

Uni-Flange® Series 1400

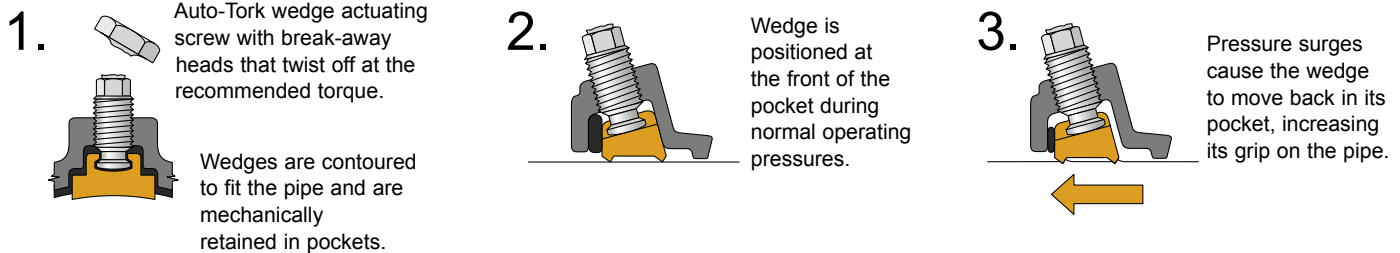
Wedge Action MJ Joint Restraint for Ductile Iron Pipe



◁FM▷Approved

HOW IT WORKS

The Series 1400 is a mechanical joint restraining gland, incorporating individually actuated wedges located around the circumference of the pipe. When the specially designed wedge actuating screws are tightened, the teeth on the bottom of each wedge lock onto the pipe surface. Under normal operating conditions, this is all the restraint that is required. If external forces cause the pipe to move, the wedge teeth remain locked on the pipe and the wedge moves against the actuating screw, enclosed in its ductile iron pocket. This feature allows the joint to prevent separation yet remain resilient and flexible after assembly. In high pressure applications, or when surge pressures occur, the 1400 uses the line pressure to increase its restraining grip on the pipe. If the pressure decreases, the wedge returns to its original position and controlled expansion and flexibility are available again.



ADVANTAGES OF THE SERIES 1400

- **Eliminates** the need of costly and time consuming **concrete thrust blocks**.
- **Auto-Tork wedge actuating screws ensure proper installation.** Auto-Tork screws are designed with a break-away head that twists off at the recommended torque, leaving a hex head in case future maintenance or removal is required. This gives a visual indicator and ensures correct installation every time.
- **Wedges are contoured to fit the pipe.** This provides greater surface area contact, increasing the restraint capability and distributing the restraining force. The Series 1400 can be used on any thickness or class of ductile iron pipe.
- **High Pressure Capabilities.** The Series 1400 is rated at 350 PSI in 3" - 16" nominal sizes, 250 PSI in 18" - 48". Minimum 2:1 safety factor in all sizes. For higher pressure rating applications, see Series 2800.
- **Proven Technology.** The Series 1400 design has decades of successful field service.
- **The Series 1400 Offers 5° deflection** on sizes 3"-12", **3° deflection** on sizes 14"-24" and **1° deflection** on 30" through 48" sizes. This advantage is provided even after installation and pressurization.
- **No special tools necessary.** Designed for use with standard mechanical joint bells conforming to AWWA C111. The same wrench used to tighten the T-bolt nuts can be used on the wedge actuating screws.
- **Wedges are mechanically retained in pockets.** The Series 1400 wedges cannot fall out! All necessary parts show up at the job site and no parts are lost in the trench if the gland is removed from the pipe for system maintenance or relocation.
- **Used with ordinary ductile iron pipe and mechanical joint sockets.** There is no need to order, pay for and wait for special factory fabricated parts. Totally field adaptable; no beveling, special segments or welded rings required.
- **4" - 12" FM approved, and 4" - 48" UL listed.** Contact factory for details.

