

# Information - Uni-Flange® Series 1500

## Features of Uni-Flange Series 1500

Ford Meter Box / Uni-Flange® has the most technically advanced, high performance mechanical joint restraint for PVC pipe available in the water works industry with the Series 1500.

### ADVANTAGES OF THE SERIES 1500

- **Full support of the pipe wall.** The Series 1500 can be used on any thickness class of AWWA C900 PVC pipe without point loading.
- **ASTM / ISO 9001.** The Series 1500 has been tested to and exceeds the requirements of ASTM F1674 "Standard Test Method for Joint Restraint Products for Use with PVC Pipe." It is manufactured by Ford Meter Box, certified by UL to ISO 9001 quality standard.
- **Versatility.** 3" - 12" sizes can be used on C909 PVCO, C900 PVC and IPS PVC per ASTM A2241, and can also be used on SDR35 as long as a Ford SO-EZ gasket is used.
- **Correct installation every time.** The Series 1500 features Auto-Tork actuating screws with heads specially designed to twist off at the correct installation torque, leaving a hex head in case future system maintenance or removal is required. This feature offers a visual indicator of correct installation. A special "assurance stop" is built into the bolt. After the Auto-Tork feature has been engaged, the bolt cannot be tightened further so there is never any danger of pipe damage.
- **Restraining segments are mechanically retained in pockets,** they cannot fall out. All parts show up on the job site.
- **Eliminates the need for concrete thrust blocks.** When you use the Series 1500, there is no need to pour expensive and time consuming concrete thrust blocks. The Series 1500 offers guaranteed joint restraint, in any soil condition, in a matter of minutes.
- **E-coat epoxy coating** standard on all sizes.



### HOW IT WORKS

The Series 1500 is a mechanical joint restraint. It performs two functions during installation; gasket sealing and thrust restraint.

- **Gasketed Seal.** As with a standard mechanical joint, the gasket seal is made first. This is accomplished by tightening the T-head bolts / nuts that connect the Series 1500 to the mechanical joint fitting. The Series 1500 can be used with any mechanical joint bell conforming to ANSI / AWWA C110 / A21.10, ANSI / AWWA C111/ A21.11, or ANSI / AWWA C153 / A21.53.
- **Thrust Restraint.** The Series 1500 incorporates a series of ductile iron restraint segments that fit in pockets around the inner surface of the specially designed gland housing. These segments are contoured to fit each pipe size and have integrally cast restraint edges along their bottom surface. After the seal is made, the Auto-Tork segment actuating screws are tightened. This locks the restraint segments onto the pipe surface, providing complete and total thrust restraint for the joint.

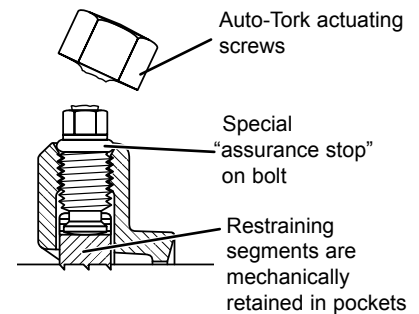
The restraint segments of the 1500 are the key to the design. They spread the restraining force, offering even distribution and support of the pipe. This is important with PVC pipe, especially for thinner wall classes. The restraint segments are designed with a "slot" at the top, which accepts the channeled foot of the activating bolt, so they cannot fall out of their pockets. The Series 1500 meets or exceeds the capabilities of "factory restrained joint pipe" at a fraction of the cost.

### TESTING

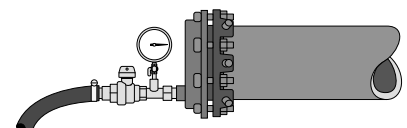
The Series 1500 has successfully passed the rigorous quality assurance and pressure tests required by UL, Factory Mutual Research Corporation, and ASTM F-1674. These include the following tests conducted on AWWA C900 PVC pipe, DR18:

- All sizes tested to a minimum of 755 PSI
- 1,000 hours at 500 PSI
- Over 1,000,000 cycles oscillating between 94 PSI to 188 PSI

All of these tests were against exposed end caps, the most severe test of a restraining device. Contact The Ford Meter Box Company, Inc. for copies of these tests.

