	0.61	16.00	23.50	–	–	1533	–	–	0.74	0.61	16.00	23.50	1446	1785
36x30	0.74	0.66	20.00	23.50	–	–	2270	–	–	0.74	0.66	20.00	23.50	1675	–
36	0.74	0.74	23.50	23.50	–	–	1910	–	–	0.74	0.74	23.50	23.50	2015	2655
42x12	0.82	0.62	10.00	27.50	–	–	1410	–	–	0.82	0.42	10.00	27.50	1885	–
42x24	0.82	0.62	20.00	27.50	–	–	2295	–	–	0.82	0.61	20.00	27.50	2270	2668
42x30	0.82	0.66	22.00	29.50	–	–	2337	–	–	0.82	0.66	22.00	30.00	2425	2950
42x36	0.82	0.74	30.00	30.00	–	–	3000	–	–	0.82	0.74	30.00	30.00	3000	3607
42	0.82	0.82	30.00	30.00	–	–	3169	–	–	0.82	0.82	30.00	30.00	3175	3725
48x12	0.90	0.62	9.00	32.00	–	–	2500	–	–	0.90	0.42	9.00	32.00	2535	–
48x24	0.90	0.62	23.00	32.00	–	–	2822	–	–	0.90	0.74	23.00	32.00	2870	–
48x36	0.90	0.82	33.50	33.25	–	–	3982	–	–	0.90	0.74	33.50	33.25	3900	–
48x42	0.90	0.82	33.50	33.50	–	–	4100	–	–	0.90	0.82	33.50	33.50	4100	–
48	0.90	0.82	33.50	33.50	–	–	4251	–	–	0.90	0.90	33.50	33.50	4250	4955

† Weight includes the swivel gland.

C153 DUCTILE IRON COMPACT FITTINGS



3-12 14-48 3-12 14-48



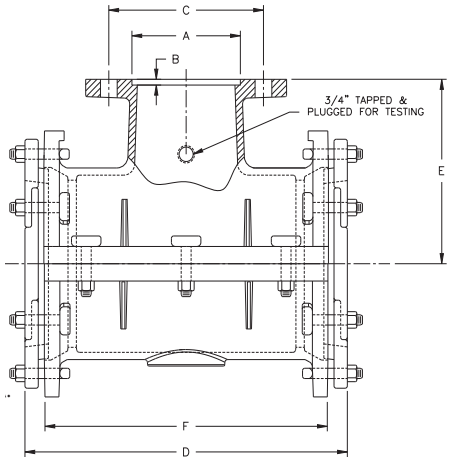
L1 L2

SOLID & TAPPED PLUGS & CAPS

Domestic					Import		
Size	T	Max. Tap	Weight		T	Weight	
			Plugs	Caps		Plugs	Caps
3	0.46	2	9	8	0.33	8	8
4	0.46	2	9	10	0.34	10	9
6	0.46	2	13	18	0.36	16	15
8	0.46	2	25	26	0.38	26	22
10	0.56	2	36	32	0.40	36	32
12	0.56	2	47	46	0.42	46	42
14	0.62	2	76	85	0.47	75	66
16	0.62	2	98	94	0.50	95	92
18	0.65	2	138	121	0.54	121	114
20	0.66	2	158	149	0.57	135	125
24	0.68	2	202	232	0.61	296	198
30	0.66	2	426	345	0.66	355	345
36	0.74	2	560	626	0.74	688	628
42	0.82	2	1091	723	0.82	–	–
48	0.90	2	1455	974	0.90	–	–

SOLID SLEEVES

Domestic						Import				
Size	T	L1	L2	Weight		T	L1	L2	Weight	
				Short	Long				Short	Long
3	0.34	7.50	12.00	13	22	0.33	7.50	12.00	12	17
4	0.35	7.50	12.00	19	25	0.34	7.50	12.00	15	20
6	0.37	7.50	12.00	28	37	0.36	7.50	12.00	23	29
8	0.39	7.50	12.00	38	49	0.38	7.50	12.00	31	45
10	0.41	7.50	12.00	48	68	0.40	7.50	12.00	45	61
12	0.43	7.50	12.00	58	81	0.42	7.50	12.00	56	76
14	0.56	9.50	15.00	107	153	0.47	9.50	15.00	94	128
16	0.57	9.50	15.00	116	174	0.50	9.50	15.00	118	159
18	0.68	9.50	15.00	154	207	0.54	9.00	15.00	145	200
20	0.69	9.50	15.00	200	249	0.57	9.00	15.00	173	236
24	0.75	9.50	15.00	232	323	0.61	9.00	15.00	226	306
30	0.74	15.00	24.00	549	640	0.66	15.00	24.00	472	634
36	0.74	15.00	24.00	725	868	0.74	15.00	24.00	673	889
42	0.82	–	24.00	–	1146	0.82	15.00	24.00	887	1150
48	0.90	–	24.00	–	1431	0.90	15.00	24.00	1136	1435

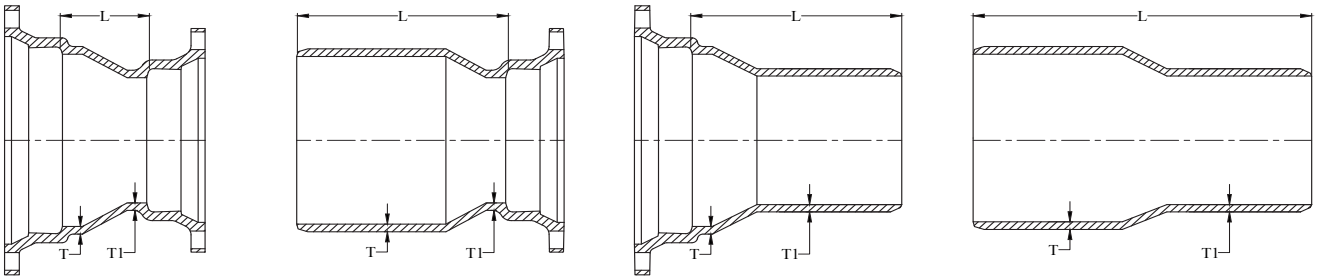


TAPPING SLEEVE FOR CAST IRON/DUCTILE IRON

Size	A	B	C	D	E	F	Min.	Max	Weight
6X4	5.016	0.250	7.50	15.75	8.00	12.75	6.85	7.15	104
6	7.016	0.312	9.50	15.75	8.00	12.75	6.85	7.15	108
8X4	5.016	0.250	7.50	16.50	9.00	13.50	9.00	9.35	134
8X6	7.016	0.312	9.50	16.50	9.00	13.50	9.00	9.35	140
8	9.016	0.312	11.75	16.50	9.00	13.50	9.00	9.35	148
10X4	5.016	0.250	7.50	24.00	11.00	20.75	11.04	11.45	236
10X6	7.016	0.312	9.50	24.00	11.00	20.75	11.04	11.45	240
10X8	9.016	0.312	11.75	24.00	11.00	20.75	11.04	11.45	246
10	11.016	0.312	14.25	24.00	11.00	20.75	11.04	11.45	257
12X4	5.016	0.250	7.50	26.50	12.00	23.25	13.14	13.56	273
12X6	7.016	0.312	9.50	26.50	12.00	23.25	13.14	13.56	286
12X8	9.016	0.312	11.75	26.50	12.00	23.25	13.14	13.56	292
12X10	11.016	0.312	14.25	26.50	12.00	23.25	13.14	13.56	303
12	13.016	0.312	17.00	26.50	12.00	23.25	13.14	13.56	320

Note: Visit www.tylerunion.com for assembly instructions.
Tapping sleeve is assembled with gland and gasket.

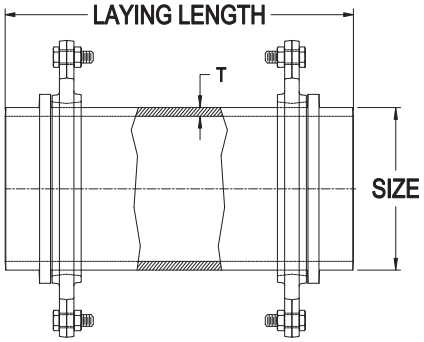
C153 DUCTILE IRON COMPACT FITTINGS

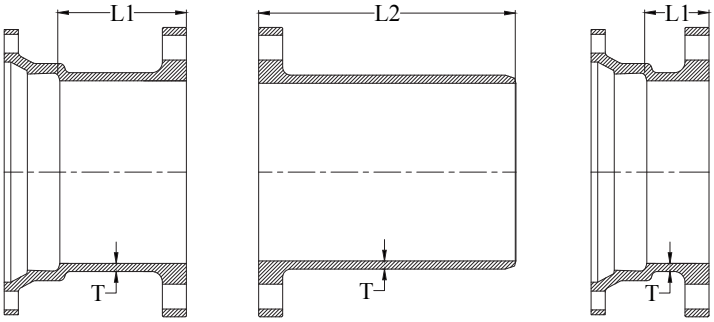


MJxMJ			PExMJ-SEB								MJ-LEBxPE									
Domestic											Import									
Size			MJ	SEB	LEB	PE	Weight						MJ	SEB	LEB	PE	Weight			
	T	T1	L	L	L	L	MJ	SEB	LEB	PE	T	T1	L	L	L	L	MJ	SEB	LEB	PE
4x3	0.35	0.34	3.00	8.50	8.50	14.00	18	17	17	18	0.34	0.33	3.00	8.50	8.50	14.00	18	17	18	14
6x3	0.37	0.34	5.00	10.50	10.50	16.00	28	25	27	20	0.36	0.33	5.00	10.50	10.50	16.00	22	24	19	16
6x4	0.37	0.35	4.00	9.50	9.50	15.00	28	26	27	26	0.36	0.34	4.00	9.50	9.50	15.00	24	25	25	22
8x4	0.39	0.35	5.00	10.50	10.50	16.00	36	34	36	33	0.38	0.34	5.00	10.50	10.50	16.00	32	30	34	30
8x6	0.39	0.37	4.00	9.50	9.50	15.00	39	38	39	30	0.38	0.36	4.00	9.50	9.50	15.00	36	35	32	30
10x4	0.41	0.35	7.00	12.50	12.50	18.00	53	46	51	–	0.40	0.34	7.00	12.50	12.50	18.00	46	43	43	46
10x6	0.41	0.37	5.00	10.50	10.50	16.00	59	48	52	49	0.40	0.36	5.00	10.50	10.50	16.00	47	46	42	46
10x8	0.41	0.39	4.00	9.50	9.50	15.00	54	52	52	47	0.40	0.38	4.00	9.50	9.50	15.00	50	42	50	47
12x4	0.43	0.35	9.00	14.50	14.50	20.00	67	61	68	60	0.42	0.34	9.00	14.50	14.50	20.00	58	60	60	58
12x6	0.43	0.37	7.00	12.50	12.50	18.00	64	58	66	54	0.42	0.36	7.00	12.50	12.50	18.00	58	58	58	57
12x8	0.43	0.39	5.00	10.50	10.50	16.00	57	62	65	60	0.42	0.38	5.00	10.50	10.50	16.00	57	54	55	54
12x10	0.43	0.41	4.00	9.50	9.50	15.00	63	61	65	57	0.42	0.40	4.00	9.50	9.50	15.00	61	59	59	54
14x6	0.51	0.44	9.00	17.00	14.50	22.50	104	107	112	–	0.47	0.36	9.00	16.90	14.50	22.30	100	100	104	93
14x8	0.51	0.45	7.00	15.00	12.50	20.50	104	107	108	–	0.47	0.38	7.00	14.90	12.40	20.30	100	98	98	94
14x10	0.51	0.46	5.00	13.00	10.50	18.50	100	102	100	–	0.47	0.40	5.00	12.90	10.40	18.30	100	94	92	90
14x12	0.51	0.47	4.00	12.00	9.50	17.50	100	101	100	100	0.47	0.42	4.00	11.90	9.40	17.30	100	90	92	88
16x6	0.52	0.45	11.00	19.00	16.50	24.50	132	131	141	128	0.50	0.36	11.00	18.90	16.50	24.30	124	125	136	93
16x8	0.52	0.46	9.00	17.00	14.50	22.50	136	128	136	136	0.50	0.38	9.00	16.90	14.40	22.30	124	121	128	119
16x10	0.52	0.47	7.00	15.00	12.50	20.50	128	124	128	123	0.50	0.40	7.00	15.00	12.50	20.50	124	105	123	119
16x12	0.52	0.48	5.00	13.00	10.50	18.50	120	123	119	11	0.50	0.42	5.00	12.90	10.50	18.30	112	109	108	99
16x14	0.52	0.51	4.00	12.00	12.00	20.00	140	139	138	133	0.50	0.47	4.00	12.00	12.00	19.70	140	126	132	129
18x8	0.59	0.45	14.00	22.00	19.50	27.50	201	180	195	–	0.54	0.38	13.00	20.00	19.50	27.40	190	170	195	170
18x10	0.59	0.47	12.00	20.00	17.50	25.50	196	180	185	–	0.54	0.40	10.00	18.00	17.40	25.50	195	165	185	160
18x12	0.59	0.49	10.00	18.00	15.50	23.50	175	170	190	–	0.54	0.42	7.00	15.50	14.00	19.50	180	150	175	150
18x14	0.59	0.56	8.00	16.00	16.00	24.00	180	181	200	–	0.54	0.47	6.00	15.00	15.00	23.00	190	175	190	160
18x16	0.59	0.57	7.00	15.00	15.00	23.00	194	180	190	–	0.54	0.50	5.00	12.50	12.50	18.00	195	170	190	145
20x10	0.60	0.47	14.00	22.00	19.40	27.50	225	210	210	–	0.57	0.40	14.00	22.00	19.00	27.50	220	200	210	180
20x12	0.60	0.49	12.00	20.00	17.50	25.50	214	208	210	–	0.57	0.42	12.00	17.50	16.00	21.50	205	170	205	190
20x14	0.60	0.56	10.00	18.00	17.80	26.00	208	198	205	–	0.57	0.47	10.00	18.00	17.90	26.00	200	190	205	195
20x16	0.60	0.57	8.00	16.00	15.80	24.00	225	215	222	–	0.57	0.50	7.00	13.50	13.50	19.00	200	200	185	170
20x18	0.60	0.59	7.00	15.00	15.00	23.00	233	220	–	–	0.57	0.54	4.00	12.00	12.00	20.00	225	200	215	190
24x12	0.62	0.49	16.00	24.00	21.40	29.50	320	302	300	–	0.61	0.42	16.00	21.50	21.00	22.50	305	275	290	240
24x14	0.62	0.56	14.00	22.00	21.80	30.00	314	325	322	–	0.61	0.47	14.00	22.00	21.90	25.00	306	310	315	295
24x16	0.62	0.57	12.00	20.00	19.80	28.00	325	319	340	–	0.61	0.50	12.00	17.50	17.50	23.00	320	285	285	285
24x18	0.62	0.59	10.00	18.00	18.00	26.00	325	310	–	–	0.61	0.54	10.00	18.00	18.00	21.00	305	300	310	290
24x20	0.62	0.60	8.00	16.00	16.00	24.00	315	305	–	–	0.61	0.57	7.00	13.50	13.50	14.00	300	270	275	240
30x16	0.66	0.50	30.00	39.00	–	–	475	565	–	–	0.66	0.50	30.00	39.00	39.00	48.00	633	565	623	555
30x18	0.66	0.54	28.00	37.00	–	–	495	590	–	–	0.66	0.54	28.00	37.00	37.00	46.00	658	590	635	567
30x20	0.66	0.57	24.00	33.00	–	–	525	560	–	–	0.66	0.57	24.00	33.00	33.00	42.00	628	560	603	535
30x24	0.66	0.61	10.00	24.50	–	–	478	495	–	–	0.66	0.61	10.00	24.50	24.50	33.50	478	495	526	458
36x16	0.74	0.50	30.00	–	–	–	789	890	–	–	0.74	0.50	30.00	27.00	–	–	1016	595	–	–
36x20	0.74	0.57	36.00	45.00	–	–	970	874	–	–	0.74	0.57	36.00	45.00	45.00	54.00	975	874	950	849
36x24	0.74	0.61	19.00	33.00	–	–	770	746	–	–	0.74	0.61	19.00	33.00	33.00	42.00	770	746	810	709
36x30	0.74	0.66	15.50	24.50	–	–	838	725	–	–	0.74	0.66	15.50	24.50	24.50	725.00	650	33.5	758	657
42x30	0.82	0.74	20.00	–	–	–	1067	–	–	–	0.82	0.66	20.00	29.00	29.00	38.00	1083	931	1015	863
42x36	0.82	0.74	15.50	–	–	–	1116	–	–	–	0.82	0.74	15.50	24.50	24.50	33.50	1114	962	1013	861
48x30	0.90	0.66	40.00	–	–	–	1852	–	–	–	0.90	0.66	40.00	49.00	49.00	58.00	1779	1594	1711	1526
48x36	0.90	0.74	28.00	–	–	–	1632	–	–	–	0.90	0.74	28.00	37.00	37.00	46.00	1641	1456	1540	1355
48x42	0.90	0.82	15.50	–	–	–	1486	–	–	–	0.90	0.82	15.50	24.50	24.50	33.50	1426	1241	1274	1089

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

C153 DUCTILE IRON COMPACT FITTINGS

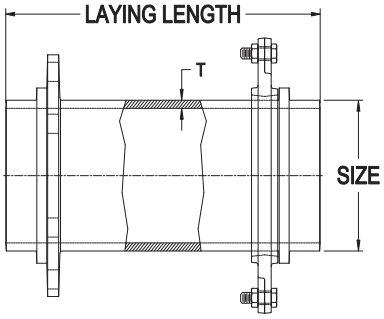


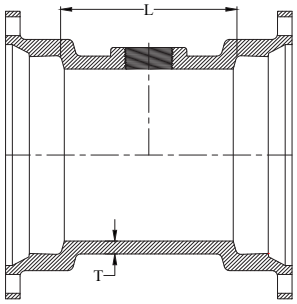


SWIVEL X SWIVEL ADAPTER		
Size by Laying Length	Wall Thickness	Weight
6x12	0.37	48
6x18	0.37	49
6x24	0.37	68

Adapter weights include swivel glands.

DOMESTIC MJxFE				FExPE		NON-DOMESTIC MJxFE	
Domestic				Weights		Import	Weight
Size	T	L1	L2	MJxFE	FExPE	L1	MJxFE
3	0.34	6.00	12.00	18	…		
4	0.35	6.00	12.00	26	23	3.50	24
6	0.37	6.00	12.00	36	35	3.50	37
8	0.39	6.00	12.00	55	43	3.50	51
10	0.41	6.00	12.00	69	59	3.50	70
12	0.43	6.00	12.00	88	88	3.50	101
14	0.51	6.00	12.00	127	–	6.00	128
16	0.52	6.00	12.00	161	149	6.00	158
18	0.56	6.00	–	173	–	6.00	176
20	0.60	6.00	–	275	–	6.00	267
24	0.62	6.00	–	271	–	6.00	288
30	0.66	7.00	–	514	–	7.00	557
36	0.74	8.00	–	770	–	8.00	798





SWIVEL X SOLID ADAPTER WITH SWIVEL GLAND			
Size by Laying Length	Wall Thickness	Weight	
		Domestic	Import
6x13	0.37	46	51
6x18	0.37	64	61
6x24	0.37	75	74
8x12	0.39	63	67

Adapter weights include swivel glands.

MJ TAPPED TEE (2" TAP)					
Size	T	L	Max. Tap	Domestic	Import
3	0.34	6.00	2	22	20
4	0.35	6.00	2	30	24
6	0.37	6.00	2	44	35
8	0.39	6.00	2	50	54
10	0.41	6.00	2	92	68
12	0.43	6.00	2	165	83
16	0.52	6.00	2	177	162

TYLER UNION®
Quality Waterworks Products
www.tylerunion.com

DOMESTIC PRODUCT SUBMITTAL

TUFGRIP™

Series 1000 - For Ductile Iron Pipe

"A Proven Third Generation Mechanical Joint Restraint"

TYLER UNION®
Quality Waterworks Products

Tyler Union's TUF Grip restraints represent the culmination of 20 years of engineering and testing. As a 3rd generation restraint, TUF Grip is the best available technology in the Waterworks market for use in restraining Ductile Iron Pipe.

HK&A Designed by Harold Kennedy & Associates, Inc.

"BETTER BY DESIGN"

SPECIFICATIONS:

- Designed and proven to restrain plain end ductile iron pipe conforming to ANSI/AWWA C151/A21.51 in diameters 3" - 48"
- Proven for use on heavy wall **Schedule 40 or greater steel pipe in sizes 3" - 12" and on all sizes 3" - 16" when pipe O.D. and wall thickness conforms to C151 **Note: IPS diameter steel pipe requires the use of an MJ Transition gasket
- Restraint design conforms with applicable requirements of ANSI/AWWA C111, ANSI/AWWA C153, and ANSI/AWWA C110
- Restraint engineered for securing plain end pipe to mechanical joint fittings conforming to ANSI/AWWA C110, C111, and C153
- Restraints rated for working water pressure of 350 psi and transitory surges of 100psi for 3" - 16" and 250 psi for 18" - 48"
- Cast of ASTM A536 compliant 65-45-12 ductile iron complete with a cast on date code and country of origin for traceability
- Restraints and all components are designed and proven for a 2:1 safety factor based on the pipe pressure rating
- Restraint deflection rating when installed on nominal diameter pipe: 3° max for 3", 5° max for 4"-12", 2° max for 14"-16", and 1.5° max for 18" - 48"
- Standard coating for Domestic restraint is 4-6 mil of TUF-Bond™ **(thermoset polyester for impact, corrosion and UV protection)**
- Gripping wedges are heat treated to a mininum 420 Brinell Hardness
- Gripping wedge, wedge collar bolt, and twist off torque limiting nut shall be e-coated
- FM approved for 4" - 12" applications and UL listed and approved for 3" - 36" applications
- Not recommended for use on plain end fittings
- Color coded black for pipe type(ductile/*cast iron/*steel) - ***Note: Refer to the following pages for cast iron and steel pipe applications**

FEATURES & ADVANTAGES:

- Torque limiting nut on gripping wedge assembly twists off within a designed torque range eliminating the need for specialized tools
- Gripping wedge assembly pivots providing stronger engagement of pipe wall at lower torque requirement (45-60 ft-lb)
- Proven restraint technology utilizing fewer gripping wedges in frequently applied diameters, reducing trench time and project cost
- Restraint's heavy duty construction and design eliminates the need for costly thrust blocks and tie rods
- Suitable for potable and wastewater applications

ISO 9001-2015 Registered	Listed with Underwriters Laboratory	Factory Mutual Approved

Product Source/Type	Name of Project	Name of Contractor	Project Engineer	Spec. Section and/or Project No.

☐ 100% Domestic ☐ Domestic Gland with Import Components

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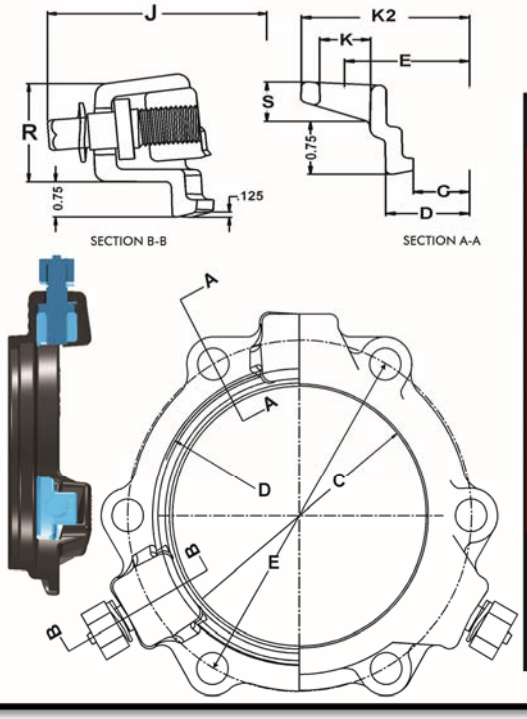
TUFGRIP™

"Better By Design"

Series 1000-Ductile Pipe Restraint



TUFGrip™ MJ Restraint Dimensions

Size (inches)	C	D	E	K2	J	K	R	S
3	4.08	4.88	6.19	7.67	9.82	3/4	2.20	0.86
4	4.93	5.92	7.50	8.98	10.67	7/8	2.20	0.73
6	7.03	8.02	9.50	10.98	12.77	7/8	2.24	0.82
8	9.18	10.17	11.75	13.23	14.92	7/8	2.28	0.82
10	11.23	12.22	14.00	15.70	16.97	7/8	2.37	0.93
12	13.33	14.32	16.25	17.95	19.07	7/8	2.40	0.93
14	15.44	16.40	18.75	20.43	21.18	7/8	2.57	0.91
16	17.54	18.50	21.00	22.88	23.28	7/8	2.57	1.05
18	19.64	20.60	23.25	25.43	25.38	7/8	2.57	1.05
20	21.74	22.70	25.50	27.50	27.48	7/8	2.66	1.15
24	25.94	26.90	30.00	32.00	31.68	7/8	2.72	1.35
30	32.18	33.30	36.88	39.42	39.78	1-1/8	3.86	1.53
36	38.48	39.60	43.75	46.29	46.08	1-1/8	3.86	1.53
42	44.68	45.80	50.62	53.62	53.08	1-3/8	4.56	2.05
48	50.98	52.10	57.50	60.50	59.28	1-3/8	4.56	2.05

SERIES 1000 TLD-DUCTILE TUFGrip™ - APPLICATION CHART

Size (Inches)	Part # - Gland Only Hybrid	/	100% Domestic	Wedge Qty.	T-Head Bolt Qty.	Bolt Size	Gland Weight(lbs.)	Weight (w/Acc.)	Pressure Rating	Pipe O.D.
3	540823	/	CALL	2	4	⅝" x 3"	6.5	10.5	350	3.96
4	515944	/	600905	2	4	¾" x 3 ½"	7.1	11.8	350	4.80
6	515968	/	600910	3	6	¾" x 4"	11.2	18.8	350	6.90
8	515975	/	600915	3	6	¾" x 4"	13.1	20.3	350	9.05
10	515982	/	600920	6	8	¾" x 4"	26.0	32.5	350	11.10
12	515999	/	600925	8	8	¾" x 4"	31.5	40.4	350	13.20
14	516231	/	600930	10	10	¾" x 4 ½"	43.3	53.6	350	15.30
16	516255	/	600935	12	12	¾" x 4 ½"	54.1	66.3	350	17.40
18	516279	/	600940	12	12	¾" x 4 ½"	59.8	72.2	250	19.50
20	516293	/	600945	14	14	¾" x 4 ½"	69.8	83.8	250	21.60
24	516316	/	600950	16	16	¾" x 5"	90.4	106.9	250	25.80
30	539759	/	600955	20	20	1" x 7 ½"	248	290	250	32.00
36	539764	/	600960	24	24	1" x 7 ½"	277	327	250	38.30
42	539695	/	600961	28	28	1 ¼" x 8 ½"	448	512	250	44.50
48	539699	/	600962	32	32	1 ¼" x 8 ½"	519	597	250	50.80

ISO 9001-2015 Registered | Listed with Underwriters Laboratory | Factory Mutual Approved

STOP-LOOK :

- Extra length T-Head bolts are provided with 30" - 48" restraints to facilitate mechanical joint assembly
- For UL/FM Approvals, 3"-12" were tested at 5°of deflection and 14"- 24" inch were tested at 3° of deflection; all test were to 700 psi
- The Series 1000 TUF Grip is specified for use on ductile iron pipe but can be used on some sizes of cast grey iron or pit cast pipe if the pipe is not severely corroded, is in sound condition, and has an outside diameter compatible with the as provided dimensions
- TUF Grip 30"– 48" inch provided with TRU-Lock™ mechanical joint gasket to ensure pressure ratings and safety factors are met
- Installation and hydrostatic testing shall be in accordance with AWWA C600 and AWWA C651
- Some vertical applications where the piping is partially buried may require additional restraint – Contact Tyler Union
- **Caution:** Pressure testing of piping systems restrained or un-restrained with insufficient backfill or bracing is not recommended

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New Lenox: 2200 West Haven● New Lenox, IL 60451
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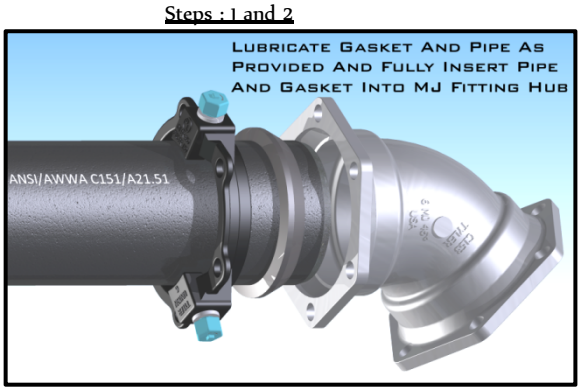
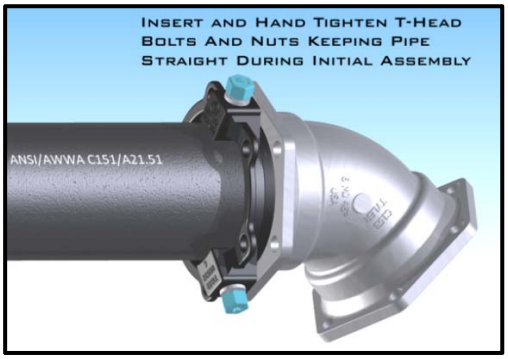
DOMESTIC - TLD TUFGrip™

Assembly Steps – Series 1000 – For Ductile Iron Pipe

Steps : 1 and 2

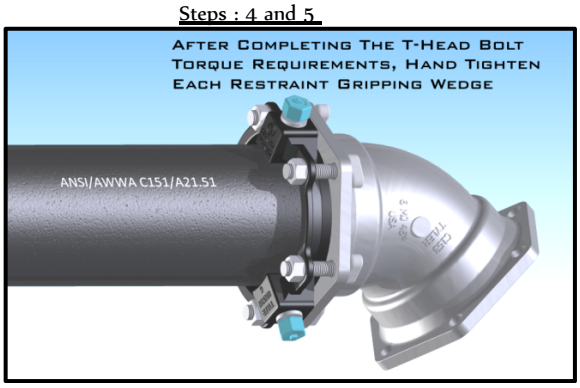


Step : 3

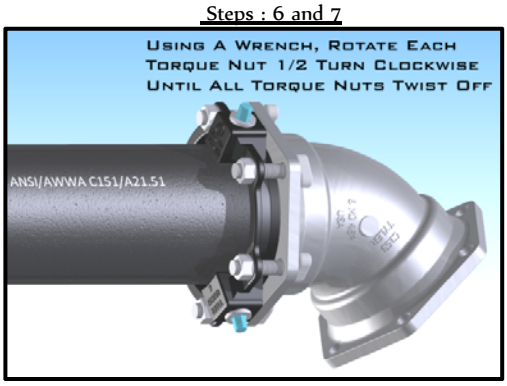


1. Insure the beveled pipe end to be joined and mechanical joint socket are clean and free of debris. Slide the Black TUF Grip onto the pipe to be restrained. The TUF Grip compression lip extension must be toward the beveled end of the pipe to be restrained.
2. Evenly lubricate the beveled pipe end, pipe wall exterior, and inside surface of the MJ gasket with a lubricant that meets the requirements of AWWA C111. Now place the **MJ gasket over the plain beveled end of the pipe with the narrow edge of the tapered gasket toward the beveled end of the pipe to be restrained. **NOTE : For Steel pipe with IPS diameter in sizes 3”-12”, use of a MJ Transition gasket is required.
3. Fully insert the pipe end into the MJ socket pipe landing. Keeping the pipe straight, slide/push the MJ gasket firmly and evenly into the socket recess. Joint must be kept straight during assembly.

Steps : 4 and 5



Steps : 6 and 7



4. Push the TUF Grip compression lip extension evenly against the thick side of the gasket and insert T-Head bolts with the T-Head against the back side of the MJ fitting bolt flange. Use only T-Head bolts and nuts that meet AWWA C111 requirements. Evenly hand-tighten the nuts on the T-Head bolts making sure the gland is centered around the pipe and within the MJ socket. If joint deflection is needed, only deflect the pipe in the joint after hand tightening of all nuts is completed. *Joint deflection is 3° max for 3”, 5° max for 4”-12”, 2° max for 14”-16”, and 1.5° max for 18”- 48”.
   ***NOTE :** Maximum deflection values provided apply with nominal pipe, fitting, and restraint diameters.
5. Using a wrench, tighten the nuts on the T-Head bolts a few turns at a time in an alternating or star pattern maintaining equal spacing or distance between the TUF Grip bolt flange and face of the MJ socket bolt flange as the MJ gasket is compressed. The T-Head bolt and nut torque requirement is 45-60 ft-lb for 3”, 75-90 ft-lb for 4”- 24”, 100-120 ft-lb for 30”- 36”, and 120-150 ft-lb for 42”- 48”. **DO NOT OVER-TORQUE!**
6. Hand-tighten the torque limiting nut attached to each TUF Grip wedge assembly in a clockwise direction with an alternating or star pattern until all gripping wedges are in contact with the pipe wall. Rotational direction of torque limiting nut is indicated by a recessed arrow on the face of the nut. With a wrench (box, socket, or pneumatic), continue to tighten each torque nut ½ turn in an alternating or star pattern around the restraint until all torque limiting nuts twist off. **NEVER** turn a torque limiting nut more than ½ turn without turning the remaining torque nuts an equal amount!
7. When all torque limiting nuts twist off, the assembly of the mechanical joint is complete.

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MEGALUG RESTRAINTS

EBAA IRON INC
Your Connection to the Future™

AIS Certification
EBAA Iron Inc.

