



TWG Construction, LLC
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Indianapolis, IN 46202
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Submittal # 330500-004

Project: Fall Creek View
2717 Anna Lane
Indianapolis, IN 46205

Fire Main System Data

APPROVERS:	Art Kaser (Evergreen Planners)	CREATED BY:	Jeremy Abbott (TWG Construction, LLC)
ISSUE DATE:	12/12/2013	CLOSED:	True
RECEIVED FROM:	Scott Peterson (Clark Construction Group)	TYPE:	
DESCRIPTION:	Fire Main Material Submittal		

NAME	DATE DUE	DATE RETURNED	STATUS	COMMENTS
Art Kaser	12/19/2013	12/17/2013	Approved	None



FIRE MAIN SUBMITTAL PACKAGE

for

The Point on Fall Creek

FIRE MAIN

SUBMITTAL PDF FILES

MANUFACTURER

PRODUCT

A. Y. McDONALD MFG. CORP	MODEL #3802 IPS PVC X FNPT BRONZE SERVICE SADDLE
FIRE PROTECTION PRODUCTS, INC.	½" BRASS BALL DRIP VALVE
GUARDIAN FIRE EQUIPMENT	MODEL #6315 90 DEGREE SINGLE CLAPPER SIAMESE AUTO SPKR
KENNEDY VALVE	MODEL #7071 MJ X MJ PIV VALVE WITH POST PLATE
KENNEDY VALVE	MODEL #2945A SIZE "C" ADJUSTABLE INDICATOR POST
U.S. PIPE & FOUNDRY, INC.	FLANGED DUCTILE IRON PIPE
STAR PIPE PRODUCTS	FLANGE ACCESSORY KIT

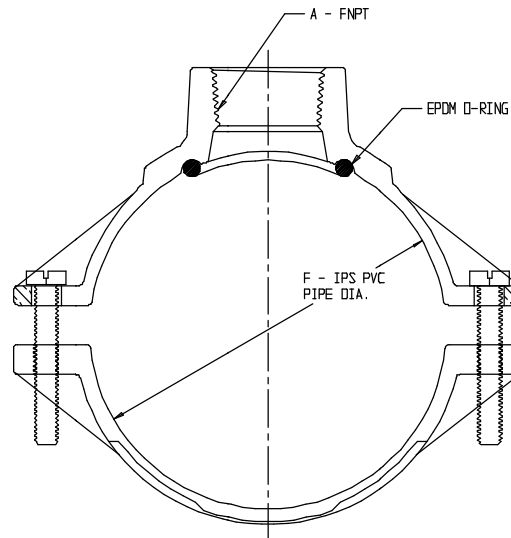
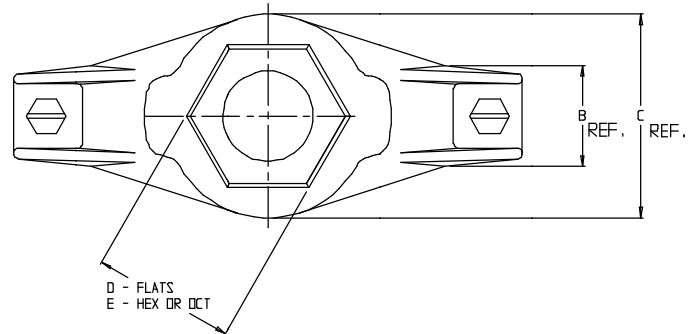
SUBMITTAL DATA SHEET

Two Piece Brass Saddle - 3802

IPS PVC x FNPT



MODEL	SIZE	A	B	C	D	E	F
3802	2 X 3/4	3/4	1.21	2.20	1.47	HEX	2.375
3802	2 X 1	1	1.21	2.20	1.69	HEX	2.375
3802	2 1/2 X 3/4	3/4	1.21	2.20	1.47	HEX	2.875
3802	2 1/2 X 1	1	1.21	2.20	1.69	HEX	2.875
3802	3 X 3/4	3/4	1.21	2.20	1.47	HEX	3.500
3802	3 X 1	1	1.21	2.20	1.69	HEX	3.500
3802	4 X 3/4	3/4	1.21	2.38	1.47	HEX	4.500
3802	4 X 1	1	1.21	2.56	1.69	HEX	4.500
3802	4 X 1 1/2	1 1/2	1.37	3.46	2.34	OCT	4.500
3802	4 X 2	2	1.37	3.72	2.82	OCT	4.500
3802	6 X 3/4	3/4	1.21	2.26	1.47	HEX	6.625
3802	6 X 1	1	1.21	2.56	1.69	HEX	6.625
3802	6 X 1 1/2	1 1/2	1.37	3.46	2.34	OCT	6.625
3802	6 X 2	2	1.37	3.72	2.82	OCT	6.625
3802	8 X 3/4	3/4	1.33	2.56	1.69	HEX	8.625
3802	8 X 1	1	1.33	2.56	1.69	HEX	8.625
3802	8 X 1 1/2	1 1/2	1.50	3.96	3.10	OCT	8.625
3802	8 X 2	2	1.50	3.96	3.10	OCT	8.625
3802	10 X 3/4	3/4	2.75	3.00	1.69	HEX	10.750
3802	10 X 1	1	2.75	3.00	1.69	HEX	10.750
3802	10 X 1 1/2	1 1/2	2.75	4.44	3.10	HEX	10.750
3802	10 X 2	2	2.75	4.44	3.10	HEX	10.750
3802	12 X 3/4	3/4	2.75	2.92	1.69	HEX	12.750
3802	12 X 1	1	2.75	2.92	1.69	HEX	12.750
3802	12 X 1 1/2	1 1/2	2.75	4.63	3.10	HEX	12.750
3802	12 X 2	2	2.75	4.63	3.10	HEX	12.750



SUBMITTAL INFORMATION

- Manufactured in compliance with ANSI/AWWA C800 (latest revision)
- Brass components conform to ASTM B62 and ASTM B584, UNS C83600 -85-5-5-5 (latest revision)
- Certified to NSF/ANSI 61
- Silicon Bronze bolts
- EPDM o-ring
- Pipe and tap size, and thread type identified on saddle
- Outlet boss with large wrench flats
- Made in North America



A.Y. McDonald Mfg. CO.
P.O. Box 508
Dubuque, IA 52004-508

Toll Free: 1-800-292-2737
Fax: 1-800-832-9296
Hours: 7:00 a.m. – 5:00 p.m., CST

sales@aymcdonald.com
www.aymcdonald.com

A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:

05-11

Brass Ball Drip Valve

Description

The solid brass ball drip is a “ball” type check valve. When properly installed, the internal ball rests in the lower most area of the valve body allowing for proper drainage of moisture accumulation. Upon system pressurization, the internal ball is “pushed” into the small end of the ball drip body closing the opening. When system pressure is removed, the ball returns to its original position. One of the most common uses is on the dry side of the Fire Department Connection valve. This use helps keep moisture from accumulating inside the Fire Department Connection. Designed for horizontal installation only.

