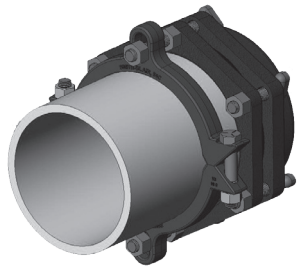
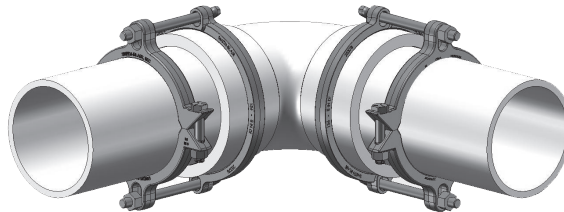


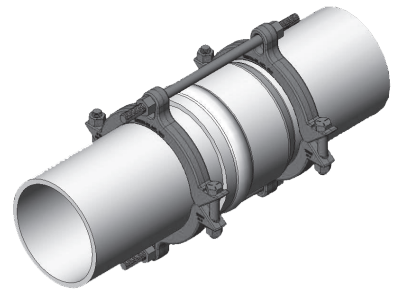
Installation Instructions
Types, 115, 136 and 165
Bell-Lock™ Joint Restraints



115 Bell-Lock



136 Bell-Lock



165 Bell-Lock

FOR TYPE 115 BELL-LOCK
SERRATED RESTRAINT FOR PVC PIPE - FOR MJ FITTINGS AND PUSH-ON JOINTS

Step 1

Identify the pipe as ductile iron OD or IPS/steel OD. Note: Bell-Locks coated BLACK are for DI OD pipe. Bell-Locks coated RED are for IPS/steel OD pipe. Clean the MJ fitting socket, gasket and pipe approximately one foot from the pipe end. Remove all dirt, grease, oil, labels, tape, etc. Inspect the pipe, fitting and gasket for any defects and repair or replace as necessary.

Step 2

Assemble mechanical joint per relevant AWWA standards and/or procedures, leaving out longer restraint T-bolts corresponding to re-

straint ears. Use of torque wrench is recommended.

Step 3

Insert long restraint hardware corresponding with restraint ears and install one nut (4"-12" sizes) or two nuts (14"-24") on each long hardware. Hand-tighten nut until close to MJ flange. Leave hardware loose.

Step 4

Each restrainer half has a retaining slot in one side to prevent the clamping bolt heads from rotating. Place restraint halves on pipe with the long hardware inserted through restraint ears, making sure the re-

taining slots are on opposite sides of the pipe. Leave approximately one inch of long hardware extending through restraint ears. Tighten restraint clamping bolts to recommended torque (see table).

Use of a torque wrench is recommended. (Keep gap between restraint halves equal on each side during tightening). Tighten nuts on long hardware against MJ flange to the recommended torque range - 75-90 ft-lbs. Insert one additional nut on each long hardware and hand tighten against restraint ears. Do not torque or over-tighten nuts against restraint ears!

FOR TYPE 136 BELL-LOCK
SERRATED RESTRAINT FOR AWWA C907 PVC PIPE

Step 1

Identify the pipe as ductile iron OD or IPS/steel OD. Note: Bell-Locks coated BLACK are for DI OD pipe. Bell-Locks coated RED are for IPS/steel OD pipe. Clean the MJ fitting socket, gasket and pipe approximately one foot from the pipe end. Remove all dirt, grease, oil, labels, tape, etc. Inspect the pipe, fitting and gasket for any defects and repair or replace as necessary.

Step 2

Assemble mechanical joint per relevant AWWA standards and/or procedures, leaving out longer restraint T-bolts corresponding to re-

straint ears. Use of torque wrench is recommended.

Step 3

Insert long restraint hardware corresponding with restraint ears and install one nut (4"-12" sizes) or two nuts (14"-24") on each long hardware. Hand-tighten nut until close to MJ flange. Leave hardware loose.

Step 4

Each restrainer half has a retaining slot in one side to prevent the clamping bolt heads from rotating. Place restraint halves on pipe with the long hardware inserted through restraint ears, making sure the re-

taining slots are on opposite sides of the pipe. Leave approximately one inch of long hardware extending through restraint ears. Tighten restraint clamping bolts to recommended torque (see table).

Use of a torque wrench is recommended. (Keep gap between restraint halves equal on each side during tightening). Tighten nuts on long hardware against MJ flange to the recommended torque range - 75-90 ft-lbs. Insert one additional nut on each long hardware and hand tighten against restraint ears. Do not torque or over-tighten nuts against restraint ears!



Installation Instructions Types, 115, 136 and 165 Bell-Lock™ Joint Restraints

FOR TYPE 165 BELL-LOCK SERRATED RESTRAINT FOR PVC PIPE - FOR BELL AND SPIGOT JOINTS

Step 1

Identify the pipe as ductile iron OD or IPS/steel OD. Note: Bell-Locks coated BLACK are for DI OD pipe. Bell-Locks coated RED are for IPS/steel OD pipe. Assemble the bell and spigot joint per pipe manufacturer's recommended procedures.

Step 2

Clean an area approximately one foot from both sides of the bell and remove all labels, tape, grease, oil and dirt from pipe surface.

Step 3

Each restrainer half has a retain-

ing slot in one side to prevent the clamping bolt heads from rotating. Place two restraint halves on pipe just behind the bell, making sure the retaining slots are on opposite sides of the pipe. Tighten restraint clamping bolts to recommended torque (see table).

Use of a torque wrench is recommended. (Keep gap between restraint halves equal on each side during tightening).

Step 4

Place two other restraint halves on the spigot end so approximately one

inch of a tie-rod extends through restraint ears on each end. Make sure the restraint ears on each side of the bell are aligned. Using a torque wrench, tighten restraint clamping bolts to the recommended torque in Step 3.

Step 5

Insert tie-rods through restraint ears so approximately one inch (4"-12") or two inches (14"-24") of tie-rods extends through restraint ears. Place nuts on tie-rods and hand tighten nuts snug against restraint ears. Do not torque or over-tighten nuts against restraint ears!

Recommended Torque			
4" - 6"	100 ft-lbs.	18"	175-225 ft-lbs.
8"	150 ft-lbs.	20"	200-250 ft-lbs.
10" - 12"	200 ft-lbs.	24"	175-225 ft-lbs.
14" - 16"	150-200 ft-lbs.		

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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WARNING

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®, Inc. will provide additional information about this product's material specifications at your request. You may also obtain product information at www.smith-blair.com.

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