

EAGLE LOC 900RL™

INTERNAL JOINT RESTRAINT
SYSTEM

INSTALLATION GUIDE



DELIVERING GOOD WATER TO YOU

EAGLE LOC 900RL™

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LIMITED WARRANTY

1. PERIODS AND SCOPE OF COVERAGE

JM Eagle™ warrants that the pipe products certified to the standards of the American Water Works Association (AWWA) for water distribution, transmission and force sewer mains including C900, C905, C909, C901 and C906 products manufactured by JM Eagle™ (each a "Product" and collectively, the "Products") are manufactured in accordance with the following AWWA, ASTM, ANSI/NSF, and UL standards as follows: (1) AWWA C900 and ASTM 1784 cell class 12454; Gaskets meet ASTM F477; Joints meet ASTM D3139; ANSI/NSF-61, UL 1285 for the C900, (2) AWWA C905 and ASTM 1784 cell class 12454; Gaskets meet ASTM F477; Joints meet ASTM D3139; ANSI/NSF-61, UL 1285 for C905, (3) AWWAC909 and UL 1285; Gaskets meet ASTM F477; Joints meet ASTM D3139 for C909 and (4) AWWA C901/906, ASTM D2239, ASTM D2737, ASTM D3035, F714, cell class per ASTM D3350, PPI listed material (TR-4) PE3408/3608 & PE4710, ANSI/NSF-14 for C901 and C906. JM Eagle™ warrants that each of these Products manufactured by JM Eagle™ leaves our plant free from defects in workmanship and materials. These Products as manufactured by JM Eagle™ are backed by our unprecedented fifty (50) year Limited Warranty. This Limited Warranty provides that Products manufactured by JM Eagle™ meet the above stated quality standards published by the AWWA, ASTM International (ASTM), American National Standards Institute/NSF International (ANSI/NSF), and Underwriters Laboratories (UL).

If any Product is determined within fifty (50) years from the date of invoice by JM Eagle™ to be defective because it failed to meet the above stated standards, JM Eagle™ will then provide replacement product of the same type, size and quantity of the product and pay for the costs directly related to its replacement*** or issue credits, offsets or a combination thereof for the wholesale purchase price of the defective product.

JM Eagle™ also warrants that the design of our Products are independently tested and/or certified by AWWA, NSF and UL to meet their respective standards and that our plants manufacturing the Products are already certified or in process of being certified to ISO 9001 certification** as part of our program to develop manufacturing processes that consistently produce high quality plastic pipe.

JM Eagle™ quality control programs encompass three critical aspects of the manufacturing process: the incoming raw material, pipe production, and the finished goods.

2. EXCLUSIONS FROM COVERAGE AND EXCLUSIVE REMEDY:

Products manufactured by JM Eagle™ are marked with JM Eagle, PW Eagle or US Poly stencil markings. This limited warranty excludes any Product not manufactured by JM Eagle™, even if it is sold by JM Eagle™, and also excludes defects or failures caused after shipment by:

- improper installation (including, without limitation, misalignment),
- use in improper applications or conditions or in conjunction with improper materials (including, without limitation, improper lubricants, pastes, solvents or sealants),
- contact with aggressive chemical agents, freezing or overheating of liquids in the Product, or unusual pressure surges or pulsation,
- vibration,
- temperature shocking,
- U.V. degradation,
- failure to adhere to JM Eagle™'s instructions concerning the proper handling, installation, testing and use of the Product,
- failure to adhere to applicable standards set forth by local laws, codes, or regulations and the applicable industry standards, or
- any other improper activities not listed above or damage caused by the fault or negligence of anyone other than JM Eagle™.

THE WARRANTIES IN THIS LIMITED WARRANTY ARE THE ONLY WARRANTIES APPLICABLE TO THE PRODUCTS. THERE ARE NO OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS SUPPLIED HEREUNDER INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED AND JM EAGLE™ SHALL NOT BE LIABLE IN THIS RESPECT NOTWITHSTANDING JM EAGLE'S™ ACTUAL KNOWLEDGE OF THE PRODUCT'S INTENDED USE OR ANY ADVICE OR REPRESENTATIONS THAT MAY HAVE BEEN RENDERED BY JM EAGLE™ CONCERNING THE DESIGN, MANUFACTURE, FABRICATION, SALE, USE, INSTALLATION OR PROVISION OF THE PRODUCTS. NO STATEMENT, CONDUCT OR DESCRIPTION BY JM EAGLE™ OR ITS REPRESENTATIVES, IN ADDITION TO OR BEYOND THIS LIMITED WARRANTY, SHALL CONSTITUTE A WARRANTY.