Installation

Proper installation of the brass ball drip can be accomplished with standard piping installation tools. Make sure the threads are clean and free from burs and debris. Apply a thread sealant suitable for the materials being joined such as PipeFit, PipeFit AS or PTFE tape. When using a paste type sealant, make sure to brush the sealant deep into the root of the threads. Thread the ball drip into female threads

hand tight. Finish tightening with a pipe wrench up to one full turn. **Do not over tighten. Over tightening may damage threads and ball drip.** Finish piping to allow for proper drainage. **Valve opens by force of gravity only. Do not use with more than 1 ft. column of water (water pressure) on the ball check. Use only in the horizontal position.**



Specifications

Type:
Straight Pattern

Material:
Body: Brass
Ball: Brass

Standard Finishes:
Rough Brass

Adjustment Range:
 $\frac{1}{4}$ " x $\frac{1}{2}$ " MNPT
 $\frac{1}{2}$ " x $\frac{1}{2}$ " MNPT
 $\frac{3}{4}$ " x $\frac{3}{4}$ " MNPT





GUARDIAN

FIRE EQUIPMENT, INC.
MIAMI, FL

Ph. 800.327.6584 • Fax 800.827.3869

DETAIL AND SUBMITTAL SHEET

6300 Series - Fire Dept. Inlet Connections - Bodies

Project/Location: THE POINT ON FALL CREEK

Date: 12/03/13

Architect/Engineer: ITEM: 90 Degree Single Clapper Siamese Fire Dept Connection

Qty: One

Contractor: Model #6315 with AUTO-SPKR lettering on bottom

☒ Appropriate Selection

Used as auxiliary connections through which the fire department can pump water to supplement existing water supplies. Provides 250 GPM flow (minimum), per 2 1/2" inlet.

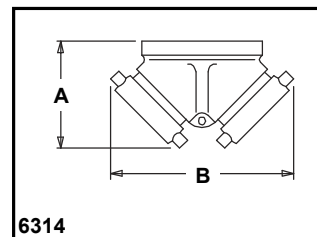
Two and three-way - inlet connections feature clappered brass bodies (straight or angle pattern), with female hose thread swivel inlets and female outlets. Cast brass construction, standard.

Two and Three-Way Connections					
Model No.	Outlet	Size	Clappers	A	B
<input type="checkbox"/> 6314*	Back	4" x 2 1/2" x 2 1/2"	1	5 1/2"	8 1/8"
<input checked="" type="checkbox"/> 6315*	Angle	4" x 2 1/2" x 2 1/2"	1	8 1/8"	8 3/4"
<input type="checkbox"/> 6324	Back	4" x 2 1/2" x 2 1/2"	2	7 9/32"	11 21/32"
<input type="checkbox"/> 6325	Angle	4" x 2 1/2" x 2 1/2"	2	8 31/64"	11 21/32"
<input type="checkbox"/> 6326	Back	6" x 2 1/2" x 2 1/2"	2	7 1/4"	10 1/2"
<input type="checkbox"/> 6327	Angle	6" x 2 1/2" x 2 1/2"	2	10"	10 1/2"
<input type="checkbox"/> 6336**	Back	6" x 2 1/2" x 2 1/2" x 2 1/2"	3	10 1/2"	13 3/4"
<input type="checkbox"/> 6337**	Angle	6" x 2 1/2" x 2 1/2" x 2 1/2"	3	11 1/2"	14 1/2"
Body Lettering					
<input checked="" type="checkbox"/> AUTO SPKR <input type="checkbox"/> STANDPIPE					
<input type="checkbox"/> Blank (unlettered)					

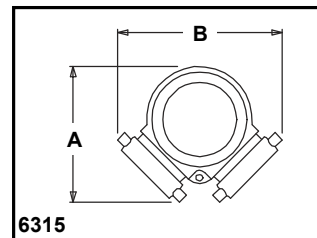
*Auto Spkr lettering only ** Blank (Unlettered) only

Optional Finish: ☒ -B Polished Brass
☐ -C Rough Chrome Plated
☐ -D Polished Chrome Plated

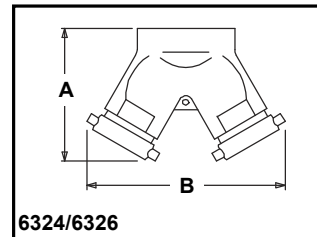
Threads:
☐ NST
☐ Other



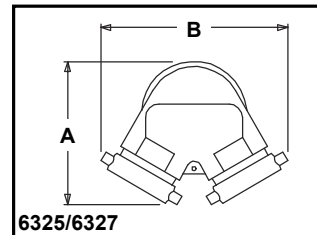
6314



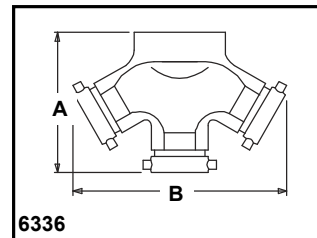
6315



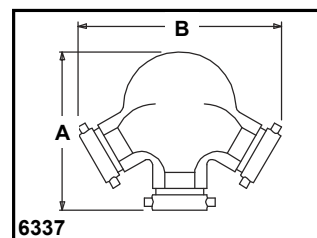
6324/6326



6325/6327



6336



6337

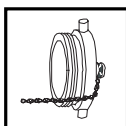
Plugs with Chains and Break Caps - Used to keep fire dept. inlet connections free of debris and protect female threads.