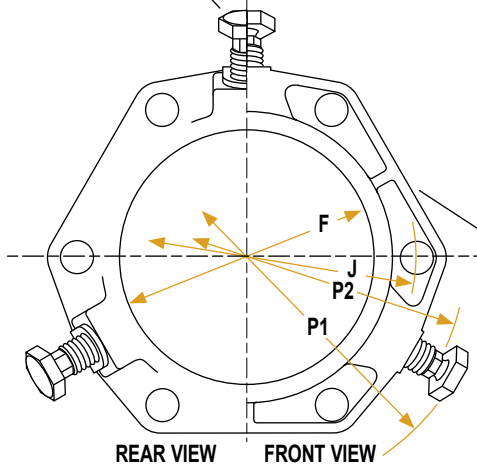


Uni-Flange® Series 1400

Wedge Action MJ Joint Restraint for Ductile Iron Pipe

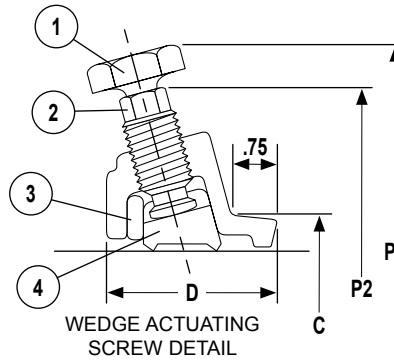
Actuating Screws -

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation



Color Code:

All ductile iron components are black e-coat epoxy



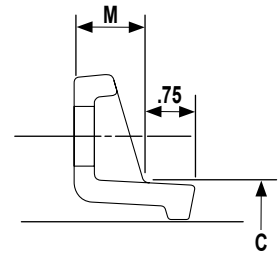
Wedges -

Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge

Gland Body -

High strength ductile iron per ASTM A536, Grade 65-45-12. Compatible with all mechanical joints conforming to ANSI/AWWA C111/A21.11 and fittings conforming to AWWA C110 and C153



GLAND BODY DETAIL

Working Pressure: 3" - 16" = 350 PSI
18" - 48" = 250 PSI

Note: The Series 1400 can be re-used or re-installed after the Auto-Tork screw heads have been twisted off. In this case, use a torque wrench to tighten the hex head of the wedge activating screw to 75 - 110 ft-lb.

Consult the Ford Meter Box website for the most current installation instructions.

Series 1400 MJ Restraint for Ductile Iron Pipe

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	PRESSURE RATING (PSI)	NO. OF WEDGES	APPROX. WEIGHT (LBS.)	P1*	P2**	C	D	F	M	J	NO. OF BOLT HOLES
3"	3.96	UFR1400-D-3-(I or U)	350	2	6.0	11.04"	9.06"	4.84"	2.65"	4.06"	0.68"	6.19"	4
4"	4.80	UFR1400-D-4-(I or U)	350	2	7.5	11.9"	10.0"	5.92"	2.65"	4.90"	0.88"	7.50"	4
6"	6.90	UFR1400-D-6-(I or U)	350	3	11.0	14.0"	12.1"	8.02"	2.65"	7.00"	0.88"	9.50"	6
8"	9.05	UFR1400-D-8-(I or U)	350	4	14.5	16.2"	14.3"	10.17"	2.65"	9.15"	1.10"	11.75"	6
10"	11.10	UFR1400-D-10-(I or U)	350	6	22.0	18.2"	16.3"	12.22"	2.75"	11.20"	1.10"	14.00"	8
12"	13.20	UFR1400-D-12-(I or U)	350	8	28.0	20.3"	18.4"	14.32"	2.75"	13.30"	1.10"	16.25"	8
14"	15.30	UFR1400-D-14-(I or U)	350	10	42.0	22.9"	20.9"	16.40"	3.00"	15.44"	1.50"	18.75"	10
16"	17.40	UFR1400-D-16-(I or U)	350	12	50.0	25.0"	23.0"	18.50"	3.00"	17.54"	1.56"	21.00"	12
18"	19.50	UFR1400-D-18-(I or U)	250	12	67.0	28.1"	25.8"	20.60"	3.05"	19.64"	1.65"	23.25"	12
20"	21.60	UFR1400-D-20-(I or U)	250	14	75.0	30.2"	27.9"	22.70"	3.10"	21.75"	1.70"	25.50"	14
24"	25.80	UFR1400-D-24-(I or U)	250	16	85.0	34.4"	32.1"	26.90"	3.20"	25.94"	1.85"	30.00"	16
30"	32.00	***UFR1400-D-30-(I or U)	250	20	221.0	40.6"	38.6"	33.29"	3.55"	32.17"	2.25"	36.88"	20
36"	38.30	***UFR1400-D-36-(I or U)	250	24	256.0	46.9"	44.9"	39.59"	3.76"	38.47"	2.25"	43.75"	24
42"	44.50	***UFR1400-D-42-(I or U)	250	28	475	53.9"	53.9"	45.79"	5.68"	44.79"	2.56"	50.62"	28
48"	50.80	***UFR1400-D-48-(I or U)	250	32	573	60.2"	60.2"	52.09"	5.68"	51.09"	2.56"	57.50"	32

I = Import Casting U = Domestic Casting

All dimensions in inches unless otherwise stated.

* Maximum O.D. of gland on pipe before break-away heads have been removed (as received).

