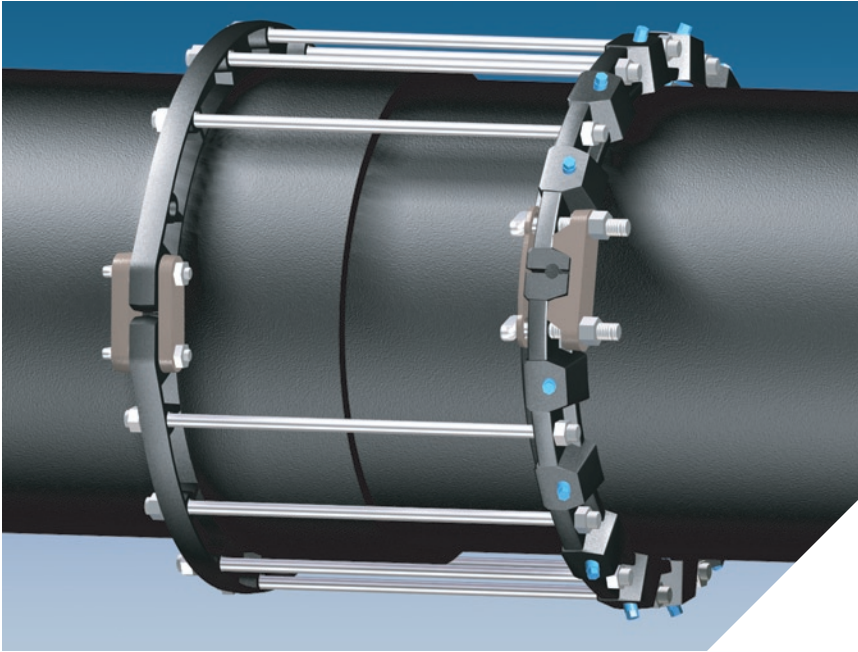


SERIES 1100HD

Restraint for Existing Push-on
Joints on Ductile Iron Pipe

U.S. Patent Nos. 4092036, 4627774, 4627774, 4779900, 4896903, 5544922

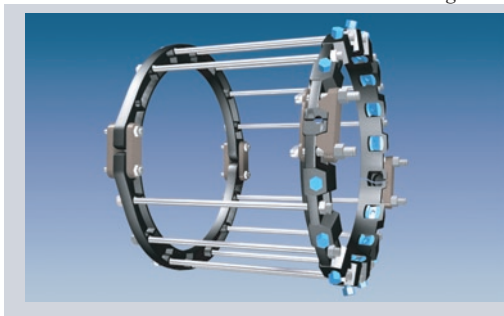


1124HD on 24 inch pipe.

Nominal Pipe Size	Series Number	Approximate Shipping Weight	Rods (Qty. - Size, inches)	Pressure Ratings (PSI)
				Ductile Iron
3	1103HD	9.50	4 - 5/8 x 12	350
4	1104HD	23.50	2 - 3/4 x 13	350
6	1106HD	33.00	4 - 3/4 x 13	350
8	1108HD	41.00	4 - 3/4 x 13	350
10	1110HD	63.16	4 - 3/4 x 18	300
12	1112HD	77.06	4 - 3/4 x 18	300
14	1114HD	136.15	6 - 3/4 x 18	300
16	1116HD	143.92	8 - 3/4 x 18	300
18	1118HD	160.41	8 - 3/4 x 18	200
20	1120HD	187.08	10 - 3/4 x 18	200
24	1124HD	252.89	12 - 3/4 x 18	200
30	1130HD	492.20	16 - 1 x 18	200
36	1136HD	546.30	20 - 1 x 18	200
42	1142HD	964.30	24 - 1 1/4 x 28	175
48	1148HD	1270.90	28 - 1 1/4 x 28	175

Note: For applications or pressures other than those shown, please contact EBAA for assistance.

Packaged items.



