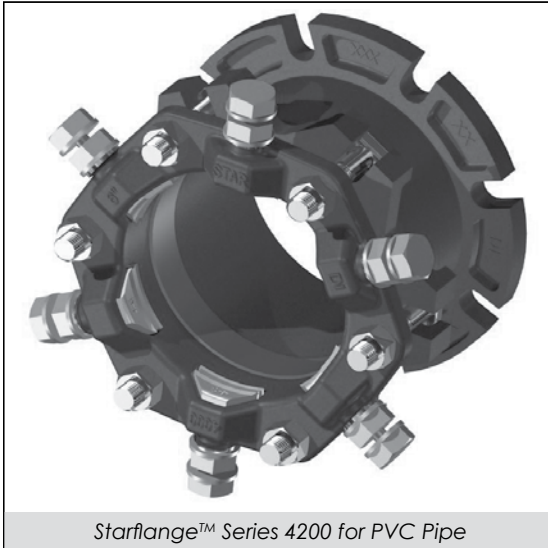




# StarFlange™ series 4200

Restrained Adapter Flange Coupling  
for PVC Pipe



Starflange™ Series 4200 for PVC Pipe

## INFORMATION

StarFlange™ Series 4200 is a restrained adapter flange coupling device designed to connect plain end PVC pipe to a flanged pipe or fitting. A ductile iron flange body provides the flange connection and includes an O-ring gasket that seals with the mating flange. The PVC Stargrip® Series 4000 provides restraint for the plain end PVC pipe.

## No Special Tools Required For Installation

## FEATURES & ADVANTAGES

- Provides flexibility to accommodate pipe misalignment
- No special tools required for installation
- Fully restrained to pressure rating of pipe with a 2:1 safety factor
- Pipe end does not need to be square cut.
- Flange meets ANSI Class 125/150 and ANSI/AWWA C115/A21.15 drill pattern.
- Can be used on 3" - 12" IPS PVC Pipe (a transition MJ gasket is required with IPS pipe)
- StarFlange™ body and PVC Stargrip® are manufactured from high strength Ductile Iron per ASTM A536, Grade 65-45-12.
- MJ gasket and O-ring flange gasket are made from styrene butadiene rubber (SBR) per ANSI / AWWA C111/ A-21.11.
- T-bolts / nuts are produced from high strength low alloy steel per ANSI/AWWA C111/A-21.11
- Includes PVC Stargrip®, Flange Adapter Barrel, MJ Gasket, O-Ring gasket and low alloy steel T-bolts
- StarFlange™ size 4"-12" are listed with Underwriters Laboratories Inc. and approved by Factory Mutual Research (FM) Approved.
- StarFlange™ Adapter Barrels are FBE coated.

## SAMPLE SPECIFICATIONS

Restrained adapter flange is to be used to connect plain end PVC pipe to a flanged pipe, valve or fitting. The device shall be manufactured of high strength ductile iron in accordance to ASTM A36 Grade 65-45-12 for all sizes. The restrainer portion of the device shall be of wedge type design with torque limiting bolts to insure proper engagement of the wedges.

Applicable dimensions shall conform to ANSI/AWWA C111/A21.11, C110/A21.10 and C153/A21.53. Flange ends to meet ANSI Class 125/150 & ANSI/AWWA C115/A21.15 drill pattern.

All sizes shall have a minimum safety factor of 2:1 (i.e. twice the pressure rating of the pipe on which it is used). Restrained flange adapter shall be Star® Pipe Products StarFlange™ Series 4200 or an approved equal.

