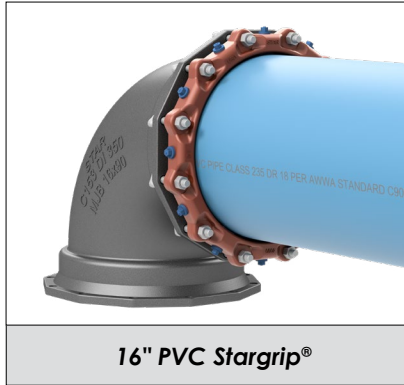




PVC Stargrip® series 4000

Mechanical Joint Wedge Action Restraint
for Plastic Pressure Pipe
Sizes 3" - 48"



16" PVC Stargrip®

SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

CONTRACTOR:

SPEC. SECTION:



FEATURES & ADVANTAGES

- Sizes 3" - 12" consists of G2 design.
- Can be used on 4"-48" AWWA C900 PVC, 4"-18" AWWA C909 PVCO and AWWA C906 HDPE pipes along with 3"-12" IPS OD* ASTM D2241 PVC pipe. (*A transition gasket is required on IPS Plastic Pipe). See Tables A and B for further details.
- Sizes 4"-12" are listed with Underwriters Laboratories, approved by Factory Mutual Research, and tested to and meets the requirements of ASTM F1674.
- Safety factor is twice (2:1) the standardized pressure rating listed in Tables A and B.
- Offers 5° of deflection on 3"-12" AWWA C900, 3° on 14"-24", 2° on 30"-36" and 1° on 42"-48".
- Standard gland color is Coral Red and is made from high strength Ductile Iron per ASTM A536 Grade 65-45-12 and is compatible with all Mechanical Joints that conform to ANSI/AWWA C111/A21.11.
- Eliminates the need for tie rods and thrust blocks
- Fewer wedges and lower wedge-bolt torque results in quicker and easier installation (see specifications and tables C, D & E).
- Sizes 4"-12" uses a spacer that is easily removed when restraint is used on IPS Plastic pipe.
- Curved wedges reduce the amount of localized pipe deformation.
- The gland's larger inside diameter allows restraint to be installed on pipe with more ovality.
- Improved design of the wedge bolts prevents over torquing which can damage PVC pipe.
- For sizes 3"-12" and 42"-48" wedges are mechanically attached to wedge bolts, which eliminates the possibility of falling out during shipping and handling.
- US Patent# 9,822,910 applies to sizes 3"-12" and 42"-48".

MATERIAL SPECIFICATIONS:

- Wedges: Ductile Iron per ASTM A536, Grade 65-45-12. Wedge coating is a thermally cured fluoropolymer epoxy.

GLAND 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

HARDWARE OPTIONS (Please check):

- Standard: T-bolts and nuts are high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11
- Optional: T-bolts alloy SS 304 per ASTM F593; Nuts alloy SS 304 per ASTM F594 CW
- Optional: T-bolts SS 316 per ASTM F593; Nuts SS 316 per ASTM A194 Grade 8M
- Optional: T-bolts and nuts Fluoropolymer Star-Blue coated high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11

STAR® PIPE PRODUCTS

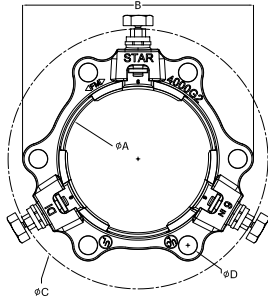




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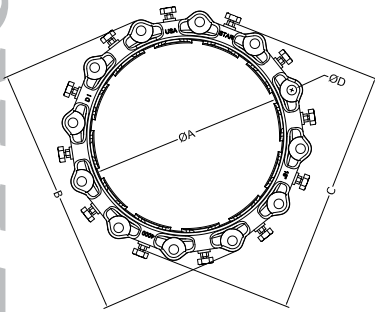
TECHNICAL INFORMATION (SIZES 3"-12")