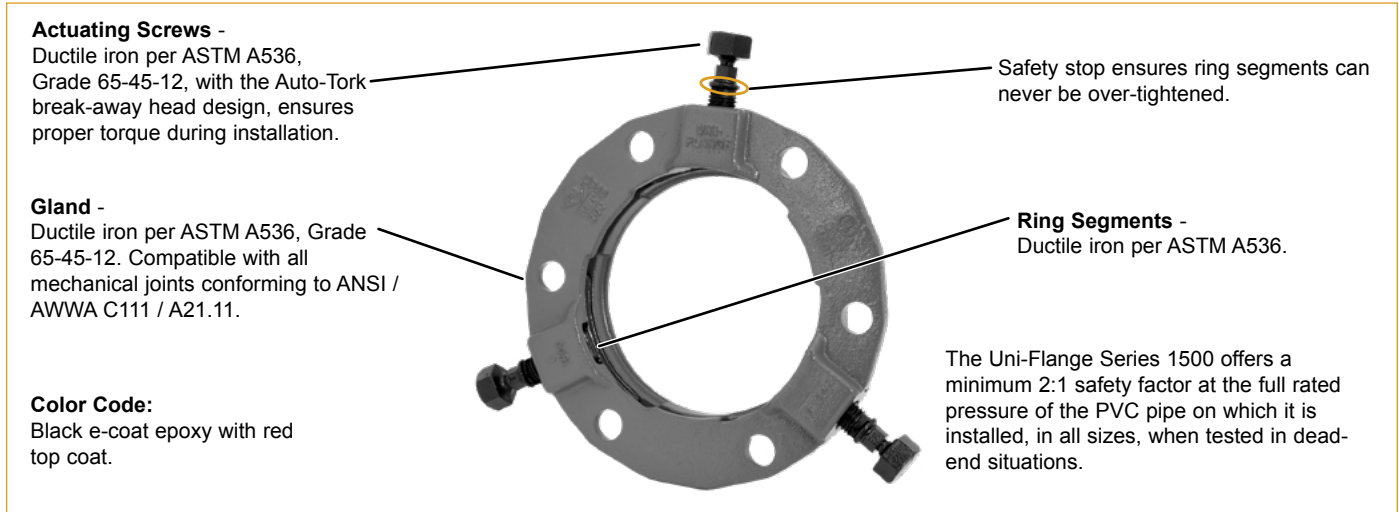


The unique design of the Series 1500 offers even distribution and support of the pipe wall. This design utilizes **Ring Segments** and is an exclusive feature of the Series 1500.



# Uni-Flange® Series 1500

## Mechanical Joint Restraint for PVC Pipe, C909 and HDPE



### Sample Specification - Series 1500

Restraint for PVC pipe joined with standardized mechanical joint fittings shall be incorporated in the design of the follower gland and shall provide full circle contact and support of the pipe wall. Restraint shall be accomplished by a series of ring segments mechanically retained inside the gland housing and designed to grip the pipe wall in an even and uniform manner. Restraining ring segments shall be actuated by bolts featuring Auto-Tork twist off heads to ensure proper installation torque is applied. A safety stop on the Auto-Tork bolt shall limit the force applied to the ring segment against the pipe. All components of the restrainer, including the gland, bolts, and restraint segments shall be of high strength ductile iron, ASTM A536. Restraining devices shall be manufactured by a facility independently certified to ISO 9001 quality standard and shall be Ford / Uni-Flange Series 1500 or approved equal.