Plugs with Chains

Model No.	Size	Type
<input type="checkbox"/> 6404	2 1/2"	Brass

Optional Finish:

☐ -B Polished
☐ -C Rough Chrome Plated
☐ -D Polished Chrome Plated



Threads:

☐ NST
☐ Other

Break Caps

Model No.	Size	Type
<input type="checkbox"/> 6406	2 1/2"	Aluminum
<input type="checkbox"/> 6407	2 1/2"	Plastic

Adjustable Plugs

Model No.	Size	Type
<input type="checkbox"/> 6408	2 1/2"	Aluminum
<input type="checkbox"/> 6409	2 1/2"	Plastic

Contact factory for current listings and approvals

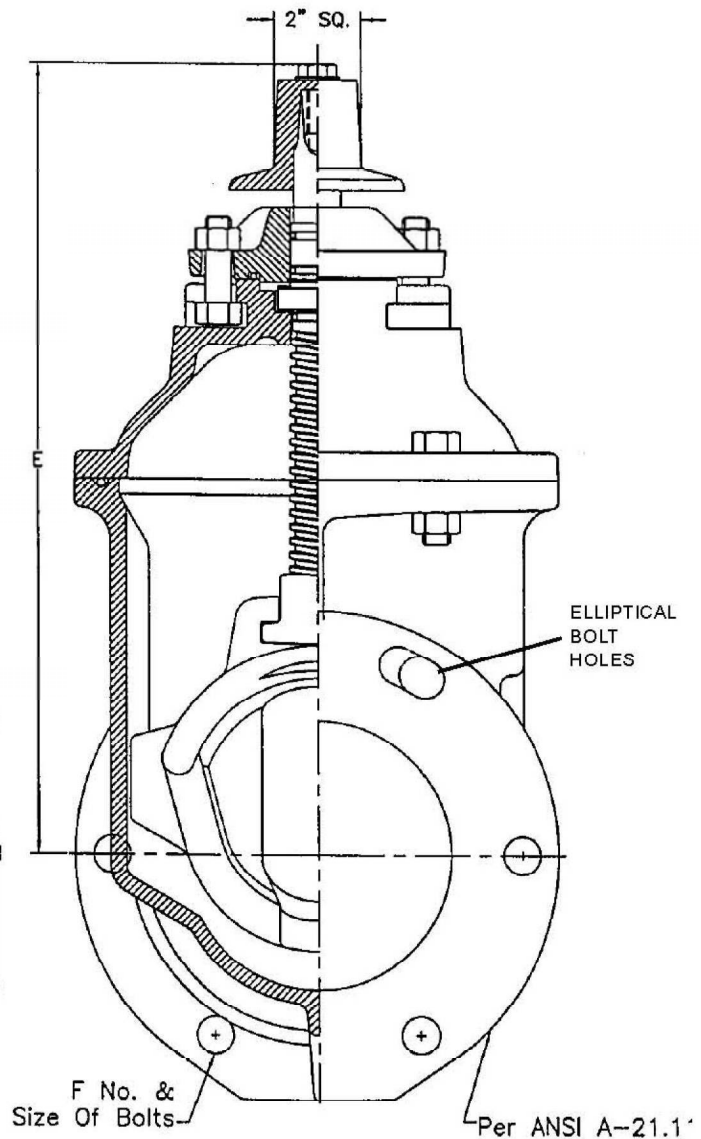
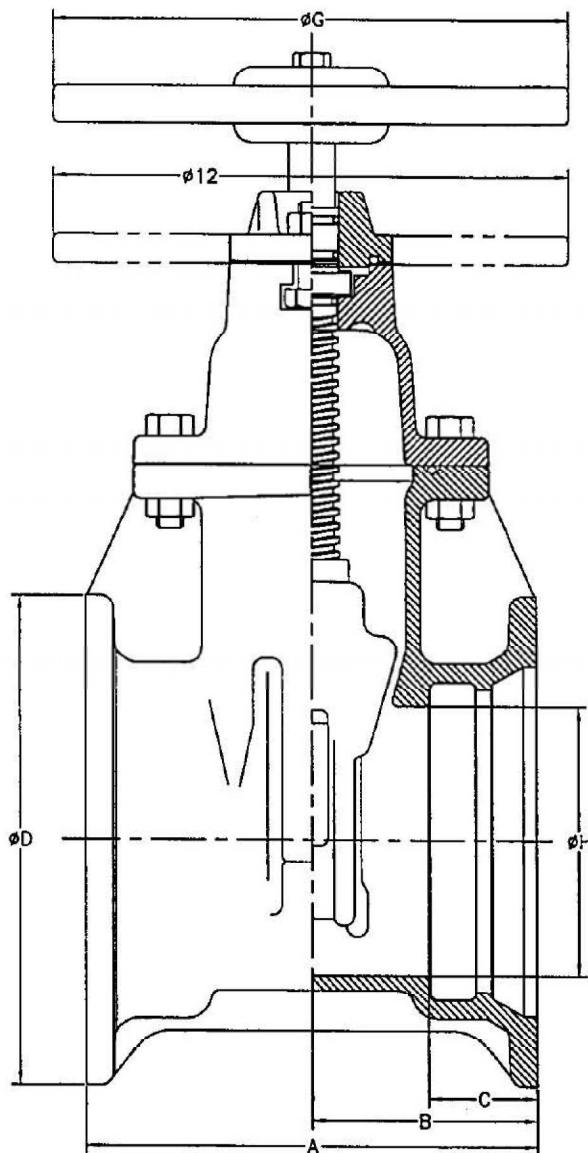


