

EXHIBIT A
City of Boerne
Shop Drawing Transmittal No. 02660 - 01
(Spec Section) (Series)

Project Name: George's Ranch Unit 1		Date Received:	
Project Owner: The Lookout Group		Checked By:	
Contractor: VK Knowlton	Engineer: Cude Engineering	Log Page:	
Address: 18225 FM 2252 San Antonio, Tx 78266	Address: 4122 Pond Hill Rd #101 San Antonio, Tx 78231	City of Boerne No.:	
		Spec Section: 02660	
		Drawing/Detail No.:	
Attn: Derek Moczygemba	Attn: Patrick Murphy	1st. Sub	ReSub.
Date Transmitted: 11/15/2023	Previous Transmittal Date:		

Item No.	No. Copies	Description	Manufacturer	Mfr/Vendor Dwg or Data No.	Action Taken*
		C900 Water Pipe	JM Eagle		
		Water Pipe Restraints and Fittings	SIP Industries		
		Fire Hydrant	Mueller		
		Gate Valve	Mueller		
		Butterfly Valve	Mueller		
		Valve Box	Serampore Industries		

Remarks:

* The Action Designated Above is in Accordance with the Following Legend:

A - Furnish as Submitted

D - Rejected

B - Furnish as Noted

E - Engineer's review not required

C - Revise and Submit

1. Not enough information for review.
2. No reproduces submitted.
3. Copies illegible.
4. Not enough copies submitted.
5. Wrong sequence number.
6. Wrong resubmittal number.
7. Wrong spec. section.
8. Wrong form used.
9. See comments.

1. Submittal not required.
2. Supplemental Information. Submittal retained for informational purposes only.
3. Information reviewed and approved on prior submittal.
4. See comments.

Comments:

	By _____	Date _____
Distribution:	Contractor ☐	File ☐ City of Boerne ☐ Owner ☐ Other ☐

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Item No.	No. Copies	Description	Manufacturer	Mfr/Vendor Dwg or Data No.	Action Taken*
		CTS Tubing	ADS PolyFlex		
		Water Service Valves and Fittings	Mueller		
		Meter Box	DFW Plastics		
		Tracer Wire	Regency Wire & Cable		
		Split Bolt Connector	Pennunion		
		Snake Pit Tracer Boxes	Copperhead Industries		

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Item No.	No. Copies	Description	Manufacturer	Mfr/Vendor Dwg or Data No.	Action Taken*
		Warning Tape	White Rhino		
		Double Check Valve Assembly	Zurn Wilkins		

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Comments:

Distribution:	Contractor ☐	File ☐	City of Boerne ☐	Owner ☐	Other ☐
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SUBMITTALS PREPARED FOR

KNOWLTON COMPANY

GEORGE'S RANCH UNIT 1

BOERNE, TEXAS

PREPARED BY



Water



DELIVERING GOOD WATER TO YOU

BLUE BRUTE™

MEETS AWWA C900 AND ASTM D1784 CELL CLASS 12454;
GASKETS MEET ASTM F477; JOINTS MEET ASTM D3139.



APPLICATIONS

JM Eagle's Blue Brute C900 pipe is suitable for use in distribution pipelines of potable water, as well as gravity sewer, force main and water reclamation projects.

DESCRIPTION

JM Eagle Blue Brute C900 is available in 4-through 48-inch diameters, in blue, white, purple and green. It comes in standard laying lengths of 20 feet.

The pipe conforms to AWWA C900 pressure class 165 psi (DR 25), 235 psi (DR 18), 305 psi (DR 14), 200 psi (DR 21), 125 psi (DR 32.5), 100 psi (DR 41), and 80 psi (DR 51). It carries approval of ANSI/NSF Standard 61, UL 1285 and FM 1612 (DR 18 and DR 14 only).

BENEFITS

JM Eagle Blue Brute C900 pipe is the safe, long-lasting and stable solution for a modern infrastructure. Blue Brute:

- Maintains performance against tuberculation, corrosion and external galvanic soil conditions without lining wrapping, coating or cathodic protection.
- Keeps its smooth interior over long years of service with virtually no loss in carrying capacity, allowing for savings in pumping costs, as well as savings on the size of the pipe required.
- Can be field-cut with a power saw or ordinary handsaw and beveled without the use of expensive or complicated machinery.

Revised 1/27/2017. This information may have been updated. Please download the latest version at www.jmeagle.com/onesheets.

BLUE BRUTE™

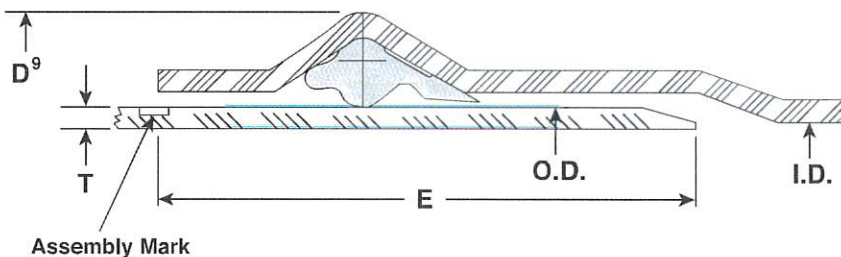
SUBMITTAL AND DATA SHEET

PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D ⁹ (IN)	APPROX. WEIGHT (LBS/FT)
PRESSURE CLASS 165 psi (DR 25)						
4	4.80	4.39	0.192	5.25	5.57	1.9
6	6.90	6.31	0.276	6.40	8.00	3.9
8	9.05	8.28	0.362	7.05	10.50	6.7
10	11.10	10.16	0.444	8.20	12.88	10.1
12	13.20	12.08	0.528	8.80	15.31	14.4
PRESSURE CLASS 235 psi (DR 18)*						
4	4.80	4.23	0.267	5.25	5.87	2.6
6	6.90	6.09	0.383	6.40	8.43	5.3
8	9.05	7.98	0.503	7.05	11.06	9.2
10	11.10	9.79	0.617	8.20	13.57	13.9
12	13.20	11.65	0.733	8.80	16.13	19.7
PRESSURE CLASS 305 psi (DR 14)*						
4	4.80	4.07	0.343	5.25	6.17	3.2
6	6.90	5.86	0.493	6.40	8.87	6.7
8	9.05	7.68	0.646	7.05	11.63	11.6
10	11.10	9.42	0.793	8.20	14.27	17.6
12	13.20	11.20	0.943	8.80	16.97	25.1

Consult JM Eagle™ for CSA and other listing availability prior to shipment.

Note: *FM Approvals Pressure Class 150 psi for DR 18 and 200 psi for DR 14.

* Contact your JM eagle™ sales representative for location availability.



I.D. : Inside Diameter
O.D. : Outside Diameter
T. : Wall Thickness
D⁹ : Bell Outside Diameter
E : Distance between Assembly Mark to the end of spigot.

Product Standard: ANSI/AWWA C900
Pipe Compound: ASTM D1784 Cells Class 12454
Gasket: ASTM F477
Integral Bell Joint: ASTM D3139
Certifications: ANSI/NSF Standard 61
UL Standard 1285
Pipe Length: 20 feet laying length
AWWA C605
JM Eagle™ Installation Guide

JM Eagle™ also manufactures this pipe in green for sewer force main applications and purple, specifically for reclaimed water systems. This pipe is made to the same requirements as our standard products. The only difference is that the pigment used is green or purple. These products will not be marked with UL or NSF listing marks. Additionally, the green pipe will be marked "Forced Sewer" and the purple pipe will be marked: "Reclaimed Water... Do Not Drink."



BIG BLUE™

SUBMITTAL AND DATA SHEET



PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D° (IN)	APPROX. WEIGHT (LBS/FT)
Rated 235 psi (DR 18)						
14	15.30	13.50	0.850	8.00	19.00	26.75
16	17.40	15.35	0.967	9.25	21.62	34.86
18	19.50	17.20	1.083	13.00	24.22	48.95
20	21.60	19.06	1.200	14.50	26.85	54.22
24	25.80	22.76	1.433	12.00	32.06	77.97
30	32.00	28.23	1.778	16.75	37.81	117.82
Rated 200 psi (DR 21)*						
14	15.30	13.75	0.729	8.00	18.22	23.07
16	17.40	15.64	0.829	9.25	20.72	30.04
18	19.50	17.53	0.929	13.00	23.22	37.27
20	21.60	19.42	1.029	14.50	25.72	46.71
24	25.80	23.19	1.229	12.00	30.72	67.53
30	32.00	28.77	1.524	16.75	38.10	103.71
36	38.30	34.43	1.824	19.02	45.60	152.16
Rated 165 psi (DR 25)						
14	15.30	14.00	0.612	8.00	17.94	19.48
16	17.40	15.92	0.696	9.25	20.41	25.38
18	19.50	17.85	0.780	13.00	22.87	31.99
20	21.60	19.77	0.864	14.50	25.34	39.46
24	25.80	23.61	1.032	12.00	30.27	56.98
30	32.00	29.29	1.280	16.75	37.12	88.49
36	38.30	35.05	1.532	19.02	44.43	128.41
42	44.50	40.73	1.780	22.43	51.62	176.02
48*	50.80	46.49	2.032	24.78	58.93	231.22
Rated 125 psi (DR 32.5)*						
14	15.30	14.30	0.471	8.00	17.48	15.14
16	17.40	16.27	0.535	9.25	19.88	19.63
18	19.50	18.23	0.600	13.00	23.30	24.75
20	21.60	20.19	0.665	14.50	24.38	30.54
24	25.80	24.12	0.794	12.00	29.47	44.11
30	32.00	29.91	0.985	16.75	35.94	68.45
36	38.30	35.80	1.178	19.02	43.01	99.22
42	44.50	41.60	1.369	22.43	49.98	135.49
48	50.80	47.49	1.563	24.78	56.73	178.49



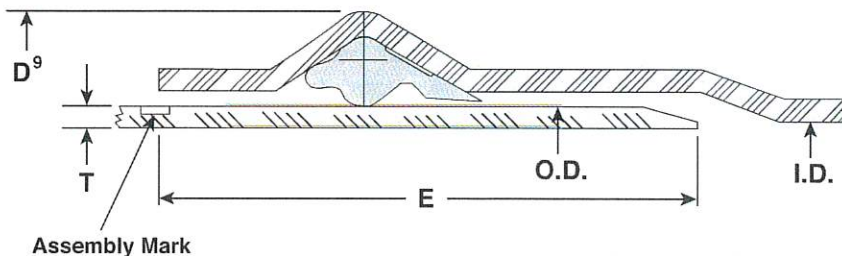
Building essentials
for a better tomorrow™



PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D ⁹ (IN)	APPROX. WEIGHT (LBS/FT)
Rated 100 psi (DR 41)						
14	15.30	14.52	0.37	8.00	16.07	12.01
16	17.40	16.51	0.42	9.25	18.28	15.63
18	19.50	18.50	0.47	13.00	20.49	19.72
20	21.60	20.49	0.52	14.50	22.70	24.31
24	25.80	24.48	0.62	12.00	27.11	35.10
30	32.00	30.35	0.78	16.75	35.12	54.65
36	38.30	36.30	0.93	19.02	42.04	78.97
42	44.50	42.18	1.08	22.43	48.84	108.19
48	50.80	48.14	1.23	24.78	55.76	142.10
Rated 80 psi (DR 51)**						
18	19.50	18.69	0.382	11.09	20.80	15.92
24	25.80	24.72	0.506	14.90	26.86	28.39
30	32.00	30.67	0.627	16.75	34.50	44.08
36	38.30	36.71	0.751	19.02	41.30	64.32
42	44.50	42.65	0.872	22.43	47.99	88.10
48	50.80	48.69	0.996	24.78	54.78	115.79

* Prior to ordering or specifying, consult JM Eagle™ for product and/or listing availability.

** UL 1285 up to 24"



I.D. : Inside Diameter
O.D. : Outside Diameter
T : Wall Thickness
D⁹ : Bell Outside Diameter
E : Distance between Assembly Mark to the end of spigot.

Product Standard: ANSI/AWWA C905
Pipe Compound: ASTM D1784 Cells Class 12454
Gasket: ASTM F477
Integral Bell Joint: ASTM D3139
Certifications: ANSI/NSF Standard 61
UL Standard 1285 (up to 24")
Pipe Length: 20 feet laying length
Installation: AWWA C605
JM Eagle™ Installation Guide



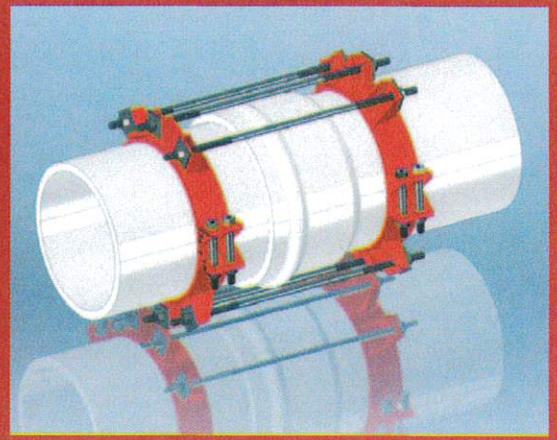
SIP Industries
Quality Manufacturers Since 1960

EZ GRIP™
PTP SERIES

BELL JOINT RESTRAINT FOR PVC PIPE

The EZ GRIP®

Pipe-To-Pipe Joint Restraint is a proven design, offering an efficient, reliable, and inexpensive method of restraining PVC Bell and Spigot (Push-On) Joints by utilizing a series of rigid machined gripping serrations that grab, hold, and secure the PVC Bell and Spigot ends.



ADVANTAGES, BENEFITS, FEATURES

- The PTP Joint Restraint eliminates the need of timely thrust blocks.
- The PTP Joint Restraint performs optimally with AWWA C900 (PVC), C905 (PVC), C906 (HDPE), C909 (PVCO), or ASTM D2241 IPS PVC Pipe.
- Composed of high strength Ductile Iron in compliance with the ASTM A536 Standard, Grade 65-45-12
- T-Bolts, Rods, and Hex nut are manufactured from high-strength low-alloy (HSLA) steel as per ANSI/AWWA C111/A21.11
- Machined to exact tolerances with a minimum safety factor of 2:1.
- Easily maintains a water working pressure equal to that of the PVC pipe on which it is installed
- The PTP Joint Restraint is designed and manufactured to be disassembled, reinstalled, and reusable.
- The PTP Joint Restraint can be installed on new or existing water systems.
- The PTP Joint Restraint allows full joint deflection and maintains the seal while under pressure, and while subjected to ground movements.
- The internal serrations offer 360° circumferential contact with the pipe wall and increase the grip as the hydrostatic pressure increases whilst concurrently offering support of the pipe wall.
- With the split castings, the PTP Joint Restraint can conveniently be installed in or outside the trench.
- The PTP Joint Restraint for PVC Pipe is provided with a coating that is compatible with most field applied coatings. The standard color of the PTP Joint Restraint is red.
- Offered in sizes from 4" up to 36".
- Approved by Factory Mutual (FM) for sizes 4"-12" at 200psi for AWWA C900 Class 305 DR-14 pipe and at 150psi for AWWA C900 Class 235 DR-18 pipe.



Available:  Import

Toll Free 877-921-6111
www.sipindustries.com

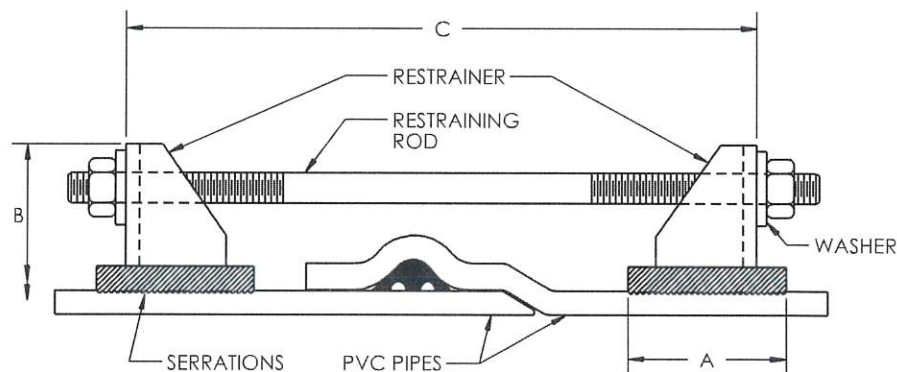


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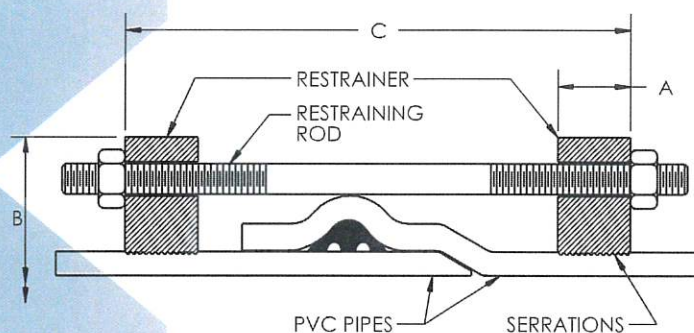
EZ GRIP™ PTP SERIES

BELL JOINT RESTRAINT FOR PVC PIPE

Technical Data



SIZES: 14" - 36"



SIZES: 4" - 12"

PTPVC PIPE RESTRAINTS SPECIFICATIONS

NOMINAL PIPE SIZE	C900/C909 PVC PIPES PTPVC SERIES		IPS PVC PIPES PTPVS SERIES		A	B (APPROX.)	C (MAX.)	RESTRAINT BOLTS/RODS		CLAMPING BOLTS		WEIGHT (APPROX.) LBS
	O.D.	ITEM CODE	O.D.	ITEM CODE				QTY	SIZE	QTY	SIZE	
4	4.80	PTPVC04	4.50	PTPVS04	1.12	9.15	12.00	2	3/4 X 17	4	5/8 X 3 1/2	16
6	6.90	PTPVC06	6.63	PTPVS06	1.15	11.12	13.00	2	3/4 X 17	4	5/8 X 3 1/2	20
8	9.05	PTPVC08	8.63	PTPVS08	1.47	14.75	15.00	2	3/4 X 17	4	3/4 X 4	32
10	11.10	PTPVC10	10.75	PTPVS10	1.38	16.82	16.00	4	3/4 X 24	4	7/8 X 5	52
12	13.20	PTPVC12	12.75	PTPVS12	1.42	19.45	18.00	4	3/4 X 24	4	7/8 X 5	56
14	15.30	PTPVC14	N/A	N/A	4.00	22.56	24.00	6	3/4 X 30	8	7/8 X 7	150
16	17.40	PTPVC16	N/A	N/A	4.00	24.64	28.00	6	3/4 X 30	8	7/8 X 7	154
18	19.50	PTPVC18	N/A	N/A	5.00	26.64	28.00	8	3/4 X 30	8	7/8 X 7	222
20	21.60	PTPVC20	N/A	N/A	5.00	28.75	28.00	8	3/4 X 36	8	1 1/8 X 9	195
24	25.80	PTPVC24	N/A	N/A	5.00	33.90	34.00	12	3/4 X 36	8	1 1/8 X 9	237
30	32.00	PTPVC30	N/A	N/A	5.50	40.75	38.00	10	1 X 40	8	1 1/4 X 9	475
36	38.30	PTPVC36	N/A	N/A	9.00	49.10	38.00	14	1 X 40	12	1 1/8 X 10	722

Toll Free 877-921-6111

www.sipindustries.com



SIP Industries
Quality Manufacturer Since 1960

Date: 10/05/2022

Daryl Haby
Sales Manager
Core&Main
San Antonio, TX 78251
daryl.haby@coreandmain.com

RE: 04" to 12" PTP Restraints

SIP Industries Pipe to Pipe (PTP) restraints for PVC joints are manufactured from high-strength Ductile Iron in accordance with ASTM A536, Grade 65-45-12. The PTP restraint is compatible with AWWA C900 PVC, C906 HDPE, C909 PVCO and ASTM D2241 IPS PVC pipes. SIP Industries' Pipe to Pipe restraints are Factory Mutual (FM) approved in sizes 4" - 12", and were tested for 4 times the rated pressure.