**Note:** Maximum deflection for Series 1500 is 5°, 2° on C909.

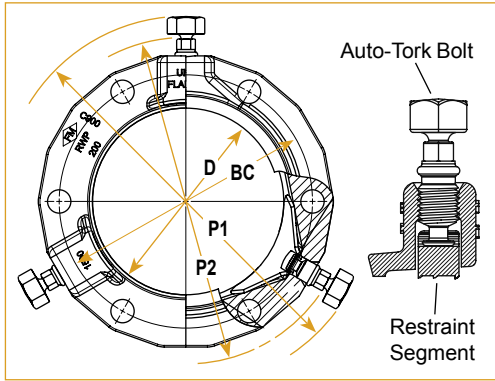
**Note:** To reinstall gland after twist-off heads are removed, use a torque wrench to tighten remaining hex head to 65 ft-lb. Consult the Ford Meter Box website for the most current installation instructions.

# Uni-Flange® Series 1500

## Mechanical Joint Restraint for PVC Pipe

### MATERIAL SPECIFICATIONS:

- Gland Body:** Ductile iron per ASTM A536, Grade 65-45-12. May be used with all mechanical joint bells conforming to ANSI / AWWA C111 standard.
- Auto-Tork Screws:** Ductile iron per ASTM A536, Grade 65-45-12. Designed to twist off at approximately 65 ft-lb.
- Restraint Segments:** Ductile iron per ASTM A536, hardened.



### Pipe Pressure Rating for C900, IPS PVC, HDPE, C909\*\* and \*SDR35 Pipe Sizes 3" - 36"

C900			ASTM D2241		C909		*SDR35
DR25	DR18	DR14	SDR26	SDR21	PC165	PC235	
165 PSI	235 PSI	305 PSI	160 PSI	200 PSI	165 PSI	235 PSI	46 PSI

\*Note: UFR1500s with a SO-EZ NBR (Buna-N) Gasket can be used on SDR35 sewer pipe. Contact factory for details.

See UFR1500-ZA listing on page U-55 or SO-EZ gasket listing on page U-56.

- P1 - Maximum O.D. of gland on pipe before Auto-Tork heads are removed (as shipped).  
 P2 - Maximum O.D. of gland installed on pipe after Auto-Tork heads are removed.

### Domestic Series 1500 for C900, IPS PVC, HDPE, C909\*\*, and \*SDR35

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)	P1 (IN.)	P2 APPROX. (IN.)		BC (IN.)	D (IN.)
						C900	C909		
3"	3.50	UFR1500-3-U	2	7.0	11.50	-	9.00	6.19	4.06
* 4"	4.22 - 4.80	UFR1500-4-U	2	9.1	13.00	9.40	9.25	7.50	4.90
* 6"	6.28 - 6.90	UFR1500-6-U	3	11.3	15.13	11.60	11.65	9.50	7.00
* 8"	8.40 - 9.05	UFR1500-8-U	4	15.0	17.25	13.75	13.60	11.75	9.15
*10"	10.50 - 11.10	UFR1500-10-U	8	26.0	19.38	16.00	15.85	14.00	11.20
*12"	12.50 - 13.20	UFR1500-12-U	8	29.0	21.50	18.05	17.85	16.25	13.30
14"	15.30	UFR1500-C-14-U	10	47.0	23.6	22.72	-	18.75	15.44
16"	17.40	UFR1500-C-16-U	12	62.0	26.2	25.28	-	21.00	17.54
18"	19.50	UFR1500-C-18-U	12	78.0	28.3	27.38	-	23.25	19.64
20"	21.60	UFR1500-C-20-U	14	95.0	30.4	29.48	-	25.50	21.74
24"	25.80	UFR1500-C-24-U	16	125.0	34.6	33.68	-	30.00	25.94
30"	32.00	UFR1500-C-30-U	20	140.0	40.79	38.06	-	36.88	32.30
36"	38.30	UFR1500-C-36-U	24	198.0	46.84	44.40	-	43.75	38.62