December 14, 2021

Attn: Taylor Pitman
Ferguson Waterworks, #1895
10830 E. 45th St., Suite 4
Tulsa, OK 74146
Office: 704-972-7891 Cell: 713-818-5476 Email: Taylor.Pitman@Ferguson.com

Subject: American Iron and Steel Certification

Project Name: Wichita Northwest Water Treatment Facility, Wichita, KS

Order Number or Invoice Number: Submittal Only, PO to Follow

I, Danny Norris, certify that all processes for manufacturing and fabricating the following products and/or material shipped or provided for the subject project is in full compliance with the AIS requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials, and location of delivery: Wichita, KS

1. Series: 1100 DIP Megalug Size: (8ea) 36", (4ea) 42"
2. Series: 1500 Split Bell Restraint Size: (1ea) 6", (1ea) 8"
3. Series: 2000PV PVC Megalug Size: (25ea) 8"

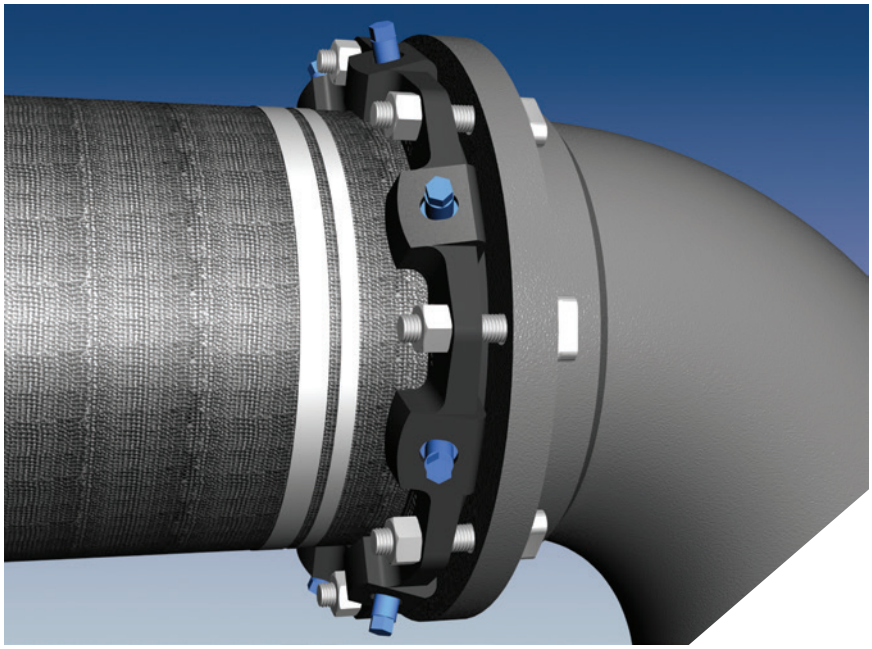
Such processes for AIS took place at the following location: Eastland, Texas, USA

If any of the above compliance statements change while providing materials to this project, we will immediately notify the prime contractor and engineer.

Danny Norris,
General Manager, Foundries

MEGALUG®
Series 1100

Mechanical Joint Restraint for Ductile Iron Pipe



Nominal Pipe Size	Series Number	Shipping Weights	Post Assembly Deflection	Pressure Rating (PSI)
3	1103	6.1	3°	350
4	1104	7.7	3°	350
6	1106	11.9	3°	350
8	1108	14.8	3°	350
10	1110	23.9	3°	350
12	1112	31.2	3°	350
14	1114	48.5	2°	350
16	1116	56.4	2°	350
18	1118	63.1	1½°	250
20	1120	72.3	1½°	250
24	1124	133.1	1½°	250
30	1130	194.6	1°	250
36	1136	234.0	1°	250
42	1142	536.0	1°	250
48	1148	653.0	1°	250
54	1154	700.2	0.5°	200

NOTE: For applications or pressures other than those shown please contact EBAA for assistance.

Made In The USA

U.S. Patent Nos.
4092036, 4627774, 4779900, 4896903, 5544922

Features and Applications:

- Sizes 3 inch through 54 inch
- Constructed of ASTM A536 Ductile Iron
- Torque Limiting Twist-Off Nuts
- MEGA-BOND®
  Restraint Coating System
  For more information on MEGA-BOND, refer to www.ebaa.com
- The Mechanical Joint Follower Gland is incorporated into the restraint
- Heavy Duty thick wall design
- Support Products Available:
  Split repair style available 3 inch through 48 inch.
  EBAA Series 1100SD

  Solid restraint harness available for push-on pipe bells.
  EBAA Series 1700

  Split restraint harness available for existing push-on bells.
  EBAA Series 1100HD
- All MEGALUG and related restraint products can be furnished as packaged accessories complete with appropriate restraint, gasket, lubrication, and bolting hardware
- For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774

MEGALUG: THE PRODUCT OF PREFERENCE SINCE 1984

Since 1984, engineers and contractors designing and installing water and wastewater pipelines and systems have come to rely on the EBAA Series 1100 MEGALUG Mechanical Joint Restraint as the "Product of Preference" for effectively and economically restraining ductile iron pipe connections above or below ground.

MEGALUG Mechanical Joint Restraints replace external restraints such as cumbersome concrete thrust blocks and corrodible metal tie rods creating a quicker, safer and more economical installation.

Major testing laboratories agree as the 3" through 24" sizes are Underwriters Laboratories (UL) listed, and the 3" through 12" sizes are Factory Mutual (FM) approved.

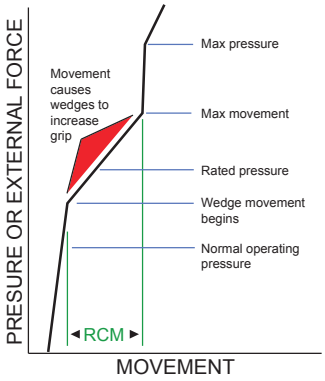
For use on all classes of ductile iron pipe (PC350 through PC150 and CL56 through CL50), for practically any application including valves, hydrants and pipe, the MEGALUG Mechanical Joint Restraint effectively and safely performs without damage to the pipe or cement linings.

THE MEGALUG GRIPPING WEDGE... PERFORMANCE PROVEN

The wedge style MEGALUG design reacts to the amount of force acting on the joint. When each wedge is set, the wedge teeth penetrate the pipe's outer surface, and the wedge does not move on the pipe. There is very little change in this interface until the wedge movement begins inside the pocket of the main casting. Once the wedge starts moving, the formation of the buttress begins.

This "dam" of material (the wedge impression) is cold formed as the wedging action continues. If the force of pressure acting on the joint is released, the wedge moves back to near its original position. This engages the reserve-controlled movement or "RCM". The wedge is then ready for another round.

After the wedge has moved to the back



of the pocket at the maximum pressure or load, the wedge buttress are in shear. The maximum movement is about 0.3 inch through the thirty-six inch size and 0.4 inch for forty-two and forty-eight inch.

The RCM is available even with severe cyclic loads. This has been tested to very high-pressure differentials and the wedge impressions look the same as if a single test had been performed.

Typically, the depth of pipe wall penetration, or wedge impression at around 25,000 pounds of force per wedge (200 PSI on a six inch and 150 PSI on a twelve inch) is 0.03". Finally, at roughly twice that force the penetration is around 0.05" At these high pressures, there is no affect on the design thickness of ductile iron pipe made according to AWWA C150. The lack of damage to the cement lining clearly indicates that the thrust load is primarily longitudinal.

This ability to move in the pocket allows for angular flexibility as well as longitudinal flexibility.

THE ORIGINAL PATENTED GRIPPING WEDGES

Since 1964 EBAA Iron has responded aggressively to the needs of the water industry for better solutions to joint restraint problems - thus the development of the family of self actuating MEGALUG wedge action restraints.

TOOLS

MEGALUGS install using an ordinary wrench (box, ratchet, or air-driven), because the torque-limiting, twist-off nuts automatically shear during tightening when the proper torque is reached. The same 1¼ wrench used to tighten the T-bolts on the 4" through 24" sizes can be used to tighten and shear the twist off nuts in all sizes. If removal becomes necessary, a 5/8 hex head remains so the screws can be loosened, and retightened with a torque-indicating wrench. During removal, the wedges are held in place by retainer clips.

DEFLECTION

The MEGALUG gripping wedges provide resiliency to your pipeline design. In addition to deflecting as much as allowed by the mechanical joint during installation, it can also deflect after assembly:
Sizes of 12" and below are capable of up to 3 degrees of deflection after installation (depending on the preset deflection.)
The 14" and 16" sizes are capable of 2 degrees deflection.
The 18" through 24" sizes are capable of 1.5 degrees deflection.
The 30" through 48" sizes are capable of 1 degree deflection.
The 54" size has a 0.5 degree deflection.

STEEL PIPE

The 1100 Series MEGALUG can be used to restrain 3" - 8" SCH 40 or 80 steel pipe when joining to mechanical appurtenances. It can also be used on steel pipe in all sizes if the pipe's outside diameter is the same as the ductile iron pipe and its thickness is equal to or greater than PC350 ductile iron pipe in sizes of 16 inch and below and PC250 ductile iron pipe 18 inches and above.

CAST IRON PIPE

Grey iron pipe diameters are often larger than ductile iron pipe diameters. The Series 1100 MEGALUG restraint may be used with grey iron pipe having standardized cast iron O.D. per AWWA C150 and C151, and with pit cast Classes "A" and "B" without modification. Use of the Series 1100 with pit cast grey iron Classes "C" and "D" will require over sizing the MEGALUG. More information on this is explained in detail in "Connections Bulletin DI-1".

MEGALUG Takes the Load

On April 11, 1997 EBAA Iron performed a remarkable force demonstration of their series 1100 MEGALUG Joint Restraint. With the use of EBAA's Series 1100 MEGALUG using a standard mechanical joint installation on 12 inch Ductile Iron Pipe, and a 80 Ton motor crane, EBAA Iron lifted a D7 Caterpillar Track Type Tractor weighing in at 50,350 lbs. Along with this, the Series 1100 MEGALUG has been tested to over 700 PSI. Concluding that EBAA's MEGALUGS can take the load.

Mechanical Joint Restraint Sample Specifications

(The text of the specifications below can be copied pasted from www.ebaa.com/download/1100Spec.DOC)

Restraint devices for mechanical joint fittings and appurtenances conforming to either ANSI/AWWA C111/A21.11 or ANSI/AWWA C153/A21.53, shall conform to the following:

Design
Restraint devices for nominal pipe sizes 3 inch through 54 inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.

The devices shall have a working pressure rating of 350 psi for 3-16 inch, 250 psi for 18-48 inch and 200 psi for the 54 inch. Ratings are for water pressure and must include a minimum safety factor of 2 to 1 in all sizes.

Material
Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.

For applications requiring restraint 30 inch and greater, an alternate grade of iron meeting the material requirements of ASTM A536 is acceptable, providing the device meets all end product performance requirements.

Ductile iron gripping wedges shall be heat treated within a range of 370 to 470 BHN.

Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) Specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8.

Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis.

Traceability
An identification number consisting of year, day, plant and shift (YYDDD)(plant designation)(Shift number), shall be cast into each gland body.

All physical and chemical test results shall be recorded such that they can be accessed via the identification number on the casting. These Material Traceability Records (MTR's) are to be made available, in hard copy, to the purchaser that requests such documentation and submits his gland body identification number.

Production pieces that are too small to accommodate individual numbering, such as fasteners and wedges, shall be controlled in segregate inventory until such time as all quality control tests are passed. These component parts may then be released to a general inventory for final assembly and packaging.

All components shall be manufactured and assembled in the United States. The purchaser shall, with reasonable notice, have the right to plant visitation at his/her expense.

Installation
Mechanical joint restraint shall require conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly as well as allowing joint deflection after assembly.

Proper actuation of the gripping wedges shall be ensured with torque limiting twist off nuts.

Approvals
Restraint devices shall be Listed by Underwriters Laboratories (3" through 24" inch size) and Approved by Factory Mutual (3" through 12" inch size).

Mechanical joint restraint for ductile Iron pipe shall be Megalug Series 1100 produced by EBAA Iron Inc. or approved equal.

MEGA-BOND® Restraint Coating System
All wedge assemblies and related parts shall be processed through a phosphate wash, rinse and drying operation prior to coating application. The coating shall consist of a minimum of two coats of liquid thermoset epoxy coating with heat cure to follow each coat.

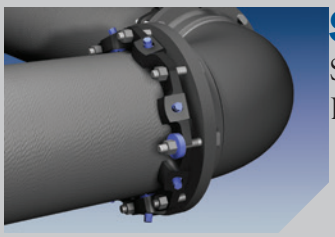
All casting bodies shall be surface pretreated with a phosphate wash, rinse and sealer before drying. The coating shall be electrostatically applied and heat cured. The coating shall be a polyester based powder to provide corrosion, impact and UV resistance.

The coating system shall be MEGA-BOND by EBAA Iron, Inc. or approved equal. Requests for approved equal must submit coating material and process details for review prior to bid.

For more information regarding MEGA-BOND, refer to the MEGA-BOND brochure or visit www.ebaa.com.

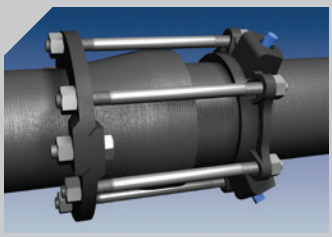
Support Products

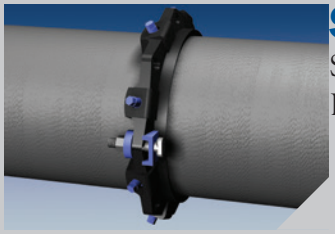
for more information concerning these products please consult the catalog or www.ebaa.com



Series 1100SD
Split MEGALUG Restraint
For Existing Mechanical Joints

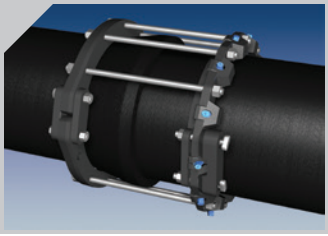
Series 1700
MEGALUG Restraint Harness
For Push-On Bell Joints





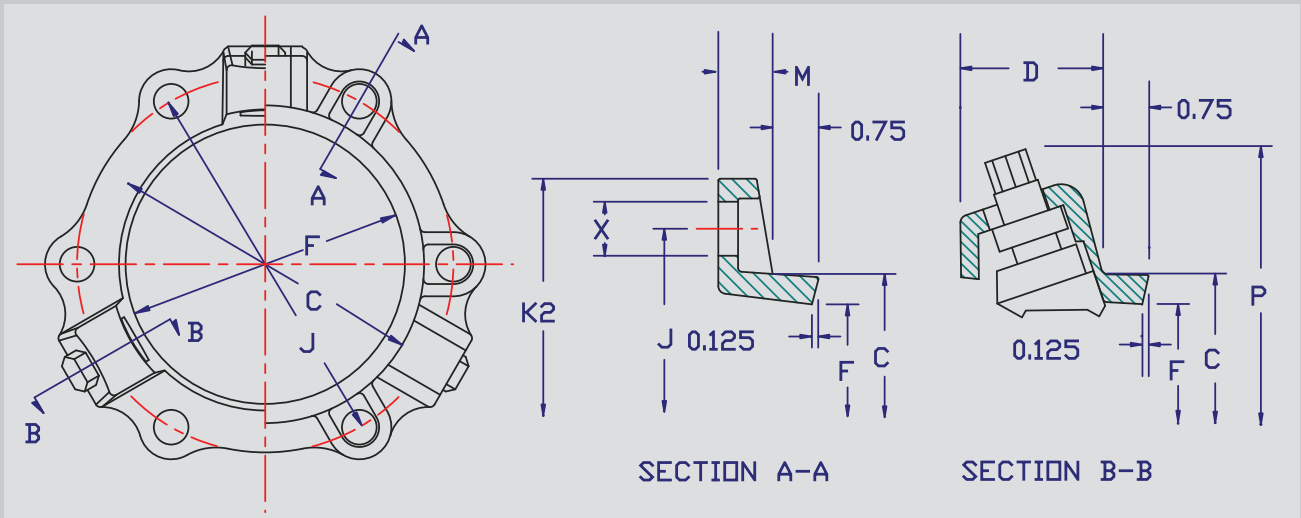
Series 1100SDB
Split MEGALUG Restraint
For Mid-Span Applications

Series 1100HD
Split MEGALUG Restraint
Harness for Existing Push-On Bells



Series 1100 Submittal Reference Drawing

EBAA IRON



MADE IN USA

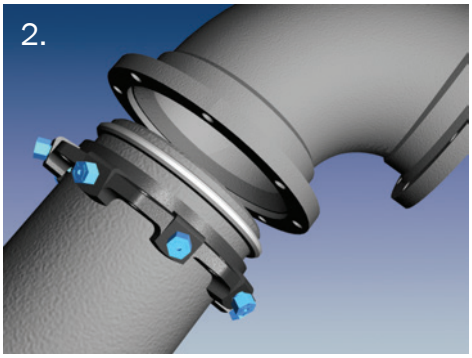
Nominal Pipe Size	Series Number	C	D	F	M	P*	X	J	K2	Wedge QTY.	Bolt QTY.	Weight (LBS.)	Pressure Rating (PSI)
3	1103	4.48	2.27	4.06	0.62	9.06	0.750	6.19	7.69	2	4	6.1	350
4	1104	5.92	2.27	4.90	0.75	9.90	0.875	7.50	9.12	2	4	7.7	350
6	1106	8.02	2.27	7.00	0.88	12.00	0.875	9.50	11.12	3	6	11.9	350
8	1108	10.17	2.31	9.15	1.00	14.15	0.875	11.75	13.37	4	6	14.8	350
10	1110	12.22	2.37	11.20	1.00	16.20	0.875	14.00	15.62	6	8	23.9	350
12	1112	14.32	2.37	13.30	1.25	18.30	0.875	16.25	17.88	8	8	31.2	350
14	1114	16.40	2.69	15.44	1.50	20.94	0.875	18.75	20.25	10	10	48.5	350
16	1116	18.50	2.69	17.54	1.56	22.90	0.875	21.00	22.50	12	12	56.4	350
18	1118	20.60	2.69	19.64	1.63	25.00	0.875	23.25	24.75	12	12	63.1	250
20	1120	22.70	2.69	21.74	1.69	27.10	0.875	25.50	27.00	14	14	72.3	250
24	1124	26.90	3.20	25.94	1.81	32.64	0.875	30.00	31.50	16	16	133.1	250
30	1130	33.29	3.20	32.17	2.25	38.87	1.125	36.88	39.12	20	20	194.6	250
36	1136	39.59	3.20	38.47	2.25	45.17	1.125	43.75	46.00	24	24	234.0	250
42	1142	45.79	4.56	44.67	3.88	55.57	1.375	50.62	53.48	28	28	536.0	250
48	1148	52.09	4.56	50.97	3.88	61.87	1.375	57.50	60.36	32	32	653.0	250
54	1154	58.82	4.56	57.73	3.88	66.40	1.375	63.20	66.33	36	36	700.3	200

* With Twist-Off Nuts twisted off.

NOTE: Dimensions are in inches (±1%) and are subject to change without notice.

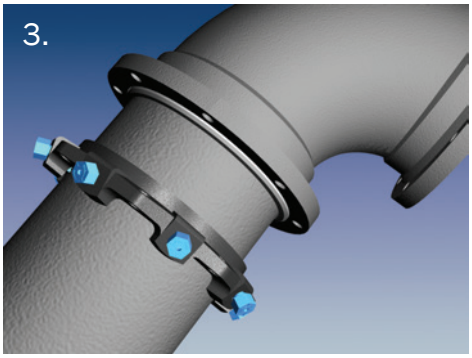
Important Notes

- The Series 1100 MEGALUG should not be used on plain end fittings.
- If encased in concrete, polyethylene wrap must be used to prevent concrete intrusion into the wedge pocket.
- For test pressures above the rated pressures shown, contact EBAA for recommendations, such as tandem restraint for high pressure applications.
- If you experience the need to install the Series 1100 MEGALUG in an unconventional manner please consult our engineering department.
- EBAA-Seal™ Mechanical Joint Gaskets are provided with 30 inch through 54 inch MEGALUG restraints. These are required on the above referenced sizes to accommodate the pressure ratings and safety factors shown.
- Extra length T-bolts are provided with the 42 inch, 48 inch and 54 inch sizes to facilitate easier assembly of the mechanical joint.
- All Series 1100 MEGALUG components are made of ductile iron conforming to ASTM A536. The wedges are heat treated to a hardness range of 370 to 470 BHN.
- LISTINGS AND APPROVALS: Sizes 3 inch through 24 inch are listed by Underwriters Laboratories, Inc. Category HJKF "Fittings, Retainer Type" with a deflection angle of 5 degrees (3 inch through 12 inch) and 2½ degrees (14 inch through 24 inch). The listing file number is EX2836, Sizes 3 inch through 12 inch are Factory Mutual approved.
- The Series 1100 MEGALUG is intended for use on ductile iron pipe. The restraint can be used on grey iron pipe if the pipe is not severely corroded and is in sound condition and has an outside diameter that can be accommodated. For more information on the use of the MEGALUG restraint on grey iron pipe ask for Connections Bulletin DI-1.



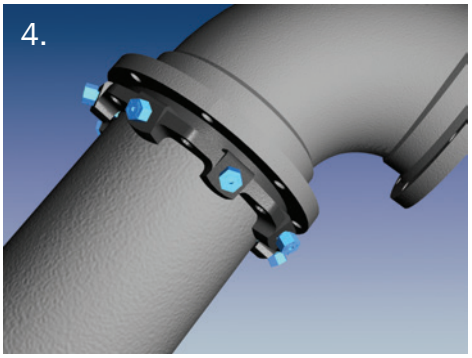
1. The Series 1100 MEGALUG joint restraint is designed for use on ductile iron pipe conforming to ANSI/AWWA C151/A21.51 (all thickness classes) when restraining mechanical joint pipe fittings.

2. Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and the plain end with soapy water or an approved pipe lubrication meeting



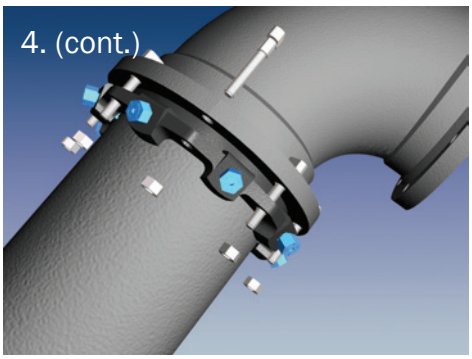
the requirement of ANSI/AWWA C111/A21.11, just prior to slipping the gasket onto the plain end for joint assembly. Place the gland on the plain end with lip extension toward the plain end, followed by the gasket.

NOTE: In cold weather it is preferable to warm the gasket to facilitate assembly of the joint.

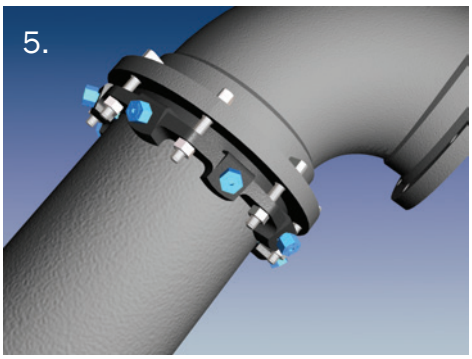


3. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.

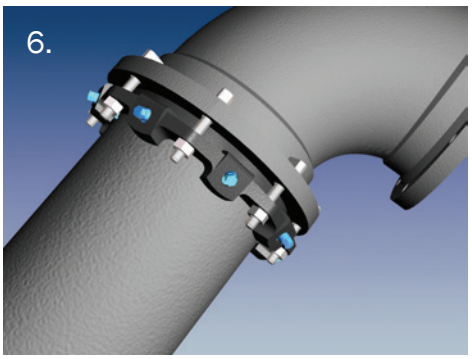
4. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Make deflection after joint assembly but before tightening bolts.



5. Tighten the bolts to the normal range of torque as indicated [3 inch 45-60 ft-lbs., 4-24 inch 75-90 ft-lbs., 30-36 inch 100-120 ft-lbs., and 42, 48 and 54 inch 120-150 ftlbs.] While at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolt first, then top bolt, next the bolts at either side, finally the remaining bolts. Repeat the process until all bolts are within the appropriate range of torque. In large sizes (30-48 [and 54] inch), five or more repetitions may be required. The use of a torque-indicating wrench will facilitate this procedure.



6. Tighten the torque limiting twist off nuts in a clockwise direction (direction indicated by arrow on top of nut) until all wedges are in firm contact with the pipe surface. Continue tightening in an alternating manner until all of the nuts have been twisted off.



7. If removal is necessary, utilize the ⅝ inch hex heads provided. If reassembly is required, assemble the joint in the same manner as above, by tightening the wedge bolts to 90 ft-lbs. If the series 1100 restraint is removed from the pipe, be sure that all the collar bolts and wedges are in place before the restraint is reassembled.

Steps 2-5 are requirements of AWWA. AWWA Standard C600

EBAA IRON Sales, Inc.
P.O. Box 857, Eastland, TX 76448
Tel: (254) 629-1731
Fax: (254) 629-8931
(800) 433-1716 within US and Canada
contact@ebaa.com
www.ebaa.com

For More Information

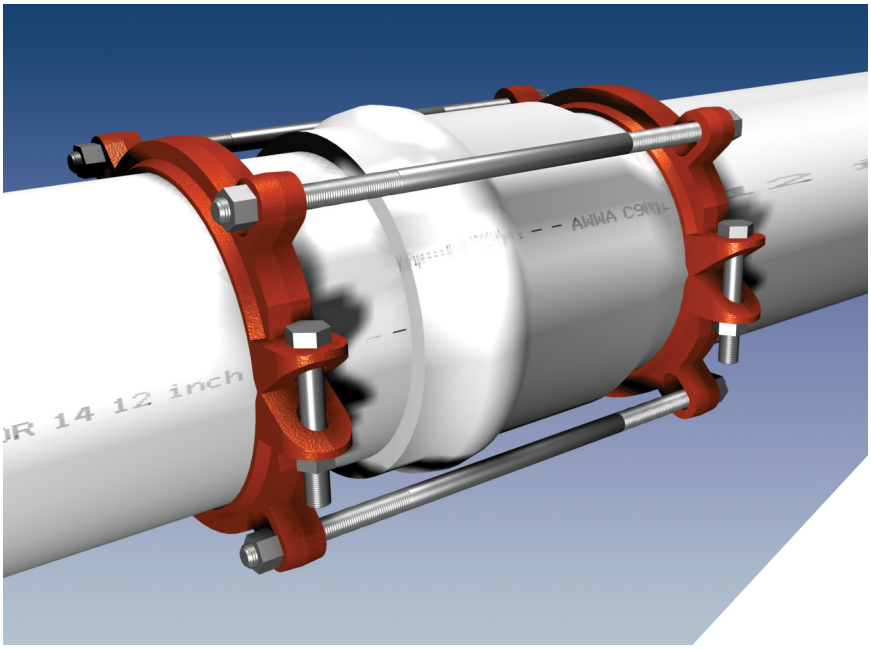
For more information about MEGALUG restraints call EBAA today and request "EBAA Connections Bulletin DI-1" concerning use of the MEGALUG restraint on grey iron pipe, or "EBAA Connections Bulletin DI-2" covering the background and operation of the MEGALUG system of restraint.

"Restraint Length Calculation" Software is available for PC/Windows applications. Support documentation about the software can be found in "EBAA Connections Bulletin PD-1 through PD-5".

BELL JOINT RESTRAINT HARNESS FOR C900

Series 1500

Bell Restraint Harness for C900 PVC Pipe



Series 1512 on 12 inch PVC Pipe.

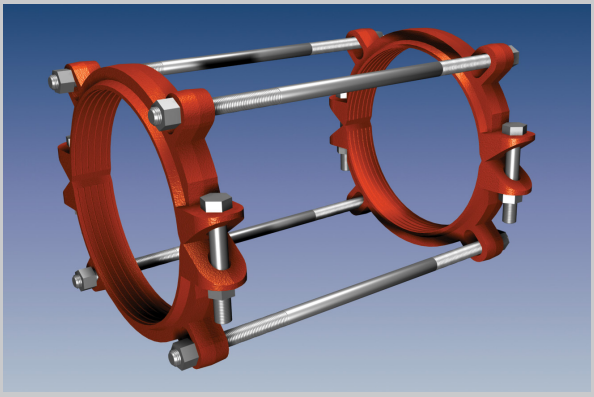
Features and Applications:

- For use on AWWA C900 PVC pipe bells
- Minimum 2 to 1 Safety Factor
- MEGA-BOND®
  Restraint Coating System
  For more information regarding MEGA-BOND refer to www.ebaa.com
- Split design for ease of installation
- Constructed of ASTM A536 ductile iron
- Available in accessory packages
- For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774

			Pressure Ratings (C900)		
Nominal Pipe Size	Series Number	Approximate Shipping Weight	DR 14 Class 200	DR 18 Class 150	DR 25 Class 100
4	1504	14.8	200	200	100
6	1506	22.5	200	200	100
8	1508	33.2	200	200	100
10	1510	57.2	200	200	100
12	1512	62.7	200	200	100

NOTE: For applications or pressures other than those shown, please contact EBAA for assistance.

Packaged Items.



Sample Specification

Restraint for PVC pipe bell (AWWA C900) shall consist of the following: The restraint shall be manufactured of ductile iron conforming to ASTM A536. The restraint devices shall be coated with MEGA-BOND. (For complete specifications on MEGA-BOND visit www.ebaa.com.) A split serrated ring shall be used behind the pipe bell. A split serrated ring shall also be used to grip the pipe, and a sufficient number of bolts shall be used to connect the bell ring and the gripping ring. The combination shall have a pressure rating as shown in the adjacent table. The restraint shall be the Series 1500, as manufactured by EBAA Iron, Inc., or approved equal.

AIR RELEASE VALVE ASSEMBLY

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
WATERLINE #1				**REF: 048C405, 406, 408, 409, 412, 413, 414, 415, 416**
2" AIR RELEASE VALVE ASSEMBLY:				
16" X 2" DIP TAPPING SADDLE - CC THRD	SDL	3	EA	
24" X 2" DIP TAPPING SADDLE - CC THRD	SDL	2	EA	
2" CC X CTS CORP STOP	BRS	5	EA	
2" X 10' K-SOFT COPPER TUBE	COP	60	FT	
2" MIP X CTS ADAPTER	BRS	5	EA	
2" FIP X FIP CURB STOP	BRS	5	EA	
2" X 4" BRS THRD NIPPLE	BRS	5	EA	
2" WATER COMB AIR RELEASE VALVE	VARV	5	EA	VALMATIC 202C.2XD
2" X 10" BRS THRD NIPPLE	BRS	5	EA	
2" BRS THRD 90 BEND	BRS	10	EA	
2" X 6" BRS THRD NIPPLE	BRS	5	EA	
2" SST MESH INSECT SCREEN	MISC	5	EA	
2" SST HOSE CLAMP	MISC	5	EA	1-5/16" - 3-1/4"
30" X 48" PVC METER CAN	MTR	5	EA	
30" X 20" MONITOR COVER WITH 20" LID (WITHOUT LOCK)	MTR	5	EA	EQUAL - FORD MC-30-LL
WATERLINE #2				**REF: 048C402, 403, 404, 405,**
2" AIR RELEASE VALVE ASSEMBLY:				
24" X 2" DIP TAPPING SADDLE - CC THRD	SDL	2	EA	
2" CC X CTS CORP STOP	BRS	2	EA	
2" X 10' K-SOFT COPPER TUBE	COP	20	FT	
2" MIP X CTS ADAPTER	BRS	2	EA	
2" FIP X FIP CURB STOP	BRS	2	EA	
2" X 4" BRS THRD NIPPLE	BRS	2	EA	
2" WATER COMB AIR RELEASE VALVE	VARV	2	EA	VALMATIC 202C.2XD
2" X 10" BRS THRD NIPPLE	BRS	2	EA	
2" BRS THRD 90 BEND	BRS	4	EA	
2" X 6" BRS THRD NIPPLE	BRS	2	EA	
2" SST MESH INSECT SCREEN	MISC	2	EA	
2" SST HOSE CLAMP	MISC	2	EA	1-5/16" - 3-1/4"
30" X 48" PVC METER CAN	MTR	2	EA	

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
30" X 20" MONITOR COVER WITH 20" LID (WITHOUT LOCK)	MTR	2	EA	EQUAL - FORD MC-30-LL
WATERLINE #3				**REF: 048C409, 410, 411, 412**
2" AIR RELEASE VALVE ASSEMBLY:				
24" X 2" DIP TAPPING SADDLE - CC THRD	SDL	3	EA	
2" CC X CTS CORP STOP	BRS	3	EA	
2" X 10' K-SOFT COPPER TUBE	COP	30	FT	
2" MIP X CTS ADAPTER	BRS	3	EA	
2" FIP X FIP CURB STOP	BRS	3	EA	
2" X 4" BRS THRD NIPPLE	BRS	3	EA	
2" WATER COMB AIR RELEASE VALVE	VARV	3	EA	VALMATIC 202C.2XD
2" X 10" BRS THRD NIPPLE	BRS	3	EA	
2" BRS THRD 90 BEND	BRS	6	EA	
2" X 6" BRS THRD NIPPLE	BRS	3	EA	
2" SST MESH INSECT SCREEN	MISC	3	EA	
2" SST HOSE CLAMP	MISC	3	EA	1-5/16" - 3-1/4"
30" X 48" PVC METER CAN	MTR	3	EA	
30" X 20" MONITOR COVER WITH 20" LID (WITHOUT LOCK)	MTR	3	EA	EQUAL - FORD MC-30-LL
WATERLINE #4				**REF: 048C401, 402**
2" AIR RELEASE VALVE ASSEMBLY:				
24" X 2" DIP TAPPING SADDLE - CC THRD	SDL	1	EA	
2" CC X CTS CORP STOP	BRS	1	EA	
2" X 10' K-SOFT COPPER TUBE	COP	10	FT	
2" MIP X CTS ADAPTER	BRS	1	EA	
2" FIP X FIP CURB STOP	BRS	1	EA	
2" X 4" BRS THRD NIPPLE	BRS	1	EA	
2" WATER COMB AIR RELEASE VALVE	VARV	1	EA	VALMATIC 202C.2XD
2" X 10" BRS THRD NIPPLE	BRS	1	EA	
2" BRS THRD 90 BEND	BRS	2	EA	
2" X 6" BRS THRD NIPPLE	BRS	1	EA	
2" SST MESH INSECT SCREEN	MISC	1	EA	
2" SST HOSE CLAMP	MISC	1	EA	1-5/16" - 3-1/4"
30" X 48" PVC METER CAN	MTR	1	EA	

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
30" X 20" MONITOR COVER WITH 20" LID (WITHOUT LOCK)	MTR	1	EA	EQUAL - FORD MC-30-LL

The Ford Meter Box Company, Inc.