PVC STARGRIP® 4000 SPECIFICATIONS* (SIZES 3"-12")									
NOM. SIZE	C900/C909 PIPE CI OD	IPS PIPE OD¹	ØA	B	ØC²	ØD	T-BOLT SIZE (QTY)	WEDGE (QTY)	APPROX WT. (LBS)
3	N/A	3.50	4.09	7.57	9.11	¾	¾ x 3 (4)	2	6
4	4.80	4.50	4.93	9.00	10.44	¾	¾ x 3 ½ (4)	2	7
6	6.90	6.63	7.03	11.00	12.54	¾	¾ x 3 ½ (6)	3	10
8	9.05	8.63	9.18	13.25	14.59	¾	¾ x 4 (6)	4	15
10	11.10	10.75	11.23	15.62	16.74	¾	¾ x 4 (8)	6	21
12	13.20	12.75	13.33	17.87	18.69	¾	¾ x 4 (8)	6	25

*All dimensions in inches except where indicated.
1 - transition gasket required
2 - dimension after assembly on pipe

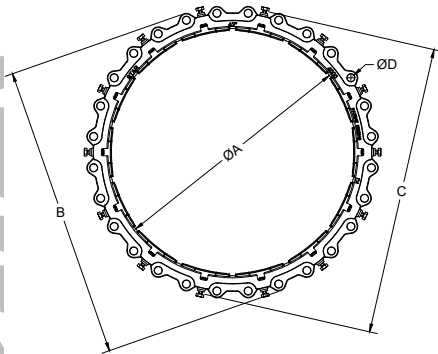
TECHNICAL INFORMATION (SIZES 14"-36")



PVC STARGRIP® 4000 SPECIFICATIONS* (SIZES 14"-36")								
NOM. SIZE	C900/C909 PIPE CI OD	ØA	B	ØC²	ØD	T-BOLT SIZE (QTY)	WEDGE (QTY)	APPROX WT. (LBS)
14	15.30	15.45	20.75	20.48	¾	¾ x 4 ½ (10)	10	50
16	17.40	17.55	23.00	22.58	¾	¾ x 4 ½ (12)	12	60
18	19.50	19.65	25.25	24.68	¾	¾ x 4 ½ (12)	12	65
20	21.60	21.75	27.50	26.78	¾	¾ x 4 ½ (14)	14	76
24	25.80	25.95	32.00	30.98	¾	¾ x 5 (16)	16	98
30	32.00	32.18	39.38	36.94	1-½	1 x 6 (20)	20	173
36	38.30	38.48	46.25	43.24	1-½	1 x 6 (24)	24	219

*All dimensions in inches except where indicated.
2 - dimension after assembly on pipe

TECHNICAL INFORMATION (SIZES 42"-48")



PVC STARGRIP® 4000 SPECIFICATIONS* (SIZES 42"-48")								
NOM. SIZE	C900/C909 PIPE CI OD	ØA	B	ØC²	ØD	T-BOLT SIZE (QTY)	WEDGE (QTY)	APPROX WT. (LBS)
42	44.50	44.75	53.12	52.58	1-¾	1 ¼ x 8 ½ (28)	14	436
48	50.80	51.05	60.00	58.88	1-¾	1 ¼ x 8 ½ (32)	16	530

*All dimensions in inches except where indicated.
2 - dimension after assembly on pipe

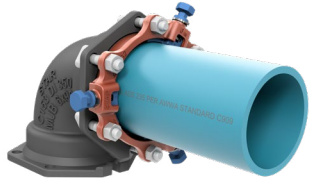
STAR® PIPE PRODUCTS



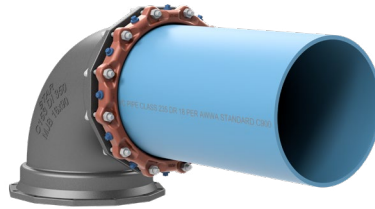
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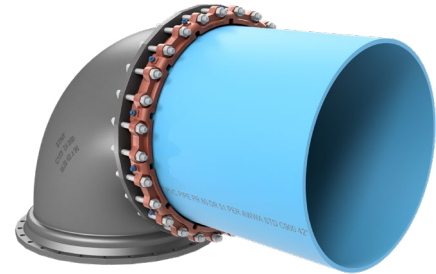
TECHNICAL INFORMATION (cont'd)