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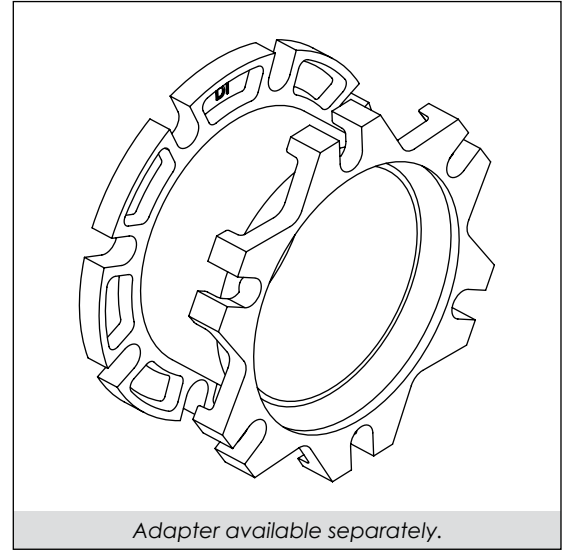
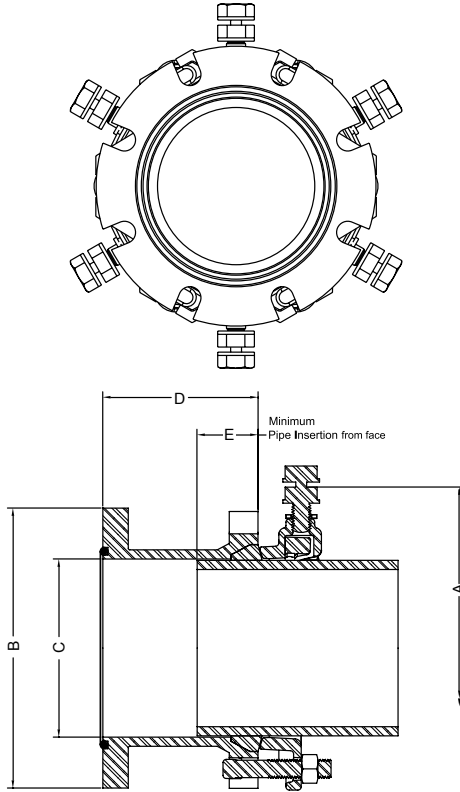
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TECHNICAL INFORMATION



STARFLANGE™ 4200 SPECIFICATIONS\*

NOM. SIZE	ITEM CODE	C900/C905 PIPE OD	IPS PIPE OD	A <sup>1</sup>	B	C	D	E	<sup>2</sup> MAXIMUM JOINT DEFLECTION°	APPROX. WT. (LBS)
3	RAC4203	N/A	3.50	8.50	7.50	4.06	3.88	2.13	5°	20
4	RAC4204	4.80	4.50	9.64	9.00	4.90	4.35	2.13	5°	27
6	RAC4206	6.90	6.63	11.72	11.00	7.00	5.25	2.50	5°	39
8	RAC4208	9.05	8.63	13.97	13.50	9.15	5.25	2.50	5°	52
10	RAC4210	11.10	10.75	16.18	16.00	11.20	5.62	2.50	3°	72
12	RAC4212	13.20	12.75	18.23	19.00	13.30	5.69	2.50	3°	92
14	RAC4214	15.30	N/A	20.36	21.00	15.44	6.67	3.00	2°	133
16	RAC4216	17.40	N/A	22.46	23.50	17.54	6.79	3.00	2°	164
18	RAC4218	19.50	N/A	24.56	25.00	19.64	7.40	3.00	1.5°	193
20	RAC4220	21.60	N/A	26.66	27.50	21.74	7.41	3.00	1.5°	227
24	RAC4224	25.80	N/A	30.86	32.00	25.94	7.90	3.00	1°	302
30	RAC4230	32.00	N/A	36.82	38.75	32.17	8.50	3.00	1°	494
36	RAC4236	38.30	N/A	43.12	46.00	38.47	9.00	3.00	1°	636

\*All dimensions in inches except where indicated.  
1 - Dimension after assembly on pipe.  
2 - Deflection attained at minimum pipe insertion.

