

# Specifications - Uni-Flange® Series 1300

## Series 1300 Uni-Flange® Restraint Device for PVC Pipe used with Mechanical Joint / \*Push-On Fittings

A fast, economical method of restraining water main fittings, valves and hydrants used in PVC piping systems, the Uni-Flange® Series 1300 offers guaranteed joint restraint, in every soil condition, every time. It eliminates the need for expensive, time consuming concrete thrust blocks.

The Series 1300 is a split design, incorporating a series of serrations on the inside surface. When the side clamping bolts are tightened, the serrations lock the device onto the pipe surface, providing total axial thrust restraint.

### Features:

- 360° contact and support of the pipe wall
- "Pad to Pad" feature... cannot be overtightened
- Ideal companion for push-on fittings (4" – 12")
- Meets Uni-B-13-94
- Visual Safety Feature... easy to verify correct installation
- \* Rated at full working pressure rating of any class of PVC Pipe, minimum 2:1 safety factor
- Does not replace the follower gland... mechanical joint retains full deflection capabilities
- Can be installed outside of the trench, prior to pipe laying
- 4" through 16" "C" Style units can be used on ductile iron pipe, see page U-23

**Series 1300 Restrainer -**  
Ductile Iron ASTM A536 Grade 65-45-12 or ASTM A36 Structural Steel

Color Code:  
Black for PVC with ductile iron pipe O.D.  
Gray for PVC with steel pipe O.D.  
Contact factory for coating options.

**Side Clamping Bolts and Nuts**

**T-Bolts / Studs -**  
High Strength, Low Alloy Steel  
ANSI / AWWA C111 / A21.11  
Optional: Type 304 Stainless Steel.

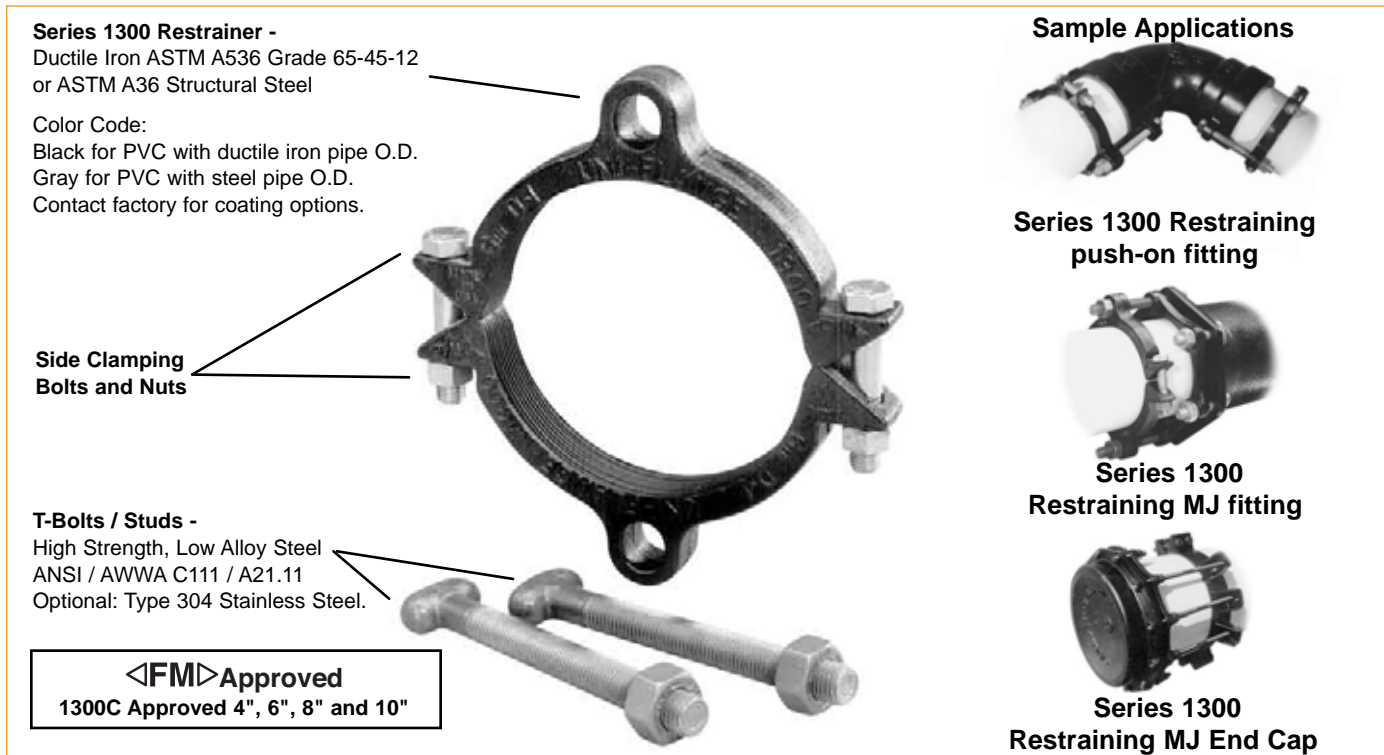
**Sample Applications**

**Series 1300 Restraining push-on fitting**

**Series 1300 Restraining MJ fitting**

**Series 1300 Restraining MJ End Cap**

**◀FM▶ Approved**  
1300C Approved 4", 6", 8" and 10"



### Suggested Specification - Series 1300

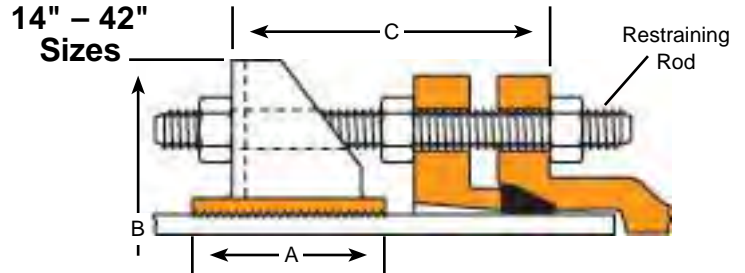
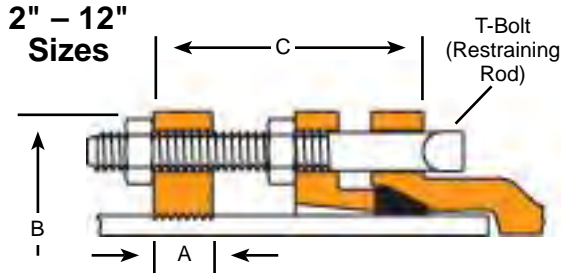
Restraint Devices for PVC Pipe shall incorporate a series of serrations on the inside diameter to provide positive restraint, exact fit, 360° contact and support of the pipe wall. Restraint Devices shall be manufactured of high strength ductile iron, ASTM A536, Grade 65-45-12 or ASTM A36 structural steel. Bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI / AWWA C111/A21.11.

All Restraint Devices for PVC Pipe shall have a water working pressure rating equivalent to the full rated pressure of the PVC Pipe on which they are installed, with a minimum 2:1 safety factor in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94, **Recommended Performance Specification For Joint Restraint Devices For Use With Polyvinyl Chloride (PVC) Pipe**. Notarized certification from the manufacturer of the restraint device shall be provided with submittals. Restraint Devices for Mechanical Joint or Push-On fittings shall be Uni-Flange® 1300 or approved equal.

\*The safety factor is derated on 10" and 12" push-on joints that do not accommodate all of the 1300 T-Bolts.