**2"-12" R/S VALVE MECHANICAL
 JOINT ENDS
 GENERAL DIMENSIONS**

KENNEDY VALVE MODEL KS-RW

Complies with applicable requirements of AWWA C515

**7571 STANDARD
 7071 W/POST PLATE (3-12")**



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

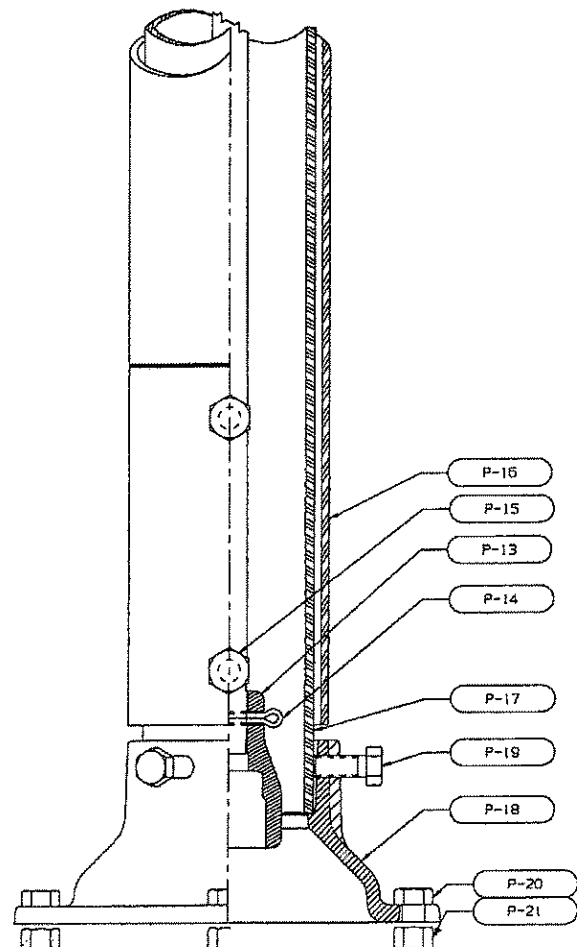
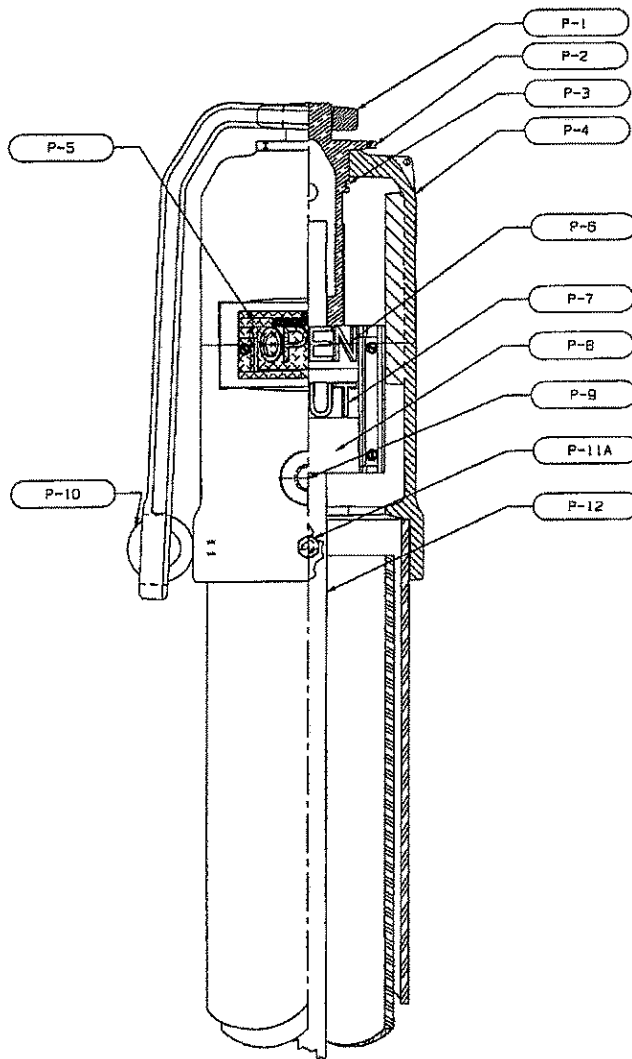
VALVE SIZE	A	B	C	D	E	F	G	H
2	8 1/4	4 1/8	2 1/2	4 1/2	10 7/8	2 5/8	7 1/4	2
2 1/2	---	---	---	---	---	---	---	---
3	8 1/2	4 1/4	2 1/2	7 3/4	12 3/8	4 5/8	10	3
4	9 1/2	4 3/4	2 1/2	9 1/8	14 3/4	4 3/4	10	4 1/4
6	10 1/2	5 1/4	2 1/2	11 1/8	19	6 3/4	12	6 1/4
8	13 1/8	6 9/16	2 1/2	13 3/4	22 1/2	6 3/4	14	8 1/4
10	15 1/2	7 3/4	2 1/2	15 3/4	26 1/2	8 3/4	18	10 1/4
12	16	8	2 5/8	18	30	8 3/4	18	12 1/4