775 Manchester Avenue • 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

December 13, 2021

The Ford Meter Box Company, Inc.
775 Manchester Avenue
Wabash, IN 46992

Project: Northwest Water Treatment Facility
Project Location: Wichita, KS

American Iron and Steel Certification

I, Jim Harlan, certify that all manufacturing processes for the products listed below are in full compliance with the American Iron and Steel (AIS) requirement as mandated in EPA's State Revolving Fund Programs.

Additionally, all manufacturing processes for the products listed below are also in full compliance with the American Iron and Steel (AIS) requirement as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

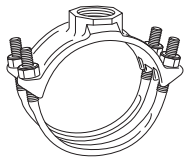
Part Number	Description
F202-1840-CC7	Iron Saddle, Two Steel Straps, Epoxy Coated Body
F202-2650-IP7	Iron Saddle, Two Steel Straps, Epoxy Coated Body

Such processes take place at the following location: Pell City, Alabama

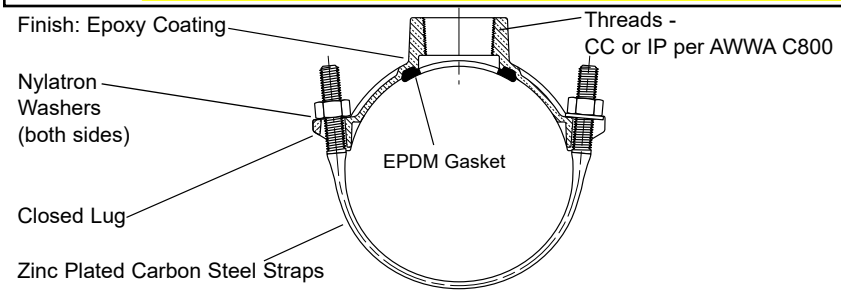
THE FORD METER BOX COMPANY, INC.
Jim Harlan
Jim Harlan
Marketing Administrator

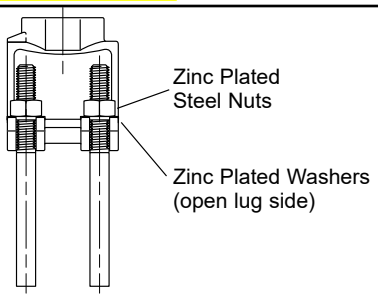
SUBMITTAL INFORMATION

Iron Service Saddles - *(F202-xxx-TAP style)*



F202 DOUBLE STRAP IRON SERVICE SADDLES FOR DUCTILE IRON AND A/C PIPE





Nom. Pipe Size	O.D. Range (In.)	Approx. Wt. Lbs.	Catalog Number	✓ Submitted Item(s)
2"	2.35 - 2.50	2.8	F202-250-TAP	
2-1/2"	2.75 - 2.90	2.8	F202-290-TAP	
3"	*3.46 - 3.80	4.8	F202-380-TAP	
	*3.80 - 4.25	5.5	F202-425-TAP	
4"	**4.26 - 4.80	5.4	F202-480-TAP	
	▲ 4.74 - 5.00	5.4	F202-500-TAP	
	*4.74 - 5.26	5.4	F202-526-TAP	
	▲ 4.97 - 5.26	5.4	F202-526-TAP	
6"	5.94 - 6.69	6.5	F202-669-TAP	
	6.63 - 6.90	6.5	F202-690-TAP	
	6.84 - 7.60	6.8	F202-760-TAP	
8"	7.93 - 8.71	7.4	F202-871-TAP	
	8.63 - 9.05	7.4	F202-905-TAP	
	8.99 - 9.79	8.2	F202-979-TAP	
10"	10.00 - 10.75	10.4	F202-1075-TAP	
	10.75 - 11.10	11.5	F202-1110-TAP	
	11.10 - 12.12	11.5	F202-1212-TAP	
12"	12.00 - 12.75	12.5	F202-1275-TAP	
	12.75 - 13.20	12.5	F202-1320-TAP	
	13.20 - 14.38	12.5	F202-1438-TAP	
14"	15.30 - 16.25	16.0	F202-1625-TAP	
	16.30 - 17.25	16.5	F202-1725-TAP	
16"	17.40 - 18.40	17.0	F202-1840-TAP	
	18.50 - 19.25	17.3	F202-1925-TAP	
18"	19.50 - 20.50	20.8	F202-2050-TAP	
20"	21.20 - 22.20	21.3	F202-2220-TAP	
	22.50 - 23.50	24.0	F202-2350-TAP	
24"	23.80 - 24.80	24.5	F202-2480-TAP	
	25.60 - 26.50	31.7	F202-2650-TAP	
30"	31.74 - 32.74	42.0	F202-3274-TAP	

* Saddles for this pipe range are not available with 2" CC (CC7) or 2-1/2" IP (IP8) threads.
** These saddles with 2" CC (CC7) or 2-1/2" IP (IP8) taps only fit 4.80" O.D. pipe.
Example: F202-480-CC7 fits 4.80 pipe O.D. only
▲ This saddle is only available with 2" CC (CC7) or 2-1/2" IP (IP8) taps

Outlet Tap Code

CC (AWWA) Thread

Thread	Code Number	✓ Submitted Item(s)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	

IP Thread

Thread	Code Number	✓ Submitted Item(s)
1/2" IP	Δ IP1	
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

FEATURES

- Body made of high strength ductile iron per ASTM A536
- Straps are 5/8" AISI C1010 steel, zinc plated with trivalent seal. Each strap has a 5/8" flat bearing surface. For saddles 3" or smaller, straps are 1/2"
- Gasket is EPDM rubber per ASTM D2000
- Finish on saddle body is fusion-bonded epoxy coating
- Certified to ANSI/NSF Standard 61
- Rated for the lesser of 350 psi on sizes 2"-12", 250 psi on sizes 14"-30", or the pressure of the pipe on which it is installed
- Conforms to AWWA C800

The Ford Meter Box Company, Inc.
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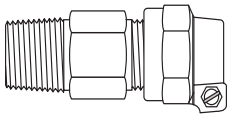
Phone: 260-563-3171 / Fax: 800-826-3487
Overseas Fax: 260-563-0167
www.fordmeterbox.com

06/04/19

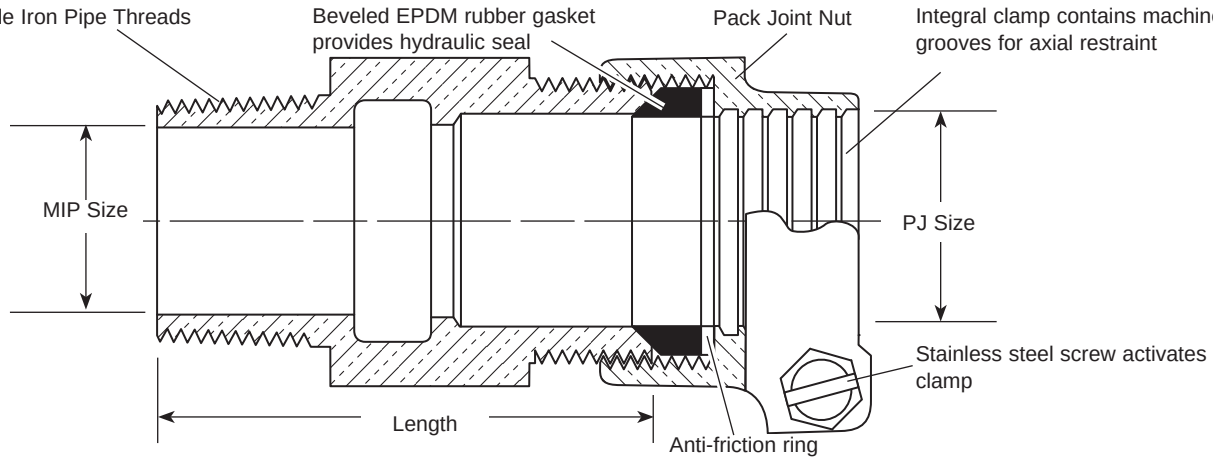
Submitted By:

SUBMITTAL INFORMATION

Pack Joint Coupling - *(C84-xx-NL style)*



MALE IRON PIPE BY PACK JOINT FOR COPPER OR PLASTIC TUBING (CTS)



Description		Length	Approx. Wt. Lbs	Part Number	✓ Submitted Item(s)
Male Iron Pipe	P.J. for CTS				
1/2"	1/2"	2"	0.5	C84-11-NL	
1/2"	5/8"	2-1/16"	0.8	C84-12-NL	
1/2"	3/4"	2-1/16"	0.8	C84-13-NL	
3/4"	1/2"	2"	0.8	C84-31-NL	
3/4"	5/8"	-	0.7	C84-32-NL	
3/4"	3/4"	2-1/4"	0.6	C84-33-NL	
3/4"	1"	2-3/8"	0.7	C84-34-NL	
1"	5/8"	-	0.7	C84-42-NL	
1"	3/4"	2-3/8"	0.7	C84-43-NL	
1"	1"	2-9/16"	0.8	C84-44-NL	
1"	1-1/4"	2-1/2"	1.2	C84-45-NL	
1"	1-1/2"	2-9/16"	1.8	C84-46-NL	
1-1/4"	1"	2-9/16"	1.4	C84-54-NL	
1-1/4"	1-1/4"	2-9/16"	1.4	C84-55-NL	
1-1/4"	1-1/2"	3-1/4"	1.8	C84-56-NL	
1-1/2"	1-1/2"	3-1/4"	2.0	C84-66-NL	
1-1/2"	2"	2-15/16"	2.6	C84-67-NL	
2"	2"	3-1/4"	3.1	C84-77-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters “NL” cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Sleeve design provides hexagonal wrench flats for proper installation

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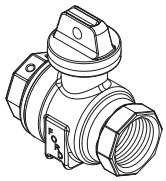
02/09/15

Submitted By:

SUBMITTAL INFORMATION

Ball Valve Curb Stop - *(B11-xxx-NL style)*



FEMALE IRON PIPE THREAD INLET BY FEMALE IRON PIPE THREAD OUTLET

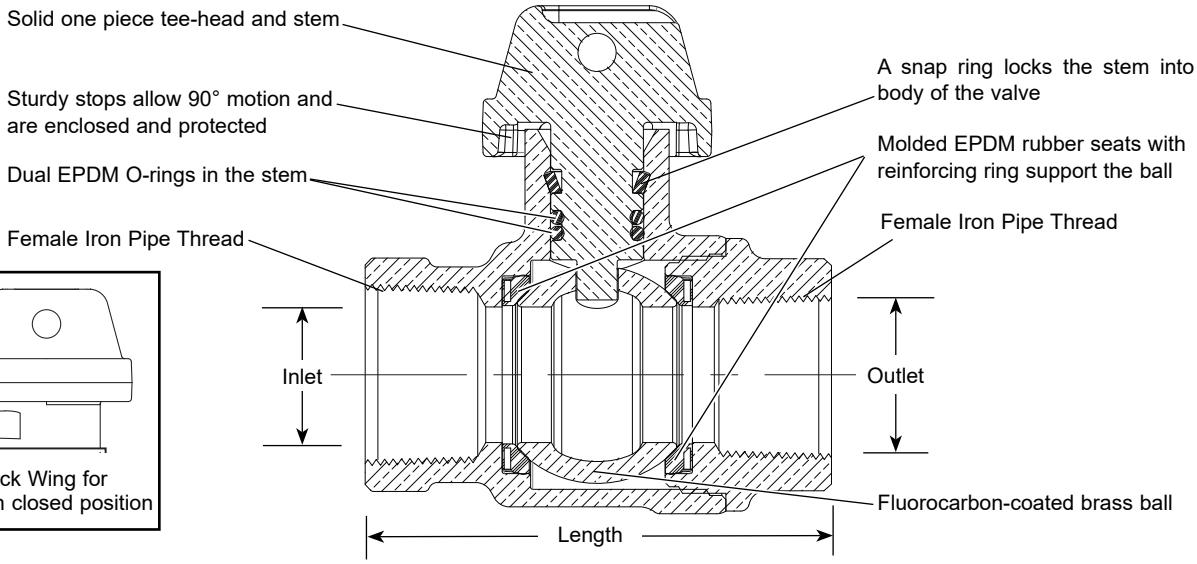


Image shown above is a B11-444-NL

Valve Size	Inlet Size	Outlet Size	Length	Approx. Wt. Lbs	Part Number	✓ Submitted Item(s)
3/4"	3/4"	3/4"	3-1/64"	1.5	B11-333-NL	
3/4"	3/4"	3/4"	3-21/64"	1.7	B11-333W-3-33-NL	
3/4"	1"	3/4"	3-17/64"	1.6	B11-343-NL	
3/4"	1"	1"	3-25/64"	1.6	B11-344-NL	
1"	1"	1"	3-7/16"	2.0	B11-444-NL	
1"	1-1/4"	1"	3-9/16"	1.9	B11-454-NL	
1"	1-1/4"	1-1/4"	3-25/32"	2.0	B11-455-NL	
1-1/4"	1-1/4"	1-1/4"	4-1/32"	4.2	B11-555-NL	
1-1/4"	1-1/2"	1-1/2"	4-11/32"	4.4	B11-566-NL	
1-1/2"	1-1/2"	1-1/2"	4-15/32"	4.8	B11-666-NL	
1-1/2"	2"	1-1/2"	4-23/32"	5.0	B11-676-NL	
1-1/2"	2"	2"	5"	8.0	B11-677-NL	
2"	2"	2"	5-1/4"	7.2	B11-777-NL	
2"	2"	2-1/2"	5-45/64"	7.6	B11-778-NL	
2"	2-1/2"	2-1/2"	6-1/4"	11.1	B11-788-NL	

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters “NL” cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Valve is non-directional and is watertight with flow in either direction
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- Hole for attaching curb box rod or handle is provided in tee-head
- 300 PSI working pressure

Optional Padlock Wing for locking valve in closed position. Add “W” to part number. Example: B11-444**W**-NL
Optional full 360° tee-head rotation. Add "R" to part number. Example: B11-444**R**-NL

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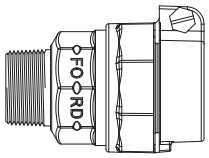
www.fordmeterbox.com

07/12/17

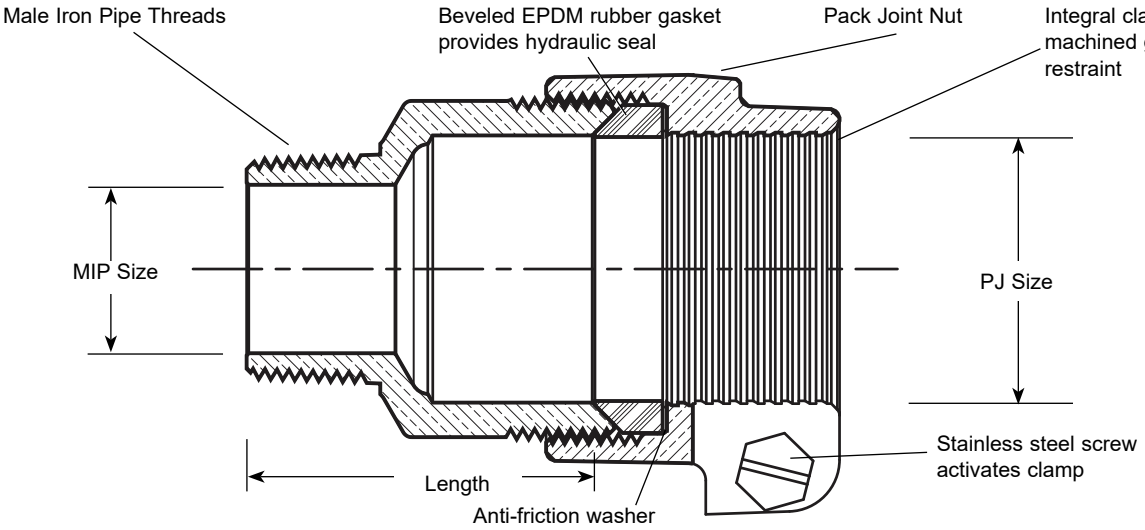
Submitted By:

SUBMITTAL INFORMATION

Pack Joint Coupling - *(C87-xx-NL style)*



MALE IRON PIPE THREAD BY PACK JOINT FOR PVC PIPE



DUE TO DESIGN VARIATIONS RELATED TO SIZING, ITEMS MAY DIFFER FROM IMAGES ABOVE

Description		Length	Approx. Wt. Lbs	Part Number	✓ Submitted Item(s)
Male Iron Pipe	P.J. for PVC				
3/4"	1/2"	2-1/4"	0.7	C87-31-NL	
3/4"	3/4"	2-3/8"	0.8	C87-33-NL	
3/4"	1"	2-3/8"	1.2	C87-34-NL	
1"	3/4"	2-9/16"	0.9	C87-43-NL	
1"	1"	2-1/2"	1.3	C87-44-NL	
1"	1-1/4"	2-9/16"	1.7	C87-45-NL	
1"	1-1/2"	2-5/8"	2.0	C87-46-NL	
1"	2"	2-7/8"	3.2	C87-47-NL	
1-1/4"	1"	2-5/8"	1.5	C87-54-NL	
1-1/4"	1-1/4"	2-5/8"	1.8	C87-55-NL	
1-1/4"	1-1/2"	2-21/32"	2.3	C87-56-NL	
1-1/2"	1-1/4"	3-1/4"	2.0	C87-65-NL	
1-1/2"	1-1/2"	2-3/4"	2.3	C87-66-NL	
2"	2"	3"	3.5	C87-77-NL	

Note: Ford® Pack Joints for PVC are only recommended for Schedule 40 and Schedule 80 PVC pipe or DR11 HDPE pipe with appropriate insert stiffener.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters “NL” cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Body design provides hexagonal wrench flats for proper installation

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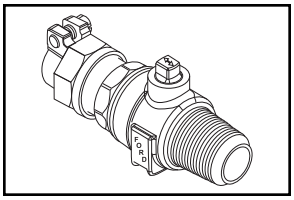
07/13/21

Submitted By:

SUBMITTAL INFORMATION

Ballcorp Corporation Stops - *(FB1000-xx-NL style)*



AWWA/CC TAPER THREAD INLET BY PACK JOINT FOR COPPER OR PLASTIC TUBING (CTS) OUTLET

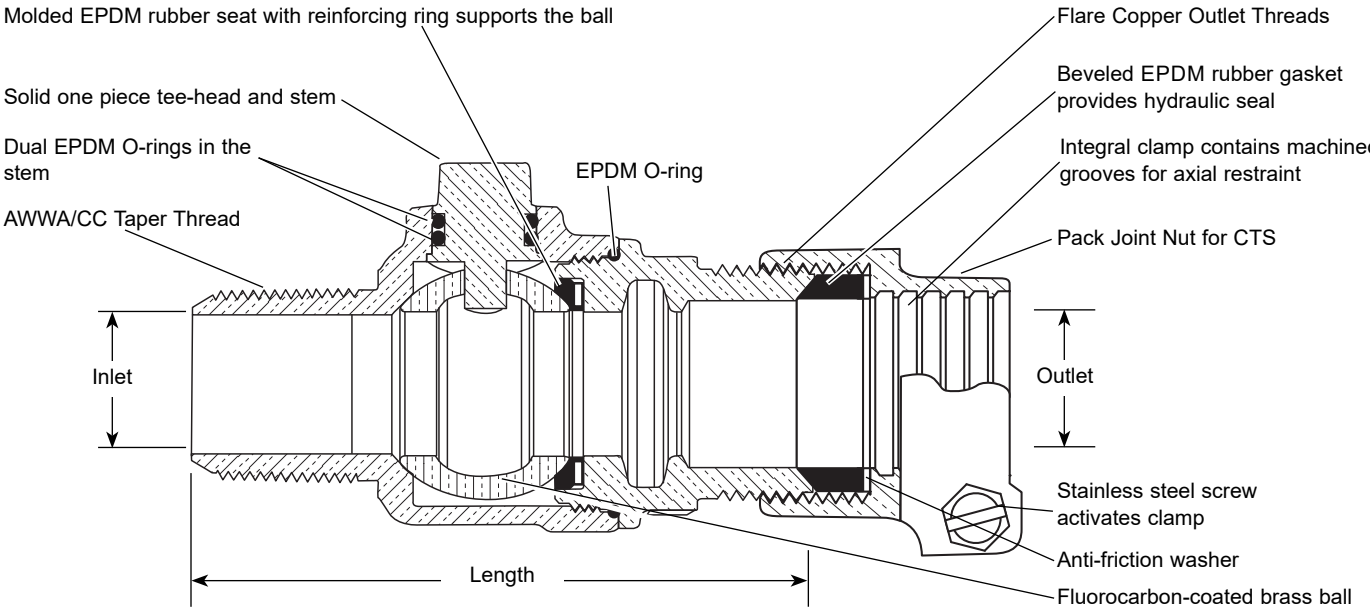


Image shown above is an FB1000-4-NL

Valve Size	Inlet Size	Outlet Size	Valve Length	Body Outlet Threads	Approx. Wt. Lbs	Part Number	✓ Submitted Item(s)
3/4"	3/4"	3/4"	4-19/64"	3/4" Flare Copper	2.1	FB1000-3-NL	
3/4"	3/4"	1"	4-7/16"	1" Flare Copper	2.1	FB1000-34-NL	
1"	1"	1"	4-1/2"	1" Flare Copper	2.6	FB1000-4-NL	
1"	1"	1-1/4"	4-5/16"	1-1/4" Flare Copper	2.8	FB1000-45-NL	
1-1/4"	1-1/4"	1-1/4"	5-25/32"	1-1/4" Flare Copper	4.6	FB1000-5-NL	
1-1/4"	1-1/4"	1-1/2"	5-39/64"	1-1/2" Flare Copper	5.2	FB1000-56-NL	
1-1/2"	1-1/2"	1-1/2"	6-13/32"	1-1/2" Flare Copper	6.3	FB1000-6-NL	
1-1/2"	1-1/2"	2"	6-29/64"	2" Flare Copper	7.4	FB1000-67-NL	
2"	2"	2"	7-1/2"	2" Flare Copper	11.5	FB1000-7-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters “NL” cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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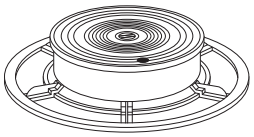
06/02/17

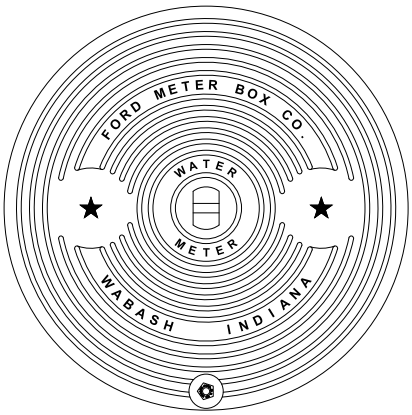
Submitted By:

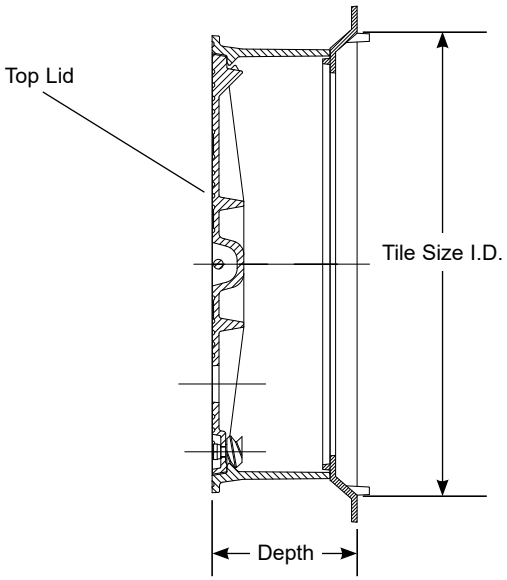
SUBMITTAL INFORMATION

Monitor Cover - *(MC-xx style)*



MONITOR COVER WITH LOCKING LID





Lid Size*	Cover Depth	Tile Size I.D.	Approx. Wt. Lbs.	Part Number	✓ Submitted Items
20"	7-1/2"	24"	103.0	MC-24	
20"	7-1/2"	30"	131.0	MC-30	
20"	8"	36"	185.0	MC-36	
20"	7-1/2"	24"	127.0	MC-24H	
20"	7-1/2"	30"	155.0	MC-30H	
20"	8"	36"	209.0	MC-36H	
20"	7-1/2"	24"	136.0	MC-24HH**	
20"	7-1/2"	30"	164.0	MC-30HH***	
20"	8"	36"	218.0	MC-36HH**	

* Lid size indicates approximate pit access opening; actual lid diameter is approximately 1" larger.
** Not available with "-TT" suffix
*** Not available with "-LB-TT" suffix

FEATURES

- Manufactured of cast iron per ASTM A48-92, Class 25
- Hat-shape design to minimize surface exposure and provide additional ground insulation.
- Inset lid design rests flush with the top of the riser ring.
- Standard pentagon bolt furnished with locking lids.
  Larger size bolt is available. Add "-LB" to catalog number. For non-locking lid, add "-LL".
- For extra heavy lid, order catalog number with "H" and for double extra heavy lid, order catalog number with "HH".
- Available with 2" precast holes for electronic meter reading modules.
  Add to catalog number: "-T" for single hole, "-TT" for double holes.

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01/23/20

Submitted By:

COPPER TUBE • PLUMBING

Streamline® Copper Tube sets the standard for quality, consistency and service in the plumbing industries. With a full line of copper tube products to support most all plumbing supply and DWV applications, Streamline® Copper Tube is available in all common types including Type K, Type L, Type M and DWV. Each piece of tube is incised marked and color coded for easy, long lasting identity. Manufactured in accordance with applicable standards, our ongoing commitment to quality continues to make Streamline® Copper Tube the preferred and specified brand of industry professionals.

- Made to applicable ASTM standards B88, B306, B819
- Meets NSF 61G
- Made in the USA

Copper Tube • Plumbing

		TYPE K			TYPE L			TYPE M	DWV	MEDICAL GAS	
										Nitrogenized® thru 3-1/8" only	
Nom. Dia.	O.D. Dia.	Hard Lengths	Soft Coils	Soft Lengths	Hard Lengths	Soft Coils	Soft Lengths	Hard Lengths	Hard Lengths	Type K Hard Lengths	Type L Hard Lengths
1/4"	3/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	-	-	10 ft., 20 ft.	10 ft., 20 ft.
3/8"	1/2"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1/2"	5/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
5/8"	3/4"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
3/4"	7/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1"	1-1/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1-1/4"	1-3/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
1-1/2"	1-5/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
2"	2-1/8"	10 ft., 20 ft.	40 ft., 60 ft.	10 ft., 20 ft.	10 ft., 20 ft.	40 ft., 60 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
2-1/2"	2-5/8"	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.	-	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
3"	3-1/8"	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.	-	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
3-1/2"	3-5/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
4"	4-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
5"	5-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
6"	6-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
8"	8-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.

COMBINATION AIR VALVES (SINGLE BODY TYPE)

MODEL NOS. 201C.2 - 202C.2 - 203C.2 - 204C.2

STANDARD MATERIALS OF CONSTRUCTION

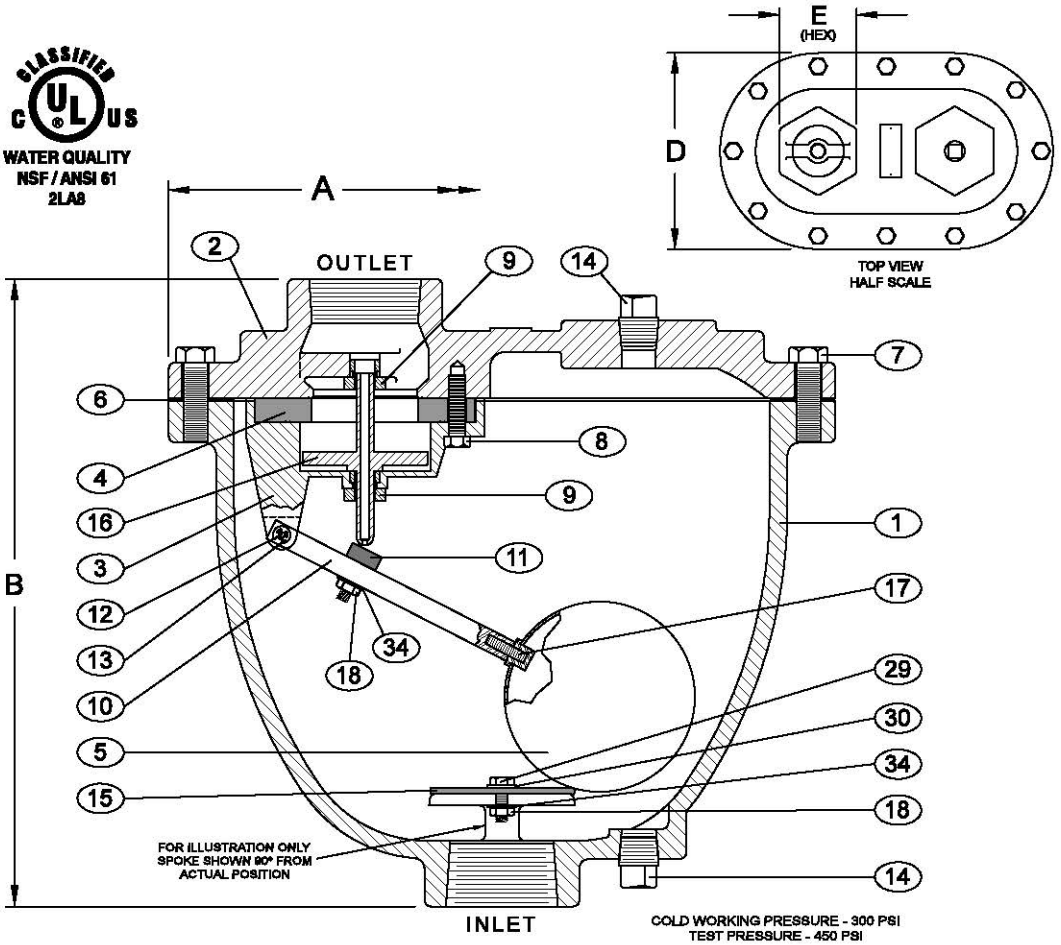
PART NO.	PART NAME	MATERIAL
1	BODY	CAST IRON ASTM A126, CLASS B
2	COVER	CAST IRON ASTM A126, CLASS B
3	BAFFLE	CAST IRON ASTM A126, CLASS B
4	SEAT	BUNA-N
5	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	ALLOY STEEL SAE, GRADE 5
8	RETAINING SCREWS	STAINLESS STEEL T316, ASTM F593
9	GUIDE BUSHING	STAINLESS STEEL T316, ASTM A240
10	FLOAT ARM	STAINLESS STEEL T316, ASTM A240
11	ORIFICE BUTTON	STAINLESS STEEL & BUNA-N
12	PIVOT PIN	STAINLESS STEEL T316, ASTM A276
13	RETAINING RING	STAINLESS STEEL PH 15-7 MO
14	PIPE PLUG	STEEL
15	CUSHION	BUNA-N
16	PLUG	STAINLESS STEEL T316, ASTM A276
17	FLOAT RETAINER	STAINLESS STEEL T316, ASTM F880
18	LOCK NUT	STAINLESS STEEL T316, ASTM F594
29	CUSHION RETAINER	STAINLESS STEEL T316, ASTM F593
30	WASHER	STAINLESS STEEL T316, ASTM A240
34	LOCK WASHER	STAINLESS STEEL T316, ASTM A240

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

Revised 1-29-03

MATERIALS OF CONSTRUCTION	DATE 2/2/69
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-201C-M

WATER QUALITY
NSF / ANSI 61
2LA8



SEE DRAWING NO. VM-201C-M FOR STANDARD MATERIALS OF CONSTRUCTION
SEE DRAWING NO. VM-201CDISV-M FOR SUPER VALVE MATERIALS OF CONSTRUCTION

VALVE SIZE	MODEL NUMBER	A	B	D	E	INLET SIZE	OUTLET SIZE	ORIFICE SIZE
2"	202C.2	14.00	13.00	8.25	3.25	2" NPT	2" NPT	3/32"

1	BODY	8	RETAINING SCREWS	15	CUSHION
2	COVER	9	BUSHING	16	PLUG
3	BAFFLE	10	FLOAT ARM	17	FLOAT RETAINER
4	SEAT	11	ORIFICE BUTTON	18	LOCK NUT
5	FLOAT	12	PIVOT PIN	29	CUSHION RETAINER
6	GASKET	13	RETAINING RING	30	WASHER
7	COVER BOLTS	14	PIPE PLUG	34	LOCK WASHER

Revised 8-19-14 (Rev 1)

COMBINATION AIR VALVE (SINGLE BODY TYPE)

DATE 5-8-13

VAL-MATIC VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-202C

MERIT BRASS

May 1, 2020

For Brass Nipples Only

To our valued customers,

We hereby certify that to the best of our knowledge and belief, all brass nipples manufactured by Merit Brass Company in Cleveland, Ohio conform to the requirements of specification ASTM B687- 2016.

Nipples are threaded with American Standard Tapered Pipe threads (NPT) in accordance with ASME B1.20.1 – 2013

Brass nipples have a weighted average lead content of =<0.25% and are in compliance with lead content requirements for lead free plumbing per the U.S. Safe Drinking Water Act.

