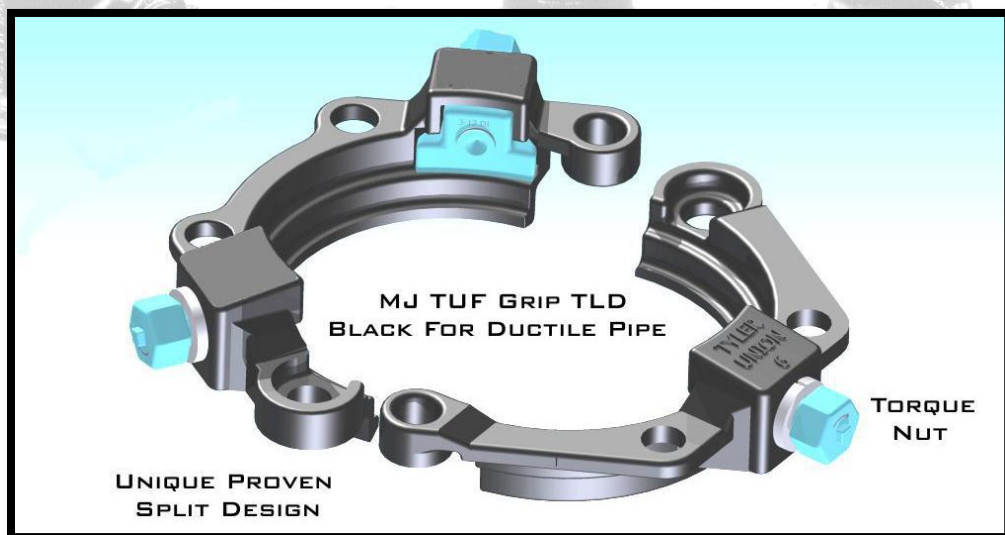


TUFGRIP[™]

SERIES 1000S - MJ TLD SPLIT FOR DUCTILE PIPE

"A PROVEN THIRD GENERATION MECHANICAL JOINT RESTRAINT"



"BETTER BY DESIGN"

SPECIFICATIONS:

- Designed and proven to restrain plain end ductile iron pipe conforming to ANSI/AWWA C151/A21.51 in diameters 4" thru 12"
- Restraint design conforms with applicable requirements of ANSI/AWWA C111, ANSI/AWWA C153, and ANSI/AWWA C110
- Restraint engineered for securing plain end pipe to mechanical joint fittings conforming to ANSI/AWWA C110, C111, and C153
- Rated restraint rated for working water pressure of 350 psi for 4" thru 12" restraints
- Cast of ASTM A536 compliant 65-45-12 ductile iron complete with a cast on date code and country of origin for traceability
- Restraints and all components are designed and proven for a 2:1 safety factor based on the pipe pressure rating
- Deflection rating when installed on AWWA C151 pipe with nominal diameter shall be 3° for 4" thru 12" restraints
- Standard coating for Non-Domestic restraint is 4-6 mil of *Alkyd resin baking enamel - ***Note: Epoxy coatings available upon request**
- Gripping wedges are heat treated to a minimum 420 Brinell Hardness
- Gripping wedge, wedge collar bolt, and twist off torque limiting nut shall be e-coated
- Not recommended for use on plain end fittings
- Color coded black for pipe type (ductile pipe/*cast iron pipe) - ***Note: Refer to page 2 for cast iron pipe application**

FEATURES & ADVANTAGES:

- Torque limiting nut on gripping wedge assembly twists off within a designed torque range eliminating the need for specialized tools
- Gripping wedge assembly pivots providing stronger engagement of pipe wall at lower torque requirement (45-60 ft.-lbs.)
- Proven restraint technology utilizing fewer gripping wedges in frequently applied diameters, reducing trench time and project cost
- Restraint's heavy duty construction and design eliminates the need for costly thrust blocks and tie rods
- Suitable for Potable and Wastewater applications

