



2820 Mary Linda Avenue  
Roanoke, VA 24012  
T 540-342-8000  
T 800-552-6161 In VA  
F 540-343-9267

***PROJECT:***                      *Daleville – Cottages of Steeplechase*

***ENGINEER:***                    *Integrity Engineering*

***CONTRACTOR:***              *Earth Movers Inc.*  
   *221 S Roanoke St.*  
   *Fincastle, VA 24090*  
   *(540) 473-3058*

***CONTACT:***                    *Chris Moore*

***MATERIAL:******MANUFACTURER:*****PIPE & FITTINGS**

6" & 8" C909 ULTRA BLUE PVC PIPE	JM EAGLE
4", 6", & 8" SDR35 PVC SEWER PIPE	JM EAGLE
8" TJ CL50 DUCTILE IRON PIPE	US PIPE
4" SCH40 SOLVENT WELD BELL PIPE	NATIONAL PIPE
12", 18", 24" HDPE N12 PIPE AASHTO STIB	ADVANCED DRAINAGE SYSTEMS
MECHANICAL JOINT FITTINGS	SIGMA CORPORATION
MECHANICAL JOINT RESTRAINTS	FORD METER BOX
UFR1399 BELL RESTRAINTS	FORD METER BOX
SDR35 PVC FITTINGS	GPK PRODUCTS
DWV PVC FITTINGS	GPK PRODUCTS

**VALVES / HYDRANTS**

6" & 8" MJ GATE VALVE	AMERICAN FLOW CONTROL
B84B FIRE HYDRANT	AMERICAN FLOW CONTROL
562S VALVE BOX	SIGMA CORPORATION
FTSS-1110-8" 10X8 TAPPING SLEEVE	FORD METER BOX
8" TAPPING VALVE	AMERICAN FLOW CONTROL

**AIR RELEASE ASSEMBLY**

FS202-690-CC4 6X1 CC SADDLE	FORD METER BOX
FB400-4-NL 1" BALL CORP STOP X MIP	FORD METER BOX
UL10 1" AIR & VAC VALVE	CRISPIN VALVE
30X36 PLASTIC METER BOX	CARSON INDUSTRIES
MC-30 MONITOR COVER, RING, & LID	FORD METER BOX
GALVANIZED FITTINGS	LEGEND VALVE

### **BLOWOFF ASSEMBLY**

FS202-690-IP7 6X2 IP SADDLE	FORD METER BOX
FB500-7-NL 2" BALL CORP STOP X MIP	FORD METER BOX
NO LEAD BRASS FITTINGS	LEGEND VALVE
#78 BLOW OFF HYDRANT	KUPFERLE
20X24 PLASTIC METER BOX	CARSON INDUSTRIES
C3 20" METER BOX FRAME & COVER	FORD METER BOX

### **METER SERVICE**

FS202-905 & -690 – CC3 3/4" CC SADDLE	FORD METER BOX
FB1000-3GNL 3/4" BALL CORP STOP X CTS	FORD METER BOX
VBHC72-12W-44-33GNL STRAIGHT SETTER	FORD METER BOX
18X24 PLASTIC METER BOX	ADVANCED DRAINAGE SYSTEMS
C32-T 18" METER BOX FRAME & COVER	FORD METER BOX
5/8 X 3/4 IPERL WATER METER	SENSUS METERING SYSTEMS
520M SMARTPOINT TOUCH COUPLER	SENSUS METERING SYSTEMS
INSERT-51 3/4" SS INSERT	FORD METER BOX

#### DUAL

FS202-905 & -690 – CC4 1" CC SADDLE	FORD METER BOX
FB1000-4GNL 1" BALL CORP STOP X CTS	FORD METER BOX
VBHH72-15W-44-43GNL STRAIGHT SETTER	FORD METER BOX
INSERT-52 1" SS INSERT	FORD METER BOX
3/4" & 1" CTS ENDOPURE TUBING	ENDOT INDUSTRIES

## **2" WATER SERVICE**

FS202-905-IP7 2" IP SADDLE	FORD METER BOX
FB1100-7GNL 2" BALL CORP STOP X CTS	FORD METER BOX
B41-777WGNL 2" BALL CURB STOP	FORD METER BOX
2" CTS ENDOPURE TUBING	ENDOT INDUSTRIES
18X24 PLASTIC METER BOX	ADVANCED DRAINAGE SYSTEMS
C32-T 18" METER BOX FRAME & COVER	FORD METER BOX
INSERT-55 2" SS INSERT	FORD METER BOX

## **FRAME & COVERS**

1045Z & 1040AGS FRAME & COVER	EAST JORDAN IRON WORKS
MB344 CI CLEANOUT FRAME & COVER	SIGMA CORPORATION





# ULTRA BLUE™ PVCO

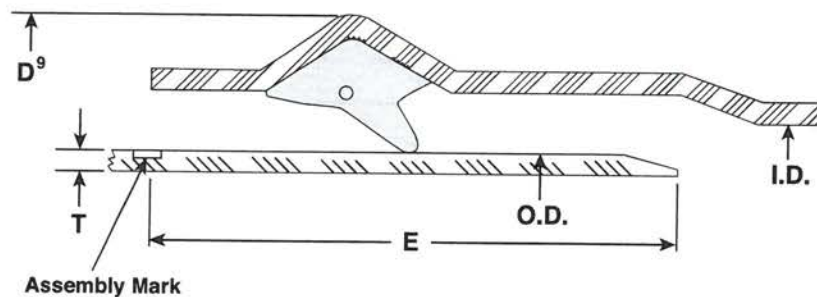
## AWWA C909 PIPE

### SUBMITTAL AND DATA SHEET

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

\* UL 1285 Listed — 6"-12" PC 235

\* Check for availability.



I.D. : Inside Diameter  
O.D. : Outside Diameter  
T. : Wall Thickness  
D<sup>9</sup> : Bell Outside Diameter  
E : Distance between Assembly Mark to  
the end of spigot.

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

✓	<b>APPROVED</b>
	<b>APPROVED AS NOTED</b>
	<b>NOT APPROVED</b>
BY: <u>DSG</u>	DATE: <u>12/1/14</u>

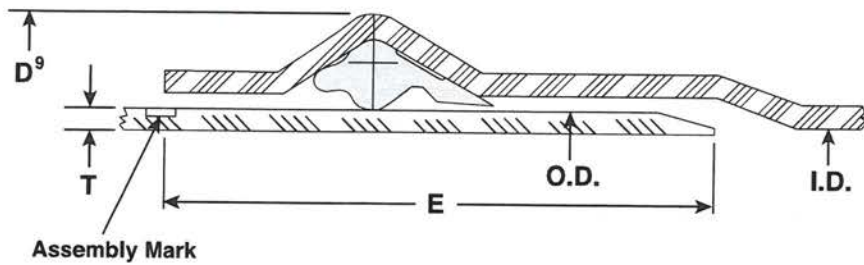
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BY: <u>DSG</u>	DATE: <u>12/1/14</u>



# GRAVITY SEWER

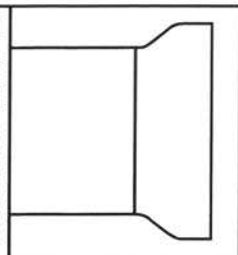
## SUBMITTAL AND DATA SHEET

PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D (IN)	APPROX. WEIGHT (LBS/FT)
<b>SDR 35 (PS46) ASTM D3034</b>						
4	4.215	3.975	0.120	3.50	4.695	1.05
6	6.275	5.915	0.180	4.25	6.995	2.36
8	8.400	7.920	0.240	4.75	9.360	4.24
10	10.500	9.900	0.300	6.00	11.700	6.64
12	12.500	11.780	0.360	6.25	13.940	9.50
15	15.300	14.426	0.437	7.25	17.048	14.19
<b>SDR 26 (PS115) ASTM D3034</b>						
4	4.215	3.891	0.162	3.50	4.863	1.40
6	6.275	5.793	0.241	4.25	7.239	3.11
8	8.400	7.754	0.323	4.75	9.692	5.63
10	10.500	9.692	0.404	6.00	12.116	8.84
12	12.500	11.538	0.481	6.25	14.424	12.56
15	15.300	14.124	0.588	7.25	17.652	18.90
<b>PS46, ASTM F679</b>						
18	18.701	17.629	0.499	8.00	20.845	21.43
21	22.047	20.783	0.588	9.50	24.575	29.88
24	24.803	23.381	0.661	9.60	27.647	38.96
27	27.953	26.351	0.745	10.10	31.157	49.47
30 CIOD	32.000	30.194	0.853	16.75	35.612	64.18
36 CIOD	38.300	36.042	1.021	19.02	42.816	93.00
42 CIOD	44.500	41.948	1.187	22.43	49.604	—
48 CIOD	50.800	47.888	1.355	24.78	56.624	—
<b>PS115, ASTM F679</b>						
18	18.701	17.261	0.671	8.00	21.581	28.49
21	22.047	20.349	0.791	9.50	25.443	—
24	24.803	22.891	0.889	9.60	28.627	—
27	27.953	25.799	1.002	10.10	32.261	—
30 CIOD	32.000	29.070	1.148	16.75	36.348	—
36 CIOD	38.300	35.464	1.373	19.02	45.438	—
42 CIOD	44.500	41.072	1.596	22.43	51.356	—
48 CIOD	50.800	46.886	1.822	24.78	58.628	—



I.D. : Inside Diameter  
O.D. : Outside Diameter  
T. : Wall Thickness  
 $D^9$  : Bell Outside Diameter  
E : Distance between Assembly Mark to  
the end of spigot.

Product Standard: ASTM 3034 (4"–15")  
ASTM F679 (18"–48")  
Pipe Compound: ASTM D1784 Cells Class 12454 or 12364  
Gasket: ASTM F477  
Integral Bell Joint: ASTM D3212  
Pipe Stiffness: ASTM D2412  $F/\Delta Y = 46 \text{ PSI}$  or  $115 \text{ PSI}$   
Pipe Length: 14 or 20 feet laying length  
Installation: ASTM D 2321  
JM Eagle™ Installation Guide



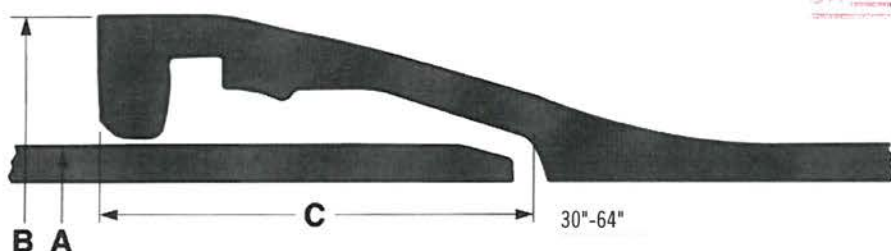
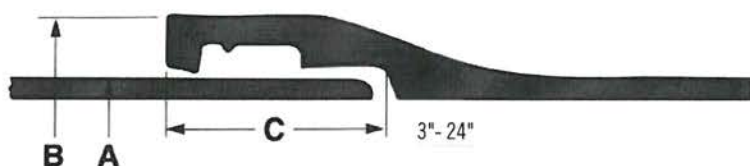
# TYTON JOINT® Pipe



2013 EDITION

P 9

## Bell Dimensions

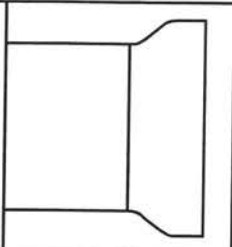


NOTE: Actual bell configuration may vary from illustration shown.

SIZE Inches	A PIPE OUTER DIAMETER Inches	B BELL OUTER DIAMETER Inches	C SOCKET DEPTH Inches
3	3.96	5.56	3.00
4	4.80	6.52	3.15
6	6.90	8.66	3.38
8	9.05	10.82	3.69
10	11.10	12.91	3.75
12	13.20	15.05	3.75
14	15.30	17.67	5.00
16	17.40	19.79	5.00
18	19.50	21.91	5.00
20	21.60	24.03	5.50
24	25.80	28.21	5.95
30	32.00	35.40	6.55
36	38.30	41.84	7.00
42	44.50	49.36	7.90
48	50.80	55.94	8.60
54	57.56	63.38	9.40
60	61.61	67.38	10.10
64	65.67	71.56	10.65

\*Subject to manufacturing tolerances. Dimensions in inches.





# TYTON JOINT® Pipe



2013 EDITION

P 10

## Pressure Class

Nominal Thickness for Standard Pressure Classes of Ductile Iron Pipe

SIZE Inches	OUTSIDE DIAMETER Inches	NOMINAL THICKNESS Inches					CASTING TOLERANCES Inches
		PRESSURE CLASS*					
		150	200	250	300	350	
3	3.96	—	—	—	—	0.25**	0.05
4	4.80	—	—	—	—	0.25**	0.05
6	6.90	—	—	—	—	0.25**	0.05
8	9.05	—	—	—	—	0.25**	0.05
10	11.10	—	—	—	—	0.26	0.06
12	13.20	—	—	—	—	0.28	0.06
14	15.30	—	—	0.28	0.30	0.31	0.07
16	17.40	—	—	0.30	0.32	0.34	0.07
18	19.50	—	—	0.31	0.34	0.36	0.07
20	21.60	—	—	0.33	0.36	0.38	0.07
24	25.80	—	0.33	0.37	0.40	0.43	0.07
30	32.00	0.34	0.38	0.42	0.45	0.49	0.07
36	38.30	0.38	0.42	0.47	0.51	0.56	0.07
42	44.50	0.41	0.47	0.52	0.57	0.63	0.07
48	50.80	0.46	0.52	0.58	0.64	0.70	0.08
54	57.56	0.51	0.58	0.65	0.72	0.79	0.09
60	61.61	0.54	0.61	0.68	0.76	0.83	0.09
64	65.67	0.56	0.64	0.72	0.80	0.87	0.09

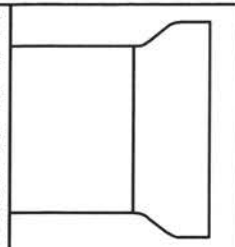
NOTE: Per ANSI/AWWA C150/A21.50 the thicknesses in above table include the 0.08" service allowance and the casting tolerance by size ranges.

Dimensions and weights of Special Classes (Thickness Classes) are found on pages 13, 14, 15 and 16.

\* Pressure Classes are defined as the rated water pressure of the pipe in psi. The thicknesses shown are adequate for the rated water working pressure plus a surge allowance of 100 psi. Calculations are based on a minimum yield strength of 42,000 and a 2.0 safety factor times the sum of the working pressure and 100 psi surge allowance.

\*\* Presently these are the lowest nominal thicknesses available in these sizes.

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NOT APPROVED
BY: _____ DATE: _____



# TYTON JOINT® Pipe



2013 EDITION

P 13

## Thickness Class – Thicknesses, Dimensions and Weight

18-FOOT LAYING LENGTH 20-FOOT LAYING LENGTH

SIZE Inches	THICKNESS CLASS	THICKNESS Inches	OUTSIDE DIAMETER* Inches	BARREL WEIGHT PER FOOT Pounds	WEIGHT PER LENGTH† Pounds	WEIGHT PER LENGTH† Pounds
3	51	0.25	4.02	8.9	170	—
3	52	0.28	4.02	9.9	185	—
3	53	0.31	4.02	10.9	205	—
3	54	0.34	4.02	11.8	220	—
3	55	0.37	4.02	12.8	240	—
3	56	0.40	4.02	13.7	255	—
4	51	0.26	4.80	11.3	215	—
4	52	0.29	4.80	12.6	235	—
4	53	0.32	4.80	13.8	260	—
4	54	0.35	4.80	15.0	280	—
4	55	0.38	4.80	16.1	300	—
4	56	0.41	4.80	17.3	320	—
6	50	0.25	6.90	16.0	305	335
6	51	0.28	6.90	17.8	335	370
6	52	0.31	6.90	19.6	370	410
6	53	0.34	6.90	21.4	400	445
6	54	0.37	6.90	23.2	435	480
6	55	0.40	6.90	25.0	465	515
6	56	0.43	6.90	26.7	495	550
8	50	0.27	9.05	22.8	430	475
8	51	0.30	9.05	25.2	475	525
8	52	0.33	9.05	27.7	520	575
8	53	0.36	9.05	30.1	560	620
8	54	0.39	9.05	32.5	605	670
8	55	0.42	9.05	34.8	650	720
8	56	0.45	9.05	37.2	690	765

**NOTE:** Thicknesses and dimensions of 3" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51.  
Weights may vary from the standard because of differences in bell weights.

\*Tolerance of O.D. of spigot end: 3-12 in.,  $\pm 0.06$  in.; 14-24 in.,  $+0.05$  in.,  $-0.08$  in.; 30-48 in.,  $+0.08$  in.,  $-0.06$  in.; 54-64 in.,  $+0.04$  in.,  $-0.10$  in.

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

Table continued on next page.



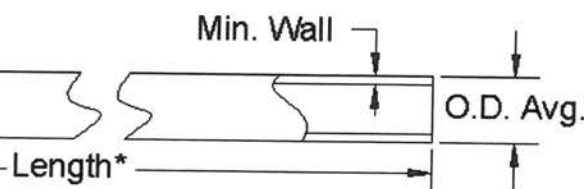
# PLUMB-RITE®

## NATIONAL PIPE & PLASTICS, INC.

### PVC Schedule 40/DWV

National Pipe & Plastics, Inc. PLUMB-RITE® PVC Schedule 40 IPS pressure pipe is manufactured in accordance with the specifications set forth in ASTM Standard D1785 and is listed with NSF for use in potable water applications, having met Standards 14 and 61 requirements. PVC Schedule 40 is manufactured from a rigid polyvinyl chloride compound, with a Cell Classification of 12454, as defined in ASTM Standard D1784.

✓	APPROVED
	APPROVED AS NOTED
	NOT APPROVED
BY: <u>DSG</u>	DATE: <u>12/1/14</u>



### PIPE DIMENSIONS

Nominal Size (inches)	Avg. O.D.	Minimum Wall Thickness	Pressure Rating @ 73° F (PSI)	Pressure Rating @ 140° F (PSI)	Minimum Socket Depth	Feet Per Pallet
		SCH 40	SCH 40	SCH 40		SCH 40
1/2	.840	.109	600	132	1.000	8100
3/4	1.050	.113	480	105	1.250	4560
1	1.315	.133	450	99	1.500	3000
1-1/4	1.660	.140	370	81	1.750	3600
1-1/2	1.900	.145	330	72	2.000	3300
2	2.375	.154	280	61	2.250	1980
2-1/2	2.875	.203	300	66	2.500	2700
3	3.500	.216	260	57	3.250	2000
4	4.500	.237	220	48	4.000	1260
6	6.625	.280	180	39	6.000	520
8	8.625	.322	160	35	6.000	280
10	10.750	.365	140	30	7.500	240
12	12.750	.406	130	28	8.500	60



- Schedule 40 pipe is commonly dual rated for pressure water systems, as well as drain waste and vent applications, meeting the requirements of ASTM Standard D2665.
- PLUMB-RITE pipe is manufactured with solvent weld bell in accordance with ASTM D2672 Standard. Plain End (P.E.) available upon request.
- Standard lengths are 20 feet. Other lengths available upon request.



## ADS N-12® ST IB PIPE (per AASHTO) SPECIFICATION

### Scope

This specification describes 4- through 60-inch (100 to 1500 mm) ADS N-12 ST IB pipe (per AASHTO) for use in gravity-flow drainage applications.

### Pipe Requirements

ADS N-12 ST IB pipe (per AASHTO) shall have a smooth interior and annular exterior corrugations.

- 4- through 10-inch (100 to 250 mm) shall meet AASHTO M252, Type S or SP.
- 12- through 60-inch (300 to 1500 mm) shall meet AASHTO M294, Type S or SP or ASTM F2306.
- Manning's "n" value for use in design shall be 0.012.

### Joint Performance

Pipe shall be joined using a bell & spigot joint meeting AASHTO M252, AASHTO M294 or ASTM F2306. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

### Fittings

Fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the soil-tight joint performance requirements of AASHTO M252, AASHTO M294 or ASTM F2306.

### Material Properties

Virgin material for pipe and fitting production shall be high density polyethylene conforming with the minimum requirements of cell classification 424420C for 4- through 10-inch (100 to 250 mm) diameters, or 435400C for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The 12- through 60-inch (300 to 1500 mm) virgin pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.5 and 5.1 of AASHTO M294 and ASTM F2306, respectively.

### Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch (100 to 1200 mm) diameters shall be one foot. (0.3 m) and for 54- and 60-inch (1350 and 1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% SPD) or Class 3 (minimum 90%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.01. Contact your local ADS representative or visit our website at [www.ads-pipe.com](http://www.ads-pipe.com) for a copy of the latest installation guidelines.

### Pipe Dimensions

Pipe I.D. in (mm)	Nominal Diameter, in (mm)													
	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	54* (1350)	60 (1500)
Pipe O.D.** in (mm)	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	61 (1549)	67 (1702)
Perforations	All diameters available with or without perforations													

\*Check with sales representative for availability by region.

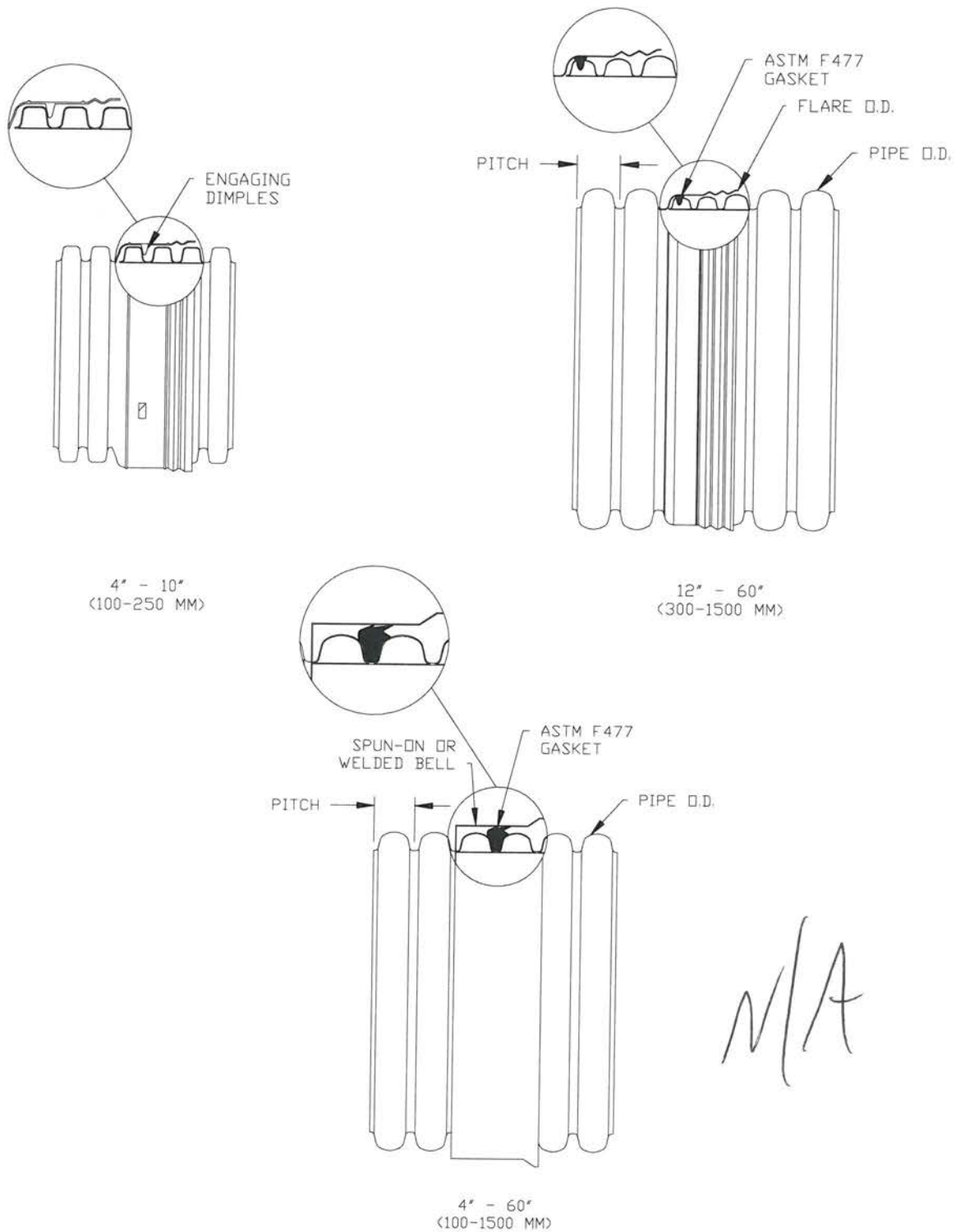
\*\*Pipe O.D. values are provided for reference purposes only, values stated for 12- through 60-inch are  $\pm 1$  inch. Contact a sales representative for exact values.

N/A



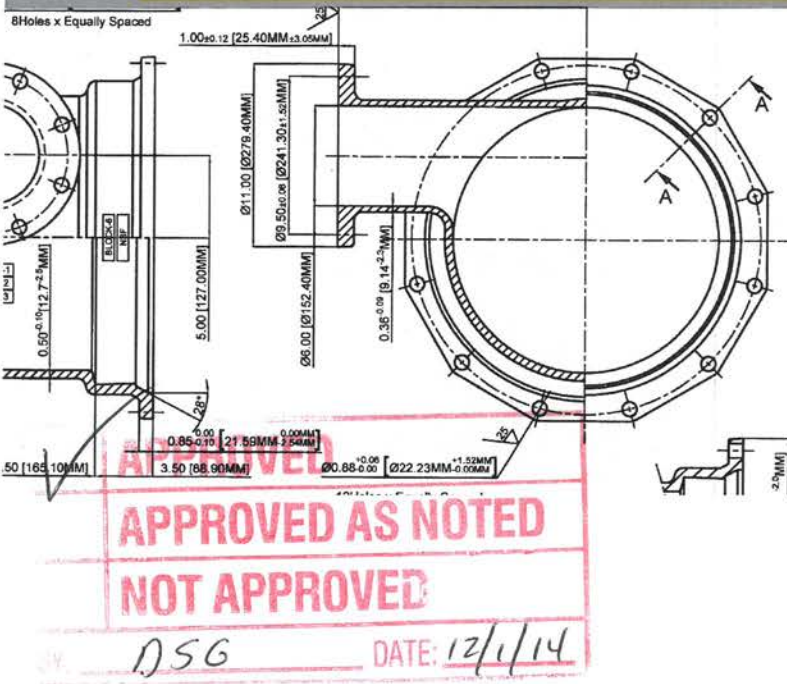
**N-12<sup>®</sup> ST IB (per AASHTO) JOINT SYSTEM**

(Joint configuration & availability subject to change without notice. Product detail may differ slightly from actual product appearance.)



Quality – Service – Commitment – Delivered.

## C153 Mechanical Joint Ductile Iron Fittings



### 3-48" Ductile Iron Mechanical Joint Fittings Class 350

MATERIAL: Ductile Iron ASTM A536

PRESSURE: 350PSI WATER WORKING PRESSURE (CLASS 350) 3" - 24": & 250 PSI 30" - 48"

TESTING: In accordance with ANSI / AWWA C153 / A21.53 & UL - FM requirements

LAYING LENGTH: Short body design - straight section of body deleted to provide a compact and lighter fitting without reducing strength or flow characteristics, in accordance with ANSI / AWWA C153 / A21.53

CEMENT LINING: In accordance with ANSI / AWWA C104 / A21.4 COATING: Tar coated (bituminous)  
inside and out in accordance with ANSI / AWWA C104 / A21.4

GASKETS: SBR in accordance with ANSI / AWWA C111 / A21.11

T-BOLTS: Low Alloy corrosion resistant high strength steel in accordance with ANSI / AWWA C111 / A21.11

APPROVALS: 3"-16" Underwriters Laboratories listed and Factory Mutual Approved.

STANDARDS: Certified to NSF61 Standard ANSI / AWWA C153 / A21.53 for Compact Ductile Iron Fittings 3"-48" for water and other liquids.