### Imported Series 1500 for C900, IPS PVC, HDPE, C909\*\*, and \*SDR35

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)	P1 (IN.)	P2 APPROX. (IN.)		BC (IN.)	D (IN.)
						C900	C909		
3"	3.50	UFR1500-3-I	2	7.0	11.50	-	9.00	6.19	4.06
* 4"	4.22 - 4.80	UFR1500-4-I	2	9.1	13.00	9.40	9.25	7.50	4.90
* 6"	6.28 - 6.90	UFR1500-6-I	3	11.3	15.13	11.60	11.65	9.50	7.00
* 8"	8.40 - 9.05	UFR1500-8-I	4	15.0	17.25	13.75	13.60	11.75	9.15
*10"	10.50 - 11.10	UFR1500-10-I	8	26.0	19.38	16.00	15.85	14.00	11.20
*12"	12.50 - 13.20	UFR1500-12-I	8	29.0	21.50	18.05	17.85	16.25	13.30
14"	15.30	UFR1500-C-14-I	10	47.0	23.6	22.72	-	18.75	15.44
16"	17.40	UFR1500-C-16-I	12	62.0	26.2	25.28	-	21.00	17.54
18"	19.50	UFR1500-C-18-I	12	78.0	28.3	27.38	-	23.25	19.64
20"	21.60	UFR1500-C-20-I	14	95.0	30.4	29.48	-	25.50	21.74
24"	25.80	UFR1500-C-24-I	16	125.0	34.6	33.68	-	30.00	25.94
30"	32.00	UFR1500-C-30-I	20	140.0	40.79	38.06	-	36.88	32.30
36"	38.30	UFR1500-C-36-I	24	198.0	46.84	44.40	-	43.75	38.62

\*\* Suitable for use on C909 up through 16".

# Uni-Flange® Series 1500-CA

## Mechanical Joint Restraint for PVC Pipe with Accessories

The Uni-Flange Series 1500-CA is packaged with an MJ or Uni-Seal gasket and the necessary hardware required for installation on C900 or C909. Sizes 4" through 12" are shipped shrink wrapped in a weather resistant carton. 14" through 48" sizes are bulk packaged.

### Pipe Pressure Rating for C900 and C909 3" - 48"

C900			C909	
DR25	DR18	DR14	PC165	PC235
165 PSI	235 PSI	305 PSI	165 PSI	235 PSI

### PACKAGE CONTAINS

- 1 - Series 1500 restraint
- 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111)
- 1 - Mechanical joint gasket (4" - 24")  
(30" through 48" sizes include a Uni-Seal gasket)



### Domestic Series 1500-CA For C900 and \*\*C909 Packaged with Accessories 4"- 48"

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
*4"	4.80	UFR1500-CA-4-U	2	14.2
*6"	6.90	UFR1500-CA-6-U	3	20.1
*8"	9.02	UFR1500-CA-8-U	4	24.3
*10"	11.10	UFR1500-CA-10-U	8	33.0
*12"	13.20	UFR1500-CA-12-U	8	37.3
14"	15.30	UFR1500-CA-14-U	10	56.1
16"	17.40	UFR1500-CA-16-U	12	71.4
18"	19.50	UFR1500-CA-18-U	12	89.2
20"	21.60	UFR1500-CA-20-U	14	102.8
24"	25.80	UFR1500-CA-24-U	16	140.6
30"	32.00	UFR1500-CA-30-U	20	179.0
36"	38.30	UFR1500-CA-36-U	24	237.7
42"	44.50	UFR1500-CA-42-U	28	475.0
48"	50.80	UFR1500-CA-48-U	32	573.0

### Imported Series 1500-CA For C900 and \*\*C909 Packaged with Accessories 4"- 48"

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
*4"	4.80	UFR1500-CA-4-I	2	14.2
*6"	6.90	UFR1500-CA-6-I	3	20.1
*8"	9.02	UFR1500-CA-8-I	4	24.3
*10"	11.10	UFR1500-CA-10-I	8	33.0
*12"	13.20	UFR1500-CA-12-I	8	37.3
14"	15.30	UFR1500-CA-14-I	10	56.1
16"	17.40	UFR1500-CA-16-I	12	71.4
18"	19.50	UFR1500-CA-18-I	12	89.2
20"	21.60	UFR1500-CA-20-I	14	102.8
24"	25.80	UFR1500-CA-24-I	16	140.6
30"	32.00	UFR1500-CA-30-I	20	179.0
36"	38.30	UFR1500-CA-36-I	24	237.7
42"	44.50	UFR1500-CA-42-I	28	475.0
48"	50.80	UFR1500-CA-48-I	32	573.0

\*\* Suitable for use on C909 up through 16".