Further, 04" to 12" PTP Restraints when used on C900 DR14 pipes, will have a pressure rating of 305 psi which is equal to the pressure rating of the pipe.

There are no special conditions, requirements, and/or limitations that apply to our products in normal applications or for optimal performance.

If you have any questions, please do not hesitate to contact me.

Thank you,

Amit Kumar
Director - Engineering Services
akumar@sipindustries.com



SIP CORPORATE 8876 Gulf Freeway, Suite 500, Houston, TX 77017
SIP CENTRAL 2900 Patio Drive, Houston, TX 77017
SIP EAST 600 Rayloc Drive, Atlanta, GA 30336
SIP WEST 8333 Almeria Avenue, Fontana, CA 92335

Phone: 877-921-6111 or 713-923-6111 | Fax: 713-923-6114 | www.sipindustries.com | sales@sipindustries.com



SIP Industries

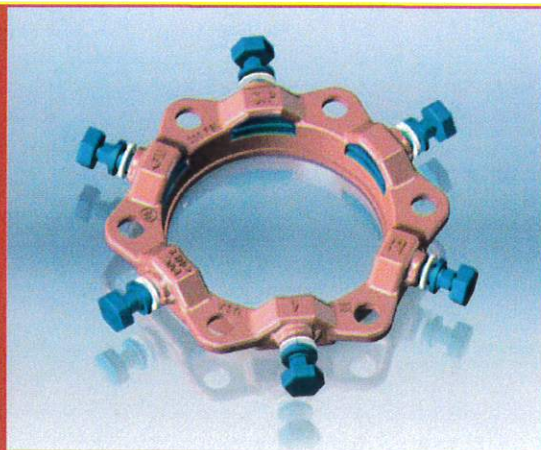
Quality Manufacturers Since 1960

EZ GRIP™

JOINT RESTRAINT FOR PVC PIPE

The EZ GRIP®

Joint Restraint is a proven design, offering an efficient, reliable, and inexpensive method of restraining PVC Pipe with Mechanical Joint Pipe or appurtenances, by integrating a series of gripping wedges into a Mechanical Joint follower gland.



ADVANTAGES, BENEFITS, FEATURES

- The EZ GRIP® Joint Restraint eliminates clamps, tie rods, cables, and thrust blocks.
- The EZ GRIP® Joint Restraint performs optimally with all mechanical joint sockets of the ANSI/AWWA C111/A21.11, C110/A21.10, and C153/121.53 Standards and may be used with 4" - 12" AWWA C900 (PVC), C905 (PVC), C906 (HDPE)*, C909 (PVC) or 3"-12" ASTM D2241 IPS PVC Pipe.
- The EZ GRIP® Joint Restraint will allow joint deflection, and maintain the seal and restraint while under pressure, and while subjected to ground movements
- The EZ GRIP® Joint Restraint shall have a pressure rating equal to that of the PVC pipe and shall have a minimum safety factor of at least 2 to 1.
- The contoured wedges provide greater circumferential contact with the pipe wall and increase the grip as the hydrostatic pressure increases.
- The hex head of the actuating screw is the same size as a standard T-bolt nut (1 1/4"), and requires no tool other than the tool required to install a standard Mechanical Joint T-Bolt and Nut.
- The hex head of the torque control screw is designed to shear at a preset limit, assuring proper installation and to prevent damage to the PVC pipe.
- When the actuating screw is rotated in the correct direction (clockwise) the torque control head breaks off, exposing a 5/8" hex head, indicating proper deployment of the wedge.
- After removing the 1-1/4" torque control hex head, a 5/8" hex head remains for multiple disassembly and re-installation, if necessary.
- EZ Grip Joint Restraints offers 5° deflection up to sizes 12", 3° on 14"-24", 2° on 30"-36"
- The gland, wedges, and screws are manufactured from high strength Ductile Iron in compliance with the ASTM A536 Standard, Grade 65-45-12.
- The EZ GRIP® Joint Restraint is designed to perform optimally for potable and recycled water, and for wastewater applications.
- The EZ GRIP® Joint Restraint for PVC Pipe is provided with a coating that is compatible with most field applied coatings.
- The standard color for the EZ Grip for PVC Pipe is red.
- Approved by Factory Mutual (FM) for sizes 4"-12" at 200psi for AWWA C900 Class 305 DR-14 pipe and at 150psi on AWWA C900 Class 235 DR-18 pipe. Listed with Underwriters Laboratories (UL) for sizes 4"-12" at 235psi on AWWA C900 Class 235 DR-18 pipe.



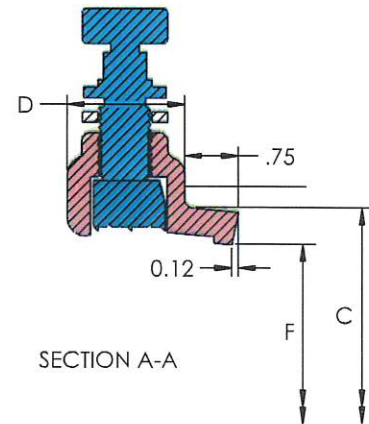
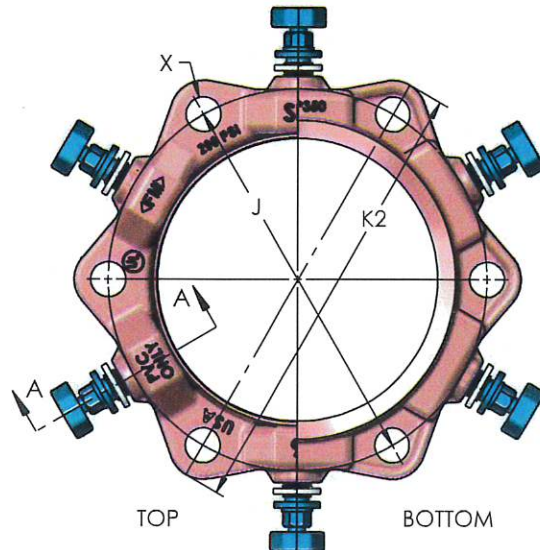
Available: Made in USA (4"-12") Import

* AWWA C906 HDPE Pressure Pipes up to 12" by using internal pipe stiffeners. Contact SIP for further assistance.

Toll Free 877- 921-6111

www.sipindustries.com

Technical Data



EZ-GRIP PVC RESTRAINTS SPECIFICATIONS

NOMINAL PIPE SIZE	SERIES NUMBER	C	D	F	X	J	K2	BOLT QTY	WEDGE QTY	APPROX. WEIGHT (LBS)
3	EZPVCP03	4.84	1.60	4.06	3/4	6.19	7.96	4	4	7.50
4	EZPVCP04 (D or I)	5.92	1.76	4.90	7/8	7.50	9.16	4	4	7.75
6	EZPVCP06 (D or I)	8.02	1.75	7.00	7/8	9.50	11.12	6	6	11.40
8	EZPVCP08 (D or I)	10.17	2.26	9.15	7/8	11.75	13.75	6	6	16.49
10	EZPVCP10 (D or I)	12.22	2.32	11.20	7/8	14.00	15.91	8	8	22.10
12	EZPVCP12 (D or I)	14.32	2.39	13.30	7/8	16.25	18.23	8	8	29.63
14	EZPVCP14	16.40	2.29	15.44	7/8	18.75	20.75	10	10	48.70
16	EZPVCP16	18.50	2.38	17.54	7/8	21.00	23.13	12	12	57.25
18	EZPVCP18	20.60	2.39	19.64	7/8	23.25	25.25	12	12	61.45
20	EZPVCP20	22.70	2.41	21.74	7/8	25.50	27.50	14	14	75.68
24	EZPVCP24	26.90	2.50	25.94	7/8	30.00	32.13	16	16	92.92
30	EZPVCP30	33.29	3.45	32.17	1 1/8	36.88	39.57	20	20	172.40
36	EZPVCP36	39.59	3.70	38.47	1 1/8	43.75	46.34	24	24	218.88

All dimensions are in inches, unless otherwise noted

(D) Made in USA

(I) Import

STANDARDIZED PRESSURE RATINGS

ANSI/AWWA C900 CI OD		ANSI/AWWA C905 CI OD		ASTM D2241 IPS OD	
DR 14	305 PSI	DR 18	235 PSI	SDR 17	250 PSI
DR 18	235 PSI	DR 21	200 PSI	SDR 21	200 PSI
DR 25	165 PSI	DR 25	165 PSI	SDR 26	160 PSI
		DR 32.5	125 PSI		



SIP Industries
Quality Manufacturer Since 1960

To Whom it may concern,

SIP Industries has been providing quality products for over 60 years and we take great pride in meeting or exceeding industry standards. This letter is to address comments for the above name project submittal transmittal No. 2660-03.

Comment #1 – The EZ Grip PTP Series 4" – 12" is considered bi-directional. The harness halves can be oriented in either direction. The EZ Grip PTP is a harness type with full 360 deg engagement and does not point load the PVC pipe. We have not encountered any point loading issues with this restraint type. Point loading is typically associated with the set screw type of restraints which should never be used with PVC pipe.

Comment #5 – The EZ Grip EZPVC wedge joint restraint has a Brinnell hardness of 179-255 BHN suitable for all types of PVC pipes. The EZ Grip EZPVC wedge restraints is a proven design and like others in the marketplace with a proven record. All SIP MJ SBR gaskets meet AWWA C111 requirements.

Should you have additional questions or if I can be of service in any other way, do not hesitate to contact me at SIP Industries headquarters in Houston, TX.

Sincerely,

Roger Johnson
Director of Technical Services
Mobil; 281 254-4047
Email: rjohnson@sipindustries.com

Cc: Dev Saha



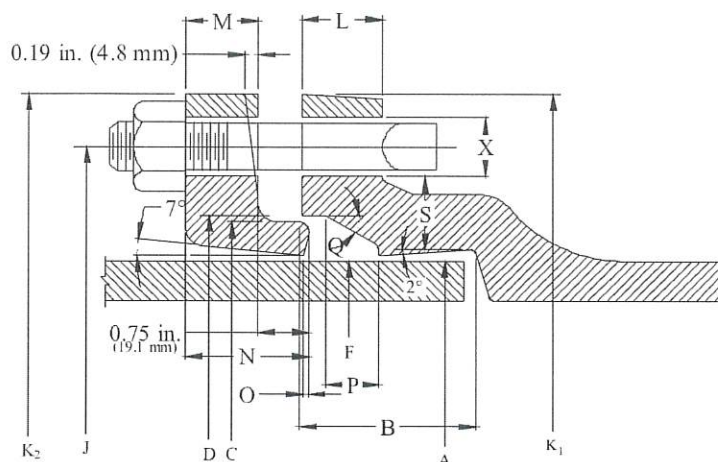
SIP CORPORATE 8876 Gulf Freeway, Suite 500, Houston, TX 77017
SIP CENTRAL 2900 Patio Drive, Houston, TX 77017
SIP EAST 600 Rayloc Drive, Atlanta, GA 30336
SIP WEST 8333 Almeria Avenue, Fontana, CA 92335

Phone: 877-921-6111 or 713-923-6111 | Fax: 713-923-6114 | www.sipindustries.com | sales@sipindustries.com

3" - 48" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

GENERAL SPECIFICATIONS

MATERIAL :	Ductile Iron per ASTM A536.
PRESSURE :	350 psi Rating for 3"-24" sizes and 250 psi Rating for 30"-48".
TESTING :	In accordance with ANSI/AWWA C153/A21.53 and UL Requirement.
LAYING LENGTH :	In accordance with ANSI/AWWA C153/A21.53. Fittings not listed in ANSI/AWWA have dimensions per SIP design as noted in Catalog.
WEIGHTS :	Do not include Accessories, Cement Lining and Coatings.
FLANGES :	Flanged ends on Fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 CLASS 125 Flanges.
CEMENT LINING :	In accordance with ANSI/AWWA C104/A21.4.
COATING :	Asphaltic Seal Coat inside and out in accordance with ANSI/AWWA C104/A21.4
GASKETS :	SBR in accordance with ANSI/AWWA C111/A21.11.
T-BOLTS/NUTS :	Low Alloy Steel in accordance with ANSI/AWWA C111/A21.11.
APPROVALS :	3"-24" Underwriters Laboratories Listed and UL/NSF 61.

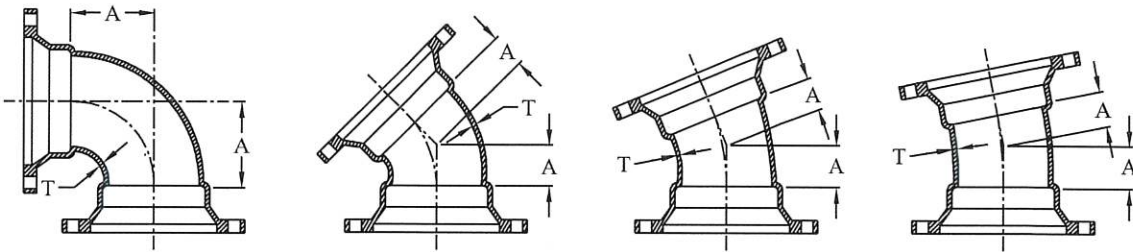


MECHANICAL JOINT DIMENSIONS

SIZE	A	B	C	D	F	J	K ₂	K ₁	L	X	BOLTS		
											No	Size	Length
3	3.96	2.50	4.84	4.94	4.06	6.19	7.69	7.62	0.58	3/4	4	5/8	3
4	4.80	2.50	5.92	6.02	4.90	7.50	9.12	9.06	0.60	7/8	4	3/4	3 1/2
6	6.90	2.50	8.02	8.12	7.00	9.50	11.12	11.06	0.63	7/8	6	3/4	3 1/2
8	9.05	2.50	10.17	10.27	9.15	11.75	13.37	13.31	0.66	7/8	6	3/4	3 1/2
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	7/8	8	3/4	4
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	7/8	8	3/4	4
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	7/8	10	3/4	4 1/2
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	7/8	12	3/4	4 1/2
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	7/8	12	3/4	4 1/2
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	7/8	14	3/4	4 1/2
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	7/8	16	3/4	5
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	1 1/8	20	1	6
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	1 1/8	24	1	6
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	1 3/8	28	1 1/4	6 1/2
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	1 3/8	32	1 1/4	6 1/2

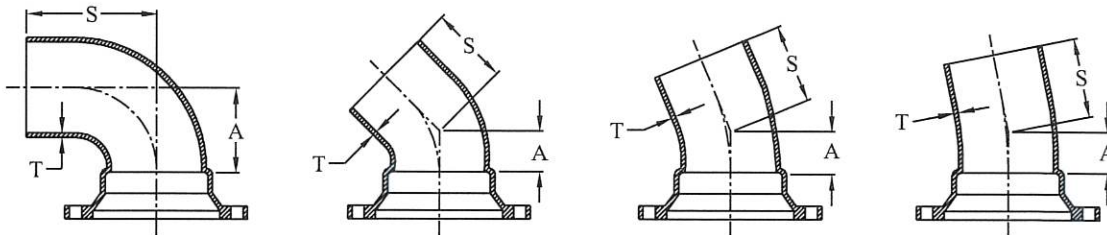
All Dimensions in Inches.

Weights shown are approximate in lbs.