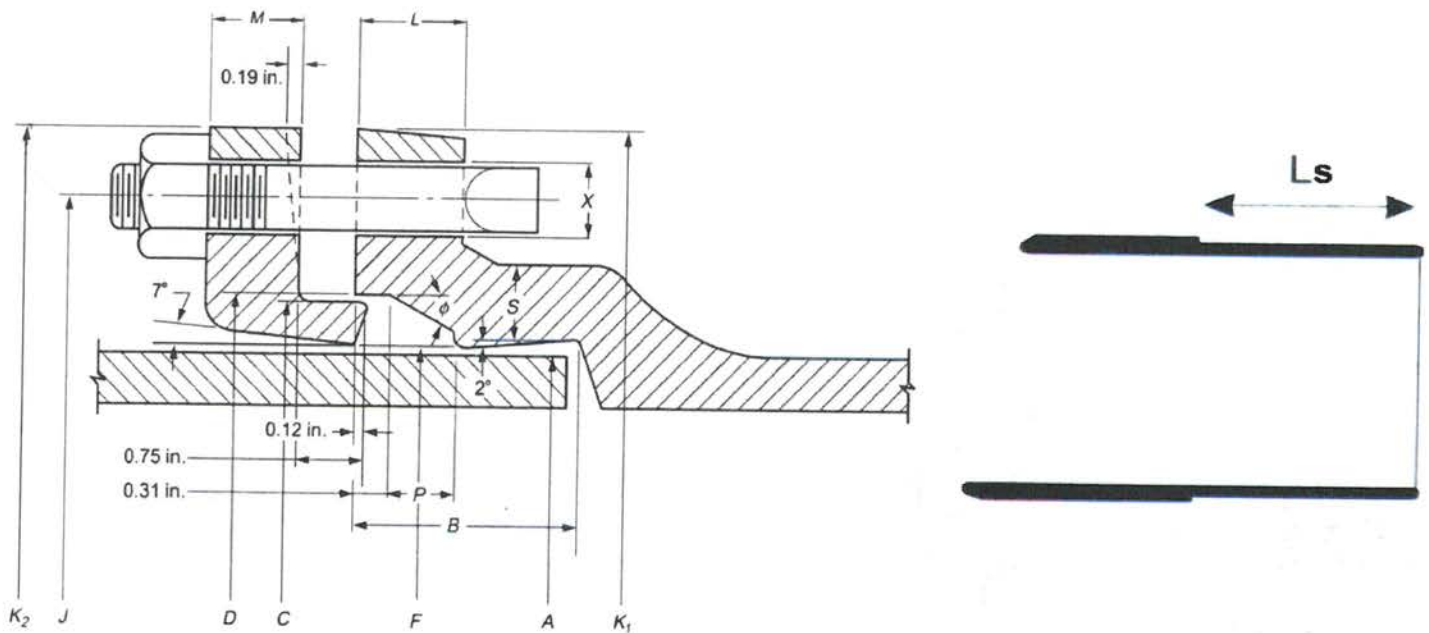
**SIGMA Corporation**

700 Goldman Drive  
Cream Ridge, NJ 08514

800 999 2550 p  
609 758 1163 f  
crm-sales@sigmaco.com

[www.sigmaco.com](http://www.sigmaco.com)

# C153 Mechanical Joint Compact Fittings



Mechanical Joint Details

Plain End Detail

Size	A	B	C	D	F	J	K1	K2	L	M	P	S	X	Bolts			Ls
														No	Size	Len	
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.63	0.39	3/4	4	5/8	3.0	5.5
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.75	0.39	7/8	4	3/4	3.5	5.5
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.75	0.43	7/8	6	3/4	3.5	5.5
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.75	0.45	7/8	6	3/4	3.5	5.5
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.75	0.47	7/8	8	3/4	3.5	5.5
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.75	0.49	7/8	8	3/4	3.5	5.5
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	1.25	0.75	0.55	7/8	10	3/4	4.0	8.0
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	1.31	0.75	0.58	7/8	12	3/4	4.0	8.0
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.75	0.68	7/8	12	3/4	4.0	8.0
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.75	0.69	7/8	14	3/4	4.0	8.0
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	0.75	7/8	16	3/4	4.5	8.0
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	1.00	0.82	1 1/8	20	1	5.5	8.0
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	1.00	1 1/8	24	1	5.5	8.0
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.00	1.25	1 3/8	28	1 1/4	6.0	8.0
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.00	1.35	1 3/8	32	1 1/4	6.0	8.0

Weights in Pounds, Less Accessories / Dimensions in inches  
Ductile Iron Class 350 per ANSI/AWWA C153/A21.53



# SUBMITTAL INFORMATION

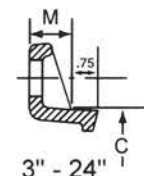
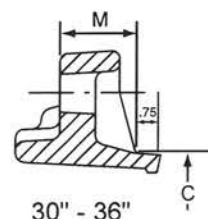
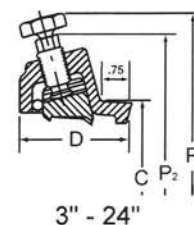
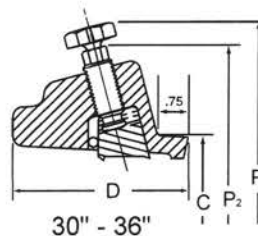
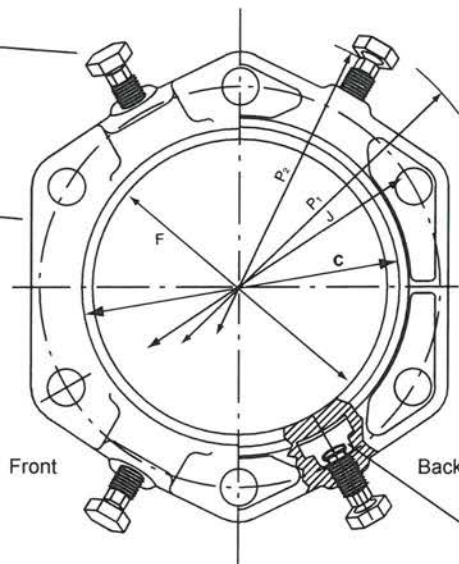
## Uni-Flange Retainer (UFR1400-D-x-I style)



### WEDGE ACTION SERIES 1400-D RETAINER GLAND FOR DUCTILE IRON PIPE

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

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



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

NOM. PIPE SIZE	O.D.	CATALOG NUMBER	PRESSURE RATING (PSI)	NO. OF WEDGES	APPROX. WEIGHT (LBS.)	P1*	P2**	C	D	F	M	J	✓ SUBMITTED ITEM(S)
3	3.96	UFR1400-D-3-I	350	2	6.0	11.04	9.06	4.84	2.65	4.06	0.68	6.19	
4	4.80	UFR1400-D-4-I	350	2	7.5	11.9	10.0	5.92	2.65	4.90	0.88	7.50	
6	6.90	UFR1400-D-6-I	350	3	11.0	14.0	12.1	8.02	2.65	7.00	0.88	9.50	
8	9.05	UFR1400-D-8-I	350	4	14.5	16.2	14.3	10.17	2.65	9.15	1.10	11.75	
10	11.10	UFR1400-D-10-I	350	6	23.0	18.2	16.3	12.22	2.75	11.20	1.10	14.00	
12	13.20	UFR1400-D-12-I	350	8	28.5	20.3	18.4	14.32	2.75	13.30	1.10	16.25	
14	15.30	UFR1400-D-14-I	350	10	46.0	22.9	20.9	16.40	3.00	15.50	1.50	18.75	
16	17.40	UFR1400-D-16-I	350	12	52.0	25.0	23.0	18.50	3.00	17.60	1.56	21.00	
18	19.50	UFR1400-D-18-I	250	12	69.0	28.1	25.8	20.60	3.05	19.70	1.65	23.25	
20	21.60	UFR1400-D-20-I	250	14	76.0	30.2	27.9	22.70	3.10	21.82	1.70	25.50	
24	25.80	UFR1400-D-24-I	250	16	90.0	34.4	32.1	26.90	3.20	26.04	1.85	30.00	
30	32.00	***UFR1400-D-30-I	250	20	221.0	40.6	38.6	33.29	4.30	32.29	2.25	36.88	
36	38.30	***UFR1400-D-36-I	250	24	260.0	46.9	44.9	39.59	4.50	38.62	2.25	43.75	

\* Maximum O.D. of gland on pipe before break-away heads have been removed (as received).

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

\*\*\* 30 - 36" sizes include a Uni-Seal gasket.

### FEATURES

- Eliminates the need of costly and time consuming concrete thrust blocks and corrosion susceptible steel tie rods
- "Auto-Tork" wedge actuating screws assure proper installation
- Wedges are contoured to fit the pipe
- Gland, screws and wedges are black E-coated
- Imported ductile iron castings
- Assembled, inspected and packaged in the U.S.A.

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



**The Ford Meter Box Company, Inc.**  
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<http://www.fordmeterbox.com>

01/03/12

Submitted By:

**APPROVED AS NOTED**  
**NOT APPROVED**

BY:

DSC

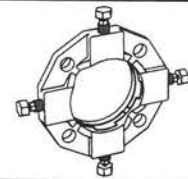
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# SUBMITTAL INFORMATION

## Mechanical Joint Retainer (UFR1500-x-I style)

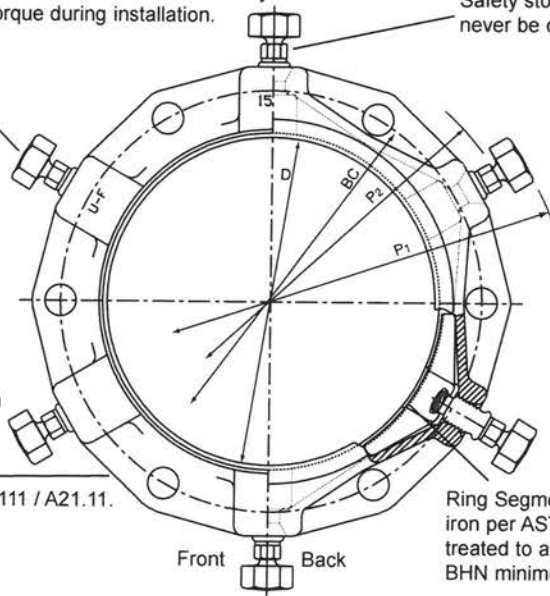


### 3" - 12" SERIES UFR1500 CIRCLE-LOCK MECHANICAL JOINT RESTRAINT FOR C900, C909 AND IPS PVC

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

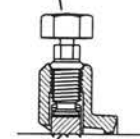
Safety stop insures ring segments can never be over-tightened.

Gland body is of High Strength Ductile Iron per ASTM A536, Grade 65-45-12. Compatible with all mechanical joints conforming to ANSI / AWWA C111 / A21.11.



Ring Segments are ductile iron per ASTM A536 and heat treated to a hardness of 370 BHN minimum.

Auto-Tork Bolt



Restraint Segment



Bolt Hole Cross Section

NOM. PIPE SIZE	O.D.	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)	P1*	P2**		BC	D	PRESSURE RATING					✓ SUBMITTED ITEM(S)
						C900 C909	IPS			C900		C909	ASTM D2241		
										DR-18	DR-14	PC-235	SDR-26	SDR-21	
3"	3.50"	UFR1500-3-I	4	9	11.50"		9.00"	6.19"	4.06"			-	160 PSI	200 PSI	
4"	4.50"-4.80"	UFR1500-4-I	4	10	13.00"	9.40"	9.25"	7.50"	4.90"	235 PSI	305 PSI	-	160 PSI	200 PSI	
6"	6.63"-6.90"	UFR1500-6-I	6	14	15.13"	11.60"	11.65"	9.50"	7.00"	235 PSI	305 PSI	235 PSI	160 PSI	200 PSI	
8"	8.63"-9.05"	UFR1500-8-I	6	18	17.25"	13.75"	13.60"	11.75"	9.15"	235 PSI	305 PSI	235 PSI	160 PSI	200 PSI	
10"	10.75"-11.10"	UFR1500-10-I	8	25	19.38"	16.00"	15.85"	14.00"	11.20"	235 PSI	305 PSI	235 PSI	160 PSI	200 PSI	
12"	12.75"-13.20"	UFR1500-12-I	8	29	21.50"	18.05"	17.85"	16.25"	13.30"	235 PSI	305 PSI	235 PSI	160 PSI	200 PSI	

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

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

### FEATURES

- Fits C900, C909 and ASTM D2241 IPS PVC
- Full circle contact and support of the pipe wall
- "Auto-Tork" actuating screws with heads specially designed to twist off at the correct installation torque, leaving a hex head in case future system maintenance or removal is required
- Restraining segments are mechanically retained in pockets
- Series 1500 eliminates the need to pour expensive and time consuming concrete thrust blocks
- UL/FM approved, 4"-12" nominal size C900 PVC, for use on listed and approved PVC pipe
- Imported ductile iron castings
- Gland, screws and segments are black epoxy coated using the e-coat process
- Gland colored red for identification purposes
- Assembled, inspected and packaged in the U.S.A.

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03/01/12

Submitted By:

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BY: DSG

DATE: 12/1/14

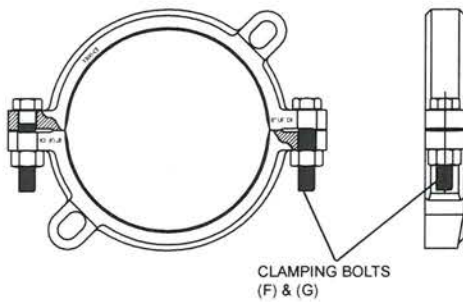
# SUBMITTAL INFORMATION

## Uni-Flange Series UFR1399-C-x-I Restrainer



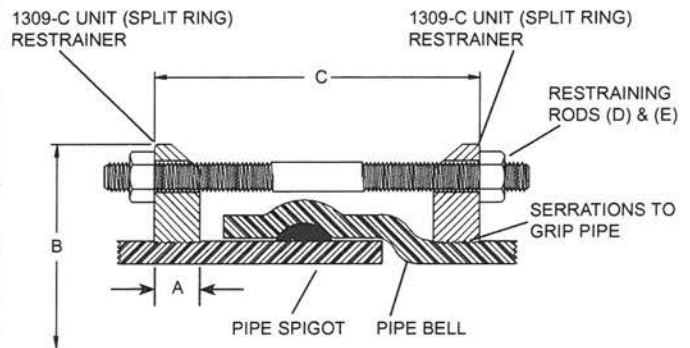
UNI-FLANGE SERIES 1399-C RESTRAINT DEVICE FOR DUCTILE IRON, C900 OR C909 PVC BELL JOINTS  
CAST SIZES 4" - 12"

1309-C SPLIT RESTRAINER



(8" Design Shown)

1399-C ASSEMBLY



NOM PIPE SIZE	PVC PIPE WITH DI PIPE OD STYLE 1399-C		A	B APPROX.	C MAX	RESTRAINING BOLTS / RODS		CLAMPING BOLTS		BC MAX	BC MIN	APPROX. WT. LBS.	✓ SUBMITTED ITEM(S)
	OD	CATALOG No.				No. D	SIZE E	No. F	SIZE G				
4"	4.80	UFR1399-C-4-I	1.50"	9.50"	12"	2	3/4" x 17"	2	5/8" x 3"	8.00"	7.24"	20.4	
6"	6.90	UFR1399-C-6-I	1.50"	11.75"	13"	2	3/4" x 17"	2	5/8" x 3"	10.58"	9.58"	25.0	
8"	9.05	UFR1399-C-8-I	1.75"	14.63"	15"	2	3/4" x 24"	2	3/4" x 3"	12.50"	11.50"	32.0	
10"	11.10	UFR1399-C-10-I	1.75"	16.88"	16"	4	3/4" x 24"	2	3/4" x 3-1/2"	15.25"	14.25"	57.0	
12"	13.20	UFR1399-C-12-I	1.75"	19.35"	18"	4	7/8" x 24"	2	7/8" x 3-1/2"	17.33"	16.33"	63.0	

### FEATURES

- 4" - 12" Sizes: Cast Ductile Iron per ASTM A536 Grade 65-45-12.
- 360° contact and support of the pipe wall.
- Restraining rods are high strength, low alloy steel per ANSI / AWWA C111 / A21.11.
- Rated at full rated pressure of any class of C900, C909 PVC Pipe, minimum 2:1 safety factor.
- Rated at 350 psi on sizes 4"-8" and 250 psi on sizes 10" and 12" on ANSI A21.51/ AWWA C-151 ductile iron pipe.

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06/17/11

Submitted By:

APPROVED

APPROVED AS NOTED

NOT APPROVED

BY:

DSG

DATE:

12/1/14





## SDR35 D 3034 / PS46 F 679 FITTING SPECIFICATIONS

- 1.0 **GPK PVC Sewer Fittings** shall be manufactured in accordance with either ASTM D 3034, F1336 or F 679. The PVC material shall have a minimum cell classification of 12454, 13343 or 12364 as defined in ASTM D 1784.
- 2.0 The **purpose** of GPK in-line fittings is to convey municipal sanitary and industrial wastes, storm water runoff and many other related applications. They are designed to be used in gravity flow and low pressure applications not to exceed 10.8 psi. (74.5 kPa).
- 3.0 **Injection Molded Fittings** are produced in sizes 4" (100mm) through 12" (300mm) diameter. **Fabricated Fittings** are produced in sizes 4" (100mm) through 36" (973mm) diameter. A fabricated fitting is considered any fitting made from pipe or a combination of pipe and molded components.
- 4.0 **Chemical Resistance** GPK fittings resist attack from certain alcohols, alkalies, salt solutions, acids and other types of chemicals. Refer to chemical resistant chart for suitability.
- 5.0 **Marking.** GPK fittings shall be marked with applicable size, "PVC", company name or logo, PSM and the ASTM specification number (D 3034, F 1336 or F679). The fittings and/or packaging shall include the manufacturer's date and shift code.
- 6.0 **Testing.** A test after installation of either low pressure air (Uni-B-6) or a water infiltration-exfiltration test is recommended.
- 7.0 **Deflection Test.** The maximum allowable pipe fitting deflection should be 7 ½% of base ID as shown in table X1.1 of D 3034, and X2.1 of F 679.
- 8.0 **Backfilling and Tamping.** Backfilling should follow closely after assembly of pipe and fittings.
- 8.1 **Backfilling.** with proper material is important to achieve desired density in haunching area which enables pipe, fitting and soil to work together to meet designed load requirements. This eliminates excess deflection and shear breaks due to heavy loads. Approved material shall be used properly, compacted continuously above and around the pipe and fittings as well as between fitting and trench wall. A cushion of approved material up to a minimum of 12" (305mm) over the fittings and between the trench walls shall be applied in accordance with the engineers' specifications.
- 8.2 **Tamping.** This shall be done by hand tamping of the embedment material between the trench wall of the service line fitting and riser connection. Tamping can also be done by mechanical tampers or by using water to consolidate the embedment material. **Extreme unstable ground conditions** may require wider trenches to enable you to compact a larger area around the pipe and fittings to the density consistent of the original ground surface conditions.
- 9.0 **Service Lines.** Normally, service lines from the property line to the collection sewer should be a minimum depth of 3 feet (1 meter) at the property line and should be laid in straight alignment and uniform slope of not less than ¼" per foot (20.8mm/meter) for 4" (100mm) nominal pipe and 1/8" (10.4mm/meter) per foot for 6" (150mm) pipe. Where collection sewers are deeper than 7 feet (2 meters) a vertical standpipe or stack is permitted but not recommended, consult the project engineer for proper installation details. Deep sewer chimney and risers necessitate extreme care during backfilling. Where surface loading is anticipated the final backfill must be compacted to a density compatible with those surface loads to be encountered.
- 9.1 **Backfilling around pipe service laterals on slope.** Extra attention should be given on slopes to prevent the newly backfilled trench from becoming a "French Drain". Before backfilling completely there is a tendency for ground and surface water to follow the direction of the looser soil. This flow may wash out soil from under or around pipe and branch line fittings, reducing or eliminating the support needed. To avoid this problem the backfilling should be of greater compaction. Tamping should be done in 4" (100mm) layers and continued in this manner all the way up to the ground or surface line of the trench. Concrete collars or other concrete poured around the fitting to stabilize unwanted movement is recommended to prevent water from undercutting the underside of the pipe and fittings.
- Summary:** Due to various ground conditions and different situations, installation techniques vary widely. We warranty our products to be free of manufacturer's defects. We will not replace the products that are installed or used incorrectly. The design of the systems that our product is used in is a factor that cannot be overlooked.

✓ APPROVED

APPROVED AS NOTED

NOT APPROVED

BY: DS81G DATE: 12/1/14

# GPB FITTING SUBMITTAL SHEET

- Intro:** GPB manufactures PVC sewer fittings in accordance with either ASTM D 3034, F 1336 or F 679 to be used in gravity flow or low pressure applications. Injection molded fittings are produced in sizes 4" (100mm) through 12" (300mm) diameter. Fabricated fittings are produced in sizes 4" (100mm) through 36" (973mm) diameter.
- Material:** Fabricated fittings are manufactured from PVC pipe and molded components meeting the requirements of either ASTM D 3034, F 1336 or F 679 for workmanship, extrusion quality, stiffness, impact resistance, dimensions and structural performance.
- Extruded pipe components are made from PVC material with a minimum cell classification of 12454, 13343 or 12364 as defined in ASTM D1784.
- Injection molded fittings are made from PVC material with a minimum cell classification of 12454 or 13343 as defined in ASTM D 1784.
- Extrusion Quality:** Extruded components are tested in accordance with and meet the requirements of ASTM D 2152 for properly fused PVC.
- Impact Resistance:** Extruded Components are tested in accordance with ASTM D 2444 using a 20 lb (9.07kg). Tup A and a Flat Plate Holder B. The strength shall equal or exceed the values shown below:
- |   |   |   |
|---|---|---|
| 4" – 5" 150 Ft-Lbs<br>(100mm – 125mm 203 J) | 6" – 8" 210 Ft-Lbs<br>(150mm – 200mm 284 J) | 10" – 36" 220 Ft-Lbs<br>(250mm – 973mm 299 J) |
|---|---|---|
- Impact Resistance:** Injection molded fittings are tested in accordance with ASTM D 2444 using a 20 lb (9.07kg). Tup A and a Flat Plate Holder B. The strength shall equal or exceed the values shown below:
- |                              |  |  |
|------------------------------|--|--|
| 4" 50 Ft-Lbs<br>(100mm 68 J) | 6" – 8" 75 Ft-Lbs<br>(150mm – 200mm 102 J) | 10" – 12" 90 Ft-Lbs<br>(250mm – 300mm 122 J) |
|------------------------------|--|--|
- Pipe Stiffness:** Extruded Components are tested in accordance with ASTM D 2412. The stiffness equals or exceeds the requirements of ASTM D 3034 and F 679.
- Pipe Flattening:** Extruded components are flattened as described in ASTM D 3034 and F 679 until the distance between the plates is 40% of the outside diameter of the pipe. There shall be no splitting, cracking or breaking.
- Pressure/Pressure Deflection:** Gasketed joints are tested in accordance with ASTM D 3212.  
Pressure: 10 minutes @ 10.8 psi (74.5 kPa) + 10 minutes deflected @ 10.8 psi (74.5 kPa).  
Vacuum: 10 minutes @ 22 in. Hg (74 kPa) + 10 minutes deflected @ 22 in. Hg (74kPa).
- Branch Bending:** The chemically fused areas around the fabricated branches of tee, wye and tee-wye fittings are tested to ASTM F 1336 to verify their strength and integrity.
- Pipe Stop Support:** Tee and tee-wye fittings are tested to requirements of ASTM F 1336 for pipe stop load support. No cracking or splitting shall occur and pipe spigot shall not protrude into waterway of the fitting.
- Joining Methods:** Chemically Fused Solvent Weld Joints  
Solvent cement is handled and tested in accordance with ASTM D 2564 and D 2855.  
The Lap Shear Strength shall equal or exceed 900 psi (6205 kPa) @ 72 hours.
- Heat Fusion Welded Joints (Butt Fusion Welds)
- Elastomeric Seals (Gaskets)  
Must meet all requirements of ASTM F 477 and D 3212.
- Saddles:** Injection Molded saddle tees and saddle wyes shall have skirts with a minimum of 80 square inches (516 square cm) surface area which can be bonded to pipe.
- Fabricated saddle tees and saddle wyes shall have skirts with a minimum of 160 square inches (1032 square cm) surface area which can be bonded to pipe.
- The worm drive saddle straps used to fasten the saddles are manufactured with corrosion resistant 300 series AISI stainless steel.
- GPB does not recommend gasket skirts where air tests are required.
- Epoxy Reinforced Welds.





## SCH. 40 DRAINAGE/DWV FITTING SPECIFICATIONS

- 1.0** **GPK PVC Schedule 40 drainage/DWV** fittings shall be manufactured in accordance with either ASTM D2665 or F1866. The PVC material shall have a minimum cell classification of 12454-B as defined in ASTM D-1784.
- 2.0** The **purpose** of GPK Schedule 40 Drainage/DWV in-line fittings is to convey and provide a drainage and venting of storm water runoff, municipal or industrial chemicals and wastes as well as many other commercial and agricultural applications. The fittings are designed for non-pressure or low pressure applications up to 25 psi.
- 3.0** **Injection molded fittings** are produced in sizes 4" through 8" diameter. Fabricated fittings are produced in sizes 4" through 24" diameter. A fabricated fitting is any fitting made from pipe or a combination of injection molded components and pipe.
- 4.0** **Chemical Resistance.** GPK PVC fittings resist attack from many acids, alkalies, alcohol, salt solutions and other chemicals. Refer to chemical resistance chart for suitability.
- 5.0** **Dimensions:**
- 5.1** **Socket Inside Diameters** and socket depths shall comply with the values listed in ASTM D-2665 or F1866.
  - 5.2** **Threads** shall be American National Standard Taper Pipe Threads (ANSI B1.20.1) which shall be gaged in accordance with ASTM Method D-2122.
  - 5.3** **Gasketed Bell** connections comply with ASTM D3212 and F477.
- 6.0** **Marking.** GPK Schedule 40 Drainage/DWV fittings shall be marked with applicable size, SCH 40 DRAINAGE, company name and applicable ASTM Number (D2665/ F1866). The fittings and/or packaging shall also include the manufacturer's date and shift code.
- 7.0** **Installation.** Fittings shall be installed in properly engineered piping systems in accordance with established procedures and standards. The assembly of solvent cemented joints shall be in accordance with ASTM Practice D-2855. For threaded ends, use teflon tape recommended by the manufacturer for use with plastics - DO NOT use oil based pipe joint compound. One to two turns beyond finger tight is generally acceptable. Overtightening may cause damage to either pipe or fitting.

## GPKFITTINGSUBMITTALSHEET

- Intro: GPK manufactures Schedule 40 drainage/DWV Fittings sizes 4" through 24" for non-pressure or low pressure applications up to 25 psi in accordance with ASTM D2665 or F1866.
- Material: GPK Schedule 40 Drainage/DWV Fittings are made from PVC material with a minimum cell classification of 12454-B as defined in ASTM D-1784. Fabricated fittings are manufactured from PVC pipe meeting the requirements of ASTM D-2665 or D-1785.
- Dimensions: Dimensions and tolerances comply with those shown in Table 1 and Table 2 of D-2665 or Table 1, Table 2 and Table 3 of ASTM F1866.
- Pipe Stiffness: Extruded components exhibit a pipe stiffness which equals or exceeds the values shown in Table 3 of D-2665 when tested in accordance with ASTM Method D-2412.
- Pipe Flattening: Extruded components are flattened as described in ASTM D1785 until the distance of the plates is 40% of the outside diameter of the pipe or the walls of the pipe touch, whichever occurs first. There shall be no splitting, cracking or breaking.
- Branch Bending: The chemically fused areas around the fabricated branches of tee and wye fittings are tested to STM F1866 to verify their strength and integrity.
- Impact Resistance: Fittings are tested in accordance with ASTM D-2444 using a 12 lb. or 20 lb. Tup A and a Flat Plate Holder B. Fabricated fitting shall withstand an impact equal to or exceeding 15 Ft.lbs.
- Marking: Fabricated fittings shall be marked on the body or hub with the manufacturer's name and trademark, "PVC", size, SCH 40 DRAINAGE, date.
- Joining Methods: Chemically Fused Solvent Welded Joints  
Solvent cement is handled and tested in accordance with ASTM D-2564 and D-2855. The Lap Shear Strength shall equal or exceed 900 psi @ 72 hours.
- Heat Fusion Welded Joints (Butt Fusion Welds)
- Elastomeric Seals (Gaskets)  
Meets all applicable requirements of ASTM F477 and D3212.
- Pressure/Pressure Deflection: Gasketed joints are tested in accordance with ASTM D3212.  
Solvent cement sockets are tested in accordance with ASTM D2672.  
Section 10.4 Socket Joint Tightness Test of 25psi.

✓	APPROVED
	APPROVED AS NOTED
	NOT APPROVED
BY: DSG	DATE: 12/1/14

## 2" -12" SERIES 2500 RESILIENT WEDGE GATE VALVE

### FEATURES

The AMERICAN Series 2500 Ductile Iron Resilient Wedge Gate Valve is designed for use in drinking water, sewage and fire protection systems as well as irrigation and backflow control systems.