# Uni-Flange® Series 1300 Pipe Restraint

**\*\*Restraint Device for PVC Pipe used with Mechanical Joint / \*Push-On Fittings**



NOM. PIPE SIZE	PVC PIPE WITH STEEL PIPE O.D. STYLE 1300-S		** PVC PIPE WITH DUCTILE IRON PIPE O.D. STYLE 1300-C		A	B APPROX.	C MAX.	RESTRAINT BOLTS / RODS		CLAMPING BOLTS		APPROX. WT. LBS.
	O.D.	CATALOG NUMBER	O.D.	CATALOG NUMBER				No.	SIZE	No.	SIZE	
2"	2.375	UFR1300-S-2-I	N/A	-	1-1/8"	6-1/4"	4"	2	5/8"x5"	2	5/8"x3-1/2"	6.3
2-1/2"	2.875	UFR1300-S-25-I	N/A	-	1-1/8"	6-7/8"	4"	2	5/8"x5"	2	5/8"x3-1/2"	7.4
3"	3.500	UFR1300-S-3-I	N/A	-	1-1/8"	7-11/16"	4"	2	5/8"x5"	2	5/8"x3-1/2"	7.4
4"	4.500	UFR1300-S-4-I	4.80	UFR1300-C-4-(I or U)	1-1/8"	9-1/8"	6"	2	3/4"x7"	2	5/8"x3-1/2"	8.5
6"	6.625	UFR1300-S-6-I	6.90	UFR1300-C-6-(I or U)	1-1/8"	11-1/8"	6"	2	3/4"x7"	2	5/8"x3-1/2"	10.0
8"	8.625	UFR1300-S-8-I	9.05	UFR1300-C-8-(I or U)	1-1/4"	14-5/8"	6"	2	3/4"x7"	2	3/4"x4"	15.5
10"	10.750	UFR1300-S-10-I	11.10	UFR1300-C-10-(I or U)	1-3/8"	16-5/8"	6"	4	3/4"x7"	2	7/8"x5"	26.5
12"	12.750	UFR1300-S-12-I	13.20	UFR1300-C-12-(I or U)	1-3/8"	19-1/4"	6"	4	3/4"x7"	2	7/8"x5"	28.5
14"	14.000	UFR1300-S-14-U	15.30	UFR1300-C-14-(I or U)	4"	22-1/2"	15"	6	3/4"x17"	4	7/8"x7"	72.5
16"	16.000	UFR1300-S-16-U	17.40	UFR1300-C-16-(I or U)	4"	24-9/16"	15"	6	3/4"x17"	4	7/8"x7"	77.0
18"	18.000	UFR1300-S-18-U	19.50	UFR1300-C-18-(I or U)	5"	26-11/16"	15"	8	3/4"x17"	4	1"x7"	109.0
20"	20.000	UFR1300-S-20-U	21.60	UFR1300-C-20-(I or U)	5"	29-3/16"	22"	8	3/4"x24"	◆ 4/6	1-1/8"x9"	144.0
24"	24.000	UFR1300-S-24-U	25.80	UFR1300-C-24-(I or U)	5"	33-7/8"	22"	12	3/4"x24"	◆ 4/6	1-1/8"x9"	220.0
30"	30.000	UFR1300-S-30-U	32.00	UFR1300-C-30-(I or U)	10"	40-9/10"	22"	12	1"x24"	◆ 6/8	1-1/8"x6"	325.0
36"	36.000	UFR1300-S-36-U	38.30	UFR1300-C-36-(I or U)	10"	48"	22"	12	1"x24"	◆ 6/8	1-1/8"x6"	360.0
42"	-	-	44.50	UFR1300-C-42-I	10-3/4"	57-9/16"	22"	16	1-1/4"x24"	◆ 8	1-1/8"x6"	487.0

I = Import Casting U = Domestic Casting

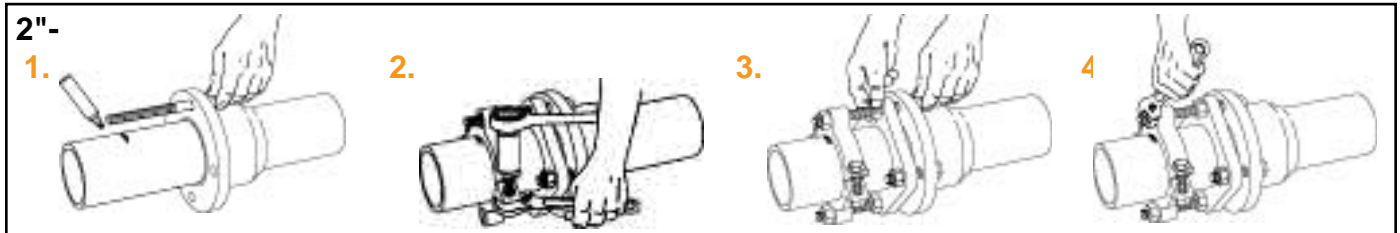
Note: 14" - 42" are non-returnable and may be subject to a cancellation fee.

\*\* 4" through 16" "C" Style Units can be used on ductile iron pipe. See page 23 for installation and pressure qualifications.

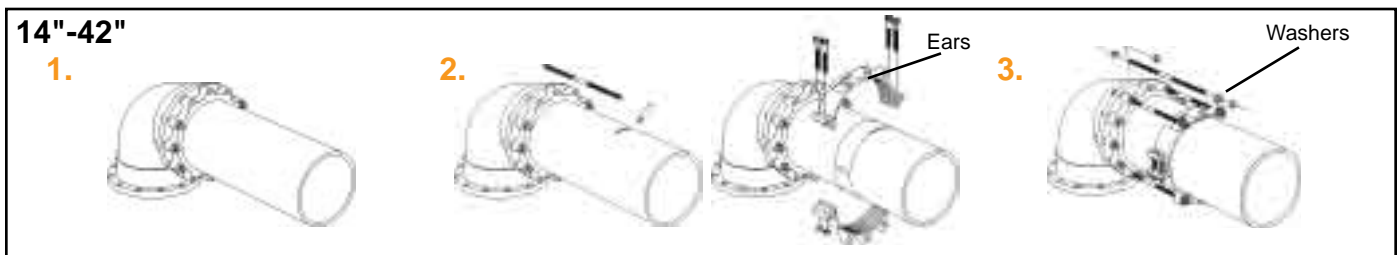
All dimensions in inches unless otherwise stated.

◆ Contact factory for details

## Installation Instructions



1. Insert pipe into the mechanical joint bell. Insert one of the extra long T-Bolts provided with the Series 1300 through one of the flange holes, mark a line on the pipe approximately 1 inch back from the end of the bolt.
2. Assemble the MJ gland, gasket and bolts to AWWA standards. Assemble Series 1300 clamping ring onto the pipe even with line. (Make sure restrainer ears line up with bolt hole in MJ gland as shown.) Tighten clamping bolts evenly to recommended torque.
3. Insert the extra long T-Bolts/rods provided with the Series 1300 and install one nut each between the gland and clamping ring as shown.
4. Tighten nuts against MJ gland to AWWA standards. Snug retaining nuts behind restrainer ears. **Do not over-tighten retaining nuts.**



1. Assemble the mechanical joint, installing gasket, gland and T-Bolts to AWWA standards. Leave out T-Bolts corresponding to "ears" on 1300 Restrainer.
2. Use one of the rods (provided) as a guide to position 1300. Leave sufficient threads on the rod ends to fully engage nuts. Tighten clamping bolts to torque recommended on restrainer label, ensuring the gap between pads on both sides remain even. Stated torque values are the minimum requirement.
3. Connect 1300 to fitting by inserting studs through restrainer ear, gland and fitting bolt hole. Install one nut behind fitting bell, one against the gland and one behind restrainer ear (against washer which is provided).