MJ X MJ BENDS

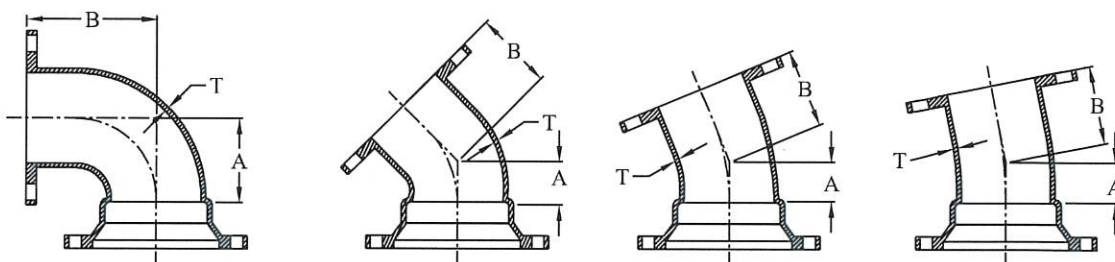
SIZE	T	MJ 90° BEND		MJ 45° BEND		MJ 22.5° BEND		MJ 11.25° BEND	
		A	WT	A	WT	A	WT	A	WT
3	0.33	3.50	19	1.50	16	1.00	15	1.00	14
4	0.34	4.00	25	2.00	22	1.50	18	1.25	16
6	0.36	5.00	39	3.00	32	2.00	31	1.50	30
8	0.38	6.50	57	3.50	46	2.50	46	1.75	42
10	0.40	7.50	89	4.50	70	3.00	64	2.00	58
12	0.42	9.00	108	5.50	86	3.50	80	2.25	67
14	0.47	11.50	210	5.00	160	3.75	136	2.50	93
16	0.50	12.50	264	5.50	202	3.75	172	2.50	148
18	0.54	14.00	335	6.00	250	4.50	255	3.00	205
20	0.57	15.00	400	7.00	305	4.50	310	3.00	245
24	0.61	16.75	565	7.50	405	4.50	412	3.00	315
30	0.66	21.50	930	10.50	780	6.75	665	4.75	600
36	0.74	24.50	1450	11.50	1135	7.75	960	5.00	820
42	0.82	29.25	2205	14.00	1610	9.00	1350	6.00	1180
48	0.90	33.25	2990	15.00	2090	10.00	1760	6.50	1475



MJ X PE BENDS

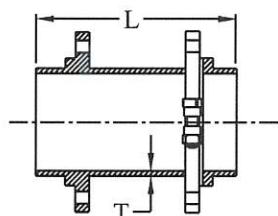
SIZE	T	90° PLAIN END BEND			45° PLAIN END BEND			22.5° PLAIN END BEND			11.25° PLAIN END BEND		
		A	S	Wt	A	S	Wt	A	S	Wt	A	S	Wt
3	0.33	3.25	8.50	16	1.50	7.00	13	1.00	6.50	12	1.00	6.50	12
4	0.34	4.00	9.50	22	2.00	7.50	19	1.50	7.00	18	1.25	6.25	17
6	0.36	5.00	11.50	41	3.00	8.50	34	2.00	7.50	29	1.50	7.00	27
8	0.38	6.50	12.50	58	3.50	9.00	49	2.50	8.00	43	1.75	7.25	39
10	0.40	7.50	13.00	83	4.50	10.00	69	3.00	8.50	61	2.00	7.50	52
12	0.42	9.00	14.50	114	5.50	11.00	93	3.50	9.00	79	2.25	7.75	69
14	0.47	11.50	19.50	197	5.00	13.00	146	3.75	11.25	133	2.50	10.50	118
16	0.50	12.50	20.50	248	5.50	13.50	184	3.75	11.75	166	2.50	10.50	136
18	0.54	14.00	21.00	325	6.00	13.00	235	6.00	13.00	235	6.00	13.00	235
20	0.57	15.00	22.50	390	7.00	14.00	290	7.00	14.00	300	7.00	14.00	300
24	0.61	17.00	25.00	575	7.50	14.50	390	7.50	14.50	395	7.50	14.50	400
30	0.66	22.50	30.50	865	10.50	19.50	715	6.75	15.75	600	4.75	13.75	535
36	0.74	24.50	33.50	1355	12.00	21.00	1040	7.75	16.75	865	5.00	14.00	725
42	0.82	29.25	38.25	2055	14.00	23.00	1460	9.00	18.00	1200	6.00	15.00	1030
48	0.90	33.25	42.24	2805	15.00	24.00	1905	10.00	19.00	1575	6.50	15.50	1290

All Dimensions in Inches.
 Weights shown are approximate in lbs.



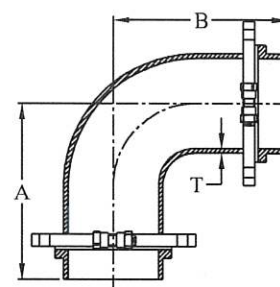
MJ X FLANGE BENDS*

SIZE	T	90° MJ-FLANGE BEND			45° MJ-FLANGE BEND			22.5° MJ-FLANGE BEND			22.5° MJ-FLANGE BEND		
		A	B	WT	A	B	WT	A	B	WT	A	B	WT
3	0.33	3.50	5.50	20	1.50	3.00	17	1.00	3.00	18	1.00	3.00	16
4	0.34	4.00	6.50	26	2.00	4.00	24	1.50	4.00	27	1.25	4.00	20
6	0.36	5.00	8.00	47	3.50	5.00	39	2.00	5.00	36	1.50	5.00	30
8	0.38	6.50	9.00	68	3.50	5.50	57	2.50	5.50	53	1.75	5.50	50
10	0.40	7.50	11.00	102	4.50	6.50	83	3.00	6.50	100	2.00	6.50	75
12	0.42	9.00	12.00	134	5.50	7.50	111	3.50	7.50	145	2.25	7.50	88
14	0.47	11.50	14.00	227	5.00	7.50	208	---	---	---	---	---	---
16	0.50	12.50	15.00	306	5.50	8.00	240	---	---	---	---	---	---



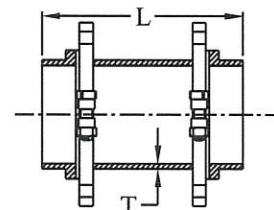
**SWIVEL X SOLID HYDRANT ADAPTERS
WITH SWIVEL GLAND***

SIZE	T	L	WEIGHT
6 X 13	0.36	13	47
6 X 18	0.36	18	56
6 X 24	0.36	24	60
6 X 30	0.36	30	64
6 X 36	0.36	36	75
6 X 48	0.36	48	94
8 X 13	0.38	13	54
8 X 18	0.38	18	67
8 X 24	0.38	24	82
8 X 48	0.38	48	143
12X 13	0.42	13	87



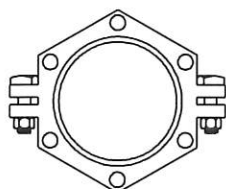
**SWIVEL X SWIVEL HYDRANT ELL
WITH TWO-SWIVEL GLANDS***

SIZE	T	A	B	WEIGHT
6	0.36	10.50	16.00	50



**SWIVEL X SWIVEL HYDRANT ADAPTERS
WITH TWO-SWIVEL GLANDS***

SIZE	T	L	WEIGHT
6 X 13	0.36	13	30
6 X 18	0.36	18	49
6 X 24	0.36	24	52

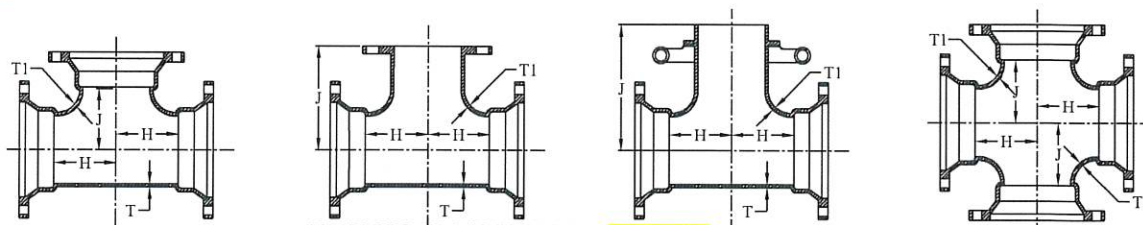


SWIVEL GLANDS*

SIZE	Wt.
4	8
6	10
8	12
10	16
12	24

All Dimensions in Inches.
Weights shown are approximate in lbs.

* Not included in AWWA C153.



MJ X MJ, MJ X FLANGE, MJ X ST & CROSSES

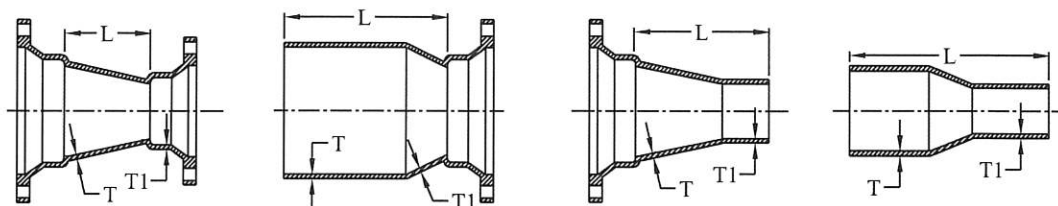
Size	T	T1	MJ X MJ			MJ X FE*			MJ X ST*			CROSS		
			H	J	Wt.	H	J	Wt.	H	J	Wt.	H	J	Wt.
*2 X 2	0.30	0.30	3.00	3.00	16	---	---	---	---	---	---	---	---	---
3 X 3	0.33	0.33	3.00	3.00	28	3.00	5.50	30	---	---	---	3.00	3.00	35
*4 X 2	0.34	0.30	3.00	4.00	29	---	---	---	---	---	---	---	---	---
4 X 3	0.34	0.33	3.50	4.00	30	3.50	6.50	34	---	---	---	*3.50	4.00	49
4 X 4	0.34	0.34	4.00	4.00	32	4.00	6.50	40	---	---	---	4.00	4.00	40
6 X 3	0.36	0.33	3.50	5.00	42	3.50	8.00	51	---	---	---	3.50	5.00	60
6 X 4	0.36	0.34	4.00	5.00	46	4.00	8.00	65	---	---	---	*4.00	5.00	68
*6 X 4 X 6	0.36	0.36	*5.00	5.00	60	---	---	---	---	---	---	---	---	---
6 X 6	0.36	0.36	5.00	5.00	56	5.00	8.00	62	5.00	10.25	66	5.00	5.00	75
*6 X 6 X 8	0.36	0.38	*6.50	6.50	75	---	---	---	---	---	---	---	---	---
*8 X 3	0.38	0.33	*4.00	6.50	52	---	---	---	---	---	---	---	---	---
8 X 4	0.38	0.34	4.00	6.50	60	4.50	9.00	79	---	---	---	*4.00	6.00	100
8 X 6	0.38	0.36	5.00	6.50	72	5.50	9.00	80	5.00	11.25	86	*5.00	6.00	105
*8 X 6 X 6	0.38	0.38	*5.00	6.50	75	---	---	---	---	---	---	---	---	---
*8 X 6 X 8	0.38	0.38	*6.00	6.50	85	---	---	---	---	---	---	---	---	---
8 X 8	0.38	0.38	6.50	6.50	86	6.50	9.00	90	6.50	11.50	105	6.00	6.00	105
*10X 3	0.40	0.33	*4.00	7.50	75	---	---	---	---	---	---	3.00	7.00	115
10X 4	0.40	0.34	4.00	7.50	78	4.00	11.00	90	---	---	---	*4.00	7.00	120
10X 6	0.40	0.36	5.00	7.50	90	5.00	11.00	110	5.00	12.75	110	*5.00	7.00	125
10X 8	0.40	0.38	6.50	7.50	105	6.50	11.00	115	6.50	12.75	120	*6.50	7.00	130
10X10	0.40	0.40	7.50	7.50	120	7.50	11.00	130	---	---	---	7.00	7.00	145
*12X 3	0.42	0.33	*4.00	8.75	90	---	---	---	---	---	---	---	---	---
12X 4	0.42	0.34	4.00	8.75	94	4.50	12.00	118	---	---	---	*4.00	8.50	123
12X 6	0.42	0.36	5.00	8.75	110	5.50	12.00	133	5.00	13.75	128	*5.00	8.50	140
12X 8	0.42	0.38	6.50	8.75	125	6.50	12.00	135	6.50	13.75	130	*6.00	8.50	157
12X10	0.42	0.40	7.50	8.75	140	7.50	12.00	150	---	---	---	*7.50	8.50	189
12X12	0.42	0.42	8.75	8.75	160	8.75	12.00	170	---	---	---	8.50	8.50	213
14X 4	0.47	0.34	5.50	10.50	172	---	---	---	---	---	---	---	---	---
14X 6	0.47	0.36	6.50	10.50	182	6.50	14.00	185	6.50	15.00	211	*6.50	10.50	210
14X 8	0.47	0.38	7.50	10.50	206	---	---	---	---	---	---	*7.50	10.50	231
14X10	0.47	0.40	8.50	10.50	228	8.50	14.00	244	---	---	---	*8.50	10.50	255
14X12	0.47	0.42	9.50	10.50	234	9.50	14.00	284	---	---	---	*9.50	10.50	270
14X14	0.47	0.47	10.50	10.50	280	10.50	14.00	305	---	---	---	10.50	10.50	299
16X 6	0.50	0.36	6.50	11.50	228	6.50	15.00	210	6.50	16.00	280	*6.50	11.50	250
16X 8	0.50	0.38	7.50	11.50	248	7.50	15.00	260	---	---	---	*7.50	11.50	264
16X10	0.50	0.40	8.50	11.50	264	8.50	15.00	287	---	---	---	*8.50	11.50	286
16X12	0.50	0.42	9.50	11.50	280	9.50	15.00	312	---	---	---	*9.50	11.50	310
16X14	0.50	0.47	10.50	11.50	316	10.50	15.00	348	---	---	---	---	---	---
16X16	0.50	0.50	11.50	11.50	322	11.50	15.00	374	---	---	---	11.50	11.50	385
18X 6	0.54	0.36	6.50	12.50	275	6.50	15.50	325	6.50	18.00	280	---	---	---
18X 8	0.54	0.38	7.50	12.50	295	7.50	15.50	352	---	---	---	---	---	---
18X10	0.54	0.40	8.50	12.50	315	---	---	---	---	---	---	---	---	---
18X12	0.54	0.42	9.50	12.50	335	9.50	15.50	360	---	---	---	*9.50	12.50	437
18X14	0.54	0.47	10.50	12.50	380	---	---	---	---	---	---	---	---	---
18X16	0.54	0.50	11.50	12.50	405	---	---	---	---	---	---	---	---	---
18X18	0.54	0.54	12.50	12.50	435	---	---	---	---	---	---	12.50	12.50	657
20X 6	0.57	0.36	6.50	14.00	315	6.50	17.00	406	6.50	18.50	360	---	---	---
20X 8	0.57	0.38	8.00	14.00	345	8.00	17.00	339	---	---	---	*8.00	14.00	440
20X10	0.57	0.40	9.00	14.00	370	---	---	---	---	---	---	---	---	---
20X12	0.57	0.42	10.00	14.00	395	---	---	---	---	---	---	*10.00	14.00	558
20X14	0.57	0.47	11.00	14.00	440	---	---	---	---	---	---	---	---	---

Contd....

All Dimensions in Inches.

Weights shown are approximate in lbs.

* Not included in AWWA C153.



REDUCERS

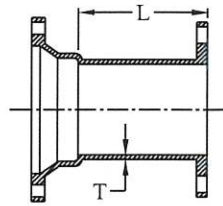
SIZE	T	T ₁	MJ REDUCERS		MJ X LARGE END BELL		MJ X SMALL END BELL		PLAIN END X PLAIN END	
			L	Wt.	L	Wt.	L	Wt.	L	Wt.
4 X 3	0.34	0.33	3.00	18	8.50	18	8.50	17	14.00	14
6 X 3	0.36	0.33	5.00	22	10.50	19	10.50	24	16.00	19
6 X 4	0.36	0.34	4.00	24	9.50	25	9.50	25	15.00	22
8 X 4	0.38	0.34	5.00	32	10.50	34	10.50	30	16.00	30
8 X 6	0.38	0.36	4.00	36	9.50	32	9.50	35	15.00	30
10X 4	0.40	0.34	7.00	46	12.50	43	12.50	43	18.00	46
10X 6	0.40	0.36	5.00	47	10.50	42	10.50	46	16.00	46
10X 8	0.40	0.38	4.00	50	9.50	50	9.50	42	15.00	47
12X 4	0.42	0.34	9.00	58	14.50	60	14.50	60	20.00	58
12X 6	0.42	0.36	7.00	58	12.50	58	12.50	58	18.00	57
12X 8	0.42	0.38	5.00	57	10.50	55	10.50	54	16.00	54
12X10	0.42	0.40	4.00	61	9.50	59	9.50	59	15.00	54
14X 6	0.47	0.36	9.00	100	14.50	104	16.90	100	22.30	93
14X 8	0.47	0.38	7.00	100	12.40	98	14.90	98	20.30	94
14X10	0.47	0.40	5.00	100	10.40	92	12.90	94	18.30	90
14X12	0.47	0.42	4.00	100	9.40	92	11.90	90	17.30	88
16X 6	0.50	0.36	11.00	124	16.50	136	18.90	125	24.30	93
16X 8	0.50	0.38	9.00	124	14.40	128	16.90	121	22.30	119
16X10	0.50	0.40	7.00	124	12.50	123	15.00	105	20.50	119
16X12	0.50	0.42	5.00	112	10.50	108	12.90	109	18.30	99
16X14	0.50	0.47	4.00	140	12.00	132	12.00	126	19.70	129
18X 8	0.54	0.38	13.00	190	19.50	195	20.00	170	27.40	170
18X10	0.54	0.40	10.00	195	17.40	185	18.00	165	25.50	160
18X12	0.54	0.42	7.00	180	14.00	175	15.50	150	19.50	150
18X14	0.54	0.47	6.00	190	15.00	190	15.00	175	23.00	160
18X16	0.54	0.50	5.00	195	12.50	190	12.50	170	18.00	145
20X10	0.57	0.40	14.00	220	19.00	210	22.00	200	27.50	180
20X12	0.57	0.42	12.00	205	16.00	205	17.50	170	21.50	190
20X14	0.57	0.47	10.00	200	17.90	205	18.00	190	26.00	195
20X16	0.57	0.50	7.00	200	13.50	200	13.50	185	19.00	170
20X18	0.57	0.54	4.00	225	12.00	215	12.00	200	20.00	190
24X12	0.61	0.42	16.00	305	21.00	290	21.50	275	22.50	240
24X14	0.61	0.47	14.00	310	21.90	315	22.00	310	25.00	295
24X16	0.61	0.50	12.00	320	17.50	285	17.50	285	23.00	285
24X18	0.61	0.54	10.00	305	18.00	310	18.00	300	21.00	290
24X20	0.61	0.57	7.00	300	13.50	275	13.50	270	14.00	240
30X16	0.66	0.50	30.00	633	39.00	623	39.00	565	48.00	555
30X18	0.66	0.54	28.00	658	37.00	635	37.00	590	46.00	567
30X20	0.66	0.57	24.00	628	33.00	603	33.00	560	42.00	535
30X24	0.66	0.61	10.00	478	24.50	526	24.50	495	33.50	458
*36X16	0.74	0.50	40.00	1078	---	---	27.00	700	---	---
*36X18	0.74	0.54	38.00	1329	---	---	37.00	800	---	---
36X20	0.74	0.57	36.00	975	45.00	950	45.00	874	54.00	849
36X24	0.74	0.61	19.00	770	33.00	810	33.00	746	42.00	709
36X30	0.74	0.66	15.50	650	24.50	758	24.50	725	33.50	657

Contd.....