#### Triple O-ring Stem Seals

Sealing the lubrication chamber is a series of three O-ring stem seals. The O-rings help to isolate the lubrication chamber.

#### Thrust Washers

Two thrust washers are used. One is located above and one is located below the thrust collar. The use of thrust washers helps provide easy operation.

#### Fusion-Bonded Epoxy

The Series 2500 valve is epoxy coated on the interior and the exterior. The fusion-bonded epoxy coating is applied prior to assembly. The bolt holes and body-to-bonnet flange surfaces are fully epoxy coated.

### FEATURES/SPECIFICATIONS

#### Ductile Iron Construction

The ductile iron body, bonnet and wedge provide strength and a pressure rating that meets or exceeds the requirements of AWWA C515. The tensile strength of ductile iron is more than twice that of cast iron. This added strength makes the Series 2500 more durable and allows for a 250 psig pressure rating. This strength and higher pressure rating is provided in a compact, lightweight and easy-to-handle ductile iron valve.

#### O-ring Style Gaskets

The body-to-bonnet and stuffing box seals are pressure-energized O-rings. This reduces the need for excessive bolt loading, which is required by designs that use flat gaskets. The O-rings are reusable, which reduces downtime during any needed repair.

The Series 2500 Resilient Wedge Gate Valve is furnished in configurations that are Listed by Underwriters Laboratories, Inc. and Approved by Factory Mutual Research Corp.

### The Series 2500 Ductile Iron Resilient Wedge Gate Valve has these standard features:

- 250 psig AWWA, UL and FM Pressure Rating
- UL Listed-FM Approved configurations
- Seat Tested at 375 psig
- Shell Tested at 500 psig
- Fusion-Bonded Epoxy Coating Complies With ANSI/AWWA C550
- Class 250 Raised Face Flanges Available
- 4" -12" Fully Rubber-Encapsulated Wedge
- Triple O-ring Stem Seals
- Thrust Washers
- Smooth Larger Than Nominal Waterway
- Leak-Tight Closure
- 4" and Larger Sizes Certified to ANSI/NSF Standard 61
- Complies with ANSI/AWWA C515
- Ductile Iron Body, Bonnet, Wedge, Operating Nut and Stuffing Box

### SPECIFICATIONS

Valves 2" -12" in size shall be of a resilient wedge design. The valve shall have a cold water rated working pressure of 250 psig. All cast ferrous components shall be ductile iron and shall be manufactured in compliance with the latest edition of ANSI/AWWA C515. The valve shall also be Listed by Underwriters Laboratories Incorporated and Approved by Factory Mutual Approvals, in applicable configurations.

The valve design shall be lightweight, easy to handle, and constructed with wall thickness per Table 2, of ANSI/AWWA C515. Heavy wall and/or cast gray-iron bodies are not acceptable. The valve shall have a smooth and oversize waterway and have the marking "D.I." or "Ductile Iron" cast onto the body. The valve wedge shall be constructed of ductile iron and provided with protective wedge guide covers in sizes 4"-12". All wedges 3" and smaller shall be constructed of bronze. All 4"-12" wedges shall be fully encapsulated with EPDM rubber.

Valve stems shall be sealed by three O-rings. Two of the O-rings shall reside above the thrust collar. The O-rings shall be replaceable under full working pressure and with the valve in the full open position. O-rings

set in a cartridge shall not be allowed. The valve shall also be equipped with thrust washers above and below the stem thrust collar for reduced operating torque.

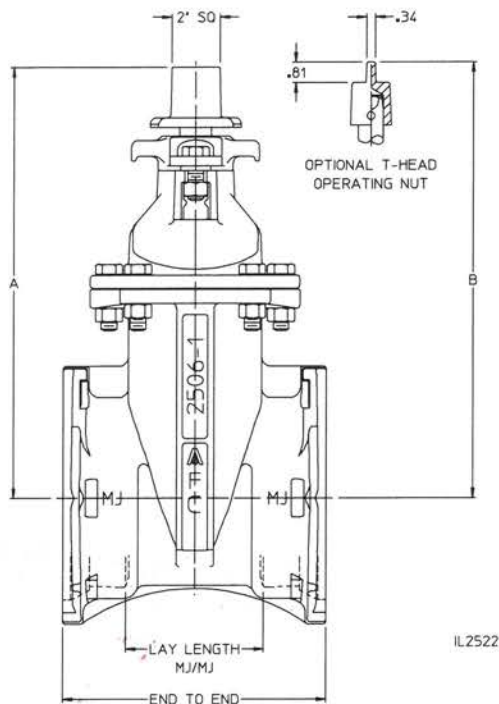
All exterior valve body bolting shall be Type 304 stainless steel and shall be provided with hexagonal heads with dimensions conforming to ANSI B18.2.1. Metric size and/or socket head cap screws, or bolts, are not allowed. The operating nut shall be 2" square and shall be constructed of ductile iron fitted to a square tapered stem to help ensure even distribution of input torque. All body gaskets shall be of the pressure energized O-ring style design.

All internal and external ferrous surfaces of the valve body and bonnet shall have fusion-bonded epoxy coating, complying with ANSI/AWWA C550. The coating shall be electro-statically applied prior to assembly and shall be Certified to ANSI/NSF Standard 61.

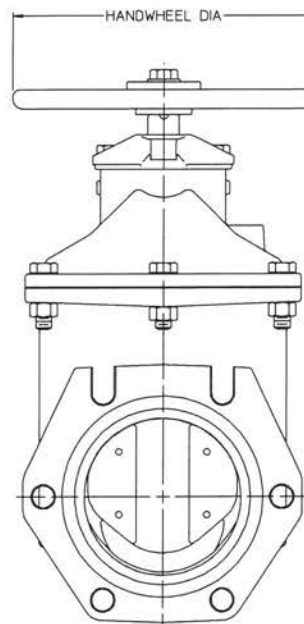
All valves shall be the AMERICAN Flow Control Series 2500 or 2500-1 Resilient Wedge Gate Valves.



## STANDARD 2"-12" NRS DIMENSIONS



SHOWN WITH 2" OPERATING NUT



SHOWN WITH OPTIONAL HANDWHEEL  
NOT AVAILABLE IN UL/FM

DIMENSION	VALVE SIZE							
	Series 2500			Series 2500-1				
	2"	2-1/2"	3"	4"	6"	8"	10"	12"
A	9.25	11.03	11.84	13.91	17.12	20.47	24.06	27.59
B	10.22	12.00	N/A	N/A	N/A	N/A	N/A	N/A
End to End – MJ/MJ	8.25	N/A	8.62	10.00	10.50	11.50	12.50	13.50
Lay Length – MJ/MJ	3.25	N/A	3.62	5.00	5.50	6.50	7.50	8.50
End to End – FL/FL (Class 125)	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00
End to End – FL/FL (Class 250)	N/A	N/A	11.12	12.00	15.88	16.50	18.00	19.75
End to End – TY/TY	N/A	N/A	N/A	13.00	15.88	17.50	18.75	19.75
End to End – FL/MJ (Class 125)	N/A	N/A	8.31	9.50	10.50	12.38	13.62	14.38
End to End – FL/TY (Class 125)	N/A	N/A	N/A	11.00	13.19	14.50	15.88	16.88
End to End – PVC/PVC	10.75	11.12	11.38	13.00	15.88	17.50	N/A	N/A
End to End – Threaded	6.25	7.38	7.38	N/A	N/A	N/A	N/A	N/A
Handwheel Diameter	8.06	8.00	8.00	10.00	12.00	14.00	15.50	15.50
No. of Turns to Open	9	11	13	14	20	26	32	38

- 3" through 12" valves meet or exceed requirements of ANSI/AWWA C515.
- 2" through 12" valves may be ordered in configurations which are Listed by Underwriter's Laboratories, Inc. and Approved by Factory Mutual Research Approvals.
- 2" through 12" valves have 250 psig AWWA rated working pressure.
- 2-1/2" through 12" valves have 250 psig UL and FM rated working pressure.
- Fusion-bonded epoxy coating meets or exceeds requirements of ANSI/AWWA C550.
- Flanged ends are in accordance with ANSI/AWWA C110/A21.10 (ASME B16.1, Class 125).

- Threaded ends are in accordance with ASME B16.4, Class 125.
- Mechanical joint ends are in accordance with ANSI/AWWA C111/A21.11.
- Tyton ends and push-on ends are in accordance with ANSI/AWWA C111/A21.11 for use on cast iron (CI) size ductile iron pipe.
- PVC ends are suitable for use on steel (IPS) sizes of PVC or steel pipe.
- MAINTENANCE:** Each valve should be operated through a full cycle and returned to its normal position. This should be done on a time schedule that is designed to prevent a buildup of tuberculation or other deposits that could render the valve inoperable or prevent a tight shutoff. It is recommended this be done once a year.

## FEATURES

AMERICAN Flow Control's American-Darling 5-1/4" B-84-B-5 hydrant incorporates more than 80 years of experience in design, manufacture and field experience. This means dependable and efficient operation when needed.

Introduced in 1984, the 5-1/4" B-84-B-5 hydrant is rated at 250 psig and is seat tested at 500 psig. This hydrant meets or exceeds all requirements of AWWA C502 for dry-barrel hydrants.

The 5-1/4" B-84-B-5 is manufactured with the features you expect from a high-quality fire hydrant. The all-bronze seat and drain ring ensure that the 5-1/4" B-84-B-5 hydrant is easily repaired by just one person.

### 5-1/4" B-84-B-5 Standard Features:

- Upper barrel is furnished with an E-coat primer and a two-part polyurethane top coat for durability, gloss and color retention
- Ductile iron upper and lower barrels and base
- Easy 360° rotation of nozzle section
- 250 psig rated working pressure
- Shell tested at 500 psig

### Optional UL-FM

In applicable configurations, the 5-1/4" B-84-B-5 hydrant is Listed by Underwriters Laboratories, Inc., as meeting their standard UL 246, latest edition. The Factory Mutual Research Corporation has Approved the 5-1/4" B-84-B-5 in applicable configurations. Both Underwriters Laboratories and Factory Mutual Research Corporation require that we consistently manufacture and test our hydrants in full compliance with their stringent requirements. Our facilities are subject to periodic inspections to ensure we are in compliance with their standards.

- Lubrication chamber
- Stainless steel bolting below grade
- Bronze-to-bronze seating
- Short, lightweight disassembly wrench
- Travel stop nut located in top of hydrant
- Positive compression, fast-closing drains



## BENEFITS

### Spring-Loaded Multiport Drains

There are two port drains and four drain outlets as a standard feature on the 5-1/4" B-84-B-5. The rod spring helps assure drains close after approximately three turns of the operating nut. This important safety feature helps prevent washouts.

### Near Vertical Hydrant Valve

Minimal taper on the 5-1/4" B-84-B-5 hydrant valve helps prevent entrapment of debris in the hydrant seating area.

### Lubrication Chamber

Seals operating threads from water and debris. Proper Maintenance required.

### Top Travel Stop Nut

Helps prevent stem buckling and damage to bronze components which may occur if excessive torque is applied in the full open position.

## SPECIFICATIONS

Fire hydrants shall meet or exceed AWWA C502, latest revision. Rated working pressure shall be 250 psig, test pressure shall be 500 psig and hydrants shall include the following specific design criteria:

The main valve closure shall be of the compression type. Traffic feature to be designed for easy 360° rotation of nozzle section during field installation.

The main valve opening shall not be less than 5 1/4" and be designed so that removal of all working parts can be accomplished without excavating. The hydrant valve shall have a vertical taper of 20° or less. The bronze seat shall be threaded into mating threads of bronze. The draining system of the hydrant shall be bronze and positively activated by the main operating rod. Hydrant drains shall close completely after no more than three turns of the operating nut. There shall be a

minimum of two internal ports and four outlets to the exterior of the hydrant. Drain shutoff to be by direct compression closure. Sliding drains are not permitted.

Hydrant barrels shall be made of ductile iron.

Hydrant upper barrel shall be factory coated with Electrodeposition (E-coat) epoxy primer and catalyzed two-part polyurethane topcoating.

Friction loss not to exceed 3.0 psig at 1000 gpm through 4 1/2" pumper nozzle. Hydrants shall be equal to AMERICAN Flow Control's American-Darling 5-1/4" B-84-B-5.





AMERICAN

FLOW CONTROL

THE RIGHT WAY

## CONSTRUCTION

Fully complies with AWWA C502 and is available UL Listed and Factory Mutual Approved in applicable configurations.

### ONE PIECE BRONZE OPERATING NUT

Has a removable pipe plug to allow lubrication of operating threads.

### TOP TRAVEL STOP NUT

Provides a positive limit to main rod travel. Eliminates contact of valve bottom with interior of base, thereby protecting coating.

### HYDRANT ROD

Furnished in two sections of high-tensile steel. Upper section has bronze sleeve where it passes through O-rings. Upper and lower sections are connected by cast iron coupling using stainless steel pins.

### TWO-PART CATALYZED PRIMER AND POLYURETHANE COATING SYSTEM

Upper barrel is provided with an e-coat primer and a two-part polyurethane top coat for improved durability, color and gloss retention.

### HYDRANT SPRING

Assures quick drain closure and allows throttling.

### DRAIN LEVER

Rugged bronze lever performs dual function as carrier for drain lever pads and as wrench to remove working parts.

### BASE BOLTS AND NUTS

Are stainless steel for corrosion resistance.

### HYDRANT SEAT

Made of bronze, with accurately machined seat for hydrant valve with two drain ports.

### HYDRANT VALVE

Consists of an iron valve top and bottom. Hydrant valve rubber constructed of EPDM rubber. Valve has a near vertical seat taper to minimize entrapment of debris while sealing against an all-bronze hydrant seat. Spherical design provides minimal flow loss.

### WEATHER COVER

The word "open" and an arrow show direction to turn the operating nut. The rubber weather shield helps prevent water and debris from entering the housing area.

### HOUSING AND HOUSING COVER

Retain operating nut and thrust washer. Rugged construction helps withstand operating forces.

### THRUST WASHER

Takes upward thrust when opening hydrant valve and reduces operating torque.

### NOZZLES

Patented design allows field replacement of damaged nozzles in minutes by one person. Uses no pins or set screws that can become dislodged or lost.

### UPPER BARREL

Ductile iron with markings identifying size, model, and year of manufacture.

### TRAFFIC FEATURE

Upper barrel is connected to lower barrel with breakable traffic flange and 8 bolts and nuts. This feature allows 360° rotation of upper nozzle section.

### LOWER BARREL

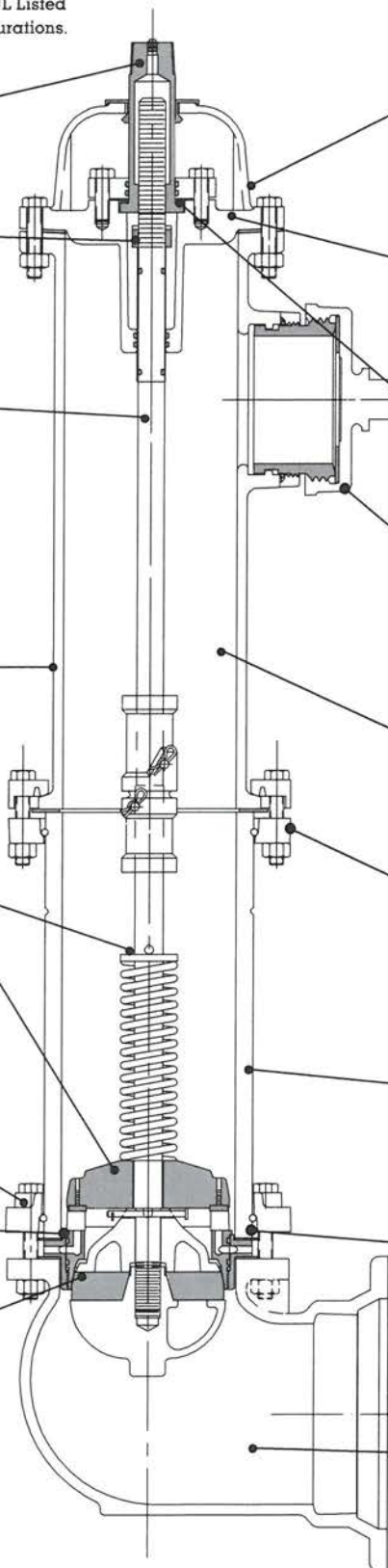
The ductile iron lower barrel provides extra strength against traffic impact damage.

### HYDRANT DRAIN RING

Securely held between barrel and base flange, provides bronze-to-bronze threaded connection for hydrant seat. Serves as four non-corrosive multiport drain channels.

### BASE

Spherical-shaped base has no projections or cavities to obstruct flow or collect sediment. Base is epoxy-coated ductile iron.



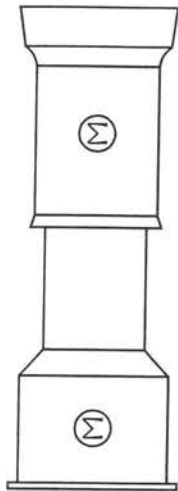
# Valve Boxes

Municipal

VB261-8 and VB461-8

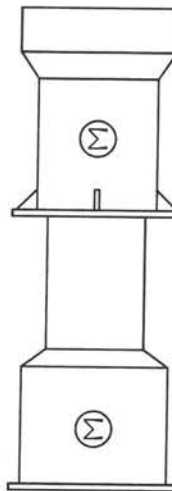
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**APPROVED AS NOTED**  
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 BY: DSG DATE: 12/1/14

**SCREW TYPE**



**VALVE BOX COMPLETE**

**SLIP TYPE**



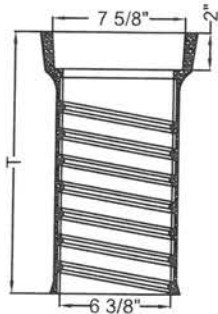
**VALVE BOX COMPLETE**

SREW TYPE	SPECIFICATIONS COMMON TO SCREW TYPE & SLIP TYPE						SLIP TYPE
	COMPLETE	TOP		BOTTOM			
ITEM #	HEIGHT RANGE	APPX. WT (LBS.)	LENGTH (T) (INCHES)	APPX. WT (LBS.)	LENGTH (B) (INCHES)	APPX. WT (LBS.)	ITEM #
VB261	18-22	54	10	32	15	32	VB461
VB262	27-37	72	16	41	24	32	VB462
VB264	39-49	81	16	41	36	41	VB464
VB266	39-59	99	26	59	36	41	VB466
VB267	51-71	122	26	59	48	63	VB467
VB268	63-83	131	26	59	60	72	VB468

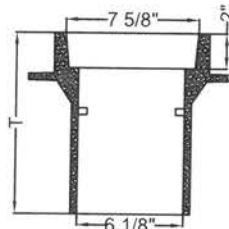
Also Available in Extra Heavy Weights:

Item No.	Weight
VB262X	76
VB262X-35*	76
VB264X	90
VB266X	110
VB267H	129

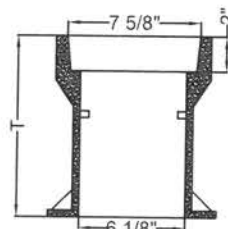
\*Denotes Class 35 Cast Iron



**TOP SECTION**

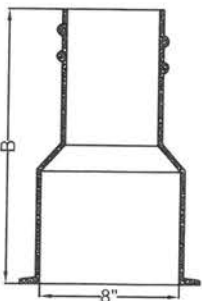


**WITH TOP FLANGE**



**WITH BOTTOM FLANGE**

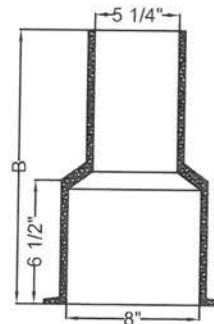
**TOP SECTION**



**BOTTOM SECTION**

LIDS FIT IN BOTH SCREW TYPE & SLIP TYPE VALVE BOXES	
<p>VB2600 (5 1/4" DROP LID)</p>	<p>VB2625 (5 1/4" LOCK LID)</p>

Item No.	Lid Marking
VB2600D	DRAIN
VB2600G	GAS
VB2600S	SEWER
VB2600W	WATER



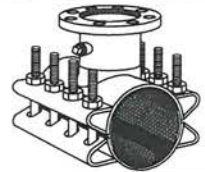
**BOTTOM SECTION**

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# SUBMITTAL INFORMATION

## Stainless Steel Tapping Sleeve 4"-12" - (FTSS-xxx-x style)



### TAPPING SLEEVE WITH STAINLESS STEEL OR CARBON STEEL FLANGE

Flange - 18-8 Type 304 stainless steel with recess per MSS SP60 to accept standard tapping valves. Flange conforms to AWWA C228 Class D ANSI 150# drilling. Optional carbon steel flange, per AWWA C207, is available.

Outlet Pipe - Schedule 5, Type 304 stainless steel except 4" is Schedule 10

3/4-14 Brass Test Plug



Outlet Gasket - Virgin Buna-N compounded for water service, per ASTM D2000. Outlet gasket assures complete seal of outlet area.

Bolts, Nuts, & Washers - Type 304 stainless steel. Heavy hex nuts and washers are coated to prevent galling and maximize bolt efficiency.

Full Gasket - Gridded virgin SBR compounded for water service, per ASTM D2000. Full gasket gives 360° pipe coverage.

Armors - Heavy gage stainless steel are vulcanized to gasket and recessed to bridge the gap between lugs.

3/16" lug (1/4" lug if using a 3/4" bolt)

NOM. PIPE SIZE	SLEEVE O.D. RANGE	CATALOG NUMBER	BY	FLANGED OUTLET SIZE*	APPROX. WT.	NOMINAL DIMENSIONS - INCHES					SADDLE THICKNESS (GAGE)	STRAP THICKNESS (GAGE)	BOLT SIZE	✓ SUBMITTED ITEM(S)
						A	B	C	D	E				
4"	4.50-4.80	FTSS-480-	X	4"	38	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
	4.80-5.00	FTSS-500-			38	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
	5.10-5.30	FTSS-530-			38	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
	5.20-5.40	FTSS-540-			38	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
6"	6.63-7.00	FTSS-700-	X	4"	42	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
	6.90-7.30	FTSS-730-			47	7-1/32"	6-3/8"	5-1/2"	15	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	7.30-7.50	FTSS-750-			47	7-1/32"	6-3/8"	5-1/2"	15	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	8.63-9.05	FTSS-905-			42	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
8"	9.05-9.30	FTSS-930-	X	4"	49	7-1/32"	6-3/8"	5-1/2"	15	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	9.30-9.60	FTSS-960-			75	9-1/32"	8-5/16"	5-5/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	9.45-9.75	FTSS-975-			75	9-1/32"	8-5/16"	5-5/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	10.75-11.10	FTSS-1110-			47	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
10"	11.10-11.40	FTSS-1140-	X	6"	53	7-1/32"	6-3/8"	5-1/2"	15	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	11.40-11.70	FTSS-1170-			79	9-1/32"	8-5/16"	5-5/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	11.85-12.15	FTSS-1215-			99	11-1/32"	10-1/4"	6-1/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	12.75-13.20	FTSS-1320-			50	5-1/32"	4-1/4"	5-3/16"	15	.28	.105" (12)	.075" (14)	5/8"x6-1/2"	
12"	13.20-13.50	FTSS-1350-	X	6"	55	7-1/32"	6-3/8"	5-1/2"	15	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	13.50-13.80	FTSS-1380-			86	9-1/32"	8-5/16"	5-5/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
	14.10-14.40	FTSS-1440-			104	11-1/32"	10-1/4"	6-1/8"	20	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	
					138	13-1/32"	12-1/4"	6-1/4"	24	.34	.105" (12)	.075" (14)	5/8"x6-1/2"	

\* To order: Add Flanged Outlet Size to catalog number. Example: The complete FTSS catalog number for a 6" pipe (6.90 O.D.) with a 4" stainless steel flange is FTSS-730-4. For a carbon steel flange, add "A" to the catalog number. Example: FTSS-710-4A

### FEATURES

- Body, Straps and UNC threaded bolts are made of 18-8 Type 304 stainless steel. Flange can be either Stainless Steel or ASTM A36 Carbon Steel. All sleeves are fully passivated for corrosion resistance.
- Outlet gasket is Buna-N rubber (ASTM 2000).
- Meets AWWA C223
- UL Classified to ANSI/NSF Standard 61

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



**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
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Overseas Fax: 260-563-0167  
<http://www.fordmeterbox.com>

11/05/10

Submitted By:

APPROVED AS NOTED  
NOT APPROVED

BY: DSG

DATE: 12/1/14



## FEATURES/SPECIFICATIONS/MAINTENANCE

### FEATURES

AMERICAN provides tapping valves for sizes 4"-48" rated at 250 psig pressure.

Tapping valves 4"-48" are furnished with an alignment ring on the end flange which fits into a recess on the AMERICAN Flow Control manufactured tapping sleeve. This fit helps assure proper alignment between the sleeve and valve, which permits passage of the cutter during the tapping procedure.

### SPECIFICATIONS

#### RESILIENT SEATED TAPPING VALVES

Tapping valves shall be resilient wedge type with bodies and bonnets made of ductile iron for 250 psig working pressure.

The alignment ring dimensions of the tapping valve flange conform to MSS SP 60 to help ensure true alignment of the valve with the tapping sleeve. The outlet end of the valve shall have the desired joint connection for the intended pipe.

All tapping valves shall include a minimum 3/8" NPT pipe plug on the bonnet of the valve body to aid in the field testing of the valve.

The Series 2500 is constructed of ductile iron and rated at 250 psig. The Series 2500 4"-48" will accept full-size shell cutters.

All wedges shall be fully encapsulated with EPDM rubber.

All wedges shall be provided with guide covers.

All interior and exterior ferrous surfaces shall be protected against corrosion by fusion-bonded epoxy coating. The coating shall be applied prior to assembly to assure coverage of all exposed areas, including bolt holes.

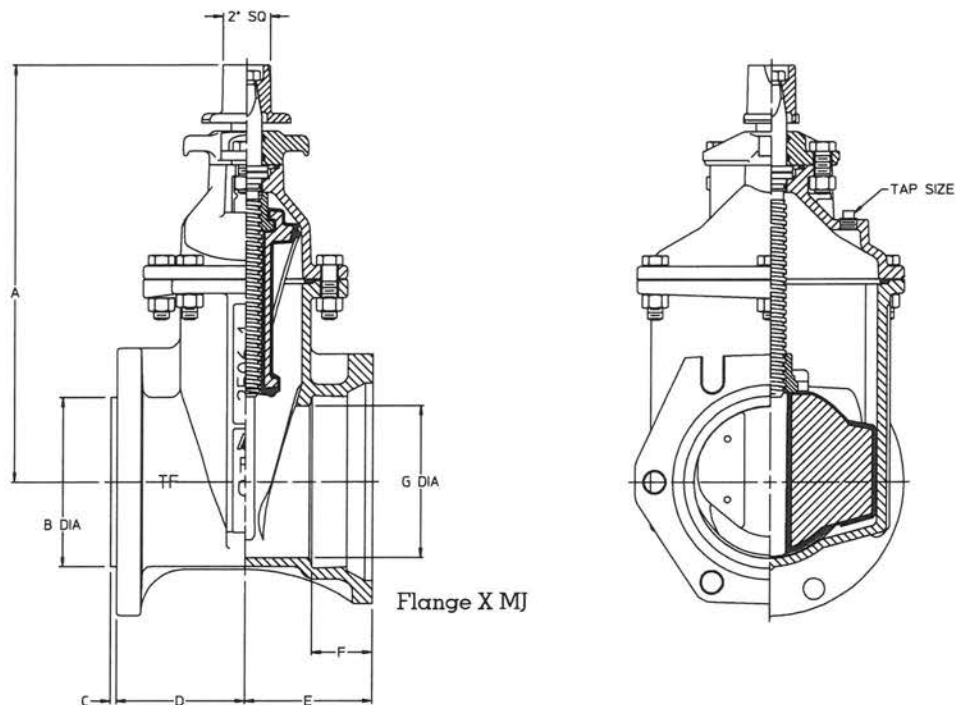
Tapping valve shall be AMERICAN 4"-48" Series 2500 Ductile Iron 250 psig rating (accepts full-size shell cutter).

### MAINTENANCE

Each valve should be operated through a full cycle and returned to its normal position. This should be done on a time schedule that is designed to prevent a buildup of tuberculation or other deposits that could render the valve inoperable or prevent a tight shutoff. It is recommended this be done once a year.