\*The safety factor is derated on 10" and 12" push-on joints that do not accommodate all of the 1300 T-Bolts.

# Specifications - Uni-Flange® Series 1350

## Series 1350 Uni-Flange® Restraint Device for PVC Pipe Bell Joints

The Uni-Flange® Series 1350 offers the fastest, most economical method of restraining bell and spigot joints of PVC Pipe in new installations. Total thrust restraint is guaranteed, in any soil condition.

The Series 1350 consists of two basic components... a Series 1300 split restraint device, which is installed on the spigot end of the pipe, and a Series 1350 solid back-up ring, which has a beveled leading edge and seats behind the pipe bell.

### Features:

- Fast and Easy - 1350 solid back-up ring eliminates the need to tighten extra bolts and nuts
- Can be installed outside of the trench, prior to pipe laying
- 360° contact and support of the pipe wall
- Meets Uni-B-13-94
- Cannot be over-tightened due to "pad-to-pad" feature
- Visual Safety Feature... easy to verify correct installation
- Rated at full working pressure rating of any class of PVC Pipe, minimum 2:1 safety factor

**Note:** Series 1350 (4" – 12" sizes) is NOT recommended for use on AWWA C-900, DR-14 PVC pipe. Use Series 1390 for C-900 DR-14 PVC pipe.

#### Split Ring Restraint - Uni-Flange®

Series 1300 made from Ductile Iron per ASTM A536, Grade 65-45-12, or ASTM A36 Structural Steel.

#### Color Code:

Black for PVC with ductile iron pipe O.D.  
Gray for PVC with steel pipe O.D.  
Contact factory for coating options.

#### Side Clamping Bolts and Nuts

**T-Bolts / Studs** - High strength, low alloy steel ANSI / AWWA C111/A21.11.  
Optional: Type 304 Stainless Steel

**Back-Up Ring** - 2" - 18" Sizes: Ductile Iron per ASTM A536, Grade 65-45-12.  
20" - 24" Steel per ASTM A36



2" - 12"  
Series 1350 Installed



14" - 24"  
Series 1350 Installed

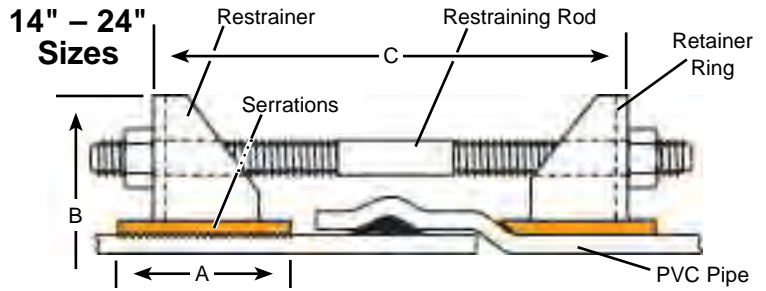
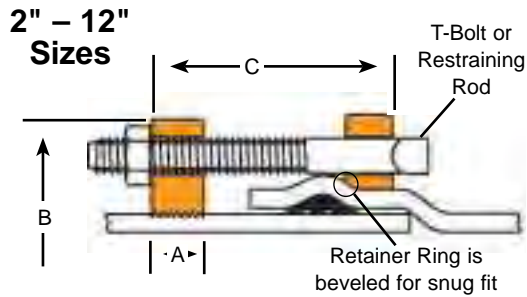
### Suggested Specification - Series 1350

Restraint Devices for bell and spigot joints of PVC Pipe shall consist of a split restraint ring installed on the spigot, connected to a solid back-up ring seated behind the bell. The split restraint ring shall incorporate a series of serrations on the inside diameter to provide positive restraint, exact fit and 360° contact and support of the pipe wall. The solid back-up ring shall have a beveled leading edge to assure exact fit behind the pipe bell. Restraint Devices shall be of ductile iron, ASTM A536, Grade 65-45-12, or ASTM A36 structural steel. Connecting bolts shall be of high strength, low alloy material in accordance with ANSI / AWWA C111 / A21.11.

All Restraint Devices shall carry a water working pressure rating equivalent to the full rated pressure of the PVC Pipe they are installed on, with a minimum 2:1 safety factor in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94, **Recommended Performance Specification For Joint Restraint Devices For Use With Polyvinyl Chloride (PVC) Pipe**. Notarized certification from the manufacturer of the restraint device shall be provided with submittals. Restraint Devices for bell and spigot joints of PVC pipe shall be Uni-Flange® 1350 or approved equal.

# Uni-Flange® Series 1350 Pipe Restraint

## Restraint Device for PVC Pipe Bell Joints



NOM. PIPE SIZE	PVC PIPE WITH STEEL PIPE O.D. STYLE 1350-S		PVC PIPE WITH DUCTILE IRON PIPE O.D. STYLE 1350-C		A	B APPROX.	C MAX.	RESTRAINT BOLTS / RODS		CLAMPING BOLTS		APPROX. WT. LBS.
	O.D.	CATALOG NUMBER	O.D.	CATALOG NUMBER				No.	SIZE	No.	SIZE	
2"	2.375	UFR1350-S-2-I	N/A	-	1-1/8"	6-1/4"	4"	2	5/8"x5"	2	5/8"x3-1/2"	8.5
3"	3.500	UFR1350-S-3-I	N/A	-	1-1/8"	7-11/16"	4"	2	5/8"x5"	2	5/8"x3-1/2"	11.0
4"	4.500	UFR1350-S-4-I	4.80	UFR1350-C-4-(I or U)	1-1/8"	9-1/8"	6"	2	3/4"x9"	2	5/8"x3-1/2"	13.0
6"	6.625	UFR1350-S-6-I	6.90	UFR1350-C-6-(I or U)	1-1/8"	11-7/8"	6"	2	3/4"x9"	2	5/8"x3-1/2"	16.5
8"	8.625	UFR1350-S-8-I	9.05	UFR1350-C-8-(I or U)	1-1/4"	14-5/8"	8"	2	3/4"x12"	2	3/4"x4"	26.5
10"	10.750	UFR1350-S-10-I	11.10	UFR1350-C-10-(I or U)	1-3/8"	16-5/8"	8"	4	3/4"x17"	2	7/8"x5"	43.5
12"	12.750	UFR1350-S-12-I	13.20	UFR1350-C-12-(I or U)	1-3/8"	19-1/4"	8"	4	3/4"x17"	2	7/8"x5"	50.0
14"	14.000	UFR1350-S-14-U	15.30	UFR1350-C-14-(I or U)	4"	23-3/16"	15"	6	3/4"x24"	4	7/8"x7"	118.0
16"	16.000	UFR1350-S-16-U	17.40	UFR1350-C-16-(I or U)	4"	25-3/8"	15"	6	3/4"x24"	4	7/8"x7"	127.0
18"	18.000	UFR1350-S-18-U	19.50	UFR1350-C-18-(I or U)	5"	27-3/8"	15"	8	3/4"x24"	4	1"x7"	166.0
20"	20.000	UFR1350-S-20-U	21.60	UFR1350-C-20-(I or U)	5"	29-3/4"	21-1/2"	8	3/4"x30"	◆ 4/6	1-1/8"x9"	223.0
24"	24.000	UFR1350-S-24-U	25.80	UFR1350-C-24-(I or U)	5"	33-7/8"	21-1/2"	12	3/4"x36"	◆ 4/6	1-1/8"x9"	334.0
30"	USE SERIES 1390 FOR THESE SIZES											
36"	USE SERIES 1390 FOR THESE SIZES											
42"	USE SERIES 1390 FOR THESE SIZES											