INDICATOR POST STYLE 2945 A TELESCOPING BARREL ASSEMBLY UL AND FM APPROVED

KENNEDY VALVE

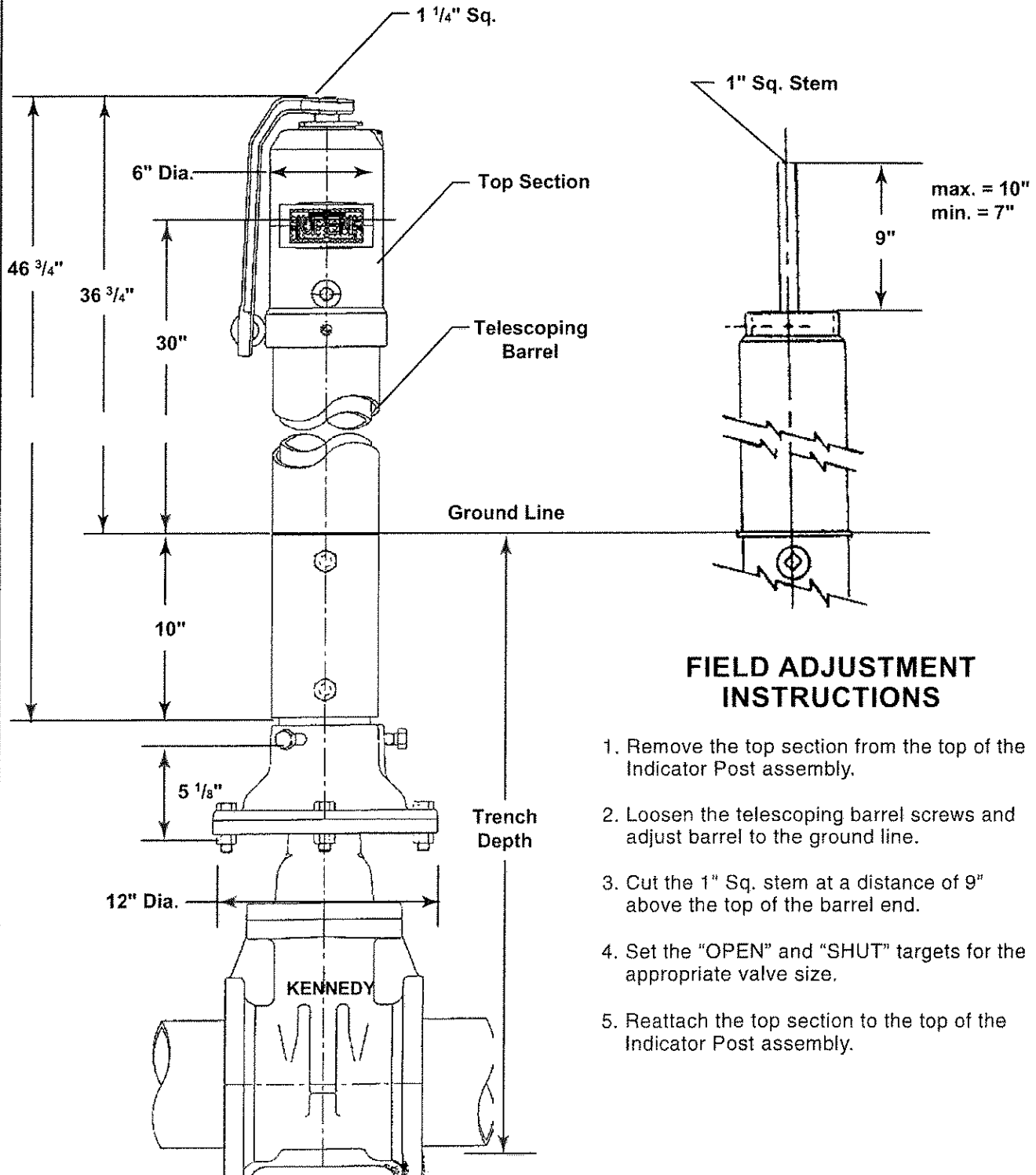
Available in Sizes B C D E
 See Page 6 for Dimensions



INDICATOR POST STYLE 2945 A TELESCOPING BARREL UL/FM DIMENSIONS AND INSTRUCTIONS

KENNEDY VALVE

Available in Sizes B C D E
See Page 6 for Dimensions



INDICATOR POST STYLE 2945 A (ADJUSTABLE) AND STYLE 2945 (FIXED) - PARTS LIST

KENNEDY VALVE

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
	4	442411P	#10-24 Hex Nut	Zinc Plated 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. CI 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. CI 52 ANSI A21.51
P-23	1	3004762	Spacer Sleeve (Fixed Post)	5" D.I. CI 52 ANSI A21.51

**Part numbers change based on post furnished.

**INDICATOR POST STYLE 2945A & 2945
TRENCH DEPTHS FOR GATE VALVES
UL & FM APPROVED**

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"

RSGV (3" - 12") --- Maximum turns to open = 45

Note: For valves requiring more than 45 turns to open, contact Kennedy Valve

FLANGED DI PIPE



2010 EDITION

P 3

Flanged Pipe for Water and Other Liquids

Flanged pipe and fittings are typical components in rigid piping systems. Such systems are particularly suited for above ground installation in the following: water filtration plants, sewage disposal plants, wastewater treatment plants, pumping stations and industrial plants, per **AWWA C115/21.15**. The underground use of the flanged joint is not recommended due to the rigidity of the joint. Unequal settlement or other stressing of such piping may result in excessive strain on the flanges or the pipe due to excessive beam loadings.

Flanged Pipe with Threaded Flanges

Pipe barrels conform to **ANSI/AWWA C151/A21.51**. Flanged pipe are fabricated by threading plain end pipe, screwing threaded flange(s) on and machine-tightening them. The bolt holes are aligned per **ANSI/AWWA C115/A21.15**. The plain end and the flange are then faced to insure that the flange is perpendicular to the pipe axis and the pipe/flange interface is flush. Pipe barrels and flanges have a taper pipe thread (NPT) in accordance with **ANSI B1.20.1**, with thread diameters adapted to Ductile Iron pipe standard outside diameters. Threaded pipe and threaded flanges are individually fitted and the flanges are not interchangeable. U.S. Pipe only uses and recommends ductile iron flanges, although **ANSI/AWWA C115/A21.15** currently allows gray iron flanges.

Flanged pipe are furnished with a maximum length of 19' - 6". The minimum length varies by pipe size and can be found in the table on page 7.

The minimum class thickness for Ductile Iron flanged pipe to be threaded is Special Thickness Class 53 for sizes up through 54" and pressure class 350 for 60" and 64" sizes. Greater pipe wall thicknesses can be furnished if so ordered.

Weights of flanged pipe shown are subject to a minus tolerance of not more than 10% for individual pieces. To obtain the weight of a short flanged pipe, calculate the pipe weight for the length from face to face of the flanges and add the weight of two flanges.

Pipe may be furnished with one end flanged and the other end with a TYTON®, TR FLEX®, HP LOK™, or MJ bell. Special ends such as grooved, shouldered, spigot restrained, and MJ HARNESS-LOK, are also available.

Thrust Type Wall Collars are available for wall penetrations and thrust restraint. See U.S. Pipe's THRUST COLLAR/WALL PIPE submittal for more information.

The Foreword of **ANSI/AWWA C115/A21.15** lists the required information and the options which if desired must be specified on the purchase order for flanged pipe, such as size and finished length. See the standard for more details.

ANSI/AWWA Standards

ANSI/AWWA C115/A21.15 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.

Threaded flanged pipe conform to the requirements of ANSI/AWWA C115/A21.15.

ANSI/AWWA C151/A21.51 Ductile Iron Pipe, Centrifugally Cast, for Water.

Ductile Iron pipe used for flanging are centrifugally cast in accordance with the requirements of ANSI/AWWA C151/A21.51.

ANSI/AWWA C104/A21.4 Cement-Mortar Lining for Ductile-Iron and Gray-Iron Fittings for Water.

