



ALL Stargrip® series 4300

Designed for use on Ductile Iron, Steel, HDPE and PVC Pipes
Sizes 4"-12", 16" & 24"



ALL Stargrip® Series 4300 for Ductile Iron,
Steel, HDPE and PVC Pipe

INFORMATION

The ALL Stargrip® Series 4300 Mechanical Joint Restraint System is a unique product with a proven design that provides an exceptional restraining system for mechanical joint fittings (AWWA C153 or C110), valves, fire hydrants on a variety of ductile iron, Steel and plastic pressure pipes.

**Versatile Product with
a quicker and easier installation.**

FEATURES & ADVANTAGES

- Consists of 4" to 12" 4300 Generation 2 design gland.
- Fewer wedges and lower wedge-bolt torque (45 to 60 ft-lbs) results in quicker and easier installation.
- Spacer is provided for sizes 4"-12" that can be easily removed when restraint is used on IPS/Steel pipe. Wedge bolts do not need to be removed and reinstalled to remove spacer.
- Wedges are mechanically attached to the wedge bolts, which eliminates the possibility of falling out during shipping and handling.
- The standard gland color is orange and is made from high strength Ductile Iron per ASTM A536 Grade 65-45-12 and is compatible with all Mechanical Joints conforming to ANSI/AWWA C111/A21.11.
- The wedges are heat treated to a minimum of 370 BHN.
- Sizes 4"-12" can be used on ductile iron pipe, steel pipe, AWWA C900 PVC, AWWA C909 PVCO pipe, ASTM D2241 IPS PVC pipe, AWWA C906 HDPE pipe. See pressure rating table for approved DR and sizes.
- Sizes 16" & 24" can be used on ductile iron pipe, AWWA C900 PVC and C906 HDPE pipe.
- Sizes 4"-12" steel and plastic pressure pipes manufactured to an IPS diameter regimen will require a transition gasket. HDPE pipe requires use of stainless steel pipe stiffener.
- Sizes 4"-12" are listed with UL and ULC, are FM Approved and are tested to and meets the requirements of ASTM F1674.
- The safety factor is twice (2:1) the standardized pressure rating listed on next page.
- Will fit any Mechanical Joint configuration, meaning compatibility with different types of installations.
- The ALL Stargrip® Series 4300 offers 5° deflection 4"-12". For sizes 16" & 24" it is 3° deflection on ductile iron pipe. 3° and 2° deflection respectively for sizes 16" & 24" on AWWA C900 PVC. NOTE: Deflection for C909 PVCO pipe is not allowed per pipe manufacturer.
- Larger gland ID allows easier installation on out-of-round pipe.
- Torque limiting bolts are designed to prevent over torque.
- All sizes have curved wedges that do not flatten pipe.
- Eliminates the need for tie rods and thrust blocks.
- US Patent #9,822,910

SAMPLE SPECIFICATIONS

Restrainer mechanism shall be integrated into the design of the restraint gland. As the mechanism is activated, multiple wedging action shall be imparted against the pipe increasing its resistance as internal pressure increases. After burial of the restraining mechanism, joint flexibility shall be maintained.

The actuating bolt shall be threaded into the gland and have a 1-1/4" hex operating nut. The actuating bolt system shall have a torque-limiting head designed to break off at preset torque levels, thus insuring proper action of the restraining device. After removal of the torque-limiting head, a 5/8" hex head shall remain to facilitate the removal and re-assembly of the gland. Glands, bolts and wedges shall be manufactured of high strength ductile iron in accordance with ASTM A536 Grade 65-45-12 requirements. Wedges shall be heat treated to a minimum hardness of 370 BHN.

Applicable dimensions conforming to ANSI/AWWA C111/A21.11, C110/A21.10 and C153/A21.53 and shall be incorporated into the design so that the device facilitates use with standard mechanical joint sockets. The restraining mechanism shall have a pressure rating as stated in most current catalog and shall have a safety factor of at least 2:1. The restraining device shall be Star® Pipe Products ALL Stargrip® Series 4300 or equal.