** Maximum O.D. of gland on pipe after wedges have been activated and break-away heads have been removed.

*** 30" through 48" sizes include a Uni-Seal gasket.

Note: 4" - 12" oversized 1400 restraint glands are available for gray cast iron pipe by adding "-XL" to the end of the catalog number. Contact factory for details.

Note: Not to be used on plain end fittings. For higher pressure ratings, see Series 2800.

Uni-Flange® Series 1400-DA

Wedge Action MJ Joint Restraint for Ductile Iron Pipe with Accessories

The Uni-Flange Series 1400-DA is packaged with an MJ or Uni-Seal gasket and the necessary hardware for installation. Sizes 3" through 12" are shipped shrink wrapped in a weather resistant carton. 14" through 48" sizes are bulk packaged.



PACKAGE CONTAINS

- 1 - Series 1400 wedge action restraint
- 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111)
- 1 - Mechanical joint gasket (AWWA C111) 3" - 24" sizes
(30" through 48" sizes include a Uni-Seal gasket)

Series 1400-DA Restraint for Ductile Iron Pipe with Accessories

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF WEDGES	PRESSURE RATING (PSI)	APPROX. WEIGHT (LBS.)
3"	3.96	UFR1400-DA-3-(I or U)	2	350	8.0
4"	4.80	UFR1400-DA-4-(I or U)	2	350	10.5
6"	6.90	UFR1400-DA-6-(I or U)	3	350	15.5
8"	9.05	UFR1400-DA-8-(I or U)	4	350	19.8
10"	11.10	UFR1400-DA-10-(I or U)	6	350	29.5
12"	13.20	UFR1400-DA-12-(I or U)	8	350	35.0
14"	15.30	UFR1400-DA-14-(I or U)	10	350	52.0
16"	17.40	UFR1400-DA-16-(I or U)	12	350	62.0
18"	19.50	UFR1400-DA-18-(I or U)	12	250	79.0
20"	21.60	UFR1400-DA-20-(I or U)	14	250	88.0
24"	25.80	UFR1400-DA-24-(I or U)	16	250	101.0
30"	32.00	UFR1400-DA-30-(I or U)	20	250	262.0
36"	38.30	UFR1400-DA-36-(I or U)	24	250	306.0
42"	44.50	UFR1400-DA-42-(I or U)	28	250	575.0
48"	50.80	UFR1400-DA-48-(I or U)	32	250	690.0

I = Import Casting U = Domestic Casting

Note: Not to be used on plain end fittings.

Sample Specification – Series 1400

Restraint for standardized mechanical joints shall be incorporated in the design of the follower gland and shall impart multiple points of wedge action against the pipe, increasing its resistance as the pressure increases. The assembled joint shall maintain its flexibility after burial and shall maintain its integrity by a controlled and limited expansion of each joint during the wedging action. Restraining glands shall be manufactured of high strength ductile iron, conforming to the requirements of ASTM A536. Wedges shall be contoured to properly fit on the pipe and shall be manufactured of ductile iron, heat-treated to a minimum hardness of 370 BHN. Dimensions of the glands shall be such that they can be used with the standardized mechanical joint bell and tee head bolts conforming to the requirements of ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off heads shall be incorporated in the design of the wedge actuating screws to ensure proper torque. All ductile iron components shall be phosphate washed and coated with an electrostatically applied, heat cured epoxy coating. The restraining device shall have a water working pressure rating of 350 PSI in sizes 3" through 16" and 250 PSI in sizes 18" and larger with a safety factor of at least 2:1 against separation when tested in a dead-end situation. Restraint shall be Uni-Flange Series 1400 or approved equal.

Uni-Flange® Series 1400-ZA

Wedge Action MJ Joint Restraint for Ductile Iron Pipe with Accessories

The Uni-Flange Series 1400-ZA is packaged with a SO-EZ gasket and the necessary hardware for installation. Sizes 3" through 12" are shrink wrapped in a weather resistant carton.



PACKAGE CONTAINS

- 1 - Series 1400 wedge action restraint
- 1 - Set of high strength, low alloy T-bolts & nuts (AWWA C111)
- 1 - SO-EZ gasket 3" - 12" sizes (AWWA C111)

Series 1400-ZA Restraint for Ductile Iron Pipe with Accessories

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	NO. OF WEDGES	PRESSURE RATING (PSI)	APPROX. WEIGHT (LBS.)
3"	3.96	UFR1400-ZA-3-(I or U)	2	350	8.0
4"	4.80	UFR1400-ZA-4-(I or U)	2	350	10.5
6"	6.90	UFR1400-ZA-6-(I or U)	3	350	15.5
8"	9.05	UFR1400-ZA-8-(I or U)	4	350	19.8
10"	11.10	UFR1400-ZA-10-(I or U)	6	350	29.5
12"	13.20	UFR1400-ZA-12-(I or U)	8	350	35.0

I = Import Casting U = Domestic Casting

Note: Not to be used on plain end fittings.

