Pipe Restrainers series 1000

1000C Restrainers for AWWA C900 PVC Pipe and MJ or Push-On Fittings
1000S Restrainer for IPS PVC and MJ or Push-On Fittings

Series 1000C for DI OD PVC Pipe

SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

CONTRACTOR:

SPEC. SECTION:

FM APPROVED

AWWA MEMBER

TÜVRheinland® Certified to ISO 9001:2015

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 Manufactured 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/C900 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

☐ Domestic - AIS Compliant (Available in sizes 4" to 36") *(Series 1000S is NOT available in domestic.)*

HARDWARE OPTIONS (Please check one):

☑ **STANDARD**:
- Clamp Bolt: SAE J429 Grade 5
- Clamp Nut: SAE J995 Grade 5 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

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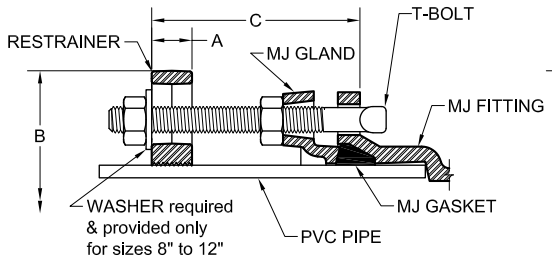
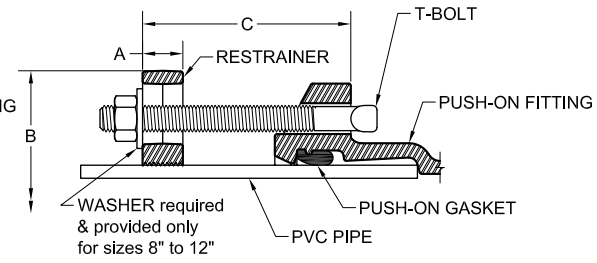
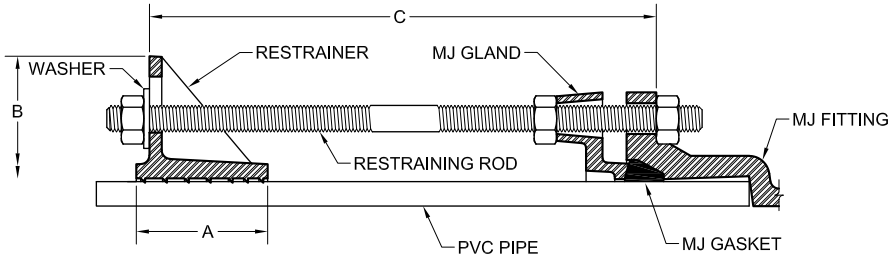
TECHNICAL INFORMATION



4"-12" Sizes with MJ Fittings



4"-12" Sizes with Push-On Fittings



14"-48" Sizes with MJ Fittings

Please check sizes:

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	4	3/4 x 17	4	7/8 x 7	60
16	17.40	N/A	3.75	24.65	15.00	6	3/4 x 17	4	7/8 x 6 1/2	64
18	19.50	N/A	4.25	26.65	15.00	8	3/4 x 17	4	7/8 x 6 1/2	82
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	151
30	32.00	N/A	7.00	42.48	22.00	12	1 x 24	6	1 1/8 x 6	282
36	38.30	N/A	9.00	49.10	22.00	12	1 x 24	6	1 1/8 x 6	327
42	44.50	N/A	11.00	57.20	26.00	12	1-1/4 x 30	6	1 1/2 x 10	709
48	50.80	N/A	11.00	64.07	26.00	12	1-1/4 x 30	6	1 1/2 x 10	772

All dimensions in inches except where indicated.

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TECHNICAL INFORMATION

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

NOM. SIZE (IN.)	AWWA C900 (CIOD)									AWWA C909 PVCO			ASTMD2241* (IPS OD)		
										IPEX PVCO	JM EAGLE PVCO				
	DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41	DR51	PC235	PC235	PC165	SDR 17	SDR 21	SDR 26
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	305	250	235	200	165	-	-	-	-	200	-	165	-	-	-
18	-	250	235	200	165	-	-	-	-	200	-	-	-	-	-
20	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-
24	-	-	235	200	165	-	-	-	-	-	-	-	-	-	-
30	-	-	235	200	165	150	125	100	80	-	-	-	-	-	-
36	-	-	235	200	165	150	125	100	80	-	-	-	-	-	-
42	-	-	-	200	165	150	125	100	80	-	-	-	-	-	-
48	-	-	-	-	165	150	125	100	80	-	-	-	-	-	-

** Transition Gasket Required*

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

NOM. SIZE (IN.)	AWWA C900 (CIOD)									ASTMD2241** (IPS OD)		
	DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41	DR51	SDR 17	SDR 21	SDR 26
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 Push-On Gasket Required*

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