Sincerely,
Alan Lipp

Chief Operating Officer

ISO 9001 Certified System
SAI Global File No. 008375

P.O. Box 43127 • One Merit Drive • Cleveland, OH 44143
Phone: 216 261 9800 • Toll Free: 800 726 9800 • Fax: 800 726 9880 • www.meritbrass.com • www.mbwebXpress.com

MB Web Xpress

MERIT BRASS

DIRECTING THE FLOW OF *Quality*

TO OUR VALUED CUSTOMER:

We hereby certify that to the best of our knowledge and belief that the domestic lead-free fittings supplied to us by Lee Brass and New England Union Company comply with the following standards:

	SPECIFICATIONS
DIMENSION	ANSI/ASME B16.14, B16.15,B16.18 MSS-SP-106 (FLANGES) A-A-5961 (UNION)
THREADS	ANSI/ASME B1.20.1
MATERIAL	ASTM 584-06a (C89833) LEAD FREE Cu = 87.0-91.0% Sn = 4.0-6.0% Pb = 0.10% (Max.) Zn = 2.0-4.0% Ni = 1.0% (Max.) P = 0.05% (Max.) Si = 0.005% (Max.) Al = 0.005% (Max.) S = 0.08% (Max.) Fe = 0.3% (Max.) Sb = 0.25% (Max.) Bi = 1.7-2.7%

Please consider this letter official notification that these fittings meet all applicable state and federal lead-free requirements, and are also certified by NSF to NSF/ANSI 61 Annex G.

Regards,

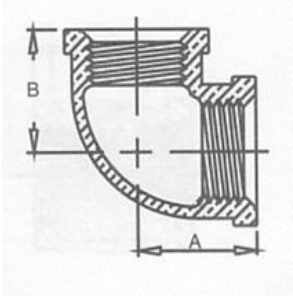
Charlene Urban
Purchasing
Merit Brass Company

DIMENSIONAL SPECIFICATIONS

LEAD-FREE DOMESTIC BRASS FITTINGS* 125 LB.

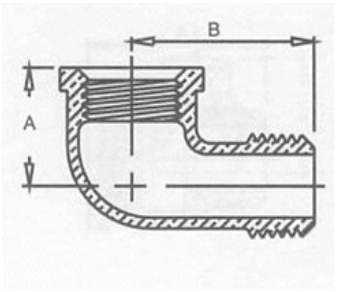
90 DEGREE ELBOW

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B
NL101-02	1/8	0.06	0.54	0.54
NL101-04	1/4	0.08	0.71	0.71
NL101-06	3/8	0.16	0.82	0.82
NL101-08	1/2	0.24	1.01	1.01
NL101-12	3/4	0.35	1.18	1.18
NL101-16	1	0.60	1.43	1.43
NL101-20	1-1/4	0.95	1.69	1.69
NL101-24	1-1/2	1.03	1.84	1.84
NL101-32	2	1.95	2.12	2.12
NL101-40	2-1/2	3.45	2.70	2.70
NL101-48	3	5.40	3.08	3.08
NL101-64	4	9.25	3.79	3.79
NL101-96	6	24.22	5.13	5.13



90 DEGREE STREET ELBOW

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B
NL103-02	1/8	0.06	0.55	0.92
NL103-04	1/4	0.11	0.72	1.11
NL103-06	3/8	0.17	0.83	1.24
NL103-08	1/2	0.23	1.03	1.51
NL103-12	3/4	0.35	1.19	1.66
NL103-16	1	0.50	1.43	1.98
NL103-20	1-1/4	0.85	1.71	2.26
NL103-24	1-1/2	1.15	1.87	2.46
NL103-32	2	1.98	2.14	2.98
NL103-40	2-1/2	3.15	2.74	3.92
NL103-48	3	5.26	3.10	4.45



*Conforms with lead content requirements for lead-free plumbing as defined by the U.S. Safe Drinking Water Act. Certified <0.25 weighted average % lead.

Be Lead Free With MB MERIT BRASS

MERIT BRASS

DIRECTING THE FLOW OF *Quality*

WHITE RHINO
METER CANS

TECHNICAL SPECIFICATIONS

Corrugated meter can will be supplied with cast iron ring and cover bolted to white Contech PVC pipe (A-2000) with stainless steel fasteners. Cast iron cover is supplied with locking mechanism. Cover is also available with Touch Read hole or H20 rated polymer traffic cover (both optional). Meter can body will be seamless, open-profile and meet all requirements of ASTM F949. Pipe body will have smooth interior with a solid cross-sectional corrugated exterior. Exterior corrugations will be perpendicular to the axis of the pipe. Corrugated pipe will be extruded from PVC resin cell class 12454 as defined in ASTM D1784.

3"W x 4"H Cutouts for service lines are optional.

KEY FEATURES & BENEFITS:

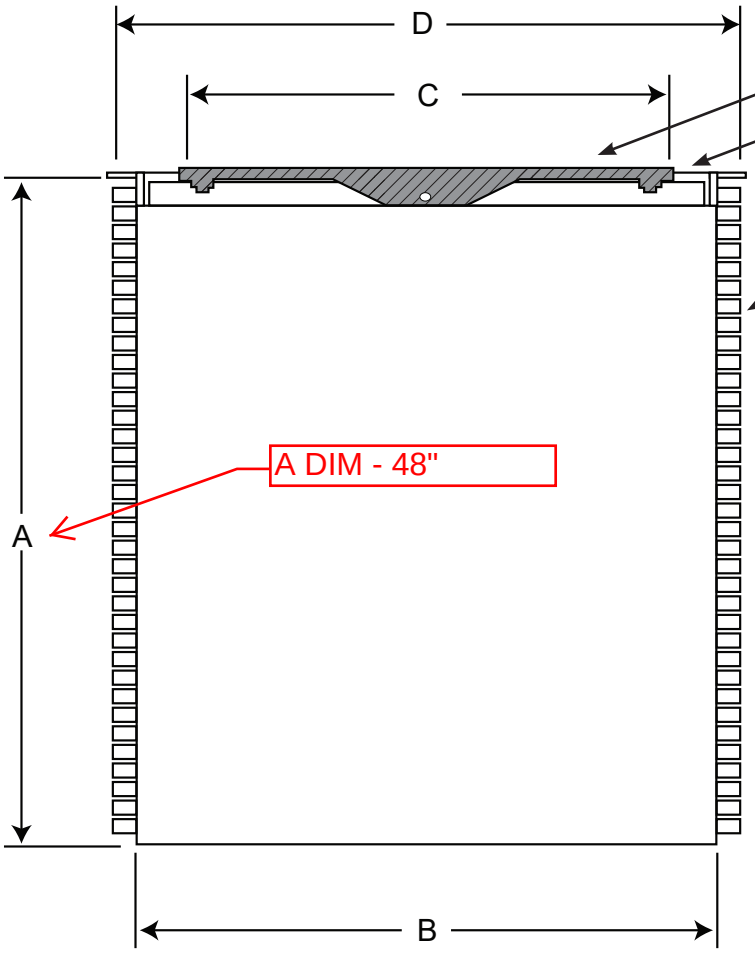
- **Strong:** Corrugated design prevents settling
- **Lightweight:** 18"x18" version weighs only 43 lbs.
- **Corrosion resistant body:** Constructed with Rhino Tuff PVC
- **Sturdy:** Cast iron ring and lid
- **Interior visibility:** White can allows for greater visibility
- **Hardware:** 304 stainless steel
- **Fast delivery:** Same day pick-up or shipment from stock in most cases
- **Multi-functional:** Larger sizes are perfect for air relief valves
- **Order what you need:** Pallet quantities NOT Required
- **Customizable:** EGW sales force available for spec work
- **Quality:** White pipe reduces UV degradation

Standard Meter Cans are available in these sizes:

Diameters:
18"
24"
30"
36"

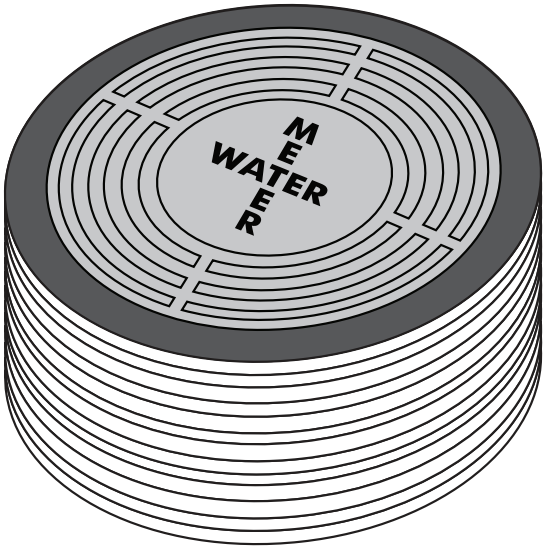
Depths:
15"
18"
24"
30"
36"
48"
60"

1406 Hutton Drive, Carrollton, TX 75006 | Phone: 972.446.1655 | Fax: 972.446.1684 | sales@egwusa.com



Part Number	A*	B*	C*	D*
WRMC 3015	15.00	29.47	20.00	32.15
WRMC 3018	18.00	29.47	20.00	32.15
WRMC 3024	24.00	29.47	20.00	32.15
WRMC 3030	30.00	29.47	20.00	32.15
WRMC 3036	36.00	29.47	20.00	32.15

*All Dimensions in inches
*Average Dimensions



WHITE RHINO

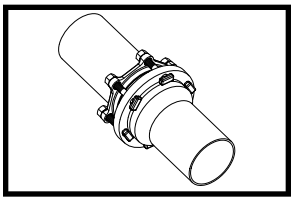
White Rhino Meter Can - 30” Diameter

1406 Hutton Drive, Carrollton, TX 75006 | Phone: 972.446.1655 | Fax: 972.446.1684 | sales@egwusa.com

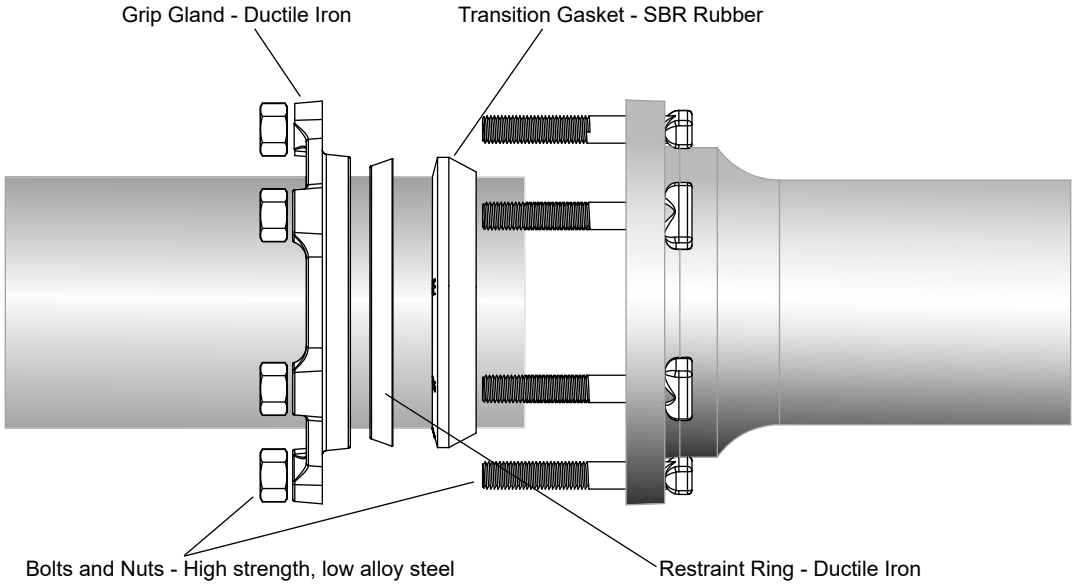
IPS RESTRAINTS

SUBMITTAL INFORMATION

MJ Gripping Style Restraint - *(FUR-S-x-I style)*



2"-12" UNI-RING MECHANICAL JOINT RING RESTRAINT
FOR STEEL SIZE O.D. PVC AND HDPE PIPE AND STEEL PIPE (2"-3" ONLY)
NOT FOR USE ON STEEL SIZE PVCO - C909



Nom. Pipe Size	OD (In.)	Catalog Number	Approx. Weight	Number of Bolts	Bolt Size	✓ Submitted Items
2"	2.38	FUR-S-2-I	3.0	2	5/8" x 3-1/2"	
3"	3.50	FUR-S-3-I	4.0	4	5/8" x 3-1/2"	
4"	4.50	FUR-S-4-I	9.0	4	3/4" x 3-1/2"	
6"	6.63	FUR-S-6-I	12.0	6	3/4" x 3-1/2"	
8"	8.63	FUR-S-8-I	15.0	6	3/4" x 4"	
10"	10.75	FUR-S-10-I	21.0	8	3/4" x 4"	
12"	12.75	FUR-S-12-I	24.0	8	3/4" x 4"	

Note: Ford recommends the use of an insert stiffener when used on HDPE.

Note: Shorter bolts may be required when used with MJ x Flange valves and fittings

FEATURES

- Fits steel size O.D. PVC and HDPE pipe and steel pipe (2" and 3" only)
- Restraint ring: Ductile iron per ASTM A536, Grade 65-45-12, with black e-coat epoxy and gray topcoat for identification purposes
- Gland: Ductile iron per ASTM A536, Grade 65-45-12 with black e-coat epoxy and gray topcoat for identification purposes
- Gasket: SBR rubber per ASTM D2000 - NSF 61 approved. NBR (Buna-N) and EPDM optional
- Bolts & Nuts: High strength, low alloy steel per ASTM A242 and AWWA C111. Blue fluorocarbon coating, type 304 stainless steel and type 316 stainless steel optional
- 2:1 safety factor at the full rated pressure of the pipe

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

07/09/19

Submitted By:

VALVE EXTENSION STEMS

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	4	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 10' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	3	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 5' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	2	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 10' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 10' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	2	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 8' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 10' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 12' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: **YES - AIS DOMESTIC**

Description	Grouping	Quantity	UM	Comments
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 13' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	2	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 5' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 5' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 8' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 8' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 6' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION

ERGUSON®
nt Division

JOB NAME: WICHITA, KS. NWWTF
SHIP TO CITY, ST: WICHITA, KS.
REF: SITE WATERLINES 1 - 8

DOMESTIC REQUIREMENT: YES - AIS DOMESTIC

Description	Grouping	Quantity	UM	Comments
1-1/2" X 12' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 8' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 4' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 7' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 12' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 4' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 4' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 4' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 4' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 5' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION
1-1/2" X 9' VALVE EXTENSION STEM - SOCKET W/SET SCREW X 2" OP. NUT, CENTERING RING	VSE	1	EA	VERIFY FINAL LENGTH AFTER VALVE INSTALLATION

TRUMBULL

Trumbull Manufacturing, Inc.
3850 Hendricks Road, Youngstown, Ohio 44515
Phone: 330.270.7888 | Toll Free: 877.504.1507 | Fax: 330.392.0756
www.trumbull-mfg.com

Round Valve Extension Stems

Solid Bar or Pipe – Carbon Steel or Stainless Steel

SQUARE STEMS are shown on page G-3

Trumbull Round Valve Extension Stems are used to raise the elevation of both buried and "in-plant" valves having a 2″ square operating nut. We can also adapt to valves without 2″ nut.

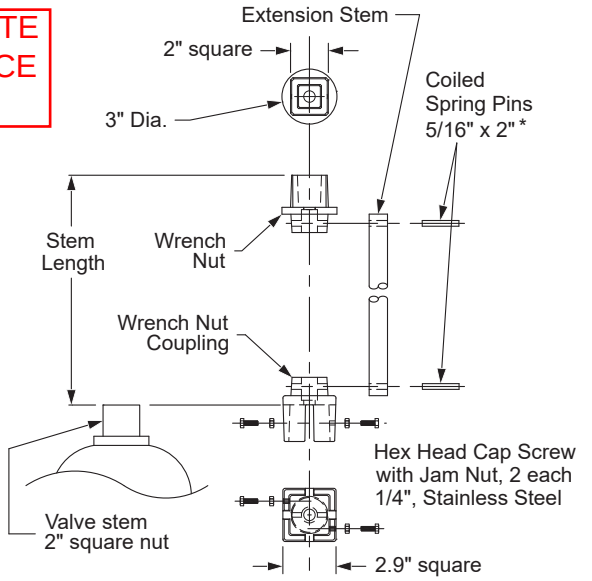
The extension stem is made up of an extension rod (or pipe), a 2″ square top wrench nut (or handwheel), and a bottom wrench nut coupling. Wrench nut coupling fits over the 2″ square nut of the valve stem being extended, held to the nut by two cap screws with jam nuts threaded in the bottom coupling.

The top nut (or handwheel) and bottom coupling are pinned to the extension rod (or pipe) which is drilled to receive stainless steel coil pins. The top nuts and bottom couplings are available in either ductile iron, grade 65-45-12, or stainless steel, Type 316. The pinned connections permit the removal of the castings so the rod can slide through Trumbull Floor Boxes and Stem Guides. Extensions can easily be shortened by cutting the stem and re-drilling for the pin.

EXTENSION STEM ASSEMBLY

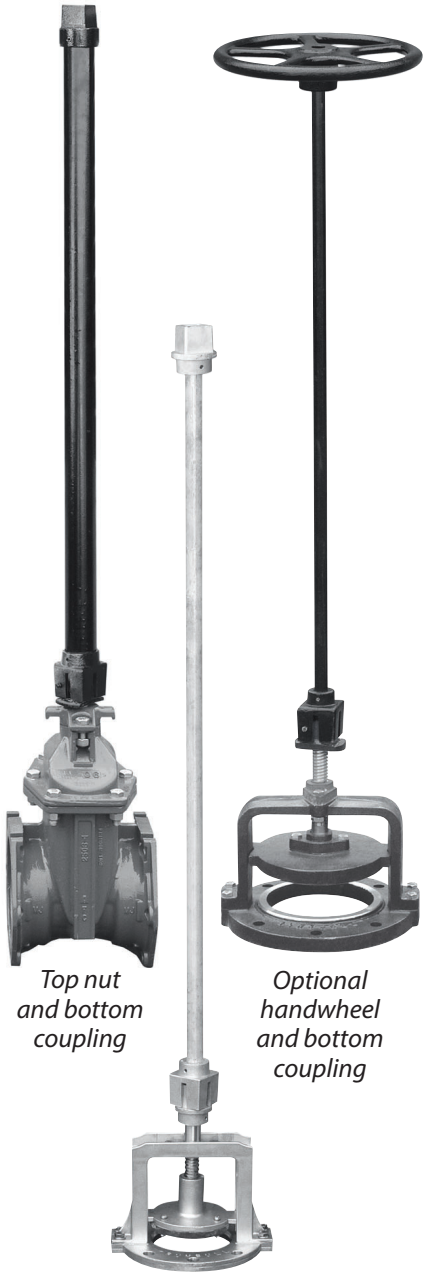
Using a Wrench Nut and Wrench Nut Coupling

AIS CERTIFICATE PROVIDED ONCE ORDERED



*Smaller diameter stems use 5/16" x 2" SS Coiled Spring Pins while larger stems use 5/16" x 3" SS Coiled Spring Pins.

Extension Stems are normally furnished complete with top nut (or handwheel), rod, bottom coupling, two cap screws with jam nuts and pins. Top nuts and bottom couplings are also available for separate sale (see page G-4). Universal Joints, Thrust Collars and Miter Gears are also available. See page G-6 for illustration of custom installations.



Top nut and bottom coupling

Optional handwheel and bottom coupling

Stainless steel top nut and bottom coupling

See separate literature on Trumbull Floorstands, Floor Boxes, Stem Guides, Mud Valves and Valve Position Indicators.

TRUMBULL

Trumbull Manufacturing, Inc.
3850 Hendricks Road, Youngstown, Ohio 44515
Phone: 330.270.7888 | Toll Free: 877.504.1507 | Fax: 330.392.0756
www.trumbull-mfg.com

Top Nuts and Bottom Couplings

For Round and Non-Telescopic Square Stems - Ductile Iron and Stainless Steel

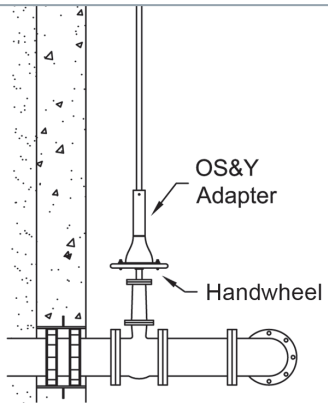
	Solid Rod	Max Torq* in ft-lb	Steel Pipe	Max Torq* in ft-lb	Bore Diameter	Top Nut Trumbull Item No.	Bottom Coupling Trumbull Item No.
Ductile Iron	7/8″	340	1/2″	325	0.905″	367-4953	367-4963
	1″	390	3/4″	410	1.155″	367-4954	367-4964
	1-1/4″	480	----	----	1.265″	367-4905	367-4915
	----	----	1″	510	1.330″	367-4901	367-4910
	1-3/8″	530	----	----	1.390″	367-4955	367-4965
	1-1/2″	580	1-1/4″	640	1.675″	367-4956	367-4966
	1-3/4″	680	1-1/2″	740	1.929″	367-4957	367-4967
	2″	775	----	----	2.047″	367-4958	367-4968
	----	----	2″	920	**	367-4959	367-4969
	1-1/4″ square stems			***	----	367-4930	367-4938
Stainless Steel	3/4″	325	----	----	0.780″	367-4931	367-4941
	1-1/4″	480	----	----	1.265″	367-4935	367-4945
	----	----	1″	510	1.375″	367-4933	367-4943
	1-1/2″	580	1-1/4″	640	1.675″	367-4934	367-4944
	----	----	1-1/2″	740	1.929″	367-4932	367-4942
	----	----	2″	920	**	367-4936	367-4947
	1-1/4″ square stems			***	----	367-4929	367-4937

* Maximum torque is based on the minimum load for 5/16″ coil pin. For higher torque capacity or for square stems, consult Trumbull.

** Nuts and Couplings have 2.030″ hub diameter; fit inside 2″ pipe.

*** Max torque is 250 ft-lb for 1-1/4″ square tubing; and 460 ft-lb for solid bar.

1. Top Nut for small round stem
2. Top Nut for large round stem
3. Top Nut for 1-1/4″ square stem
4. Bottom Coupling for small round stem
5. Bottom Coupling for large round stem
6. Bottom Coupling for 1-1/4″ square stem

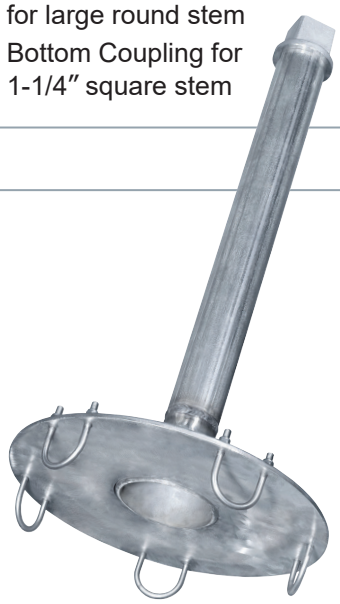


OS&Y Adapters

"Outside Screw and Yoke" Adapters

OS&Y / Handwheel Adapters are designed to allow an extension stem to be added to a rising stem valve with an existing handwheel.

These adapters give the operator the flexibility of operating the valve from either the actual valve location, or at some elevation above the valve.



SWING CHECK VALVES

KENNEDY VALVE

AWWA C508 Standard Swing Check Valves

General Information

Fig. 1106 (Standard), 1106LW (Lever & Weight), 1106LS (Lever & Spring).

"A" signifies optional resilient seal.

General:

Check Valves shall be all iron body, bronze mounted, full opening swing type. Valve clapper shall swing full open permitting a "full flow" thru the valve equal to the nominal pipe diameter. They shall comply with AWWA Standard C-508 latest revision.

- **Sizes 2" - 36"**
- **Water / Sewage Service**
- **Limit Switch Option Available**

Rating:

Check Valves (2" through 12") shall be rated at 200 psi water working pressure, 400 psi hydrostatic test for structural soundness. Check valves (14" through 36") shall be rated at 150 psi water working pressure, 300 psi hydrostatic test. Pressure testing shall be done in accordance with AWWA C508.

Materials:

All cast iron shall conform to ASTM-A-126 Class B. Casting shall be clean and sound without defects that will impair their service.

- Clappers 2"-3" shall be bronze or faced with rubber.
- Clappers 4"-12 shall be faced with bronze or rubber.
- Clappers 14"-36" shall be rubber faced.
- Body Rings / Seats shall be bronze.
- Hinge pins shall be SS304 stainless steel with bronze side plugs (2"-12"), or packing with a Ductile Iron packing gland with 18-8 fasteners (14"-36").

Coating:

The inside and outside of all valves, together with the working parts except bronze and machined surfaces, shall be coated in accordance with AWWA standards.

End Configuration:

Check Valves shall be furnished with 125# ANSI flanged end connections.

Design:

Check Valves are constructed to permit top entry for complete removal of internal components without removing the valve from the line.

Plain Check Valves 2"-12" shall have O-ring sealed side plugs. Levered Check Valves in all sizes shall have conventional packing & packing gland design.

When specified, for application conditions of rapid flow reversal or vertical installation, check valve shall be equipped with adjustable outside lever & spring or lever & weight to accomplish faster closing and to minimize slamming effect.

All valves 14" and larger shall have extended hinge pins for future addition of levers and springs if required. Valves shall be suitable for installation in either horizontal or vertical position.

Markings:

Markings shall be in accordance with AWWA C-508 and shall include size, working pressure, cast arrow to indicate direction of flow, name of manufacturer, and year of manufacture.

Limit Switch Option:

Customer may order limit switch as an option to be mounted on the same side as the lever with a 1106LW* or 1106LS. Kennedy Valve uses an Allen Bradley Switch (802T model).

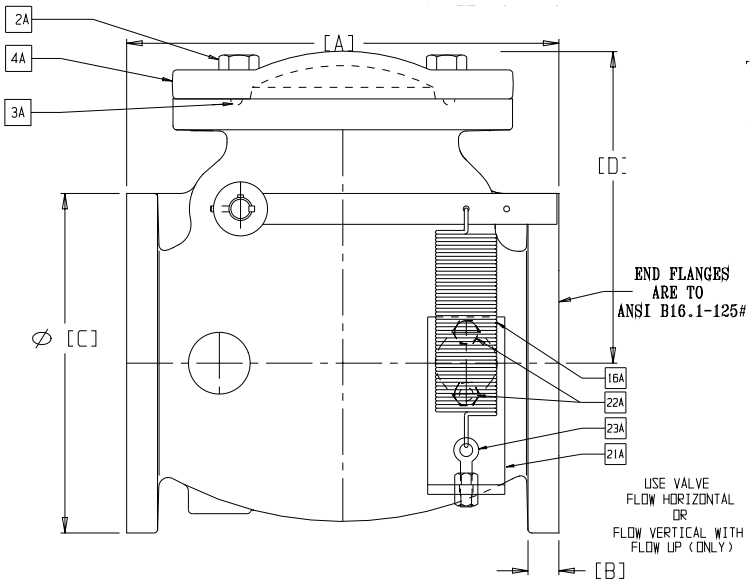
** Needs to be horizontal for switch mounting.*

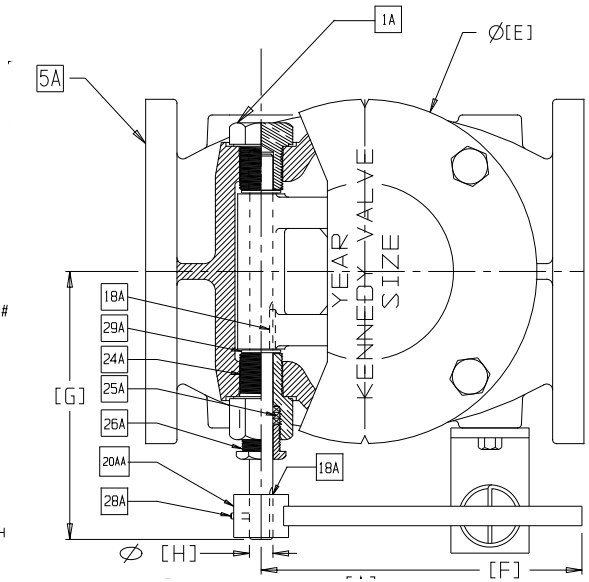
Note:

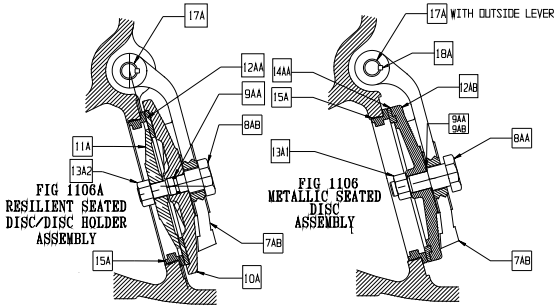
It is generally recommended that when using KV swing check valves that you locate the valve at least 5 pipe diameters downstream from any flow disturbance or obstruction (valve, pump, elbow, reducer, etc.). Turbulence close to the check valve may result in valve "chatter", resulting in premature failure of the check valve.

KENNEDY VALVE

FIG. 1106LS / 1106AS - AWWA CHECK VALVE FULL WALL / DOMESTIC with LEVER & SPRING (SPRING ONE-SIDE)







DIMENSIONS									
	DA LG	FLG THK	FLG DD	DA HT	COVER DD	LEVER LG	CL to PIN END	PIN DIA	WALL THK
Size	A	B	C	D	E	F	G	H	J
2”	8”	0.66”	6”	6”	6”	6”	4.72”	0.50”	0.34”
2.5”	8.5”	0.72”	7”	6.44”	7”	6”	4.94”	0.50”	0.41”
3”	9.5”	0.78”	7.5”	6.85”	7.5”	6”	5.35”	0.50”	0.44”
4”	11.5”	1.00”	9”	8.69”	9”	7.75”	8.19”	0.63”	0.50”
6”	14”	1.06”	11”	10.51”	11”	9.75”	9”	0.75”	0.62”
8”	19.5”	1.25”	13.5”	12.56”	13.5”	14.13”	10.19”	0.88”	0.75”
10”	24.5”	1.31”	16”	14.07”	16.75”	18”	11.63”	1.00”	0.81”
12”	27.5”	1.38”	19”	16.13”	19”	18”	13.75”	1.00”	0.88”

COVER / BODY ATTACHMENTS			
No.	QTY.	Description	Material
1A	1	Side Plug	Bronze B371
2A	A/R	Hex Bolt	Stainless Steel ASTM A276
3A	1	O-Ring Seal Cover to Body	Buna-N
4A	1	Check Valve Cap	Gray, Cast Iron ASTM 126B
5A	1	Body	Gray, Cast Iron ASTM 126B
7AB	1	Keyed Hinge (with Lever)	Bronze (2”-3”) / Ductile Iron (4”-12”) with Lever
8AA	1	Disc Bolt (Metal to Metal)	Bronze (10” & 12”)
8AA	1	Disc Bolt (Metal to Metal)	Steel (4”-12”) (N/A 2”-3”, Integral w/ Disc)
8AB	1	Disc Bolt (Resilient)	Bronze (4”-12”” (N/A 2”-3”, Integral w/ Disc)
9AA	1	Disc Bolt O-Ring, Fig. 1106	Buna-N (10” & 12”)
9AA	1	Disc Bolt, Fig. 1106A	Buna-N (4”-12”) (N/A 2”-3”)
9AB	2	Disc Bolt Gasket, Fig. 1106	Fibre (4”-8”)
10A	1	Disc Holder	Gray, Cast Iron (4”-12”, ex. 8”)
10A	1	Disc Holder	Ductile Iron (8”)
11A	1	Disc Plate	Bronze
12AA	1	Replacable Rubber Disc	Rubber
12AB	1	Disc w/ Integral Bronze Ring	Gray Cast Iron (4”-12”)
12AB	1	Disc w/ Integral Bolt & Ring	Bronze (2.5” - 3”)
13A1	1	Hex Nut - Disc	SS18-8 (2-12”) Metal to Metal
13A2	1	Hex Nut - Disc Holder	SS18-8, 2 Nuts (2”-3”)
14AA	1	Disc Ring - Integral w/ Disc	Bronze (4”-12”)
14AA	1	Disc Ring - Integral w/ Disc	Solid Bronze Disc (2”-3”)
15A	1	Seat Ring	Bronze ASTM B584 C89833 / C87850
16A	1	Spring (for L/S)	Steel
17A	1	Extended Hinge Pin (for Lever)	Stainless Steel A-276 (304)
18A	2	Key	Stainless Steel 16-6 (302 / 304)
20AA	1	Lever Arm (for L/S)	Steel
21A	1	Bracket (for D/S)	Steel
22A	2	Hex Head Bolt (L/S Bracket)	Steel
23A	1	Eye Bolt w/ 2 Hex Nuts	Steel
24A	1	Side Plug Stuffing Box	Bronze ASTM B371 C69300
25A	A/R	Packing	NON Asbestos
26A	1	Gland	Bronze ASTM B371 C69300
28A	1	Lever Set Screw	Steel
29A	2	Washers	Stainless Steel

GATE VALVES

KENNEDY VALVE

LISTED FM APPROVED NSF AWWA

2”-12” Resilient Wedge Gate Valve
Model KS FW C509
General Dimensions

AIS Certificate to be provided when shipped.

Note: 2” OS&Y Flanged and Threaded versions are UL Listed
All OS&Y Gates incorporate a pre-grooved stem for supervisory switch
Flanged valves: Standard taps are 1/2” for 4” and smaller valves. Standard taps are 3/4” for 6” and larger valves.
*Older production may have 1/2” taps.

END CONNECTIONS	STEM TYPE	SIZE RANGE	FIGURE NO.	w/ POST PLATE	PAGE NO.
Flanged Ends	Non-Rising	2”-12”	8561ASS	8701ASS (3”-12”)	2, 3, 6
Mechanical Joint	Non-Rising	2”-12”*	8571SS	8071SS (3”-12”)	2, 3, 8
Flange x Mechanical Joint	Non-Rising	3”-12”	8572SS	8702SS (3”-12”)	2, 3, 9
Push-on for PVC (SDR)	Non-Rising	2”-8”	8597SS	8597PSS (3”-8”)	2, 3, 12
Flanged Ends	OS&Y	2”-12”	8068A	N/A	4, 5, 7
Mechanical Joint x Tap Ends	Non-Rising	4”-12”	8950SS	8950PSS	2, 3, 15
Push-on for D.I. & C900 PVC	Non-Rising	4”-12”	8901SS	8901PSS	2, 3, 10
M.J. Cutting-in	Non-Rising	4”-12”	8576SS	8576PSS	2, 3, 13
Push-on for D.I. x Fig.	Non-Rising	4”-12”	8902SS	8902PSS	2, 3, 11
Threaded	Non-Rising	2”-3”	8057SS	8057PSS (3” only)	2, 3, 14
Threaded	OS&Y	2”-3”	8067SS	N/A	4, 5, 16

*excludes 2½”
**SDR - Standard Dimension Ratio

SIZE RANGE	WATER WORKING PRESSURE PSI	SEAT TEST PSI	HYDROSTATIC SHELL TEST PSI
AWWA 2”-12”	250 Water Work	300	500
ULFM 2”-12”	200 Fire Protection	300	500

Available in either non-rising stem or outside screw & yoke.