Sample Specification – Series 1400

Restraint for standardized mechanical joints shall be incorporated in the design of the follower gland and shall impart multiple points of wedge action against the pipe, increasing its resistance as the pressure increases. The assembled joint shall maintain its flexibility after burial and shall maintain its integrity by a controlled and limited expansion of each joint during the wedging action. Restraining glands shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536. Wedges shall be contoured to properly fit on the pipe and shall be manufactured of ductile iron, heat-treated to a minimum hardness of 370 BHN. Dimensions of the glands shall be such that they can be used with the standardized mechanical joint bell and tee head bolts conforming to the requirements of ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off heads shall be incorporated in the design of the wedge actuating screws to ensure proper torque. All ductile iron components shall be phosphate washed and coated with an electrostatically applied, heat cured epoxy coating. The restraining device shall have a water working pressure rating of 350 PSI in sizes 3" through 12" with a safety factor of at least 2:1 against separation when tested in a dead-end situation. Restraint shall be Uni-Flange Series 1400 or approved equal.

Uni-Flange® Series 1405

Split Wedge Action MJ Joint Restraint for Ductile Iron with Accessories

The UFR1405 is a split mechanical joint restraint for ductile iron. The restraint comes with a set of tee-bolts and mechanical joint or Uni-Seal gasket.

Working Pressure: 3" - 12" = 350 PSI
14" - 16" = 300 PSI
18" - 36" = 200 PSI

Safety Factor: 2:1 safety factor at rated working pressure

Actuating Screws -

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation

Connector Plates/Rings -

High strength ductile iron per ASTM A536, Grade 65-45-12
3" - 8" uses connector ring
10" - 36" uses connector plate

Heavy Hex Nuts -

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

Split Gland Body -

High strength ductile iron per ASTM A536, Grade 65-45-12. Compatible with all mechanical joints conforming to ANSI/AWWA C111/A21.11 and fittings conforming to AWWA C110 and C153

Tee Bolts -

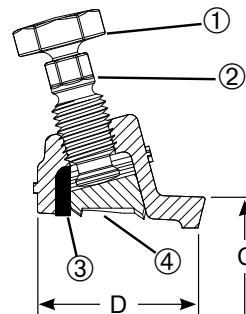
High strength low alloy steel per ASTM A242 and ANSI/AWWA C111



Wedges -

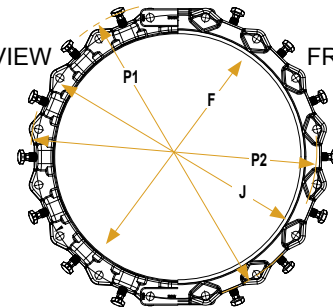
Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge



REAR VIEW

FRONT VIEW



Color Code -

All ductile iron components are black e-coat epoxy

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	PRESSURE RATING (PSI)	NO. OF WEDGES	APPROX. WT. LBS.	P1*	P2**	C	D	F	J	NO. OF BOLT HOLES
3"	3.96	UFR1405-DA-3-(I)	350	2	6.0	11.0"	9.1"	4.84"	2.65"	4.06"	6.19"	4
4"	4.80	UFR1405-DA-4-(I)	350	2	7.5	11.9"	10.0"	5.92"	2.65"	4.90"	7.50"	4
6"	6.90	UFR1405-DA-6-(I)	350	3	11.0	14.0"	12.1"	8.02"	2.65"	7.00"	9.50"	6
8"	9.05	UFR1405-DA-8-(I)	350	4	14.5	16.2"	14.0"	10.17"	2.65"	9.15"	11.75"	6
10"	11.10	UFR1405-DA-10-(I)	350	4	23.0	18.2"	16.3"	12.22"	2.75"	11.20"	14.00"	8
12"	13.20	UFR1405-DA-12-(I)	350	6	28.5	20.3"	18.4"	14.32"	2.75"	13.30"	16.25"	8
14"	15.30	UFR1405-DA-14-(I or U)	300	8	53.0	22.9"	20.9"	16.40"	3.00"	15.44"	18.75"	10
16"	17.40	UFR1405-DA-16-(I or U)	300	10	59.6	25.0"	23.0"	18.50"	3.00"	17.54"	21.00"	12
18"	19.50	UFR1405-DA-18-(I or U)	200	10	74.2	28.1"	25.8"	20.60"	3.05"	19.64"	23.25"	12
20"	21.60	UFR1405-DA-20-(I or U)	200	12	78.4	30.2"	27.9"	22.70"	3.10"	21.75"	25.50"	14
24"	25.80	UFR1405-DA-24-(I or U)	200	14	101.0	34.4"	32.1"	26.90"	3.20"	25.94"	30.00"	16
30"	32.00	UFR1405-DA-30-(I or U)	200	18	181.0	40.6"	38.6"	33.29"	3.55"	32.17"	36.88"	20
36"	38.30	UFR1405-DA-36-(I or U)	200	22	325.0	46.9"	44.9"	39.59"	3.76"	38.47"	43.75"	24