Cement-Mortar Lining with asphaltic coating inside in accordance with ANSI/AWWA C104/A21.4.

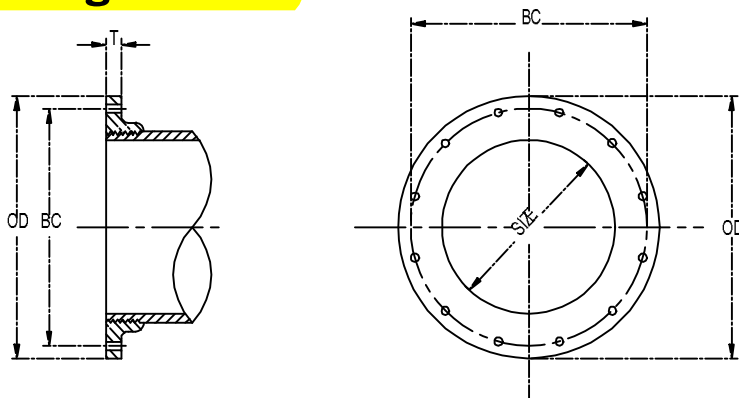
FLANGED DI PIPE



2010 EDITION

P 5

Ductile Iron Flanged Pipe With Threaded Flanges Flange Details



SIZE Inches	DIMENSIONS Inches					
	OD	BC	T	BOLT HOLE Diameter	BOLT Diameter & Length	QTY. OF BOLTS
3	7.50	6.00	.75 ± .12	3/4	5/8 x 2-1/2	4
4	9.00	7.50	.94 ± .12	3/4	5/8 x 3	8
6	11.00	9.50	1.00 ± .12	7/8	3/4 x 3-1/2	8
8	13.50	11.75	1.12 ± .12	7/8	3/4 x 3-1/2	8
10	16.00	14.25	1.19 ± .12	1	7/8 x 4	12
12	19.00	17.00	1.25 ± .12	1	7/8 x 4	12
14	21.00	18.75	1.38 ± .19	1-1/8	1 x 4-1/2	12
16	23.50	21.25	1.44 ± .19	1-1/8	1 x 4-1/2	16
18	25.00	22.75	1.56 ± .19	1-1/4	1-1/8 x 5	16
20	27.50	25.00	1.69 ± .19	1-1/4	1-1/8 x 5	20
24	32.00	29.50	1.88 ± .19	1-3/8	1-1/4 x 5-1/2	20
30	38.75	36.00	2.12 ± .25	1-3/8	1-1/4 x 6-1/2	28
36	46.00	42.75	2.38 ± .25	1-5/8	1-1/2 x 7	32
42	53.00	49.50	2.62 ± .25	1-5/8	1-1/2 x 7-1/2	36
48	59.50	56.00	2.75 ± .25	1-5/8	1-1/2 x 8	44
54	66.25	62.75	3.00 ± .25	2	1-3/4 x 8-1/2	44
60	73.00	69.25	3.12 ± .25	2	1-3/4 x 9	52
64	80.00	76.00	3.38 ± .25	2	1-3/4 x 9	52

LENGTH TOLERANCE: Pipe face-to-face dimensions conform to a tolerance of $\pm .12$ " for sizes 3"-64"

FLANGES: The bolt circle and bolt holes of these flanges match those of **ANSI/AWWA C115/A21.15** and Class 125 flanges shown in ANSI B16.1 and can be joined with A21.15 and Class 125 B16.1 flanges. The flanges do not match the Class 250 flanges shown in ANSI B16.1 and cannot be joined with Class 250 B16.1 flanged fittings and valves. For technical information on Class 250 flanges see U.S. Pipe's Class 250 Flanges submittal document at www.uspipe.com.

FACING: Class 125 flanges are plain faced without projection and are furnished smooth or with shallow serrations.

CERTIFICATION: Complies with **ANSI/AWWA C115/A21.15 Flanged Ductile Iron Pipe**.

Bolts are normally not furnished by U.S. Pipe. Bolt data in the table is provided for information only. Bolts may be provided by U.S. Pipe upon request.

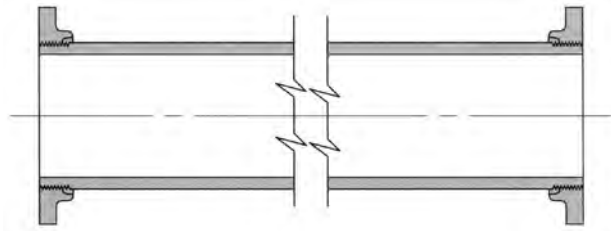
FLANGED DI PIPE



2010 EDITION

P 6

Ductile Iron Flanged Pipe With Threaded Flanges



U.S. Pipe recommends the use of **FULL FACE FLANGE-TYTE®** Gaskets or **RING FLANGE-TYTE®** Gaskets with Ductile Iron flanged joint products supplied by U.S. Pipe. These gaskets were designed specifically for the unique surface of Ductile Iron. Flat rubber gaskets are **NOT** considered equal in performance and may not provide the sealing capability the project requires. In addition, their use could result in unintended damage to the flanges and threads of the fabricated pipe by applying excess torque to the bolts/flanges in order to seal the joint.

SIZE Inches	PRESSURE RATING psi	OUTSIDE DIAMETER Inches	MIN. WALL THICKNESS Inches	MAXIMUM LENGTH		WEIGHT Pounds		
				Feet	Inches	FLANGE Per Each	PIPE W/O FLANGES Per Foot	PIPE W/ FLANGES Per Length
3	250	3.96	0.31	19'	6"	7	10.9	225
4	250 *	4.80	0.32	17'	6"	13	13.8	295
6	250 *	6.90	0.34	19'	6"	17	21.4	450
8	250 *	9.05	0.36	19'	6"	28	30.1	645
10	250 *	11.10	0.38	19'	6"	38	39.2	840
12	250 *	13.20	0.40	19'	6"	58	49.2	1076
14	250 *	15.30	0.42	19'	6"	72	60.1	1315
16	250 *	17.40	0.43	19'	6"	90	70.1	1545
18	250 *	19.50	0.44	19'	6"	90	80.6	1751
20	250 *	21.60	0.45	19'	6"	115	91.5	2013
24	250 *	25.80	0.47	19'	6"	160	114.4	2554
30	250	32.00	0.51	17'	6"	240	154.4	3490
36	250	38.30	0.58	17'	6"	350	210.3	4800
42	250	44.50	0.65	17'	6"	500	274.0	6343
48	250	50.80	0.72	19'	0"	625	346.6	8010
54	150	57.56	0.81	19'	0"	670	441.9	9955
60	150	61.61	0.83	19'	0"	1035	485.0	11525
64	150	65.67	0.87	19'	0"	1510	542.0	13590

* U.S. Pipe rates its 4"-24" pipe for 350 psi service with use of the **FULL FACE FLANGE-TYTE™** or **RING FLANGE-TYTE™** Gasket.
Contact U.S. Pipe if longer length is required.
For bolt hole details see page 5.