ACCESSORIES

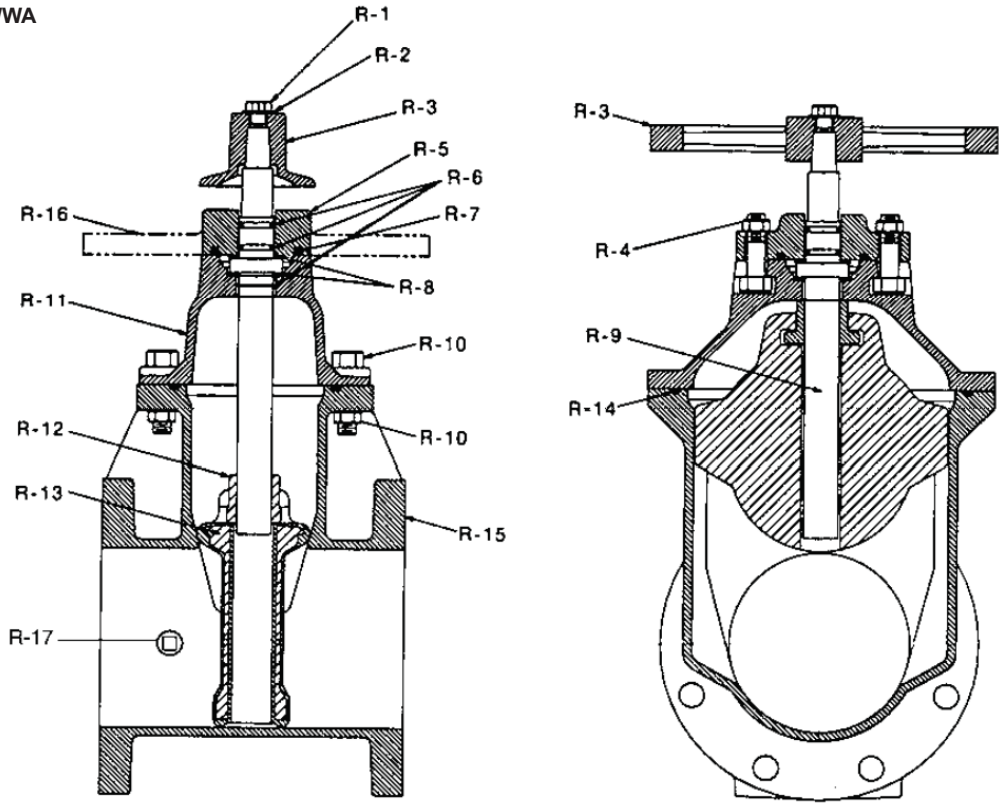
Indicator Posts
“T” Handles”
Stem Guides
2” Sq. Operating Nuts
Floor Boxes
Floorstands (Non-Rising Stem)
Handwheels
Extension Stems
Chain Wheels

KENNEDY VALVE

2”-12” Resilient Seated Gate Valve
KS FW Non-Rising
Material List

LISTED FM APPROVED NSF Certified to ANSI/NSF-61-G

AWWA



PIPE PLUG STANDARD ON FLANGE & GROOVE VALVES @ POSITION "A"

DET.	PART NAME		MATERIAL	ASTM SPEC.
R-1	Hex Head Bolt		Stainless Steel	ASTM F593C
R-2	Flat Washer		Zinc Plated Steel	ASTM A307
R-3	Operating Nut		Cast Iron	ASTM A126 Class B
	Handwheel		Cast Iron	ASTM A126 Class B
R-4	Hex Bolt & Nut		Stainless Steel	ASTM F593C/F594
R-5	Stuffing Box	2” - 8”	Casrt Iron	ASTM A126 Class B
		10” & 12”	Ductile Iron	ASTM A536 Grade 70-50-5
R-6	O-Ring (Stem)		EPDM	- - - - - - - -
R-7	O-Ring (Stuffing Box)		EPDM	- - - - - - - -
R-8	Thrust Washer		Delrin	- - - - - - - -
R-9	Stem		Bronze	ASTM B584 C86700
R-10	Hex Head Cover Bolts & Nuts		Stainless Steel	ASTM F593C / F594
R-11	Cover		Cast Iron	ASTM A126 Class B
R-12	Stem Nut		Bronze (NDZ)	ASTM B763 C99500
R-13	Wedge (EPDM Encapsulated)		Ductile Iron	ASTM A536 Grade 70-50-5
R-14	O-Ring (Cover)		EPDM	- - - - - - - -
R-15	Body (All Types)		Cast Iron	ASTM A126 Class B
R-16	Plate		Cast Iron	ASTM A126 Class B
R-17	Pipe Plug		Low Carbon Steel	- - - - - - - -

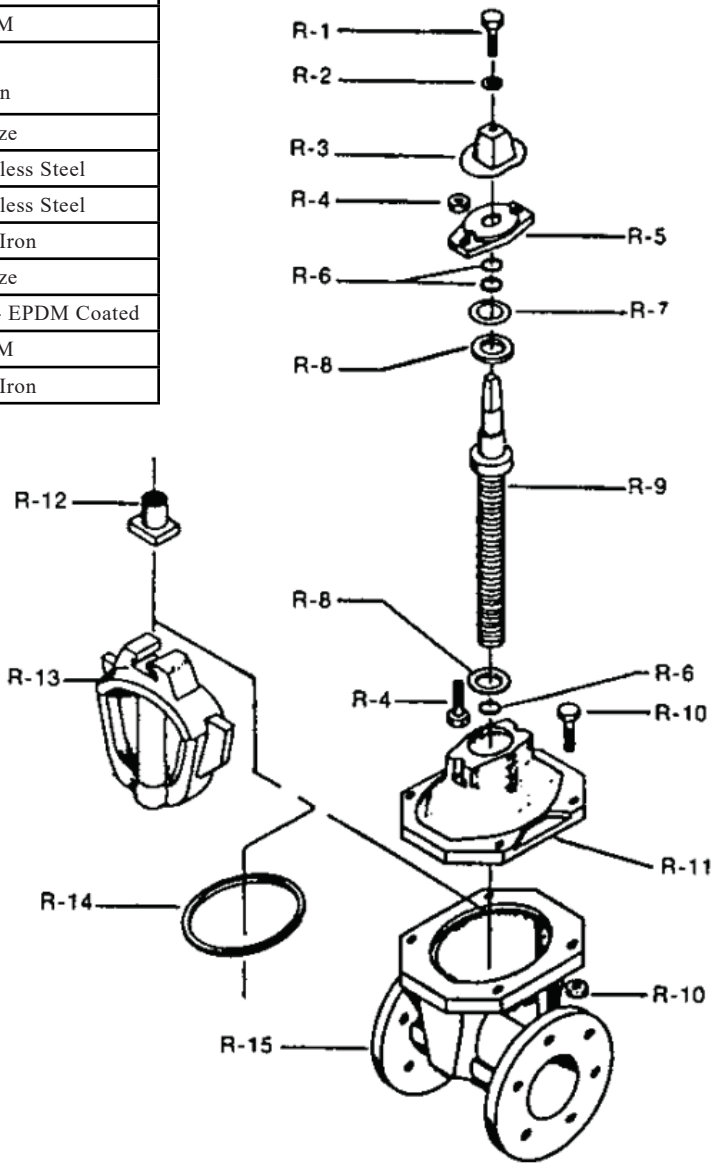
KENNEDY VALVE

LISTED FM APPROVED NSF Certified to ANSI/NSF-61-G

AWWA

2”-12” Resilient Seated Gate Valve
KS FW Non-Rising
Assembly Explosion

DET.	QTY.	PART NAME	MATERIAL
R-1	1	Hold Down Hex Bolt	Stainless Steel
R-2	1	Hold Down Bolt Washer	Zinc Plated Steel
R-3	1	Sq. Operating Nut OR	Cast Iron
		Handwheel (Not Shown)	
R-4	2	Bolt & Nut (Stuffing Box)	Stainless Steel
R-5	1	Stuffing Box (10” & 12” D.I.)	Cast Iron
R-6	3	O-Ring (Stem) 1 Below Collar	EPDM
R-7	1	O-Ring (Stuffing Box)	EPDM
R-8	1	Thrust Washer (2” - 2-1/2”)	Delrin
	2	Thrust Washer (3” - 12”)	
R-9	1	Stem	Bronze
R-10	4	Cover Bolts & Nuts (2” - 6”)	Stainless Steel
	8	Cover Bolts & Nuts (8” - 12”)	Stainless Steel
R-11	1	Cover	Cast Iron
R-12	1	Stem Nut	Bronze
R-13	1	Wedge Disc	D.I. - EPDM Coated
R-14	1	O-Ring (Cover)	EPDM
R-15	1	Body	Cast Iron

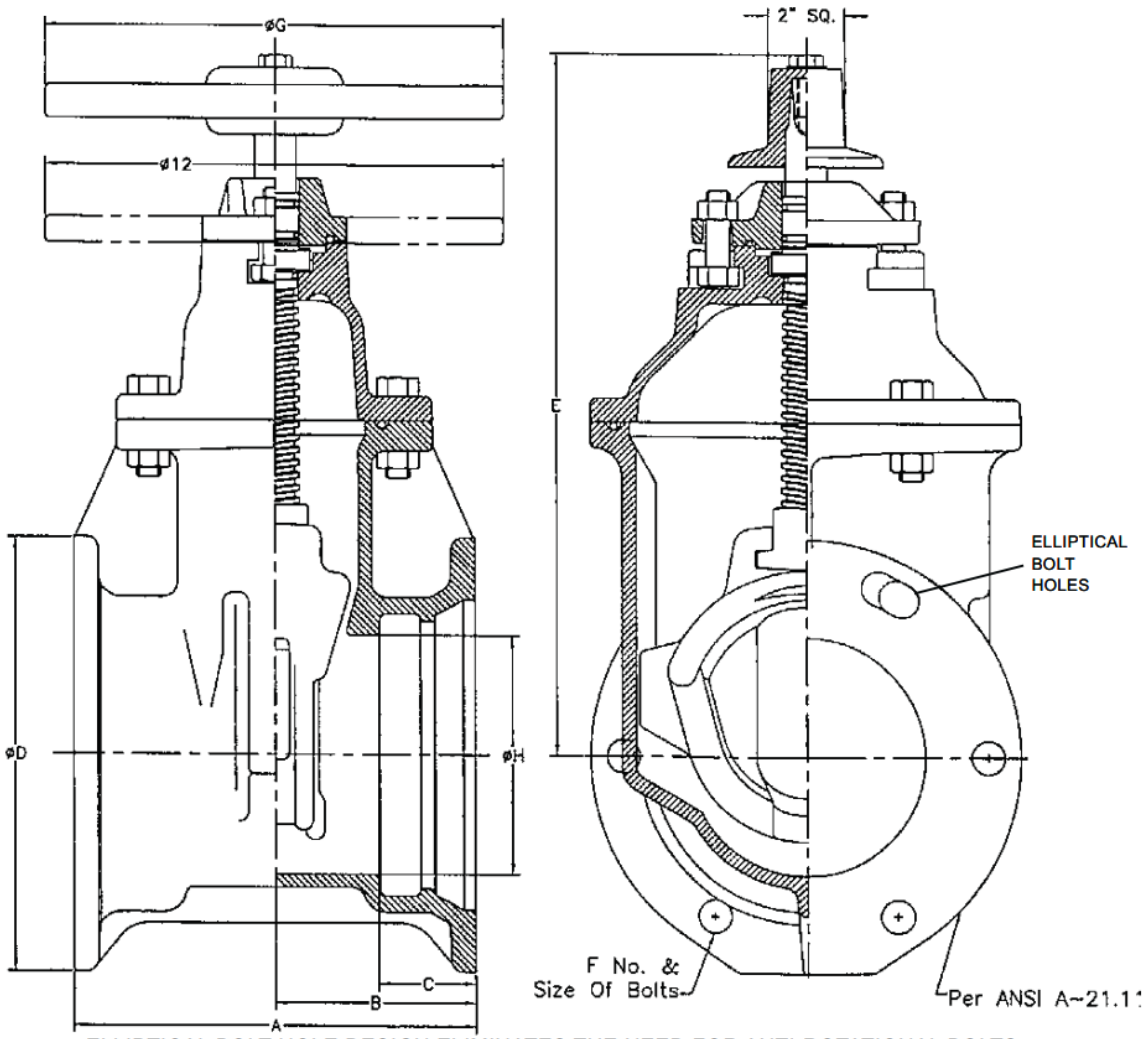


KENNEDY VALVE

LISTED FM APPROVED NSF AWWA

2”-12” Resilient Seated Gate Valve
KS FW
Mechanical Joint Ends
General Dimensions

Fig. 8571SS
Fig. 8071SS 3”-12” (with post plate) ← 6" & 8" ONLY



ELLIPTICAL BOLT HOLE DESIGN ELIMINATES THE NEED FOR ANTI-ROTATIONAL BOLTS

VALVE SIZE	A	B	C	D	E	F	G	H	WEIGHT*
2	8-1/4	4-1/8	2-1/2	4-1/2	10-7/8	4-5/8	7-1/4	2	36
2-1/2	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3	8-1/2	4-1/4	2-1/2	7-3/4	12-3/8	4-5/8	10	3	59
4	9-1/2	4-3/4	2-1/2	9-1/8	14-3/4	4-3/4	10	4-1/4	86
6	10-1/2	5-1/2	2-1/2	11-3/8	19	6-3/4	12	6-1/4	134
8	13-1/8	6-9/16	2-1/2	13-3/4	22-1/2	6-3/4	14	8-1/4	206
10	15-1/2	7-3/4	2-1/2	15-3/4	26-1/2	8-3/4	18	10-1/4	351
12	16	8	2-5/8	18	30	8-3/4	18	12-1/4	473

*ADD 16 LBS. FOR INDICATOR POST PLATE (3"–12" only)

KENNEDY VALVE

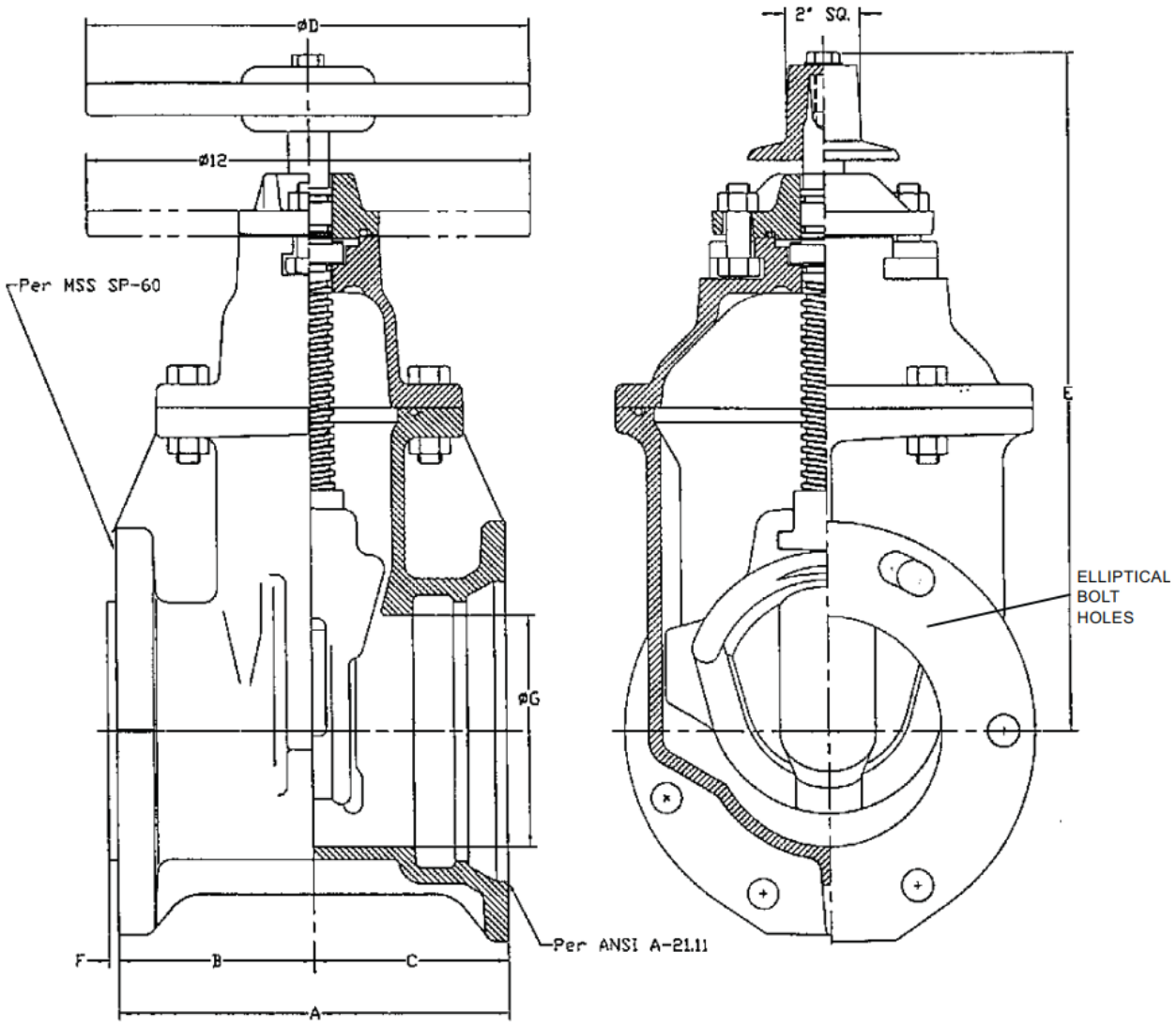
LISTED FM APPROVED NSF Certified to ANSI/NSF-61-G

AWWA

3”-12” Resilient Seated Gate Valve
KS FW Non-Rising
Tap x Mechanical Joint Ends
General Dimensions

Fig. 8950SS

Fig. 8950PSS (with post plate)



ELLIPTICAL BOLT HOLE DESIGN ELIMINATES THE NEED FOR ANTI-ROTATIONAL BOLTS

VALVE SIZE	A	B	C	D	E	F	G	WEIGHT*
4	9-1/4	4-1/2	4-3/4	10	14-3/4	3/16	4-1/4	92
6	10-1/2	5-1/4	5-1/4	12	19	1/4	6-1/4	144
8	13-1/4	5-3/4	7-1/2	14	22-1/2	1/4	8-1/4	224
10	14-1/4	6-1/2	7-3/4	18	26-1/2	1/4	10-1/4	392
12	15	7	8	18	30	1/4	12-1/4	527

*ADD 16 LBS. FOR INDICATOR POST PLATE

KENNEDY VALVE

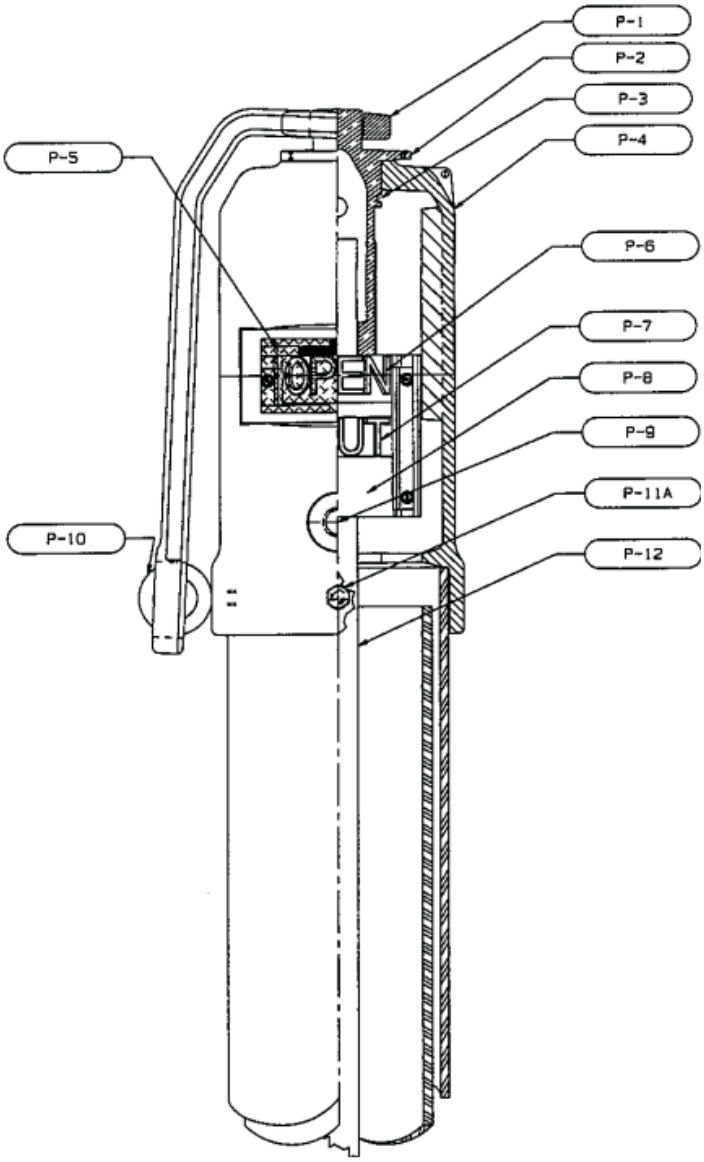
LISTED

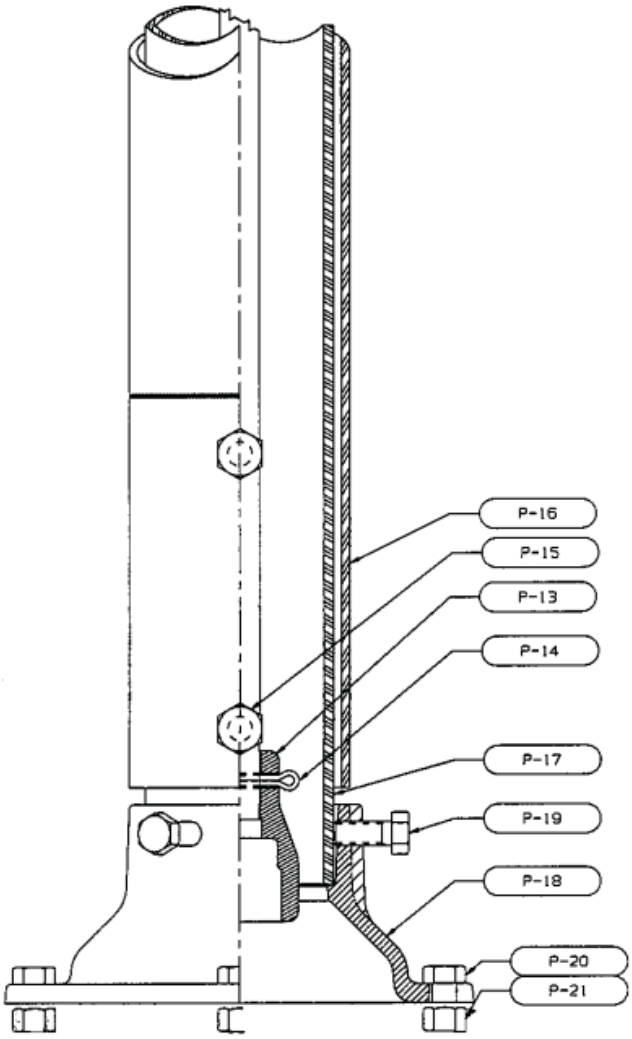
APPROVED

Indicator Posts
Style 2945 Telescoping Barrel Assembly
General Dimensions

Note: Available in Sizes B, C, D and E.

See Page 6 for Dimensions



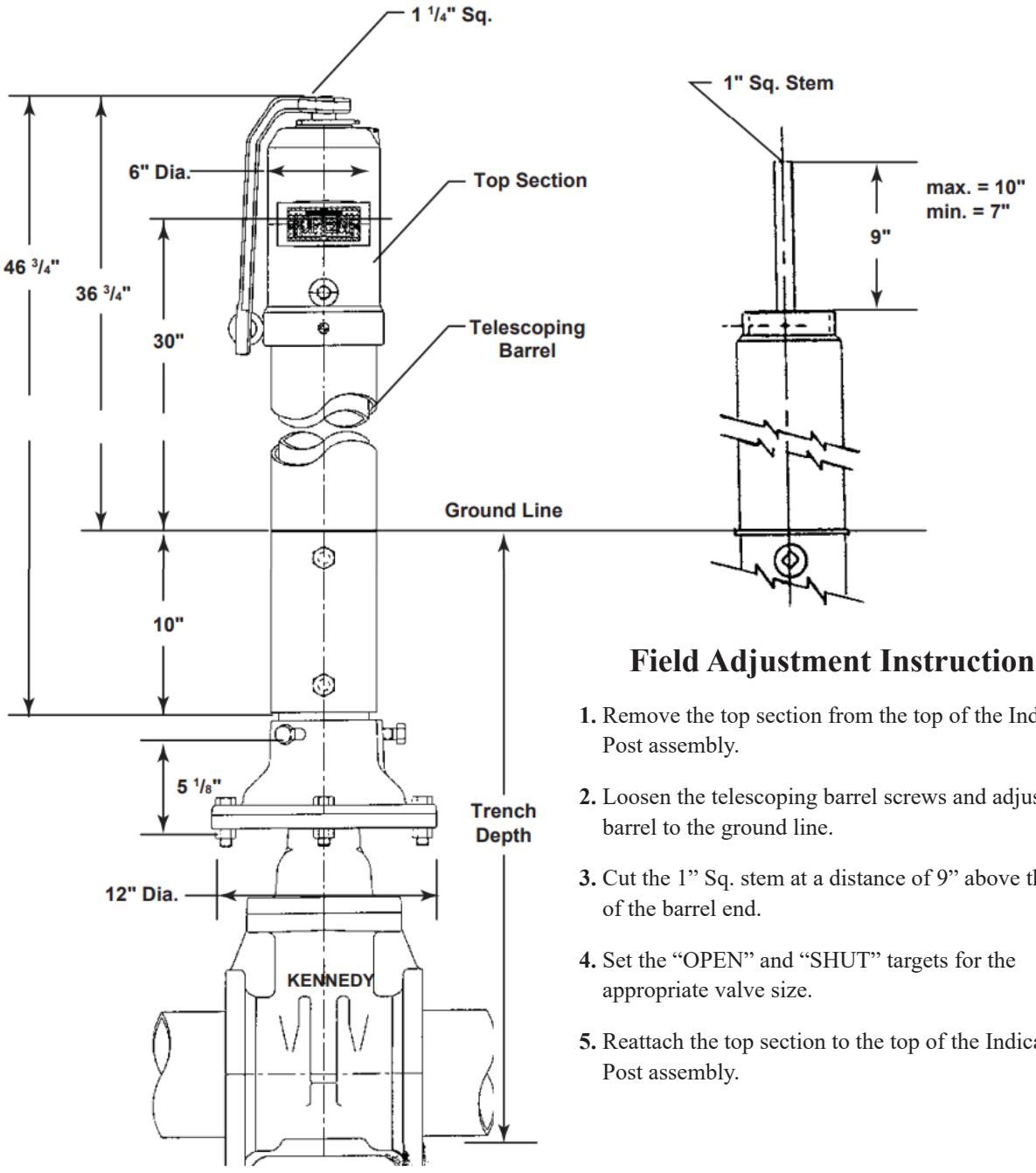


KENNEDY VALVE

LISTED FM APPROVED

Indicator Posts
Style 2945 A
Telescoping Barrel
Dimensions and Instructions

Note: Available in Sizes B, C, D and E.
See Page 6 for Dimensions



Field Adjustment Instructions

1. Remove the top section from the top of the Indicator Post assembly.
2. Loosen the telescoping barrel screws and adjust barrel to the ground line.
3. Cut the 1" Sq. stem at a distance of 9" above the top of the barrel end.
4. Set the "OPEN" and "SHUT" targets for the appropriate valve size.
5. Reattach the top section to the top of the Indicator Post assembly.

KENNEDY VALVE

Indicator Posts
Style 2945A (Adjustable) and Style 2945 (Fixed)
Parts List

LISTED FM APPROVED

DET	QTY.	PART NO.	DESCRIPTION	MATERIAL
P-1	1	3361270	Locking Wrench	Cast Iron ASTM A-126 Cl.B
P-2	1	3024872 (4-14")	Operating Nut	Bronze ASTM B584 Alloy 864
P-3	1	442639P	Retainer O-Ring #226	Buna N
P-4	1	3020913	Top Section	Cast Iron ASTM A-126 Cl.B
P-5	2	441980P	Window Glass	Lexan - UV Stabilized
P-6	2	443370P	Open Target	Cast Aluminum
P-7	2	443371P	Shut Target	Cast Aluminum
P-8	1	—	Target Carrier Assem.	
	1	3005802 (4-14")	Target Carrier Nut	Bronze ASTM B584 Alloy 844
	2	443347P	Target Carrier Plate	1/16" Sheet Metal
	4	440736P	Clamp Target Retainer	16 Ga. 302 S.S.
	8	444171P	#10-24x1/2 " Pan Head	Stainless Steel
P-9	1	443476P	1/2" NPT Pipe Plug	Mall. Iron
P-10	1	440254P	3/8" Eyebolt #23	Forged Steel
P-11A	1	444303P	3/8-16x1" Hex Capscrew (Adj. Post)	Zinc Plated Steel
P-11F	2	444306P	3/8-16x1 1/2" Hex Capscrew (Fixed Post)	Zinc Plated Steel
P-12	1	**	Stem 1" Sq.	AISI M1020 HRS
P-13	1	318035&	Crane Coupling	Cast Iron ASTM A-126 Cl.B
P-14	1	442190P	Cotter Pin	Brass
P-15	2	444342P	3/4" Hex Hd. Screw	Zinc Plated Steel
P-16	1	3004774	Telescoping Barrel	Cast Iron ASTM A-126 Cl.B
P-17	1	**	Lower Standpipe (Adjustable Post)	4" D.I. Cl 52 ANSI A21.51
P-18	1	3180402 (3-12")	Base Flange	Cast Iron ASTM A-126 Cl.B
P-19	3	444355P	5/8"x1" Hex Hd. Screw	Zinc Plated Steel
P-20	4	444357P	5/8"x2 1/4" Hex Capscrew	Zinc Plated steel
P-21	4	442484P	5/8" Hex Nut	Zinc Plated Steel
P-22	1	**	Standpipe Section (Fixed Post)	4" D.I. Cl 52 ANSI A21.51
P-23	1	3004762	Spacer Sleeve (Fixed Post)	5" D.I. Cl 52 ANSI A21.51

**Part numbers change based on post furnished.

KENNEDY VALVE

LISTED FM APPROVED

Indicator Posts
Style 2945A (Adjustable) and Style 2945 (Fixed)
Trench Depths for Gate Valves

Note: RSGV (3”-12”) - Maximum turns to open = 45
For valves requiring more than 45 turns to open, contact Kennedy Valve.

TELESCOPING BARREL 2945A
TRENCH DEPTH LIMITS

	B Size		C Size		D Size		E Size	
Valve Size	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
4"	31"	51"	49"	69"	67"	87"	88"	111"
6"	35"	55"	53"	73"	71"	91"	92"	115"
8"	42"	62"	60"	80"	78"	98"	99"	122"
10"	45"	65"	63"	83"	81"	101"	102"	125"
12"	49"	69"	67"	87"	85"	105"	106"	129"
14"/16"	58"	78"	76"	96"	94"	114"	115"	138"

FIXED LENGTH POSTS 2945
MAXIMUM TRENCH DEPTH

Valve Size	F Size	G Size	H Size
4"	45 1/2"	63 1/2"	87 1/2"
6"	49 1/2"	67 1/2"	91 1/2"
8"	54 1/2"	72 1/2"	96 1/2"
10"	59"	77"	101"
12"	64"	82"	106"
14"	69"	87"	111"

KENNEDY VALVE

Indicator Posts
Style 2945A (Adjustable) and Style 2945 (Fixed)
Installation Instructions

LISTED FM APPROVED

Note: RSGV (3”-12”) - Maximum turns to open = 45
For valves requiring more than 45 turns to open, contact Kennedy Valve.

Installation - The valve should be opened to the fully open position before proceeding with the Indicator Post installation.

1. **Disassembly of the Indicator Post Unit**

   Telescoping Barrel Units

   - Remove the Top Section from the end of the barrel.
   - Loosen the two screws on the barrel and slide off the top of the standpipe.

   Fixed Length Units

   - Remove the Top Section from the end of the standpipe.

2. **Base Flange Installation:**

   - Attach the base flange along with the standpipe to the valve plate using the four 5/8" bolts and nuts provided.

3. **Grade Line Adjustments:**

   Telescoping Barrel Units

   - Lower the barrel over the standpipe until the grade line mark on the barrel is at ground line height and then tighten the two screws securely.

   Fixed Length Units

   - Cut the required length off the bottom of the standpipe so that the indicated grade line of the standpipe is at the ground line height and then secure to the base flange by tightening the two screws.

4. **Extension Rod Adjustments:**

   Lower the stem into the barrel/standpipe, placing the crane coupling over the valve operating nut.

   It is necessary that the stem engage the operating nut a minimum of 2 inches, but not more than 5 inches.

   To check for correct engagement, the end of the stem should be from 7 inches to 10 inches above the top of the standpipe (Fixed Length Units) or the top of the telescoping barrel.

5. **Target (Open and Shut) Adjustments**

   Remove the target assembly from inside the body by rotating the operating nut counterclockwise.

   Loosen the target retainer screws, but do not remove them.

KENNEDY VALVE

Indicator Posts
Style 2945A (Adjustable) and Style 2945 (Fixed)
Installation Instructions

LISTED FM APPROVED

5. Cont'd

Open Left Valves

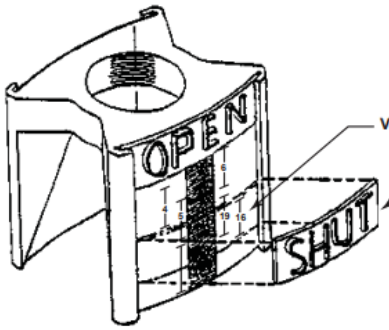
Move the OPEN target to the top of the plate.