* Maximum O.D. of gland on pipe before break-away heads have been removed (as received).

** Maximum O.D. of gland on pipe after wedges have been activated and break-away heads have been removed.

Sizes 3" - 24" include a mechanical joint gasket. Sizes 30" and 36" include an Uni-Seal gasket.

Note: The Series UFR1405 can be reused or reinstalled after the Auto-Tork screw heads have been twisted off.

In this case, tighten the hex head of the wedge actuating screw to 75 - 110 ft. lb. A torque wrench is required to ensure proper torque.

Note: 4" - 12" oversized split restraints are available for gray cast iron pipe by adding "-XL" to the end of the catalog number.

Contact factory for details.

I = Import Casting U = Domestic Casting



Uni-Flange® Series 1450

Wedge Action Restraint Harness for Push-on Joints of Ductile Iron Pipe (New Installations Only)

The UFR1450 consists of a UFR1400 restraint installed on the pipe spigot, connected with high strength steel rods to a solid backup ring that seats behind the pipe bell. It offers the following advantages:

- Fast, economical restraint of push-on pipe bells. There is no need for special (and expensive) “factory restrained joint” pipe.
- Recommended for any thickness class or pressure class of ductile iron pipe. The contoured wedges of the 1400 component fit the pipe properly and spread the restraining force around the circumference of the pipe to maximize performance. There is no point loading of the pipe.

Working Pressure: 3" - 16" = 350 PSI
18" - 48" = 250 PSI

Safety Factor: 2:1 safety factor at rated working pressure

Restraint -

High strength ductile iron per ASTM A536, Grade 65-45-12. Compatible with all pipe bell joints conforming to ANSI/AWWA C111/A21.11

Color Code:

All ductile iron components are black e-coat epoxy

Actuating Screws-

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation

Heavy Hex Nuts-

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

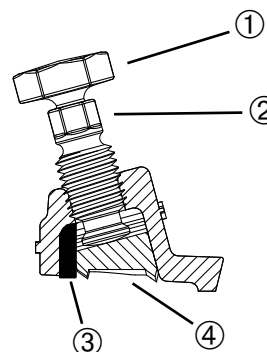
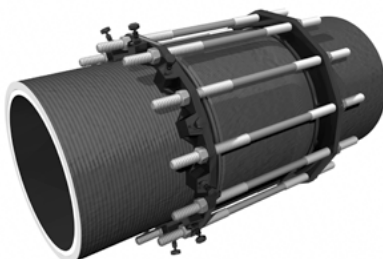
Threaded Rods-

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

Solid Back-Up Ring-

Ductile iron per ASTM A536, Grade 65-45-12 or carbon steel per ASTM A36

Series 1450 Installed



Wedges -

Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge

Uni-Flange® Series 1450

Wedge Action Restraint Harness for Push-on Joints of Ductile Iron Pipe (New Installations Only)

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	PRESSURE RATING (PSI)	No. OF RODS	ROD LENGTH	ROD DIAMETER	**MAX. BELL DIAMETER	APPROX. WEIGHT (LBS)
3"	3.96	UFR1450-D-3-(I or U)	350	4	14"	5/8"	5.50	12.0
4"	4.80	UFR1450-D-4-(I or U)	350	4	17"	3/4"	6.62	19.5
6"	6.90	UFR1450-D-6-(I or U)	350	6	17"	3/4"	8.62	29.0
8"	9.05	UFR1450-D-8-(I or U)	350	6	17"	3/4"	10.88	34.5
10"	11.10	UFR1450-D-10-(I or U)	350	8	24"	3/4"	13.12	56.0
12"	13.20	UFR1450-D-12-(I or U)	350	8	24"	3/4"	15.38	62.0
14"	15.30	UFR1450-D-14-(I or U)	350	10	24"	3/4"	17.88	87.0
16"	17.40	UFR1450-D-16-(I or U)	350	12	24"	3/4"	20.12	107.0
18"	19.50	UFR1450-D-18-(I or U)	250	12	24"	3/4"	22.38	122.0
20"	21.60	UFR1450-D-20-(I or U)	250	14	24"	3/4"	24.62	140.0
24"	25.80	UFR1450-D-24-(I or U)	250	16	24"	3/4"	29.12	159.0
30"	32.00	* UFR1450-D-30-(I or U)	250	10	24"	1"	35.80	362.0
36"	38.30	* UFR1450-D-36-(I or U)	250	12	24"	1"	42.60	430.0
42"	44.50	UFR1450-D-42-(I or U)	250	28	52"	1-1/4"	49-1/4"	1350
48"	50.80	UFR1450-D-48-(I or U)	250	32	52"	1-1/4"	56-1/8"	1570