✓	<b>APPROVED</b>
	<b>APPROVED AS NOTED</b>
	<b>NOT APPROVED</b>
BY: <u>DSG</u>	DATE: <u>12/1/14</u>

## SECTIONAL DRAWINGS/DIMENSIONS



DIMENSION	VALVE SIZE				
	Series 2500-1				
	4"	6"	8"	10"	12"
A	13.91	17.12	20.47	24.06	27.59
B +.000/- .031	4.984	6.984	8.984	10.984	12.984
C +/- .016	.188	.250	.250	.250	.250
D (Flange End) (TF) (Class 125)	4.50	5.25	5.75	6.50	7.00
E (MJ End) (TM)	5.00	5.25	6.62	7.12	7.38
F	2.50	2.50	2.50	2.50	2.50
G Waterway Diameter	4.25	6.25	8.25	10.25	12.25
No. of turns to open	14	20	26	32	38
Tap Size	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
MAX. CUTTER DIA.	4.00	6.00	8.00	10.00	12.00

**Series 2500 Ductile Iron Resilient Wedge Tapping Valve, 250 psig pressure rating.**

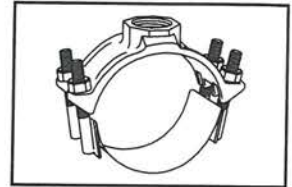
## NOTES:

1. 4" thru 36" valves meet or exceed requirements of ANSI/AWWA C515.
2. 4" thru 16" valves may be ordered in configurations Listed by Underwriters Laboratories, Inc. and Approved by Factory Mutual Approvals.
3. 18" thru 24" valves may be ordered in configurations Listed by Underwriters Laboratories, Inc.
4. 4" thru 48" valves have 250 psig ANSI/AWWA rated working pressure.
5. 4" thru 12" valves in Listed and Approved configurations have 250 psig UL and FM rated working pressure.
6. 14" and 16" valves in Listed and Approved configurations have 200 psig UL Listed and Approved FM rated working pressures.
7. 18" thru 24" valves in Listed configurations have 175 psig UL rated working pressure.
8. Fusion bonded epoxy coating meets or exceeds requirements of ANSI/AWWA C550.
9. Mechanical joint ends are in accordance with ANSI/AWWA C111/A21.53 and MSS SP-113.
10. Bolt patterns of flanged ends are in accordance with ANSI/AWWA C110/A21.10.
11. Raised alignment ring dimensions of flanged ends on tapping valves are in accordance with MSS SP-60.
12. Tapping valves are supplied with flanged-end hardware, including bolts, nuts, ring-type gasket and flange protection kit. The flange-end bolting is furnished in the same material as specified for the valve body bolting.
13. 4" thru 48" valves are Certified to ANSI/NSF Standard 61.



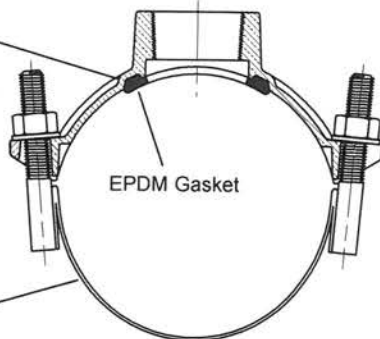
# SUBMITTAL INFORMATION

## Iron Service Saddles - (FS202-xxx-xxx style)

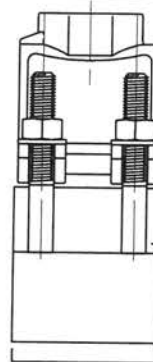


### FS202 DOUBLE BAND IRON SERVICE SADDLES

Finish: Black E-coating



Stainless steel band



Coated stainless steel nuts and washers

Stainless steel bolts



NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
2"	*2.35 - 2.50	2.8	FS202-250-Tap	
2-1/2"	*2.75 - 2.90	2.8	FS202-290-Tap	
3"	**3.46 - 3.80	4.8	FS202-380-Tap	
	**3.80 - 4.25	5.5	FS202-425-Tap	
	**4.26 - 4.73	5.4	FS202-473-Tap	
4"	***4.50 - 4.80	5.4	FS202-480-Tap	
	4.74 - 5.26	5.4	FS202-526-Tap	
	5.94 - 6.69	6.5	FS202-669-Tap	
6"	6.63 - 6.90	6.5	FS202-690-Tap	
	6.84 - 7.60	6.8	FS202-760-Tap	
	7.93 - 8.71	7.4	FS202-871-Tap	
8"	****8.63 - 9.05	7.4	FS202-905-Tap	
	8.99 - 9.79	8.2	FS202-979-Tap	
	10.00 - 10.75	10.4	FS202-1075-Tap	
10"	10.75 - 11.10	11.5	FS202-1110-Tap	
	11.10 - 12.12	11.5	FS202-1212-Tap	
	12.00 - 12.75	12.5	FS202-1275-Tap	
12"	***12.75 - 13.20	12.5	FS202-1320-Tap	
	13.20 - 14.38	12.5	FS202-1438-Tap	
14"	15.30 - 16.25	16.0	FS202-1625-Tap	
	16.30 - 17.25	16.5	FS202-1725-Tap	
16"	17.40 - 18.40	17.0	FS202-1840-Tap	
	18.50 - 19.25	17.3	FS202-1925-Tap	
18"	19.50 - 20.50	20.8	FS202-2050-Tap	
20"	21.20 - 22.20	21.3	FS202-2220-Tap	
	22.50 - 23.50	24.0	FS202-2350-Tap	
24"	23.80 - 24.80	24.5	FS202-2480-Tap	
	25.60 - 26.50	31.7	FS202-2650-Tap	
30"	31.74 - 32.74	42.0	FS202-3274-Tap	

3-1/4" (3/4" and 1" taps)  
4" (1-1/4" and 2" taps)  
5" (14" and 30" saddles, all tap sizes)

\* Saddles for this pipe range are available with 3/4" and 1" taps only.

\*\* Saddles with this pipe range are not available with 2" CC or 2-1/2" IP taps.

\*\*\* These saddles with 1-1/2" through 2" taps fit the top end of the listed range only.

\*\*\*\* This saddle with 2" CC (CC7) or 2-1/2" IP (IP8) fits 9.05 O.D. only.

#### OUTLET TAP CODE CC (AWWA) THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	

#### IP THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

### FEATURES

- Body made of high strength ductile iron per ASTM A536
- Double Wide Band and 5/8" UNC threaded bolts of 18-8 type 304 stainless steel 1/2" bolts are furnished on saddles 3" and smaller
- Gasket is EPDM rubber, ASTM-D2000
- Finish on saddle body is black e-coating
- UL Classified to ANSI/NSF Standard 61

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



**The Ford Meter Box Company, Inc.**  
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<http://www.fordmeterbox.com>

07/19/11

Submitted By:

**APPROVED AS NOTED**  
**NOT APPROVED**

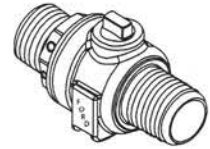
BY:

DSG

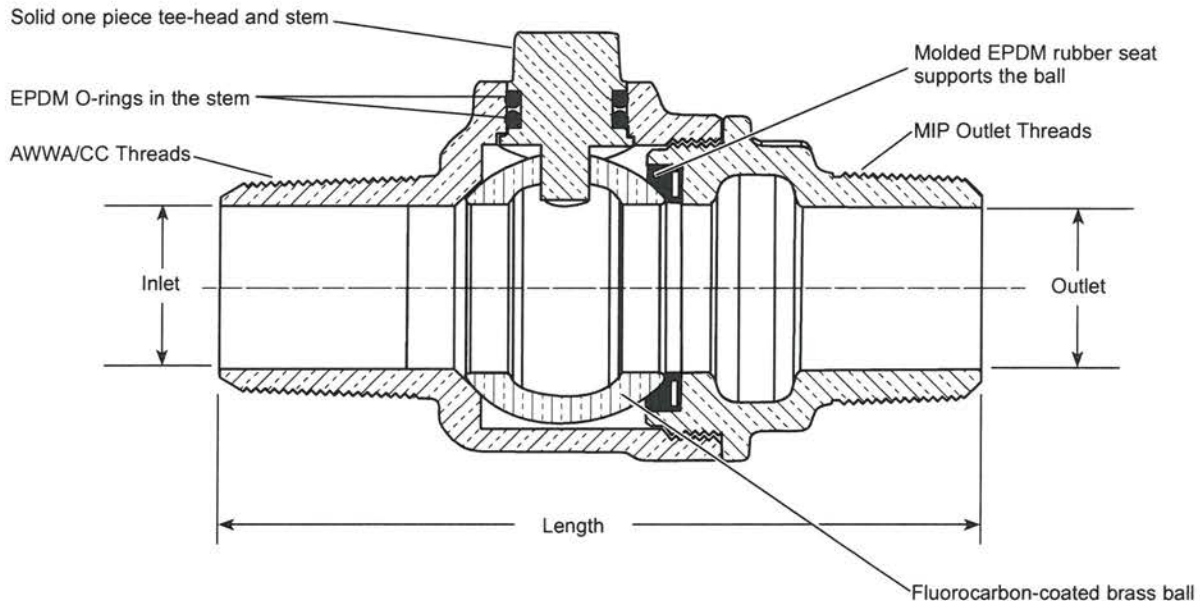
DATE: 12/1/14

# SUBMITTAL INFORMATION

## Ballcorp Corporation Stops - (FB400-4-NL style)



### AWWA/CC TAPER THREAD INLET BY MALE IRON PIPE OUTLET



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
1"	1"	1"	4-33/64"	1" MIP	1.7	FB400-4-NL	

### FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- UL Classified to ANSI/NSF Standard 61 and Standard 61 Annex G (NSF/ANSI 372)
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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<http://www.fordmeterbox.com>

02/04/13

Submitted By: \_\_\_\_\_

**APPROVED**  
**APPROVED AS NOTED**  
**NOT APPROVED**

DSG

DATE: 12/1/14



# Submittal Sheet for Crispin UL Series

## 1" Universal Air Release Valve

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001

### Orifice Options

DIAMETER	MAX. PRESSURE	FLOW RATE
3/16	150 PSIG	54.6 SCFM
3/32	300 PSIG	26.4 SCFM

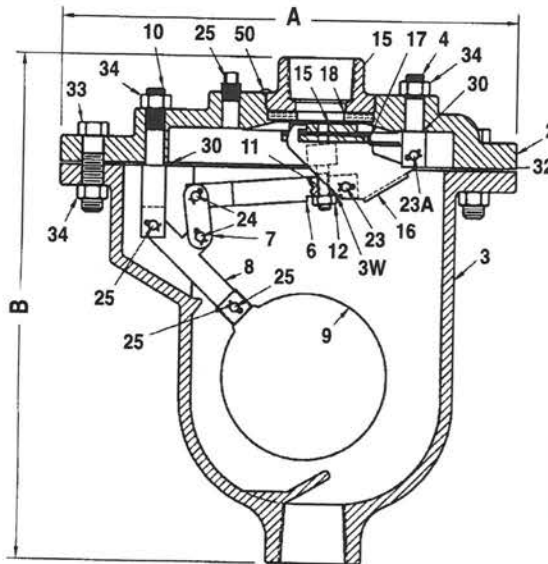
### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WHT.
UL10	1" NPT	1" NPT	9.75	10.75	27
UL10.1	1" NPT	1" NPT	9.75	10.75	27

### Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1S	TOP	CAST IRON	A126 CL.B
2	FLANGE	CAST IRON	A126 CL.B
3	BODY	CAST IRON	A126 CL.B
3W	LOCK WASHER	STAINLESS STEEL	A240
4	AIR & VAC FULCRUM	STAINLESS STEEL	A240
**6	VALVE LEVER	STAINLESS STEEL	A582
7	LINK	STAINLESS STEEL	A240
8	BALL LEVER	STAINLESS STEEL	A240
9	FLOAT	STAINLESS STEEL	A240
10	BALL FULCRUM	STAINLESS STEEL	A582
11	VALVE PLUNGER	STAINLESS STEEL & BUNA-N RUBBER	A193
12	PLUNGER NUT	STAINLESS STEEL	A194
15	PRESSURE SEAT	STAINLESS STEEL	A582
16	PRESSURE FULCRUM	STAINLESS STEEL	A240
17	SEAT CAGE	STAINLESS STEEL	A240
18	AIR & VAC SEAT	BUNA-N RUBBER	N/A
23	BEARING PIN	STAINLESS STEEL	A582
23A	BEARING PIN	STAINLESS STEEL	A582
24	BEARING PIN	STAINLESS STEEL	A582
25	BEARING PIN	STAINLESS STEEL	A582
26	COTTER PIN	STAINLESS STEEL	A313
29	DRAIN PLUG	BRASS	B505
30	FULCRUM WASHER	FIBER	N/A
32	FLANGE GASKET	ARMSTRONG N-8092	N/A
33	FLANGE BOLT	STEEL	A307
34	NUT	STEEL	A563
50	INTERFERENCE PIN	STAINLESS STEEL	A582

\*\* Material for UL10.1 will be brass



### Specifications

The valve(s) shall be installed at the high points in the system or at points selected by the engineer. This will permit discharging the surge of air from an empty line when filling, and relieve the vacuum when draining the system. The valve(s) shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body.

The valve(s) shall operate through a compound lever system which will seal both the pressure orifice and the air and vacuum orifice simultaneously. This lever system shall permit a \_\_\_\_\_ orifice to release an accumulation of air from the valve body at a capacity of \_\_\_\_\_ SCFM of air and pressure of \_\_\_\_\_ PSIG.

The function of the lever system shall also permit a positive disengagement of the main valve from the large orifice, as the float drops and pressure decreases. The disengagement shall be immediate and not limited to the initial draw of a vacuum.

The valve(s) shall be Crispin Model \_\_\_\_\_ Universal Air Valve as manufactured by Multiplex Manufacturing Co., Berwick, PA. The valve(s) shall be \_\_\_\_\_ NPT screwed or ANSI Class (125, 250) flanged inlet connection, and shall have a cast iron body, top and inlet flange (where required), stainless steel float and trim with Buna-N seat. Valves which operate the pressure plunger via a single lever and fulcrum will not be acceptable.

**Option:** A protectop will be supplied to prevent debris from entering the outlet of the valve.

**Option:** (Where pressures are greater than 300 PSIG), the valve(s) shall be ANSI Class \_\_\_\_\_ flanged inlet connection, and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:  
 \_\_\_\_\_ 2 to 40 PSIG    \_\_\_\_\_ 151 to 300 PSIG

APPROVED  
APPROVED AS NOTED

NOT APPROVED

BY:

DSG

DATE:

12/1/14

Heavywall

**0030-B**

White Interior

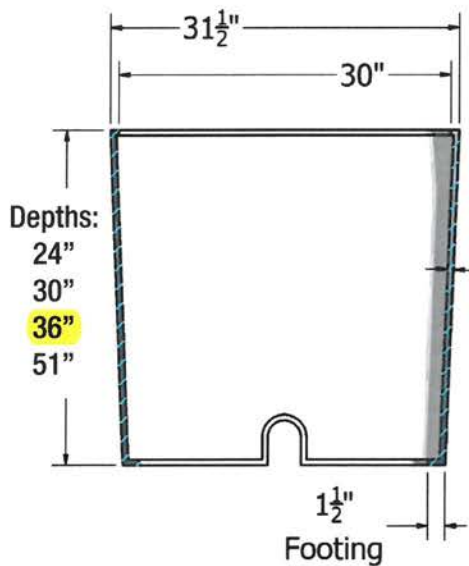


3" Wide x 4" Tall  
2 Mouseholes

**BODY:**

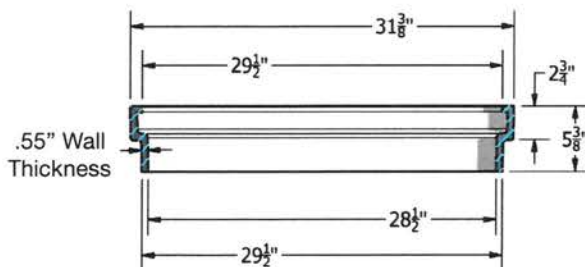
Material: Polyethylene Blend  
Model: 24" Dia.  
Weight: 24" Depth: 31 lbs  
30" Depth: 42 lbs  
**36" Depth: 47 lbs**  
51" Depth: 60 lbs

Mouseholes: 2



**EXTENSION:**

Material: Polyethylene Blend  
Weight: 3" Depth: 12 lbs



For use in non-vehicular traffic situations only.

We do not recommend installation in concrete or asphalt.

Actual load rating is determined by the box and cover combination. Weights and dimensions may vary slightly.

\*Cover comes standard with permanent markings for manufacturer, load rating, model size and manufacturing location.

Contact your Oldcastle Enclosure Solutions Distribution Center for specific information and additional options.



Heavywall  
**0030-B**
**Options:**
**Available Plastic Covers:**

MSIL1 Plastic Cover (for use with cast iron frame)

**Available Monitor Set:**

Cast Iron Cover with Cast Iron Frame (2 Piece)

(Requires use of Expander Ring)

**Add On Options for Cast Iron Cover:**

Touch Read Hole

**Locking Options for Cast Iron Cover:**

Penta Nut (Small or Large)



MSIL1



Cast Iron Cover



Cast Iron Frame



Penta Nut Detail

**Raw Material Specifications:**

- Meter Boxes are high-density Polyethylene, one-piece molded construction
- Wall thickness minimum .550"
- Vertical load rating minimum 15,000 lbs.
- Sidewall loading of 200 lb side load, applied with a 4" X 4" plate.
- Multi-layer wall construction
- Black exterior surface to provide UV protection
- Gray foaming for strength and insulating value
- White interior surface for ease of meter reading
- Manufactured by Oldcastle Precast Enclosure Solutions

**Cast Iron Meter Ring and Lid Specifications:**

- Made of cast iron conforming to ASTM A48 standards and marked with country of origin
- Coated with a factory applied water based asphalt paint
- Castings are ground smooth and cleaned by shot blasting, uniform quality, free from sand holes, shrinkage, cracks and other surface defects, with a dimensional tolerance of +/- 1/16" per foot based on the accepted foundry tolerances outlined in the Iron Castings Handbook published by the American Foundry Society.

**Product Load Rating:**


Medium Duty : Non-Deliberate Traffic

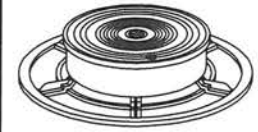
**Note:**

Actual load rating is determined by the box and cover combination. Weights and dimensions may vary slightly. All information contained on this sheet is current at the time of printing. Oldcastle Precast, Inc. reserves the right to discontinue or update product information without notice.

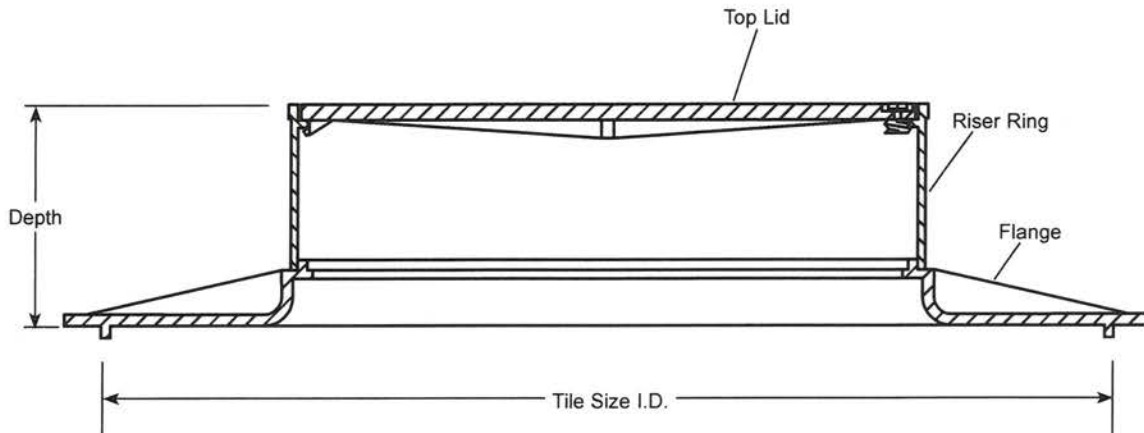


## SUBMITTAL INFORMATION

### Monitor Cover - (No. MC-xx style)



#### MONITOR COVER WITH LOCKING LID



Lid Size*	Cover Depth	Tile Size I.D.	APPROX. Wt. LBS.	PART NUMBER	✓ SUBMITTED ITEMS
20"	7-1/2"	24"	103.0	MC-24	
20"	7-1/2"	30"	131.0	MC-30	
20"	8"	36"	185.0	MC-36	
20"	7-1/2"	24"	127.0	MC-24H	
20"	7-1/2"	30"	155.0	MC-30H	
20"	8"	36"	209.0	MC-36H	
20"	7-1/2"	24"	136.0	MC-24HH	
20"	7-1/2"	30"	164.0	MC-30HH	
20"	8"	36"	218.0	MC-36HH	

\*Lid size indicates approximate pit access opening; actual lid diameter is approximately 1" larger.

✓ APPROVED

APPROVED AS NOTED

NOT APPROVED

BY: DSG DATE: 12/1/14

#### FEATURES

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

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<http://www.fordmeterbox.com>

09/03/03

Submitted By:



## SUBMITTAL SHEET

JOB NAME		ITEM TAG
JOB LOCATION		PART NUMBER
CONTRACTOR	DATE	
ENGINEER APPROVAL	DATE	

### LEGEND MALLEABLE FITTINGS (CHINA)

#### Elbows, Tees, Crosses, Plugs, Unions, Caps, Couplings, Hex Bushings and Floor Flanges

- Produced in an ISO 9001 registered facility.
- Manufactured in compliance with all applicable ASTM and ANSI standards.
- UL listed and Factory Mutual approved \*UL listings HHXX.EX6624 Fire Main Equipment - Pipe fittings and VIZQ.EX9172 Sprinkler System and Water Spray System Devices - Unions
- Manufactured using the latest technologies for material consistency and dimensional tolerances. They're cast using an electric induction furnace, to ensure that the material is at optimum casting temperature longer.
- Classified as a Class 150 malleable iron fitting, (rated at 150 psi) they are test pressure rated by UL and Factory Mutual at 300 and 500 psi, configuration-specific.
- Packaged in double corrugated, oil-resistant boxes marked with an English description. All labels are color-coded, denoting either a black or galvanized fitting.



#### MATERIAL SPECIFICATION

PART	MATERIAL	SPECIFICATION
1. All Fittings	Malleable Iron	ASTM A197 & ASTM A47

#### Specifications for Threaded Malleable Iron Fittings - Class 150:

##### American Society for Testing and Materials (A.S.T.M.):

ASTM A197: Standard specification for cupola malleable iron.

ASTM A153: Standard specification for zinc coating (hot-dip) on iron and steel hardware.

ASTM A47: Standard specification for ferritic malleable iron castings.

##### American National Standards Institute (A.N.S.I.):

ANSI B16.3: Malleable iron threaded fittings.

ANSI B16.14: Ferrous pipe plugs, bushings and locknuts with pipe threads.

ANSI B16.39: Malleable iron threaded pipe unions.

ANSI B1.20.1: Threads, pipe—general purpose (inch).

#### UPC/IAPMO:

California lead plumbing law compliant: File #6047

Galvanized fittings only: NSF Standard 61-4 compliant

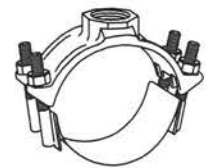
\*Copyright 2008 Underwriters Laboratories Inc.



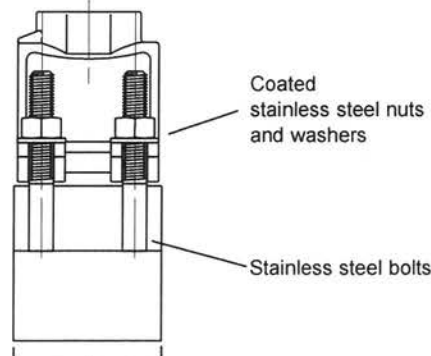
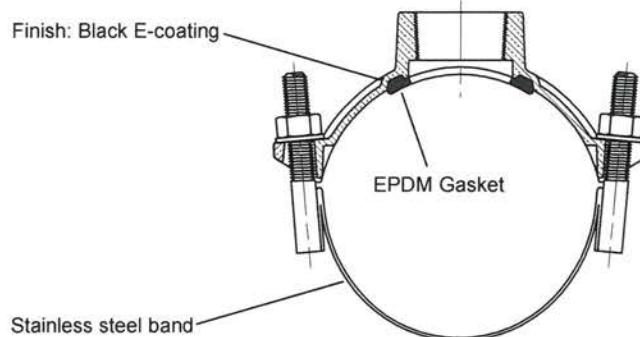
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	NOT APPROVED
BY: <u>DSG</u>	DATE: <u>12/1/14</u>

# SUBMITTAL INFORMATION

## Iron Service Saddles - (FS202-xxx-xxx style)



### FS202 DOUBLE BAND IRON SERVICE SADDLES



NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
2"	*2.35 - 2.50	2.8	FS202-250-Tap	
2-1/2"	*2.75 - 2.90	2.8	FS202-290-Tap	
3"	**3.46 - 3.80	4.8	FS202-380-Tap	
	**3.80 - 4.25	5.5	FS202-425-Tap	
	**4.26 - 4.73	5.4	FS202-473-Tap	
4"	***4.50 - 4.80	5.4	FS202-480-Tap	
	4.74 - 5.26	5.4	FS202-526-Tap	
	5.94 - 6.69	6.5	FS202-669-Tap	
6"	6.63 - 6.90	6.5	FS202-690-Tap	
	6.84 - 7.60	6.8	FS202-760-Tap	
	7.93 - 8.71	7.4	FS202-871-Tap	
8"	***8.63 - 9.05	7.4	FS202-905-Tap	
	8.99 - 9.79	8.2	FS202-979-Tap	
	10.00 - 10.75	10.4	FS202-1075-Tap	
10"	10.75 - 11.10	11.5	FS202-1110-Tap	
	11.10 - 12.12	11.5	FS202-1212-Tap	
	12.00 - 12.75	12.5	FS202-1275-Tap	
12"	***12.75 - 13.20	12.5	FS202-1320-Tap	
	13.20 - 14.38	12.5	FS202-1438-Tap	
14"	15.30 - 16.25	16.0	FS202-1625-Tap	
	16.30 - 17.25	16.5	FS202-1725-Tap	
16"	17.40 - 18.40	17.0	FS202-1840-Tap	
	18.50 - 19.25	17.3	FS202-1925-Tap	
18"	19.50 - 20.50	20.8	FS202-2050-Tap	
20"	21.20 - 22.20	21.3	FS202-2220-Tap	
	22.50 - 23.50	24.0	FS202-2350-Tap	
24"	23.80 - 24.80	24.5	FS202-2480-Tap	
	25.60 - 26.50	31.7	FS202-2650-Tap	
30"	31.74 - 32.74	42.0	FS202-3274-Tap	

3-1/4" (3/4" and 1" taps)  
4" (1-1/4" and 2" taps)  
5" (14" and 30" saddles, all tap sizes)

\* Saddles for this pipe range are available with 3/4" and 1" taps only.

\*\* Saddles with this pipe range are not available with 2" CC or 2-1/2" IP taps.

\*\*\* These saddles with 1-1/2" through 2" taps fit the top end of the listed range only.

\*\*\*\* This saddle with 2" CC (CC7) or 2-1/2" IP (IP8) fits 9.05 O.D. only.