All Dimensions in Inches.

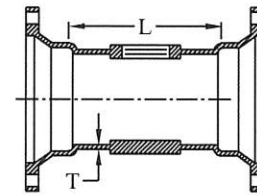
Weights shown are approximate in lbs.

* Not included in AWWA C153.



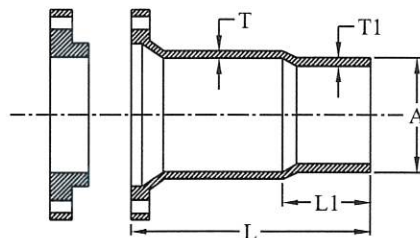
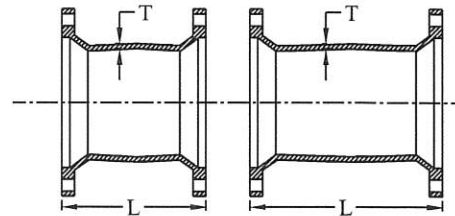
MJ X FLANGE ADAPTERS*

SIZE	L	T	WEIGHT
3	3.50	0.33	14
4	3.50	0.34	23
6	3.50	0.36	32
8	3.50	0.38	46
10	3.50	0.40	63
12	3.50	0.42	100
14	5.00	0.47	143
16	5.00	0.50	170
18	5.00	0.54	221
20	5.00	0.57	252
24	5.00	0.61	324
30	7.00	0.66	557
36	8.50	0.74	798
42	12.00	0.82	1214



MJ X MJ TAPPED TEES (2" TAP)*

SIZE	T	L	TAP SIZE	Wt
3	0.33	6.00	2	18
4	0.34	6.00	2	25
6	0.36	6.00	2	36
8	0.38	6.00	2	56
10	0.40	6.00	2	70
12	0.42	6.00	2	86
16	0.50	6.00	2	164

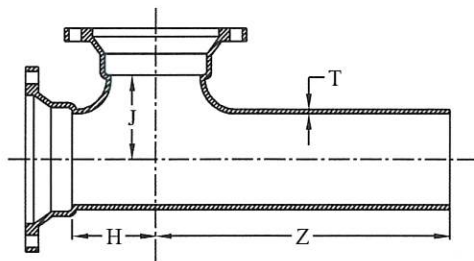


**MJ X PE CUTTING IN SLEEVE
WITH OVER SIZE GLAND***

SIZE	T	T1	A	L	L1	Wt.
4	0.36	0.34	4.80	20.00	9.00	50
6	0.38	0.36	6.90	20.00	9.00	62
8	0.40	0.38	9.05	20.00	9.00	90
10	0.42	0.40	11.10	20.00	9.00	105
12	0.47	0.42	13.20	20.00	9.00	128
16	0.54	0.50	17.40	20.00	9.00	275

SLEEVES

SIZE	T	LONG		SHORT	
		L	Wt.	L	Wt.
3	0.33	12.00	18	7.50	13
4	0.34	12.00	20	7.50	17
6	0.36	12.00	33	7.50	28
8	0.38	12.00	46	7.50	38
10	0.40	12.00	62	7.50	49
12	0.42	12.00	76	7.50	56
14	0.47	15.00	140	9.50	111
16	0.50	15.00	170	9.50	123
18	0.54	15.00	200	9.00	160
20	0.57	15.00	255	9.00	195
24	0.61	15.00	335	9.00	255
30	0.66	24.00	640	15.00	500
36	0.74	24.00	925	15.00	725
42	0.82	24.00	1150	15.00	877
48	0.90	24.00	1435	15.00	1406



MJ X PE X MJ TEES*

SIZE	T	H	J	Z	Wt.
6	0.36	5.00	5.00	12.00	57
8	0.38	6.50	6.50	12.50	77

All Dimensions in Inches.
Weights shown are approximate in lbs.

* Not included in AWWA C153.

9.4

Mueller Co.

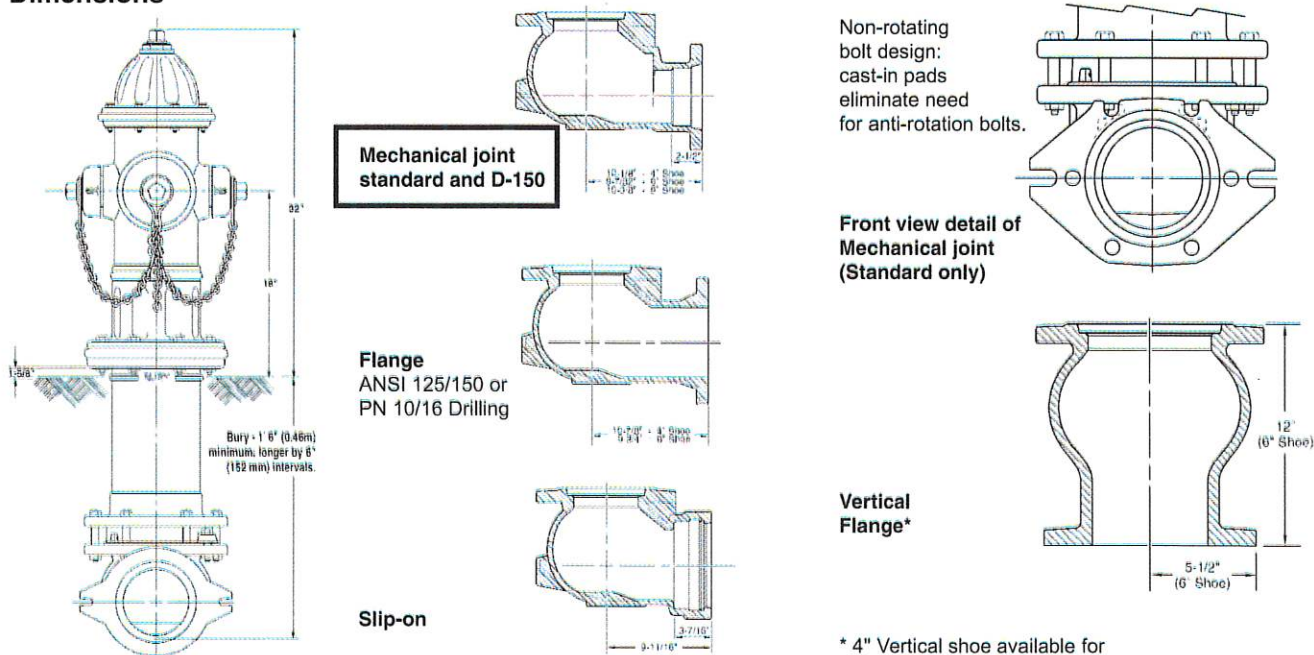
MUELLER® SUPER CENTURION® FIRE HYDRANT

Rev. 12-01

- ❑ **Super Centurion 250™ 3-way catalog numbers**
(approved to UL 262, FM 1120/1130, ANSI/AWWA C502 Standards) -
 - A-421 4-1/2" main valve opening three way (two hose nozzles and one pumper nozzle)
 - A-423 5-1/4" main valve opening three way (two hose nozzles and one pumper nozzle)
- ➔ **Super Centurion 200™ 2-way catalog numbers**
(approved to ANSI/AWWA C502 Standards) -
 - A-420 4-1/2" main valve opening two way (two hose nozzles)
 - A-422 5-1/4" main valve opening two way (two hose nozzles)
 - A-425 5-1/4" main valve opening two way (two pumper nozzles)
- Super Centurion 200™ 1-way catalog number**
(approved to ANSI/AWWA C502 Standards)-
 - A-424 4-1/2" main valve opening one way (one pumper nozzle)
- ❑ 10 year limited warranty on material and workmanship
- ❑ Meets all applicable parts of ANSI/AWWA C502 Standard
- ❑ Post type dry barrel design
- ❑ Dry top design with O-ring sealed oil reservoir
- ❑ Traffic feature with stainless steel safety stem coupling
- ❑ Compression-type main valve closes with pressure for positive seal; it is made of rubber and is conveniently reversible providing a spare for long service life
- ❑ Operating nut available in wide variety of shapes and sizes - **open left** or right
- ❑ Field replaceable hose and pumper nozzles
- ❑ Hose and pumper nozzles have large radius, full flow openings for low friction loss
- ❑ Contoured shoe is designed for full flow
- ❑ Dual bronze drain valves provide effective barrel drainage
- ❑ 250 psig (1723 kPa) maximum working pressure, 500 psig (3447 kPa) static test pressure for 3-way hydrants; 200 psig (1379 kPa) maximum working pressure, 400 psig (2758 kPa) static test pressure for 2-way and 1-way hydrants



Dimensions



SEE PAGE 9.24 FOR ORDERING INSTRUCTIONS

10.8

Mueller Co.

2"-12" MUELLER® A-2360 RESILIENT WEDGE GATE VALVES - M.J. x M.J.

Rev. 12-01

- ☐ Catalog number—
 - A-2360-20** Mechanical joint ends (with mechanical joint unassembled accessories)
 - A-2360-23** Mechanical joint ends (less mechanical joint accessories)
 - A-2360-25** Mechanical joint ends (with transition gaskets)
- ☐ Sizes—2", 3", 4", 6", 8", 10", 12"
- ☐ Meets or exceeds all applicable requirements of ANSI/AWWA C509 Standard and is certified to ANSI/NSF 61
- ☐ Standard mechanical joint ends comply with ANSI/AWWA C111
- ☐ Iron body with nominal 10 mils MUELLER® Pro-Gard™ Fusion Epoxy Coated interior and exterior surfaces
- ☐ Epoxy coating meets or exceeds all applicable requirements of ANSI/AWWA C550 Standard and is certified to ANSI/NSF 61
- ☐ Iron wedge, symmetrical & fully encapsulated with molded rubber; no exposed iron
- ☐ Non-rising stem (NRS)
- ☐ Triple O-ring seal stuffing box (2 upper & 1 lower O-rings)
- ☐ 2" square wrench nut (optional handwheel available)—open left or open right
- ☐ 2"-12" sizes—250 psig (1723 kPa) maximum working pressure, 500 psig (3447 kPa) static test pressure
- ☐ UL Listed, FM Approved: 200 psig (1379 kPa) – 3"-12" sizes



A-2360-20

M.J. accessories
shipped unassembled

Options

See pages 10.34 and 10.35 for more information on Resilient Wedge Gate Valve options

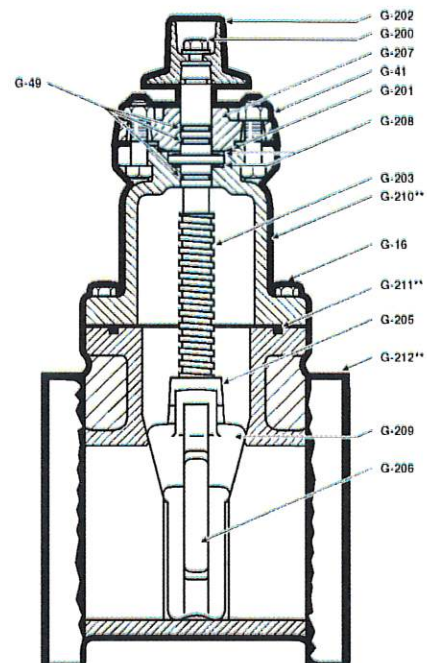
- ☐ Position indicators
- ☐ Stainless steel fasteners: Type 304, Type 316
- ☐ ASTM B98-C66100/H04 stem
- ☐ Handwheel

Resilient wedge gate valve parts

Catalog Part No.	Description	Material	Material standard
G-16	Bonnet Bolts & Nuts	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-41	Stuffing Box Bolts & Nuts	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-49	Stem O-rings (3)	Rubber	ASTM D2000
G-200	Wrench Nut Cap Screw	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-201	Stuffing Box Seal	Rubber	ASTM D2000
G-202	Wrench Nut	Cast Iron	ASTM A126 CL.B
G-203	Stem	Bronze	ASTM B138
G-204	Hand Wheel (not shown)	Cast Iron	ASTM A126 CL.B
G-205	Stem Nut	Bronze	ASTM B62
G-206	Guide Cap Bearings	Celcon	
G-207	Stuffing Box	Cast iron	ASTM A126 CL.B
G-208	Anti-friction Washers (2)	Celcon	
G-209	Wedge, Rubber Encapsulated	Cast Iron*	ASTM A126 CL.B
G-210**	Bonnet	Cast Iron	ASTM A126 CL.B
G-211**	Bonnet O-ring	Rubber	ASTM D2000
G-212**	Body	Cast Iron	ASTM A126 CL.B

* Fully encapsulated in molded rubber with no iron exposed

** Previous to 1999 these parts on 4"-12" valves were designed with a gasket instead of an O-ring and with additional bolt holes (2"-3" sizes retain gasket design affecting these parts). Confirm the type of seal when ordering a replacement gasket or O-ring.



SEE PAGE 10.39 FOR ORDERING INSTRUCTIONS

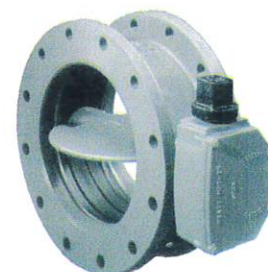
MUELLER® LINESEAL III® BUTTERFLY VALVES (Class 150B) 3" - 48"*

Mueller Co.

11.3

Rev. 9-09

- ❑ Catalog number--
 - 3211-6** Flanged Ends Class 125
 - Sizes--3", 4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36", 42", 48"
 - 3211-20** Mechanical joint ends (with mechanical joint unassembled accessories)
 - Sizes--4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36", 42", 48"
 - 3211-23** Mechanical joint ends (without mechanical joint accessories)
 - Sizes--4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36", 42", 48"
 - 3211-16** Flanged Class 125 by mechanical joint ends (with mechanical joint unassembled accessories)
 - Sizes--6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36"
 - 3211-19** Flanged Class 125 by mechanical joint ends (without mechanical joint unassembled accessories)
 - Sizes--6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36"
 - 3211-41** Flanged Class 125 by slip-on
 - Sizes--12", 16"
 - 3211-38** Slip-on by slip-on
 - Sizes--12", 16"

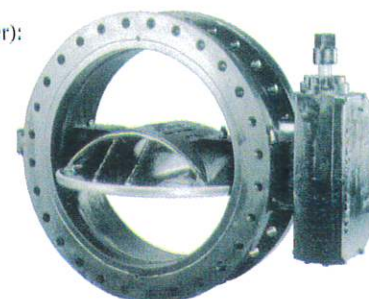


3"-20"

- ❑ Meets or exceeds all applicable requirements of ANSI/AWWA C504 Standard Class 150B; NSF 61 certified

- ❑ Buried service valves: I.D. and O.D. coated
- ❑ Body - Cast Iron ASTM A-126
- ❑ Flanges drilled per ANSI B16.1 Class 125
- ❑ Above ground valves (ordered with either a handwheel, position indicator on the actuator, or lever): minimum 4 mills epoxy coated interior and exterior; meets AWWA C504 standard.
- ❑ Seat-in-body design reduces seat failure due to corrosive buildup in the valve and pipeline
- ❑ Through-disc pinning provides a tight disc-to-shaft pin connection, greatly reducing the possibility of loosening through vibration
- ❑ Disc edge is 316 Stainless Steel
- ❑ Disc - Cast Iron ASTM A-126 (3", 4", 6" Stainless Steel ASTM A-743 CF8M)
- ❑ Symmetrical disc for higher Cv and lower head loss
- ❑ Nonmetallic bearings prevent galvanic corrosion and provides lower coefficient of friction
- ❑ Chevron "V" type packing is self-adjusting to last the life of the valve
- ❑ 3"-24" Standard 304 SS hardware.

