



PVC Stargrip® series 4000

Mechanical Joint Wedge Action Restraint
for Plastic Pressure Pipe

6" PVC Stargrip® / 16" PVC Stargrip®

SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

CONTRACTOR:

SPEC. SECTION:



FEATURES & ADVANTAGES

Consists of 3" to 12" G2 design and 14" and larger original Series 4000HD design:

- Can be used on 4" through 12" AWWA C900 and AWWA C909 PVCO pipe, HDPE pipe or 3"-12" IPS PVC pipe*. (*A transition gasket is required on IPS Plastic Pipe).
- Listed with Underwriters Laboratories in sizes 4" to 12" and Approved by Factory Mutual Research in sizes 4" to 12".
- 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 five degrees of deflection on 3" to 12" AWWA C900, three degrees on 14" to 24" and two degrees on 30" to 36".
- Gland 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. Standard gland color is Coral Red.

Features & Advantages for Sizes 3" - 12" only (US Patent# 9,822,910):

- Fewer wedges and lower wedge-bolt torque (45 to 60 ft-lbs) results in quicker and easier installation.
- Design uses a spacer that is easily removed when restraint is used on IPS Plastic pipe. Wedge bolts do not need to be removed and reinstalled to remove spacer.
- Curved wedges reduce the amount of localized pipe deformation.
- Offers five degrees of deflection on all sizes of AWWA C900 pipe.
- 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.
- Wedges are mechanically attached to wedge bolts, which eliminates the possibility of falling out during shipping and handling.

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

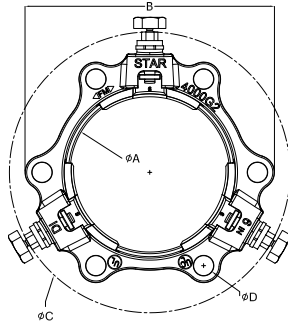
100% Domestic¹Domestic gland with import components¹(*Please see [Domestic Restraint Options Available](#) on our website.)**HARDWARE OPTIONS (Please check):**Standard: T-bolts and nuts are high strength low
alloy steel manufactured in accordance with ANSI/
AWWA C111/A21.11Optional: T-bolts alloy SS 304 per ASTM F593;
Nuts alloy SS 304 per ASTM F594 CWOptional: T-bolts SS 316 per ASTM F593;
Nuts SS 316 per ASTM A194 Grade 8MOptional: T-bolts and nuts Fluoropolymer Star-Blue
coated high strength low alloy steel manufactured
in accordance with ANSI/AWWA C111/A21.11



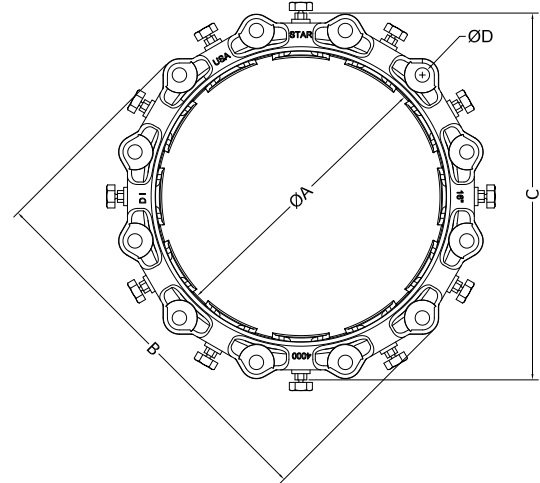
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TECHNICAL INFORMATION



6" PVC Stargrip® Series 4000 for PVC Pipe

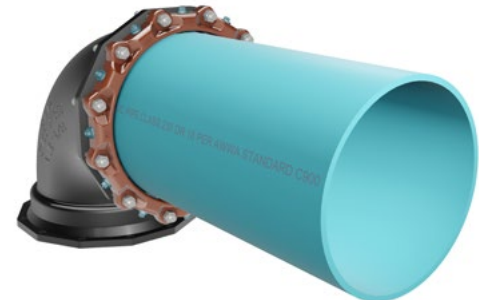
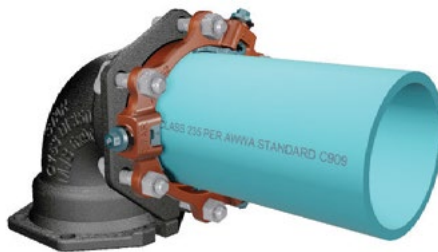


16" PVC Stargrip® Series 4000 for PVC Pipe

Please
check sizes:

PVC STARGRIP® 4000 SPECIFICATIONS*									
NOM. SIZE	C900/C909 PIPE CI OD	IPS PIPE OD (TRANSITION GASKET REQUIRED)	ØA	B	ØC ¹	ØD	T-BOLT SIZE (QTY)	WEDGE (QTY)	APPROX WT. (LBS)
3	N/A	3.50	4.09	7.57	9.01	3/4	5/8 x 3 (4)	2	6
4	4.80	4.50	4.93	9.00	10.29	7/8	3/4 x 3 1/2 (4)	2	7
6	6.90	6.63	7.03	11.00	12.39	7/8	3/4 x 3 1/2 (6)	3	10
8	9.05	8.63	9.18	13.25	14.44	7/8	3/4 x 4 (6)	4	15
10	11.10	10.75	11.23	15.62	16.59	7/8	3/4 x 4 (8)	6	21
12	13.20	12.75	13.33	17.87	18.54	7/8	3/4 x 4 (8)	6	25
14	15.30	N/A	15.45	20.75	20.36	7/8	3/4 x 4 1/2 (10)	10	50
16	17.40	N/A	17.55	23.00	22.46	7/8	3/4 x 4 1/2 (12)	12	60
18	19.50	N/A	19.65	25.25	24.56	7/8	3/4 x 4 1/2 (12)	12	65
20	21.60	N/A	21.75	27.50	26.66	7/8	3/4 x 4 1/2 (14)	14	76
24	25.80	N/A	25.95	32.00	30.86	7/8	3/4 x 5 (16)	16	98
30	32.00	N/A	32.18	39.38	36.82	1-1/8	1 x 6 (20)	20	173
36	38.30	N/A	38.48	46.25	43.12	1-1/8	1 x 6 (24)	24	219

*All dimensions in inches except where indicated.

¹ - dimension after assembly on pipe



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TECHNICAL INFORMATION (cont'd)

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	-	-	235	-	165	-	-	-	160	-	-	
18	19.50	-	250	235	200	165	150	125	-	-	200	-	-	-	-	-	160	-	-	
20	21.60	-	250	235	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-	
24	25.80	-	250	235	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-	
30	32.00	-	-	200	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-	
36	38.30	-	-	-	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-	

* 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.