ISO 9001-2008 Registered

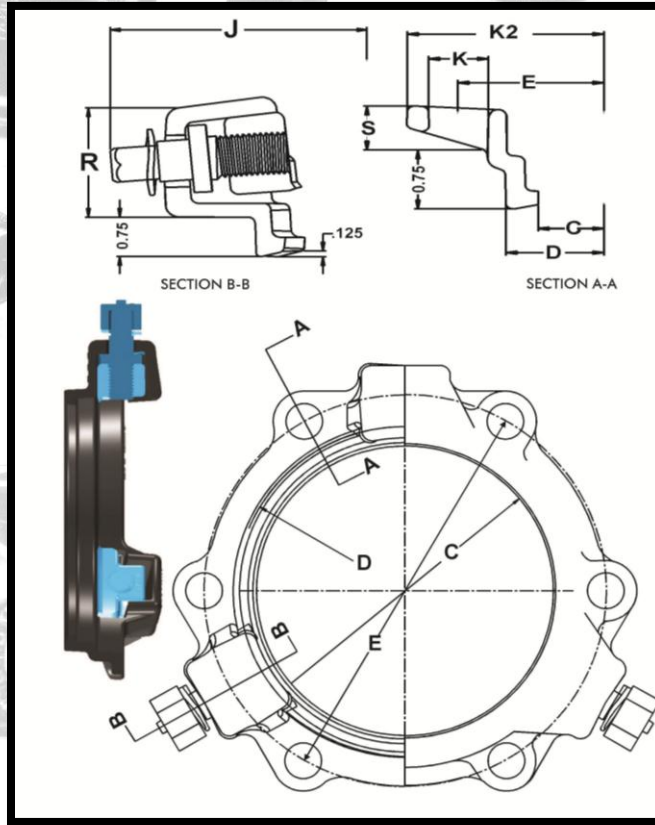
Product Source/Type	Name of Project	Name of Contractor	Project Engineer	Spec. Section and/or Project No.

Tyler Union Waterworks Contact Information

Tyler: 11910 CR 492 • Tyler, Texas 75706 • (800) 527-8478
Anniston: 1501 W 17th St. • Anniston, AL 36201 • (800) 226-7601
Corona: 1001 El Camino Ave. • Corona, CA 92879 • (866) 527-8471

TUFGrip™

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Size (inches)	C	D	E	K2	J	K	R	S
4	4.93	5.92	7.50	8.98	10.67	7/8	2.20	0.73
6	7.03	8.02	9.50	10.98	12.77	7/8	2.24	0.82
8	9.18	10.17	11.75	13.23	14.92	7/8	2.28	0.82
10	11.23	12.22	14.00	15.70	16.97	7/8	2.37	0.93
12	13.33	14.32	16.25	17.95	19.07	7/8	2.40	0.93

SERIES 1000 TLD-DUCTILE MJ TUF Grip™ - APPLICATION CHART

Size (Inches)	Part # Domestic / Non-Domestic	Gland+Accessories	Wedge Qty.	T-Head Bolt Qty.	Bolt Size	Gland Weight(lbs.)	Weight (w/Acc.)	Pressure Rating	Pipe O.D.
4	N/A / 495918	/	2	4	3/4" x 3.5"	7.1	11.8	350	4.80
6	N/A / 495925	/	3	6	3/4" x 4"	11.2	18.8	350	6.90
8	N/A / 495932	/	3	6	3/4" x 4"	13.1	20.3	350	9.05
10	N/A / 495949	/	6	8	3/4" x 4"	26.0	32.5	350	11.10
12	N/A / 495956	/	8	8	3/4" x 4"	31.5	40.4	350	13.20

ISO 9001-2008 Registered

STOP-LOOK :

- The Series 1000S TUF Grip is specified for use on ductile iron pipe but can be used on some sizes of cast grey iron or pit cast pipe as provided (pipe not severely corroded, in sound condition, and with an outside diameter compatible with restraint "C" dimension)
- Installation and hydrostatic testing shall be in accordance with AWWA C600 and AWWA C651