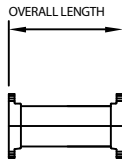
FLANGED DI PIPE



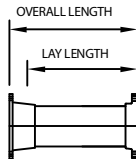
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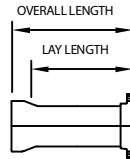
Minimum Lengths



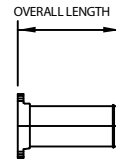
FLANGE - FLANGE



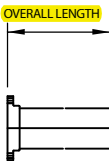
MJ - FLANGE



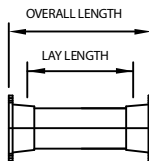
TYTON - FLANGE



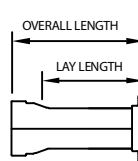
FLANGE - PLAIN END (TR or HP)



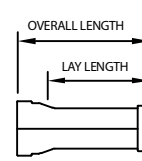
FLANGE - PLAIN END



MJ - MJ



TR FLEX - FLANGE



HP LOK - FLANGE

SIZE Inches	FLG - FLG	FLG - PE	MJ - FLG		MJ - MJ		TYTON® - FLG		TR FLEX® - FLG		FLG - PE (TR OR HP)	HP LOK® - FLG	
	O.A.	O.A.	O.A.	L.L.	O.A.	L.L.	O.A.	L.L.	O.A.	L.L.	O.A.	O.A.	L.L.
4	4.25	2.75	6.50	4.00	9.00	4.00	8.50	5.50	10.25	5.50	10.50	X	X
6	4.50	3.00	7.00	4.50	9.50	4.50	9.25	6.25	11.00	5.75	11.50	X	X
8	5.00	3.25	7.50	5.00	10.00	5.00	10.00	6.25	12.00	6.25	12.50	X	X
10	5.50	3.50	7.75	5.25	10.25	5.25	10.00	6.25	12.25	6.25	13.00	X	X
12	5.75	3.75	8.25	5.75	10.75	5.75	10.25	6.50	12.75	6.50	13.75	X	X
14	5.75	3.75	9.75	6.25	13.50	6.50	12.00	7.00	15.00	7.25	15.50	X	X
16	5.75	3.75	10.00	6.50	14.00	7.00	12.00	7.00	15.00	7.00	15.75	X	X
18	6.00	3.75	10.25	6.75	14.50	7.50	12.00	7.00	15.25	7.00	16.50	X	X
20	6.25	4.00	10.75	7.25	15.00	8.00	13.00	7.50	15.75	7.50	17.00	X	X
24	6.75	4.25	11.25	7.75	15.50	8.50	13.50	7.50	16.25	7.50	18.00	X	X
30	8.50	5.00	13.75	9.75	18.75	10.75	14.75	8.25	18.50	8.25	20.75	18.50	10.00
36	9.50	5.50	14.75	10.75	20.00	12.00	16.00	9.00	19.75	9.00	22.50	19.75	11.00
42	10.50	6.00	15.75	11.75	21.00	13.00	18.25	10.25	19.75	10.25	20.25	19.75	10.50
48	10.75	6.25	16.00	12.00	21.00	13.00	18.75	10.25	20.25	12.25	19.00	20.25	10.50
54	12.00	6.75	X	X	X	X	22.25	13.00	21.50	12.75	20.75	21.50	11.50
60	12.50	7.00	X	X	X	X	21.75	11.75	21.75	11.75	22.50	21.75	11.75
64	13.00	7.25	X	X	X	X	23.00	12.50	23.00	12.50	23.25	23.00	13.00

Lengths shown are subject to manufacturing tolerances. If exact lengths are critical, please contact U.S. Pipe Special Projects Department.

Flanges and MJ Bells should normally be specified as "tapped for studs" for minimum pieces in order to be able to assemble the joints.

If shorter lengths are required, please contact U.S. Pipe Customer Service.

All lengths for MJ bells are based on threaded-on MJ bells. Lengths may vary if cast MJ pipe is used.



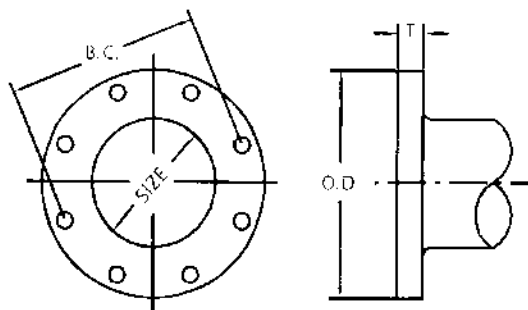
Flanged Fittings

ANSI/AWWA C110/A21.10

1" - 64" DUCTILE IRON FLANGED FITTINGS

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 250 PSI rating for 2" - 48" sizes and 150 PSI rating for 54" - 64"
- TESTING:** In accordance with ANSI/AWWA C110/A21.10, UL and FM requirements
- LAYING LENGTH:** 2" - 48" sizes in accordance with ANSI/AWWA C110/A21.10 and ANSI B16.1 and 54" - 64" sizes in accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories, cement lining and coatings
- DRILLING:** In accordance with ANSI/AWWA C110/A21.10, ANSI/AWWA C153/A21.53 and ANSI B16.1 Class 125 Flanges
- CEMENT LINING:** In accordance with ANSI/AWWA C104/A21.4 - sizes 1" - 3" single thickness and sizes 4" - 64" double thickness
- COATING:** Asphaltic seal coat inside in accordance with ANSI/AWWA C101/A21.1 and prime coat outside
- APPROVALS:** 2" - 12" Underwriters Laboratories and ULC Listed and Factory Mutual approved for 300 PSI rating. Please consult factory for detail listing and approvals. 21" and greater are UL/ANSI-61.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise.



