

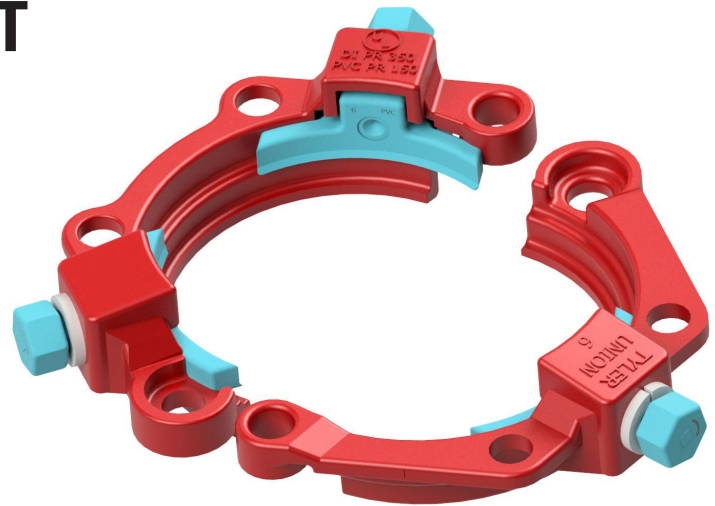
MJ TUFGRIP® TLP SPLIT

SERIES 2000S

FOR PVC PIPE

A Proven Third-Generation Mechanical Joint Restraint

Tyler Union's TUFGrip® restraint represents the culmination of 20 years of engineering and testing. As a third-generation restraint, TUFGrip is the best available technology in the waterworks market for use in restraining PVC, ductile and HDPE pipe.



FEATURES & ADVANTAGES

- Unique Split design assembles using standard T-bolts and without additional accessories in sizes 6"–12".
- 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-lb).
- Proven restraint technology utilizing fewer gripping wedges in frequently applied diameters, reducing trench time and project cost.
- There is no washer or spacer to remove when installing restraints on 4"–12" ASTM D2241 PVC pipe with IPS outside diameter.
- Restraint's heavy duty construction and design eliminates the need for costly thrust blocks and tie rods.
- Suitable for potable and wastewater applications.
- Approved for use on multiple classes of pipe — **Additional pressure ratings and associated pipe classes provided on the next page.**

SPECIFICATIONS

- Proven to restrain plain end PVC pipe in diameters 4"–12".
- Restraint design conforms to 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.
- Restraint rated for working water pressure of 305 psi for 4"–12" restraints **(details on next page).**
- Cast of ASTM A536 compliant 65-45-12 ductile iron complete with 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 PVC pipe pressure rating.
- Restraint deflection rating when installed on nominal diameter pipe: 3° max for 4"–12".
- Standard coating for Non-Domestic restraint is 4–6 mil of TUF-Bond™ (thermoset polyester for impact, corrosion and UV protection).
- Gripping wedge, wedge collar bolt and twist off torque limiting nut shall be e-coated.
- Restraint body color coded red for pipe type (AWWA C900 PVC and ASTM D2241).

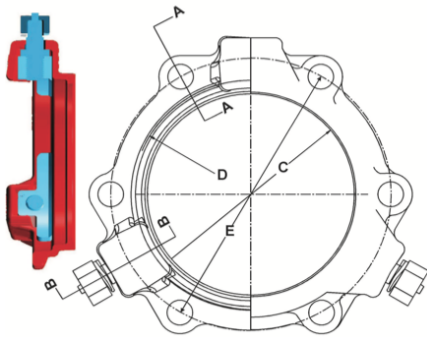
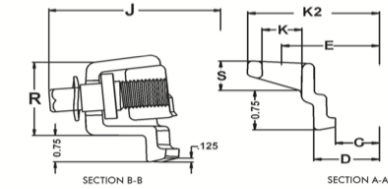
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| Product Source/Type | Name of Project | Name of Contractor | Project Engineer | Spec. Section and/or Project No. |
|---------------------|-----------------|--------------------|------------------|----------------------------------|
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| MJ TUFGRIP® TLP SPLIT DIMENSIONS | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-----|------|------|
| Size (In.) | 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 2000S TLP-PVC MJ TUFGRIP® — APPLICATION CHART