JRCAT2501



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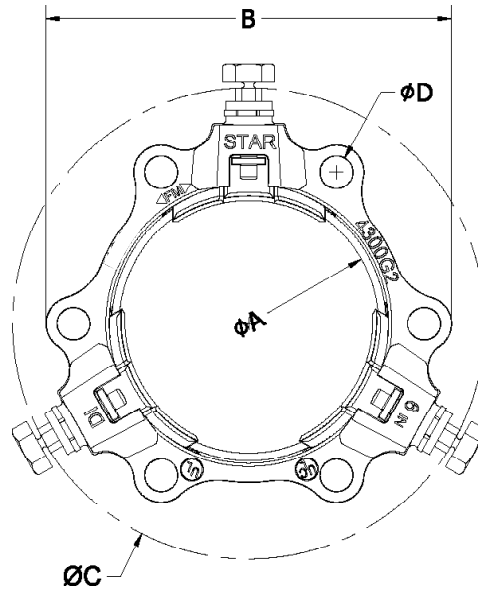


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TECHNICAL INFORMATION



6" ALL Stargrip[®] Series 4300

ALL STARGRIP[®] 4300 SPECIFICATIONS*

NOM. SIZE	CI OD	IPS OD (MJ TRANSITION GASKET REQUIRED.)	ØA	B	C ¹	ØD	T-BOLTS		WEDGES (QTY)	APPROX. WT. (LBS)
							SIZE	QTY.		
4	4.80	4.50	4.93	9.00	10.86	7/8	3/4 x 3 1/2	4	2	7.38
6	6.90	6.63	7.03	11.00	12.96	7/8	3/4 x 3 1/2	6	3	10.61
8	9.05	8.63	9.18	13.25	15.00	7/8	3/4 x 4	6	4	17.73
10	11.10	10.75	11.23	15.62	17.20	7/8	3/4 x 4	8	6	24.78
12	13.20	12.75	13.33	17.87	19.11	7/8	3/4 x 4	8	8	33.08
16	17.40	-	17.55	22.84	23.30	7/8	3/4 x 4 1/2	12	12	55.12
24	25.80	-	25.95	31.94	32.06	7/8	3/4 x 5	16	16	103.40

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

ALL STARGRIP[®] 4300 MAXIMUM PRESSURE RATINGS (PSI) **

NOM. SIZE (IN.)	DI (C151/A21.51)	STEEL* (SCH. 40)	AWWA C900 (CI OD)								AWWA C909	ASTM D2241* (IPS OD)			HDPE*** AWWA C906					
			DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41		SDR17	SDR21	SDR26	DR7.3	DR 9	DR 9.3	DR 11	DR13.5	DR17
4	350	350	305	250	235	200	165	-	-	-	235	250	200	160	254	200	193	160	130	100
6	350	350	305	250	235	200	165	-	-	-	235	250	200	160	254	200	193	160	130	100
8	350	350	305	250	235	200	165	-	-	-	235	250	200	160	254	200	193	160	130	100
10	350	350	305	250	235	200	165	-	-	-	235	250	200	160	254	200	193	160	130	100
12	350	350	305	250	235	200	165	-	-	-	235	250	200	160	254	200	193	160	130	100
16	350	-	-	-	235	200	165	150	125	100	235	-	-	-	-	-	-	160	-	-
24	250	-	-	-	235	200	165	150	125	-	-	-	-	-	-	-	-	-	-	-

* MJ Transition Gasket required.