Note: Position of the SHUT target can be determined by the following chart:

Valve Size	4"	6"	8"	10"	12"	14"
Gate Valve "A"	1"	$1\frac{3}{8}$"	$1\frac{13}{16}$"	$2\frac{3}{16}$"	$2\frac{5}{8}$	3"
RW Valve "A"	$\frac{7}{8}$"	$1\frac{5}{16}$"	$1\frac{11}{16}$"	$2\frac{1}{8}$"	$2\frac{1}{2}$"	See Note (1)

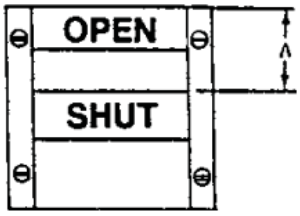
Position the SHUT target as indicated below and tighten the retainer screws until snug. Avoid over tightening. Repeat the procedure for the other side.

Note (1): Resilient Seat Gate Valves 14" and larger, require special target mechanism threads. Contact Kennedy Valve Engineering



Valve size target location markings

Adjustment of target:
1. Grasp target at midpoint & pull out slightly.
2. Slide up or down to desired location & then release grip.



Open Right Valves

The procedure is similar as for open left, but with two differences:

A: The open target is placed **below** the shut target.

B: The open target is placed at the very **bottom** of the plate.

The position of the shut target above the open target is then determined and set as described above.

Maintenance

1. Lubrication

Lubricate upper bearing area at least once per year, by applying several drops of light machine oil or food grade grease to the areas where the Operating Nut (P-2) contacts the Top Section (P-4).

Access to this area is gained by removing the Locking Wrench (P-1) and lifting upward on the Operating Nut (P-2).

2. Operation

The target mechanism will travel off the threads of the operating nut in both directions should the targets or target mechanism be positioned incorrectly. Should this happen, readjust targets. If the target mechanism falls from the operating nut, it will be stopped a short distance below the window.

KENNEDY VALVE

LISTED FM APPROVED

Indicator Posts
Style 2945A
Changing Instructions for Lower Standpipe

Note: Kennedy Valve does offer for sale Couplings to extend Stems.

2945 (A) Vertical Indicator Post - Changing the Lower Standpipe

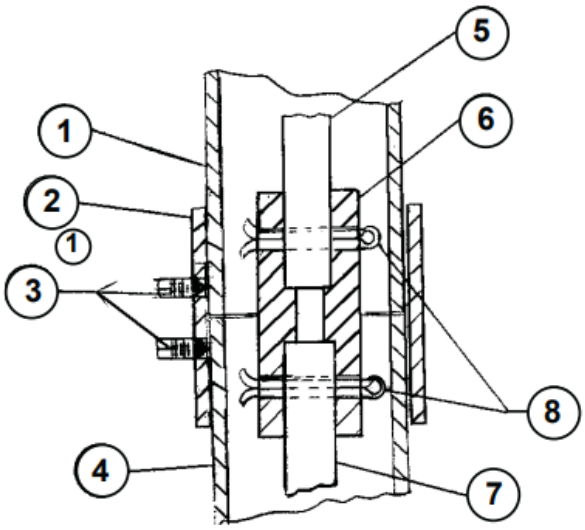
1. Loosen (2) 3/4" - UNC Bolts (Items P-15) that retain the Telescoping Barrel (Item P-16) to the lower Standpipe (Item P-17)
2. Working in a safe manner lift off the entire top assembly (Items P-1 through P-16) from the Telescoping Barrel and Base Flange
3. Remove the Stem (Item P-12) and Crane Coupling (Item P-13) sub-assembly
4. Loosen the 3/4" -UNC Bolts 19) that retain the Lower Standpipe to the Base Flange
5. Remove the existing Lower Standpipe and set the new one into the socket in the Base Flange.
6. Securely tighten the bolts that were loosened in Step 4 (50 to 100 ft.-lb)
7. Working safely, slide the entire top assembly over the new Lower Standpipe
8. Tighten the (2) 3/4" - UNC Bolts that retain the Telescoping Barrel to the Lower Standpipe (Item P-15) - Tighten them securely enough to safely maneuver the Post in the field
9. Remove the Wrench (Item P-1), the 3/8" - UNC Bolt (Item 11A) and the Eyebolt (Item P-10)
10. Lift the assembly of the Top Section (Item P-4), Operating Nut (Item P-2), Target Carrier Assembly Items P-6 through P-8), etc. from the Telescoping Barrel.
11. If a longer Lower Standpipe has been installed it will be necessary to procure a longer Stem. Slip the Crane Coupling (Item P-13) over one end of the new Stem and cross drill a new, cotter pin hole through the new Stem
12. If the Lower Standpipe just installed is shorter than the one it replaced the Stem will have to be cut
13. Bolt the Base Flange of the sub-assembly that includes the Base Flange, Lower Standpipe and Telescoping Barrel to the flange of the valve, using the 3/4" - UNC Bolts & Nuts provided by Kennedy Valve
14. Place the square socket in the Crane Coupling on the Stem & Coupling sub-assembly over the 2" Square Nut at the top of the stem of the valve
15. See page 17-4 of the Kennedy Valve Product Catalog and follow the directions.

KENNEDY VALVE

Indicator Posts
Style 2945A
Instructions for Post Extension

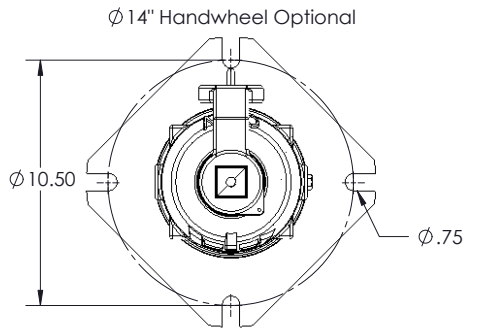
LISTED FM APPROVED

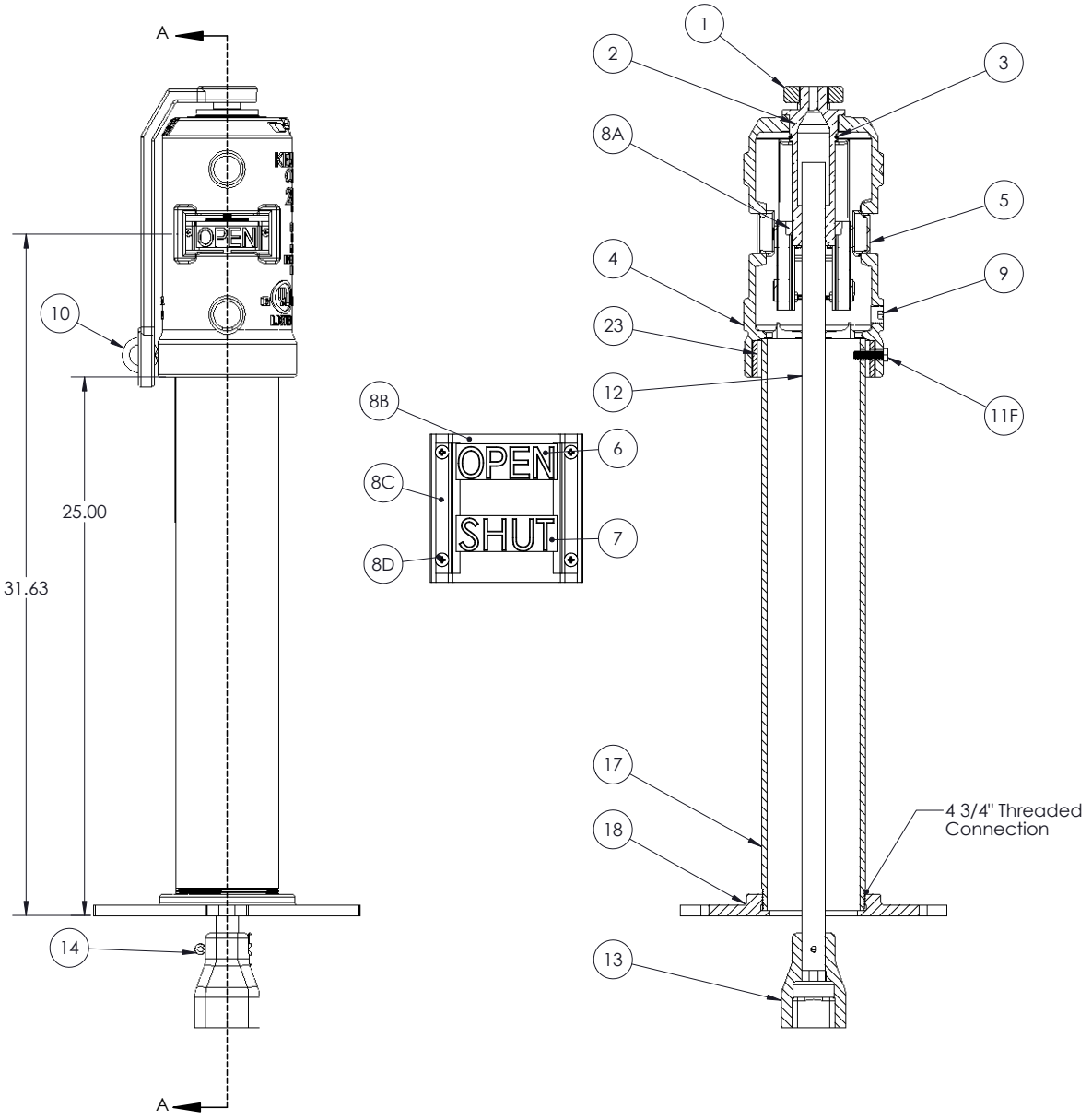
Loosen the two 3/4" screws on top pipe section (near grade line at bottom of pipe). Pull apart the upper section from the lower pipe section. Place new extension coupling with new extension pipe over the existing lower pipe section. Tighten screws provided on the extension pipe and lower pipe (3/4" X 1" square head screw). Take existing stem and place the new extension stem with coupling on top of original stem. Drill through stem and coupling (pilot holes provided on one side) then pin together with pins provided (1/4" X 3" br. cotter keys). Place stem down the inside of new extension and lower pipe assembly aligning it on the 2" square nut on valve. At this time, remove top section (with operating nut assembly) from off the top of indicator post standpipe (two bolts). Place complete upper section over top of stem and align with the new extension pipe. Push together, adjust to desired height, and retighten the two 3/4" screws in top pipe section. Stem should be cut 7" - 10" above the pipe. Adjust open/shut plates per instructions and replace top section with stem nut (can also be extended at bottom end).



No.	Description
1	Ductile Pipe (as reqd)
2	Extender Coupling
3	Set Screw 3/4 UNCX1”lg
4	Lower
5	Extension Stem
6	Ext. Stem Coupling
7	Existing Stem
8	Cotter Pin

#	PART NO.	DESCRIPTION	MATERIAL
1	446127P	LOCKING WRENCH	CAST IRON ASTM A126 CLASS B
2	3024872 (4-14")	OPERATING NUT	BRONZE ASTM B584 ALLOY 864
3	442639P	RETAINER O-RING 2-226	BUNA N
4	3020912	TOP SECTION	CAST IRON ASTM A126 CLASS B
5	441980P	WINDOW GLASS	LEXAN-UV STABILIZED
6	443370P	OPEN TARGET	CAST ALUMINUM
7	443371P	SHUT TARGET	CAST ALUMINUM
8	-	TARGET CARRIER ASSEMBLY	
8A	3005802 (4-12")	TARGET CARRIER NUT	BRONZE ASTM B584 ALLOY 864
8B	443347P	TARGET CARRIER PLATE	1/16" SHEET METAL
8C	440736P	CLAMP TARGET RETAINER	16. GA 302 SS
8D	444171P	#10-24 x 1/2" PAN HEAD	ZINC PLATED STEEL
8E	-	(REMOVED)	-
9	443476P	1/2" NPT PIPE PLUG	MALL. IRON
10	440254P	3/8" EYEBOLT #23	FORGED STEEL
11F	444306P	3/8-16 x 1-1/2" HEX CAP SCREW	
12	2181002	STEM 1" SQUARE 87"	AISI M1020 HRS
13	318035&	CRANE COUPLING	CAST IRON ASTM A126 CLASS B
14	442190P	COTTER PIN	BRASS
17	3180115	STANDPIPE	4" D.I. ANSI A21.51
18	3180362	FLOOR FLANGE	CAST IRON ASTM A126 CLASS B
23	3004762	SPACER SLEEVE	5" D.I. ANSI A21.51





No.	Date	ER/ECN	REVISION
-	12/20	-	REMOVED 8E (10-24 HEX NUTS)
-	8/20	-	CORRECTED 3/8-16 HHCS
01	4/13	2860	RELEASED

Date: 09/24/12
Drawn By: LKH
Checked By:

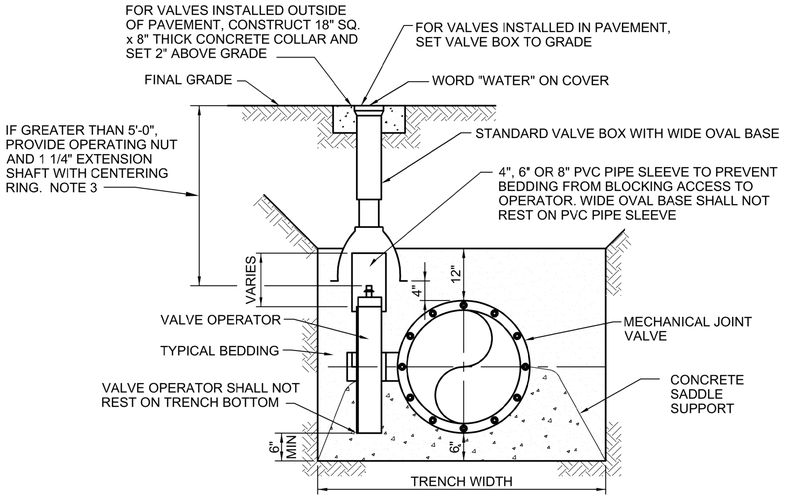
B | DWG NO. 32188 | PART NO. XXXXXX

SCALE: 1:10 | FILE PATH: VAULT | REV. 01

KENNEDY VALVE
DIVISION OF McWANE INC.
ELMIRA, NY 14901

TITLE: FIGURE 2945P FLANGED BASE INDICATOR POST ASSY DWG

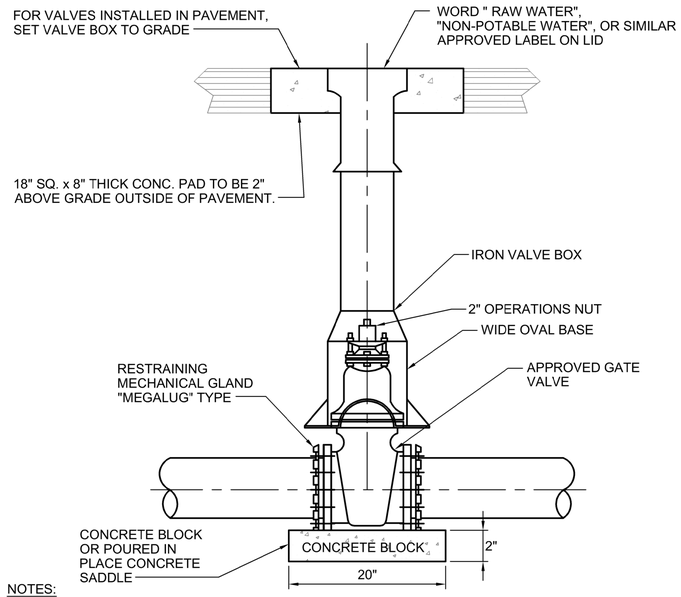
VALVE BOXES



DIRECT BURY VALVE
NOT TO SCALE

NOTES:

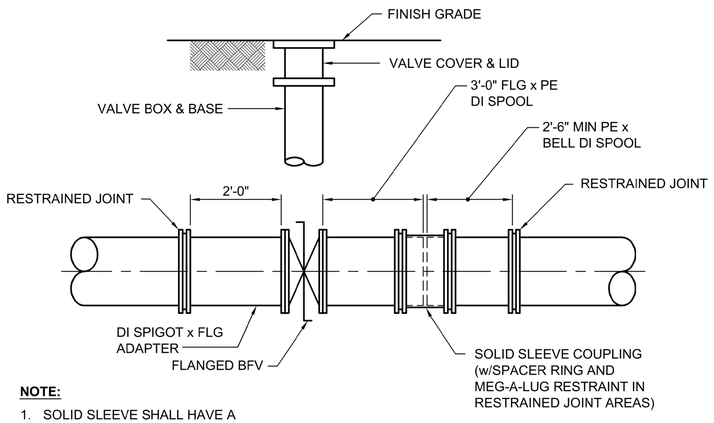
1. THIS DETAIL IS FOR BUTTERFLY OR PLUG VALVE INSTALLATIONS 24-INCHES IN DIAMETER OR SMALLER.
2. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE.
3. INSTALL CONCRETE SADDLE TO RESIST MOVEMENT.
4. OPERATING NUTS SHALL BE SET NO DEEPER THAN THREE (3) FEET TO FINAL GRADE. OPERATOR EXTENSIONS SHALL BE CONNECTED TO VALVE OPERATOR USING SET SCREW.
5. DIRECT BURY VALVES SHALL HAVE MECHANICAL JOINT ENDS.
6. VALVE, VALVE BOX, AND OTHER DUCTILE IRON HARDWARE SHALL BE POLYETHYLENE WRAPPED.



NOTES:

1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE.
2. OPERATING NUTS SHALL BE SET NO DEEPER THAN THREE (3) FEET TO FINAL GRADE. OPERATOR EXTENSIONS SHALL BE CONNECTED TO VALVE OPERATOR USING SET SCREW.
3. GATE VALVE, VALVE BOX, AND OTHER DUCTILE IRON HARDWARE SHALL BE POLYETHYLENE WRAPPED.

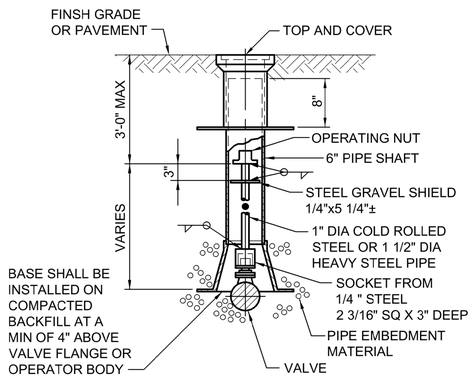
TYPICAL BURIED GATE VALVE DETAIL
NOT TO SCALE



NOTE:

1. SOLID SLEEVE SHALL HAVE A BODY LAYING LENGTH OF 15" MIN.

DUCTILE IRON PIPE
RESTRAINED LINE VALVE INSTALLATION DETAIL
NOT TO SCALE



PIPE SHAFT TYPE
VALVE BOX DETAIL
NOT TO SCALE

no.	date	by	ckd	description
0	11/12/21	PTG	JLG	PACKAGE 4: ISSUED FOR CONSTRUCTION

wichita WATER PARTNERS
BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSE NO. E-65

date	detailed
DECEMBER 14, 2020	D. HOWARD
designed	checked
J. GARDER	D. HAUSER

CITY OF WICHITA
SEDGWICK COUNTY, KANSAS

NORTHWEST WATER TREATMENT FACILITY
CIVIL DETAILS
SHEET 3

project	contract
114461	

drawing **002C503** — rev. **0**

sheet of sheets
file 114461_002_C501-C508.dwg

This Document has been digitally signed and sealed.
11/4/2021

TYLER UNION®
Quality Waterworks Products

32U – Heavy Duty Valve and Service Boxes and Components
Revised 11/2016

☑ DOMESTIC ☐ NON-DOMESTIC

SUBMITTAL:

(Current revisions for the noted Standards apply)

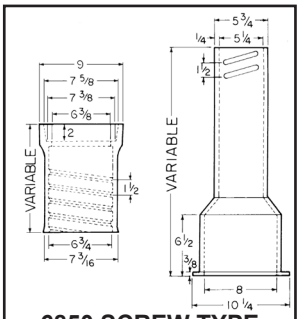
SIZES: Adjustable Slip and Screw type with standard assembly lengths ranging from 19" to 72" (Lengths noted do not include the addition of risers, extensions, and/or bases). See the catalog or List Price guide for accessories, lids, bases, risers, meter covers, etc.

STANDARDS: Produced with Class 35 cast iron in accordance with and meeting all applicable terms and provisions of ASTM A48. All Tyler Union valve boxes when properly installed are suitable for use in conjunction with projects utilizing American Association of State Highway and Transportation Officials (AASHTO) standards and provisions.

INSTALLATION: Per AWWA M44, Manual of Water Supply Practices

COATING: The asphaltic bituminous coating is applied to a minimum thickness of 1.5 mil and the coating once dry is neither brittle when cold or sticky when exposed to the sun

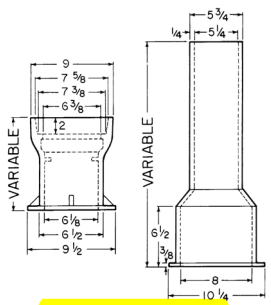
For 4" - 12" Valves
5-1/4" Shaft, Screw Type



6850 SCREW TYPE VALVE BOX
Cast Iron - 2 piece

Components	Extension Height
10T + 15B	19-22
10T + 24B	27-32
16T + 24B	27-37
16T + 30B	33-43
16T + 36B	39-50
26T + 30B	36-52
26T + 36B	39-60
26T + 24B + #60 Ext	53-71
26T + 36B + #60 Ext	64-82

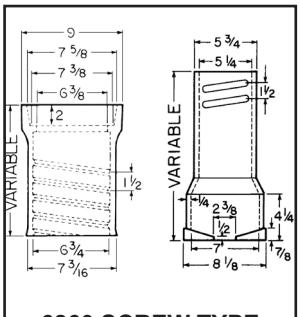
For 4" - 12" Valves
5-1/4" Shaft, Slip Type



6855 SLIP TYPE VALVE BOX
Cast Iron - 2 piece

Components	Extension Height
10T + 15B	19-22
10T + 24B	27-32
16T + 24B	27-37
16T + 30B	33-43
16T + 36B	39-50
26T + 30B	36-52
26T + 36B	39-60
26T + 24B + #60 Ext	53-71
26T + 36B + #60 Ext	64-82

For 3" - 20" Valves
5-1/4" Shaft, Screw Type

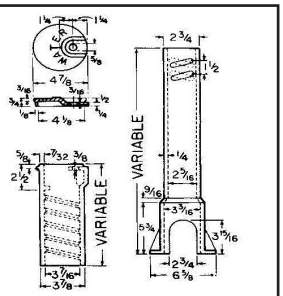


6860 SCREW TYPE VALVE BOX
Cast Iron - 3 piece

Components	Extension Height
10T + 12B	27-37
10T + 18B	33-42
16T + 24B	39-49
16T + 30B	45-54
16T + 36B	51-60
26T + 30B	45-66
26T + 36B	51-72
16T + 24B + #60 Ext	63-72
26T + 24B + #60 Ext	63-84
26T + 36B + #60 Ext	74-94

NOTE: Base Required, Order Separately

For 1/2" to 2"
Curbstops

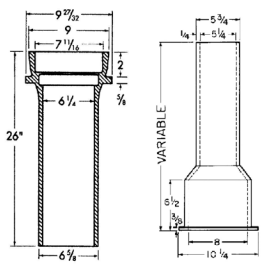


6500 SCREW TYPE CURB/SERVICE BOX

Components	Extension Height
12T + 12B	15-21
12T + 15B	18-24
15T + 15B	21-27
15T + 21B	24-33
15T + 27B	30-39
18T + 27B	30-42
18T + 33B	36-48
24T + 33B	36-54
24T + 39B	45-60
30T + 39B	41-64

NOTE: Enlarged Base Available

T = Top B = Bottom Ext = Extension



For 4" - 12" Valves
5-1/4 Shaft, Slip Type
7126 SLIP TYPE VALVE BOX
Cast Iron - 2 Piece

Components	Extension Height
26T + 30B	36-52
26T + 36B	39-60

Anniston: 1501 W 17th St. ● Anniston, AL 36201 ● (800) 226-7601
Corona: 1001 El Camino Ave. ● Corona, CA 92879 ● (866) 527-8471
Tyler: 11910 CR 492 ● Tyler, Texas 75706 ● (800) 527-8478
Dallas: 1201 Ave. S. Suite100 ● Grande Prairie, TX 75050
Elmer: 701 Kenyon Ave. Elmer, New Jersey 03318
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

CAST IRON TWO-PIECE VALVE BOXES

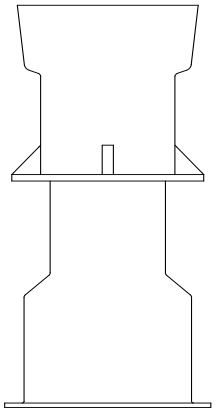
for 4" through 12" valves, 5 1/4 shaft, slip type

Tyler Union Valve boxes are available either assembled or as individual tops and bottoms.

NOTE: Domestic valve boxes available in Heavy Duty only. Non-Domestic available in Standard or Heavy Duty

6855 ASSEMBLED BOXES (LESS LID)						
Box (Components)	Extension Height	**(D-HD) UPC 670610	**(ND-HD) UPC 670610	Weight	**(ND-Std.) UPC 670610	Weight
461-A (10T + 15B)	19–22	145844	502234	55	112099	34
462-A (10T + 24B)	27–32	145831	–	65	112105	46
562-A (16T + 24B)	27–37	145868	502241	72	112112	55
563-A (16T + 30B)	33–43	145714	–	81	112129	67
564-A (16T + 36B)	39–50	145875	502258	83	112136	72
662-A (26T + 30B)	36–52	145721	–	97	112143	83
664-A (26T + 36B)	39–60	145882	502265	99	112150	88
666-A (26T+24B+60 Ext)	53–71	145899	–	124	112167	108
668-A (26T+36B+60 Ext)	64–82	145905	–	135	112181	125

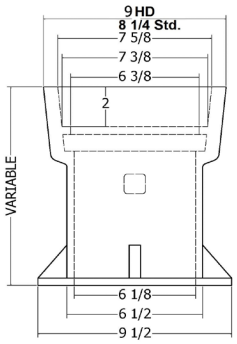
** D = Domestic ND = Import HD = Heavy Duty Weight Std. = Standard Weight



6855 Assembly
(Less Lid)

6855 INDIVIDUAL TOPS (LESS LID)							
Box	Top Length	**(D-HD) UPC 670610	Weight	**(ND-HD) UPC 670610	Weight	**(ND-Std.) UPC 670610	Weight
461-A	(10T)	144960	29	502272	29	112211	15
462-A	(10T)	144960	29	502272	29	112211	15
562-A	(16T)	144977	36	502289	36	112228	25
563-A	(16T)	144977	36	502289	36	112228	25
564-A	(16T)	144977	36	502289	36	112228	25
662-A	(26T)	144984	52	502296	52	112235	38
664-A	(26T)	144984	52	502296	52	112235	38
666-A	(26T)	144984	52	502296	52	112235	38
668-A	(26T)	144984	52	502296	52	112235	38

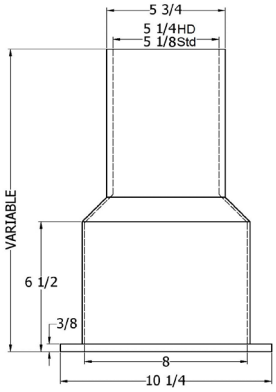
** D = Domestic ND = Import HD = Heavy Duty Weight Std. = Standard Weight



Top

6855 INDIVIDUAL BOTTOMS							
Box	Bottom Length	**(D-HD) UPC 670610	Weight	**(ND-HD) UPC 670610	Weight	**(ND-Std.) UPC 670610	Weight
461-A	(15B)	145073	26	502302	26	112051	20
462-A	(24B)	145080	36	502319	36	112068	30
562-A	(24B)	145080	36	502319	36	112068	30
563-A	(30B)	145127	45	502333	45	112075	39
564-A	(36B)	145097	47	502340	47	112082	43
662-A	(30B)	145127	45	502333	45	112075	39
664-A	(36B)	145097	47	502340	47	112082	43
666-A	(24B)	*145080	36	*502319	36	*112068	30
668-A	(36B)	*145097	47	*502240	47	*112082	43
–	(60B)	–	–	–	–	458302	75

** D=Domestic ND=Import HD=Heavy Duty Weight Std.=Standard Weight
*Note: When installing with an extension a 6850 screw type bottom is required

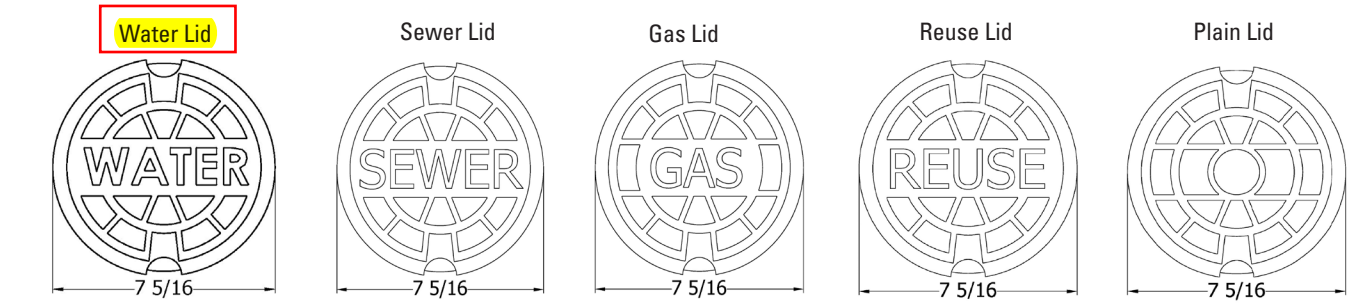


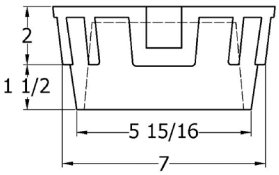
Bottom

See page 50 for extensions.

TYLER UNION®
Quality Waterworks Products

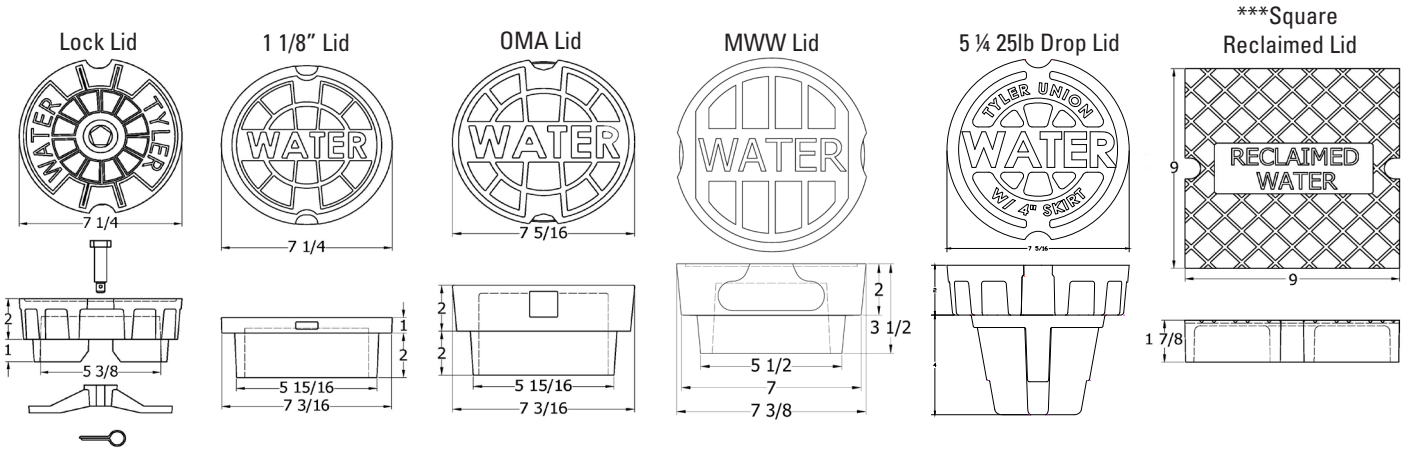
DROP AND LOCK LIDS

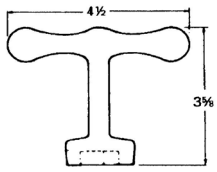




*5 1/4 DROP LID					
Item Description	**(D-HD) UPC 670610	Weight	**(ND)UPC 670610	Weight	Marking
5 1/4 Drop Lid	145325	12	136910	9	WATER
5 1/4 Drop Lid	145349	12	136903	9	SEWER
5 1/4 Drop Lid	145332	12	136873	9	GAS
5 1/4 Drop Lid	458975	12	–	–	REUSE
5 1/4 Drop Lid	145356	12	136897	9	PLAIN

** D = Domestic ND = Import HD = Heavy Duty Weight Std. = Standard Weight
*Lids marked WATER will be shipped unless otherwise specified.





Wrench
Fits Standard Waterworks Pentagon Head 27/32" Brass Screws

WRENCH		
Description	UPC 670610	Weight
Wrench	144908	0.5

SPECIALTY LIDS					
Item Description	**(D-HD) UPC 670610	Weight	**(ND)UPC 670610	Weight	Marking
5 1/4 Lock Lid	145462	11	136866	11	WATER
*1 1/8 Lid	145509	11	112532	9	WATER
5 1/4 OMA Drop Lid	145370	12	136927	12	WATER
5 1/4 MWW Drop Lid	145370	12	136880	12	WATER
5 ¼ 25lb Drop Lid	145451	25	112632	–	WATER
***Square Drop Lid	458982	14	–	–	RECLAIMED WATER

*Note: Use with 1 1/8 riser only.
** D = Domestic ND = Non-Domestic HD = Heavy Duty Weight Std. = Standard Weight
***Note: Use with 9T Top #144622.