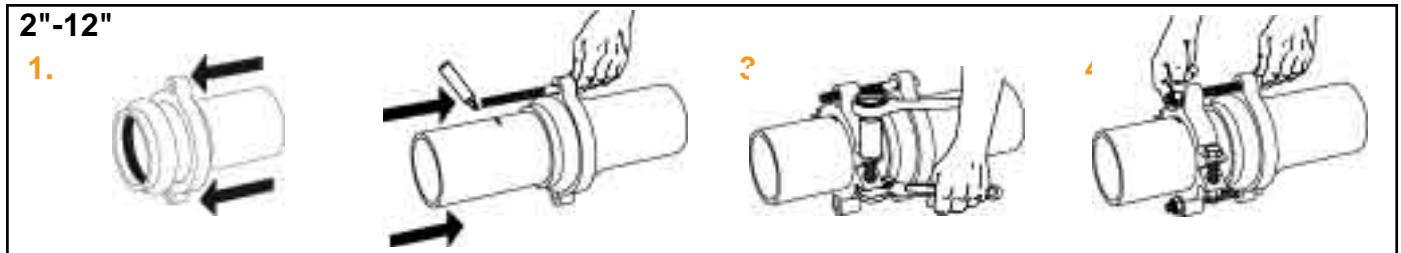
I = Import Casting U = Domestic Casting

Note: 14" - 24" are non-returnable and may be subject to a cancellation fee.

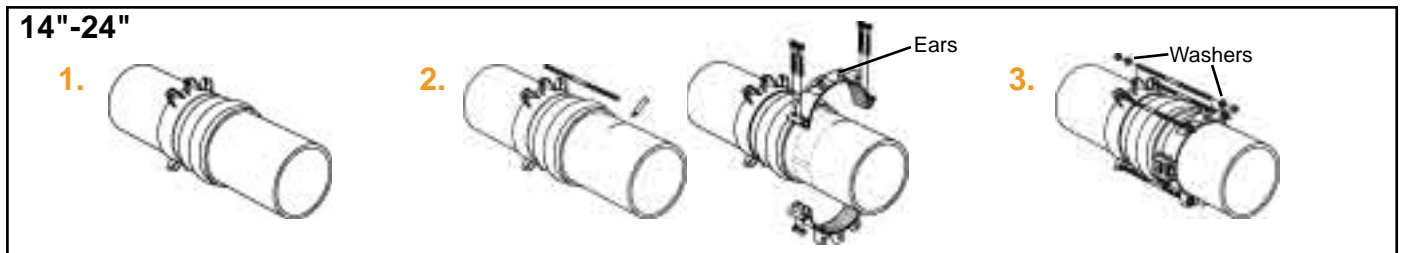
All dimensions in inches unless otherwise stated.

◆ Contact factory for details.

### Installation Instructions



- Slide bell ring over pipe and onto bell. Make sure beveled side of ring faces the pipe bell.
- Assemble push-on joint using standard procedure. Mark assembly line for restrainer using an extra long bolt as a guide.
- Assemble Series 1300 serrated clamping ring onto pipe, evenly tighten clamping bolts to recommended torque.
- Insert T-Bolts/restraint rods and snug nuts. **Do not over-tighten retaining nuts.** (Hand tight - then one full turn.)



- Assemble pipe bell joint. Slide 1350 Restrainer ring up the length of pipe until it seats against the back of the pipe bell. Make sure the beveled edge is facing bell.
- Use one of the rods (provided) as a guide to position serrated restrainer. Leave sufficient threads on the rod ends to fully engage nuts. Install the serrated restrainer on plain end of pipe; tighten clamping bolts to torque recommended on restrainer label, ensuring the gap between pads on both sides remain even. Stated torque values are the minimum requirement.
- Connect 1300 to restrainer ring with rods provided. Use one washer (these are provided) behind each ear, install nut behind washer and tighten. **Do not over-tighten retaining nuts.** (Hand tight - then one full turn.)



# Specifications - Uni-Flange® Series 1360

## Series 1360 Uni-Flange® Restraint Device for PVC Pressure Fittings

More and more municipalities and consulting engineers are specifying PVC pipe joined with PVC Pressure Fittings.

Uni-Flange® now offers the fastest, most economical, and reliable method of restraining PVC Pressure Fittings... The Series 1360. Complete fitting restraint in a matter of minutes... using only a wrench.

The Uni-Flange® Series 1360 consists of two split rings... A Series 1300 installed on the PVC pipe, connected to a specially designed back-up ring that seats securely behind the fitting bell. The back-up ring is beveled on the leading edge and the two halves are designed to interlock... no clamping bolts are required.

The Uni-Flange® Series 1360 offers guaranteed joint restraint every time... eliminating the need for expensive and time consuming concrete thrust blocks. No waiting for trucks. No building forms. Trenches can be backfilled immediately. The 1360 keeps the job moving.

### Split Ring Restraint - Uni-Flange®

Series 1300 is made from Ductile Iron per ASTM A536, Grade 65-45-12, or ASTM A36 Structural Steel.

#### Color Code:

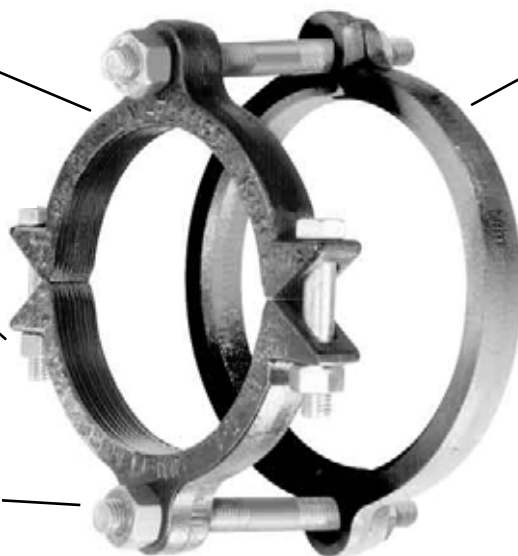
Black for PVC with ductile iron pipe O.D.

Gray for PVC with steel pipe O.D.

Contact factory for coating options.

### Side Clamping Bolts and Nuts

**Connecting Rods** - High strength, low alloy steel per ANSI / AWWA C111/A21.11.  
Optional: Type 304 Stainless Steel



**Split Back-Up Ring** - Ductile Iron per ASTM A536, Grade 65-45-12 or Steel per ASTM A36.



**Series 1360 Installed**

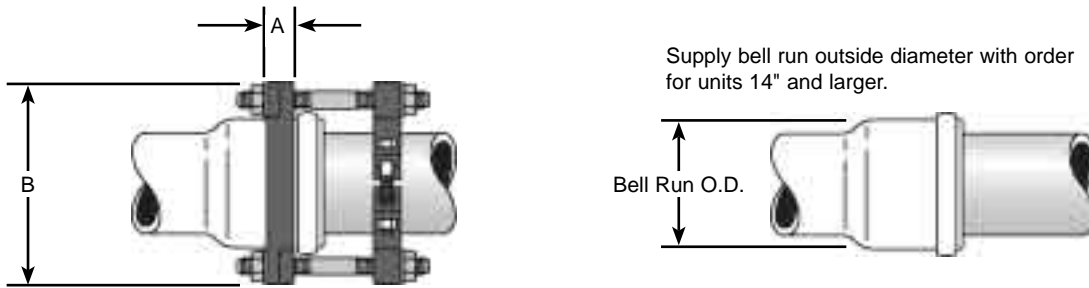
## Applications / Pressure Rating

The Uni-Flange® Series 1360 carries a water working pressure rating of 150 PSI in 2" through 8" nominal sizes. Larger sizes carry the same pressure rating as the fittings on which they are installed. (Contact fitting manufacturer for rating.) The bell run O.D. is required for sizes 14" and larger. All sizes incorporate a minimum 2:1 safety factor at the full rated pressure.