OPEN "LEFT" PER COB



24"-48"

Options

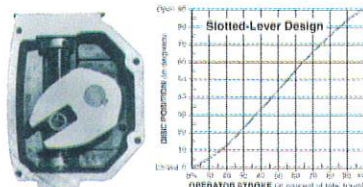
- ❑ MDT Actuator with handwheel or chainwheel and position indicator
- ❑ MDT Actuator with cylinder actuator (also available with manual override, handjack and 4-way solenoid valve)
- ❑ Hand lever for 3"-10" valves
- ❑ 200 psi test
- ❑ EPDM Rubber seat and seals
- ❑ 316 Stainless steel fasteners
- ❑ Additional 4 mills minimum Epoxy interior and/or exterior
- ❑ Holiday testing
- ❑ Ground level position indicator

Standard Buried Service Actuators

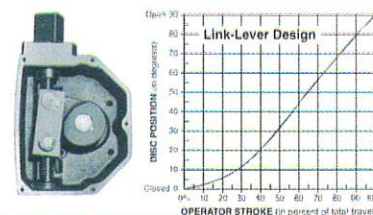
Note: Actuator size subject to change based on actual pipeline conditions.

Valve size	Actuator	Number of turns
3"-12"	MDT-2S	32
14"-16"	MDT-3S	30
18"-24"	MDT-4S	40
30"-36"	MDT-5	44
42"	MDT-5S	136
48"	MDT-6S	215

Slotted-Lever (3"-12")



Link-Lever (14"-48")



*Contact your Mueller representative for valve sizes larger than 48".

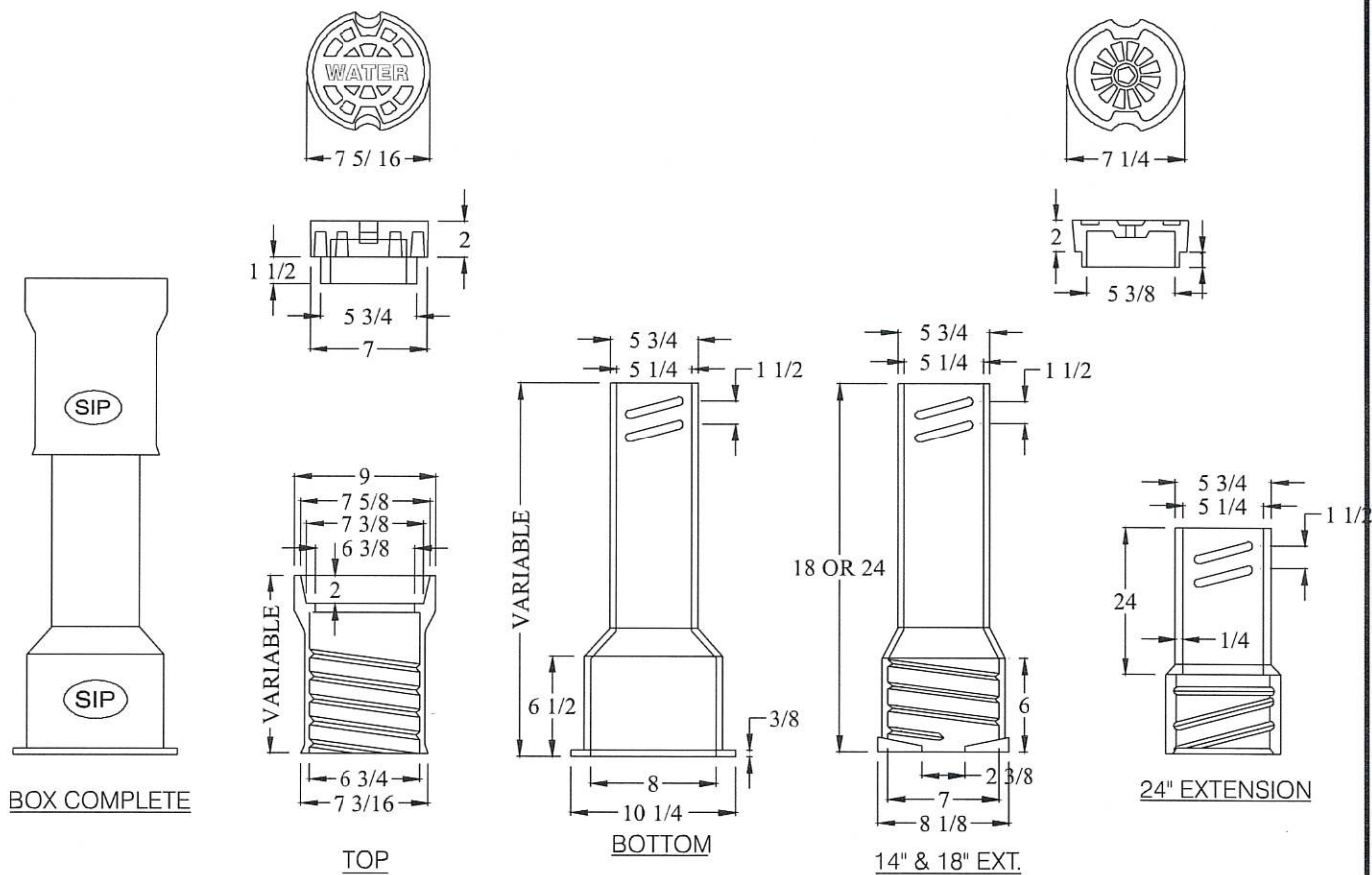
SERAMPORE INDUSTRIES (P) LTD.INC.

SIP

Casting Manufacturer Since 1960

USA Office:
2333 Gulf Terminal
Houston, TX 77023

Phone : 713-923 6111
Fax : 713-923 6114
Email : serampore@aol.com



ITEM	BOX COMPLETE EXT. (INCHES)	TOP LENGTH	BOTTOM LENGTH	CRATE QUANTITY
VS -1015	19-22	10	15	40
VS-1624	27-37	16	24	30
VS-1636	39-50	16	36	25
VS-2636	39-60	26	36	20
VS-2648	51-71	26	48	20
VS-2660	62-82	26	60	20

DESCRIPTION : SCREW TYPE VALVE BOX SERIES

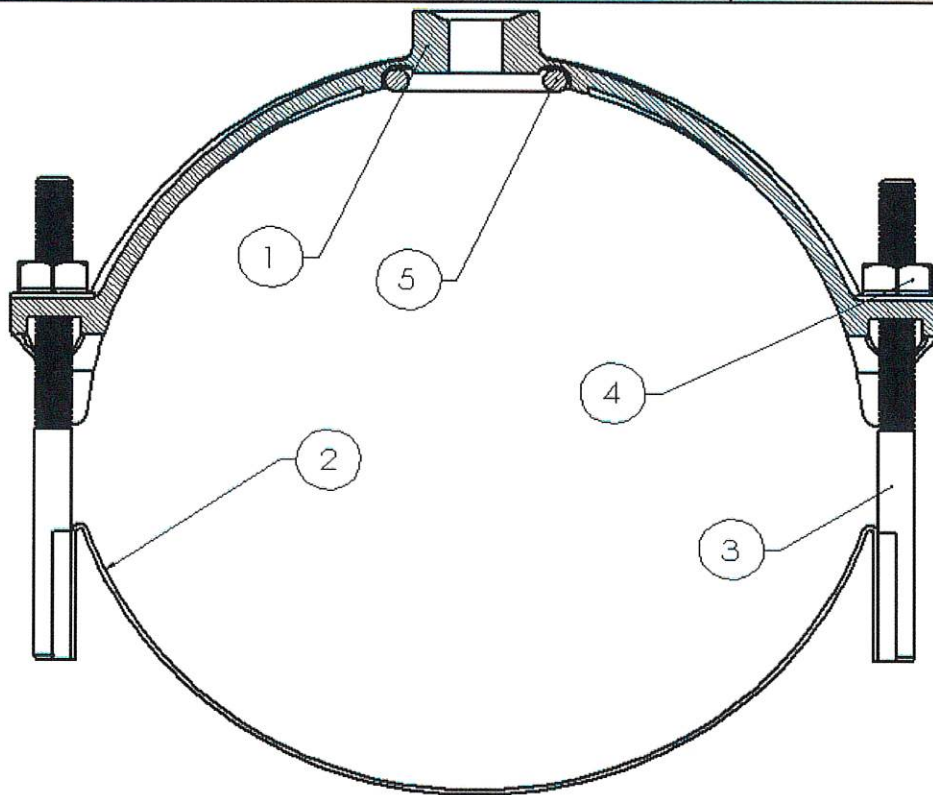
ITEM NO. SCREW TYPE VBX

MATERIAL : CAST IRON,ASTM A-48 CLASS 30B

PATTERN NO. 6000_6112

CC or IP

1. Available in both C-900 Plastic Pipe and standard Steel Pipe sizes.
2. Available in Corporation threads or Iron Pipe threads.
3. Straps are Stainless Steel.
4. Torque to installation instructions attached to saddle.



Parts List:			Sizes Available:	
ID	Part Name	Material	Nom Pipe Size	Tap Size - For CC or IP
1	Service Saddle	Copper Alloy C83600	4"	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"***
2	Straps	Stainless Steel	6"	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"***
3	Screw	Stainless Steel	8"	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"***
4	Nut for Straps	Copper Alloy C83600	10"	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"***
5	O-Ring	Buna-N	12"	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"***
6			14" CI*	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"
7			16" CI*	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"
8				
9				
10				
11				
12				
13			* For C-905 Cast Iron Size PVC	
14			** Only available in IP threads for C-900 Plastic Pipe	

Approvals:

Date:



ADS POTABLE WATER SERVICE TUBING (CTS PE4710)

ADS Potable water service tubing (CTS) is a leader in today's potable water service market. Its flexibility and durability distinguish it from the competition and make it ideal for a variety of applications.

ADS CTS tubing is strong and resistant to many common causes of damage such as vibrations, surface loads and pressure surges.

APPLICATIONS:

Residential & Commercial Water Service
Well/Pump Water Systems
Municipal Service Lines
Farm & Ranch Water Systems

FEATURES:

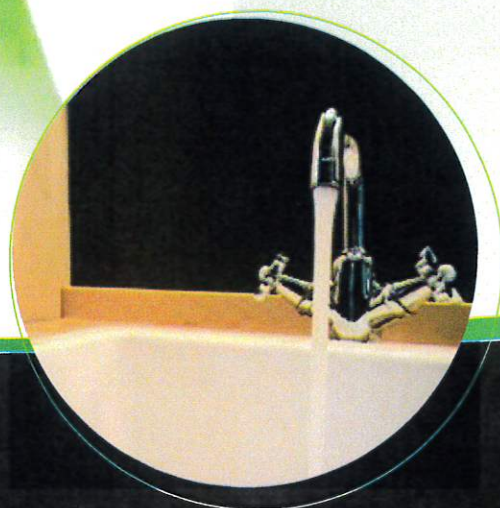
- Material conforms to ASTM D3350 requirements
- Certified to meet NSF 14/61 standard
- Durable plastic material stands the test of time
- Flexibility makes it ideal for a variety of projects
- Strength withstands weather and the human element
- Incremental footage markers printed every 2 feet throughout each coil length
- Light weight
- Chemically resistant
- Consistent outside diameter regardless of wall thickness or pressure rating

BENEFITS:

- Resistant to rot or corrosion
- Fast and easy to install
- Easy installation provides cost-efficiency
- Flexible lengths can be installed in uneven terrain
- Available in many lengths

ADS Service: ADS representatives are committed to providing you with the answers to all your questions, including specifications, and installation and more.

ADS *PolyFlex*



THE MOST **ADVANCED** NAME IN WATER MANAGEMENT SOLUTIONS™



ADS POTABLE WATER SERVICE TUBING (CTS) PIPE SPECIFICATIONS

SCOPE

This specification describes ADS Potable Water Service Tubing (CTS) pipe SDR 9 for use in potable water service applications.

PIPE REQUIREMENTS

ADS potable water service tubing shall meet the requirements of ASTM D2737, AWWA C901 and NSF Standards 14 and 61. Pipe dimensions shall meet Copper Tubing Size (CTS) standards.

MATERIAL PROPERTIES

Tubing material shall be high-density polyethylene conforming to the minimum requirements of cell classification 445574E as defined and described in ASTM D3350. The resin shall have a material designation code of PE4710 by the Plastic Pipe Institute.

DISINFECTION/MAINTENANCE

The active chlorine content of disinfecting solutions shall not exceed 12%. All disinfecting solution must be flushed from all lines within the system. Industry accepted procedures, like ANSI/AWWA C651 *Disinfecting Water Mains*, should be followed for both new and repaired potable water lines.

INSTALLATION

Installation is similar to other flexible tubing/pipe products. Methods including direct bury, plowing or pulling are applicable per local, state or federal guidelines for the application.

	SDR 9 4710 CTS				
	¾"	1"	1¼"	1 ½"	2"
Outside Diameter in (mm)	0.875 ±0.004 (22.2 ±0.10)	1.125 ±0.005 (28.6 ±0.13)	1.375 ±0.005 (34.9 ±0.13)	1.625 ±0.006 (41.3 ±0.15)	2.125 ±0.006 (54.0 ±0.51)
Wall Thickness in (mm)	0.097 +0.010 (2.5 +0.25)	0.125 +0.012 (3.2 +0.30)	0.153 +0.015 (3.9 +0.38)	0.181 +0.018 (4.6 +0.46)	0.236 +0.024 (6.0 +0.61)
Pressure Rating @ 73° F, psi (kPa)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	250 (1724)
Weight gm/ft (gm/m)	46 ±2 (151 ±7)	78 ±3 (256 ±10)	125 ±4 (410 ±13)	162 ±4 (531 ±13)	275 ±5 (902 ±16)

For more information on ADS CTS pipe and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
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THE MOST **ADVANCED** NAME IN WATER MANAGEMENT SOLUTIONS™

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

5.4

Mueller Co.

Rev. 4-01

3/4" - 2" MUELLER® 300™ BALL CORPORATION VALVES



B-25008

MUELLER® 300™ Ball Corporation Valve
Inlet: AWWA taper (MUELLER "CC") thread
Outlet: MUELLER® 110® Conductive Compression Connection for CTS O.D.* tubing

3/4"	3/4" x 1"	1"	1-1/2"	1-1/2" x 2"	2"
------	-----------	----	--------	-------------	----



B-25028

MUELLER® 300™ Ball Corporation Valve
Inlet: AWWA I.P. thread
Outlet: MUELLER® 110® Conductive Compression Connection for CTS O.D. tubing

3/4"	3/4" x 1"	1"	1-1/2"	1-1/2" x 2"	2"
------	-----------	----	--------	-------------	----



B-25009

MUELLER 300 Ball Corporation Valve
Inlet: AWWA taper (MUELLER "CC") thread
Outlet: MUELLER® 110® Compression Connection for IPS PE* pipe

3/4"	3/4" x 1"	1"
------	-----------	----



B-25029

MUELLER 300 Ball Corporation Valve
Inlet: AWWA I.P. thread
Outlet: MUELLER 110® Compression Connection for IPS PE* pipe

3/4"	3/4" x 1"	1"
------	-----------	----



E-25009

MUELLER 300 Ball Corporation Valve
Inlet: AWWA taper (MUELLER "CC") thread
Outlet: MUELLER Pack Joint for IPS PE** pipe
 **Note: 3/4" size only may also be used on PVC

3/4" **	1"	1-1/2"	2"
---------	----	--------	----



E-25029

MUELLER 300 Ball Corporation Valve
Inlet: AWWA I.P. thread
Outlet: MUELLER Pack Joint for IPS PE** pipe
 **Note: 3/4" size only may also be used on PVC

3/4" **	1"	1-1/2"	2"
---------	----	--------	----



V-25056

MUELLER 300 Ball Corporation Valve
Inlet: AWWA taper (MUELLER "CC") thread
Outlet: MUELLER Pack Joint for IPS PVC pipe

1"	1-1/2"	2"
----	--------	----



V-25058

MUELLER 300 Ball Corporation Valve
Inlet: AWWA I.P. thread
Outlet: MUELLER Pack Joint for IPS PVC pipe

1"	1-1/2"	2"
----	--------	----



P-25008

MUELLER 300 Ball Corporation Valve
Inlet: AWWA taper (MUELLER "CC") thread
Outlet: MUELLER Pack Joint Connection for CTS O.D. * tubing

3/4"	3/4"x1"	1"	1-1/2"	1-1/2"x2"	2"
------	---------	----	--------	-----------	----



P-25028

MUELLER 300 Ball Corporation Valve
Inlet: AWWA I.P. thread
Outlet: MUELLER Pack Joint Connection for CTS O.D.* tubing

3/4"	3/4"x1"	1"	1-1/2"	1-1/2"x2"	2"
------	---------	----	--------	-----------	----

*See charts on pages 5.10-5.13 for tubing and pipe

that may be used with these connections.

NOTE: Sizes shown above represent nominal size of inlet and outlet connections. When two sizes are given, the first is size of inlet and the second is size of outlet.

MUELLER Corporation Valves are manufactured and tested in accordance with ANSI/AWWA C800.

BALL ANGLE METER VALVES - 3/4" & 1"

Mueller Co.