PRODUCT SUBMITTAL

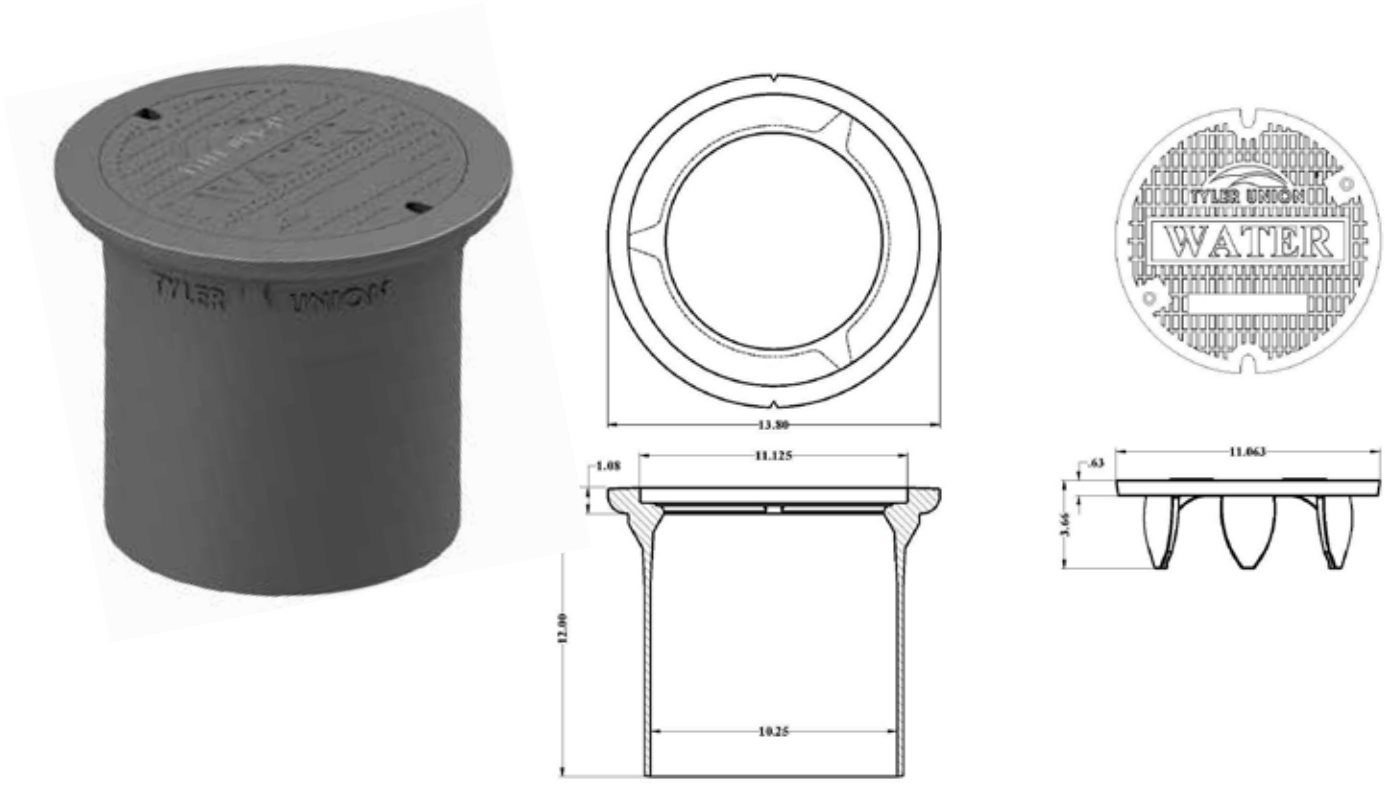
☑ Domestic ☐ Import

FOR USE WITH DUCTILE IRON PIPE RISERS

37U — TU G05 SERIES VALVE BOX & LID

Revised 2/2018 (Current revisions for the noted Standards apply)

STANDARDS:	Produced in accordance with and meeting applicable terms and provisions of ASTM A-48. All Tyler Union valve boxes when properly installed are suitable for use in conjunction with projects utilizing American Association of State and Highway Transportation Officials (AASHTO) standards. AASHTO compliance with H20 and H40 traffic loading.
INSTALLATION:	Per AWWA M44, Manual of Water Supply Practices.
COATING:	The asphaltic bituminous coating is applied to a minimum of 1.5 mil and the coating once dry is neither brittle when cold or sticky when exposed to the sun.
FEATURES:	• Lid provided with longer tynes to prevent movement. • Lids are available with "WATER", "SEWER" or blank marking. • Specialty marking available in domestic only; contact Tyler Union for more details. Available in an assembly, or pieces sold individually. • Straight body allows for easy assembly on AWWA C900 PVC Pipe. • Valve Box ribs provided to prevent movement. • No pre-cast required.
COATING:	Asphaltic or Primer per ANSI/AWWA C104/A21.4. Standard primer is Tnemec Pota Pox N140-1211. Contact Tyler Union for additional coating options.
WEIGHTS:	• Body: 42lbs. • Lid: 16lbs.



11910 CR 492 / **Tyler, TX 75706** / (800) 527-8478
1501 West 17th St. / **Anniston, AL 36201** / (800) 226-7601
1001 El Camino Ave. / **Corona, CA 92879** / (866) 527-8471
Portland, OR 97203
New Lenox, IL 60451

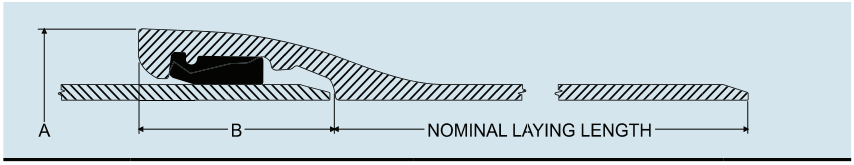
Grand Prairie, TX 75050
Anniston, AL 36207
Elmer, NJ 08318
Lithia Springs, GA 30122

TYLER UNION®
Quality Waterworks Products

RISER PIPE FOR VALVE BOX ASSEMBLIES

TYTON® JOINT PIPE

For Generations



Tyton® Joint

Pipe Size In.	Pipe Thickness In.		Outside Diameter	*Dimensions In.	
	From	To	In.	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.

ASSEMBLY INSTRUCTIONS

Step 1. Thoroughly clean out the bell with special attention to the gasket recess. Remove any foreign material or excess paint. Clean the spigot or beveled plain end and remove any sharp edges with a standard file.

Step 2. After making sure that the correct gasket is being used, insert it into the recess in the bell with the small end of the gasket facing the bell face.

Step 3. Apply lubricant to the inside surface of the gasket, making sure that the entire surface is coated. Apply a generous coating of lubricant to the beveled portion of the plain end.

Step 4. Guide the plain end into the bell and, while maintaining straight alignment, push the plain end into the bell socket. Once the joint is assembled, necessary deflection can be accomplished. When assembly is complete, the bell face should be aligned between the two white depth rings, for Tyton® Joints. Fastite® Joints have only 1 assembly stripe.

McWANE DUCTILE | IRON STRONG

Canada Pipe Company ULC

NEW JERSEY
183 Sitgreaves St.
Phillipsburg, NJ 08865
908-454-1161
mcwaneductile.com

OHIO
2266 S. 6th St.
Coshocton, OH 43812
740-622-6651
mcwaneductile.com

UTAH
1401 E 2000 S.
Provo, UT 84603
801-373-6910
mcwaneductile.com

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

McWANE DUCTILE | IRON STRONG

DUCTILE IRON PIPE
INTERNAL DIAMETERS
3"–36"

Unlined (UNL) **Single Cement Lining** (SCL) **Double Cement Lining** (DCL)

All dimensions shown are nominal with units = inches Pipe classes listed in ascending order of thickness per diameter

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
3	350	0.25	3.46	3.34	3.21
	51	0.25	3.46	3.34	3.21
	52	0.28	3.40	3.28	3.15
	53	0.31	3.34	3.22	3.09
OD 3.96	54	0.34	3.28	3.16	3.03
	55	0.37	3.22	3.10	2.97
	56	0.40	3.16	3.04	2.91
6	350	0.25	6.40	6.28	6.15
	50	0.25	6.40	6.28	6.15
	51	0.28	6.34	6.22	6.09
	52	0.31	6.28	6.16	6.03
	53	0.34	6.22	6.10	5.97
OD 6.90	54	0.37	6.16	6.04	5.91
	55	0.40	6.10	5.98	5.85
	56	0.43	6.04	5.92	5.79
10	350	0.26	10.58	10.46	10.33
	50	0.29	10.52	10.40	10.27
	51	0.32	10.46	10.34	10.21
	52	0.35	10.40	10.28	10.15
	53	0.38	10.34	10.22	10.09
OD 11.10	54	0.41	10.28	10.16	10.03
	55	0.44	10.22	10.10	9.97
	56	0.47	10.16	10.04	9.91
14	250	0.28	14.74	14.55	14.36
	300	0.30	14.70	14.51	14.32
	350	0.31	14.68	14.49	14.30
	50	0.33	14.64	14.45	14.26
	51	0.36	14.58	14.39	14.20
	52	0.39	14.52	14.33	14.14
	53	0.42	14.46	14.27	14.08
OD 15.30	54	0.45	14.40	14.21	14.02
	55	0.48	14.34	14.15	13.97
	56	0.52	14.26	14.07	13.88
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

PIPE SIZE	PIPE CLASS	PIPE WALL	INSIDE DIAMETERS		
			UNL	SCL	DCL
4	350	0.25	4.30	4.18	4.05
	51	0.26	4.28	4.16	4.03
	52	0.29	4.22	4.10	3.97
	53	0.32	4.16	4.04	3.91
OD 4.80	54	0.35	4.10	3.98	3.85
	55	0.38	4.04	3.92	3.79
	56	0.41	3.98	3.86	3.73
8	350	0.25	8.55	8.43	8.30
	50	0.27	8.51	8.39	8.26
	51	0.30	8.45	8.33	8.20
	52	0.33	8.39	8.27	8.14
	53	0.36	8.33	8.21	8.08
OD 9.05	54	0.39	8.27	8.15	8.02
	55	0.42	8.21	8.09	7.96
	56	0.45	8.15	8.03	7.90
12	350	0.28	12.64	12.52	12.39
	50	0.31	12.58	12.46	12.33
	51	0.34	12.52	12.40	12.27
	52	0.37	12.46	12.34	12.21
	53	0.40	12.40	12.28	12.15
OD 13.20	54	0.43	12.34	12.22	12.09
	55	0.46	12.28	12.16	12.03
	56	0.49	12.22	12.10	11.97
16	250	0.30	16.80	16.61	16.43
	300	0.32	16.76	16.57	16.39
	350	0.34	16.72	16.53	16.35
	50	0.34	16.72	16.53	16.35
	51	0.37	16.66	16.47	16.29
	52	0.40	16.60	16.41	16.23
	53	0.43	16.54	16.35	16.17
OD 17.40	54	0.46	16.48	16.29	16.11
	55	0.49	16.42	16.23	16.05
	56	0.52	16.36	16.17	15.99
PIPE SIZE	PIPE CLASS	PIPE WALL	UNL	SCL	DCL
			INSIDE DIAMETERS		

PIPE SLEEVE TO PREVENT BEDDING FROM BLOCKING BEDDING FROM PREVENTING ACCESS TO ACTUATOR ON BFV

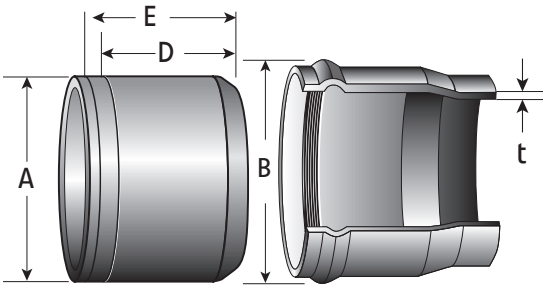
ASTM D2241 IPS SPECIFICATION DATA

Diamond IPS pressure-rated PVC pipe is made of compounds conforming to material requirements of ASTM D2241 in accordance with ASTM D1784. Pipe sizes (1 ½" through 12") are made with an integral bell to utilize the Rieber gasket system for sealing, and meeting specifications defined in ASTM F477 which conforms to the requirements of ASTM D3139.

Diamond IPS pressure-rated PVC pipe meets all the dimensional, chemical, and physical requirements as outlined in ASTM D2241. Potable water pipe carries the mark of NSF, International in accordance with Standard 61. Some factory locations produce IPS pressure pipe bearing the mark of NSF-14.

Each male end shall be beveled to facilitate joining and reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

RIEBER JOINT ILLUSTRATION



D2241

PHYSICAL PROPERTIES OF PVC 12454:

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.

SHORT FORM Specification for Diamond PVC Water Pipe
Diamond PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond PVC Water Pipe must meet all the dimensional, chemical, and physical requirements as outlined in ASTM D2241 and will be supplied in 20 and 22 foot laying lengths. Joints shall be formed using Rieber Technology. Potable water pipe shall be manufactured from NSF listed ingredients.

ASTM D2241

SPECIFICATION DATA. DIAMOND IPS PRESSURE-RATED PIPE IS SUPPLIED IN 20 AND 22 FOOT LAYING LENGTHS.

Nominal Pipe Size in. (mm)	B Bell Socket Diameter Inches	D Insert Mark 1 Inches *	E Insert Mark 2 Inches *
2" (50)	3-1/8"	2-3/4"	3-3/4"
2.5" (62.5)	4-3/8"	2"	3"
3" (75)	4-7/16"	3-5/8"	4-5/8"
4" (100)	5-1/2"	4-1/4"	5-1/4"
6" (150)	8-1/4"	4-3/4"	5-3/4"
8" (200)	10-1/4"	4-7/8"	5-7/8"
10" (250)	12-7/8"	5-1/2"	6-1/2"
12" (300)	15-1/8"	5-7/8"	6-7/8"

Prices are subject to a firm policy of "Price in effect at time of shipment on regular purchases"
"Possession of this page does not constitute an offer of sale"
*Tolerance of +/- 1/4" allowed

D2241
IPS PVC PRESSURE PIPE SPECIFICATION DATA

ASTM D2241
SPECIFICATION DATA

Nominal Pipe Size in. (mm)	A Outside Diameter Inches	t SDR 13.5 315 psi Inches	t SDR 17 250 psi Inches	t SDR 21 200 psi Inches	t SDR 26 160 psi Inches	t SDR 32.5 125 psi Inches	t SDR 41 100 psi Inches
MINIMUM WALL THICKNESS = (t)							
1.5" (37.5)	1.900	0.141	0.112	0.090			
2" (50)	2.375	0.176	0.140	0.113	0.091		
2.5" (62.5)	2.875	0.213	0.169	0.137	0.110		
3" (75)	3.500	0.259	0.206	0.167	0.135		
4" (100)	4.500	0.333	0.265	0.214	0.173	0.138	0.110
6" (150)	6.625	0.491	0.390	0.316	0.255	0.204	0.162
8" (200)	8.625		0.508	0.410	0.332	0.265	0.210
10" (250)	10.750		0.632	0.511	0.413	0.331	0.262
12" (300)	12.750		0.750	0.606	0.490	0.392	0.311

ASTM D2241
ASTM D2241 LOADING CHART

Nominal Pipe Size in. (mm)	Outside Diameter	Joints Per Bundle	Feet Per Bundle 20' laying lengths	*Feet Per Truckload 20' laying lengths	Feet Per Bundle 22' laying lengths	*Feet Per Truckload 22' laying lengths
SDR-41 PRESSURE RATING 100 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-32.5 PRESSURE RATING 125 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-26 PRESSURE RATING 160 PSI						
2" (50)	2.375	215			4,730	75,680
2.5" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936\2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156

Prices are subject to a firm policy of "Price in effect at time of shipment on regular purchases"
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CONTINUED NEXT PAGE

FIRE HYDRANTS

Submittal

MCWANE PLANT & INDUSTRIAL
1201 VANDERBILT ROAD
BIRMINGHAM, AL 35234
USA

Telephone 866-924-8674
Fax
Web www.mcwanepi.com

Line	Item number	Description	Quantity	Unit	
7	GENPART	1546350613103MKS HYD UPPER: 4 1/2" K81A 3-W AWWA RTD COLOR: SILVER(04)W/RED (01) DOME & CAPS HOSE: 2 1/2" - NST STMR: 4" - NST "LESS CAP CHAINS" NUT SIZE: 1 1/2" PENT OPEN: LEFT TRENCH: 5' 0" ELBOW: 6" MJ - EPOXY STENCIL: WICHITA/MAIZE; KS. CITIES NOW USE STORZ NOZZLES WICHITA AND MAIZE. AWWA RTD COLOR: SILVER(04)W/RED (01) DOME & CAPS HOSE: 2 1/2" - NST STMR: 4" - NST "LESS CAP CHAINS" NUT SIZE: 1 1/2" PENT OPEN: LEFT TRENCH: 5' 0" ELBOW: 6" MJ - EPOXY STENCIL: WICHITA/MAIZE; KS. CITIES NOW USE STORZ NOZZLES WICHITA AND MAIZE.	17	EA	0

The Kennedy Guardian

Kennedy Valve

Fire hydrants have been used in fire protection for over 100 years. A.W.W.A. C502 was developed in 1913 as a standard for the manufacture and use of dry barrel hydrants. Kennedy has established itself as a leader in the industry with manufacturing experience dating back to 1905. Many of the early hydrants are in use today.

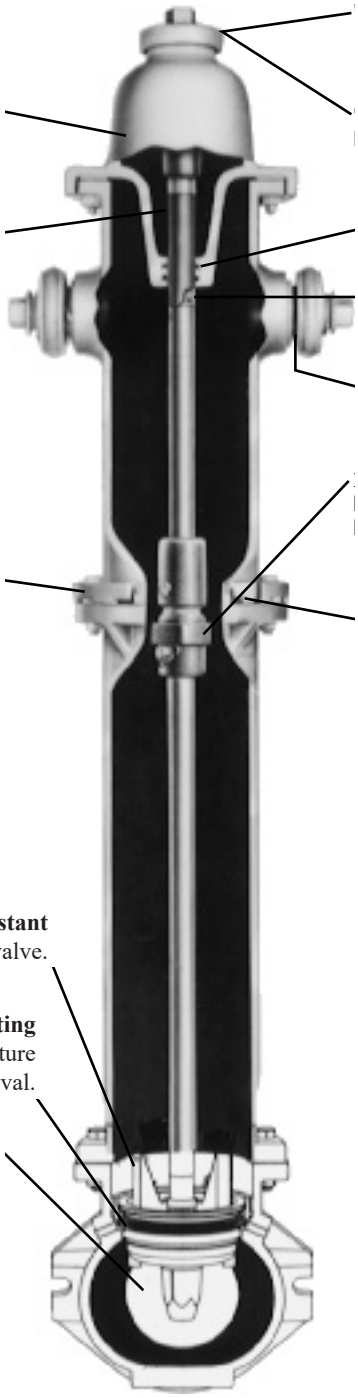
Kennedy's most recent design is the Guardian. Based on a simple design, it is easy to install, maintain and repair. The Guardian sets a standard for quality in the industry and meets or exceeds all requirements for A.W.W.A. C502 latest revision, and is UL listed and FM approved.

Guardian Features

K81D Meets or exceeds requirements of A.W.W.A. C-502 and is UL listed and FM approved.

K-81A Meets or exceeds requirements of A.W.W.A. C-502.

AIS Certificate to be provided when shipped.



Weather Shield
To protect exposed operating area from freezing rain and dirt.

Thrust Washer
For easy turning operation.

One Piece Bonnet
Newly designed for easier maintenance.

Sealed Grease Cavity
For easier operation and maintenance.

Two O-Rings
To protect operating threads from corrosion.

O-Ring
To seal between brass ferrule and stem.

Nozzle
Temper resistant.

Traffic Flange
Full 360 degree adjustment. New breaking ring on top for easy replacement and interchangeability on all K-81 models.

Breakable Coupling
Minimizes damage from traffic accident. New design makes repairs more efficient.

O-Ring
For ease of repait and nozzle facing.

Corrosion Resistant
Bronze drain valve.

Bronze to Bronze Seating
This standard feature assures easy seat removal.

Full Cover Bottom Plate
Prevents corrosion to the lower stem threads and prevents main valve distortion. Provides a positive stop against the elbow.

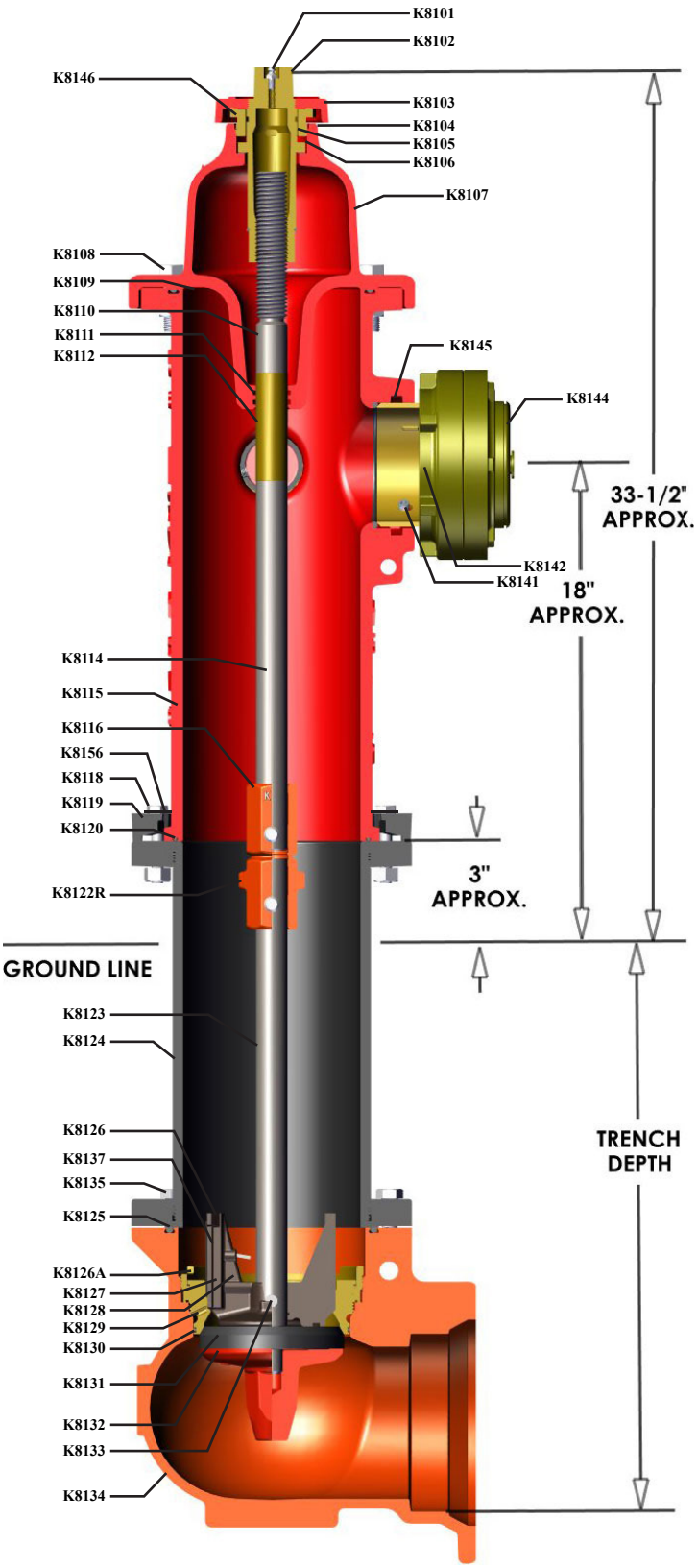
AWWA	ULFM
500 psi test pressure	500 psi test pressure
250 psi working pressure	175 psi working pressure

Easy to install—Even easier to maintain

- Tamper resistant quarter turn hose and steamer nozzles. For those who know how, replacement is easy.
- Easy to use, short, simple, inexpensive and lightweight seat removal wrench.
- Unique pressure-activated drain valve assures positive shut off.
  The higher the pressure, the tighter the seal.
  Automatically compensates for wear due to usage.
  Does not rely on interference fit.
- Two sizes available, $5^{1}/_{4}$" valve opening and $4^{1}/_{2}$" valve opening to best meet your needs.
- Fully and easily lubricated operating threads for corrosion protection and ease of operation.
- The Guardian K-81D Hydrant meets or exceeds all the latest provisions of AWWA, and UL 246-FM 1510 specifications (options are limited on UL/FM models)

Guardian K81A with "Storz" Outlet

Technical / Dimensional Data (AWWA)



	DETAIL & PART		MATERIAL	ASTM SPEC *(or as stated)*
	K8101	ALEMITE FITTING	STAINLESS STEEL	A276 (304)
|	K8102	OPERATING STEM NUT	BRONZE	B584 C87850
	K8103	DIRT SHIELD	CAST IRON	A126 CLASS B
	K8104	STEM LOCK NUT	BRONZE	B584 C87850
|	K8105	O-RING	BUNA-N (SYN. RUBBER)	02000
|	K8108	CAP BOLTS & NUTS	STAINLESS STEEL	F593C/F594
	K8107	HYDRANT CAP		
	K8108	CAP BOLTS & NUTS	STAINLESS STEEL	F593C/F594
|	K8109	CAP O-RING	BUNA-N (SYN. RUBBER)	D20000
*	K8110	STEM FERRULE	BRASS	B135 C26000
|	K8111	O-RING	BUNA-N (SYN. RUBBER)	02000
*	K8112	O-RING	BUNA-N (SYN. RUBBER)	02000
	K8114	UPPER STEM	C.R. STEEL	A108
	K8115	UPPER BARREL	CAST IRON	A126 CLASS B
	K8116	STEM BREAKING COUPLING	CAST IRON	A126 CLASS B
	K8118	BOLTS & NUTS	STAINLESS STEEL	F593C/F594
	K8119	BREAKING RING	CAST IRON	A126 CLASS B
	K8120	O-RING	BUNA-N (SYN. RUBBER)	D2000
	K8122R	COUPLING PINS	STAINLESS STEEL	410
	K8123	LOWER STEM	C.R. STEEL	A108
	K8124	LOWER BARREL	DUCTILE IRON	ANSI 21.50, 21.51
|	K8125	ELBOW O-RING	BUNA-N (SYN. RUBBER)	D2000
|	K8126A	O-RING	BUNA-N (SYN. RUBBER)	02000
*	K8127	SEAT RING INSERT	BRONZE	B584/C87850
|	K8128	SEAT RING	BRONZE	B584/C87850
	K8129	DRAIN TUBE	BRASS	B135 C23000
|	K8130	O-RING	BUNA-N (SYN. RUBBER)	D2000
|	K8131	MAIN VALVE	EPDM	
	K8132	BOTTOM PLATE	CAST IRON	A126 CLASS B
	K8133	DRAIN VALVE PIN	STAINLESS STEEL	410/416
	K8134	ELBOW	DUCTILE IRON	A536 10 70 50 05
|	K8135	ELBOW BOLTS AND NUTS	STEEL-302/304 STAINLESS	ASTM F593
|	K8136	DRAIN VALVE	BRONZE	B806 C95400/C95500
	K8137	DRAIN VALVE FACING w/INSERT		D2000 / A276 (304)
	K8138	NOZZLE CHAIN 'S' HOOK	STEEL	A108
*	K8139	NOZZLE CAP CHAIN	STEEL	A108
*	K8140	NOZZLE CAP BAND	STEEL	A108
|	K8141	NOZZLE RETAINING SCREW	STAINLESS STEEL	A276 (304)
-*#	K8142	NOZZLE: HOSE / STEAMER	BRONZE	B806 C95400 / B584 C87850
-*#	K8143	NOZZLE CAP GASKET (INTEGRAL)		RESILIENT B2000
-*#	K8144	NOZZLE CAP	AIRCRAFT ALUMINUM	A126 CLASS B
|#	K8145	O-RING	BUNA-N (SYN. RUBBER)	02000
	K8146	ALLEN HEAD SET SCREW	STAINLESS STEEL	A276 (410)
|	K8147	SEAT REMOVAL WRENCH		
	K8148	NOZZLE REMOVAL TOOLS		
|	K8149	COLLISION REPAIR KIT		
	K8150	GRADE EXTENSION KIT		
	K8156	BREAKING RING STRAPS		

*Denotes that part is available only as part of an assembly.
#Must specify type of Nozzle, Hose or Steamer.
|Recommended spare parts.
-Special for this Customer Only.

"Storz" Features

- No more time consuming threading and tightening
- Only 1/4 turn connects hose to hydrant
- Alleviates confusion if multiple steamer threads are used in your area
- Available in 4" and 5" connections

STYLE	SHOE SIZE	A
M.J.	4	7 3/4
M.J.	6	8
Flange	4	7 7/8
Flange	6	8 1/8
Tyson	6	9

Tyton ends available only in 5 1/4" Main Valve Hydrants.
4" shoe dimensions apply to 4 1/2" Main Valve Hydrants only.

Ordering Information

Guardian Hydrant

When ordering, indicate the following:
1. Size of main valve opening
2. Quantity and threading details of hose nozzles.
3. Threading details of steamer nozzle.
4. Size and type of inlet connection (mechanical joint, flanged, asbestos-cement, bell, or tyton).
5. Depth of bury (from bottom of pipe to ground line).
6. Color (National standard yellow will be furnished unless otherwise indicated).
7. Size and shape of operating nut.
8. Direction to open.
9. Regular or Bronze Lined (for Mathews-Guardian Insert only).

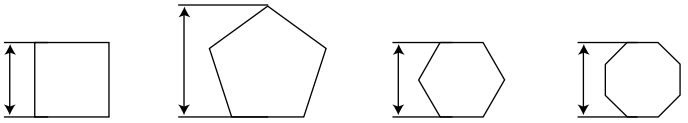
Parts

When ordering parts, indicate the following:
1. Part number
2. Part description
3. Type of hydrant
4. Size of main valve opening

ELBOW - We must have the size and type of connection to main.

OPERATING STEM NUT - Give directions to open (cast on cap) and size and shape of operating nut. 4-sided nut, give flat to flat dimension. 5-sided nut, give point to opposite flat dimension. 6-sided nut, give flat to flat dimension to eliminate any doubt as to where the measurement was taken."

Note: Dual rated hydrants are UL/FM approved for 1-1/2 P and 1-1/4" sq. nut sizes.



CAP - Give direction the hydrant opens. This is indicated by an arrow cast on the cap. Indicate the direction the arrow points.

NOZZLE CAP GASKET - Indicate size of nozzle and whether hose or steamer.

NOZZLE - Give exact threading details, outside (major) diameter, pitch diameter, root (minor) diameter and exact number of threads per inch (TPI) or send in a gauge or sample in good condition.

NATIONAL STANDARD HOSE COUPLING THREAD SPECIFICATIONS (NST)						
A. Nominal inside diameter		2 1/2"	3"	3 1/2"	4"	4 1/2"
Number of threads per inch		7 1/2	6	6	4	4
B. Major diameter nozzle thread	Max.	3.0686	3.6239	4.2439	5.0109	5.7609
	Min.	3.0366	3.5879	4.2079	4.9609	5.7109
C. Pitch diameter nozzle thread	Max.	2.9820	3.5156	4.1356	4.8485	5.5985
	Min.	2.9660	3.4976	4.1176	4.8235	5.5735
D. Minor diameter nozzle thread	Max.	2.8954	3.4073	4.0273	4.6861	5.4361
E. Diameter pilot nozzle		2.8500	3.3540	3.9730	4.6100	5.3570
F. Length of thread - nozzle		1"	1 1/8"	1 1/8"	1 1/4"	1 1/4"
G. Face to start of second turn		1/4"	5/16"	5/16"	7/16"	7/16"
H. Major diameter coupling thread	Min.	3.0836	3.6389	4.2639	5.0359	5.7859
I. Pitch diameter coupling thread	Max.	3.0130	3.5486	4.1736	4.8985	5.6485
	Min.	2.9970	3.5306	4.1556	4.8735	5.6235
J. Minor diameter coupling thread	Max.	2.9424	3.4583	4.0833	4.7611	5.5111
	Min.	2.9104	3.4223	4.0473	4.7111	5.4611
K. Depth of coupling		5/16"	1 1/16"	1 1/16"	1 3/16"	1 3/16"

Also available: Figure 109 Hose Gate Valve (2 1/2").

Estimated Weights

		DEPTH OF TRENCH									
		2'6"	3'0"	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"
Main Valve Opening	K-81A	4 1/2"	336	351	366	381	396	411	426	441	456	534
		5 1/4"	380	409	427	444	460	480	502	523	542	560
		3-way configuration with M.J. shoe less accessories										
	K-81AW	4"	281	297	316	333	350	365	381	396	414	429
		4 1/2"	278	295	313	330	347	362	378	393	411	426
		5 1/4"	328	335	355	375	395	415	430	445	468	489
		3-way configuration										

NOZZLE CAP CHAIN - Tell us the nozzle type, hose or steamer.

NOZZLE CAP - Exact threading and nut size and shape.

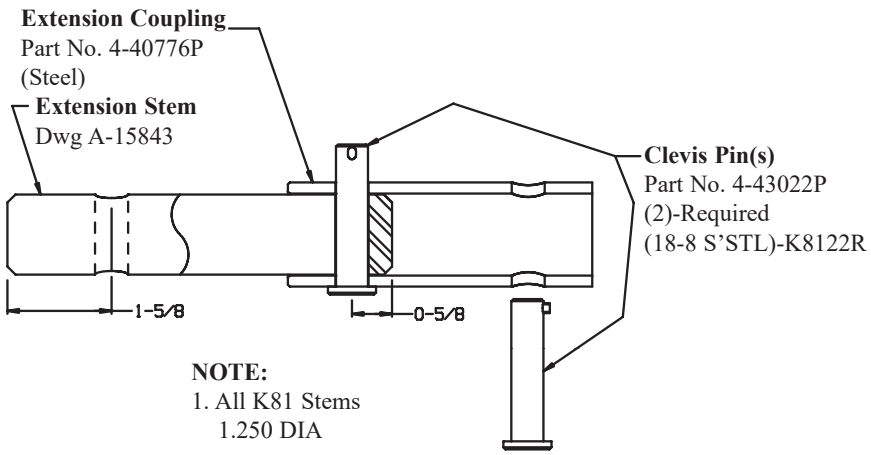
UPPER BARREL - Furnish all information cast on the barrel and the number of hose and steamer connections.