# Uni-Flange® Series 1500-SA

## Mechanical Joint Restraint for PVC Pipe with Accessories

The Uni-Flange Series 1500-SA is packaged with a transition gasket and hardware for installation on IPS PVC. Sizes 3" through 12" are shipped shrink wrapped in a weather resistant carton.

### Pipe Pressure Rating for IPS PVC Pipe Sizes 3" - 12"

ASTM D2241				
SDR17	SDR21	SDR26	SDR325	SDR41
250 PSI	200 PSI	160 PSI	125 PSI	100 PSI

### PACKAGE CONTAINS

- 1 - Series 1500 restraint
- 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111)
- 1 - Transition Gasket



### Domestic Series 1500-SA for IPS PVC Packaged with Accessories 3"- 12"

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
3"	3.50	UFR1500-SA-3-U	2	12.00
4"	4.50	UFR1500-SA-4-U	2	12.50
6"	6.63	UFR1500-SA-6-U	3	18.00
8"	8.63	UFR1500-SA-8-U	4	23.00
10"	10.75	UFR1500-SA-10-U	8	33.00
12"	12.75	UFR1500-SA-12-U	8	38.00

### Imported Series 1500-SA for IPS PVC Packaged with Accessories 3"- 12"

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
3"	3.50	UFR1500-SA-3-I	2	10.70
4"	4.50	UFR1500-SA-4-I	2	12.50
6"	6.63	UFR1500-SA-6-I	3	18.00
8"	8.63	UFR1500-SA-8-I	4	23.00
10"	10.75	UFR1500-SA-10-I	8	33.00
12"	12.75	UFR1500-SA-12-I	8	38.00

# Uni-Flange® Series 1500-ZA

## Mechanical Joint Restraint for PVC Pipe with Accessories

The Uni-Flange Series 1500-ZA is packaged with a SO-EZ gasket and the necessary hardware required for installation on C900, IPS PVC, C909 or \*SDR35. Sizes 3" through 12" are shipped shrink wrapped in a weather resistant carton.

### Pipe Pressure Rating for C900, IPS PVC, C909 and \*SDR35 Pipe Sizes 3" - 12"

C900			ASTM D2241		C909	*SDR35
DR25	DR18	DR14	SDR26	SDR21	PC235	
165 PSI	235 PSI	305 PSI	160 PSI	200 PSI	235 PSI	46 PSI

\*Note: SDR35 sewer applications require NBR (Buna-N) gasket. Contact factory for details.



### PACKAGE CONTAINS

- 1 - Series 1500 restraint
- 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111)
- 1 - SO-EZ Gasket

### Domestic Series 1500 for C900, C909, IPS PVC and \*SDR35 3" - 12" Packaged with Accessories

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
3"	3.50	UFR1500-ZA-3-U	2	10.70
*4"	4.22 - 4.80	UFR1500-ZA-4-U	2	12.50
*6"	6.28 - 6.90	UFR1500-ZA-6-U	3	18.00
*8"	8.40 - 9.05	UFR1500-ZA-8-U	4	25.00
*10"	10.50 - 11.10	UFR1500-ZA-10-U	8	33.00
*12"	12.50 - 13.20	UFR1500-ZA-12-U	8	38.00

### Imported Series 1500 for C900, C909, IPS PVC and \*SDR35 3" - 12" Packaged with Accessories

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	NO. OF RESTRAINT SEGMENTS	APPROX. WEIGHT (LBS.)
3"	3.50	UFR1500-ZA-3-I	2	10.70
*4"	4.22 - 4.80	UFR1500-ZA-4-I	2	12.50
*6"	6.28 - 6.90	UFR1500-ZA-6-I	3	18.00
*8"	8.40 - 9.05	UFR1500-ZA-8-I	4	23.00
*10"	10.50 - 11.10	UFR1500-ZA-10-I	8	33.00
*12"	12.50 - 13.20	UFR1500-ZA-12-I	8	38.00