BUYER AGREES THAT ITS SOLE AND EXCLUSIVE REMEDY FOR BREACH OF THIS LIMITED WARRANTY, AND THE SOLE AND EXCLUSIVE OBLIGATION OF JM EAGLE™ IN RESPECT OF ANY CLAIMS FOR BREACH OF THIS LIMITED WARRANTY, SHALL BE (1) THE REPLACEMENT OF THE SAME TYPE, SIZE AND LIKE QUANTITY OF NON-DEFECTIVE PRODUCT, AT THE ORIGINAL POINT OF DELIVERY AND COSTS RELATED TO ITS REPLACEMENT**, OR (2) CREDITS, OFFSETS, OR A COMBINATION THEREOF, FOR THE WHOLESALE PURCHASE PRICE OF THE DEFECTIVE PRODUCT. IN NO EVENT SHALL JM EAGLE™ BE LIABLE FOR LOST PROFITS, LOSS OF GOODWILL, LOSS OF BUSINESS OPPORTUNITIES, DAMAGE TO REPUTATION, SPECIAL DAMAGES, INDIRECT DAMAGES, DELAY DAMAGES, PUNITIVE DAMAGES, EXEMPLARY DAMAGES, CONSEQUENTIAL DAMAGES OR INCIDENTAL DAMAGES.

3. REQUIREMENTS FOR MAKING CLAIMS:

Every claim for breach under this warranty shall be void unless it is made in writing to JM Eagle™ and postmarked **within five business (5) days** of the date the defect was discovered or in the exercise of ordinary care should have been discovered and, in any event, the claim must also be made within fifty (50) years of the date of the JM Eagle™ invoice. As noted above, Products manufactured by JM Eagle™ are marked with a JM Eagle, PW Eagle or US Poly stencil. This limited warranty excludes any Product not manufactured by JM Eagle™, even if it is sold by JM Eagle™.

Any claim for breach of warranty must be sent to:

Product Assurance Department
JM Eagle
5200 W. Century Boulevard
Los Angeles, CA, 90045

For questions regarding claims, the Product Assurance Department may be also contacted at 1-800-621-4404 or JMWebSupport1@jmeagle.com.

No claim under this limited warranty will be valid unless (1) proof of purchase with the date thereof as well as a description of the alleged defect in reasonable detail is presented to the satisfaction of JM Eagle™, (2) written permission and/or a Return Goods Authorization (RGA) is obtained from JM Eagle™, (3) JM Eagle™ is given a meaningful and reasonable opportunity to inspect the allegedly defective Product and its installation at the site and (4) at JM Eagle™'s request, representative samples of the allegedly defective Product are returned to JM Eagle™ in accordance with JM Eagle™'s instructions.

* Products covered by this Limited Warranty include similar PW Eagle and US Poly products manufactured by JM Eagle after July 1, 2007.

** JM Eagle's Conroe Texas plant in the process of obtaining ISO 9001 certification. The other plants are already certified to ISO 9001.

*** Replacement costs shall be reasonable and based on industry standard cost parameters such as those listed in the RS Means Assemblies Cost Data Book.

The Eagle Loc 900RL™ Installation Guide is a supplement to the Blue Brute™ Installation Guide.

1. ASSEMBLY INSTRUCTIONS

2. INTRODUCTION

Proper assembly of Eagle Loc 900RL requires:

- Inspect and clean bell, gasket, and spigot
- **Installing the Insertion Stop on the spigot (Required)**
- Application of the recommended lubricant (a container of lubricant is typically provided with each shipment of pipe)
- Maintenance of straight alignment during assembly
- Inserting the spigot into the bell until the bell contacts with the insertion stop

1.2 INSPECT AND CLEAN

As with conventional bell-and-spigot pipe, the gasket and the groove area behind it should be wiped clean. If mud, dirt, silt, or other foreign material is in the sealing area, it may prevent the gasket from sealing against the spigot. In addition to cleaning the gasket area, the restraint hardware segments need to be clean. Debris in this area may prevent the hardware from engaging and keep the restraint mechanism from activating.