8D.1

Rev. 4-01



MUELLER® 300™
Ball Angle Meter Valve
MUELLER 110® Conductive
Compression Connection for CTS
O.D.* tubing x meter swivel nut**
Quarter turn check - lock wing.
360° turn option available by adding
-3 suffix to catalog number.
Example: B-24258-3

B-24258

Catalog size	5/8x3/4R†	5/8x3/4	5/8x3/4x3/4R†
Meter size	5/8	5/8	5/8x3/4, 3/4
Tubing size	3/4	3/4	3/4

Catalog size	5/8x3/4x3/4	5/8x3/4x1	1R†	1
Meter size	5/8x3/4, 3/4	5/8x3/4, 3/4	1	1
Tubing size	3/4	1	1	1



P-24258

MUELLER 300
Ball Angle Meter Valve
MUELLER Pack Joint Connection
for CTS O.D.* tubing x meter
swivel nut** Quarter turn check -
lock wing. 360° turn option available
by adding -3 suffix to catalog number.
Example: P-24258-3

Catalog size	5/8x3/4R†	5/8x3/4	5/8x3/4x3/4R†
Meter size	5/8	5/8	5/8x3/4, 3/4
Tubing size	3/4	3/4	3/4

Catalog size	5/8x3/4x3/4	5/8x3/4x1	1R†	1
Meter size	5/8x3/4, 3/4	5/8x3/4, 3/4	1	1
Tubing size	3/4	1	1	1



MUELLER 300
Ball Angle Meter Valve
MUELLER 110 Conductive
Compression Connection for IPS PE*
pipe x meter swivel nut**
Quarter turn check - lock wing.
360° turn option available by adding
-3 suffix to catalog number.
Example: B-24259-3

B-24259

Catalog size	5/8x3/4x3/4	1
Meter size	5/8x3/4, 3/4	1
Tubing size	3/4	1



B-24266

MUELLER 300 Ball Angle
Meter Valve
MUELLER INSTA-TITE Connection
for IPS O.D.* tubing x meter swivel
nut**
Quarter turn check - lock wing.
360° turn option available by
adding -3 suffix to catalog number.
Example: B-24266-3

Catalog size	5/8x3/4x3/4	1
Meter size	5/8x3/4, 3/4	1
Tubing size	3/4	1

Note: Two-piece factory assembly



B-24267

MUELLER 300 Ball Angle
Meter Valve
MUELLER INSTA-TITE Connection
for CTS O.D.* tubing x meter swivel
nut**
Quarter turn check - lock wing.
360° turn option available by adding
-3 suffix to catalog number.
Example: B-24267-3

Catalog size	5/8x3/4x3/4	1
Meter size	5/8x3/4, 3/4	1
Tubing size	3/4	1

Note: Two-piece factory assembly

8D-VALVES/CHECKS

* See charts on pages 8D.15 and 8D.16 for tubing and pipe that can be used with this connection.

** Meter swivel nuts are regularly furnished with a saddle feature to aid in meter installation and removal. A plain swivel nut is available as an option by adding a suffix of -1 to the catalog number.

† The "R" indicates this valve has a reduced port. Port size is one nominal size smaller than the valve inlet/outlet

MUELLER Valves and Couplings are manufactured and tested in accordance with ANSI/AWWA C800.

Rev. 9-09 Shaded area indicates changes

**H-15381**

Service tee
MUELLER 110 Conductive
Compression Connection for
CTS O.D.* tubing-all ends

3/4"	3/4"x3/4"x1"	1"	1"x1"x3/4"	1-1/2"x1-1/2"x3/4"
1-1/2"x1-1/2"x1"	1-1/2"x1-1/2"x1-1/2"	2"x2"x3/4"		
2"x2"x1"	2"x2"x2"			

**P-15381**

Service tee
MUELLER Pack Joint
Connection for CTS O.D.*
tubing-all ends

3/4"	3/4"x3/4"x1"	1"	1"x1"x3/4"	1-1/2"	2"
------	--------------	----	------------	--------	----

**H-15444**

Service tee
MUELLER 110 Conductive
Compression Connection for
IPS* PE tubing-all ends

3/4"

**E-15444**

Service tee
MUELLER Pack Joint
Connection for IPS PE*
tubing-all ends

3/4"

**H-15385**

Service tee
M.I.P. thread x M.I.P. thread x
MUELLER 110 Conductive
Compression Connection for
CTS O.D.* tubing

3/4"	1"	1"x1"x3/4"
------	----	------------

**P-15385**

Service tee
M.I.P. thread x M.I.P. thread x
MUELLER Pack Joint
Connection for CTS O.D.* tubing

3/4"	3/4"x3/4"x1"	1"
------	--------------	----

**H-15392**

Service tee
F.I.P. thread x F.I.P. thread x
MUELLER 110 Conductive
Compression Connection for
CTS O.D.* tubing

3/4"	1"
------	----

**P-15393**

Service tee
F.I.P. thread x F.I.P. thread x
MUELLER Pack Joint
Connection for CTS O.D.*
tubing

3/4"	1" ±
------	------



Service tee sizing - sizes of ends are listed in the order shown
above - when all three end sizes are the same, only one size is listed.

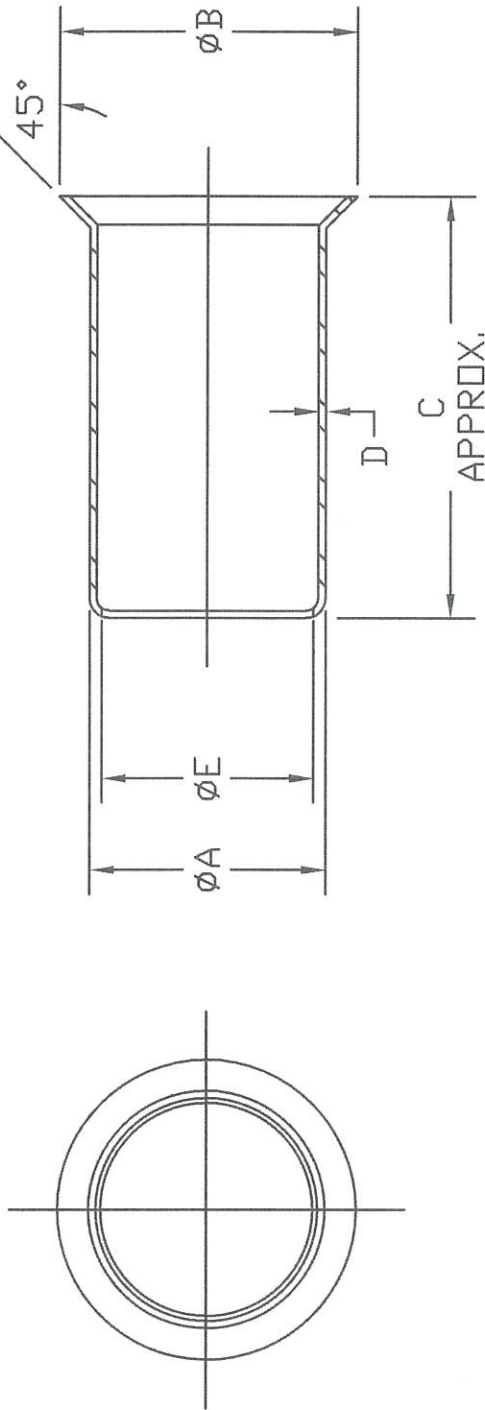
‡Requires minimum ordering quantity. Contact MUELLER Customer Service Center for minimum ordering requirements and availability.

* See page 6.29 for tubing that can be used with this connection.

MUELLER Service Tees are manufactured and tested in accordance with ANSI/AWWA C800.

"PLASTIC" TUBING			"INSERT"				
NOM SIZE	MIN I.D.	WALL THKN	"A"	"B"	"C"	"D"	"E"
3/4"	.657	.107 .097	.657 .649	.830 .810	1.438	.033 .025	.567 .523
1"	.847	.137 .125	.847 .839	1.078 1.031	1.750	.033 .025	.757 .713
1 1/2"	1.361	.132 .120	1.221 1.213	1.564 1.516	2.172	.041 .033	1.115 1.071
2"	1.361	.132 .120	1.599 1.591	2.064 2.016	2.297	.041 .033	1.493 1.449

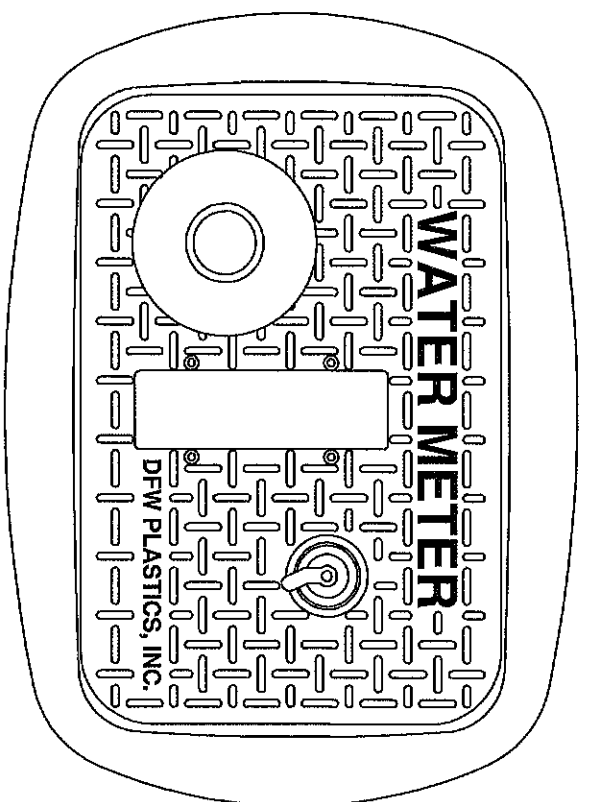
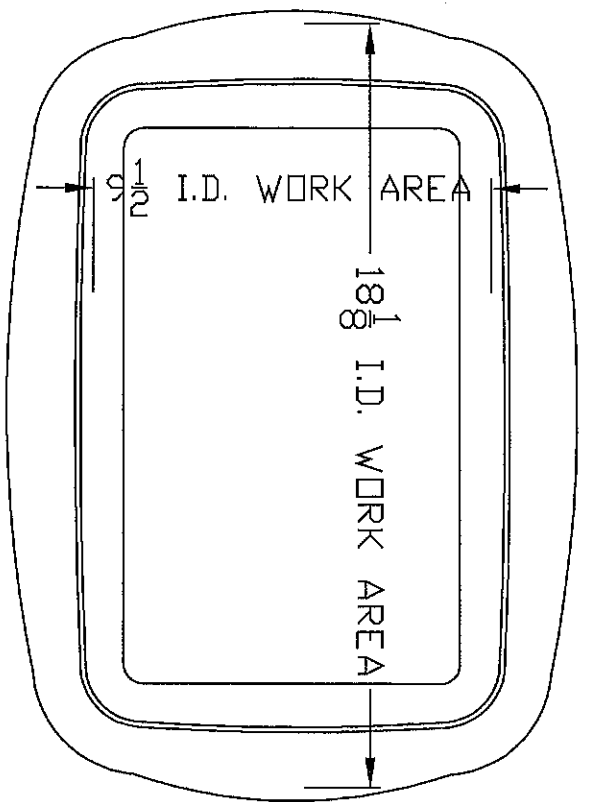
JJ/MRKTNG



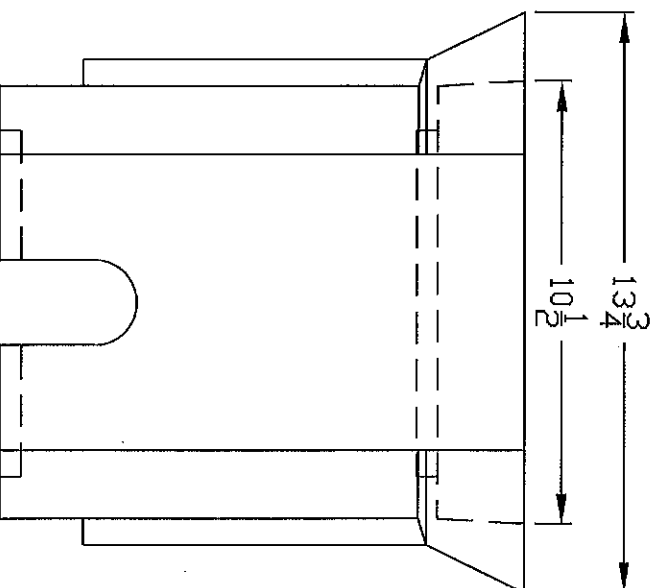
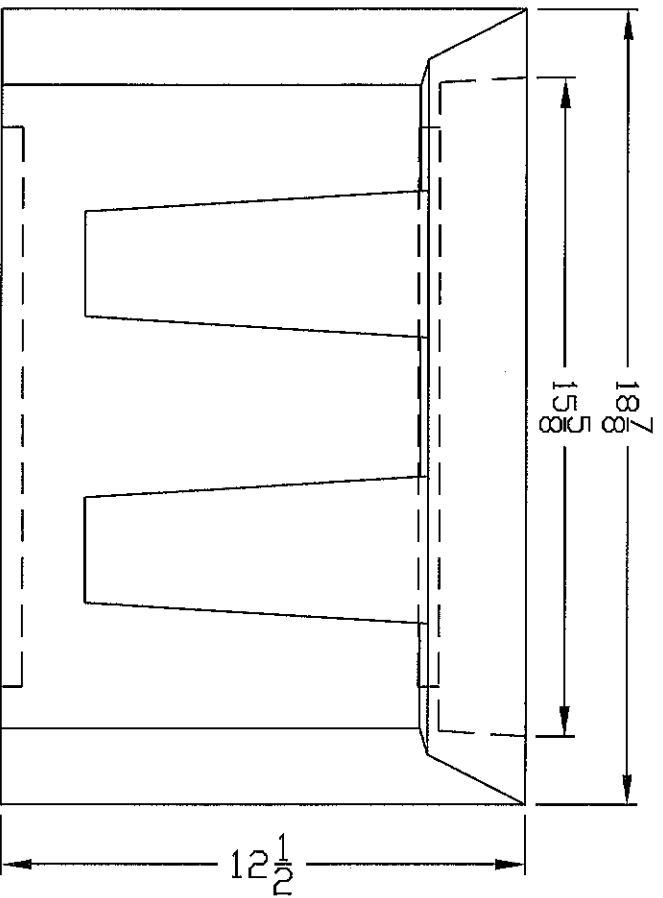
FILEPATH: PROD-ENG\JJ\SUBMITTALS\J2807

JAMES JONES CO.		UNLESS OTHERWISE NOTED		THIRD ANGLE PROJECTION	
SURFACE PREPARATION: BREAK CORNER(S) ---- .000		SURFACE FINISH -- XX RMS		REF. No.	
TOLERANCE(S): LINEAR ---- ± .000		ANGULAR ---- ± 0°00'		SCALE FULL	
STK No:		DATE		BY	
MAT'L: STAINLESS STEEL TUBING ASTM A269 TYPE 304		DATE		BY	
DESCR.		DATE		BY	
INSERTS FOR CTS SG PLASTIC TUBING		DATE		BY	
PART NUMBER J2807		DATE		BY	
REV	ECR	DESCRIPTION	DATE	BY	CHKR

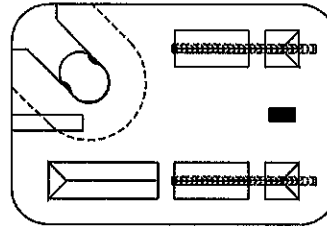
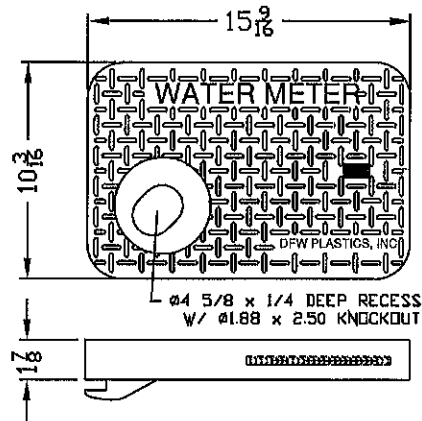
WAS EXP NO:



DFW36C-RKSBSMTR

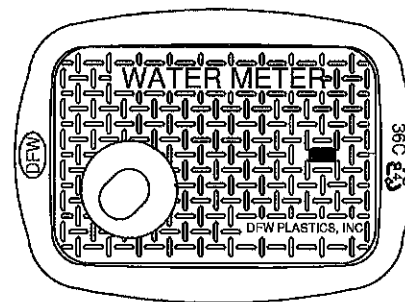
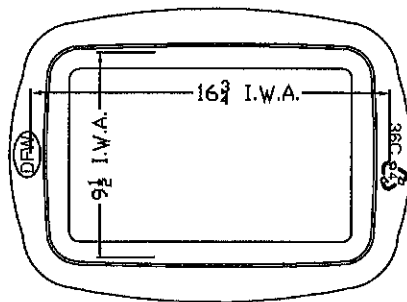


DFW36C-BODY

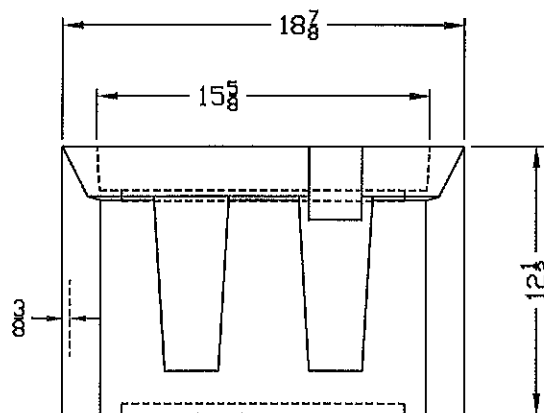


DFW36C-1EAF-LID

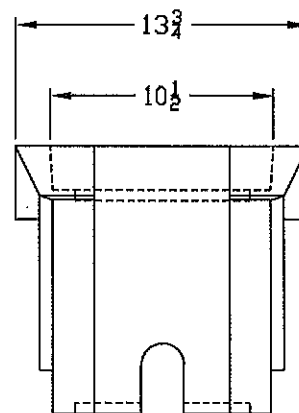
LID KEY	
1	BLACK COLOR
E	1/2" REBAR
A	AMR SLIDE MOUNT
F	KNOCKOUT



DFW36C-12-1EAF



DFW36C-12-BODY



NOTES

- 1) DIM'S ± 1/8" U.N.O.
- 2) LID MATERIAL: HDPE
- 3) BODY MATERIAL: LLDPE
- 4) WALL THICKNESS: 3/8" ± 5%
- 5) I.W.A. = INSIDE WORK AREA

DFW PLASTICS, INC. ENGAGES IN ONGOING RESEARCH AND DEVELOPMENT TO IMPROVE AND ENHANCE ITS PRODUCTS. THEREFORE, DFW PLASTICS, INC. RESERVES THE RIGHT TO CHANGE PRODUCT OR SYSTEM SPECIFICATIONS WITHOUT NOTICE.



