

## Installation Instructions

111 & 120

Cam-Lock™ Joint Restraints for PVC and Ductile Iron Pipe



**DO NOT REMOVE RETAINING WASHER UNDER TORQUE-OFF NUT.  
DO NOT USE RED WEDGES ON DUCTILE IRON PIPE.  
DO NOT USE BLACK WEDGES ON PVC PIPE.  
CAM-LOCK™ 120 LIMITED TO SDR 26 OR HEAVIER PIPE WALL.  
NOT FOR USE ON PLAIN-END FITTINGS.**

Cam-Lock Mechanical Joint Restraining Glands are designed for use with PVC pipe (red wedges) & with ductile iron pipe (black wedges).

Cam-Lock 120 (with red wedges): **Do not use red wedges on ductile iron pipe.** Cam-Lock 120 is designed for use on PVC pipe conforming to requirements of AWWA C900/C905 having cast iron OD's, & for use on PVC pipe conforming to requirements of ASTM D-2241 having IPS (steel) OD's. Cam-Lock 120 is rated at the pressure rating of the pipe on which it is used, up to 250 psi, 150 psi for 30", and 125 psi for 36". In applications requiring UL Listed products, pressure rating is 150 psi for Class 150 DR 18 pipe, 4"-12" sizes only. A standard MJ gasket is required for use on C900 pipe, a transition gasket is required for IPS pipe, or Smith-Blair Multi-Seal gasket for either. In applications requiring UL Listed components, a UL Component Recognized mechanical joint gasket (HESZ2) must be used. Either pipe can be accommodated **without modification** of the gland. **Do not remove retaining washers under torque-off nuts.**

Cam-Lock 111 (with black wedges): **Do not use black wedges on PVC pipe.** Cam-Lock 111 is designed for use with ductile iron pipe conforming to requirements of AWWA C151. Pressure rating for UL Listed applications in 3"-16" sizes is 350 psi. Pressure ratings for UL Listed applications above 16" are: 250 psi for 18" & 24", 200 psi for 20". It is rated at 350 psi in sizes 4"-16" & 250 psi in 18"-48" sizes for non-UL Listed applications. In applications requiring UL Listed components, a UL Component Recognized mechanical joint gasket (HESZ2) must be used. **Pressure ratings for non-UL Listed applications on carbon steel pipe 3"-12" (IPS Sized) is 250 psi.**

### CAM-LOCK INSTALLATION INSTRUCTIONS

Please read installation instructions carefully and fully.

#### STEP 1

Wedges may have moved during transit and could prevent the Cam-Lock from sliding easily over pipe. Using a 1-1/4" socket, hand-tighten torque-off nuts in a counterclockwise fashion until wedges are seated firmly against gland.

#### STEP 2

Clean the pipe end, mechanical joint socket and gasket. Inspect the pipe, fitting, and gasket for any defects and repair or replace as necessary. Place the Cam-Lock gland on the plain end of the pipe with the lip extension toward the plain end. Lubricate pipe end and gasket with soapy water or suitable pipe lubricant as per AWWA-C111/ANSI-A21.11. Slip gasket onto the plain end with taper toward the plain end.

#### STEP 3

Insert pipe into the socket and press gasket firmly and evenly into gasket recess. Keep joint straight during assembly.



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#### STEP 4

Push Cam-Lock gland toward the socket and center it around pipe with gland lip against the gasket. Insert T-bolts and hand-tighten the nuts. Make deflection (Max. 3° on 3"; 5o on 4"- 12"; 2o on 14" & 16"; 1-1/2° on 18"-24"; 1° on 30"-48") after joint assembly but before tightening T-bolts. Note: Use T-bolts conforming to requirements of AWWA C111 only. T-Bolts of lesser physical and chemical properties are not satisfactory.

#### STEP 5

Tighten T-bolts while maintaining equal distance between the gland and face of the M.J. flange at all points around the socket. This can be accomplished by partially tightening bottom T-bolt first, then top T-bolt, next the T-bolts at either side, and finally remaining T-bolts. Repeat the process until all T-bolts are tightened to within recommended torque range (45-60 ft-lb for 3"; 75-90 ft-lb for 4-24"; 100-120 ft-lb for 30- 36"; 120-150 ft-lb for 42-48"). The use of a torque wrench is recommended. Do not over-torque the T-bolts.

#### STEP 6

Hand-tighten Cam-Lock torque-off nuts in a clockwise fashion until all wedges touch the pipe. Then tighten torque-off nuts in an alternating pattern turning each nut ½ turn until all nuts twist off. Never turn a single torque-off nut more than ½ turn without moving to another nut. Do not tighten further after nuts twist off. Cam-Lock™ only requires 45-60 ft-lb torque to set wedges.

#### REMOVAL

If removal and re-assembly are required, use 5/8" hex that remains after nuts have twisted off. Follow above instructions in reverse order to completely remove the Cam-Lock fitting. Reassemble Cam-Lock following above instructions, using a torque wrench to set wedges to 45-60 ft-lb.

## Smith-Blair Cam-Lock Series Joint Restraints US Patent 7,484,775 7,748,100 – Canada Patent 2511782

#### WARRANTY

Smith-Blair® warrants its products only against defects in materials and workmanship. Smith-Blair's liability and customer's exclusive remedy under this warranty or any warranty extends for a period of one (1) year from the date of Smith-Blair's ship date and is expressly limited to repayment of the purchase price, repair, or replacement, at Smith-Blair's option, during said period, upon proof satisfactory to Smith-Blair® and upon customer's returning and prepaying all charges on such products to factory or warehouse designated by Smith-Blair.

This warranty is made expressly in lieu of all other warranties, expressed, implied or statutory, with respect to quality, merchantability or fitness for a particular purpose.

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#### NOTICE

Metal products are subject to corrosion, particularly when used outdoors and/or underground. A large number of factors and local conditions affect the rate of corrosion. Consult a local corrosion expert to determine the life expectancy of this product when used with your pipeline content, soil, and environment. Also, consult your system designer to determine the suitability of this product in your piping system. Failure to determine the suitability of this product in your application, soil, and/or environment can result in premature product failure. Smith-Blair® will provide additional information about this product's material specifications at your request. You may also obtain product information at [www.smith-blair.com](http://www.smith-blair.com).

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