** Pressure Ratings carry 2:1 safety factor.

*** HDPE Pipe will require a separate stiffener ring - NOT supplied by STAR PIPE PRODUCTS.

STAR[®] PIPE PRODUCTS

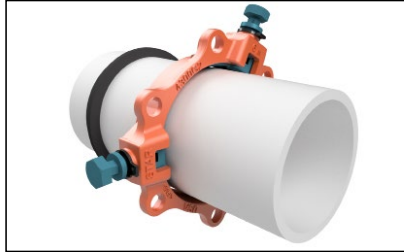


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INSTALLATION INSTRUCTIONS



STEP 1

BEFORE ASSEMBLY: Assure that ALL STARGRIP® is free of debris and foreign material.

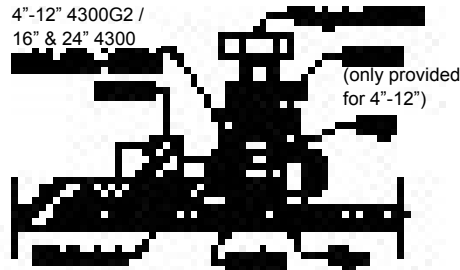
The rubber gasket seals more effectively if the surfaces with which it comes in contact are thoroughly cleaned just before assembly. Remove all foreign material while cleaning. Lubrication and additional cleaning should be provided by brushing both the gasket and the plain end with soapy water or pipe lubricant. Slide ALL STARGRIP on the plain end with lip facing the plain end, followed by the MJ gasket with tapered side facing the plain end.

IMPORTANT: When installing sizes 4" thru 12" on IPS PVC, IPS HDPE or Steel Pipe, MJ Transition gasket must be used.

STEP 5

Hand tighten the Torque-limiting twist-off bolts in a clockwise direction until all wedges are in firm contact with the pipe surface.

IMPORTANT: When installing sizes 4" through 12" on IPS PVC, IPS HDPE or Steel Pipe, spacers must be removed from the torque-limiting bolts.



STEP 2

After insertion of the pipe into the bell of the fitting, firmly press the gasket into the gasket recess. During this process the joint should be kept straight.

STEP 3

Slide ALL STARGRIP toward the MJ bell with the gland lip evenly pressed against the gasket. Insert T-bolts and hand tighten nuts.

IMPORTANT: Make deflection after joint is assembled but before tightening T-bolts to required torque range as listed in table.

STEP 4

While tightening T-bolts, it is essential that the gland be brought up toward the bell flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. **In order to keep the spigot fully homed in the MJ bell, the joint will need to be kept in compression until the completion of Step 6.** All T-bolts should be tightened until they are within the torque range as listed in table. This may require multiple rounds.

STEP 6

Continue tightening in an alternating manner until all of the Torque-limiting twist-off bolt heads have been twisted off. If removal is necessary, utilize the 5/8" hex head provided. If reassembly is required, assure that all of the Torque-off bolts, wedges, clips and spacers (if required) are in place. Assemble the joint in the same manner as above and lighten the wedge bolt to 45-60 ft.-lbs. using 5/8" hex head provided.

NOTE: If effective sealing is not attained at the maximum torque indicated, then the joint should be disassembled, thoroughly cleaned, and reassembled. Overstressing the bolts to compensate for poor installation is not acceptable.

ALL STARGRIP® SERIES 4300

NOMINAL PIPE SIZE (IN.)	T-BOLT TORQUE (FT-LBS)				MAXIMUM DEFLECTION* ANGLE FOR C900/DI/STEEL/IPS PVC/HDPE (DEG.)
	C900/DI	HDPE	C909	D2241/SCH.40 STEEL	
4	75-90	75-90	55-65	75-90	5°
6	75-90	75-90	55-65	75-90	5°
8	75-90	75-90	55-65	75-90	5°
10	75-90	75-90	55-65	75-90	5°
12	75-90	75-90	55-65	75-90	5°
16	75-90	75-90	75-90	-	3° (C900, DI)
24	75-90	-	-	-	2° (C900) 3° (DI)

* Deflection not allowed for C909



STAR® PIPE PRODUCTS

