



# Pipe Restrainers series 1100

1100C Bell Restrainers for AWWA C900 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 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 A194 Grade 8M
- 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

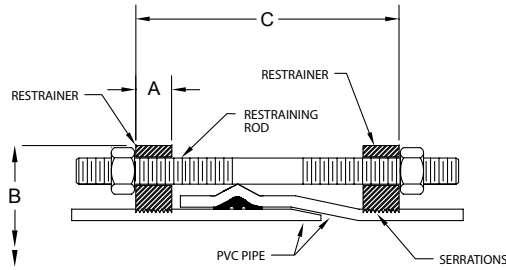




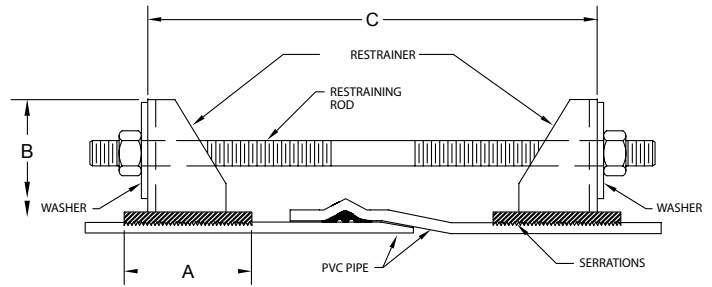
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## TECHNICAL INFORMATION



4" - 12" Sizes



14" - 48" Sizes

### 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	9.29	12.00	2	3/4 x 17	4	5/8 x 3 1/2	16
6	6.90	6.63	1.15	11.13	13.00	2	3/4 x 17	4	5/8 x 3 1/2	20
8	9.05	8.63	1.47	14.76	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.

NOM. SIZE (IN.)	Standardized Pressure Ratings**										AWWA C909 PVCO			ASTM D2241* (IPS OD)			
	AWWA C900 (CIOD)										IPEX PVCO		JM EAGLE PVCO		SDR 17	SDR 21	SDR 26
	DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41	DR51	PC235	PC235	PC165					
4	200	-	150	-	100	-	-	-	-	-	-	-	250	200	160		
6	200	-	150	-	100	-	-	-	-	-	-	-	250	200	160		
8	200	-	150	-	100	-	-	-	-	-	-	-	250	200	160		
10	200	-	150	-	100	-	-	-	-	-	-	-	250	200	160		
12	200	-	150	-	100	-	-	-	-	-	-	-	250	200	160		
14	305	250	235	200	165	-	-	-	-	235	-	-	-	-	-		
16	-	250	235	200	165	-	-	-	-	200	-	165	-	-	-		
18	-	250	235	200	165	-	-	-	-	200	-	-	-	-	-		
20	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-		
24	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-		
30	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-		
36	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-		
42	-	-	-	200	165	150	125	100	80	-	-	-	-	-	-		
48	-	-	-	-	165	150	125	100	80	-	-	-	-	-	-		

\* Transition Push-On Gasket Required

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

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