

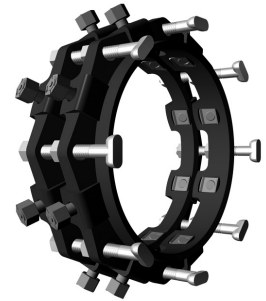
Series 1104TDM EP

High Pressure Mechanical Joint Restraint on
Ductile Iron Pipe at a Bend

Installation Instructions

1. The Series 1100TDM MEGALUG joint restraint is designed for use on ductile iron pipe conforming to ANSI/AWWA C151/A21.51 (all thickness classes) when restraining mechanical joint pipe fittings with high pressure.
 2. Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and the plain end with soapy water or an approved pipe lubrication meeting the requirement of ANSI/AWWA C111/A21.11 just prior to slipping the gasket onto the plain end for joint assembly. [Place the secondary restraint ring labeled "1100TDM SUB (ring without a lip)" onto the pipe with the machined smooth face toward the plain end. Place the primary 1100 restraint (gland with a lip) onto the pipe with the lip facing the plain end. Place the EBAA Seal Improved Mechanical Joint Gasket onto the pipe. The EBAA Seal gasket is bi-directional and is necessary for the high-pressure rating of the assembly.]
- NOTE: In cold weather it is preferable to warm the gasket to facilitate assembly of the joint.**
3. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.
 4. Push the gland[s] toward the socket and center it around the pipe with the gland lip against the gasket. Ensure that all gland wedge pockets and torque limiting twist-off nuts are aligned. Insert bolts and hand tighten nuts. [Heavy Hex Head Bolts with T-Nuts have been provided for assembly because the radius of the fitting prevents installation of long t-bolts.] Make deflection after joint assembly but before tightening bolts.
 5. Tighten the bolts to the normal range of torque as indicated [3-inch 45-60 ft.-lbs., 4 through 24-inch 75-90 ft.-lbs., 30 and 36-inch 100-120 ft.-lbs., and 42, 48 and 54-inch 120-150 ft.-lbs.] While at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolt first, then top bolt, next the bolts at either side, finally the remaining bolts. Repeat the process until all bolts are within the appropriate range of torque. In large sizes (30 through 60-inch [762mm through 1,600mm]), five or more repetitions may be required. The use of a torque-indicating wrench will facilitate this procedure.
 6. Tighten the torque limiting twist-off nuts in a clockwise direction (direction indicated by arrow on top of nut) until all wedges are in firm contact with the pipe surface. Continue tightening in an alternating manner until all of the nuts have been twisted off.
 7. If removal is necessary, utilize the $\frac{5}{8}$ ($\frac{7}{8}$) 1142TDM through 1154TDM) inch hex heads provided. If reassembly is required, assemble the joint in the same manner as above, by tightening the wedge bolts to 90 ft.-lbs (135 ft.-lbs for 1124TDM through 1154TDM). If the series 1100 restraint is removed from the pipe, be sure that all the collar bolts and wedges are in place before the restraint is reassembled.

Steps 2-5 are requirements of AWWA Standard C600-17



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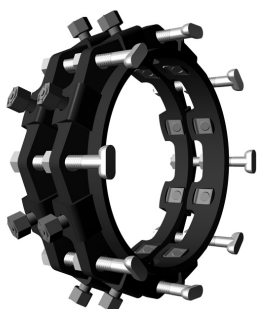
Qty.	Description
1	4 in. 1104TDM
1	4 in. 1104TDM SUB
4	$\frac{3}{4}$ in. by 7 in. Heavy Hex Bolts w/ Fluoro coated T-Nuts
1	4 in. EBAA-Seal EPDM Gasket
1	Gasket Lubrication Packet

Restraints Made in The USA

For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774

APPROXIMATE SHIPPING WEIGHT: 21 lbs.

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