# SO-EZ Gasket

## Gasket for Mechanical Joint Connections

### Sizes 3" - 12"

The SO-EZ Gasket simplifies mechanical joint installations and can be used on any mechanical joint gland meeting AWWA C111. The design and flexibility of the gasket permits compression to pipe ODs of IPS PVC, C900 PVC, ductile iron and \*SDR35 (must use NBR (Buna-N) on SDR35), all with just one gasket.

#### How it works:

The key to this amazing gasket is that it snaps onto the MJ gland, rather than having to be manually forced into the MJ socket. As the gland and gasket are engaged to the valve or fitting, the design of the gasket centers and maintains alignment of the pipe and the gland/gasket during assembly. Proper tightening of the tee-bolts and proper lubrication ensures excellent gasket compression within the MJ socket and against the pipe.

#### Features:

- Snaps to MJ Gland or MJ Restraint Gland
- SBR rubber is NSF Standard 61 approved
- Gasket maintains alignment of pipe and gland/gasket assembly
- Gland/Gasket Assembly can be loosely pre-assembled to the MJ fitting above ground for a stab-fit insertion
- For use with IPS PVC, C900 PVC and ductile iron pipe sizes 3" - 12"



CATALOG NUMBER	DESCRIPTION
<b>SO-EZ-3</b>	3" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-4</b>	4" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-6</b>	6" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-8</b>	8" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-10</b>	10" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-12</b>	12" SO-EZ Gasket for Mechanical Joint Connection
<b>SO-EZ-3-AK</b>	3" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-4-AK</b>	4" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-6-AK</b>	6" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-8-AK</b>	8" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-10-AK</b>	10" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-12-AK</b>	12" SO-EZ Gasket Packaged with T-Bolts and Nuts
<b>SO-EZ-3-MJPACK</b>	3" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
<b>SO-EZ-4-MJPACK</b>	4" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
<b>SO-EZ-6-MJPACK</b>	6" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
<b>SO-EZ-8-MJPACK</b>	8" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
<b>SO-EZ-10-MJPACK</b>	10" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
<b>SO-EZ-12-MJPACK</b>	12" SO-EZ Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland

\* SDR35 sewer applications require NBR (Buna-N) gasket, add "-N" to end of catalog number.