Tyler Union Waterworks Contact Information

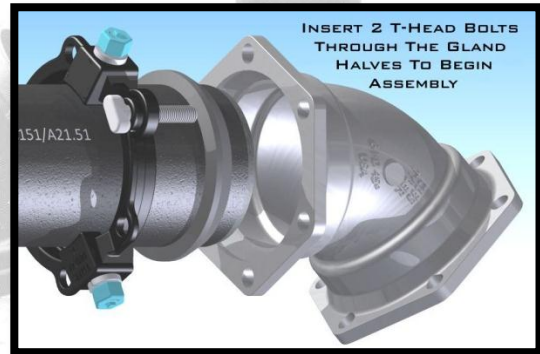
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ASSEMBLY STEPS – SERIES 1000S TLD SPLIT – FOR DUCTILE IRON PIPE

Steps: 1 and 2



Step: 3 and 4

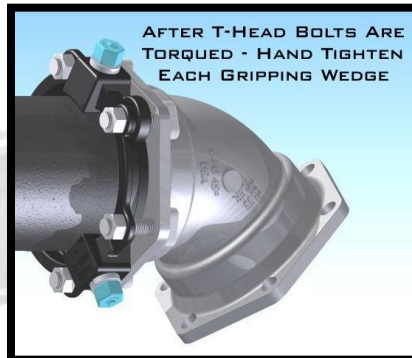


1. Insure the beveled pipe end to be joined and mechanical joint socket are clean and free of debris.
2. Lubricate the pipe end and exterior plus the inside surface of gasket with joint lubricant that meets the requirements of AWWA C111. Now place the MJ gasket over the plain beveled end of the pipe with the narrow edge of the tapered gasket toward the beveled end of the pipe to be restrained.
3. Fully insert the pipe end into the MJ socket pipe landing. Keeping the pipe straight, slide/push the gasket firmly and evenly into the MJ socket recess.
4. Place the two halves of the black TUF Grip around the pipe with the compression lip extension toward the MJ socket. Join the two restraint halves together with two T-Head bolts. Use only T-Head bolts, gaskets, and nuts that meet AWWA C111 requirements.

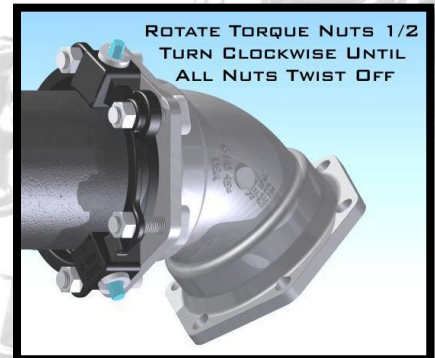
Step: 5



Steps: 6 and 7



Steps: 8 and 9



5. With the two T-Head bolts inserted through the restraint, push the TUF Grip lip extension evenly against the thick side of the MJ gasket. With the TUF Grip restraint against the gasket, the remaining T-Head bolts are inserted with the T-Head against the back of the MJ fitting bolt flange. Install two additional T-Head bolts with nuts and hand tighten to secure the restraint to the fitting.
6. With the restraint secured to the fitting, remove the original assembly T-Head bolts and reinsert with the T-Head against the back of the MJ fitting bolt flange. Making sure the TUF Grip is centered around the pipe's wall, hand tighten all remaining T-Head bolts and nuts. If joint deflection is needed, only deflect the pipe in the joint after hand tightening of all nuts is completed. Maximum joint deflection is 3° when pipe and fitting dimensions are nominal.
7. Using a wrench, tighten the nuts on the T-Head bolts a few turns at a time in an alternating or star pattern. Maintain equal spacing between the TUF Grip bolt flange and the bolt flange of the MJ socket as the gasket is compressed. The T-Head bolt and nut torque requirement is 75-90 ft.-lbs. for 4" thru 12" restraints. **DO NOT OVER-TORQUE!**
8. Hand-tighten the torque limiting nut attached to the TUF Grip wedge assemblies in a clockwise direction with an alternating or star pattern until all gripping wedges are in contact with the pipe wall. Rotational direction of torque limiting nut is indicated by recessed arrow on the face of the nut. With a wrench, continue to tighten each torque nut ½ turn in an alternating or star pattern until all torque limiting nuts twist off. **NEVER** turn a torque limiting nut more than ½ turn without turning the remaining torque nuts an equal amount!
9. When all torque limiting nuts twist off, the assembly of the mechanical joint restraint is complete.

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