#### OUTLET TAP CODE

CC (AWWA) THREAD		
THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	
IP THREAD		
THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

### FEATURES

- Body made of high strength ductile iron per ASTM A536
- Double Wide Band and 5/8" UNC threaded bolts of 18-8 type 304 stainless steel 1/2" bolts are furnished on saddles 3" and smaller
- Gasket is EPDM rubber, ASTM-D2000
- Finish on saddle body is black e-coating
- UL Classified to ANSI/NSF Standard 61

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



**The Ford Meter Box Company, Inc.**  
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Overseas Fax: 260-563-0167  
<http://www.fordmeterbox.com>

07/19/11

Submitted By:

**APPROVED AS NOTED**  
**NOT APPROVED**

BY:

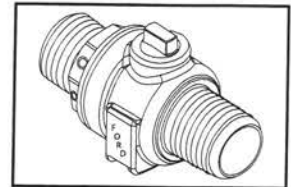
DSG

DATE: 12/1/14

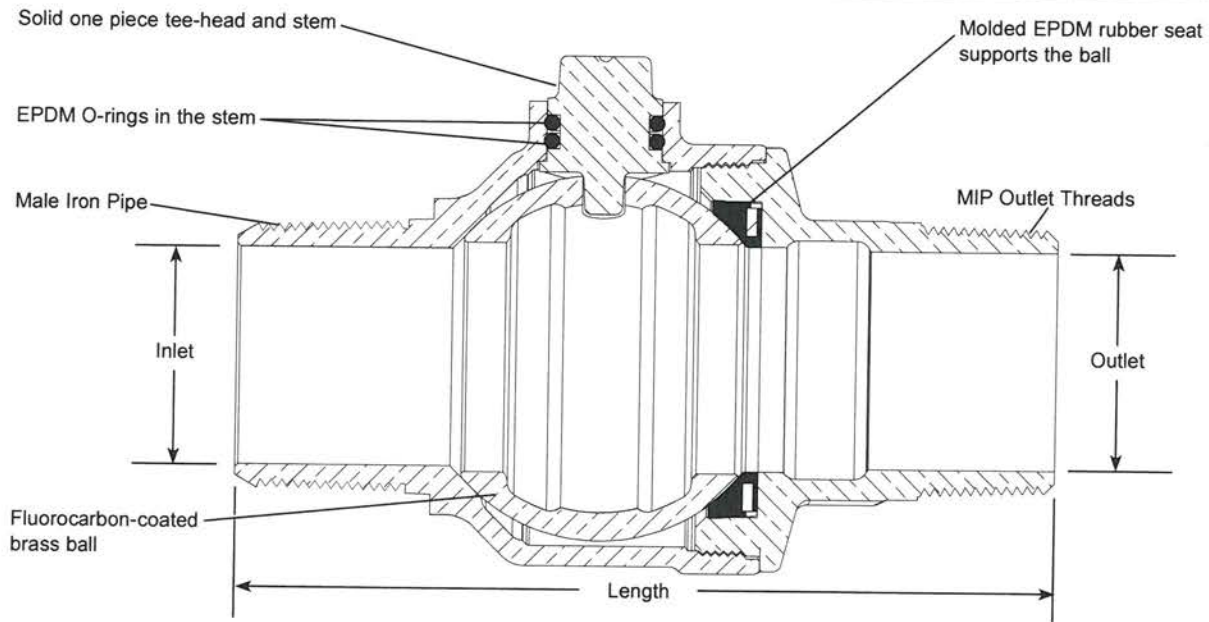


# SUBMITTAL INFORMATION

## Ballcorp Corporation Stops - (FB500-7-NL style)



### MALE IRON PIPE THREAD BOTH ENDS



✓ APPROVED

APPROVED AS NOTED

NOT APPROVED

VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
2"	2"	2"	7-5/16"	2" MIP	8.0	FB500-7-NL	

BY: DSG

DATE: 12/1/14

### FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- UL Classified to ANSI/NSF Standard 61 and Standard 61 Annex G (NSF/ANSI 372)
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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01/28/13

Submitted By:



## SUBMITTAL SHEET

JOB NAME

ITEM TAG

JOB LOCATION

PART NUMBER

CONTRACTOR

DATE

ENGINEER APPROVAL

DATE

### LEAD FREE THREADED CAST BRONZE FITTINGS

**Elbows, Tees, Crosses, Plugs, Unions, Caps, Couplings and Hex Bushings**

Lead-free design is suitable for all State and pending U.S. Federal Public Law (111-380) potable water installations.

Produced in an ISO accredited facility.

Manufactured in compliance with all applicable ASTM and ANSI standards.

Manufactured using the latest technologies for material consistency and dimensional tolerances. They're cast using an electric induction furnace, to ensure that the material is at optimum casting temperature longer.

Classified as a Class 125 cast bronze fitting, pressure-rated at 125 psi

Packaged in double corrugated, oil-resistant boxes marked with an English description.



#### MATERIAL SPECIFICATION

PART	MATERIAL	SPECIFICATION
1. All plain and chrome-plated fitting configurations	lead-free cast bronze	ASTM B584 UNS C89836



**Third-party tested and certified in compliance to NSF/ANSI 372 by the Water Quality Association**

#### SPECIFICATIONS FOR THREADED BRONZE FITTINGS - CLASS 125:

##### AMERICAN SOCIETY FOR TESTING AND MATERIALS (A.S.T.M.):

**ASTM B584:** Standard specification for copper alloy sand castings for general applications UNS alloy designation C89836

##### AMERICAN NATIONAL STANDARDS INSTITUTE (A.N.S.I.) AND AMERICAN SOCIETY OF MECHANICAL ENGINEERS (A.S.M.E.):

**ANSI/ASME B16.15:** Cast bronze threaded fittings:  
Classes 125 and 250

**ANSI/ASME B1.20.1:** Pipe threads, general purpose, inch.



Click on the link below specifications for additional No Lead Products available at our website: <http://legendvalve.com/specsheets.asp>

✓	APPROVED
	APPROVED AS NOTED
	NOT APPROVED
BY: DSG	DATE: 12/1/14

## SUBMITTAL SHEET

JOB NAME		ITEM TAG
JOB LOCATION		PART NUMBER
CONTRACTOR	DATE	
ENGINEER APPROVAL	DATE	

### LEAD FREE SCHEDULE 40 RED BRASS NIPPLES

#### Plain and chrome-plated nipples

Produced in an ISO accredited facility.

Manufactured in compliance with all applicable ASTM and ANSI standards.

All unplated nipples have a weighted average lead content of less than 0.25 % and are in compliance with the California and Vermont lead-free plumbing requirements.

All unplated nipples are in compliance with the California and Vermont lead-free plumbing requirements.

Manufactured from Schedule 40 seamless red brass pipe, copper alloy type (UNS) C23000.

Offered in 1/8" through 4" pipe diameters, in lengths close through 12", in addition to smooth chrome-plated versions.

All nipples are threaded at both ends.

Packaged in double-corrugated, oil-resistant boxes marked with an English description.



#### MATERIAL SPECIFICATION

PART	MATERIAL	SPECIFICATION
All red brass nipples and chrome-plated red brass nipples	Red brass	UNS alloy C23000

#### SPECIFICATIONS FOR RED BRASS NIPPLES - SCHEDULE 40

##### AMERICAN SOCIETY FOR TESTING AND MATERIALS (A.S.T.M.):

**ASTM B43-09:** Standard specification for seamless red brass pipe, standard sizes.

**ASTM B687-99:** Standard specification for brass, copper and chromium-plated pipe nipples

##### ASTM B456 Service

##### condition two,

##### Table six:

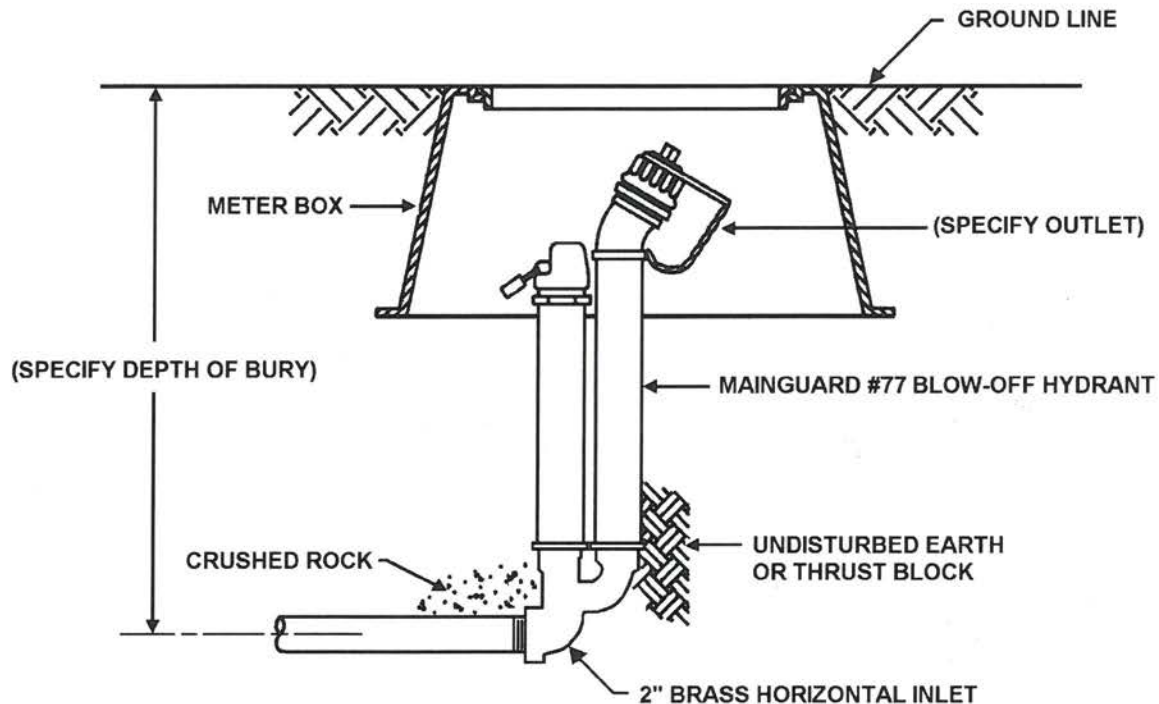
Standard specification for electrodeposited coatings of copper-plus-nickel-plus-chromium and nickel plus chromium (applicable to the chrome-plated nipples)

##### AMERICAN NATIONAL STANDARDS INSTITUTE (A.N.S.I.):

**ANSI/ASME B1.20.1:** Threads, pipe—general purpose (inch).

✓	APPROVED
	APPROVED AS NOTED
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BY: DSG	DATE: 12/1/14

# MAINGUARD NO. 78 BLOW-OFF HYDRANT



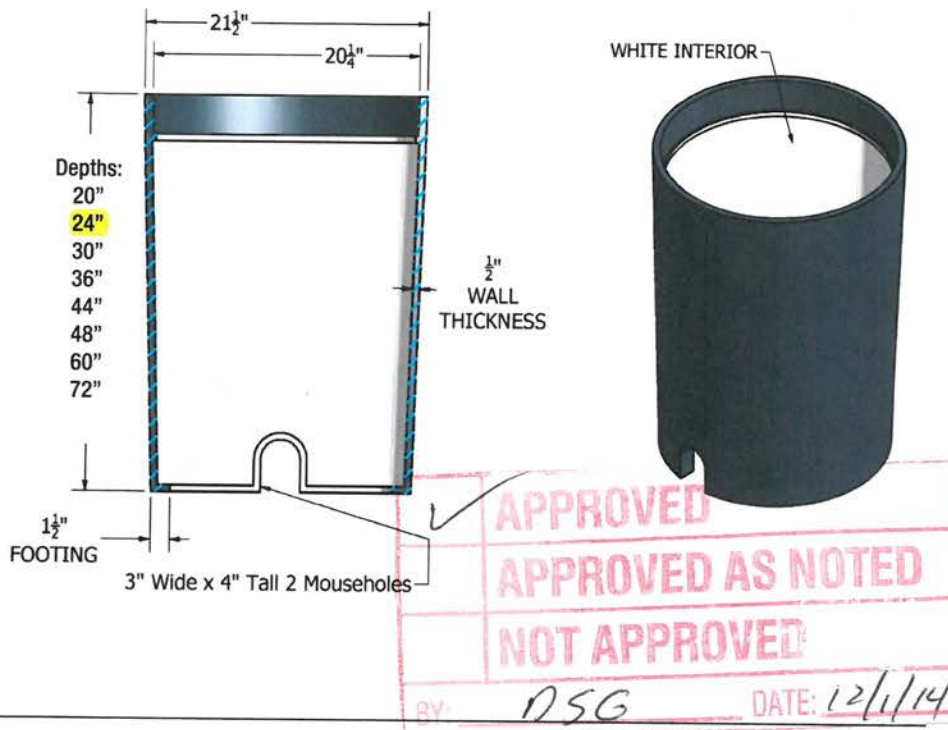
BLOW-OFF HYDRANTS SHALL BE NON-FREEZING, SELF DRAINING TYPE, WITH AN OVERALL LENGTH OF \_\_\_\_\_. SET UNDERGROUND IN A \_\_\_\_\_ METER BOX, THESE HYDRANTS WILL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT. ALL OF THE WORKING PARTS SHALL BE OF BRONZE-TO-BRONZE DESIGN, AND BE SERVICABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2-1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUFERLE FOUNDRY CO., ST. LOUIS, MO OR APPROVED EQUAL.

(MINIMUM OPENING IN METER BOX SHOULD BE 18")

✓	APPROVED
	APPROVED AS NOTED
	NOT APPROVED
BY: DSG	DATE: 12/1/14



Heavywall  
**0020-B**



**BODY:**

Material: Polyethylene Blend  
Model: 20" Dia.  
Weight: 20" Depth: 19 lbs

**24" Depth: 21 lbs**

30" Depth: 23 lbs

36" Depth: 28 lbs

44" Depth: lbs

48" Depth: 47 lbs

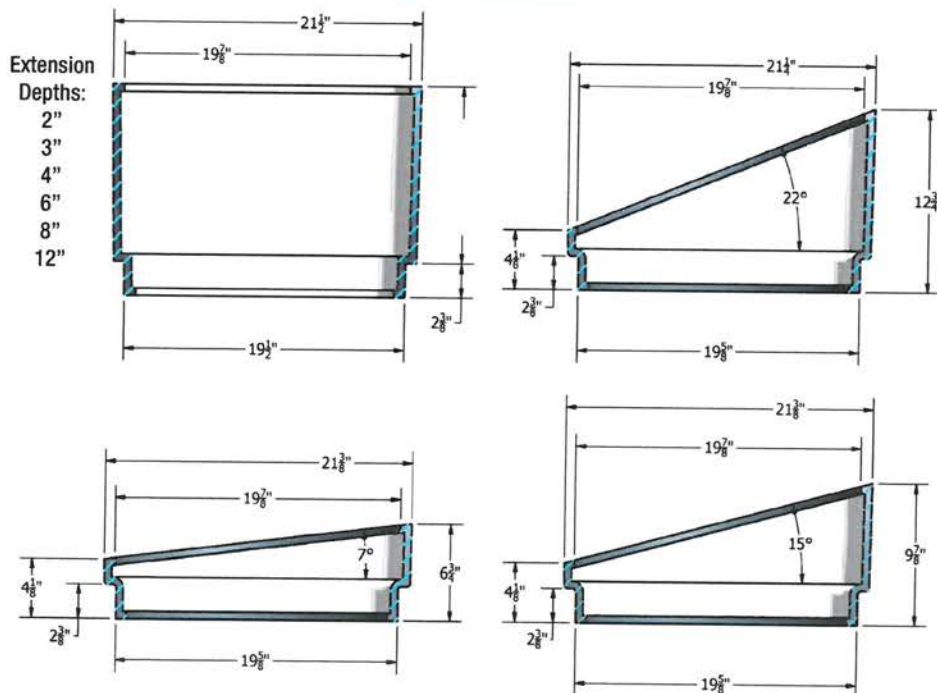
60" Depth: 65 lbs

72" Depth: 75 lbs

Mouseholes: 2 on most (44" Depth = 0)

**EXTENSION:**

Material: Polyethylene Blend  
Weight: 2" Depth: 5 lbs  
3" Depth: 6 lbs  
4" Depth: 7 lbs  
6" Depth: 7 lbs  
8" Depth: 8 lbs  
12" Depth: 10 lbs  
7° Off Grade: 9 lbs  
15° Off Grade: 13 lbs  
22° Off Grade: 15 lbs



**Medium Duty:**  
**Non-deliberate Traffic**

For use in non-vehicular traffic situations only.

We do not recommend installation in concrete or asphalt.

Actual load rating is determined by the box and cover combination.  
Weights and dimensions may vary slightly

\*Cover comes standard with permanent markings for manufacturer, load rating, model size and manufacturing location.

Contact your Oldcastle Enclosure Solutions Distribution Center for specific information and additional options.

Heavywall  
**0020-B**
**Options:**
**Available Plastic Covers:**

MSIL1 Plastic Cover (for use with cast iron frame)

**Available Cast Iron Covers:**

Flush Cast Iron Cover with Cast Iron Frame (2 Piece)

T Cast Iron Cover with Cast Iron Frame (2 Piece)

Flat Frame Cast Iron Cover

Drop In (for use with cast iron frame)

**Add On Options for Plastic Covers:**

Touch Read Hole

ERT Holder

**Add On Options for Cast Iron Covers:**

Touch Read Hole

**Locking Options for Plastic Covers:**

Penta Nut (Small or Large)

**Locking Options for Cast Iron Covers:**

Penta Nut (Small or Large)

**Add On Options for Unit:**

Thermo-Pak



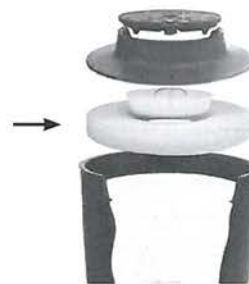
MSIL1



Cast Iron Cover



Cast Iron Frame



Thermo Pak



Penta Nut Detail

**Raw Material Specifications:**

- Meter Boxes are high-density Polyethylene, one-piece molded construction
- Wall thickness minimum .550"
- Vertical load rating minimum 15,000 lbs.
- Sidewall loading of 200 lb side load, applied with a 4" X 4" plate.
- Multi-layer wall construction

- Black exterior surface to provide UV protection
- Gray foaming for strength and insulating value
- White interior surface for ease of meter reading
- Manufactured by Oldcastle Precast Enclosure Solutions

**Cast Iron Meter Ring and Lid Specifications:**

- Made of cast iron conforming to ASTM A48 standards and marked with country of origin
- Coated with a factory applied water based asphalt paint
- Castings are ground smooth and cleaned by shot blasting, uniform quality, free from sand holes, shrinkage, cracks and other surface defects, with a dimensional tolerance of +/- 1/16" per foot based on the accepted foundry tolerances outlined in the Iron Castings Handbook published by the American Foundry Society.

**Product Load Rating:**


Medium Duty : Non-Deliberate Traffic

**Note:**

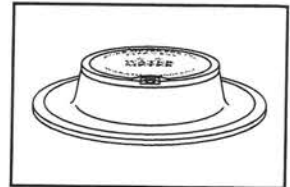
Actual load rating is determined by the box and cover combination. Weights and dimensions may vary slightly. All information contained on this sheet is current at the time of printing. Oldcastle Precast, Inc. reserves the right to discontinue or update product information without notice.



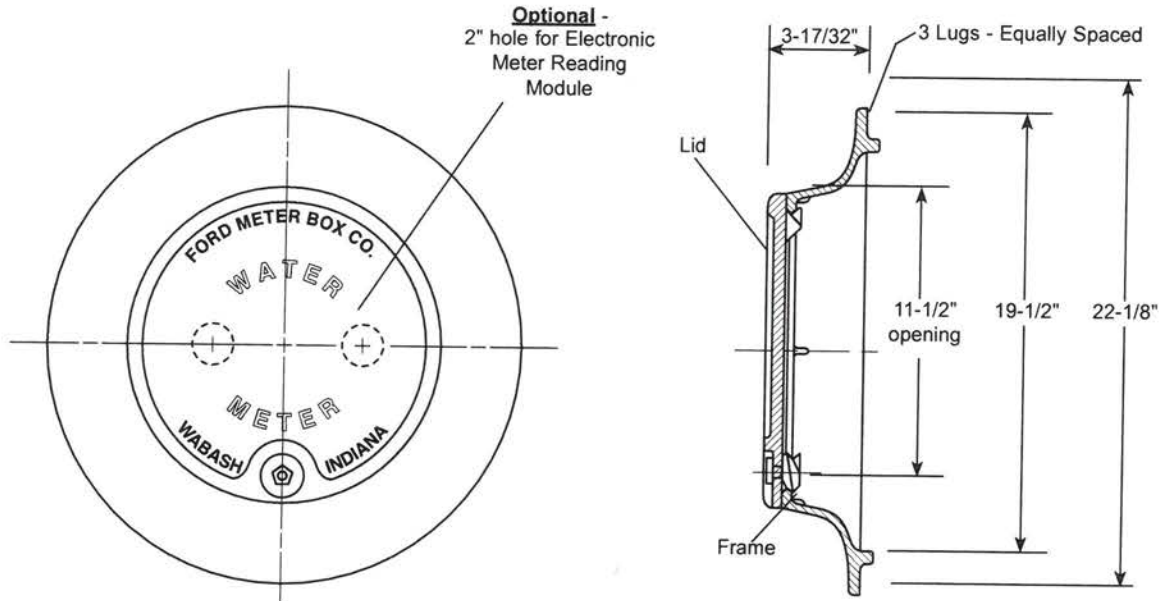


# SUBMITTAL INFORMATION

## Meter Box Covers - (C3 style)



11-1/2" OVERLAPPING LID FOR 20" TILE



*LID SIZE	TILE I.D.	APPROX. WT. LBS.	DESCRIPTION	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
11-1/2"	20"	34.0	Cover with Locking Overlapping Lid	C3	
			Cover with Lockless Overlapping Lid	C3-LL	
			Single hole for Meter Reading Module	C3-T	
			Two holes for Meter Reading Modules	C3-TT	

\*Lid size indicates approximate pit access opening; actual lid diameter is approximately 1" larger.

## FEATURES

- Available with precast holes for electronic meter reading modules. Add to catalog number: "-T" for single hole, "-TT" for double hole.
- Standard pentagon bolt furnished with locking lids. Larger size is available. Add "-LB" to catalog number. For non-locking lid, add "-LL".
- Frame and lid are cast iron per ASTM A48, Class 25.
- Finish is black e-coating.

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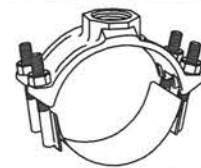
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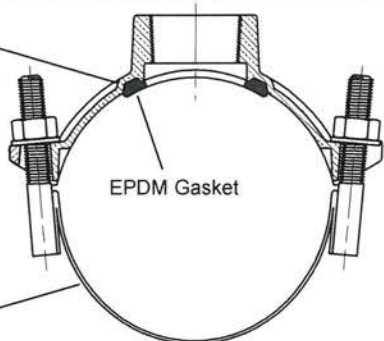
# SUBMITTAL INFORMATION

## Iron Service Saddles - (FS202-xxx-xxx style)



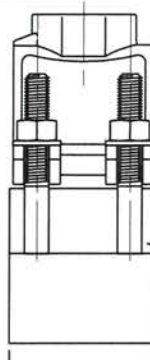
### FS202 DOUBLE BAND IRON SERVICE SADDLES

Finish: Black E-coating



EPDM Gasket

Stainless steel band



Coated stainless steel nuts and washers

Stainless steel bolts



NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
2"	*2.35 - 2.50	2.8	FS202-250-Tap	
2-1/2"	*2.75 - 2.90	2.8	FS202-290-Tap	
3"	**3.46 - 3.80	4.8	FS202-380-Tap	
	**3.80 - 4.25	5.5	FS202-425-Tap	
	**4.26 - 4.73	5.4	FS202-473-Tap	
4"	***4.50 - 4.80	5.4	FS202-480-Tap	
	4.74 - 5.26	5.4	FS202-526-Tap	
	5.94 - 6.69	6.5	FS202-669-Tap	
6"	6.63 - 6.90	6.5	FS202-690-Tap	
	6.84 - 7.60	6.8	FS202-760-Tap	
	7.93 - 8.71	7.4	FS202-871-Tap	
8"	****8.63 - 9.05	7.4	FS202-905-Tap	
	8.99 - 9.79	8.2	FS202-979-Tap	
	10.00 - 10.75	10.4	FS202-1075-Tap	
10"	10.75 - 11.10	11.5	FS202-1110-Tap	
	11.10 - 12.12	11.5	FS202-1212-Tap	
	12.00 - 12.75	12.5	FS202-1275-Tap	
12"	***12.75 - 13.20	12.5	FS202-1320-Tap	
	13.20 - 14.38	12.5	FS202-1438-Tap	
14"	15.30 - 16.25	16.0	FS202-1625-Tap	
	16.30 - 17.25	16.5	FS202-1725-Tap	
16"	17.40 - 18.40	17.0	FS202-1840-Tap	
	18.50 - 19.25	17.3	FS202-1925-Tap	
18"	19.50 - 20.50	20.8	FS202-2050-Tap	
20"	21.20 - 22.20	21.3	FS202-2220-Tap	
	22.50 - 23.50	24.0	FS202-2350-Tap	
24"	23.80 - 24.80	24.5	FS202-2480-Tap	
	25.60 - 26.50	31.7	FS202-2650-Tap	
30"	31.74 - 32.74	42.0	FS202-3274-Tap	

3-1/4" (3/4" and 1" taps)  
4" (1-1/4" and 2" taps)  
5" (14" and 30" saddles, all tap sizes)

\* Saddles for this pipe range are available with 3/4" and 1" taps only.

\*\* Saddles with this pipe range are not available with 2" CC or 2-1/2" IP taps.

\*\*\* These saddles with 1-1/2" through 2" taps fit the top end of the listed range only.

\*\*\*\* This saddle with 2" CC (CC7) or 2-1/2" IP (IP8) fits 9.05 O.D. only.

#### OUTLET TAP CODE

##### CC (AWWA) THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	

##### IP THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

### FEATURES

- Body made of high strength ductile iron per ASTM A536
- Double Wide Band and 5/8" UNC threaded bolts of 18-8 type 304 stainless steel  
1/2" bolts are furnished on saddles 3" and smaller
- Gasket is EPDM rubber, ASTM-D2000
- Finish on saddle body is black e-coating
- UL Classified to ANSI/NSF Standard 61

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07/19/11

Submitted By:

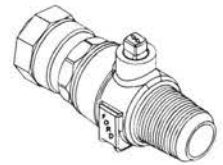
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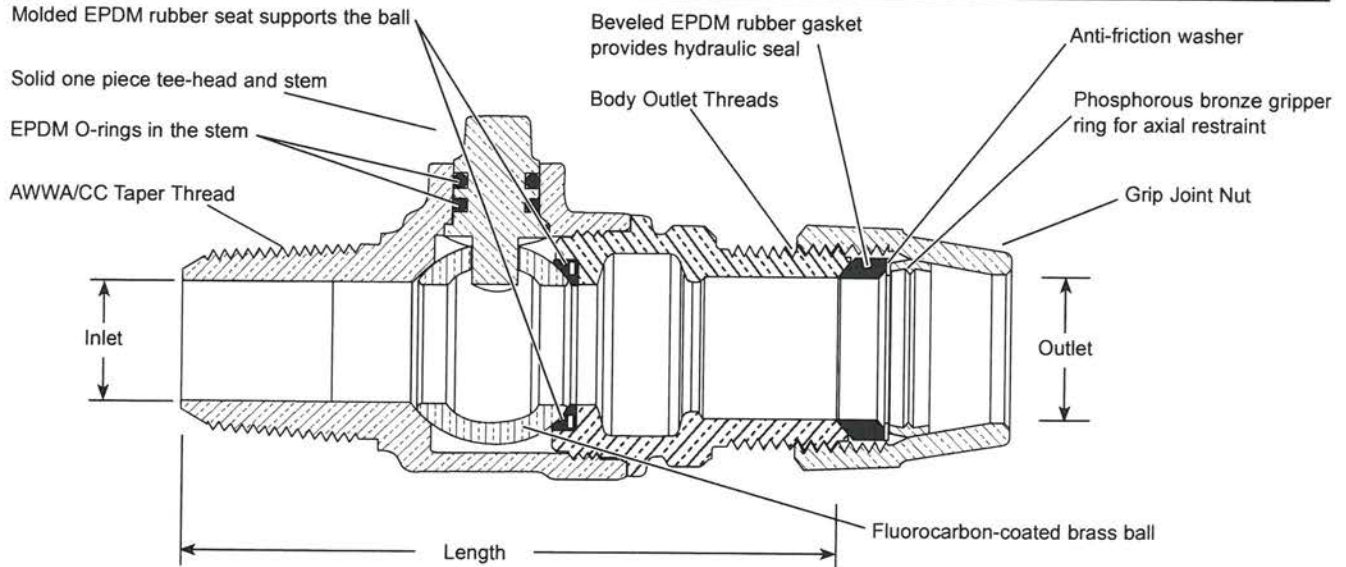
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# SUBMITTAL INFORMATION

## Ballcorp Corporation Stops - (FB1000-3x-G-NL style)



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



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
3/4"	3/4"	3/4"	4-9/64"	3/4" Flare Copper	1.5	FB1000-3-G-NL	
3/4"	3/4"	1"	4-7/16"	1" Flare Copper	1.9	FB1000-34-G-NL	

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

BY: DSG DATE: 12/1/14

## FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- UL Classified to ANSI/NSF Standard 61 and Standard 61 Annex G (NSF/ANSI 372)
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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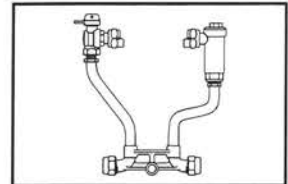
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Submitted By:



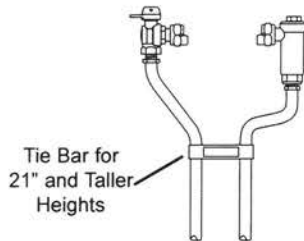
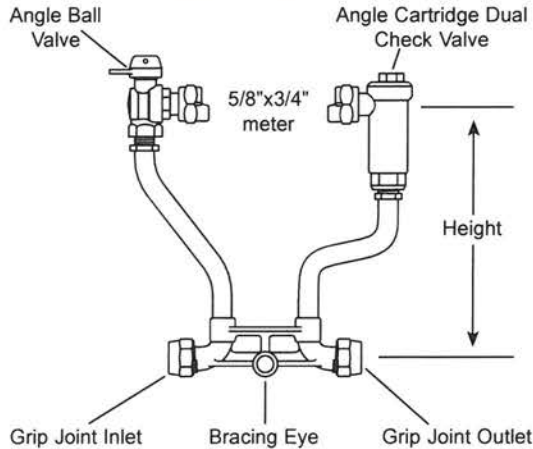
# SUBMITTAL INFORMATION

## 70 Series Coppersetter - (VBHC72-xxW-44-xx-G-NL style)



ANGLE BALL VALVE BY ANGLE CARTRIDGE DUAL CHECK VALVE (5/8" X 3/4" METER)

GRIP JOINT FOR COPPER OR PLASTIC TUBING (CTS) INLET AND OUTLET



### Coppersetter Part Number

HEIGHT (INCHES)	APPROX. WT. LBS.	CATALOG NUMBER (INSERT SERVICE LINE CONN. SIZE)	✓ SUBMITTED ITEM(S)
9	6.3	VBHC72-9W-44-xx-G-NL	
12	6.5	VBHC72-12W-44-xx-G-NL	
15	6.7	VBHC72-15W-44-xx-G-NL	
18	7.4	VBHC72-18W-44-xx-G-NL	
21	7.6	VBHC72-21W-44-xx-G-NL	
24	7.9	VBHC72-24W-44-xx-G-NL	
27	8.1	VBHC72-27W-44-xx-G-NL	
30	8.4	VBHC72-30W-44-xx-G-NL	
33	8.7	VBHC72-33W-44-xx-G-NL	
36	8.9	VBHC72-36W-44-xx-G-NL	
39	9.2	VBHC72-39W-44-xx-G-NL	
42	9.5	VBHC72-42W-44-xx-G-NL	

### Service Line Size

INLET	OUTLET	SERVICE LINE CONN. SIZE	✓ SUBMITTED ITEM(S)
3/4" (CTS) G.J.	3/4" (CTS) G.J.	33	
1" (CTS) G.J.	3/4" (CTS) G.J.	43	
1" (CTS) G.J.	1" (CTS) G.J.	44	

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

### FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Saddle Nuts hold the meter in place for tightening
- Bracing Eye is standard on all 70 Series Coppersetters
- Tie Bar is standard for 21" and taller Coppersetter heights (VBHC72 Series)
- 13/16" Copper Risers provide more flow capacity
- All Ford Setters are assembled with lead-free solder
- Copper conforms to ASTM B-75, Copper Alloy #122
- ASSE 1024 approved Dual Check Valve

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

02/22/13

Submitted By:

APPROVED  
APPROVED AS NOTED  
NOT APPROVED

BY:

NSG

DATE:

12/1/14

## ADS METER PIT SPECIFICATION

### Scope

This specification describes 18-, 21-, and 24-inch (450, 525, and 600mm) Meter Pit for use as meter enclosures.

