



# Pipe Restrainers series 1100

1100C Bell Restrainers for AWWA C900/C905 PVC Pipe and 1100S Bell Joint for IPS PVC Pipe



Series 1100C for C900/C905 PVC Pipe

### SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

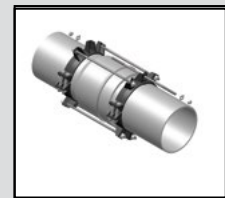
CONTRACTOR:

SPEC. SECTION:



### FEATURES & ADVANTAGES

- 360° contact, no pipe distortion or point loading
- Restrainers work with Push-On Pipe Bells.
- All restrainers are machined to exact tolerances.
- Rated pressures carry a 2:1 safety factor.
- Can be installed outside the trench, to ease installation
- Clamping Bolts: SAE J429 Grade 5
- Series 1100C is approved by Factory Mutual Research in sizes 4"-6" for use on C900 PVC DR18, for 150 PSI.
- Available in sizes 4"-48"



1100C on pipe bell

### MATERIAL SPECIFICATIONS:

- Restrainer Castings: Ductile Iron per ASTM A536, Grade 65-45-12

### PIPE RESTRAINER OPTIONS (Please check one):

SERIES 1100C  
(Bell Restrainers for AWWA C900/C905 PVC Pipe)

SERIES 1100S  
(Bell Restrainers for IPS PVC Pipe - NOT available in domestic.)

### RESTRAINER CASTINGS FINISH OPTIONS (Please check one):

Standard: alkyd enamel coating

Optional: Starbond™ TGIC polyester powder coating applied by an electrostatic spray process

Optional: Other (specify) \_\_\_\_\_

### COUNTRY OF ORIGIN OPTION (Please check one):

Import

100% Domestic<sup>1</sup>  
(Series 1100S is NOT available in domestic.)

Domestic restrainer castings with import components<sup>1</sup>  
(Series 1100S is NOT available in domestic.)

<sup>1</sup>Please see [Domestic Restraint Options Available](#) on our website.

### HARDWARE OPTIONS (Please check one):

#### STANDARD:

- Clamp Bolt: SAE J429 Grade 5
- Clamp Nut: SAE J995 Grade 2 or ASTM A563 Grade "A" or "B"
- Restraint Bolt/Rod/Nut: High strength low alloy steel per ANSI/AWWA C111/A21.11
- Washer: carbon steel per ASTM F844

#### OPTIONAL SS ALLOY 304:

- Clamp Bolt: SS alloy 304 per ASTM A193 Grade B8, Class 2
- Clamp Nut: SS alloy 304 per ASTM A194 Grade 8, S1
- Restraint Bolt/Rod: SS alloy 304 per ASTM F593 CW
- Restraint Nut: SS alloy 304 per ASTM F594 CW
- Washer: SS alloy 304

#### OPTIONAL SS ALLOY 316:

- Clamp Bolt: SS alloy 316 per ASTM A193 Grade B8M, Class 2
- Clamp Nut: SS alloy 316 per ASTM A194 Grade 8M, S1
- Restraint Bolt/Rod: SS alloy 316 per ASTM F593 CW
- Restraint Nut: SS alloy 316 per ASTM F594 CW
- Washer: SS alloy 316

#### OPTIONAL STAR BLUE:

- Clamp Bolt: Fluoropolymer Star Blue coated SAE J429 Grade 5
- Clamp Nut: Fluoropolymer Star Blue coated SAE J995 Grade 2 or ASTM A563 Grade "A" or "B"
- Restraint Bolt/Rod/Nut: Fluoropolymer Star Blue coated high strength low alloy steel per ANSI/AWWA C111/A21.11
- Washer: Fluoropolymer Star Blue coated carbon steel per ASTM F844