DFW PLASTICS, INC.
PO BOX 648
BEDFORD, TEXAS 76095
(817) 439-3600
(817) 439-3700 (f)
www.dfwplasticsinc.com

DFW36C-12-1EAF

CREATED: 09/13/2019

UPDATED: 09/13/2019

ACCEPTED: JMc

DRAWN BY: RMc

PLOT SCALE: 1:12

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Regency Wire & Cable

830 South West Street, Sikeston MO 63801

800-876-3020 / 573-472-2990 / FAX 573-471-3134



PE Wire

Description:

Regency's single conductor PE Wire is manufactured for the purpose of **direct burial** power wire and **tracer wire applications** in accordance with the National Electric Code.

Conductor construction is soft drawn bare copper meeting the requirements of ASTM Specification B-3. Gauge sizes 14, **12** and 10 awg are solid conductors.

The insulation is a low density, high molecular weight polyethylene for systems applications of up to 600 volts meeting the requirements of ASTM Specification D-1248.

The PE Sprinkler Systems Wire is constructed in accordance with **Underwriters Laboratories, Inc.**

Application:

Suitable for use as power and control wire for irrigation systems.

Construction:

Conductor: Soft drawn bare copper (ASTM Spec. B-3).
Solid (14 awg - 10 awg)

Insulation: Polyethylene (PE)

Temperature: 75 C

Voltage: **600 volts**

BLUE

Conductor Size	Insulation Thickness
14 awg thru 10 awg	.045

Material must be able to pass the following tests without showing signs of degradation:

Cold Bend – The insulation shall not show any cracks when sample is bent around a 3X mandrel after being subjected to -25 C for four (4) hours.

Electrical - AC test voltage, 60 seconds at 5000 volts.

Mechanical Water Absorption – Insulation shall not absorb more than 25 mg. mass of water per square inch.

Sunlight Resistance – Samples conditioned for 300 hours of carbon-arc or xenon-arc exposure.

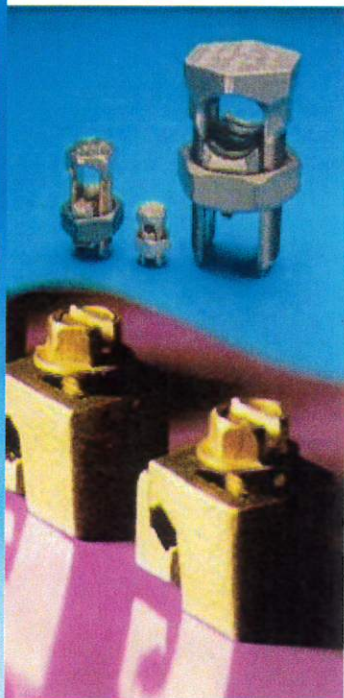
Temperature Range -55 C - +60 C



CONNECTING YOUR TOMORROW.™

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PRODUCT QUICK SEARCH:

Penn Union Search:

Search

Competitor Search:

Search

**S-8 - Copper Alloy Split Bolt Connector****For copper and copperweld wires**

- The most versatile split bolt on the market
- Manufactured in the USA

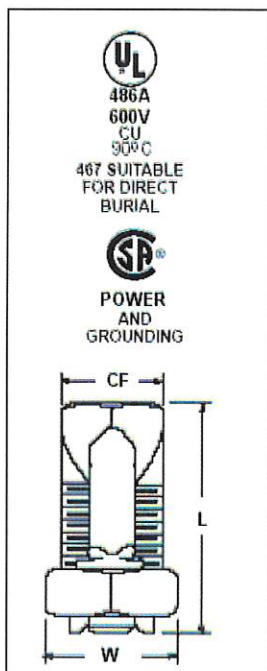
Made from high strength copper alloy.

For 2 conductors.
Highly resistant to corrosion and season cracking.

Under torque this design provides high contact pressure between conductors.

Conductor Type	Range of Equal Run and Tap	Wire Diameter Range (in.)
Copper	16 Str. - 8 Str.	.057 - .145

Product Drawing:



Click to expand.

Additional Details

Min. Tap with One Max.	16 Str.
Main:	
UL Listing:	CU 486A Power & 467 Grounding / Suitable For Direct Burial
CSA Listing:	C22.2 No. 65 Power & No. 41 Grounding / Suitable For Direct Burial
RUS ACCEPTED:	Yes

Approximate Dimensions

CF Across Flats (in.)	.38
L (in.)	.84
W (in.)	.50
Torque (in./lb.)	80

ISO 9001
Registered

© 2016 Penn-Union Corp. • 229 Waterford Street • Edinboro, PA 16412
Phone: 814-734-1631 • Fax: 814-734-4946 • info@penn-union.com

Designed & Developed by O-Web Technologies, Ltd.



May 22, 2023

Daryl Haby
Core and Main

Daryl,

This letter is in response to your inquiry for information regarding the S8 split bolt manufactured by Penn Union. The split bolt is made of three components. The main body and the nut are a bronze alloy, and the pressure bar is made of copper. Please let me know if you have any further questions.

Regards,

Nick King
Manager – Custom
Product Engineering
Penn-Union Corp.
229 Waterford Street
Edinboro, PA 16412-2398
Direct Phone: (814) 734-8324
E-mail: nking@penn-union.com



SnakePit's exclusive Encapsulated Magnet System makes locating your access boxes easier by amplifying the ferromagnetic signal!

CONNECT IT, COVER IT, FORGET ABOUT IT!!!

The only magnetized tracer box, which effectively amplifies the ferromagnetic signal. The result is clear — hear it for yourself. The SnakePit is easier to find, every time.

ANTI-CORROSION TECHNOLOGY

Corrosion and oxidation of wires are never a problem with the SnakePit. Each Magnetized Tracer Box features a corrosion-resistant brass wire lug and a wax pad to cover wire connections after installation. The wax pad blocks out moisture, is reusable and conforms to irregular surfaces. Connect it, cover it and forget about it - your tracer wire connection will be secure and protected by the SnakePit.

EASE OF LOCATEABILITY

The encapsulated magnet system amplifies the signal for the operator to quickly locate a buried test box and save hours of unproductive searching.

DIRECT CONNECTION

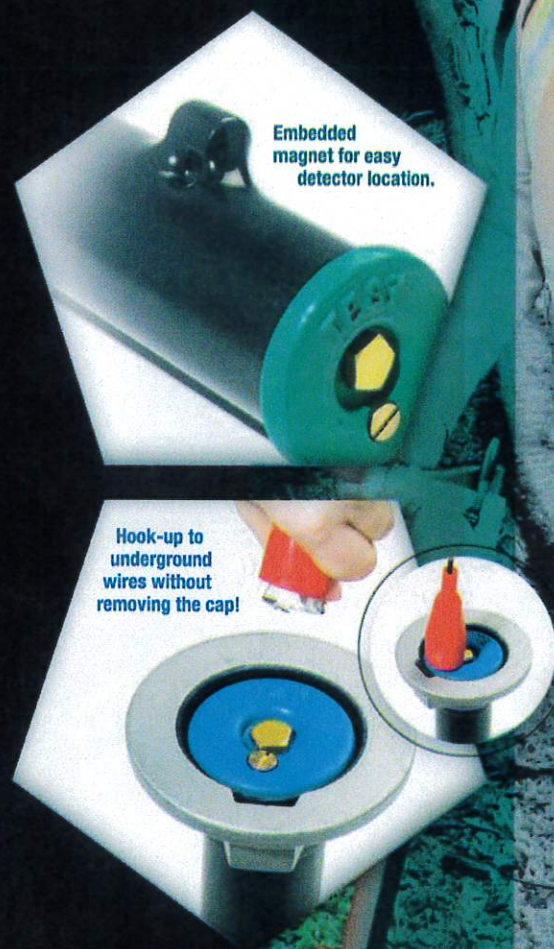
Time is money. Thanks to SnakePit's Direct Connection, you will never have to remove the cover to access your tracer wire. Simply hook-up your transmitter directly to the brass connection lug.

COLOR-CODED COVER

SnakePit's Cast Iron covers are color-coded according to American Public Works Association (APWA) standards. What does that mean for you? Instant identification of the utility you are tracing.

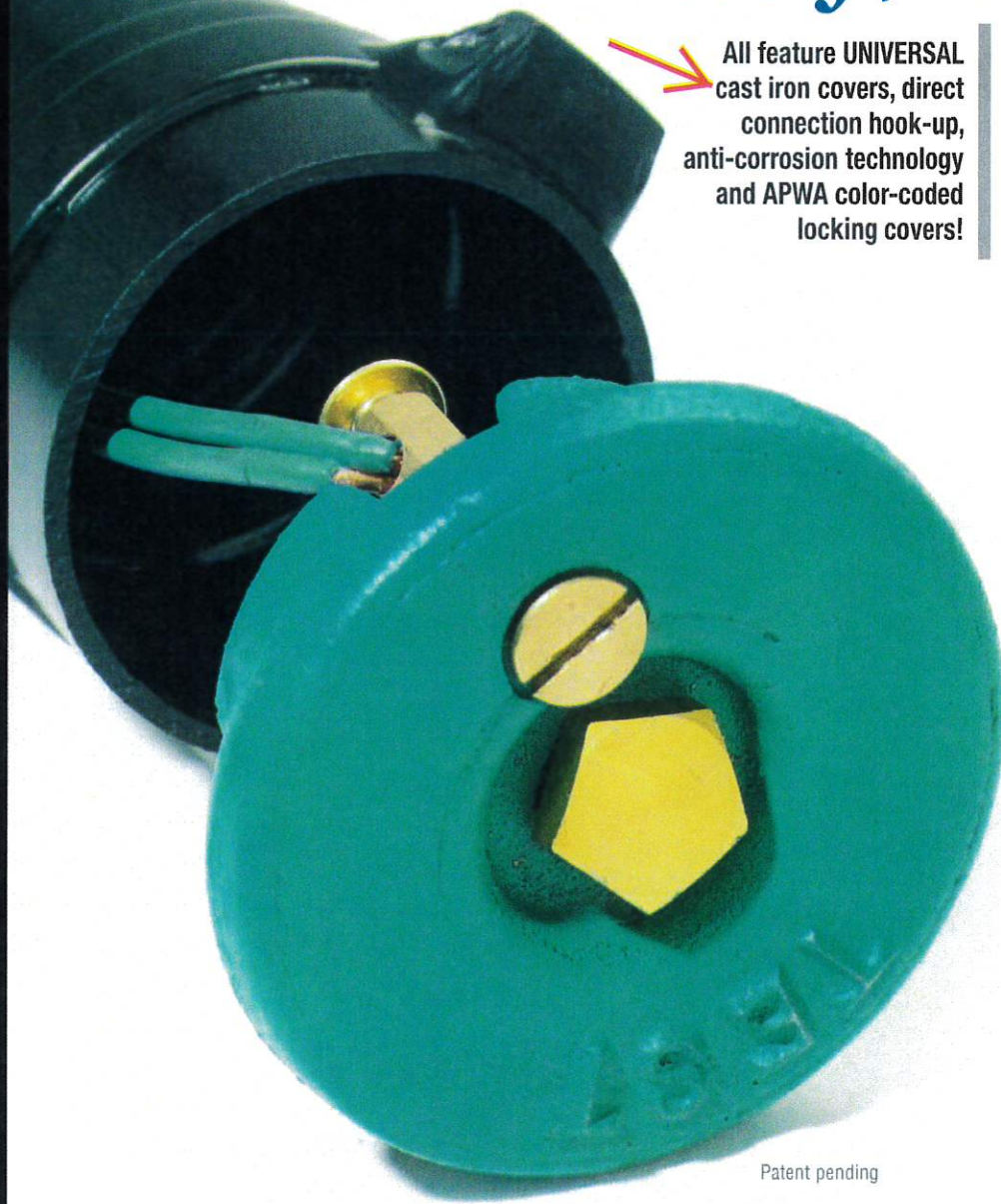
LOCKING COVER ELIMINATES TAMPERING

The SnakePit also features a tamper resistant pentagon locking nut on the cover that stop would-be tampering from creating unnecessary problems.



There is a SnakePit Magnetized Tracer Box for *every* job.

All feature **UNIVERSAL**
cast iron covers, direct
connection hook-up,
anti-corrosion technology
and APWA color-coded
locking covers!



Patent pending

LITE DUTY BOX

This SnakePit is designed for light traffic areas such as yards and ditches. Also perfect for retrofitting existing sights.

ROADWAY BOX

The toughest and strongest of all SnakePits. With its 5" top flange it can take the constant beating of heavy traffic.

CONCRETE/ DRIVEWAY BOX

Complete with a 6" top flange, this SnakePit is ideal for all concrete/driveway applications.

LITE DUTY XL BOX

All the benefits of the Light Traffic but with a Posi-Lock pull out restraint & anti-sink flange adaptor. Perfect for all new construction where shifting soil may be an issue.

APWA UNIFORM COLOR CODE

RED	— [electric]
YELLOW	— [gas]
ORANGE	— [communication]
BLUE	— [potable water]
GREEN	— [sewer]
PURPLE	— [reclaimed water]



Ground-level tracer boxes have never been this efficient! Find out today why SnakePit is the next generation in tracer box technology!

TO LEARN MORE, PLEASE VISIT:
copperheadwire.com
PHONE: 1.877.726.5644
FAX: 1.763.271.3694

Copperhead Industries, LLC
P.O. Box 1081
Monticello, MN 55362



Made in the USA



Detectable Warning Tape Product Specifications

Description:

Detectable warning tape provides for easy buried pipeline detection, below ground identification and warning. The three layer detectable tape consists of a .35 mil (.00035") solid aluminum foil core with .90 mil of clear film and a third layer of 3.75 mil virgin polyethylene. The solid foil core is encased between a 100% virgin polyethylene film and a clear protective film that not only allows a full view of the foil but the printed message as well. The foil provides for ease in detecting utility lines utilizing either a conductive or inductive method with utility locate equipment.

Standard Size and Packaging:

• 2"x1000'	12 rolls per case	6" – 18" maximum burial depth
• 3"x1000'	8 rolls per case	6" – 28" maximum burial depth
• 4"x1000'	8 rolls per case	6" – 28" maximum burial depth
• 6"x1000'	4 rolls per case	6" – 36" maximum burial depth
• 12"x1000'	2 rolls per case	6" – 45" maximum burial depth

Physical Properties:

• Thickness Overall	5 mil	ASTM D-2103
• Thickness Foil Core	0.35 mil	ASTM D-2103
• Elongation	80% MD, 150% TD	ASTM D-882
• Tensile	15,000 PSI	ASTM D-882
• Density	1.09 g/cm ³	ASTM D-792-66
• Printability	≥ 45 Dynes	ASTM D-2578-08

Legends:

- Blue Caution Buried Water Line Below
- Blue Caution Buried Geothermal Line Below
- Brown Caution Buried Non-Potable Water Line Below
- Brown Caution Buried Force Main Line Below
- Green Caution Buried Sewer Line Below
- Green Pressurized Wastewater Below
- Orange Caution Buried Fiber Optic Line Below
- Orange Caution Buried Telephone Line Below
- Orange Caution Buried Oil Line Below
- Red Caution Buried Electric Line Below
- Red Caution Buried High Voltage Cable Below
- Yellow Caution Buried Gas Line Below
- Purple Caution Buried Reclaimed Water Line Below