STEM - Furnish the direction the hydrant opens as cast on the cap and furnish the depth of trench (distance from groundline to bottom of connecting pipe). If the stem can be measured, complete overall dimensions including diameter will help. The diameter should always be measured on the smooth (unthreaded) portion.*

LOWER BARREL - Furnish depth of trench (distance from groundline to bottom of connecting pipe) or dimension from flange face to flange face (overall). The outside and inside diameters are also a help.

SEAT RING - As with all parts you order we must have size of main valve opening and type of hydrant. This is cast on the upper barrel.

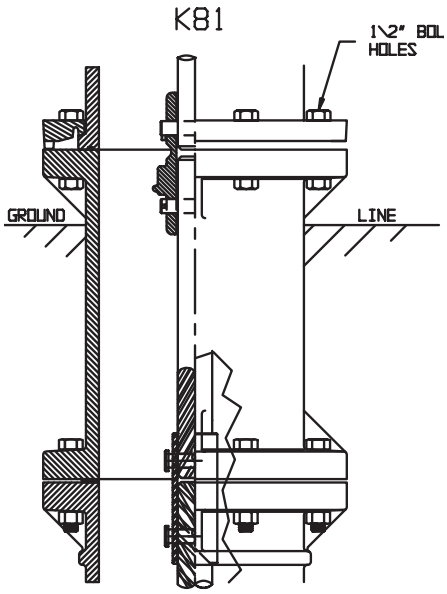
K81-A Extension Stem Installation



NOTE: *It is preferable to be able to turn the water pressure on and off. If the water pressure is low, it is possible that the hydrant will be opened when removing the upper.*

1. Make certain that the hydrant is closed. The water may remain on, but see above note.
2. Remove the eight 1/2-UNC bolts & nuts that retain the breaking rings.
3. Turn the Operating Nut in the opening direction until the threaded stem disengages from the Operating Nut. (This will lift the Upper away from the flange).
4. Lift the complete hydrant upper stand-pipe assembly and done from the stem. List this assembly straight up about 12" to avoid damaging the O-Rings that seal the stem and remove the complete upper assembly.
5. Disengage the Lower Stem from the Upper Stem. Remove the lower Clevis Pin that retains the Lower Stem to the Breaking Coupling.
6. Wire brush the exposed flange of the lower stand-pipe until all dirt and built up rust is removed.
7. Wire brush the end of the Lower Stem and attach the Extension Stem Coupling to the Lower Stem exactly as illustrated below.
8. Attach the Upper Stem to the Extension Stem in exactly the same way that it was previously attached to the Lower Stem.
9. Place the Gasket for the Extension Spool on the exposed flange of the Lower Stand-Pipe. Retain the gasket with grease to keep it from shifting.
10. Place the Extension Spool on the Lower Stand-Pipe and align the bolt holes.
11. Insert the bolts provided in the holes. Start the nuts provided on the bolts. Tighten the bolts wrist tight only then tighten them securely (70 ft-lb), proceeding in a side to side pattern that assures that the pressure on the gasket is uniform.
12. Carefully lift the complete upper assembly up above the Upper Stem and lower it onto the Upper Stem, taking care not to cut the O-Rings in the dome.
13. Turn the Operating Nut in the closed direction until the bottom of the Stand Pipe just touched the flange.
14. Align the hydrants and replace the breaking rings in the original position.
15. Replace the bolts in the breaking rings in the original position.
16. Start the nuts on the bolts and tighten the bolts per step 11 exept that the torque should be 40 ft-lb.

Spool Installation



ECLIPSE POST HYDRANT

KUPFERLE
Since 1857
2511 N. 9TH STREET, ST. LOUIS, MISSOURI 63102
PHONE: 800-231-3990, FAX: 314-231-2820, www.hydrants.com

Date: December 15, 2021

Subject: American Iron & Steel Certification for Project

Job Name: Wichita Northwest Water Treatment Facility - Wichita, KS

Contractor: Wichita Water Partners

Distributor: Ferguson - Tulsa, OK

I, Brad Welton, certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the AIS (American Iron & Steel) requirement as mandated in EPA's State Revolving Fund Programs.

Items, Products and/or Materials:

1. (10) Eclipse #2 Post Hydrant, 2" MJ Inlet, 2-1/2" NST Outlet, 5'-0" Bury
2.
3.

REF: Purchase Order No. C1211-66 Factory Order No. 445679

Such process took place at the following location:

St. Louis, MO., Manufacturing Facility

If any of the above compliance statements change while providing material to this project, we well immediately notify the prime contractor and the engineer.

Sincerely,

Brad Welton

Brad Welton

President

Eclipse™ #2 Post Hydrant

NON-FREEZING

- New full-port nozzle
- One or two nozzles
- Any size you wish up to 2½" NST

← You can replace interior parts without disturbing any connections. Just unbolt the top cap and withdraw the inside working parts

← All hydrants now furnished with a 14mm fusion-bonded epoxy coated steel stand pipe both internally and externally to provide superior corrosion resistance

Available with any depth of bury you desire →

Inlet can be 2", 2½" or 3" iron pipe. Mechanical joints 2", 3" and 4" also available →

← Has 2 - 3/16" valve opening

↳ DRAIN

2511 North 9th Street
St. Louis, MO 63102

KUPFERLE
Since 1857

800-231-3990
www.hydrants.com
info@hydrants.com

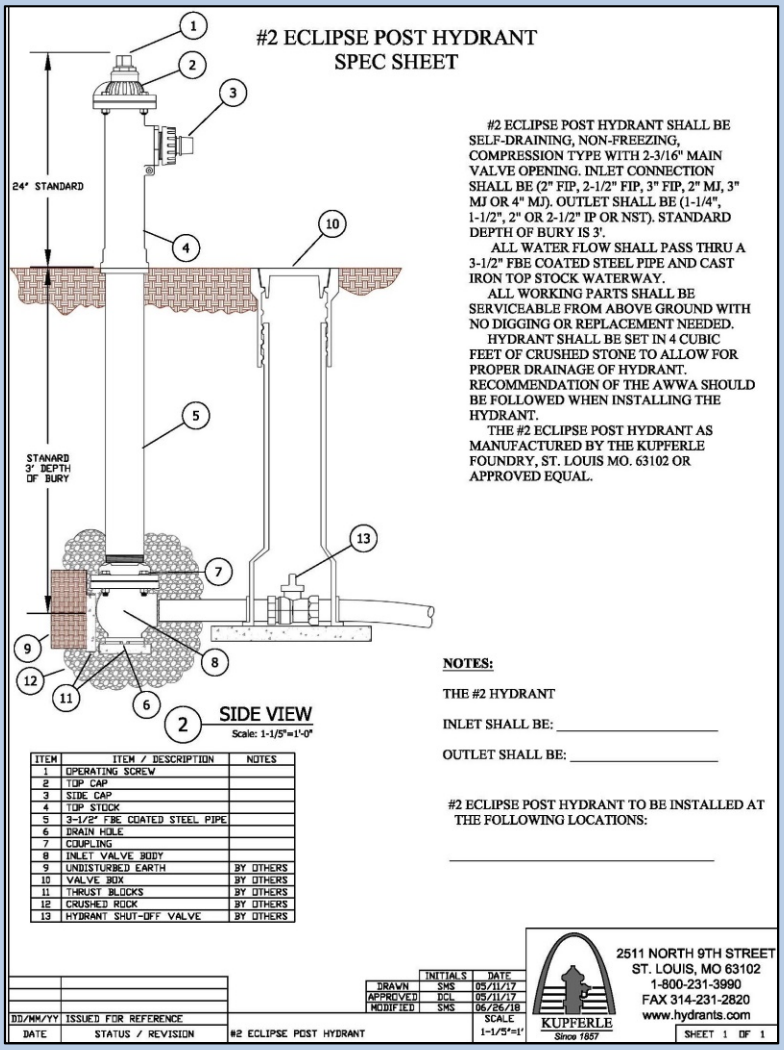
THE EASIEST TO SERVICE

UNDO 4 BOLTS

PULL UP TOP CAP

PULL OUT ROD

INPSECT PLUNGER



EVERY HYDRANT MARKED WITH "OPEN" ARROW AND TOLL-FREE NUMBER

HANDWHEEL OPTION

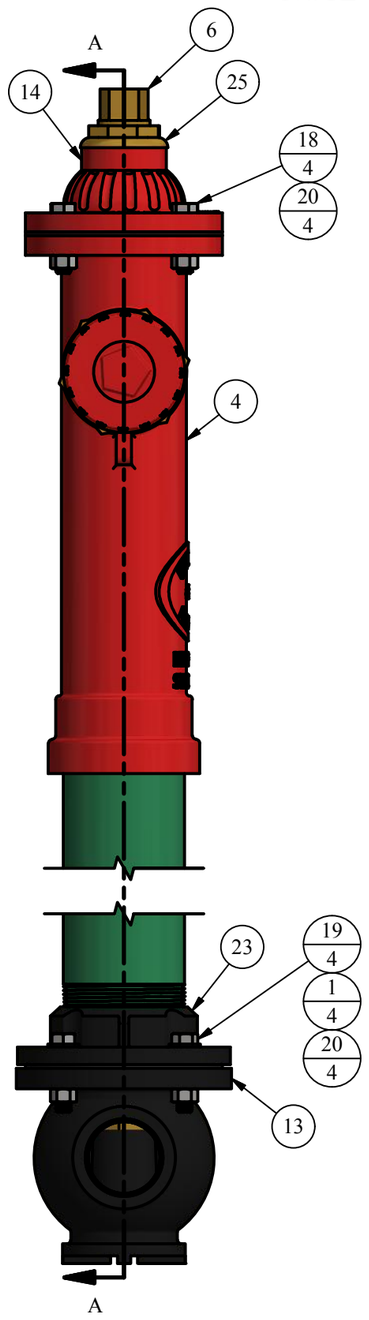
LOCKING WRENCH OPTION

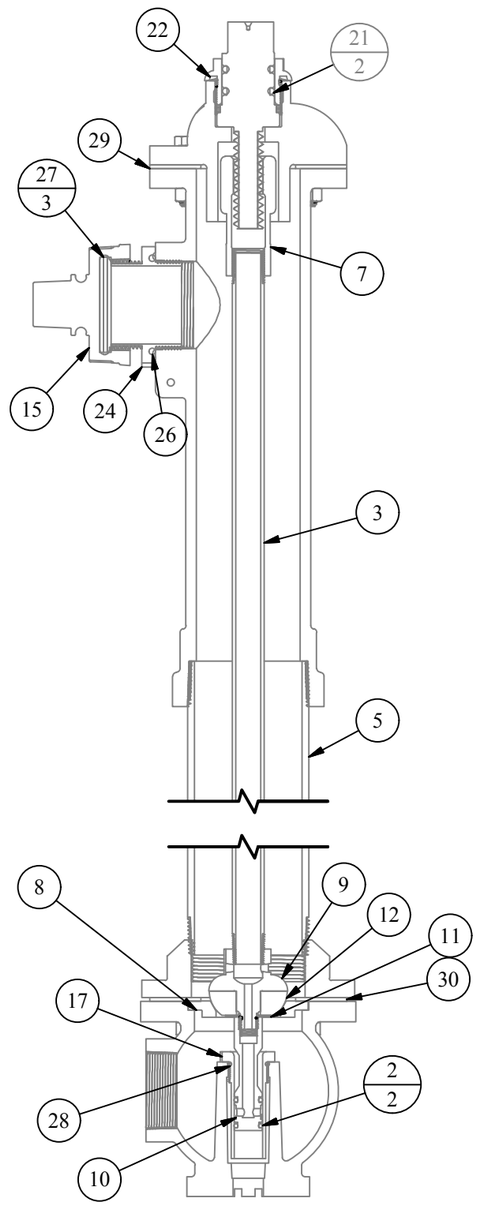
KUPFERLE
Since 1857

800-231-3990
www.hydrants.com

#2 ECLIPSE POST HYDRANT CUT SHEET

(2" FIP INLET, STANDARD TOP STOCK, 2-1/2" NST OUTLET SHOWN)
NOTE 4





SECTION A-A
CENTER SECTION VIEW

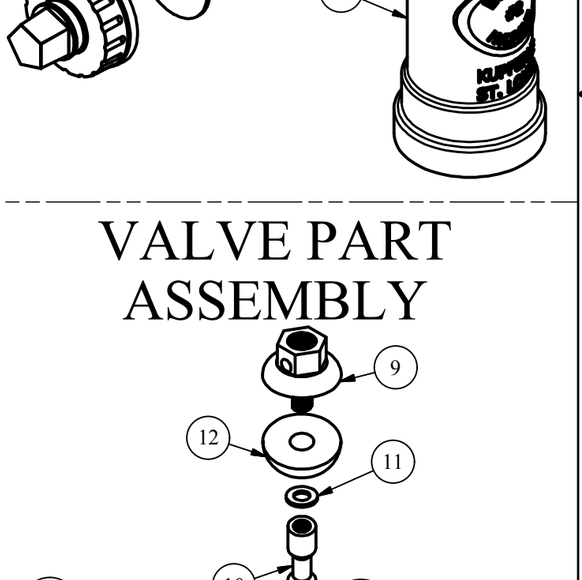
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTES
1	4	1/2W	1/2" STRUCTURAL BOTTOM WASHER	
2	2	2OR	O-RING FOR PLUNGER STEM	2,5
3	3.71	3/4GAL	3/4" GALVANIZED OPERATING ROD	1,2
4	1	487-H	NEW STYLE TOP STOCK	2,5,6
5	2.67	4FBE	3-1/2" FBE COATED STEEL PIPE	1
6	1	501A	TOP SCREW (1-1/2" PENT)	
7	1	511	CONNECTING NUT	2
8	1	521	SEAT RING	2
9	1	537-P	NEW STYLE PLUNGER TOP	2,5
10	1	539L2	PLUNGER STEM	5
11	1	539W	S.S. PLUNGER WASHER	5
12	1	541	SEAT RUBBER	2,5
13	1	571-A	IRON BOTTOM (2" IP)	4,5
14	1	581-C	NEW STYLE TOP CAP	2
15	1	592-A	2-1/2" NST SIDE CAP	5
16	1	595	CHAIN ASSEMBLY	3
17	1	611	WASTE TUBE	5
18	4	628A-B	S.S. TOP CAP BOLT	2
19	4	629A-B	S.S. COUPLING BOLT	
20	8	629A-N	1/2" S.S. HEX NUT	2
21	2	668	OPERATING SCREW O-RING	2
22	1	669	PACKING NUT GASKET	2
23	1	678	FLANGE COUPLING FOR DUCTILE	2
24	1	716	2-1/2" NST BRASS NOZZLE	2,4
25	1	739	PACKING NUT (1-1/2" PENT)	
26	1	95G	HOUSING O-RING	2
27	3	A16	SIDE CAP GASKET	2,5
28	1	A19	WASTE TUBE O-RING	2,5
29	1	A2-NS	NEW STYLE TOP CAP GASKET	2
30	1	A8	NEW STYLE BOTTOM GASKET	2,5
OPTIONS / REPAIR PARTS LIST				
31	1	1 1/16SR	SOLID OPERATING ROD	2,3
32	1	3/4C	COUPLING FOR OPERATING ROD	2,3
33	1	3/4SSP	SS OPERATING ROD	2,3
34	1	492	WRENCH FOR 1-1/4" PENT	2
35	1	492VP	VANDAL PROOF WRENCH	2
36	1	501	TOP SCREW 1-1/4" PENT	2,3
37	1	503-VP	VANDAL PROOF SCREW	2
38	1	621	PACKING NUT (1-1/4" PENT)	2,3
39	1	667	HANDWHEEL - 1-1/2" PENT	2
40	1	674	NEW STYLE LOCKING WRENCH	2
41	1	700	WRENCH FOR 1-1/2" PENT	2
42	1	77M	TOP SCREW O-RING	2,3
43	1	77MG	PACKING NUT GASKET	2,3

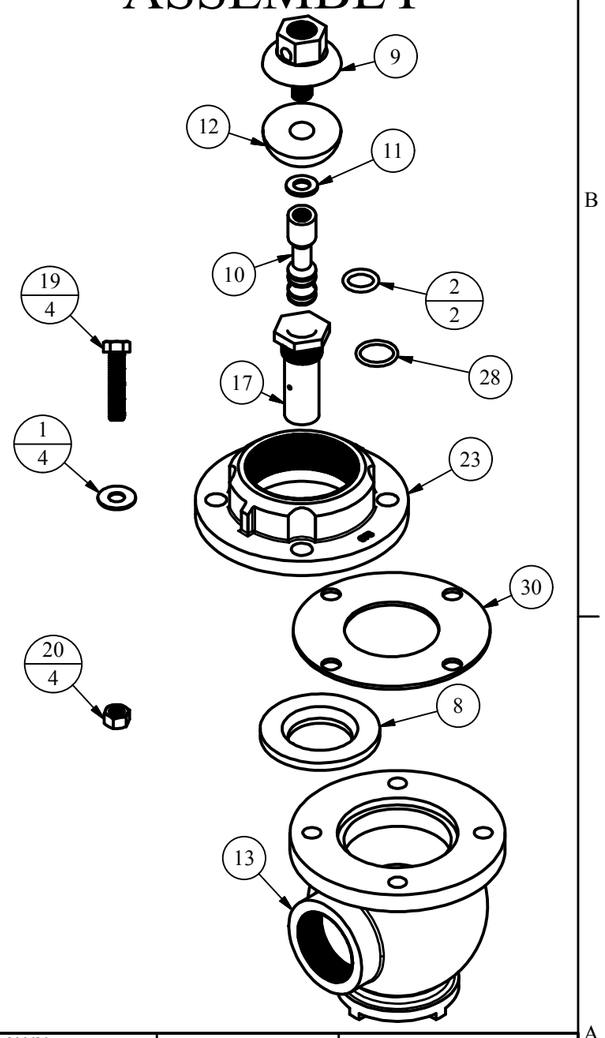
REPAIR KITS

PART NUMBER	DESCRIPTION	PARTS INCLUDED
X475-6	EXTENSION - FIRST 6"	3DUC EXTERIOR PIPE (0.5), 3/4GAL OPERATING ROD (0.5), 3/4C COUPLING (1), 661 COUPLING (2), 629A-B BOLT (4), 629A-N NUT (4), A8 GASKET (1)
X475-XX	EXTENSION - EACH ADDITIONAL 6"	3DUC EXTERIOR PIPE (0.5), 3/4GAL OPERATING ROD (0.5)
X501	1-1/4" PENT TOP SCREW COMPLETE	501 TOP SCREW 1-1/4" PENT (1), 77M O-RING (1)
X501A	1-1/2" PENT TOP SCREW COMPLETE	501A TOP SCREW 1-1/2" PENT (1), 668 O-RING (2)
X503VP	VANDAL PROOF SCREW COMPLETE	503-VP VANDAL PROOF SCREW (1), 668 O-RING (2)
X581C	IRON TOP CAP COMPLETE	581-C "NEW STYLE" TOP CAP (1), A2-NS GASKET (1), 628A-B BOLT (4), 629A-N NUT (4)
X581C-1	NEW STYLE BONNET COMPLETE	581-C TOP CAP (1), 501A TOP SCREW (1), 668 O-RING (2), 739 PACKING NUT (1), 669 GASKET (1), 511 CONNECTING NUT (1), A2-NS GASKET (1), 628A-B BOLT (4), 629A-N NUT (4)
X621	1-1/4" PENT PACKING NUT WITH GASKET	621 PACKING NUT (1), 77MG GASKET (1)
X739	1-1/2" PENT PACKING NUT WITH GASKET	739 PACKING NUT (1), 669 GASKET (1)

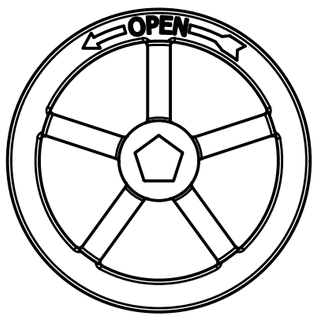
TOP STOCK PART ASSEMBLY



VALVE PART ASSEMBLY

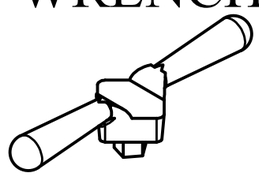


667 HANDWHEEL

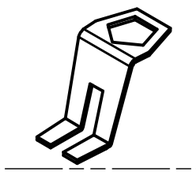


503-VP VANDALPROOF SCREW

492VP VANDALPROOF WRENCH



674 LOCKING WRENCH



LEGEND

X → STANDARD TAG

X / Y → TAG WITH Y QUANTITY

DISCLAIMER:
THIS DRAWING IS THE PROPERTY OF THE KUPFERLE FOUNDRY COMPANY. IT IS NOT TO BE USED OR DUPLICATED WITHOUT THE PERMISSION OF THE OWNER.

NOTES:
1.) PIPE LENGTH DEPENDANT ON DEPTH OF BURY. BARREL PIPE FUSION BONDED EPOXY COATED, BOTH INTERNALLY AND EXTERNALLY.
2.) SOLD AS A REPLACEMENT PART
3.) NOT SHOWN
4.) SEVERAL OTHER INLET/OUTLET CONFIGURATIONS ARE OFFERED. SEE NOTES 5 & 6.
5.) SEE #2, #8, #85 GUIDE FOR INLET, NOZZLE, CAP OPTIONS, & PLUNGER HISTORY SHEET FOR ASSEMBLY VIEWS AND REPLACMENT PART INFORMATION
6.) SEE #2 GUIDE FOR TOP STOCK OPTIONS & OLD STYLE REPAIR KITS

DRAWN	SMS	5/2/2017
CHECKED	DCL	11/14/2017
MODIFIED		
SIZE	C	SCALE 1 / 5
DWG NO	#2 Cut_Rev0	SHEET 1 OF 1
REV	1	

KUPFERLE
Since 1857
2511 NORTH 9TH ST.
ST. LOUIS, MO 63102
1-800-231-3990

FLANGE BOLT & GASKET MATERIAL

HEX BOLTS / STUDS ASTM A307 GR. B

SUBMITTAL SPECIFICATION

"ABSTRACT OF ASTM A307"

"CARBON STEEL BOLTS & STUDS, 60,000 PSI TENSILE STRENGTH"

MATERIAL / GRADE: STEEL, ASTM A307 GR. B

CHEMICAL REQUIREMENTS (%):

CARBON, MAX	0.29
MANGANESE, MAX	1.20
PHOSPHOROUS, MAX	0.04
SULFUR, MAX	
GRADE B	0.05

MECHANICAL REQUIREMENTS:

ALL DIAMETERS	MINIMUM	MAXIMUM
TENSILE STRENGTH (KSI)	60	100
YIELD STRENGTHS (KSI)	…	
ELONGATION IN 2 IN.(%)	18	
HARDNESS (BRINELL)		
LESS THAN 3 X DIA.	121	212
3 X DIA. & LONGER	----	212
HARDNESS (ROCKWELL)		
LESS THAN 3 X DIA.	B69	B95
3 X DIA. & LONGER	----	B95

IDENTIFICATION SYMBOL: 307B

OTHER: ALL BOLTS & STUDS, UNLESS OTHERWISE SPECIFIED IN THE PURCHASE ORDER SHALL BE THREADED IN ACCORDANCE WITH ANSI/ASME B1.1 UNIFIED INCH SCREW THREADS, CLASS 2A FIT. BOLT HEADS SHALL BE IN ACCORDANCE WITH THE DIMENSIONS OF ANSI/ASME B18.2.1 HEX BOLTS. UNLESS OTHERWISE SPECIFIED ON THE PURCHASE ORDER, THE HEX BOLT SERIES SHOULD BE USED. ADDITIONAL INFORMATION CAN BE FOUND IN ASTM A307, (CARBON STEEL BOLTS AND STUDS 60,000 PSI TENSILE STRENGTH)

NUTS: NUTS SHALL CONFORM TO ASTM A563 GR. A, UNLESS OTHERWISE SPECIFIED. ADDITIONAL INFORMATION CAN BE FOUND IN ASTM A563, (CARBON AND ALLOY STEEL NUTS).

FLAT WASHERS: UNLESS OTHERWISE SPECIFIED ON THE PURCHASE ORDER, ALL WASHERS SHALL BE OF THE SAME MATERIAL AS THE NUTS. (REF. ASTM F844)

Pacific Coast Bolt

12748 East Florence Ave Santa Fe Springs, CA 90670
1-800-652-6587 Fax 1-562-944-9360

HEAVY HEX NUT, A563 GRADE “A”

SUBMITTAL SPECIFICATION

"ABSTRACT OF ASTM A563"

"CARBON AND ALLOY STEEL NUTS"

MATERIAL GRADE: CARBON STEEL, ASTM A563 GR. A

CHEMICAL REQUIREMENTS (%):

CARBON, MAX	0.55
PHOSPHOROUS, MAX	0.12
SULFUR, MAX	0.15

MECHANICAL REQUIREMENTS:

HEX NUTS ¼” – 1 ½”

PROOF LOAD STRESS, PLAIN	100 KSI MIN.
PROOF LOAD STRESS, ZINC	75 KSI MIN.
HARDNESS (BRINELL)	116-302
HARDNESS (ROCKWELL)	B68-C32

IDENTIFICATION SYMBOL: N/A

OTHER:

ALL NUTS, UNLESS OTHERWISE SPECIFIED IN THE PURCHASE ORDER, SHALL BE THREADED IN ACCORDANCE WITH ANSI/ASME B1.1, CLASS 2B FIT. DIMENSIONS OF NUTS SHALL BE IN ACCORDANCE WITH ANSI/ASME B18.2.2. ADDITIONAL INFORMATION CAN BE FOUND IN ASTM 563 (CARBON AND ALLOY STEEL NUTS).

Pacific Coast Bolt

12748 East Florence Ave Santa Fe Springs, CA 90670
1-800-652-6587 Fax 1-562-944-9360

AMERICAN Toruseal® Flange Gasket***

Full Face — 1/8" Thickness

Table No. 6-10

Pipe Size in.	Pressure Rating* psi	Gasket Weight lb	Approximate Bolt Torque** (ft.-lb)
4	350	.3	100
6	350	.4	150
8	350	.5	150
10	350	.8	200
12	350	1.0	200
14	350	1.1	250
16	350	1.3	250
18	350	1.3	300
20	350	1.5	300
24	350	1.8	400
30	250	2.4	400
36	250	2.7	500
42	250	4.6	500
48	250	5.8	500
54	250	6.8	600
60	250	8.0	600
64	250	12.5	600

*Pressure rating designated is maximum water working pressure and is based on the maximum rating of C110, C115 or C153 flanges. AMERICAN Toruseal® gaskets meet the description of "specially designed gaskets" shown in the appendices of AWWA C110, C111, and C115, and "special gaskets" shown in the body of AWWA C111.

**Bolt torque applicable only to joints with Toruseal® gaskets.

AMERICAN Toruseal® gaskets are normally black and furnished of SBR rubber per ANSI/AWWA C111/A21.11. This rubber compound is NSF 61 certified for contact with potable water and is otherwise physically superior to red rubber sometimes used with flanged joints. Other types of rubber are available on special order.

Clean flange faces and faced pipe ends thoroughly prior to installation. Do not use joint or gasket compounds with Toruseal® gaskets (assemble joints dry).

In addition to normal flanged piping, AMERICAN Toruseal® gaskets are required for use with suspended joints in specially designed long–span installations (i.e., spans involving 2 or 3 lengths of pipe). See Section 7 for details.

For use with standard flange bolts. Holes match AWWA C110, C111, and C115 flange drilling. They also match certain flange drilling classes of AWWA C207 and ANSI B16.1 and B16.42 flanges.

***AMERICAN Toruseal® gaskets 1/8" thick and are supplied with dual raised torus bulbs.

Bolts and Nuts

Size, length and number of bolts and nuts are shown in Table Nos. 8-3 (Details and Accessories-AWWA C110 or C115 flange) and 8-11 (Details and Accessories-flange faced and drilled per ANSI B16.1 Class 250). Bolts are specified in ANSI B18.2.1 and nuts are specified in ANSI B18.2.2. Bolts and nuts of low-carbon steel conforming to ASTM A307 are specified in the Appendix of AWWA C110 and C115 for flanged pipe when rubber gaskets are used. Nuts of regular or heavy hex design are used according to customer specifications. Also, per the Appendix of AWWA C110 and C115, high-strength bolts should not be used when a gray iron flange is involved in the connection.

NSF 61 certified Toruseal® Gasket

AMERICAN Toruseal® Flange Gasket

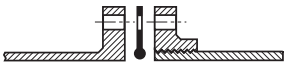
The AMERICAN Toruseal® flange gasket is available for improved joint performance. It is vastly superior to conventional full-face or ring gaskets. Although recommended for all normal water and sewer service, it especially must be used in demanding services such as very large diameter flanged piping, specially designed long-span installations (i.e. spans involving 2 or 3 lengths of pipe) or with any underground flanges* that could be subjected to undesirable beam loading. Toruseal® gaskets are normally furnished of high-quality black, molded SBR rubber with required properties per ANSI/AWWA C111/A21.11. Standard Toruseal® SBR rubber gaskets are ANSI/NSF Standard 61 certified for contact with potable water. Other type rubber is available on special order. AMERICAN Toruseal® gaskets meet the description of "specially designed gaskets" shown in the appendices of AWWA C110, C111, and C115, and "special gaskets" shown in the body of AWWA C111.

*As noted in the appendices of appropriate ANSI/AWWA standards, the use of flanged joints underground is generally not recommended because of the rigidity of the joint.

Gaskets

AMERICAN Toruseal® gaskets are recommended for AWWA standard flanged joints in normal water and sewage service. The ANSI B16.21 standard specifies the inside of 3"-12" non-metallic full-face and ring gaskets to be greater (the same as standard steel pipe outside diameters) than nominal. Any flat gaskets used for ductile iron flanged pipe must have "nominal" inside diameters as shown in the appendix of ANSI/AWWA C115/A21.15, not the larger inside diameters per ANSI B16.21. **The larger I.D. gaskets per ANSI B16.21 are not recommended by AMERICAN.**

Table No. 8-2



AMERICAN Toruseal® Flange Gasket

Full–Face — Nominal 1/8" Thickness — Dual Raised Torus Bulbs

Pipe Size in.	Pressure Rating* psi	Gasket Weight lbs	Approx. Bolt Torque** ft.-lbs
4	350	0.3	100
6	350	0.3	150
8	350	0.5	150
10	350	0.6	200
12	350	0.8	200
14	350	0.9	250
16	350	1.1	250
18	350	1.1	300
20	350	1.3	300

Pipe Size in.	Pressure Rating* psi	Gasket Weight lbs	Approx. Bolt Torque** ft.-lbs
24	350	1.6	400
30	250	2.1	400
36	250	2.7	500
42	250	3.5	500
48	250	4.0	500
54	250	4.3	600
60	250	6.4	600
64	250	9.1	600
–	–	–	–

Notes:

*Pressure rating designated is maximum water working pressure and is based on the 350 psi allowable rating of 24" and smaller flanges in C111 and the 250 psi maximum rating of other sizes of C110 or C115 flanges. Contact AMERICAN on higher pressure or temperature requirements.

**Bolt torque applicable only to flanged joints with Toruseal® gaskets.

Clean flange faces and faced pipe ends thoroughly prior to installation. Do not use joint or gasket compounds with Toruseal® gaskets (assemble joints dry).

For use with standard flange bolts. Holes match AWWA C110, C111, and C115 flange drilling. They also match certain flange drilling classes of AWWA C207 and ANSI B16.1 and B16.42 flanges.

Toruseal® gaskets may be used with steel pipe flanges in the 14"–54" sizes in some cases. Check AMERICAN for details, or when connecting to any flange configured differently than flanges per AWWA C110 or C115.

AMERICAN TORUSEAL® FLANGE GASKET

SIZES 2”- 64”, NOMINAL 1/8” THICKNESS FULL FACE RUBBER GASKET

- Positive sealing for ductile iron flanged piping.
- Full Face design - assures ready field assembly and precise placement. Superior to conventional full face or ring gaskets.
- Ideal for general purpose use, also rigorous use such as long-span installations.
- Rated for 350 psi water working pressure, 250 psi for 30” and larger.
- Available in SBR, EPDM, Nitrile, Neoprene, and FKM.
- SBR, EPDM, Nitrile and FKM certified to ANSI/NSF-61
- Meets ANSI/AWWA C111/A21.11
- Holes to match ANSI A21.10, A21.15 and B16.1 Class 125 flange drilling.
- For use with standard flange bolts.

Clean flange faces and faced pipe ends thoroughly prior to installation. Do not use joint or gasket compounds with Toruseal® gaskets (assemble joints dry).

*Pressure rating designated is maximum water working pressure and is based on the maximum rating of C110, C115 or C153 flanges. AMERICAN Toruseal® gaskets meet the description of "specially designed gaskets" shown in the appendices of AWWA C110, C111, and C115, and "special gaskets" shown in the body of AWWA C111.

**Bolt torque applicable only to joints with Toruseal® gaskets.

† The 64" Toruseal® gasket contains an additional torus to accommodate bolting a 64" C115 or C153 flange to a standard 66" flange.

AMERICAN Toruseal® gaskets are normally black and furnished of SBR rubber per ANSI/AWWA C111/A21.11. This rubber compound is NSF 61 certified for contact with potable water and is otherwise physically superior to red rubber some- times used with flanged joints. Other types of rubber are available on special order.

MADE IN U. S. A.

APPROXIMATE BOLT TORQUE AND WEIGHT

Pipe Size (in.)	Pressure Rating* (psi)	Gasket Weight (lbs.)	Aprox. Bolt Torque** (ft-lbs.)
2	350	0.2	100
3	350	0.2	100
4	350	0.3	100
6	350	0.4	150
8	350	0.5	150
10	350	0.8	200
12	350	1.0	200
14	350	1.1	250
16	350	1.3	250
18	350	1.3	300
20	350	1.5	300
24	350	1.8	400
30	250	2.4	400
36	250	2.7	500
42	250	4.6	500
48	250	5.8	500
54	250	6.8	600
60	250	8.0	600
64†	250	12.5	600

Specification Rubber Products, Inc.

P.O. Box 568 • Alabaster, AL 35007 • 205-663-2521 or 800-633-3415
specrubber@specrubber.com • www.specrubber.com