## Suggested Specification - Series 1360

Restraint Devices for PVC Pipe and PVC Pressure Fittings shall consist of a split restraint ring installed on the spigot, connected to a split back-up ring that seats behind the gasket race of the fitting. The split restraint ring shall incorporate a series of serrations on the inside diameter to provide positive restraint, exact fit and 360° contact and support of the pipe wall. The two halves of the split back-up ring shall form a beveled leading edge to assure exact fit behind the fitting gasket race. Restraint Devices shall be of ductile iron, ASTM A536, Grade 65-45-12, or ASTM A36 structural steel and connecting rods shall be of high strength, low alloy material in accordance with ANSI / AWWA C111 / A21.11. Restraint Devices shall be Uni-Flange® 1360 or approved equal.

# Uni-Flange® Series 1360 Pipe Restraint



## Restraint Device For AWWA C-907 PVC Pressure Fittings

NOM. PIPE SIZE	PIPE O.D. (INCHES)	A	B APPROX.	CATALOG NUMBER FOR FITTINGS	CONNECTING RODS NUMBER AND SIZE	SIDE BOLT QUANTITY AND SIZE		APPROX. WT. LBS.
						RESTRAINT	BACK-UP RING	
4"	4.80	1-1/8"	9-1/8"	<b>UFR1360-C-4-(I or U)</b>	(2) 3/4"x12"	(2) 5/8"x3-1/2"	-	13.5
6"	6.90	1-1/8"	11-7/8"	<b>UFR1360-C-6-(I or U)</b>	(2) 3/4"x12"	(2) 5/8"x3-1/2"	-	18.0
8"	9.05	1-1/8"	14-9/16"	<b>UFR1360-C-8-(I or U)</b>	(2) 3/4"x12"	(2) 3/4"x4"	-	29.0
10"	11.10	4"	19-11/16"	<b>UFR1360-C-10-(I or U)</b>	(4) 3/4"x17"	(2) 7/8"x5"	(2) 7/8" x 3-1/2"	54.5
12"	13.20	4"	21-15/16"	<b>UFR1360-C-12-(I or U)</b>	(4) 3/4"x24"	(2) 7/8"x5"	(2) 7/8" x 3-1/2"	81.0
14"	15.30	4"	24-1/4"	<b>*UFR1360-C-14-(I or U)</b>	(6) 3/4"x24"	(4) 7/8"x7"	(4) 7/8"x7"	127.0
16"	17.40	4"	26-9/16"	<b>*UFR1360-C-16-(I or U)</b>	(6) 3/4"x30"	(4) 7/8"x7"	(4) 7/8"x7"	140.0
18"	19.50	4"	28-7/8"	<b>*UFR1360-C-18-(I or U)</b>	(8) 3/4"x30"	(4) 1"x7"	(4) 7/8"x7"	181.0
20"	21.60	5"	31-1/8"	<b>*UFR1360-C-20-(I or U)</b>	(8) 3/4"x30"	(4) 1-1/8"x9"	(4) 1" x 9"	227.0
24"	25.80	5"	35-7/8"	<b>*UFR1360-C-24-(I or U)</b>	(12) 3/4"x36"	(4) 1-1/8"x9"	(4) 1" x 9"	328.0
30"	32.00	7"	44-1/16"	<b>*UFR1360-C-30-(I or U)</b>	(12) 1"x40"	(8) 1-1/8"x9"	(6) 1-1/8" x 9"	551.0
36"	38.30	7"	51-15/16"	<b>*UFR1360-C-36-(I or U)</b>	(12) 1"x40"	(8) 1-1/8"x9"	(6) 1-1/8" x 9"	583.0

\* The bell run outside diameter must be provided. Contact factory for details.

**I** = Import Casting    **U** = Domestic Casting

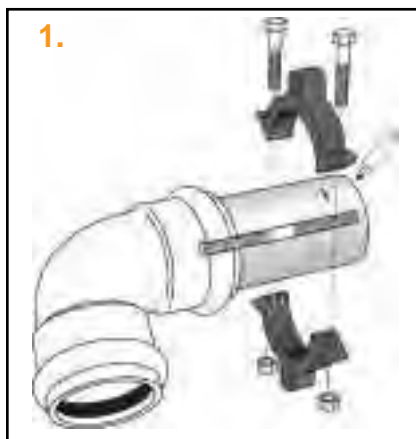
## Restraint Device For IPS Class 200 PVC Fittings

NOM. PIPE SIZE	PIPE O.D. (INCHES)	A	B	CATALOG NUMBER	CONNECTING RODS QUANTITY AND SIZE	SIDE BOLTS QUANTITY AND SIZE	APPROX. WT. LBS.
2"	2.38	1-1/8"	6-3/8"	<b>UFR1360-S-2-I</b>	(2) 5/8"x11"	(2) 5/8"x3-1/2"	9.5
2-1/2"	2.88	1-1/8"	6-7/8"	<b>UFR1360-S-25-I</b>	(2) 5/8"x11"	(2) 5/8"x3-1/2"	10.0
3"	3.50	1-1/8"	7-5/8"	<b>UFR1360-S-3-I</b>	(2) 5/8"x11"	(2) 5/8"x3-1/2"	10.5
4"	4.50	1-1/8"	9-1/8"	<b>UFR1360-S-4-I</b>	(2) 3/4"x12"	(2) 5/8"x3-1/2"	14.0
6"	6.63	1-1/8"	11-9/16"	<b>UFR1360-S-6-I</b>	(2) 3/4"x12"	(2) 5/8"x3-1/2"	17.5
8"	8.63	1-1/8"	13-3/8"	<b>UFR1360-S-8-I</b>	(2) 3/4"x12"	(2) 3/4"x4"	26.0

Contact factory for information on sizes larger than 8".

**I** = Import Casting

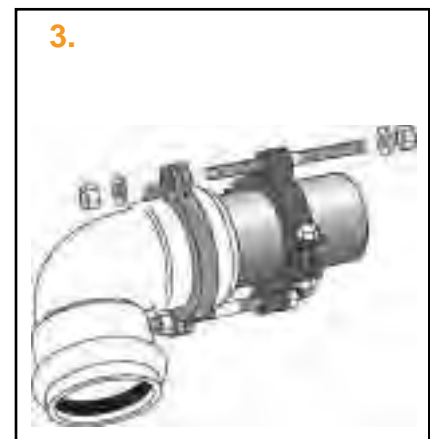
## Installation Instructions



**1.** Install pipe into fitting. Install Series 1300 split clamping ring on the spigot end of the pipe. (Use connecting rod as a guide to position serrated restrainer.) Tighten clamping bolts evenly to the recommended torque.



**2.** Install split back-up ring behind gasket race of fitting. Make sure the bevel faces the gasket race. The two halves interlock at the bolt holes.



**3.** Insert rods through Series 1300 and back-up ring. Place washers against restrainer and back-up ring ears. Snug retaining nuts against washers. Do not overtighten retaining nuts. (Hand tight - then one full turn.)