### Requirements

ADS Meter Pits shall be white in color. Meter pits shall have a smooth interior and annular exterior corrugations. Based on ASTM D 2412 at 5% deflection the pipe stiffness for 18-inch (450 mm), 21-inch (525 mm), and 24-inch (600 mm) Meter Pits shall be 40 pii (275 N/m/mm), 34 pii (235 N/m/mm), and 34 pii (235 N/m/mm), respectively. The pits shall be available in 24, 30, 36, 48 inch, and 12 foot (0.6, 0.8, 0.9, 1.2, and 3.7 m) lengths. Meter Pits shall be notched at 0 and 180 degrees at the base to accommodate inlet and outlet pipes.

### Material Properties

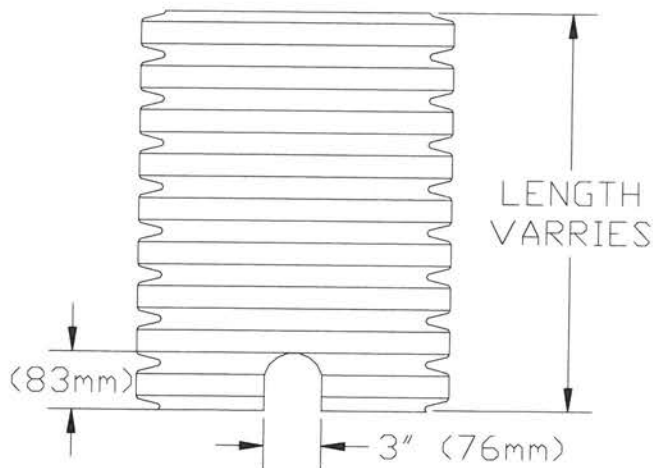
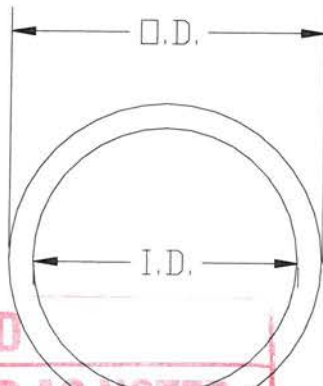
Meter pits shall be high density polyethylene conforming with the minimum requirements of cell classification 424420 B as defined and described in the latest version of ASTM D3350.

### Installation

Installation shall be in accordance with ADS installation instructions or those issued by regional, state, or local agencies.

### Nominal Dimensions

Inner Diameter	in (mm)	18 (450)	21 (525)	24 (600)
Outer Diameter	in (mm)	21.5 (546)	25 (635)	28.4 (721)



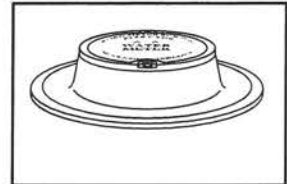
✓ APPROVED  
APPROVED AS NOTED  
NOT APPROVED  
BY: DSC DATE: 12/1/14

**Warning:** This product is not supplied with a grate or lid for means of termination at the ground surface. It is the sole responsibility of the installer/user of this product to adequately insure the product has been covered and secured at the top of the structure/product. Poor installation or failure to adequately cover and secure this product may result in injury to persons and property.

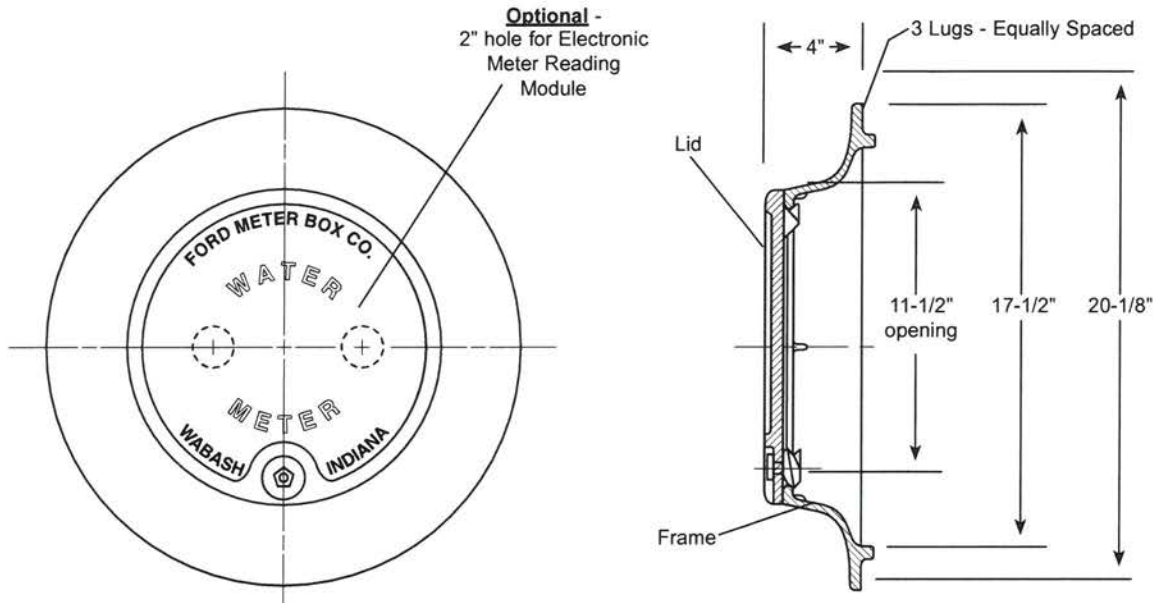


# SUBMITTAL INFORMATION

## Meter Box Covers - (C32 style)



11-1/2" OVERLAPPING LID FOR 18" TILE



*LID SIZE	TILE I.D.	APPROX. WT. LBS.	DESCRIPTION	CATALOG NUMBER	✓ SUBMITTED ITEM(s)
11-1/2"	18"	29.0	Cover with Locking Overlapping Lid	C32	
			Cover with Lockless Overlapping Lid	C32-LL	
			Single hole for Meter Reading Module	C32-T	
			Two holes for Meter Reading Modules	C32-TT	

\* Lid size indicates approximate pit access opening; actual lid diameter is approximately 1" larger.

BY: DSG DATE: 12/1/14

### FEATURES

- Available with precast holes for electronic meter reading modules  
Add to catalog number: "-T" for single hole, "-TT" for double hole
- Standard pentagon bolt furnished with locking lids  
Larger size is available. Add "-LB" to catalog number. For non-locking lid, add "-LL"
- Frame and lid are cast iron per ASTM A48-92, Class 25
- Finish is black E-coating

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10/30/03

Submitted By:

# iPERL™ Water Management System

## Electromagnetic Flow Measurement System

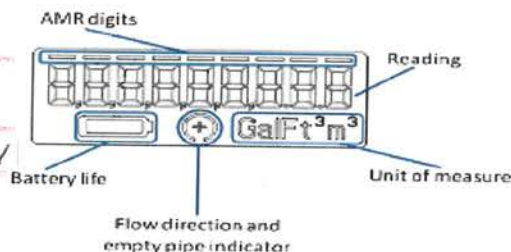
### Description

5/8" (DN 15mm), 3/4" (DN 20mm) and 1" (DN 25mm) Sizes

With no moving parts, the Sensus iPERL water management system is based on innovative electromagnetic flow measurement technology. The iPERL system family has an operating range as low as 0.03 gpm (0.007 m<sup>3</sup>/hr) to 55 gpm.



Electronic Register LCD Display



### Features

#### CONFORMANCE TO STANDARDS

The iPERL system far exceeds the most recent revision of ANSI/AWWA Standard C-700 and C-710 for accuracy and pressure loss requirements. All iPERL systems are NSF/ANSI Standard 61 Annex F and G compliant and tested to AWWA standards.

#### PERFORMANCE

The patented measurement technology of the iPERL system allows enhanced accuracy ranges at both low and high flows and perpetual accuracy over the life of the product and can be installed horizontally, vertically or diagonally.

#### CONSTRUCTION

The iPERL system is an integrated unit that incorporates an electronic register and measuring device encased in an external housing. The measuring device is comprised of a composite alloy flowtube with externally-threaded spud ends. Embedded in the flowtube are

magnetic flow sensors. The all electronic, programmable register is hermetically sealed with a tempered glass cover. The iPERL system has a 20 year life cycle, along with a 20 year battery life guarantee.

#### ELECTRONIC REGISTER

The high resolution 9-digit hermetically sealed electronic register with LCD display was designed to eliminate dirt, lens fogging issues and moisture contamination in pit settings with built in tamper protection. The tempered glass register cover displays readings with the AMR digits highlighted. Direction of flow and units of measure are also easily readable on the register display. The iPERL register features; AMR resolution and unit of measure that are fully programmable, integral customer data logging compatible with UniPro software tools. The large, easy to read display also includes battery life, empty pipe and forward/reverse flow indicators.

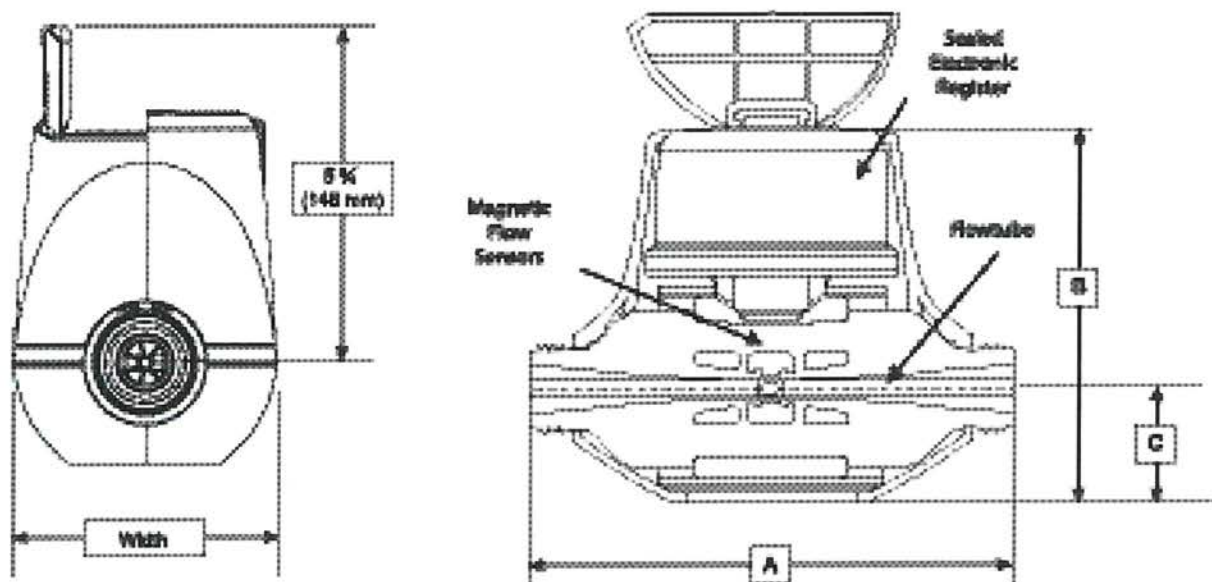
#### TAMPERPROOF FEATURES

The integrated construction of the iPERL system prevents removal of the register to obtain free water. The magnetic tamper and low field alarms will both indicate any attempt to tamper with the magnetic field of the iPERL system.

#### AMR / AMI SYSTEMS

iPERL systems are compatible with current Sensus AMR/AMI systems.





## DIMENSIONS AND NET WEIGHTS

Size	A (lay length)	B	C	Spud Ends	NPSM Thread Size	Width	Net Weight
5/8" (DN 15 mm)	7-1/2" (190 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	5/8" (15 mm)	3/4" (19 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4"S (5/8" x 3/4") (DN 20 mm)	7-1/2" (190 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4" (DN 20 mm)	9" (229 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.2 lb. (1.5 kg)
1" (DN 25 mm)	10-3/4" (273 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	1" (25 mm)	1-1/4" (32 mm)	4-1/2" (114 mm)	3.3 lb. (1.6 kg)

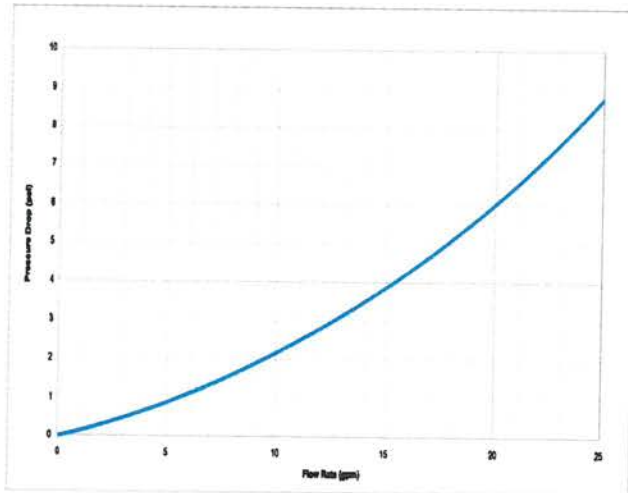
## SPECIFICATIONS

<b>SERVICE</b>	Measurement of potable and reclaim water. Operating temperature range of 33 °F (0.56 °C) - 150 °F (65.6 °C)
<b>NORMAL OPERATING FLOW RANGE</b> (±1.5%)	5/8" (DN 15mm) size: 0.18 to 25 gpm (0.04 to 5.7 m³/hr) 3/4" (DN 20mm) size: 0.18 to 35 gpm (0.04 to 8.0 m³/hr) 1" (DN 25mm) size: 0.4 to 55 gpm (0.09 to 12.5 m³/hr)
<b>LOW FLOW RANGE</b> (±3%)	5/8" (DN 15mm) size: >0.11 gpm (0.025 m³/hr) to <0.18 gpm (0.041 m³/hr) 3/4" (DN 20mm) size: >0.11 gpm (0.025 m³/hr) to <0.18 gpm (0.041 m³/hr) 1" (DN 25mm) size: >0.3 gpm (0.068 m³/hr) to <0.4 gpm (0.09 m³/hr)
<b>STARTING FLOW</b>	5/8" (DN 15mm) size: 0.03 gpm (0.007 m³/h) 3/4" (DN 20mm) size: 0.03 gpm (0.007 m³/h) 1" (DN 25mm) size: 0.11 gpm (0.025 m³/h)
<b>MAXIMUM OPERATING PRESSURE</b>	200 psi (13.8 bar)

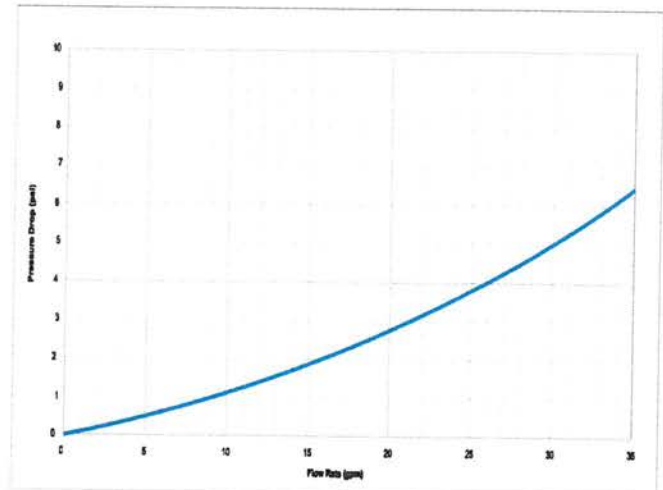
<b>MEASUREMENT TECHNOLOGY</b>	Solid state electromagnetic flow
<b>REGISTER</b>	Hermetically sealed, 9-digit programmable electronic register AMR/AMI compatible iPERL system register programmable using the UniPro programming package
<b>MATERIALS</b>	External housing – Thermal plastic Flowtube – Polyphenylene sulfide alloy Electrode – Silver/silver chloride Register cover – Tempered glass
<b>ALARM DEFAULTS</b>	Alarm Duration – 90 days Leak Duration – 24 hours Datalog Interval – 1 hour Alarm Mask – All alarms reported History Mask – All event types reported



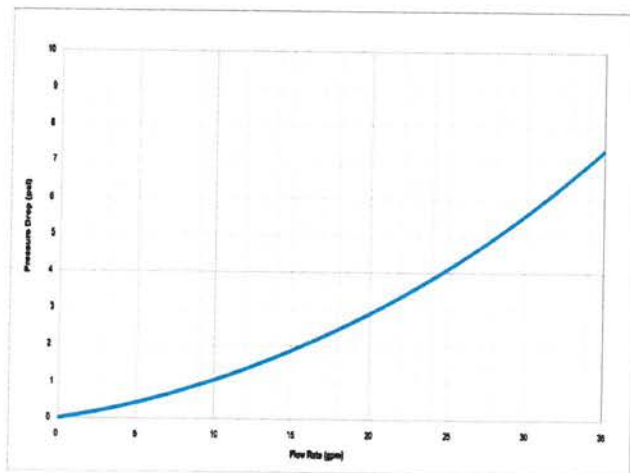
## HEADLOSS CURVES



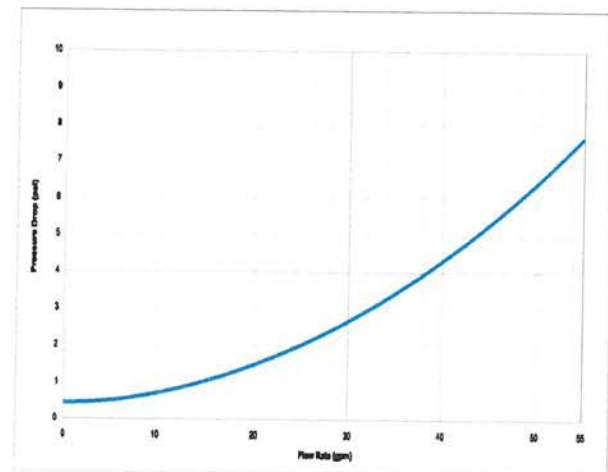
5/8" Headloss Curve



3/4" Short Headloss Curve



3/4" Headloss Curve



1" Headloss Curve

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## Description

### Model 520M – Pit Set

The FlexNet SmartPoint M2 is a radio transceiver that provides water utilities inbound and outbound access to water measurement and ancillary device diagnostics via radio signal. The SmartPoint 520M is designed for submersible, pit-set environments. With its migratable, two-way communication ability, the M-Series SmartPoint functions as a walk-by/drive-by endpoint, fixed base endpoint, or combination of the two. This flexibility increases utility data collection capabilities and streamlines operations.

## Features

### TOUCHCOUPLER DESIGN

The SmartPoint M2 utilizes TouchCoupler, the patented Sensus inductive coupling communication platform to interface with the encoded meter. With TouchCoupler, the SmartPoint M2 can connect to the meter using existing two wire AMR installations instead of requiring utilities to access the meter to install a new three-wire connection. This results in a fast, efficient and reliable connection at minimal cost.

### OPERATION

The FlexNet SmartPoint M2 receives input from the meter register and remotely sends data to a walk-by/ drive-by or fixed base collection device. The SmartPoint M2 easily migrates from walk-by/drive-by to fixed base by simply installing a Base Station.

In walk-by/drive-by mode, the SmartPoint M2 collects data and awaits an activation signal from the Vehicle Gateway Basestation (VGB) or Hand-Held Device (HHD). Upon signal receipt, it transmits readings, the meter identification number and any alarms.

As a fixed-base endpoint, the SmartPoint M2 interacts with one or more strategically placed Base Stations located in the utility service area. Top of the hour readings and other diagnostics are instantly forwarded to the Regional Network Interface (RNI) at time of transmission. The FlexNet system provides unmatched reliability by

using expansive tower receiver coverage of metering end points, data/message redundancy, fail over back up provisions and operation on FCC primary use (unshared) RF spectrum.

### POWERFUL TRANSMISSION, FLEXIBLE PLATFORM

The SmartPoint M2 offers several advantages that control both deployment and lifetime operation costs. It's powerful, industry leading two watt transmitter broadcasts over large distances and minimizes collection infrastructure. And once the SmartPoint M2 is installed, its migratable, two-way system platform can be updated without requiring personnel to visit each meter and/or inconveniencing customers.

### ADDITIONAL SMARTPOINT M2 FEATURES

The SmartPoint M2 obtains hourly readings and can monitor continuous flow over a programmable period of time, alerting the utility to leak conditions. In addition, the SmartPoint M2 stores up to 840 consumption intervals (35 days of hourly consumption), providing the utility with the ability to extract detailed usage profiles for consumer information and dispute resolution. The SmartPoint M2 also incorporates a two-port design, allowing the utility to connect multiple registers and ancillary devices (such as acoustic monitoring) to a single SmartPoint. This results in a compact installation that saves



time, space and money - without reducing system performance.

### SPECIFICATIONS

<b>SERVICE</b>	Pit set installation interfacing the utility meter to the Sensus FlexNet system. Unit requires 1.75" diameter hole in pit lid; fits pit lid thicknesses up to 1.75"
<b>PHYSICAL CHARACTERISTICS</b>	Width: 4.43" x Height: 5.09" x Depth: 3"
<b>WEIGHT</b>	1.0 lbs/16.0 oz
<b>COLOR</b>	Black
<b>FREQUENCY RANGE</b>	900 – 950 MHz, 8000 channels X 6.25 kHz steps
<b>MODULATION</b>	Proprietary Narrow Band
<b>MEMORY</b>	Non-Volatile
<b>POWER</b>	Lithium Thionyl Chloride batteries
<b>APPROVALS</b>	<b>US:</b> FCC CFR 47: Part 90, Part 24D, Part 101C, Part 15 Licensed operation <b>Canada:</b> Industry Canada (IC) RSS-134, RSS-119, RSS-210
<b>OPERATING TEMPERATURE</b>	- 22° F to +185° F - 30° C to + 85° C
<b>OPTIONS</b>	Dual or single port availability; TouchCoupler only, wired only, Nicor connection
<b>INSTALLATION ENVIRONMENT</b>	100% condensing, water submersible
<b>COMPATIBILITY</b>	<b>TouchCoupler and Wired Version:</b> Sensus Encoded Registers Badger ADE water registers and MasterMeter AccuLinx <b>Wired Version Only:</b> Elster Encoder (Sensus protocol) and Neptune ARB VI (ProRead). Hersey Translator
<b>WARRANTY</b>	20 years – Based on six transmissions per day. Refer to Sensus G-500 for warranty.

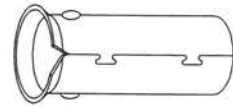
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# SUBMITTAL INFORMATION

## Stainless Steel Inserts - (Insert-xx style)



### STAINLESS STEEL INSERTS FOR POLYETHYLENE PIPE (PEP) OR TUBING (PET)

✓ APPROVED

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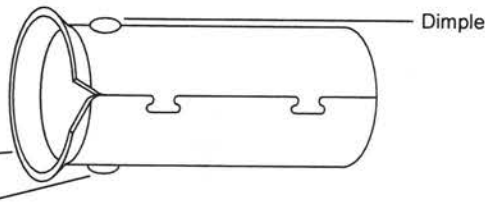
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NSG

DATE:

12/1/11



#### 70 Series For Polyethylene Pipe (PEP)

CATALOG NUMBER	NOMINAL SIZE	PEP ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-71	3/4"	0.824	4.4	100	
** INSERT-53-72	1"	1.049	2.9	50	
♦** INSERT-53-72-Q	1"	1.049	2.9	50	
INSERT-73	1-1/4"	1.380	5.8	75	
INSERT-74	1-1/2"	1.610	5.5	45	
INSERT-75	2"	2.067	9.7	50	

#### 50 series For Polyethylene Tubing (PET)

CATALOG NUMBER	NOMINAL SIZE	PET ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-51	3/4"	0.681	4.8	200	
INSERT-52	1"	0.875	4.2	100	
** INSERT-53-72	1-1/4"	1.069	2.9	50	
♦** INSERT-53-72-Q	1-1/4"	1.069	2.9	50	
INSERT-54	1-1/2"	1.263	3.1	25	
INSERT-55	2"	1.653	6.0	40	
♦ INSERT-54-Q	1-1/2"	1.263	2.6	30	
♦ INSERT-55-Q	2"	1.653	5.8	50	

\* Weights for insert stiffeners are for standard package quantities.

\*\*Insert -53 and -72 fit both 1-1/4" plastic tubing (1.069 I.D.) and 1" plastic pipe (1.049 I.D.).

♦ These inserts are specifically designed and required for Quick Joint fittings. They are not interchangeable with other Compression Fittings.

