



Pipe Restrainers series 1000

1000C Restrainers for AWWA C900/C905 PVC Pipe and MJ or Push-On Fittings

1000S Restraint for IPS PVC and MJ or Push-On Fittings



Series 1000C for DI OD PVC Pipe

SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

CONTRACTOR:

SPEC. SECTION:



FEATURES & ADVANTAGES

- 360° Contact, No Pipe Distortion or Point Loading and Supports the Wall of the Pipe
- Restrainers work with Mechanical Joint or Push-On Fittings.
- All Restrainers are Machined to Exact Tolerances.
- Rated Pressures carry a 2:1 Safety Factor.
- Can Be Installed Outside the Trench, to Ease Installation
- Maintains Full Deflection on Mechanical Joint and Push-On Fittings
- Clamping Bolts: SAE J429 Grade 5
- Series 1000C is approved by Factory Mutual Research in sizes 4" - 6" for use on C900 PVC DR18 for 150 PSI.



1000C with MJ Fitting

MATERIAL SPECIFICATIONS:

- RESTRAINER CASTINGS: Ductile Iron per ASTM A536, Grade 65-45-12

PIPE RESTRAINER OPTIONS (Please check one):

SERIES 1000C
(For AWWA C900/C905 PVC Pipe and MJ or Push-On Fittings)

SERIES 1000S
(For IPS PVC Pipe and MJ or Push-On Fittings - 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% Domestic¹
(Series 1000S is NOT available in domestic.)

Domestic Restraint Castings with import components¹
(Series 1000S is NOT available in domestic.)

¹Please 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

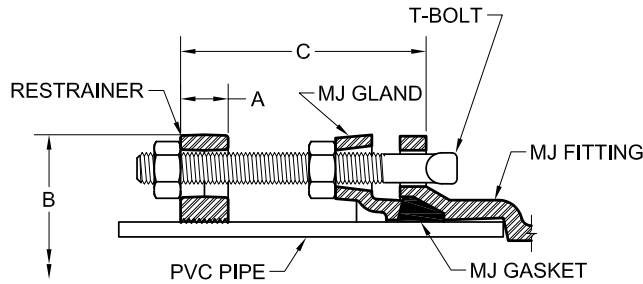


Pipe Restrainers series 1000

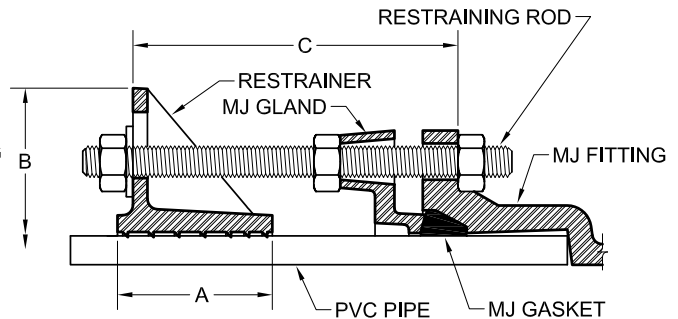
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1000S Restrainer for IPS PVC and MJ or Push-On Fittings

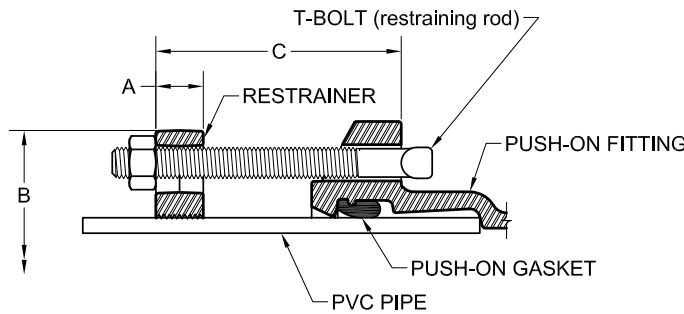
TECHNICAL INFORMATION



4"-12" Sizes with MJ Fittings



14"-48" Sizes with MJ Fittings



4"-12" Sizes with Push-On Fittings

Table A - Pressure Rating (PSI) For PVC Pipe To Ductile Iron MJ Fitting Connections

AWWA C900 (CIOD)		AWWA C905 (CIOD)		ASTMD2241* (IPS OD)	
DR 14	200	DR 18	235	SDR 17	250
DR 18	150	DR 21	200	SDR 21	200
DR 25	100	DR 25	165	SDR 26	160
		DR 32.5	125		

* Transition Gasket Required

Table B - Pressure Rating (PSI) For PVC Pipe To Ductile Iron Push-On Fitting Connections

NOMINAL SIZE	AWWA C900			ASTMD2241*		
	DR14	DR18	DR25	SDR17	SDR21	SDR26
4	200	150	100	250	200	160
6	200	150	100	250	200	160
8	200	150	100	250	200	160
10	100	75	50	125	100	80
12	100	75	50	125	100	80

* Transition Gasket Required

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TECHNICAL INFORMATION

PIPE RESTRAINERS 1000 SPECIFICATIONS*										
NOM. SIZE	PVC PIPE WITH DUCTILE IRON PIPE O.D. STYLE 1000C	PVC PIPE WITH STEEL PIPE O.D. STYLE 1000S	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	6.00	2	3/4 x 7	2	5/8 x 3 1/2	8
6	6.90	6.63	1.15	11.13	6.00	2	3/4 x 7	2	5/8 x 3 1/2	10
8	9.05	8.63	1.47	14.76	6.00	2	3/4 x 7	2	3/4 x 4	15
10	11.10	10.75	1.38	16.82	6.00	4	3/4 x 7	2	7/8 x 5	25
12	13.20	12.75	1.42	19.46	6.00	4	3/4 x 7	2	7/8 x 5	27
14	15.30	N/A	4.00	22.68	15.00	6	3/4 x 17	4	7/8 x 7	68
16	17.40	N/A	3.75	24.65	15.00	6	3/4 x 17	4	7/8 x 6 1/2	62
18	19.50	N/A	4.25	26.65	15.00	8	3/4 x 17	4	7/8 x 6 1/2	78
20	21.60	N/A	5.00	28.88	22.00	8	3/4 x 24	4	1 1/8 x 8 1/2	113
24	25.80	N/A	5.00	33.98	22.00	12	3/4 x 24	4	1 1/8 x 8 1/2	145
30	32.00	N/A	7.00	42.48	22.00	12	1 x 24	6	1 1/8 x 6	247
36	38.30	N/A	9.00	49.10	22.00	12	1 x 24	6	1 1/8 x 6	304
42	44.50	N/A	11.00	57.00	26.00	16	1-1/4 x 30	6	1 1/2 x 10	1003
48	50.80	N/A	11.00	63.88	26.00	16	1-1/4 x 30	6	1 1/2 x 10	1166

Please check sizes:

*All dimensions in inches except where indicated.

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