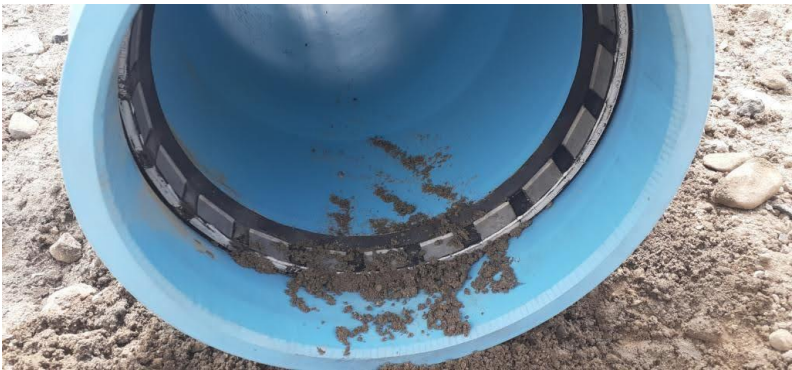


Figure 1: The sand and grit shown above must be cleaned from the restraint hardware. Dirty hardware may prevent the restraint mechanism from working and/or cause joint leak.

To make an easy installation even simpler, the product comes supplied with end plugs. The end plugs make it easier to keep the bell, gasket area, and restraint hardware clean. The plugs should be left in place until the joint is ready for assembly.



Figure 2: The end plugs in these pipes keep dirt and other foreign material out of the bell.

NOTICE: Eagle Loc 900RL gaskets SHOULD ONLY BE REMOVED OR INSTALLED at a TEMPERATURE ABOVE 40 F. If the gaskets are below that temperature, they should be warmed up prior to installation.

1.3 INSTALL THE EAGLE INSERTION STOP (MANDATORY)

The Eagle Insertion Stop will greatly reduce the possibility of over insertion of the spigot into the bell when assembling PVC pipe.



Figure 3: JM Eagle Insertion Stop

Ensure that the spigot is clean removing all dirt, dust, water, pipe lubrication, etc. Eagle Loc 900RL comes with two assembly mark lines on the spigot end of the pipe. These dual lines indicate the maximum and minimum depth of insertion of the spigot into the bell. The Insertion Stop should be placed **centered** on top of the assembly line furthest from the spigot (Ex. Dashed red line below).

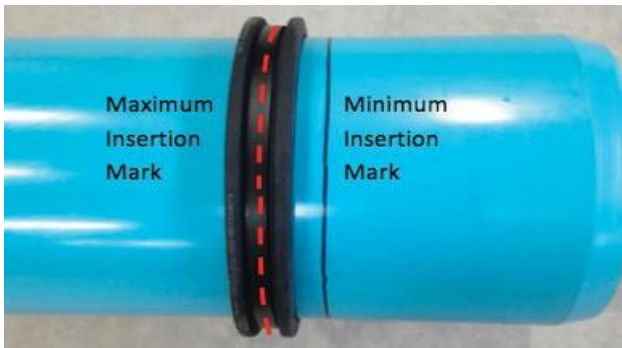


Figure 4: JM Eagle Insertion Stop Location

1.4 LUBRICATE

The lubricating technique is different from standard C900 pipe. Prior to assembly, apply lube to the gasket and bevel only (**DO NOT** apply lube to the spigot barrel). Use only lubricant supplied or recommended by JM Eagle.



Figure 5: Example of lubrication to the gasket and the bevel only.

1.5 ALIGN AND ASSEMBLE

Straight alignment is a key element for proper assembly. Missaligned pipe greatly increases the assembly force required to make the joint and the potential to roll or push out the gasket. When properly aligned, the pipe joint can be assembled manually using a pry bar.