### FEATURES

- Insert stiffeners conform to the AWWA Standard C901 for Polyethylene (PE) Pressure Pipe and Tubing
- Insert stiffeners are solid 304 tubular stainless steel (ASTM 240-92B)
- Dimpled and flanged to retain placement within the service line
- Key lock construction with a minimum of two key locks to maintain solid structural integrity
- Manufactured in the United States of America

**Note:** Consult pipe or tubing manufacturer for specific installation requirements. Ford recommends using insert stiffeners when using plastic pipe or tubing

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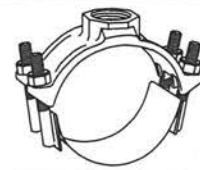
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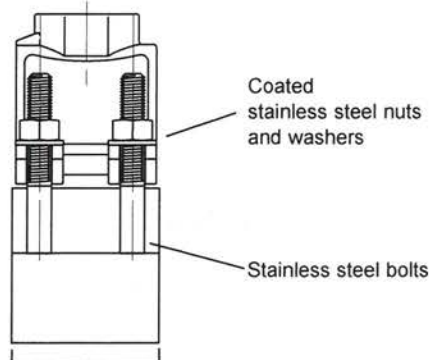
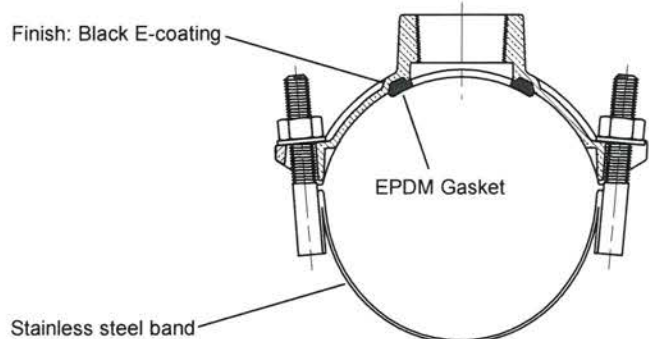


# SUBMITTAL INFORMATION

## Iron Service Saddles - (FS202-xxx-xxx style)



### FS202 DOUBLE BAND IRON SERVICE SADDLES



NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
2"	*2.35 - 2.50	2.8	FS202-250-Tap	
2-1/2"	*2.75 - 2.90	2.8	FS202-290-Tap	
3"	**3.46 - 3.80	4.8	FS202-380-Tap	
	**3.80 - 4.25	5.5	FS202-425-Tap	
	**4.26 - 4.73	5.4	FS202-473-Tap	
4"	***4.50 - 4.80	5.4	FS202-480-Tap	
	4.74 - 5.26	5.4	FS202-526-Tap	
	5.94 - 6.69	6.5	FS202-669-Tap	
6"	6.63 - 6.90	6.5	FS202-690-Tap	
	6.84 - 7.60	6.8	FS202-760-Tap	
	7.93 - 8.71	7.4	FS202-871-Tap	
8"	****8.63 - 9.05	7.4	FS202-905-Tap	
	8.99 - 9.79	8.2	FS202-979-Tap	
	10.00 - 10.75	10.4	FS202-1075-Tap	
10"	10.75 - 11.10	11.5	FS202-1110-Tap	
	11.10 - 12.12	11.5	FS202-1212-Tap	
	12.00 - 12.75	12.5	FS202-1275-Tap	
12"	***12.75 - 13.20	12.5	FS202-1320-Tap	
	13.20 - 14.38	12.5	FS202-1438-Tap	
14"	15.30 - 16.25	16.0	FS202-1625-Tap	
	16.30 - 17.25	16.5	FS202-1725-Tap	
16"	17.40 - 18.40	17.0	FS202-1840-Tap	
	18.50 - 19.25	17.3	FS202-1925-Tap	
18"	19.50 - 20.50	20.8	FS202-2050-Tap	
20"	21.20 - 22.20	21.3	FS202-2220-Tap	
	22.50 - 23.50	24.0	FS202-2350-Tap	
24"	23.80 - 24.80	24.5	FS202-2480-Tap	
	25.60 - 26.50	31.7	FS202-2650-Tap	
30"	31.74 - 32.74	42.0	FS202-3274-Tap	

3-1/4" (3/4" and 1" taps)  
4" (1-1/4" and 2" taps)  
5" (14" and 30" saddles, all tap sizes)

\* Saddles for this pipe range are available with 3/4" and 1" taps only.

\*\* Saddles with this pipe range are not available with 2" CC or 2-1/2" IP taps.

\*\*\* These saddles with 1-1/2" through 2" taps fit the top end of the listed range only.

\*\*\*\* This saddle with 2" CC (CC7) or 2-1/2" IP (IP8) fits 9.05 O.D. only.

#### OUTLET TAP CODE

CC (AWWA) THREAD		
THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	

IP THREAD		
THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

### FEATURES

- Body made of high strength ductile iron per ASTM A536
- Double Wide Band and 5/8" UNC threaded bolts of 18-8 type 304 stainless steel  
1/2" bolts are furnished on saddles 3" and smaller
- Gasket is EPDM rubber, ASTM-D2000
- Finish on saddle body is black e-coating
- UL Classified to ANSI/NSF Standard 61

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07/19/11

Submitted By: **PROVED**

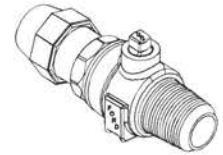
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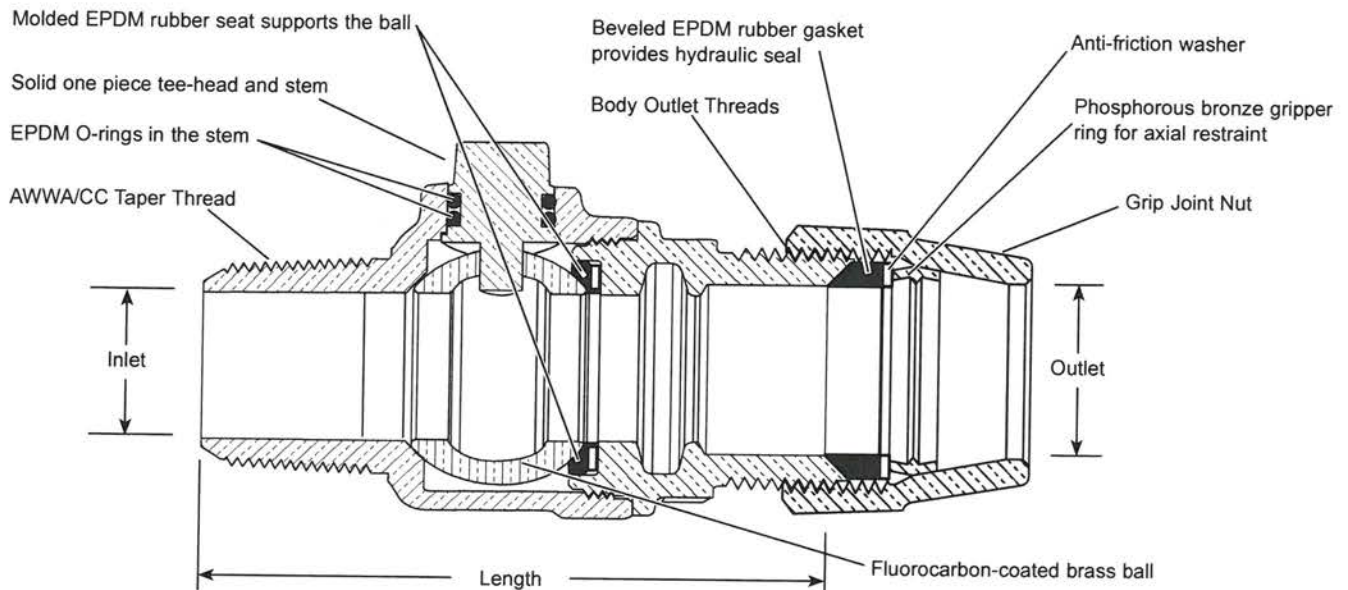
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# SUBMITTAL INFORMATION

## Ballcorp Corporation Stops - (FB1000-4x-G-NL style)



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



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
1"	1"	1"	4-1/2"	1" Flare Copper	2.6	FB1000-4-G-NL	
1"	1"	1-1/4"	4-9/16"	1-1/4" Flare Copper	3.0	FB1000-4S-G-NL	

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

DSG DATE: 12/1/14

### FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- UL Classified to ANSI/NSF Standard 61 and Standard 61 Annex G (NSF/ANSI 372)
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure
- Standard tee-head stops permit 90° turn only

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#### The Ford Meter Box Company, Inc.

P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
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<http://www.fordmeterbox.com>

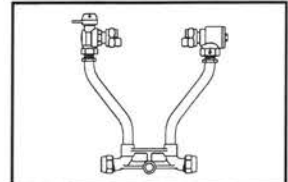
02/05/14

Submitted By:



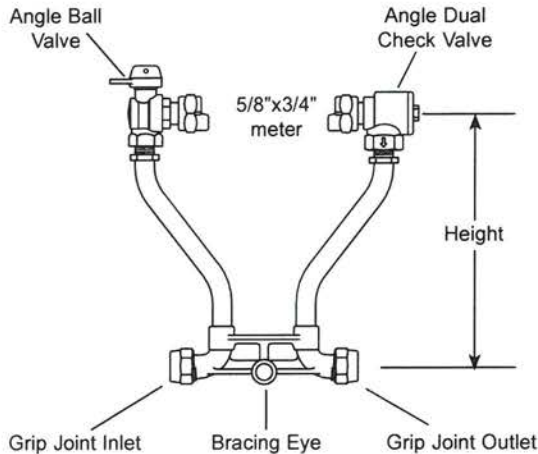
# SUBMITTAL INFORMATION

## 70 Series Coppersetter - (VBHH72-xxW-44-xx-G-NL style)



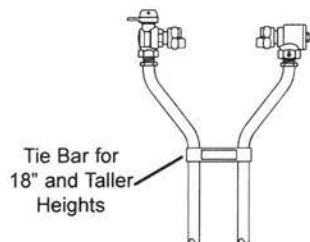
ANGLE BALL VALVE BY ANGLE DUAL CHECK VALVE (5/8" X 3/4" METER)

GRIP JOINT FOR COPPER OR PLASTIC TUBING (CTS) INLET AND OUTLET



### Coppersetter Part Number

HEIGHT (INCHES)	APPROX. WT. LBS.	CATALOG NUMBER (INSERT SERVICE LINE CONN. SIZE)	✓ SUBMITTED ITEM(S)
7	6.0	VBHH72-7W-44-xx-G-NL	
9	6.2	VBHH72-9W-44-xx-G-NL	
12	6.4	VBHH72-12W-44-xx-G-NL	
15	6.6	VBHH72-15W-44-xx-G-NL	
18	7.3	VBHH72-18W-44-xx-G-NL	
21	7.5	VBHH72-21W-44-xx-G-NL	
24	7.8	VBHH72-24W-44-xx-G-NL	
27	8.0	VBHH72-27W-44-xx-G-NL	
30	8.3	VBHH72-30W-44-xx-G-NL	
33	8.6	VBHH72-33W-44-xx-G-NL	
36	8.8	VBHH72-36W-44-xx-G-NL	
39	9.1	VBHH72-39W-44-xx-G-NL	
42	9.4	VBHH72-42W-44-xx-G-NL	



### Service Line Size

INLET	OUTLET	SERVICE LINE CONN. SIZE	✓ SUBMITTED ITEM(S)
3/4" (CTS) G.J.	3/4" (CTS) G.J.	33	
1" (CTS) G.J.	3/4" (CTS) G.J.	43	
1" (CTS) G.J.	1" (CTS) G.J.	44	

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

### FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Saddle Nuts hold the meter in place for tightening
- Bracing Eye is standard on all 70 Series Coppersetters
- Tie Bar is standard for 18" and taller Coppersetter heights (72 Series)
- 13/16" Copper Risers provide more flow capacity
- All Ford Setters are assembled with lead-free solder
- Copper conforms to ASTM B-75, Copper Alloy #122
- ASSE 1024 approved Dual Check Valve

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02/22/13

Submitted By:

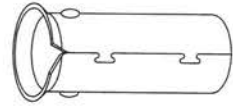
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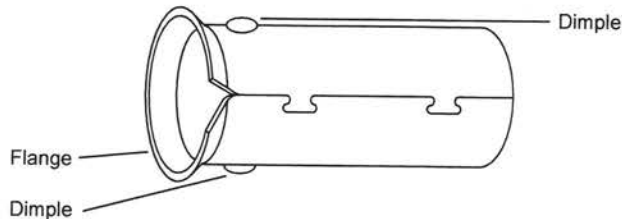
DATE: 12/1/14

# SUBMITTAL INFORMATION

## Stainless Steel Inserts - (Insert-xx style)



### STAINLESS STEEL INSERTS FOR POLYETHYLENE PIPE (PEP) OR TUBING (PET)



#### 70 Series For Polyethylene Pipe (PEP)

CATALOG NUMBER	NOMINAL SIZE	PEP ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-71	3/4"	0.824	4.4	100	
** INSERT-53-72	1"	1.049	2.9	50	
◆** INSERT-53-72-Q	1"	1.049	2.9	50	
INSERT-73	1-1/4"	1.380	5.8	75	
INSERT-74	1-1/2"	1.610	5.5	45	
INSERT-75	2"	2.067	9.7	50	

#### 50 series For Polyethylene Tubing (PET)

CATALOG NUMBER	NOMINAL SIZE	PET ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-51	3/4"	0.681	4.8	200	
INSERT-52	1"	0.875	4.2	100	
** INSERT-53-72	1-1/4"	1.069	2.9	50	
◆** INSERT-53-72-Q	1-1/4"	1.069	2.9	50	
INSERT-54	1-1/2"	1.263	3.1	25	
INSERT-55	2"	1.653	6.0	40	
◆ INSERT-54-Q	1-1/2"	1.263	2.6	30	
◆ INSERT-55-Q	2"	1.653	5.8	50	

\* Weights for insert stiffeners are for standard package quantities.

\*\*Insert -53 and -72 fit both 1-1/4" plastic tubing (1.069 I.D.) and 1" plastic pipe (1.049 I.D.).

◆ These inserts are specifically designed and required for Quick Joint fittings. They are not interchangeable with other Compression Fittings.

DSG

DATE: 12/1/14

#### FEATURES

- Insert stiffeners conform to the AWWA Standard C901 for Polyethylene (PE) Pressure Pipe and Tubing
- Insert stiffeners are solid 304 tubular stainless steel (ASTM 240-92B)
- Dimpled and flanged to retain placement within the service line
- Key lock construction with a minimum of two key locks to maintain solid structural integrity
- Manufactured in the United States of America

**Note:** Consult pipe or tubing manufacturer for specific installation requirements. Ford recommends using insert stiffeners when using plastic pipe or tubing

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11/03/10

Submitted By:



# ENDOT INDUSTRIES

PIPE AND TUBING

## EndoPure PE-4710

BLUE (with CLEAR CORE) COILED PIPE & TUBING

### BLUE WATER SERVICE TUBING (CTS - O.D. CONTROLLED) - ASTM D2737-12

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD OUTSIDE DIMENSION RATIO (SODR) = 9 (250 PSI)						
3/4"	0.875	0.675	.097	10.3	500/100	PEP07541010009
1"	1.125	0.865	.125	17.1	300/100	PEP10041010009
1-1/4"	1.375	1.059	.153	25.5	300/100	PEP12541010009
1-1/2"	1.625	1.253	.181	35.3	300/100	PEP15041010009
2"	2.125	1.629	.236	61.0	200/100	PEP20041010009

### BLUE WATER SERVICE PIPE (IPS - I.D. CONTROLLED) - ASTM D2239-12

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD INSIDE DIMENSION RATIO (SIDR) = 7 (250 PSI)						
3/4"	1.070	0.824	.118	15.5	400/100	PEP07541010004
1"	1.359	1.049	.150	24.9	300/200/100	PEP10041010004
1-1/4"	1.785	1.380	.197	42.8	300/100	PEP12541010004
1-1/2"	2.086	1.610	.230	58.4	250/100	PEP15041010004
2"	2.675	2.067	.295	93.3	200/100	PEP20041010004
STANDARD INSIDE DIMENSION RATIO (SIDR) = 9 (200 PSI)						
3/4"	1.026	0.824	.014	12.1	400/100	PEP07541010003
1"	1.293	1.049	.120	19.5	300/100	PEP10041010003
1-1/4"	1.710	1.380	.157	33.2	300/100	PEP12541010003
1-1/2"	1.980	1.610	.179	42.9	250/100	PBJ15041010003
2"	2.540	2.067	.230	71.0	200/100	PBJ20041010003

### BLUE WATER SERVICE PIPE (IPS - O.D. CONTROLLED) - ASTM D3035

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD OUTSIDE DIMENSION RATIO (DR) = 9 (250 PSI)						
3/4"	1.050	0.816	.117	15.2	400/100	PEP07541010016
1"	1.315	1.029	.146	22.7	300/200/100	PEP10041010016
1-1/4"	1.660	1.294	.184	36.5	300/100	PEP12541010016
1-1/2"	1.900	1.478	.211	47.8	300/100	PEP15041010016
2"	2.375	1.847	.264	74.1	200/100	PEP20041010016
STANDARD OUTSIDE DIMENSION RATIO (DR) = 11 (200 PSI)						
3/4"	1.050	0.860	.095	13.5	400/100	PEP07541010014
1"	1.315	1.075	.120	19.9	300/200/100	PEP10041010014
1-1/4"	1.660	1.358	.151	31.4	300/100	PEP12541010014
1-1/2"	1.900	1.554	.173	41.1	250/100	PEP15041010014
2"	2.375	1.943	.216	65.9	200/100	PEP20041010014

#### CONFORMS TO THE FOLLOWING APPLICABLE STANDARDS

Listed Under Standard 14 & 61 for Potable Water  
Cell Classification 445576A (A = Raw Material before processing)  
Meets PE 4710 Requirements  
Conforms as 250 PSI & 200 PSI  
Conforms as 250 PSI & 200 PSI

#### WARRANTY

Certification of Purity and Lifetime Warranty. See Warranty for Details.

NSF  
ASTM D3350  
ASTM D2737, D2239 & D3035  
AWWA C901  
BOCA

✓ APPROVED

APPROVED AS NOTED

NOT APPROVED

BY: DSG DATE: 12/1/14

#### CORPORATE HEADQUARTERS

60 Green Pond Road  
Rockaway, NJ 07866  
800-443-6368 • FAX 973-625-4087



#### ENDOT INDUSTRIES, INC.

www.endot.com • e-mail: info@endot.com

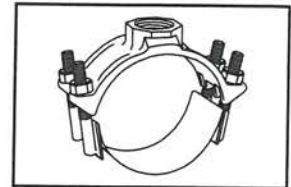


#### PLANT LOCATIONS

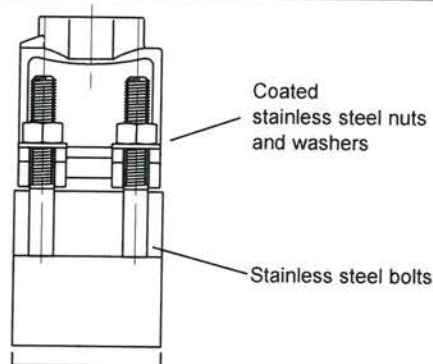
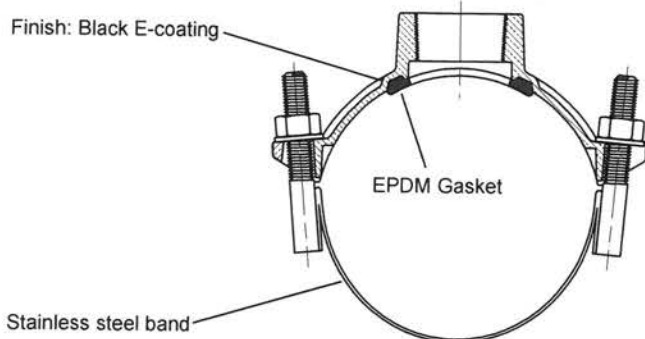
Greenville, TN  
Pryor Creek, OK

# SUBMITTAL INFORMATION

## Iron Service Saddles - (FS202-xxx-xxx style)



### FS202 DOUBLE BAND IRON SERVICE SADDLES



NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
2"	*2.35 - 2.50	2.8	FS202-250-Tap	
2-1/2"	*2.75 - 2.90	2.8	FS202-290-Tap	
3"	**3.46 - 3.80	4.8	FS202-380-Tap	
	**3.80 - 4.25	5.5	FS202-425-Tap	
	**4.26 - 4.73	5.4	FS202-473-Tap	
4"	***4.50 - 4.80	5.4	FS202-480-Tap	
	4.74 - 5.26	5.4	FS202-526-Tap	
	5.94 - 6.69	6.5	FS202-669-Tap	
6"	6.63 - 6.90	6.5	FS202-690-Tap	
	6.84 - 7.60	6.8	FS202-760-Tap	
	7.93 - 8.71	7.4	FS202-871-Tap	
8"	****8.63 - 9.05	7.4	FS202-905-Tap	
	8.99 - 9.79	8.2	FS202-979-Tap	
	10.00 - 10.75	10.4	FS202-1075-Tap	
10"	10.75 - 11.10	11.5	FS202-1110-Tap	
	11.10 - 12.12	11.5	FS202-1212-Tap	
	12.00 - 12.75	12.5	FS202-1275-Tap	
12"	***12.75 - 13.20	12.5	FS202-1320-Tap	
	13.20 - 14.38	12.5	FS202-1438-Tap	
14"	15.30 - 16.25	16.0	FS202-1625-Tap	
	16.30 - 17.25	16.5	FS202-1725-Tap	
16"	17.40 - 18.40	17.0	FS202-1840-Tap	
	18.50 - 19.25	17.3	FS202-1925-Tap	
18"	19.50 - 20.50	20.8	FS202-2050-Tap	
20"	21.20 - 22.20	21.3	FS202-2220-Tap	
	22.50 - 23.50	24.0	FS202-2350-Tap	
24"	23.80 - 24.80	24.5	FS202-2480-Tap	
	25.60 - 26.50	31.7	FS202-2650-Tap	
30"	31.74 - 32.74	42.0	FS202-3274-Tap	

3-1/4" (3/4" and 1" taps)  
 4" (1-1/4" and 2" taps)  
 5" (14" and 30" saddles, all tap sizes)

\* Saddles for this pipe range are available with 3/4" and 1" taps only.

\*\* Saddles with this pipe range are not available with 2" CC or 2-1/2" IP taps.

\*\*\* These saddles with 1-1/2" through 2" taps fit the top end of the listed range only.

\*\*\*\* This saddle with 2" CC (CC7) or 2-1/2" IP (IP8) fits 9.05 O.D. only.

#### OUTLET TAP CODE

##### CC (AWWA) THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" CC	CC3	
1" CC	CC4	
1-1/4" CC	Δ CC5	
1-1/2" CC	CC6	
2" CC	CC7	

##### IP THREAD

THREAD	CODE NUMBER	✓ SUBMITTED ITEM(S)
3/4" IP	IP3	
1" IP	IP4	
1-1/4" IP	Δ IP5	
1-1/2" IP	IP6	
2" IP	IP7	
2-1/2" IP	IP8	

Δ Contact factory for availability

### FEATURES

- Body made of high strength ductile iron per ASTM A536
- Double Wide Band and 5/8" UNC threaded bolts of 18-8 type 304 stainless steel 1/2" bolts are furnished on saddles 3" and smaller
- Gasket is EPDM rubber, ASTM-D2000
- Finish on saddle body is black e-coating
- UL Classified to ANSI/NSF Standard 61

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<http://www.fordmeterbox.com>

07/19/11

Submitted By:

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DSG

DATE: 12/1/14

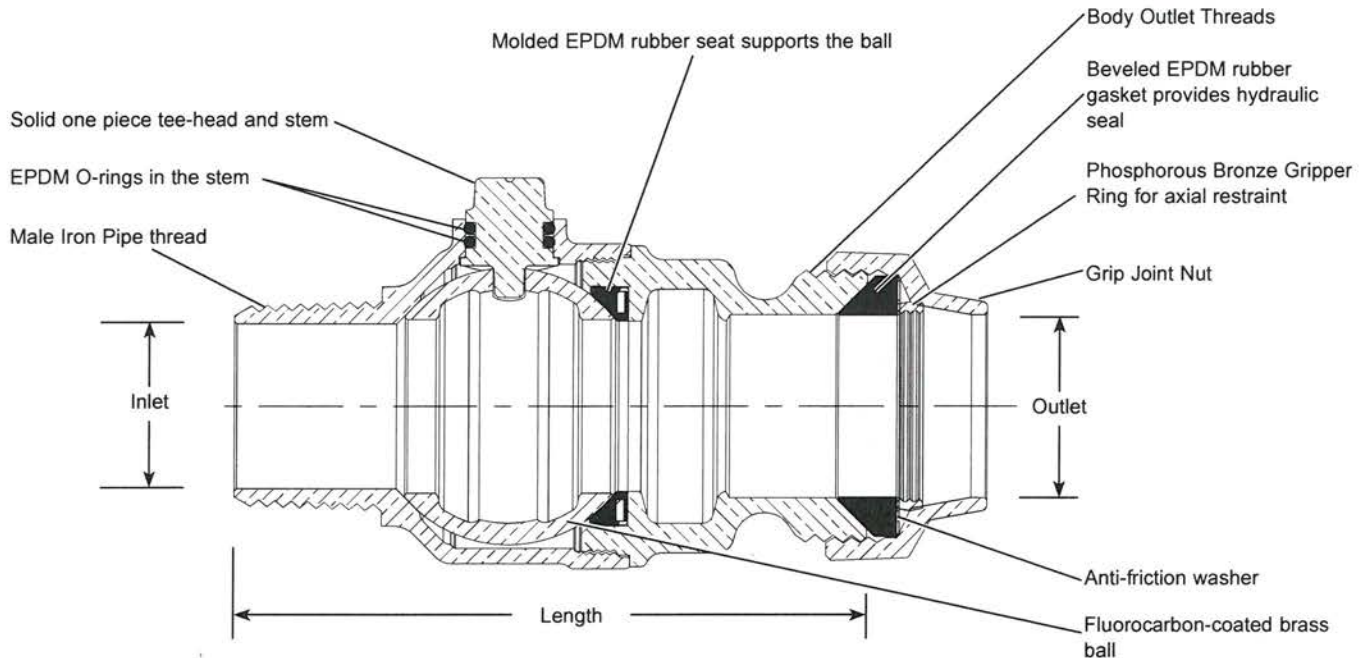


# SUBMITTAL INFORMATION

**Ballcorp Corporation Stops - (FB1100-7-G-NL style)**



**MALE IRON PIPE THREAD INLET BY GRIP JOINT FOR COPPER OR PLASTIC TUBING (CTS) OUTLET**



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
2"	2"	2"	7-1/2"	2" Flare Copper	9.4	FB1100-7-G-NL	

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

APPROVED  
APPROVED AS NOTED  
NOT APPROVED

DSG

DATE: 12/1/14

## FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (UNS NO C89833)
- The product has the letters "NL" cast into the main body for proper identification
- UL Classified to ANSI/NSF Standard 61 and Standard 61 Annex G (NSF/ANSI 372)
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B-62 and ASTM B-584, UNS NO C83600 - 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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02/04/13

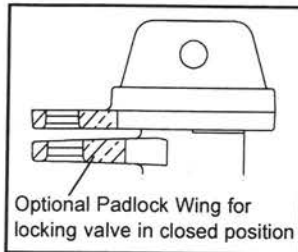
Submitted By:

# SUBMITTAL INFORMATION

## Ball Valve Curb Stop - (B41-xxx-G-NL style)



### GRIP JOINT COMPRESSION FOR COPPER OR PLASTIC TUBING (CTS) INLET BY FEMALE IRON PIPE THREAD OUTLET



Optional Padlock Wing for locking valve in closed position

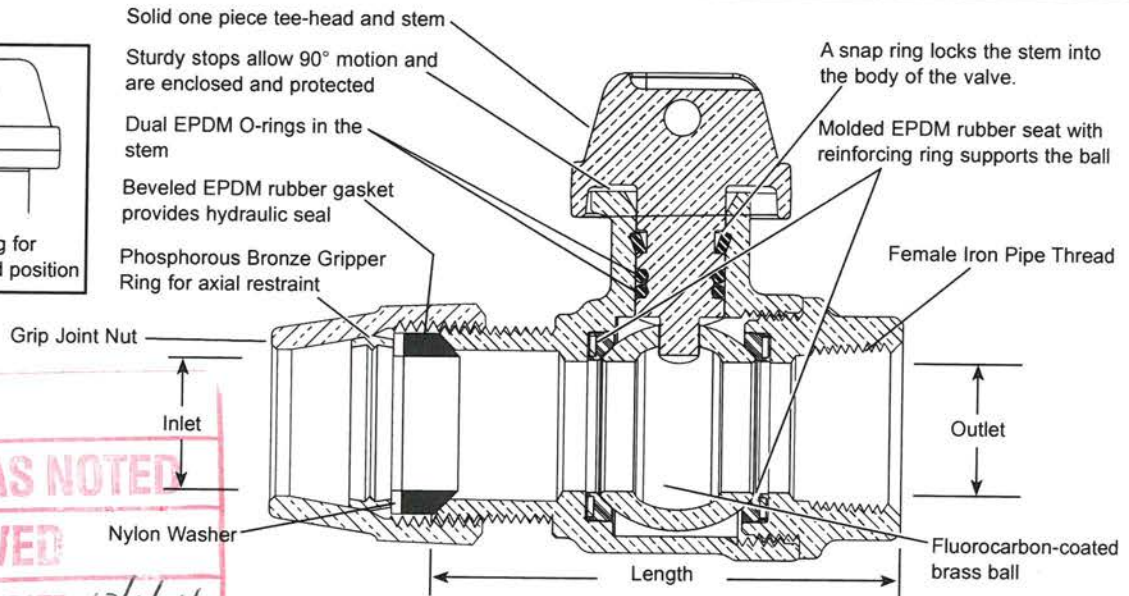


Image shown above is a B41-444-G-NL.