# Specifications - Uni-Flange® Series 1390

## Series 1390 Uni-Flange® Restraint Device for PVC Pipe Bell Joints

The Uni-Flange® Series 1390 offers fast, economical, guaranteed restraint of PVC Pipe bell and spigot joints in new or existing installations in any soil condition. The Series 1390 eliminates the need for concrete thrust blocks and offers an alternative to "factory restrained joint" metallic pipes.

The Series 1390 consists of two Series 1300 split restraint devices. One is installed on the pipe spigot and the other behind the pipe bell. The two are connected to each other with double ended rods (provided).

### Features:

- Provides restraint for new, or existing, in-ground piping systems
- 360° contact and support of the pipe wall
- "Pad-to-Pad" feature... cannot be overtightened
- Visual Safety Feature... easy to verify correct installation
- Rated at full working pressure rating of any class of PVC Pipe, minimum 2:1 safety factor
- Meets Uni-B-13-94
- 4" through 16" "C" Style units can be used on ductile iron pipe. See page 23 for installation and pressure qualifications.

**Note:** 1390 restraining rods will span 2"-12" FC1 style flexible couplings (Section M) when positioned to avoid the coupling bolts. Please contact the factory for other coupling applications.

**Two Uni-Flange® Series 1300-C Restraint Devices** - Ductile Iron per ASTM A536, Grade 65-45-12, or ASTM A36 Structural Steel

**Color Code:**

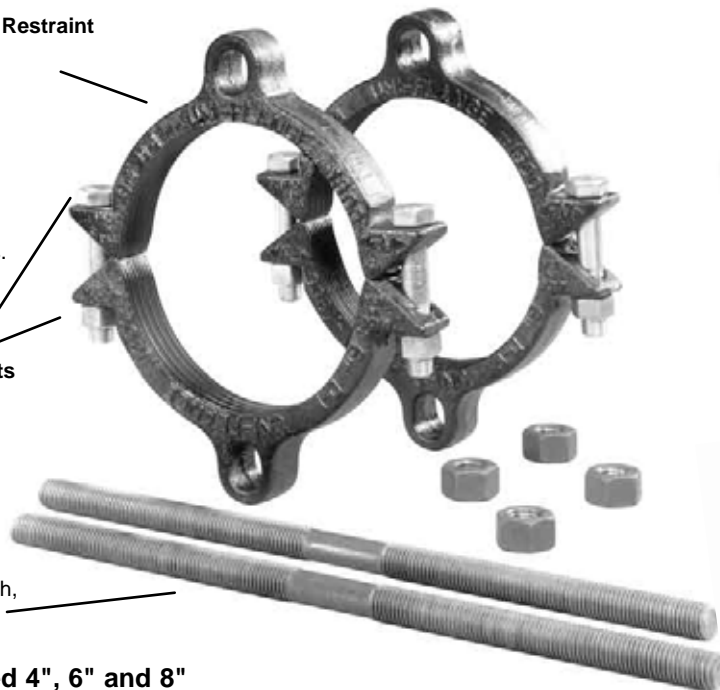
Black for PVC with ductile iron pipe O.D.

Gray for PVC with steel pipe O.D.  
Contact factory for coating options.

Side Clamping Bolts and Nuts

Threaded Rods - High strength, low alloy steel ANSI / AWWA C111/A21.11.

1390 C <FM> Approved 4", 6" and 8"



2" - 12"  
Series 1390 Installed



14" - 36"  
Series 1390 Installed

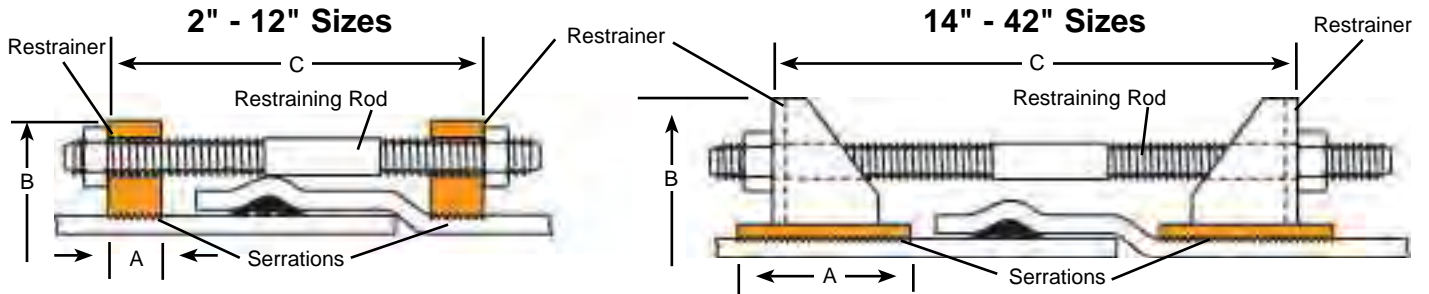
### Suggested Specification - Series 1390

Restraint Devices for bell and spigot joints of PVC Pipe shall consist of split restraint rings, one installed on the spigot, connected to one installed on the pipe barrel behind the bell. The restraint devices shall incorporate a series of serrations on the inside diameter to provide positive restraint, exact fit, 360° contact and support of the pipe wall. Restraint Devices shall be of ductile iron, ASTM A536, Grade 65-45-12 or ASTM A36 structural steel, and connecting rods shall be of high strength, low alloy material in accordance with ANSI / AWWA C111/A21.11.

All Restraint Devices shall have a water working pressure rating equivalent to the full rated pressure of the PVC Pipe they are installed on, with a minimum 2:1 safety factor in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94, **Recommended Performance Specification For Joint Restraint Devices For Use With Polyvinyl Chloride (PVC) Pipe**. Notarized certification from the manufacturer of the restraint device shall be provided with submittals. Restraint Devices for bell and spigot joints of PVC pipe shall be Uni-Flange® 1390 or approved equal.