V0118

Detectable Marking Tape - 5 Mil			Non-Detectable Marking Tape - 4 Mil			
Part #	Color	Size	Imprint	Part #	Color	Size
DT2 BW	Blue	2" x 1000'	CAUTION BURIED WATER LINE BELOW	ND3 BW	Blue	3" x 1000'
DT3 BW	Blue	3" x 1000'		ND6 BW	Blue	6" x 1000'
DT6 BW	Blue	6" x 1000'		ND12 BW	Blue	12" x 1000'
DT12 BW	Blue	12" x 1000'	CAUTION BURIED SEWER LINE BELOW			
DT2 GS	Green	2" x 1000'		ND3 GS	Green	3" x 1000'
DT3 GS	Green	3" x 1000'		ND6 GS	Green	6" x 1000'
DT6 GS	Green	6" x 1000'	CAUTION BURIED GAS LINE BELOW	ND12 GS	Green	12" x 1000'
DT12 GS	Green	12" x 1000'				
DT2 YG	Yellow	2" x 1000'		ND3 YG	Yellow	3" x 1000'
DT3 YG	Yellow	3" x 1000'	CAUTION BURIED ELECTRIC LINE BELOW	ND6 YG	Yellow	6" x 1000'
DT6 YG	Yellow	6" x 1000'		ND12 YG	Yellow	12" x 1000'
DT2 RE	Red	2" x 1000'		ND3 RE	Red	3" x 1000'
DT3 RE	Red	3" x 1000'	CAUTION BURIED RECLAIMED WATER LINE BELOW	ND6 RE	Red	6" x 1000'
DT6 RE	Red	6" x 1000'		ND12 RE	Red	12" x 1000'
DT2 PRW	Purple	2" x 1000'				
DT3 PRW	Purple	3" x 1000'	CAUTION BURIED STORM DRAIN BELOW			
DT6 PRW	Purple	6" x 1000'		ND3 GSTDR	Green	3" x 1000'
DT2 GSTDR	Green	2" x 1000'		ND6 GSTDR	Green	6" x 1000'
DT3 GSTDR	Green	3" x 1000'	CAUTION BURIED FIBER OPTIC CABLE BELOW			
DT6 GSTDR	Green	6" x 1000'		ND3 OFO	Orange	3" x 1000'
DT2 OFO	Orange	2" x 1000'		ND6 OFO	Orange	6" x 1000'
DT3 OFO	Orange	3" x 1000'	CAUTION BURIED TELEPHONE CABLE BELOW			
DT6 OFO	Orange	6" x 1000'		ND3 OT	Orange	3" x 1000'
DT2 OT	Orange	2" x 1000'		ND6 OT	Orange	6" x 1000'
DT3 OT	Orange	3" x 1000'	CAUTION BURIED FORCE MAIN BELOW			
DT6 OT	Orange	6" x 1000'		ND3 GFM	Green	3" x 1000'
DT2 GFM	Green	2" x 1000'		ND6 GFM	Green	6" x 1000'
DT3 GFM	Green	3" x 1000'	CAUTION BURIED FORCE MAIN BELOW	ND12 GFM	Green	12" x 1000'
DT6 GFM	Green	6" x 1000'				
DT2 BRFM	Brown	2" x 1000'				
DT3 BRFM	Brown	3" x 1000'				
DT6 BRFM	Brown	6" x 1000'				

Super Stretch Non-Detectable - 6 Mil			Woven Reinforced			
Part #	Color	Size	Imprint	Part #	Color	Size
SS3X1 OFO	Orange	3" x 1000'	CAUTION BURIED FIBER OPTIC CABLE BELOW	WR3X1 OFO	Orange	3" x 1000'
SS3X6 OFO	Orange	3" x 6000'		WR6X1 OFO	Orange	6" x 1000'
SS6X1 OFO	Orange	6" x 1000'		WR3X3 OFO	Orange	3" x 3000'
SS6X6 OFO	Orange	6" x 6000'		WR6X3 OFO	Orange	6" x 3000'
			CAUTION CAUTION CAUTION	WR3X1 CTN	Yellow	3" x 1000'
			CAUTION BURIED GAS LINE BELOW	WR3X1 YG	Yellow	3" x 1000'
			CAUTION BURIED ELECTRIC LINE BELOW	WR3X1 RE	Red	3" x 1000'

Barricade Tape			
Part #	Color	Size	Imprint
BY3 CTN	Yellow	3" x 1000'	CAUTION CAUTION
BY3 X300 CTN	Yellow	3" x 300'	CAUTION CAUTION
BY3 CTN DNE	Yellow	3" x 1000'	CAUTION DO NOT ENTER
BY3 CTN CONS	Yellow	3" x 1000'	CAUTION CONSTRUCTION AREA
BY3 PL LN DNC	Yellow	3" x 1000'	POLICE LINE DO NOT CROSS
BY3 CR SC DNC	Yellow	3" x 1000'	CRIME SCENE DO NOT CROSS
BY3 SHF LN DNC	Yellow	3" x 1000'	SHERIFF'S LINE DO NOT CROSS
BY3 FIR LN DNC	Yellow	3" x 1000'	FIRE LINE DO NOT CROSS
BR3 DGR	Red	3" x 1000'	DANGER DANGER
BR3 DGR DNE	Red	3" x 1000'	DANGER DO NOT ENTER



Model 350XL

Double Check Valve Assembly

Application

Ideal for use where Lead-Free* valves are required. Designed for installation on potable water lines to protect against both backsiphonage and backpressure of polluted water into the water supply. Assembly shall provide protection where a potential health hazard does not exist.

Standards Compliance (Horizontal & Vertical)

- ASSE® Listed 1015
- IAPMO® Listed
- CSA® Certified B64.5
- AWWA Compliant C510
- Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California

- UL® Classified (less shut-off valves only)
- C-UL® Classified (less shut-off valves only)
- Certified to NSF/ANSI 372* by IAPMO R&T
- NSF® Listed-Standard 61, Annex G*

*(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

Materials

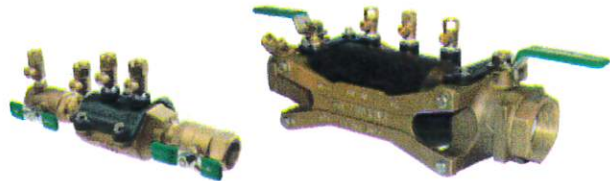
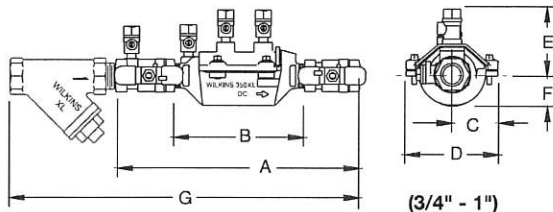
Main valve body	Cast Bronze, ASTM B 584 (3/4-1")
Housing	Reinforced Nylon
Fasteners	Stainless Steel, 300 Series
Elastomers	Silicone (FDA Approved)
	Buna Nitrile (FDA Approved)
Internals	Delrin, NSF Listed
Springs	Stainless Steel, 300 series
Ball Valves	Cast Bronze, ASTM B 584
Struts	Stainless Steel, 300 Series

Features

Sizes: 3/4", 1", 1-1/4", 1-1/2", 2"

Maximum working water pressure
Maximum working water temperature
Hydrostatic test pressure
End connections Threaded

175 PSI
180°F
350 PSI
ANSI B1.20.1



Options

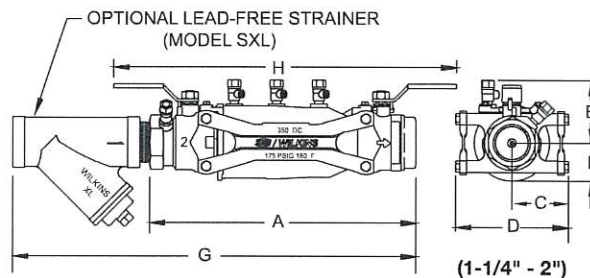
(Suffixes can be combined)

- ☒ - with full port QT ball valves (standard)
- ☐ L - less ball valves, male pipe thread
- ☐ S - with Model SXL lead-free bronze "Y" type strainer
- ☐ SH - with stainless steel handles
- ☐ FT - with integral male 45° flare SAE test fitting
- ☐ BOF - with blow out / flush fitting
- ☐ PF - with Z-Bite™ push fit connections* (1/2"-1" only)
- ☐ PR - with Z-Press™ press fit connections*

*Fittings ship in box with valve and must be threaded into valve by hand on site.

Accessories

- ☐ Repair kit
- ☐ Thermal expansion tank (Model XT)
- ☐ QT-SET Quick Test Fitting Set
- ☐ Winterizing Blow out/Flush fitting (RK34-350BOF, RK1-350BOF or RK114-350-375BOF)



Dimensions & Weights (do not include pkg.)

MODEL 350 SIZE	DIMENSIONS (approximate)																WEIGHT			
	A		B LESS BALL VALVES		C		D		E		F		G		H		LESS BALL VALVES		WITH BALL VALVES	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg	lbs.	kg
3/4	20	11	279	65/8	168	1 7/8	48	3 3/4	95	3	76	1 1/4	32	15 1/8	384	11 7/16	2.3	1.0	4.3	2.0
1	25	12 1/4	311	7	178	2 1/16	52	4 1/8	105	3 1/4	83	1 3/4	45	17	431	12 5/16	3.0	1.4	6.0	2.7
1-1/4	32	14 7/8	378	14 3/8	367	3 3/8	86	6 3/4	171	3 3/4	95	2 1/4	57	20 1/2	521	18 1/2	17.2	7.8	19	8.6
1-1/2	40	15 1/4	387	14 3/8	367	3 3/8	86	6 3/4	171	3 3/4	95	2 1/4	57	22	559	20 1/4	17	7.7	20	9.1
2	50	16	406	14 3/8	367	3 3/8	86	6 3/4	171	3 3/4	95	2 1/4	57	24	609	20 3/4	18	8.2	22	10

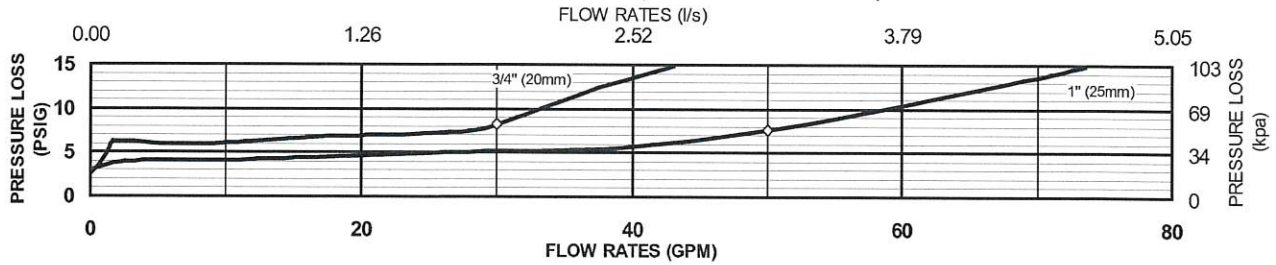
Zurn Industries, LLC | Wilkins
1747 Commerce Way, Paso Robles, CA U.S.A. 93446 Ph. 855-663-9876, Fax 805-238-5766
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3544 Nashua Drive, Mississauga, Ontario L4V 1L2 Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. E
Date: 10/14
Document No. BF-350XL
Patent No. 7,434,593, 7,784,483, & 7,905,250
Product No. Model 350XL

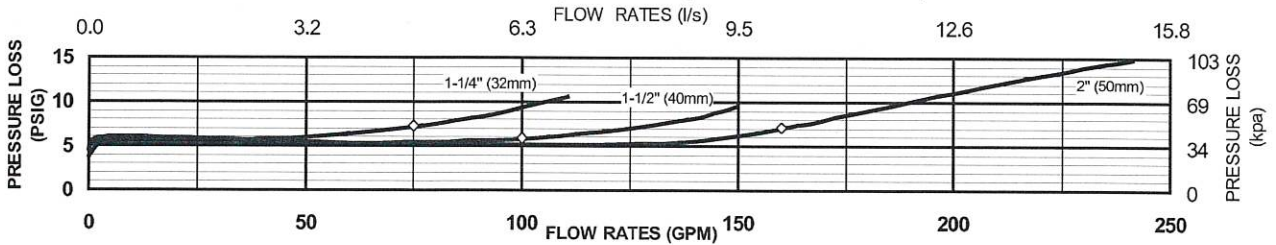
Flow Characteristics

◇ Rated Flow (established by approval agencies)

MODEL 350XL 3/4" & 1" (STANDARD & METRIC)



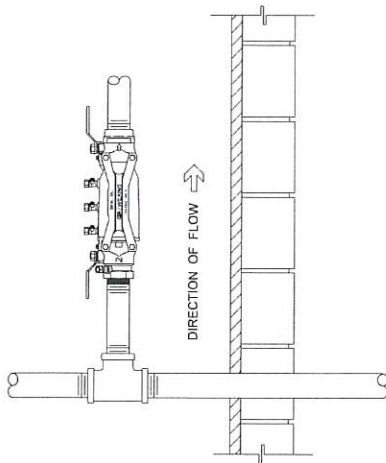
MODEL 350XL 1-1/4", 1-1/2" & 2" (STANDARD & METRIC)



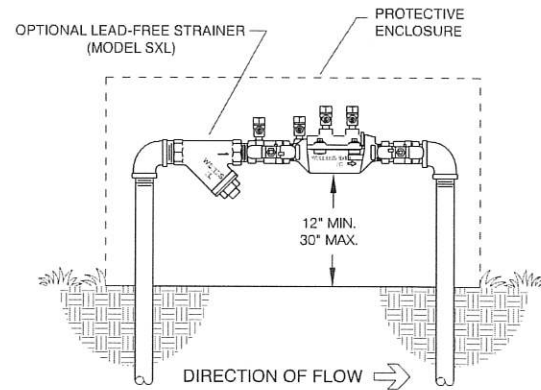
Typical Installation

Local codes shall govern installation requirements. To be installed in accordance with the manufacturers' instructions and the latest edition of the Uniform Plumbing Code. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) and a maximum of 30" (762mm) above adequate drains with sufficient side clearance for testing and maintenance. If installed below grade, be certain adequate drainage is provided to prevent the device from being submerged.

Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
1/2"	5	7	9	14
3/4"	8	12	17	25
1"	13	20	27	40
1 1/4"	23	35	47	70
1 1/2"	32	48	63	95
2"	52	78	105	167



INDOOR INSTALLATION



OUTDOOR INSTALLATION

Specifications

The Double Check Valve Backflow Preventer shall be certified to NSF/ANSI 372, shall be ASSE® Listed 1015, rated to 180°F, and supplied with full port ball valves. The main body shall be low lead Bronze for sizes 3/4" & 1", and Nylon for sizes 1-1/4" to 2". The housing shall be reinforced Nylon and the seat disc elastomers shall be silicone (FDA Approved). The first and second checks shall be accessible for maintenance without removing the device from the line. The Double Check Valve Backflow Preventer shall be a ZURN WILKINS Model 350XL.

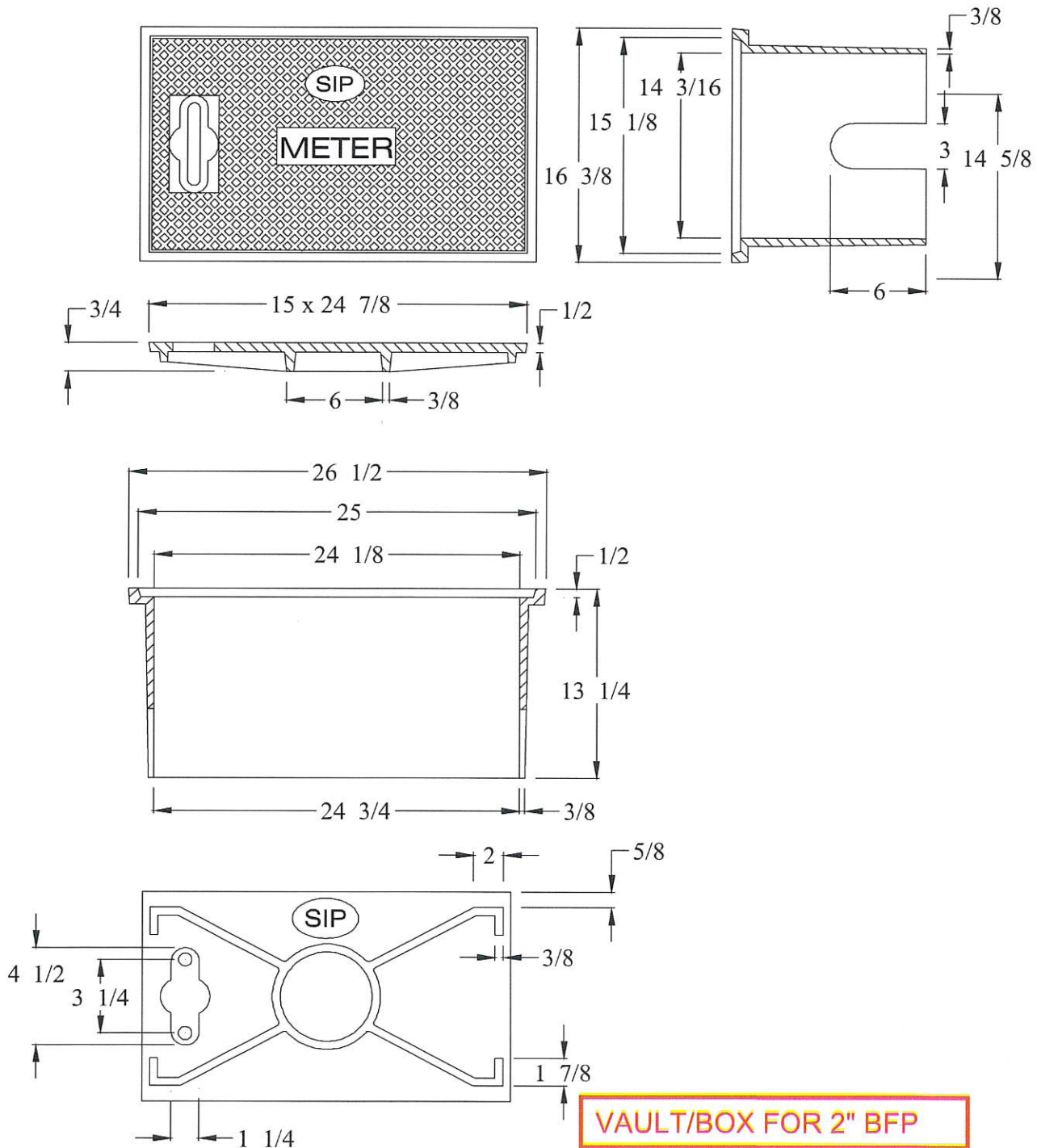
SERAMPORE INDUSTRIES (P) LTD.INC.

SIP

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DESCRIPTION : SA MB #2 15" x 25"

ITEM NO. EQ-1782

MATERIAL : CAST IRON,ASTM A-48 CLASS 30B

PATTERN NO. 4240