I = Import Casting U = Domestic Casting

All dimensions in inches unless otherwise stated.

* Backup ring is steel for 30" and 36".

** NOTE: Connecting rods **WILL NOT CLEAR** a pipe bell with a maximum diameter larger than the listed measurement. These maximum diameters do not include joint deflection. Confirm pipe bell diameter before ordering.

Sample Specification - Series 1450

Restraint harness for push-on bells of ductile iron pipe shall consist of a wedge action restraint installed on the pipe spigot, connected to a ductile iron or steel backup ring installed behind the pipe bell. The wedge action restraint shall be manufactured of high strength ductile iron per ASTM A536, Grade 65-45-12. Wedges shall be heat treated to a minimum BHN 370 and shall be contoured to properly fit the pipe. The heads of the wedge actuating screws shall twist off at the recommended torque, ensuring correct installation. Connecting rods and nuts shall be of high strength, low alloy material meeting ANSI / AWWA C111 / A21.11 or high strength steel per ASTM A193, grade B7 standard. The backup ring shall be of ductile iron per ASTM A536, Grade 65-45-12 or carbon steel per ASTM A36. Restraint harnesses for push-on joints of ductile iron pipe shall carry a water working pressure rating of 350 PSI in 3" through 16" sizes, 250 PSI in 14" through 48" sizes, and shall be Uni-Flange Series 1450 or approved equal.

Uni-Flange® Series 1455

Wedge Action Joint Restraint Harness with Split Back-up Ring for Ductile Iron Pipe

The UFR1455 consists of a split UFR1400 restraint connected with high strength steel rods to a split back-up ring that seats behind the pipe bell.

Working Pressure:

3" - 12" =	350 psi
14" - 16" =	300 psi
18" - 36" =	200 psi

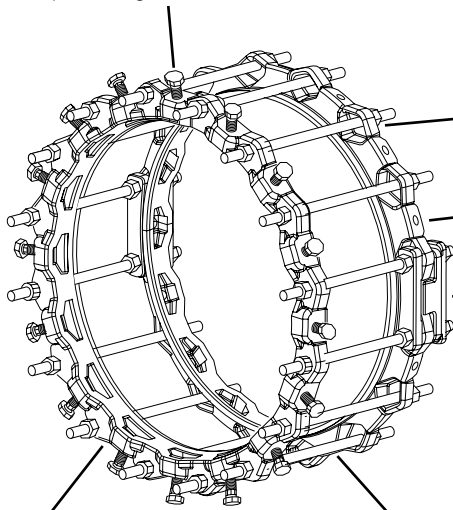
Safety Factor: 2:1 safety factor at rated working pressure

Actuating Screws -

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation

Color Code:

All ductile iron components are black e-coat epoxy



Heavy Hex Nuts -

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

Split Back-Up Ring -

Ductile iron per ASTM A536, Grade 65-45-12
ANSI/AWWA C111/A21.11 (assembled on bell end)

Connector Plates/Rings -

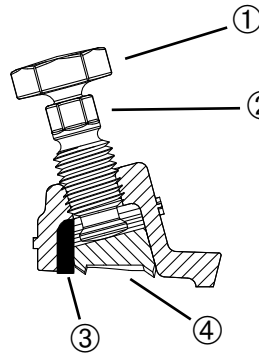
High strength ductile iron per ASTM A536, Grade 65-45-12
3" - 8" uses connector ring
10" - 36" uses connector plate

Restraint -

High strength ductile iron per ASTM A536, Grade 65-45-12.
Compatible with all pipe bell joints conforming to ANSI/AWWA C111/A21.11