Example: SO-EZ-6-N





# TGA Transition Gasket (U.S. Patent No. 10371262)

## Transition Gasket for IPS (Steel Size) Pipe and Steel Pipe Sizes 14" - 24"

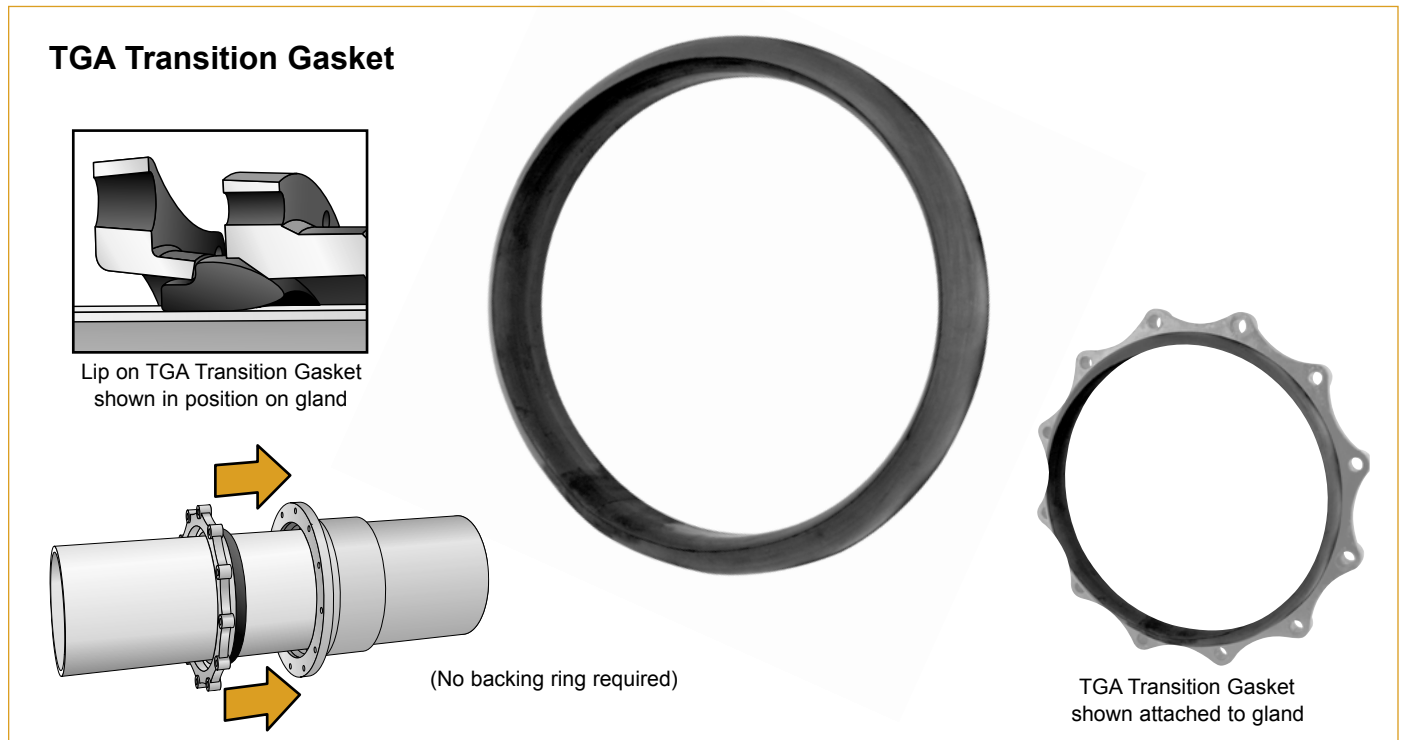
The transition gasket fills the gap when used on IPS pipe connecting to mechanical joint fittings, to restrained or reducing couplings (transitioning from DI to IPS pipe) and to restrained flange adapters.

### How it works:

The gasket snaps to the inside diameter compression lip of the MJ gland and can be installed on the pipe as one unit. The built-in lip on the gasket acts as a centering aid for the gland, to simplify installation.

### Features:

- 250 PSI rated working pressure on steel pipe with a 2:1 safety factor. For PVC, full rating of the pipe with a 2:1 safety factor
- Snaps to compression lip I.D.
- Gasket maintains alignment of pipe and gland/gasket assembly
- For use with steel pipe and IPS (steel size) pipe 14" – 24"
- No backing ring required
- Gaskets for ISO pipe available, contact factory for details



CATALOG NUMBER	DESCRIPTION
TGA-14	14" Transition MJ Gasket
TGA-16	16" Transition MJ Gasket
TGA-18	18" Transition MJ Gasket
TGA-20	20" Transition MJ Gasket
TGA-24	24" Transition MJ Gasket
TJAK-14-I	14" Transition Gasket Packaged with T-Bolts and Nuts
TJAK-16-I	16" Transition Gasket Packaged with T-Bolts and Nuts
TJAK-18-I	18" Transition Gasket Packaged with T-Bolts and Nuts
TJAK-20-I	20" Transition Gasket Packaged with T-Bolts and Nuts
TJAK-24-I	24" Transition Gasket Packaged with T-Bolts and Nuts
TJPACK-14-I	14" Transition Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
TJPACK-16-I	16" Transition Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
TJPACK-18-I	18" Transition Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
TJPACK-20-I	20" Transition Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland
TJPACK-24-I	24" Transition Gasket Packaged with T-Bolts/Nuts and Standard MJ Gland

Gasket available in NBR (Buna-N), add "-N" to the end of the catalog number. Example: TGA-16-N