STANDARDIZED PRESSURE RATINGS\*\*

ANSI/AWWA C900 CI OD		ANSI/AWWA C905 CI OD		ASTMD2241 IPS OD	
DR 14	200 PSI	DR 18	235 PSI	SDR 17	250 PSI
DR 18	150 PSI	DR 21	200 PSI	SDR 21	200 PSI
DR 25	100 PSI	DR 25	165 PSI	SDR 26	160 PSI
		DR 32.5	125 PSI		

\*\*For the ordinary water works with Transient surges only. Ratings are for PVC pipes with SERIES 4000 Restrainer.

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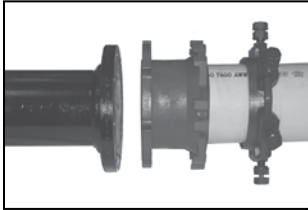
STAR® PIPE PRODUCTS



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## INSTALLATION INSTRUCTIONS - SIZES 3" - 24"



STEP 1

Check the StarFlange™ parts ensuring that no damage has occurred or parts are missing. Make sure that the O-ring gasket on the flange face of the StarFlange™ is securely in place.

The pipe end must be thoroughly cleaned for a distance of 2" greater than the length of the StarFlange body.

Slide the PVC Stargrip® Gland on the plain end of the pipe making sure that the lip extension is towards the mechanical joint bell of the StarFlange™.



STEP 2

Brush both the gasket and the plain end of the pipe with soapy water or approved pipe lubricant, which meets ANSI/AWWA C111/A21.11. Slide the MJ gasket over the pipe with the beveled edge towards the MJ bell of StarFlange™.

Slide the StarFlange™ on to the pipe with the MJ bell towards the PVC Stargrip® Gland. Pipe must be inserted into the StarFlange™ a minimum of 2.125" on 3"-4", 2.500" on 6"-12" and 3.000" on 14"-24" to attain maximum deflection per table.

Position the pipe and flanged end of StarFlange™ against the mating flange, making sure that the flange bolt holes line-up. Assemble the flanged joint using flange bolts. **Note: Flange bolts not supplied with StarFlange™.**



STEP 3

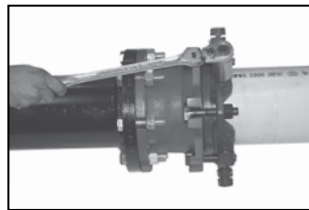
Center the pipe so that the space between the OD of the pipe and the ID of the StarFlange™ is even all around the pipe. Slide the MJ Gasket into the MJ bell recess of the StarFlange™.

Slide PVC Stargrip® towards the StarFlange™ with Gland lip against the gasket. Insert T-bolts and hand-tighten nuts.



STEP 4

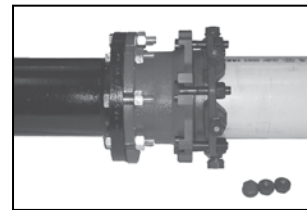
Tighten the T-bolts to normal range of bolt torque (see Table A). It is necessary that the gland be brought up toward the bell flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. T-bolts should be tightened alternately on opposite sides (Star Pattern).



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.

**Note: When installing sizes 4"-12" on IPS PVC pipe, the spacer washers must be removed from the torque limiting bolts.**



STEP 6

Continue tightening in an alternative manner going on opposite sides [Star Pattern], until all of the bolt heads have been twisted off. Never turn a single nut over 180 degrees without alternating to another nut.

If removal is necessary, utilize the 1 1/4" hex head provided. [If reassembly is required, assemble the joint in the same manner as above and tighten the wedge bolts to 90 lb-ft].

**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 practice is not acceptable.**

For use on IPS PVC pipe, Transition MJ gasket must be used and removal of spacer washers from the torque limiting bolts must be ensured

**Note:** Not to be used on plain end fittings, DI or steel pipe.

(TABLE A) T-HEAD BOLT & NUT DETAILS		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE <sup>1</sup> OF TORQUE (FT/LBS)
3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120

<sup>1</sup>These torque ranges are requirements of AWWA C600



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