Threaded Rods -

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



Wedges -

Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge

NOM. PIPE SIZE	PIPE O.D. (IN.)	CATALOG NUMBER	RODS			PRESSURE RATING (PSI)	*MAX. BELL DIAMETER	APPROX. WT. LBS.
			No.	LENGTH	DIA.			
3"	3.96	UFR1455-D-3-(I)	4	14"	5/8"	350	5.50"	12.0
4"	4.80	UFR1455-D-4-(I)	4	17"	3/4"	350	6.62"	20.0
6"	6.90	UFR1455-D-6-(I)	6	17"	3/4"	350	8.62"	29.0
8"	9.05	UFR1455-D-8-(I)	6	17"	3/4"	350	10.88"	35.0
10"	11.10	UFR1455-D-10-(I)	8	24"	3/4"	350	13.12"	56.0
12"	13.20	UFR1455-D-12-(I)	8	24"	3/4"	350	15.38"	62.0
14"	15.30	UFR1455-D-14-(I or U)	10	24"	3/4"	300	17.88"	120.3
16"	17.40	UFR1455-D-16-(I or U)	12	24"	3/4"	300	20.12"	134.4
18"	19.50	UFR1455-D-18-(I or U)	12	24"	3/4"	200	22.38"	158.3
20"	21.60	UFR1455-D-20-(I or U)	14	24"	3/4"	200	24.62"	178.7
24"	25.80	UFR1455-D-24-(I or U)	16	24"	3/4"	200	29.12"	218.8
30"	32.00	UFR1455-D-30-(I or U)	20	24"	1"	200	35.80"	455.0
36"	38.30	UFR1455-D-36-(I or U)	24	24"	1"	200	42.60"	564.6

* Note: Connecting rods **WILL NOT CLEAR** a pipe bell with a maximum diameter larger than the listed measurement. These maximum diameters do not include joint deflection. Confirm pipe bell diameter before ordering.

Note: The Series UFR1455 can be reused or reinstalled after the Auto-Tork screw heads have been twisted off.

In this case, tighten the hex head of the wedge actuating screw to 75 - 110 ft. lb. A torque wrench is required to ensure proper torque.

I = Import Casting U = Domestic Casting



Uni-Flange® Series 1490

Wedge Action Split Joint Restraint and Split Back-up Ring for Ductile Iron Pipe

The UFR1490 consists of a split UFR1400 restraint connected with high strength steel rods to a split back-up ring that seats behind the pipe bell.

Working Pressure: 3" - 12" = 350 PSI
14" - 16" = 300 PSI
18" - 36" = 200 PSI

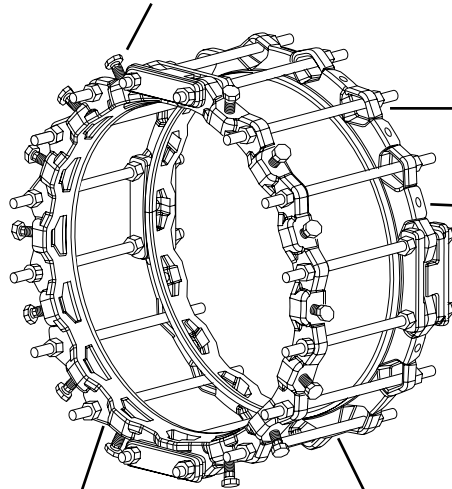
Safety Factor: 2:1 safety factor at rated working pressure

Actuating Screws -

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation

Color Code:

All ductile iron components are black e-coat epoxy



Heavy Hex Nuts -

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

Split Back-Up Ring -

Ductile iron per ASTM A536, Grade 65-45-12
ANSI/AWWA C111/A21.11 (assembled on bell end)

Connector Plates/Rings -

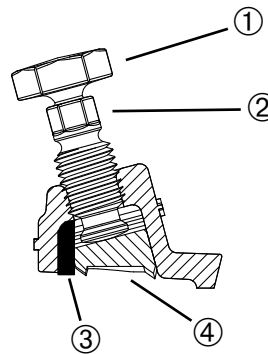
High strength ductile iron per ASTM A536, Grade 65-45-12
3" - 8" uses connector ring
10" - 36" uses connector plate

Split Restraint -

High strength ductile iron per ASTM A536, Grade 65-45-12.
Compatible with all pipe bell joints conforming to ANSI/AWWA C111/A21.11