# Uni-Flange® Series 1390 Pipe Restraint

\* Restraint Device for PVC Pipe Bell Joints



Nom. Pipe Size	PVC PIPE WITH STEEL PIPE O.D. STYLE 1390-S		*PVC PIPE WITH DUCTILE IRON PIPE O.D. STYLE 1390-C		A	B APPROX.	C MAX.	RESTRAINT BOLTS / RODS		CLAMPING BOLTS		APPROX. Wt. LBS.
	O.D.	CATALOG NUMBER	O.D.	CATALOG NUMBER				No.	SIZE	No.	SIZE	
2"	2.375	UFR1390-S-2-I	N/A	-	1-1/8"	6-1/4"	10"	2	5/8"x11"	4	5/8"x3-1/2"	11.5
2-1/2"	2.875	UFR1390-S-25-I	N/A	-	1-1/8"	6-7/8"	10"	2	5/8"x11"	4	5/8"x3-1/2"	12.8
3"	3.500	UFR1390-S-3-I	N/A	-	1-1/8"	7-11/16"	10"	2	5/8"x11"	4	5/8"x3-1/2"	13.5
4"	4.500	UFR1390-S-4-I	4.80	UFR1390-C-4-(IorU)	1-1/8"	9-1/8"	12"	2	3/4"x17"	4	5/8"x3-1/2"	17.0
6"	6.625	UFR1390-S-6-I	6.90	UFR1390-C-6-(IorU)	1-1/8"	11-1/8"	13"	2	3/4"x17"	4	5/8"x3-1/2"	18.5
8"	8.625	UFR1390-S-8-I	9.05	UFR1390-C-8-(IorU)	1-1/4"	14-5/8"	15"	2	3/4"x17"	4	3/4"x4"	29.0
10"	10.750	UFR1390-S-10-I	11.10	UFR1390-C-10-(IorU)	1-3/8"	16-5/8"	16"	4	3/4"x24"	4	7/8"x5"	53.0
12"	12.750	UFR1390-S-12-I	13.20	UFR1390-C-12-(IorU)	1-3/8"	19-1/4"	18"	4	3/4"x24"	4	7/8"x5"	56.5
14"	14.000	UFR1390-S-14-U	15.30	UFR1390-C-14-(IorU)	4"	22-1/2"	24"	6	3/4"x30"	8	7/8"x7"	136.0
16"	16.000	UFR1390-S-16-U	17.40	UFR1390-C-16-(IorU)	4"	24-9/16"	28"	6	3/4"x30"	8	7/8"x7"	147.0
18"	18.000	UFR1390-S-18-U	19.50	UFR1390-C-18-(IorU)	5"	26-11/16"	28"	8	3/4"x30"	8	1"x7"	206.0
20"	20.000	UFR1390-S-20-U	21.60	UFR1390-C-20-(IorU)	5"	29-3/16"	34"	8	3/4"x36"	◆ 8/12	1-1/8"x9"	263.0
24"	24.000	UFR1390-S-24-U	25.80	UFR1390-C-24-(IorU)	5"	33-7/8"	34"	12	3/4"x36"	◆ 8/12	1-1/8"x9"	406.0
30"	30.000	UFR1390-S-30-U	32.00	UFR1390-C-30-(IorU)	10"	40-9/10"	38"	12	1"x40"	◆ 12/16	1-1/8"x9"	601.0
36"	36.000	UFR1390-S-36-U	38.30	UFR1390-C-36-(IorU)	10"	48"	38"	12	1"x40"	◆ 12/16	1-1/8"x9"	672.0
42"	-	-	44.50	UFR1390-C-42-I	10-3/4"	57-9/16"	46"	16	1-1/4"x52"	16	1-1/8"x6"	1240.0

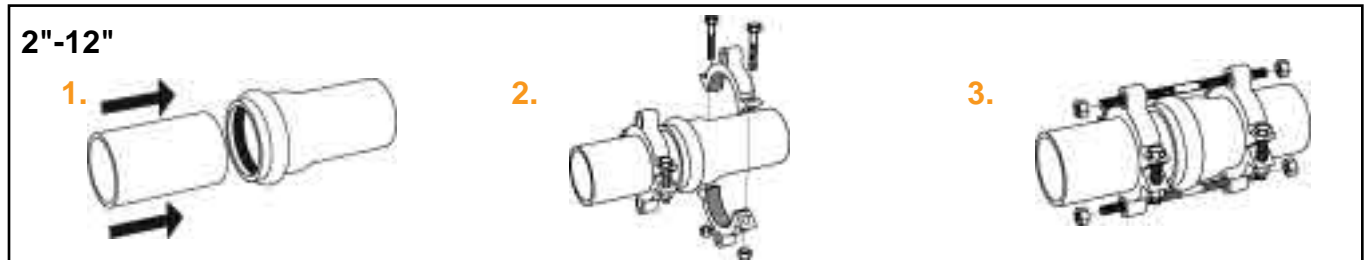
I = Import Casting U = Domestic Casting

Note: 14" - 42" are non-returnable and may be subject to a cancellation fee.

\* 4" through 16" "C" Style Units can be used on ductile iron pipe. See page 23 for installation and pressure qualifications.

◆ Contact factory for details.

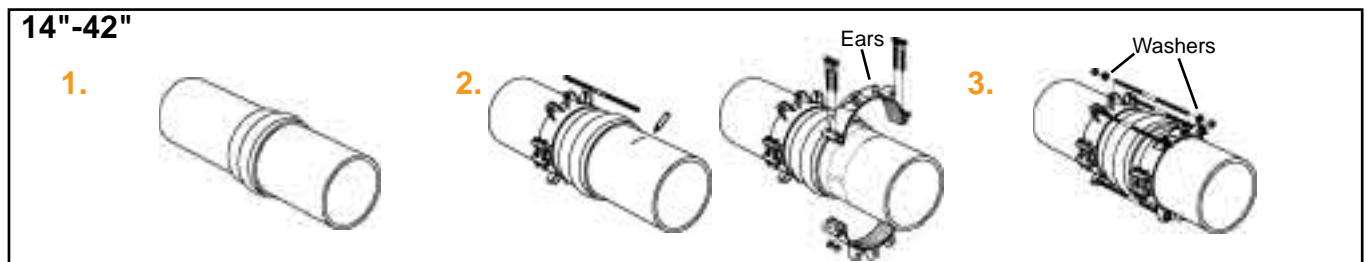
## Installation Instructions



1. Assemble spigot pipe end to bell, using standard procedure.

2. Assemble Series 1390 clamping rings onto spigot pipe and just behind bell end as shown (use restraining rods as a guide to position restrainers) and tighten bolts evenly to recommended torque.

3. Insert threaded rods and nuts as shown and tighten nuts behind restrainers. **Do not over-tighten retaining nuts.** (Hand tight - then one full turn.)



1. Assemble pipe bell.

2. Assemble one restrainer on spigot end of pipe and one directly behind pipe bell. Use one of the rods (provided) as a guide to position serrated restrainers. Leave sufficient threads on the ends of the rod ends to fully engage nuts. Tighten all clamping bolts to torque recommended on restrainer label. Stated torque values are the minimum requirement. Apply torque to each side, ensuring the gaps between the pads on both sides remain even.

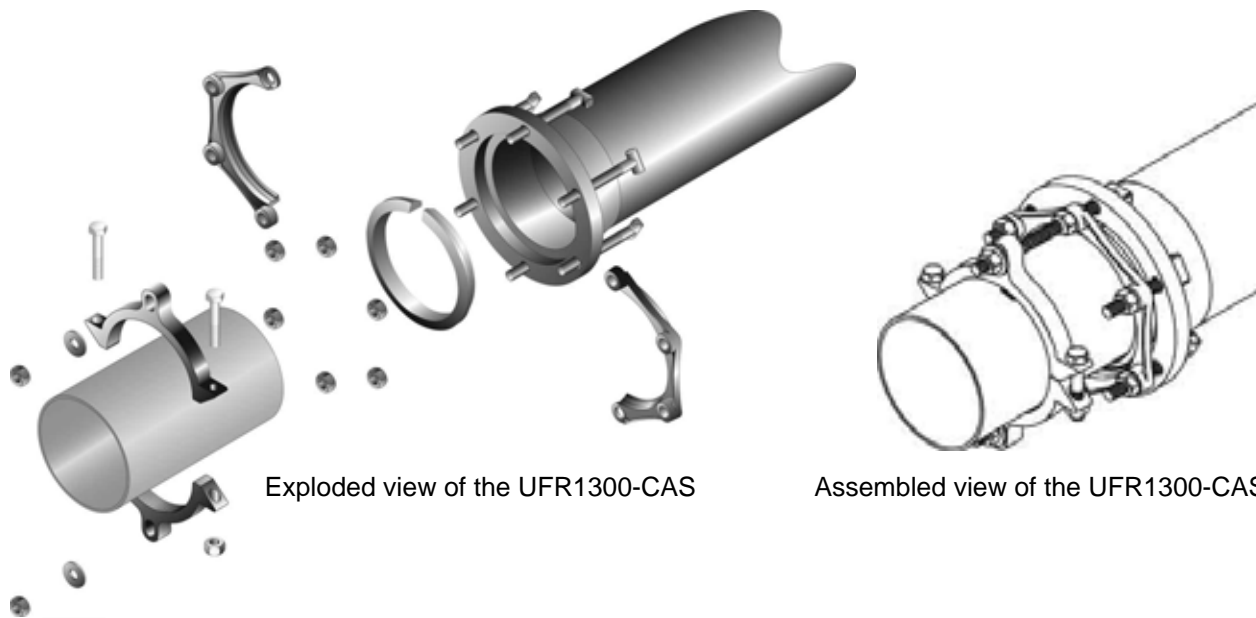
3. Connect the two restrainers using rods provided. Place a washer (these are provided) behind restrainer "ears." Tighten all nuts. **Do not over-tighten retaining nuts.** (Hand tight - then one full turn.)



