

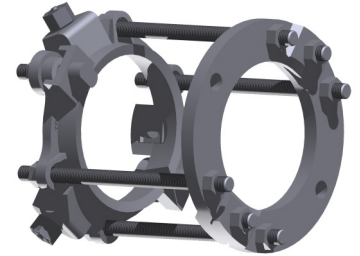


Series 1104HD

Restraint for Existing Push-on
Joints on Ductile Iron Pipe

Installation Instructions

1. The Series 1100HD is designed for restraining existing ductile iron pipe, conforming to ANSI/AWWA C151/A21.51 (all thickness classes), push on pipe bells. It has a split restraint ring on the spigot and a split ring behind the bell.
2. Install the split ring behind the bell in the direction indicated on the casting. Tighten the clamp bolts to 90 ft-lbs.
3. Disassemble the split restraint ring then reassemble restraint on the spigot such that the bolt holes are in alignment and the distance between the rings is suitable for the tie bolt length with the lip of the restraint facing toward the bell. Allow enough room on the tie bolt to fully engage the nut with several threads showing.
4. Install the tie bolts in each available bolt hole for maximum distribution of operating forces. Place nuts on the end of the tie bolts. Allow enough room on the tie bolt to fully engage the nut with several threads showing. Pull the restraint ring away from the joint until the slack is removed from the tie bolts.
5. 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 alternate manner until all of the nuts have been twisted off. Tighten the tie bolt nuts until the ring behind the bell is in firm contact with the back of the bell.
6. If removal is necessary; use the $\frac{5}{8}$ " ($\frac{7}{8}$ " 1142HD through 1154HD, and $1\frac{1}{8}$ " for 1160HD) hex heads provided. If reassembly is required, assemble the product in the same manner as indicated in the previous steps and tighten the wedge bolts to 90 ft-lbs (135 ft-lbs for 1124HD through 1154HD, and 165 ft-lbs for 1160HD).



CONTENTS

Qty.	Description
1	1104SDB Split MEGALUG®
1	1704BR Back-Up Ring
4	$\frac{3}{4}$ in. by 13 in. Rods w/ Nuts
2	$\frac{3}{4}$ in. by $3\frac{1}{2}$ in. T-Bolts w/ Nuts

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: 20 lbs.

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Made in the USA