After assembly, the joint may be deflected to a maximum of 1 degree for 4" through 12" pipe sizes and 1.5 degrees for 14" and larger pipe sizes. Joint deflection is achieved after the joint is assembled in straight alignment and to the reference mark. The bell should be braced in order to allow the free end to move laterally under steady pressure using a pry bar or other suitable means.

Care should be taken not to exceed the maximum deflection allowed or damage the pipe with the machinery used. Abrupt changes in direction shall be accomplished with fittings.

NOTICE: AVOID OVER-STRESSING THE BELL (over-inserting the joints, or exceeding the maximum deflection/curvature allowed) IN ORDER TO PREVENT POSSIBLE BREAKAGE AND/OR LEAKS.



Figure 6: Example of an Eagle Loc joint assembly

To assemble, slide the spigot into the bell, maintaining straight alignment, until the bell contacts the insertion stop. Do not push the spigot farther into the bell as this reduces the rotational flexibility at the joint and causes unnecessary stress on the bell.

2.0 PREVENT OVER ASSEMBLY

When the second black line goes past the lip of the bell, it is called over assembled or homed. When a spigot is over-inserted, there may not be adequate room for movement of the joint caused by thermal expansion and/or hydrostatic pressure. If over-insertion is combined with axial deflection of the joint, contact between the bell and spigot may cause joint leakage or significant stress in the bell wall.

CORRECT ASSEMBLY WITHOUT THE JM EAGLE INSERTION STOP

Eagle Loc 900RL comes with two assembly mark lines on the spigot end of the pipe. These dual lines indicate the maximum and minimum depth of insertion of the spigot into the bell. After correct assembly of a joint with two insertion lines, the line closest to the spigot end (minimum) should not be visible and the line furthest from the spigot end (maximum) should be visible.

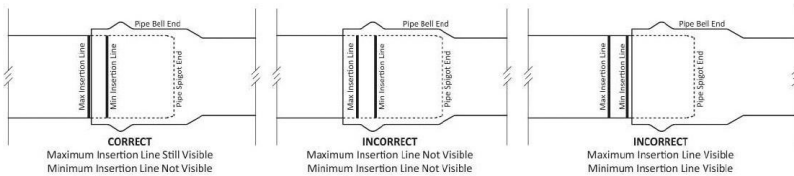


Figure 7

A properly assembled joint may become over assembled when subsequent joints are made. (See [Figure 8](#)) The force levering together a new joint (Joint B), may cause further insertion of Pipe 2 into the bell of Pipe 1. This may result in the spigot in Joint A being over-inserted. During installation, the previously assembled joint can be center loaded using equipment or material to prevent over assembly at the previous joint.

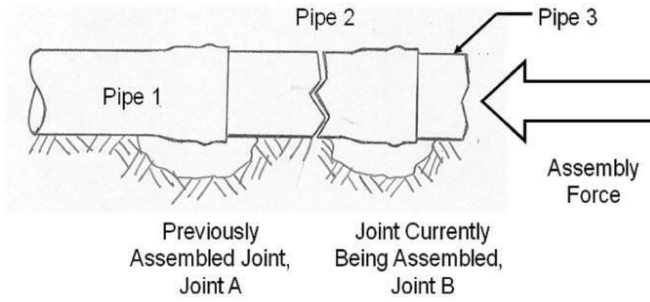


Figure 8

Alternatively, assembly tools may be used that prevent the assembly forces from moving previously installed pipe. Examples of these tools are shown in [Figure 9, 10, and 11 on next page.](#)



Figure 9: The backhoe's bucket center loads the previously installed length of pipe to keep it from moving while the new joint is being assembled



Figure 10: This assembly tool is called the Eagle Claw and is available from Pro Pipe Solutions.



Figure 11: This assembly tool uses a chain wrapped around the bell and a lever bar to make the joint.

CHECKLIST

- Bell, spigot, and Eagle Loc gasket are clean and free of foreign material

- Install the Eagle Insertion Stop

- Apply lube to the Eagle Loc gaskets and bevel only

- Align the bell and spigot for straight assembly

- Straight alignment was maintained during assembly

- Assembly stopped when the spigot contacts the insertion stop

- Previously assembled pipe did not move when subsequent joints were made

NOTES:

Lined area for notes, consisting of 21 horizontal blue lines.



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