VALVE SIZE	INLET SIZE	OUTLET SIZE	LENGTH	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
3/4"	1"	1"	3-27/64"	2.1	B41-344-G-NL	
1"	1"	1"	3-37/64"	2.3	B41-444-G-NL	
1-1/2"	1-1/2"	1-1/2"	5-5/64"	6.0	B41-666-G-NL	
2"	2"	2"	6"	8.5	B41-777-G-NL	

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

### FEATURES

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

**Optional Padlock Wing** for locking valve in closed position. Insert "W" into part number

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www.fordmeterbox.com

09/30/14

Submitted By:



# ENDOT INDUSTRIES

PIPE AND TUBING

## EndoPure PE-4710

BLUE (with CLEAR CORE) COILED PIPE & TUBING

### BLUE WATER SERVICE TUBING (CTS - O.D. CONTROLLED) - ASTM D2737-12

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD OUTSIDE DIMENSION RATIO (SDR) = 9 (250 PSI)						
3/4"	0.875	0.675	.097	10.3	500/100	PEP07541010009
1"	1.125	0.865	.125	17.1	300/100	PEP10041010009
1-1/4"	1.375	1.059	.153	25.5	300/100	PEP12541010009
1-1/2"	1.625	1.253	.181	35.3	300/100	PEP15041010009
2"	2.125	1.629	.236	61.0	200/100	PEP20041010009

### BLUE WATER SERVICE PIPE (IPS - I.D. CONTROLLED) - ASTM D2239-12

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD INSIDE DIMENSION RATIO (SIDR) = 7 (250 PSI)						
3/4"	1.070	0.824	.118	15.5	400/100	PEP07541010004
1"	1.359	1.049	.150	24.9	300/200/100	PEP10041010004
1-1/4"	1.785	1.380	.197	42.8	300/100	PEP12541010004
1-1/2"	2.086	1.610	.230	58.4	250/100	PEP15041010004
2"	2.675	2.067	.295	93.3	200/100	PEP20041010004
STANDARD INSIDE DIMENSION RATIO (SIDR) = 9 (200 PSI)						
3/4"	1.026	0.824	.014	12.1	400/100	PEP07541010003
1"	1.293	1.049	.120	19.5	300/100	PEP10041010003
1-1/4"	1.710	1.380	.157	33.2	300/100	PEP12541010003
1-1/2"	1.980	1.610	.179	42.9	250/100	PBJ15041010003
2"	2.540	2.067	.230	71.0	200/100	PBJ20041010003

### BLUE WATER SERVICE PIPE (IPS - O.D. CONTROLLED) - ASTM D3035

Size	Nominal O.D.	Nominal I.D.	Min. Wall	Weight Per 100'	Standard Coil Size	Part Number
STANDARD OUTSIDE DIMENSION RATIO (DR) = 9 (250 PSI)						
3/4"	1.050	0.816	.117	15.2	400/100	PEP07541010016
1"	1.315	1.029	.146	22.7	300/200/100	PEP10041010016
1-1/4"	1.660	1.294	.184	36.5	300/100	PEP12541010016
1-1/2"	1.900	1.478	.211	47.8	300/100	PEP15041010016
2"	2.375	1.847	.264	74.1	200/100	PEP20041010016
STANDARD OUTSIDE DIMENSION RATIO (DR) = 11 (200 PSI)						
3/4"	1.050	0.860	.095	13.5	400/100	PEP07541010014
1"	1.315	1.075	.120	19.9	300/200/100	PEP10041010014
1-1/4"	1.660	1.358	.151	31.4	300/100	PEP12541010014
1-1/2"	1.900	1.554	.173	41.1	250/100	PEP15041010014
2"	2.375	1.943	.216	65.9	200/100	PEP20041010014

#### CONFORMS TO THE FOLLOWING APPLICABLE STANDARDS

Listed Under Standard 14 & 61 for Potable Water  
Cell Classification 445576A (A = Raw Material before processing)  
Meets PE 4710 Requirements  
Conforms as 250 PSI & 200 PSI  
Conforms as 250 PSI & 200 PSI

#### WARRANTY

Certification of Purity and Lifetime Warranty. See Warranty for Details.

✓  
APPROVED  
NSF  
ASTM D3350  
ASTM D2737, D2239 & D3035  
AWWA C901  
BOCA  
NOT APPROVED  
DSG  
12/1/14



#### CORPORATE HEADQUARTERS

60 Green Pond Road  
Rockaway, NJ 07866  
800-443-6368 • FAX 973-625-4087

#### ENDOT INDUSTRIES, INC.

www.endot.com • e-mail: info@endot.com

#### PLANT LOCATIONS

Greeneville, TN  
Pryor Creek, OK

## ADS METER PIT SPECIFICATION

### Scope

This specification describes 18-, 21-, and 24-inch (450, 525, and 600mm) Meter Pit for use as meter enclosures.

### Requirements

ADS Meter Pits shall be white in color. Meter pits shall have a smooth interior and annular exterior corrugations. Based on ASTM D 2412 at 5% deflection the pipe stiffness for 18-inch (450 mm), 21-inch (525 mm), and 24-inch (600 mm) Meter Pits shall be 40 pii (275 N/m/mm), 34 pii (235 N/m/mm), and 34 pii (235 N/m/mm), respectively. The pits shall be available in 24, 30, 36, 48 inch, and 12 foot (0.6, 0.8, 0.9, 1.2, and 3.7 m) lengths. Meter Pits shall be notched at 0 and 180 degrees at the base to accommodate inlet and outlet pipes.

### Material Properties

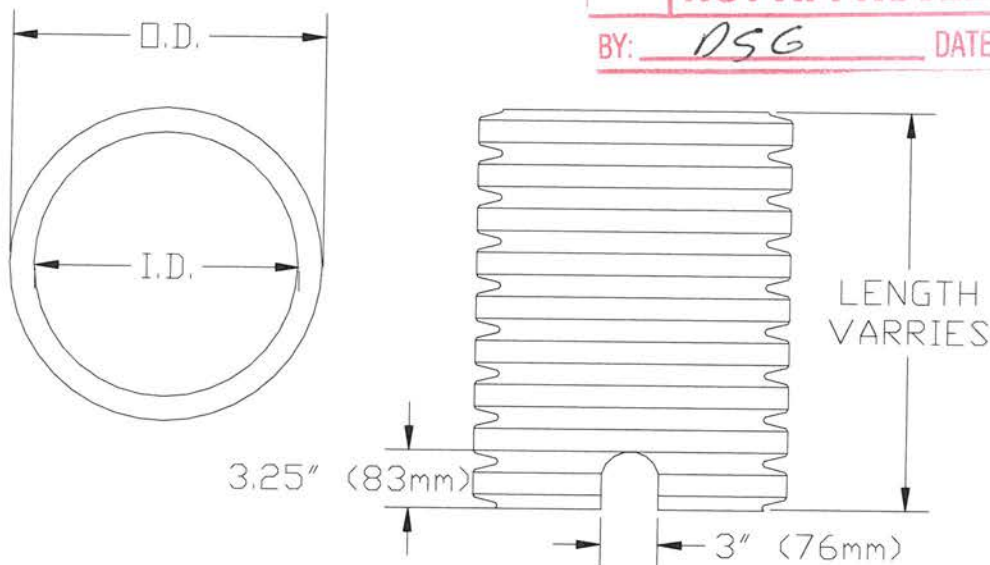
Meter pits shall be high density polyethylene conforming with the minimum requirements of cell classification 424420 B as defined and described in the latest version of ASTM D3350.

### Installation

Installation shall be in accordance with ADS installation instructions or those issued by regional, state, or local agencies.

### Nominal Dimensions

	in	18	21	24
Inner Diameter	(mm)	(450)	(525)	(600)
	in	21.5	25	28.4
Outer Diameter	(mm)	(546)	(635)	(721)

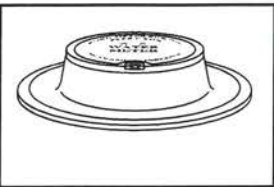


**Warning:** This product is not supplied with a grate or lid for means of termination at the ground surface. It is the sole responsibility of the installer/user of this product to adequately insure the product has been covered and secured at the top of the structure/product. Poor installation or failure to adequately cover and secure this product may result in injury to persons and property.

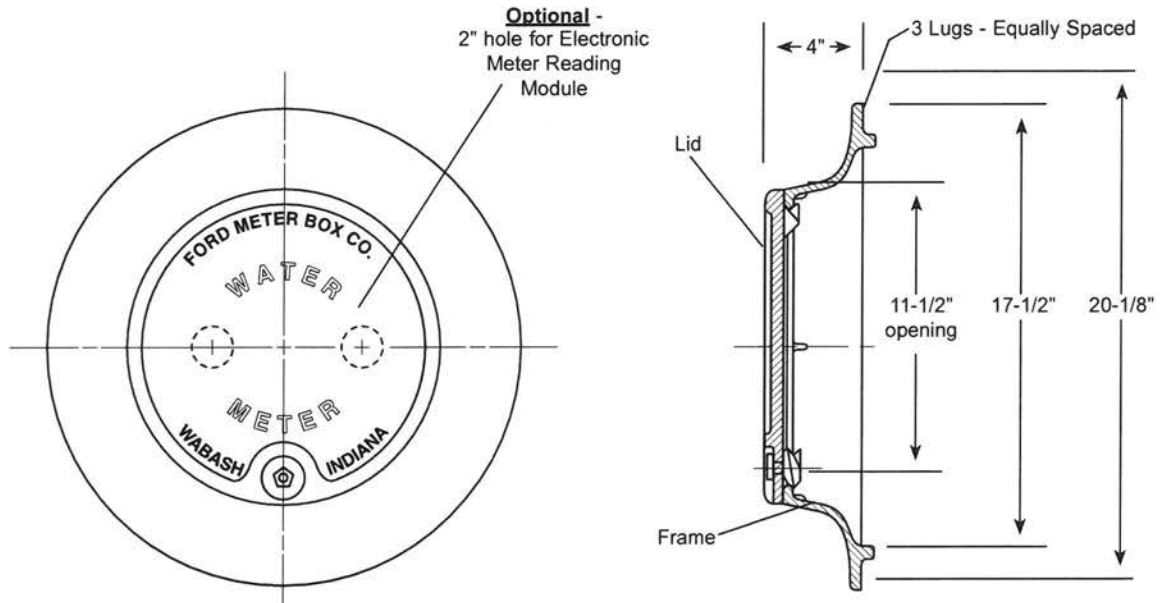


# SUBMITTAL INFORMATION

## Meter Box Covers - (C32 style)



11-1/2" OVERLAPPING LID FOR 18" TILE



*LID SIZE	TILE I.D.	APPROX. WT. LBS.	DESCRIPTION	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
11-1/2"	18"	29.0	Cover with Locking Overlapping Lid	C32	
			Cover with Lockless Overlapping Lid	C32-LL	
			Single hole for Meter Reading Module	C32-T	
			Two holes for Meter Reading Modules	C32-TT	

\* Lid size indicates approximate pit access opening; actual lid diameter is approximately 1" larger.

BY: NSG DATE: 12/1/14

### FEATURES

- Available with precast holes for electronic meter reading modules  
Add to catalog number: "-T" for single hole, "-TT" for double hole
- Standard pentagon bolt furnished with locking lids  
Larger size is available. Add "-LB" to catalog number. For non-locking lid, add "-LL"
- Frame and lid are cast iron per ASTM A48-92, Class 25
- Finish is black E-coating

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



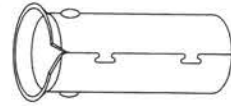
**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
<http://www.fordmeterbox.com>

10/30/03

Submitted By:

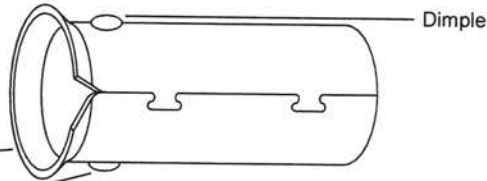
# SUBMITTAL INFORMATION

## Stainless Steel Inserts - (Insert-xx style)



### STAINLESS STEEL INSERTS FOR POLYETHYLENE PIPE (PEP) OR TUBING (PET)

✓ **APPROVED**  
**APPROVED AS NOTED**  
**NOT APPROVED**  
BY: DSG DATE: 12/1/14



#### 70 Series For Polyethylene Pipe (PEP)

CATALOG NUMBER	NOMINAL SIZE	PEP ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-71	3/4"	0.824	4.4	100	
** INSERT-53-72	1"	1.049	2.9	50	
◆** INSERT-53-72-Q	1"	1.049	2.9	50	
INSERT-73	1-1/4"	1.380	5.8	75	
INSERT-74	1-1/2"	1.610	5.5	45	
INSERT-75	2"	2.067	9.7	50	

#### 50 series For Polyethylene Tubing (PET)

CATALOG NUMBER	NOMINAL SIZE	PET ID	APPROX. WT. LBS.*	STD. PKG. QTY.	✓ SUBMITTED ITEM(S)
INSERT-51	3/4"	0.681	4.8	200	
INSERT-52	1"	0.875	4.2	100	
** INSERT-53-72	1-1/4"	1.069	2.9	50	
◆** INSERT-53-72-Q	1-1/4"	1.069	2.9	50	
INSERT-54	1-1/2"	1.263	3.1	25	
◆ INSERT-55	2"	1.653	6.0	40	
◆ INSERT-54-Q	1-1/2"	1.263	2.6	30	
◆ INSERT-55-Q	2"	1.653	5.8	50	

\* Weights for insert stiffeners are for standard package quantities.

\*\*Insert -53 and -72 fit both 1-1/4" plastic tubing (1.069 I.D.) and 1" plastic pipe (1.049 I.D.).

◆ These inserts are specifically designed and required for Quick Joint fittings. They are not interchangeable with other Compression Fittings.

### FEATURES

- Insert stiffeners conform to the AWWA Standard C901 for Polyethylene (PE) Pressure Pipe and Tubing
- Insert stiffeners are solid 304 tubular stainless steel (ASTM 240-92B)
- Dimpled and flanged to retain placement within the service line
- Key lock construction with a minimum of two key locks to maintain solid structural integrity
- Manufactured in the United States of America

**Note:** Consult pipe or tubing manufacturer for specific installation requirements. Ford recommends using insert stiffeners when using plastic pipe or tubing

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



#### The Ford Meter Box Company, Inc.

P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
<http://www.fordmeterbox.com>

11/03/10

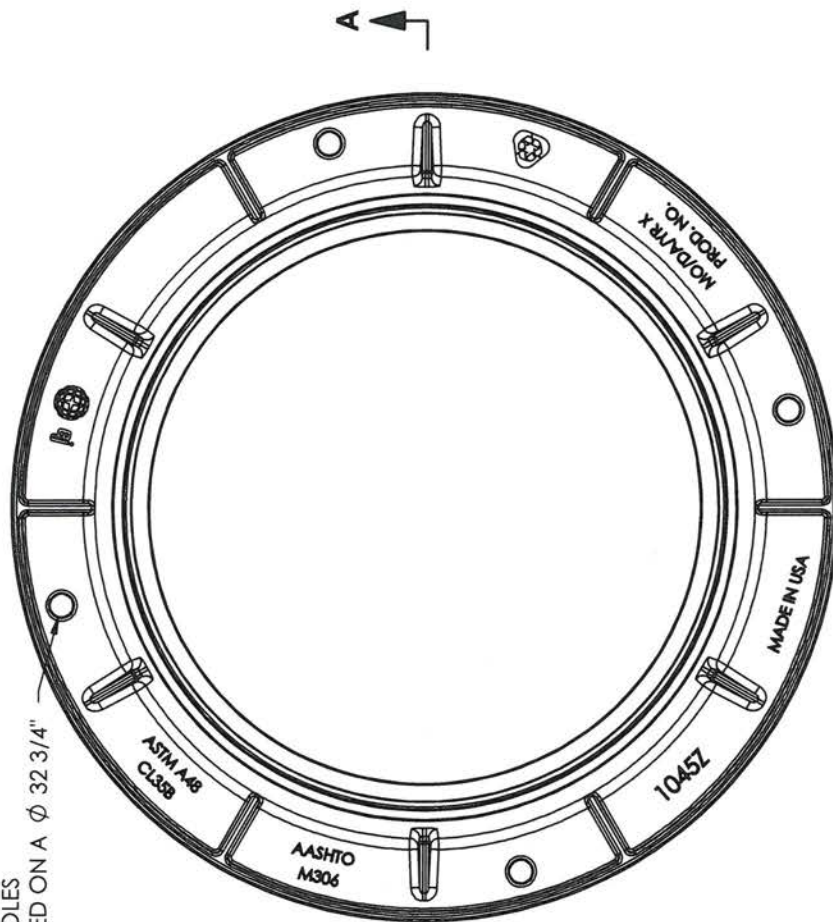
Submitted By:



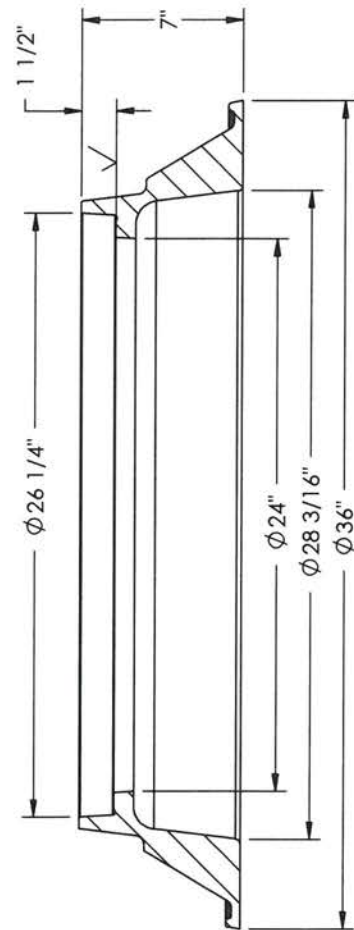
# 1045 Frame



(4)  $\phi 1"$  BOLT HOLES  
EQUALLY SPACED ON A  $\phi 32 \frac{3}{4}"$   
BOLT CIRCLE



✓	APPROVED
	APPROVED AS NOTED
	NOT APPROVED
BY: DSG	DATE: 12/1/14



SECTION A-A

## Product Number

00104510

## Design Features

- Materials  
Gray Iron (CL35)
- Design Load  
Heavy Duty
- Open Area
- Coating  
Dipped
- ✓ Designates Machined Surface

## Certification

- ASTM A48
- AASHTO M306
- Country of Origin: USA

## Drawing Revision

7/27/2009 Designer: DVDS-PS  
3/26/2012 Revised By: SDC

## Disclaimer

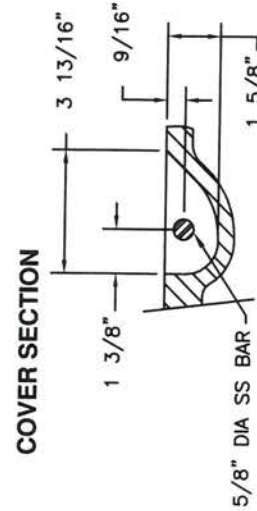
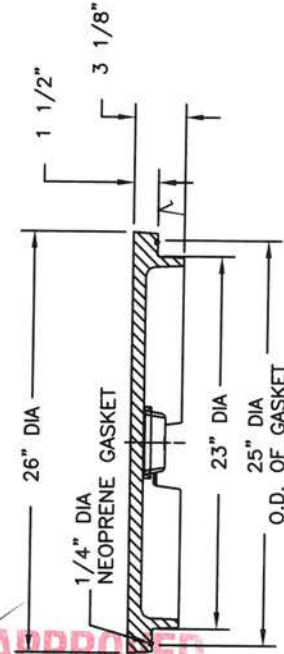
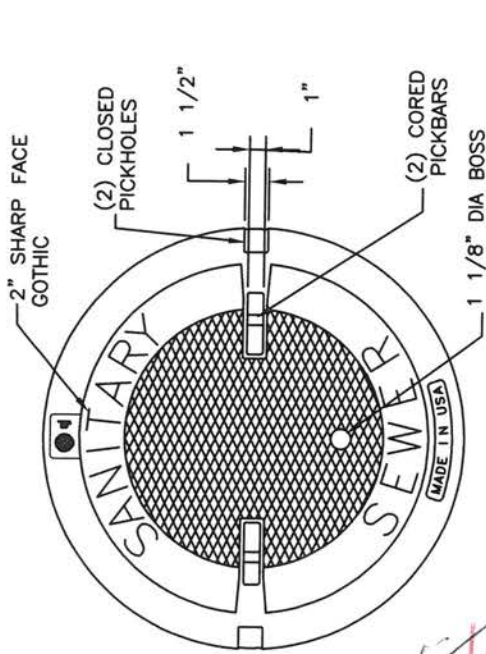
Weights (lbs/kg), dimensions (inches/mm)  
and drawings provided for your guidance. We  
reserve the right to modify specifications without  
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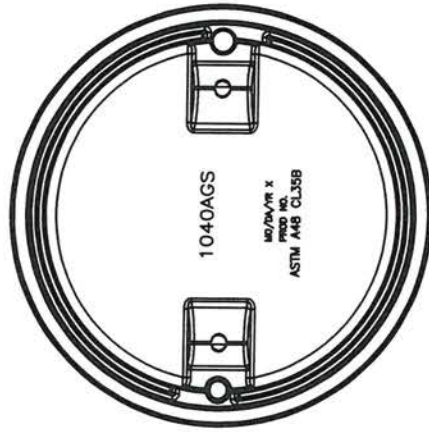
## Contact

800 626 4653  
ejco.com

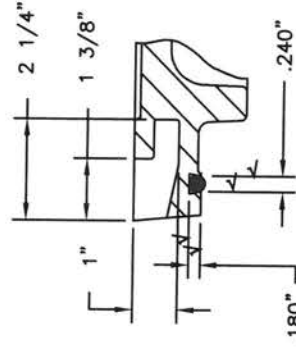
# 1040 AGS Cover



PICKBAR DETAIL



BOTTOM VIEW OF COVER



PICKHOLE DETAIL AND GROOVE DETAIL

## Product Number

00104316

## Design Features

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

## Certification

- ASTM A48
- Country of Origin: USA

## Drawing Revision

11/4/2005 Designer: TCL  
6/4/2013 Revised By: DAE

## Disclaimer

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

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## Contact

800 626 4653  
ejco.com

APPROVED  
APPROVED AS NOTED  
NOT APPROVED

BY:

DSG

DATE:

12/1/14

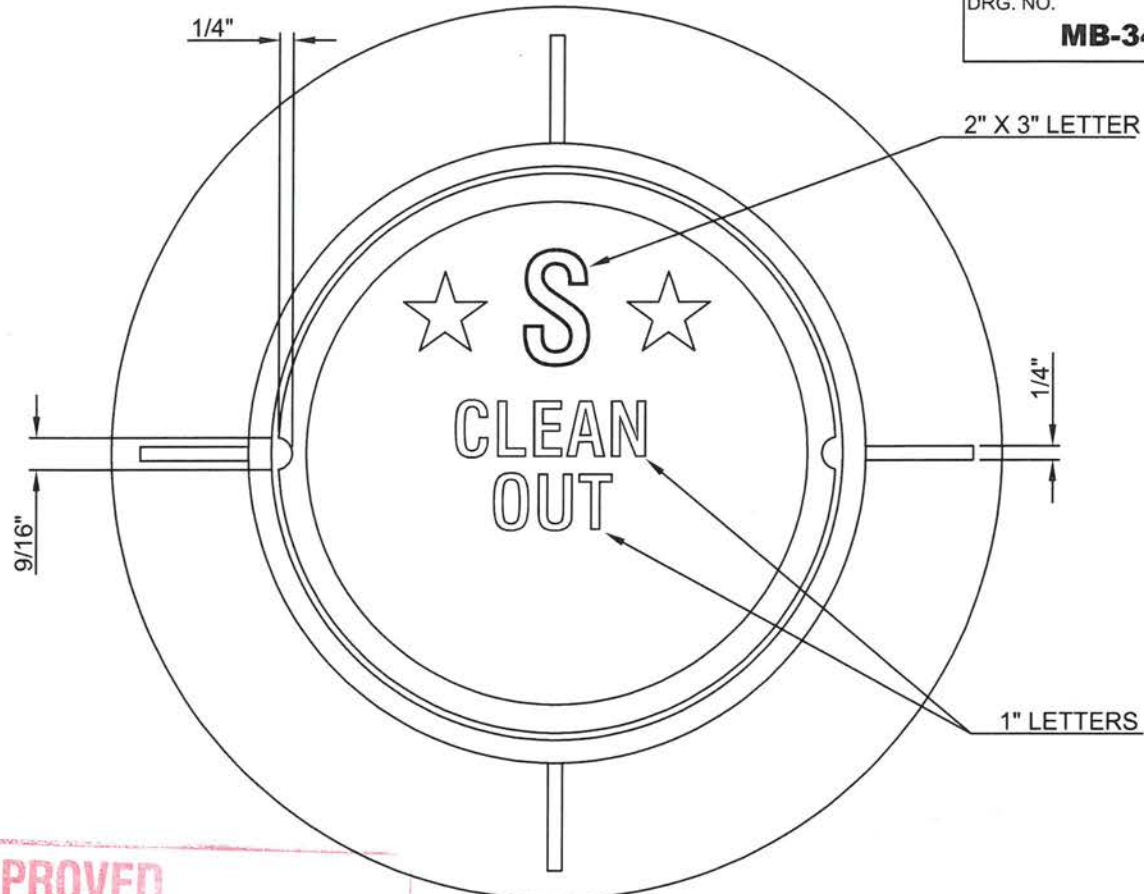


700 Goldman Drive  
Cream Ridge, NJ 08514

 **SIGMA**  
**CORPORATION**

**DRG. FOR  
APPROVAL**

DRG. NO.  
**MB-344**



✓ **APPROVED**

**APPROVE AND NOTED**

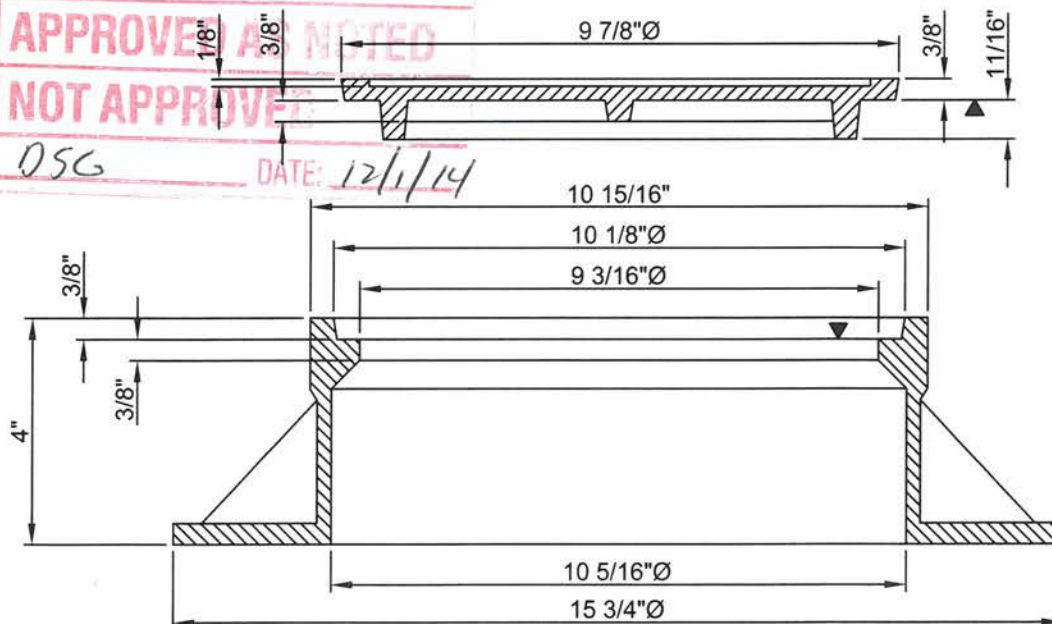
**NOT APPROVED**

BY:

DSG

DATE:

12/1/14



MATERIAL: Cast Iron ASTM A48 Class 30B  
Meets H20 Loading Standards

COATING: **PAINTED**

DESCRIPTION:

**CLEANOUT METER BOX**

DRN. BY. 06/10/2001.  
N. DEBNATH.

CHECKED BY:  
ASHIS DEY.

WEIGHT:  
**31 LBS.(SET)**

APPD. ON. REVISION: "0"