Features and Application:

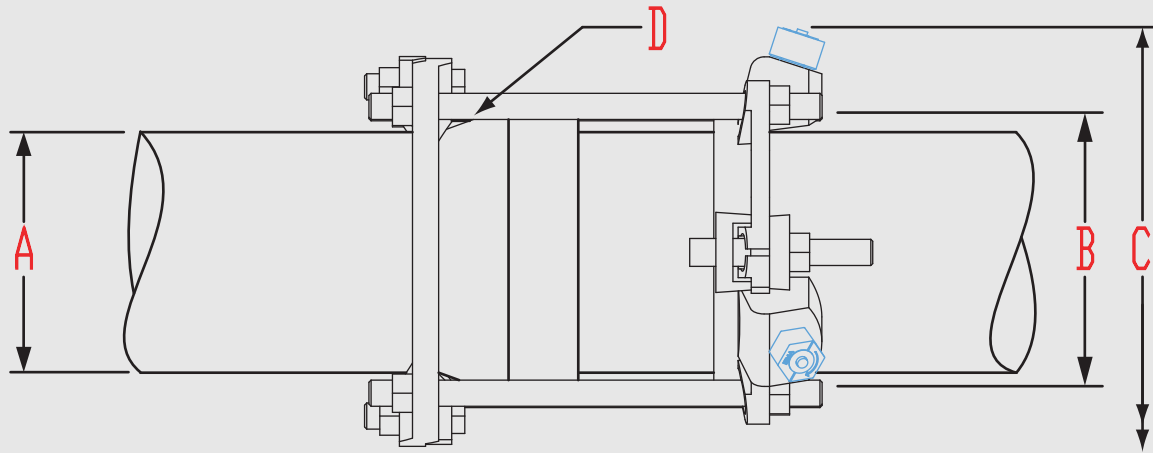
- For use on Ductile Iron Pipe at existing push-on joints.
- **MEGA-BOND™**
Restraint Coating System
For more information regarding MEGA-BOND refer to www.ebaa.com/products/mega-bond
- Minimum 2 to 1 Safety Factor.
- Split design for ease of installation.
- Constructed of ASTM A536, Ductile Iron.
- For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774.

Sample Specification

Restraint for existing bell joints found on ductile iron pipes shall consist of the following: The restraints shall be manufactured of ductile iron conforming to ASTM A536. The split restraint rings, incorporating a plurality of individually-actuating gripping surfaces, shall be used to grip the pipe on either side of the bell and a sufficient number of rods shall be used to connect each restraint to one another. The restraint devices shall be coated using MEGA-BOND™. (For complete specifications on MEGA-BOND visit www.ebaa.com.) The combination shall have a minimum working pressure rating as shown in the adjacent table. The restraint shall be the Series 1100HD as manufactured by EBAA Iron, Inc. or approved equal.

Series 1100HD Submittal Reference Drawing

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Nominal Pipe Size	Series Number	A Pipe O.D.	B Maximum Bell O.D. Cleared	C Casing Clearance (With Nuts Off)	D Thrust Bolt (Number - Size)
3	1103HD	3.95	5.4	9.06	4 - 5/8 x 12
4	1104HD	4.810	6.6	9.90	2 - 3/4 x 13
6	1106HD	6.90	8.6	12.00	4 - 3/4 x 13
8	1108HD	9.05	10.9	14.15	4 - 3/4 x 13
10	1110HD	11.10	13.1	16.20	4 - 3/4 x 18
12	1112HD	13.20	15.4	18.30	4 - 3/4 x 18
14	1114HD	15.30	17.9	21.88	6 - 3/4 x 18
16	1116HD	17.40	20.1	24.13	8 - 3/4 x 18
18	1118HD	19.50	22.4	26.50	8 - 3/4 x 18
20	1120HD	21.60	24.6	28.50	10 - 3/4 x 18
24	1124HD	25.80	29.1	33.38	12 - 3/4 x 18
30	1130HD	32.00	35.8	40.25	16 - 1 x 18
36	1136HD	38.30	42.6	46.75	20 - 1 x 18
42	1142HD	44.50	49.2	55.57	24 - 1 1/4 x 28
48	1148HD	50.80	56.0	61.87	28 - 1 1/4 x 28

NOTE: Dimensions are in inches and are subject to change without notice.

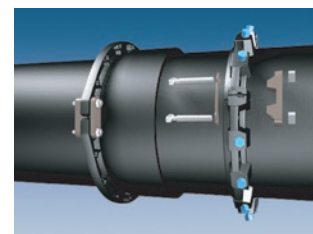
For our most current brochure, visit www.ebaa.com.

Installation Instructions

The Series 1100HD is designed for restraining 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.



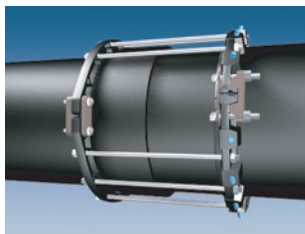
1. Install the split ring behind the bell in the direction indicated on the casting. Tighten the clamp bolts to 90 ft-lbs.



2. 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.



3. 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 thrust bolts.



4. 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.

5. If removal is necessary; use the 5/8" 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.



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