Threaded Rods -

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



Wedges -

Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge

NOM. PIPE SIZE	PIPE O.D. (In.)	CATALOG NUMBER	RODS			PRESSURE RATING (PSI)	*MAX. BELL DIAMETER	APPROX. Wt. LBS.
			No.	LENGTH	DIA.			
3"	3.96	UFR1490-D-3-(I)	4	14"	5/8"	350	5.50"	12.0
4"	4.80	UFR1490-D-4-(I)	4	17"	3/4"	350	6.62"	20.0
6"	6.90	UFR1490-D-6-(I)	6	17"	3/4"	350	8.62"	29.0
8"	9.05	UFR1490-D-8-(I)	6	17"	3/4"	350	10.88"	35.0
10"	11.10	UFR1490-D-10-(I)	8	24"	3/4"	350	13.12"	56.0
12"	13.20	UFR1490-D-12-(I)	8	24"	3/4"	350	15.38"	62.0
14"	15.30	UFR1490-D-14-(I or U)	10	24"	3/4"	300	17.88"	117.4
16"	17.40	UFR1490-D-16-(I or U)	12	24"	3/4"	300	20.12"	135.0
18"	19.50	UFR1490-D-18-(I or U)	12	24"	3/4"	200	22.38"	151.6
20"	21.60	UFR1490-D-20-(I or U)	14	24"	3/4"	200	24.62"	169.6
24"	25.80	UFR1490-D-24-(I or U)	16	24"	3/4"	200	29.12"	187.8
30"	32.00	UFR1490-D-30-(I or U)	20	24"	1"	200	35.80"	481.0
36"	38.30	UFR1490-D-36-(I or U)	24	24"	1"	200	42.60"	603.0

* Note: Connecting rods **WILL NOT CLEAR** a pipe bell with a maximum diameter larger than the listed measurement. These maximum diameters do not include joint deflection. Confirm pipe bell diameter before ordering.

Note: The Series UFR1490 can be reused or reinstalled after the Auto-Tork screw heads have been twisted off.

In this case, tighten the hex head of the wedge actuating screw to 75 - 110 ft. lb. A torque wrench is required to ensure proper torque.

I = Import Casting U = Domestic Casting



Uni-Flange® Series 1495

Wedge Action Mid-Span Split Restraint for Ductile Iron Pipe

The UFR1495 is a split restraint suitable for stand-alone installation on the mid-span of ductile iron pipe.

Working Pressure: 3" - 12" = 350 PSI
14" - 16" = 300 PSI
18" - 36" = 200 PSI

Safety Factor: 2:1 safety factor at rated working pressure

Color Code:

All ductile iron components are black e-coat epoxy

Actuating Screws -

Ductile iron wedge actuating screw, with the Auto-Tork break-away head design, ensures proper torque during installation

Heavy Hex Nuts -

High strength, low alloy steel per ASTM A242, ANSI/AWWA C111/A21.11

Connector Plates/Rings -

High strength ductile iron per ASTM A536, Grade 65-45-12
3" - 8" uses connector ring
10" - 36" uses connector plate

Split Restraint -

High strength ductile iron per ASTM A536, Grade 65-45-12. Compatible with all pipe bell joints conforming to ANSI/AWWA C111/A21.11

Tee Bolts -

High strength low alloy steel per ASTM A242 and ANSI/AWWA C111

Wedges -

Ductile iron wedges are heat-treated to a hardness of 370 BHN minimum

1. Auto-Tork break-away head, 1-1/4" across the flat (same as 3/4" heavy hex nut)
2. 5/8" hex head, operating screw
3. Rubber spacer (positions wedge during assembly)
4. Wedge

NOM. PIPE SIZE	PRESSURE RATING (PSI)	CATALOG NUMBER	*MAX. BELL DIAMETER	APPROX. WT. LBS.
3"	350	UFR1495-D-3-(I)	5.50"	7.0
4"	350	UFR1495-D-4-(I)	6.62"	8.5
6"	350	UFR1495-D-6-(I)	8.62"	12.0
8"	350	UFR1495-D-8-(I)	10.88"	15.5
10"	350	UFR1495-D-10-(I)	13.12"	41.0
12"	350	UFR1495-D-12-(I)	15.38"	50.0
14"	300	UFR1495-D-14-(I or U)	17.88"	57.0
16"	300	UFR1495-D-16-(I or U)	20.12"	63.6
18"	200	UFR1495-D-18-(I or U)	22.38"	78.2
20"	200	UFR1495-D-20-(I or U)	24.62"	89.0
24"	200	UFR1495-D-24-(I or U)	29.12"	105.0
30"	200	UFR1495-D-30-(I or U)	35.80"	185.0
36"	200	UFR1495-D-36-(I or U)	42.60"	329.0

I = Import Casting U = Domestic Casting

* Note: Connecting rods **WILL NOT CLEAR** a pipe bell with a maximum diameter larger than the listed measurement. These maximum diameters do not include joint deflection. Confirm pipe bell diameter before ordering.