| Size (In.) | Part # – Gland Only | | Wedge Qty. | T-head Bolt Qty. | Bolt Size | Gland Weight (lbs.) | Weight (w/Acc.) | *Pressure Rating | Pipe O.D. (Inches) |
|------------|---------------------|--------------|------------|------------------|---------------|---------------------|-----------------|------------------|--------------------|
| | Domestic | Non-Domestic | | | | | | | |
| 4 | N/A | 537052 | 2 | 4 | 3/4" x 3-1/2" | 8.3 | 12.2 | *305 / DR14 | 4.50-4.80 |
| 6 | N/A | 537069 | 3 | 6 | 3/4" x 4" | 12.4 | 18.3 | *305 / DR14 | 6.63-6.90 |
| 8 | N/A | 537076 | 3 | 6 | 3/4" x 4" | 14.9 | 20.8 | *305 / DR14 | 8.63-9.12 |
| 10 | N/A | 537083 | 6 | 8 | 3/4" x 4" | 25.7 | 33.4 | *305 / DR14 | 10.75-11.10 |
| 12 | N/A | 537090 | 8 | 8 | 3/4" x 4" | 34.1 | 42.0 | *305 / DR14 | 12.75-13.20 |

*Note: The pressure ratings are rated working water pressures for the restraint.

**ADDITIONAL SERIES 2000S SPLIT TLP-PVC MJ TUFGRIP® RESTRAINT RATINGS

| Size (In.) | AWWA C900 | | | ASTM D2241 | | |
|------------|-----------|------|------|------------|-------|-------|
| | DR14 | DR18 | DR25 | SDR17 | SDR21 | SDR26 |
| 4 | 305 | 235 | 150 | 250 | 200 | 160 |
| 6 | 305 | 235 | 150 | 250 | 200 | 160 |
| 8 | 305 | 235 | 150 | 250 | 200 | 160 |
| 10 | 305 | 235 | 150 | 250 | 200 | 160 |
| 12 | 305 | 235 | 150 | 250 | 200 | - |

**Note: Ratings are for ordinary water works restraint applications with transitory surges only.

NOTES

STOP-LOOK:

- Piping system installation and hydrostatic testing shall be in accordance with AWWA C600 and AWWA C65.
- TUFGRIP 4"-12" restraints shall meet the requirements of ASTM F1674, current revision.



ASSEMBLY STEPS – SERIES 2000S TLP SPLIT – FOR PVC PIPE

1. Ensure 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. ****NOTE:** For IPS diameter pipe, use of an MJ transition gasket is required.
4. Place the two halves of the red TUFGRip 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, nuts and gasket that meet AWWA C111 requirements.
5. With the two T-head bolts inserted through the restraint, push the TUFGRip lip extension evenly against the thick side of the MJ gasket. With the TUFGRip 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 TUFGRip is centered around the pipe's wall, hand tighten all the remaining T-head bolts and nuts. If joint deflection is needed, only deflect the pipe in 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 TUFGRip 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"–12" restraints. **DO NOT OVER-TORQUE!**
8. Hand tighten the torque limiting nut attached to the TUFGRip 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 nut is indicated by a recessed arrow on the face of the nut. With a wrench, continue to tighten each torque nut half turn in an alternating or star pattern until all torque limiting nuts twist off. NEVER tighten a torque limiting nut more than half turn without turning the remaining torque nuts an equal amount! ****NOTE:** For IPS applications, ensure step 7 is complete before engaging the wedges. Failure to comply will result in excessive pipe wall deflection and torque nuts will not twist off as designed.
9. When all torque limiting nuts twist off, the mechanical joint and restraint assembly are complete.