6" PVC Stargrip® Series 4000 for PVC Pipe



16" PVC Stargrip® Series 4000 for PVC Pipe



42" PVC Stargrip® Series 4000 for PVC Pipe

STAR® PIPE PRODUCTS

Table A. Maximum Working Pressure Rating with Occasional or Recurring Surges in PSI for Plastic Pipes Made to a CIOD Diameter Regimen

NOM. SIZE (IN)	Actual Plastic Pipe OD	AWWA C900 PVC									AWWA C909 PVCO			AWWA C906 HDPE*					
											IPEX PVCO	JM EAGLE PVCO							
		DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41	DR51	PC235	PC235	PC165	DR 7.3	DR 9	DR 9.3	DR11	DR13.5	DR17
4	4.80	305	250	235	200	165	-	-	-	-	235	-	-	254	200	193	160	130	100
6	6.90	305	250	235	200	165	-	-	-	-	235	235	-	254	200	193	160	130	100
8	9.05	305	250	235	200	165	-	-	-	-	235	235	-	254	200	193	160	130	100
10	11.10	305	250	235	200	165	-	-	-	-	235	235	-	254	200	193	160	130	100
12	13.20	305	250	235	200	165	-	-	-	-	235	235	-	254	200	193	160	130	100
14	15.30	305	250	235	200	165	150	125	-	-	235	-	-	-	200	193	160	-	-
16	17.40	305	250	235	200	165	150	125	100	-	235	-	165	-	-	-	160	-	-
18	19.50	250	250	235	200	165	150	125	-	-	200	-	-	-	-	-	160	-	-
20	21.60	250	250	235	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-
24	25.80	250	250	235	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-
30	32.00	-	-	235	200	165	150	125	100	80	-	-	-	-	-	-	-	-	-
36	38.30	-	-	235	200	165	150	125	100	80	-	-	-	-	-	-	-	-	-
42	44.50	-	-	-	-	-	-	125	100	80	-	-	-	-	-	-	-	-	-
48	50.80	-	-	-	-	-	-	125	100	80	-	-	-	-	-	-	-	-	-

* A stainless steel pipe stiffener (provided by others) is required for the Series 4000 to be installed on HDPE pressure pipe. The stiffener must be installed in the HDPE pipe before installing the Series 4000. The stainless steel pipe stiffener must be of sufficient length to support the full bearing length of the restrainer.

Table B. Maximum Working Pressure Rating with Occasional or Recurring Surges in PSI for Plastic Pipes Made to an IPS Diameter Regimen

NOM. SIZE (IN)	Actual Plastic Pipe OD	ASTM D2241 PVC			AWWA C901 and AWWA C906 HDPE**					
		SDR17	SDR21	SDR26	DR 7.3	DR 9	DR 9.3	DR11	DR13.5	DR17
3	3.50	250	200	160	254	200	-	160	130	100
4	4.50	250	200	160	254	200	193	160	130	100
6	6.63	250	200	160	254	200	193	160	130	100
8	8.63	250	200	160	254	200	193	160	130	100
10	10.75	250	200	160	254	200	193	160	130	100
12	12.75	250	200	160	254	200	193	160	130	100

NOTE: A transition gasket is required for use with pipes made to an IPS diameter regimen.

** A stainless steel pipe stiffener (provided by others) is required for the Series 4000 to be installed on HDPE pressure pipe. The stiffener must be installed in the HDPE pipe before installing the Series 4000. The stainless steel pipe stiffener must be of sufficient length to support the full bearing length of the restrainer.