# Uni-Flange® Series 1300-CAS and 1300-SAS

## Mechanical Joint Repair Kit for Ductile Iron and PVC Pipe

The Uni-Flange® Mechanical Joint Repair Kit is designed to repair an existing mechanical joint installation. The two-piece gland and split gasket provide for easy installation on existing pipe. The Uni-Flange® Mechanical Joint Repair Kit combines the ability to repair a leak while restraining the existing joint.



Exploded view of the UFR1300-CAS

Assembled view of the UFR1300-CAS



### PACKAGE CONTAINS

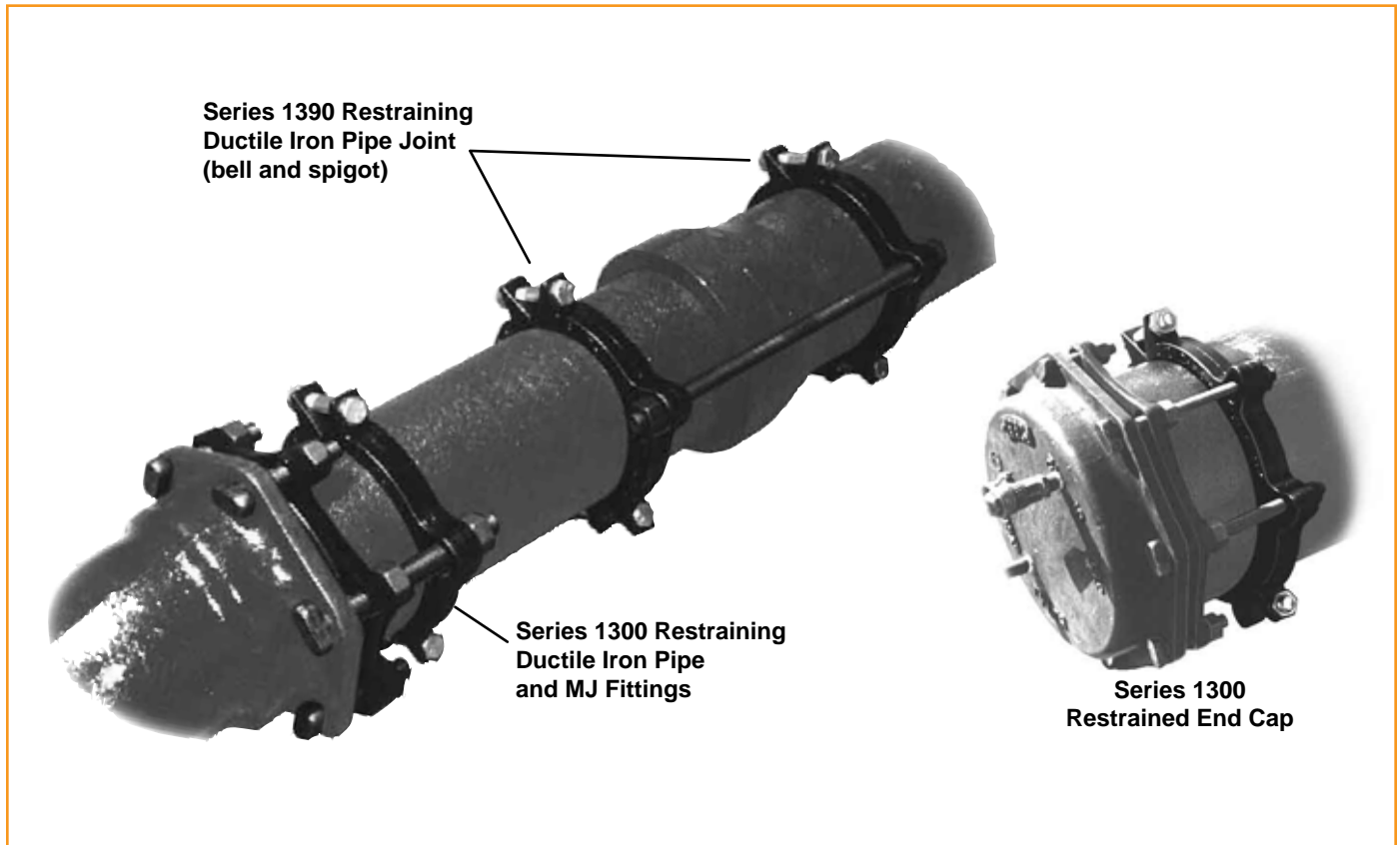
- 1 - Series 1300 Restrainer.
  - 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111).
  - 1 - Split Mechanical Joint Gasket.
  - 1 - Split (Two-Piece) Mechanical Joint Gland.
- The kit is shrink wrapped in a weather resistant carton.*

NOM. PIPE SIZE	PVC PIPE WITH STEEL PIPE O.D.		DUCTILE IRON PIPE O.D.		APPROX. WT. LBS.
	O.D.	CATALOG NUMBER	O.D.	CATALOG NUMBER	
4"	4.50	UFR1300-SAS-4-I	4.80	UFR1300-CAS-4-(IorU)	18.0
6"	6.63	UFR1300-SAS-6-I	6.90	UFR1300-CAS-6-(IorU)	22.0
8"	8.63	UFR1300-SAS-8-I	9.05	UFR1300-CAS-8-(IorU)	28.0
10"	10.75	UFR1300-SAS-10-I	11.10	UFR1300-CAS-10-(IorU)	41.0
12"	12.75	UFR1300-SAS-12-I	13.20	UFR1300-CAS-12-(IorU)	43.0

Note: The UFR1300-CAS and UFA1300-SAS are rated for a 150 PSI hydraulic seal.  
**I = Import Casting    U = Domestic Casting**

# Uni-Flange® Series 1300, 1390 And Casing Spacers For Use On Ductile Iron Pipe

Both the 1300 and 1390 offer full circumferential contact and support of the pipe wall. This is recommended by many pipe manufacturers and is **especially important when thinner walled pipes are used, such as AWWA C-151, Class 50 or the "Pressure Class" Ductile Iron Pipe.** There are no set screws or wedges that may distort / point load the pipe or damage the cement mortar lining. (In fact, the Series 1300 / 1390 combination is very similar to certain "factory restrained joint pipe" with easier installation, faster availability, and a lower overall cost.)



## Pressure Ratings, Ductile Iron Applications

Series 1300-C and 1390-C for Ductile Iron Pipe			
*NOMINAL PIPE SIZE	PIPE STANDARD	TYPE AND SIZE	*PRESSURE RATING (PSI)
4" - 16"	ANSI / A21.51 AWWA C-151	Ductile 4" - 8"	250
		Ductile 10" - 12"	200
		Ductile 14"	150
		Ductile 16"	100

**Note: Not recommended for use on machined end pipe or fittings.**

\* For higher pressure requirements or larger size bell and spigot restraint, see Series 1450. Installation requires maximum torque values stated in installation instructions.

To Order: See 4" - 16" 1300-C, 1390-C and Casing Spacer product listings within this catalog.