FLANGE DETAILS

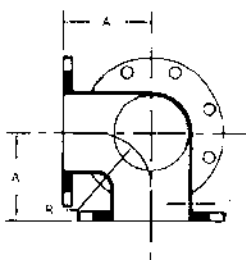
NOM. SIZE	O.D.	B.C.	T	BOLT HOLE DIA.	BOLTS	
					SIZE	NO.
1	4.25	3.12	0.44	0.62	1/2 x 2	4
1 1/2	5.00	3.88	0.56	0.62	1/2 x 2	4
2	6.00	4.75	0.62	0.75	3/8 x 2 1/4	4
2 1/2	7.00	5.50	0.60	0.75	3/8 x 2 1/2	4
3	7.50	6.00	0.75	0.75	3/8 x 2 1/2	4
4	9.00	7.50	0.94	0.75	3/8 x 3	8
5	10.00	8.50	0.94	0.88	3/8 x 3	8
6	11.00	9.50	1.00	0.88	3/8 x 3 1/2	8
8	13.50	11.75	1.12	0.88	3/8 x 3 1/2	8
10	16.00	14.25	1.19	1.00	7/8 x 4	12
12	19.00	17.00	1.25	1.00	7/8 x 4	12
14	21.00	18.75	1.38	1.13	1 x 4 1/2	12
16	23.50	21.25	1.44	1.13	1 x 4 1/2	16
18	25.00	22.75	1.56	1.25	1 1/8 x 5	16
20	27.50	25.00	1.69	1.25	1 1/8 x 5	20
24	32.00	29.50	1.88	1.38	1 1/4 x 5 1/2	20
30	38.75	36.00	2.12	1.38	1 1/2 x 6 1/2	28
36	46.00	42.75	2.38	1.63	1 1/2 x 7	32
42	53.00	49.50	2.62	1.63	1 1/2 x 7 1/2	36
48	59.50	56.00	2.75	1.63	1 1/2 x 8	44
54	66.25	62.75	3.00	2.00	1 3/4 x 8 1/2	44
60	73.00	69.25	3.12	2.00	1 3/4 x 9	52
64	80.00	76.00	3.38	2.00	1 3/4 x 9	52



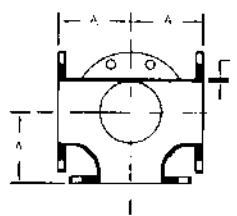


Flanged Fittings

ANSI/AWWA C110/A21.10



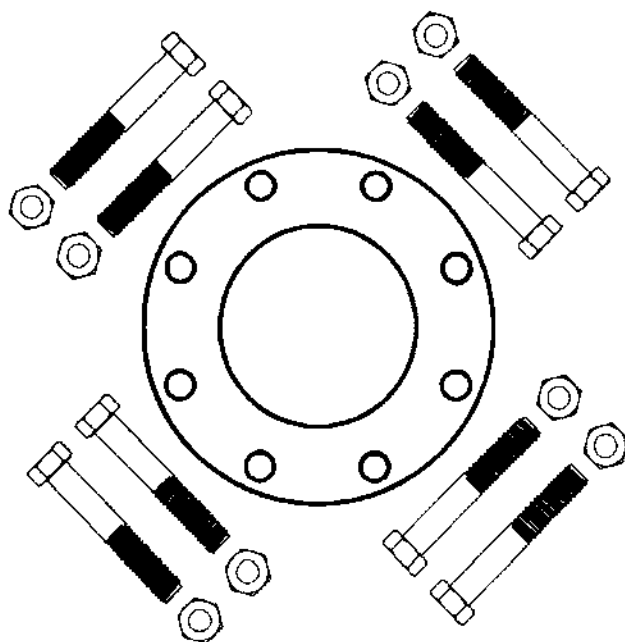
90° FLANGED SIDE OUTLET BEND				
NOM. SIZE	T	A	R	WT (LBS.)
3	0.48	5.50	4.00	35
4	0.52	6.50	4.50	60
6	0.55	8.00	6.00	95
8	0.60	9.00	7.00	145
10	0.68	11.00	9.00	240
12	0.75	12.00	10.00	345
14	0.66	14.00	11.50	478



FLANGED SIDE OUTLET TEE			
NOM. SIZE	T	A	WT (LBS.)
4 x 4	0.52	6.50	80
6 x 6	0.55	8.00	120
8 x 8	0.60	9.00	195
10 x 10	0.68	11.00	284

GENERAL SPECIFICATIONS

- HEX BOLTS:** Per ANSI/ASME B18.2.1
Material Per ASTM A307 GRADE B, Zinc Plated
- HEX NUTS:** Per ANSI/ASME B18.2.2
Material Per ASTM A563 Grade A or B, Zinc Plated
- GASKETS:** 1/8" Thick Full Face Per ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11
Material Per ASTM D1330 Grade II or ASTM D1-2000 AA, Color RED (Temperature Range: -20° F to 170° F)



FLANGE ACCESSORY PACKS C111/A.21.11			
NOM. SIZE	BOLTS	QTY.	WT (LBS.)
1 1/2	1/2 x 2	4	1
2	5/8 x 2 1/4	4	1.4
2 1/2	3/4 x 2 1/2	4	1.8
3	3/4 x 2 1/2	4	2
4	3/4 x 3	8	3
5	3/4 x 3	8	5
6	3/4 x 3 1/2	8	5
8	3/4 x 3 1/2	8	6
10	7/8 x 4	12	12
12	7/8 x 4	12	13
14	1 x 4 1/2	12	19
16	1 x 4 1/2	16	25
18	1 1/8 x 5	16	35
20	1 1/8 x 5	20	45
24	1 1/4 x 5 1/2	20	63
30	1 3/4 x 6 1/2	28	95
36	1 1/2 x 7	32	170
42	1 1/2 x 8	36	215
48	1 1/2 x 8	44	265
54	1 3/4 x 8 1/2	44	390
60	1 3/4 x 9	52	500
64	1 3/4 x 9	52	500