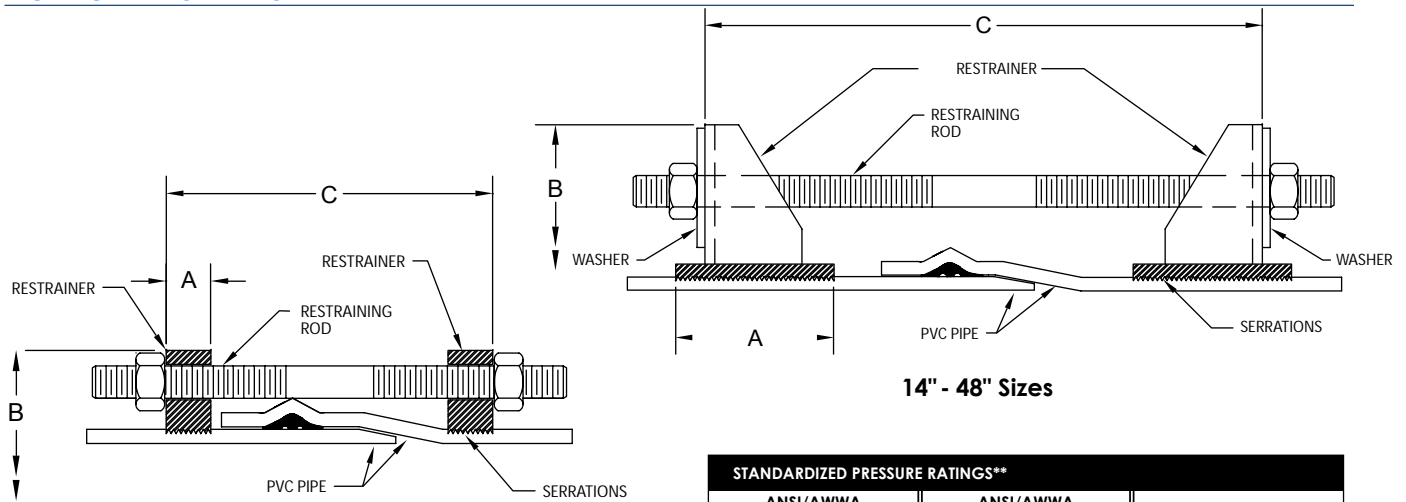
STAR® PIPE PRODUCTS



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**TECHNICAL INFORMATION**



**4" - 12" Sizes**

**14" - 48" Sizes**

STANDARDIZED PRESSURE RATINGS**					
ANSI/AWWA C900 CI OD		ANSI/AWWA C905 CI OD		ASTMD2241 IPS OD	
DR 14	200 PSI	DR 18	235 PSI	SDR 17	250 PSI
DR 18	150 PSI	DR 21	200 PSI	SDR 21	200 PSI
DR 25	100 PSI	DR 25	165 PSI	SDR 26	160 PSI
		DR 32.5	125 PSI		

\*\*For ordinary water works with transient surges only. Ratings are for PVC pipes with SERIES 1100 Restrainer.

**PIPE RESTRAINERS 1100 SPECIFICATIONS\***

Please check sizes:

NOM. SIZE	PVC PIPE WITH DUCTILE IRON PIPE O.D. STYLE 1100C	PVC PIPE WITH STEEL PIPE O.D. STYLE 1100S	A	B APPROX.	C MAX.	RESTRAINT BOLTS/RODS		CLAMPING BOLTS		APPROX WT. (LBS)
	O.D.	O.D.				QTY	SIZE	QTY	SIZE	
4	4.80	4.50	1.12	9.12	12.00	2	3/4 x 17	4	5/8 x 3 1/2	16
6	6.90	6.63	1.15	11.12	13.00	2	3/4 x 17	4	5/8 x 3 1/2	20
8	9.05	8.63	1.47	14.75	15.00	2	3/4 x 17	4	3/4 x 4	32
10	11.10	10.75	1.38	16.82	16.00	4	3/4 x 24	4	7/8 x 5	52
12	13.20	12.75	1.42	19.46	18.00	4	3/4 x 24	4	7/8 x 5	56
14	15.30	N/A	4.00	22.68	24.00	6	3/4 x 30	8	7/8 x 7	150
16	17.40	N/A	3.75	24.65	28.00	6	3/4 x 30	8	7/8 x 6 1/2	117
18	19.50	N/A	4.25	26.65	28.00	8	3/4 x 30	8	7/8 x 6 1/2	147
20	21.60	N/A	5.00	28.88	28.00	8	3/4 x 36	8	1 1/8 x 8 1/2	206
24	25.80	N/A	5.00	33.98	34.00	12	3/4 x 36	8	1 1/8 x 8 1/2	265
30	32.00	N/A	7.00	42.48	38.00	12	1 x 48	12	1 1/8 x 6	492
36	38.30	N/A	9.00	49.10	38.00	12	1 x 48	12	1 1/8 x 6	561
42	44.50	N/A	11.00	57.00	46.00	16	1 1/4 x 54	12	1 1/2 x 10	1916
48	50.80	N/A	11.00	63.88	46.00	16	1 1/4 x 54	12	1 1/2 x 10	2242

\*All dimensions in inches except where indicated.



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