



Split Stargrip® series 3100S

Split Wedge Action Restraint

for Ductile Iron Pipe - New or Existing Installations

Sizes 3" - 36"

INSTALLATION INSTRUCTIONS - SIZES 3" - 36"



STEP 1

Split Stargrip® Series 3100S is designed to restrain new and existing installations of Ductile Iron Pipe, conforming to AWWA/ANSI C151/A21.51 (all thickness classes), push-on pipe bells. It includes a Split Stargrip® Series 3000S restraint gland for the spigot end and a Split Back-Up Ring behind the bell.

Assemble Push-On Pipe joint per pipe manufacturer's installation instructions in case of new installations or make sure that Push-On Pipe joint is installed correctly per manufacturer's installation instructions in case of existing joints.

Install the split back up ring behind the pipe bell in the direction indicated on the casting. Tighten clamping bolts to the split back-up ring to 90 ft-lbs on sizes 3" - 36". Remove the clamping bolts for the Split Stargrip® Series 3000S. Loosely assemble the halves on the spigot end of the pipe with clamping bolts, making sure that the lip extension on the halves is towards the mating pipe bell. Do not remove rubber washers prior to installation. Washers have been provided for proper wedge placement during shipment and installation.



STEP 2

Rotate Split Stargrip® Series 3000S restraint gland on the spigot such that the bolt holes are in alignment and adjust the position so that the distance between the glands is suitable for the double-ended rod length. Adequate length should be allowed on the double-ended rods such that rod sticks out approximately 0.50" past the nut on each end.

Install the remaining double-ended rods provided in each bolt hole. Place nuts on the ends of each double-ended rod with rod approximately 0.50" past the nut on each end.



STEP 3

Pull Split Stargrip® Series 3000S restraint gland away from the joint until there is no slack in the rods. Tighten Clamping bolts on the Split Stargrip® Series to the following:

- 3" to 12" -- 100-125 FT-LBS
- 14" to 36" -- 250-275 FT-LBS



STEP 4

Tighten the torque limiting twist off nuts in a clockwise direction until all the wedges are in firm contact with the pipe OD. Continue tightening in alternative manner going on the opposite sides (Star Pattern), until all of the nuts have been twisted off.

The nuts on the double-ended rods for the Back-Up Ring must be tightened until the Back-Up Ring is in firm contact with the back of the bell. These nuts should not be over tightened.

If removal of the Split Stargrip® Series 3000S restraint gland is necessary, utilize the 5/8" hex head provided. If reassembly is required, assemble the product in the same manner as above and tighten the wedge bolts to 90ft-lbs on sizes 3"-20" & 120 ft-lbs on sizes 24"-36".

Notes:

- Stargrip® Series 3100S restraints are designed for use on ductile iron pipe that meets all physical requirements of ANSI/AWWA C151/A21.51. The pipe must be fully annealed to assure primary carbides have been dissolved and pearlite has been converted to ferrite. Please contact Star Pipe Products for technical assistance.
- Not to be used on plain end fittings, PVC or HDPE.
- Stargrips must be adequately wrapped or protected if they are covered by concrete to ensure that concrete is not allowed to enter the wedge pocket.
- Tightening of torque limiting twist off nuts can be performed by use of Wrench (box, ratchet or pneumatic).
- Maximum pressure rating for sizes 3"-8" is 350psi, for sizes 10"-16" it is 300psi and for sizes 18"-36" it is 200psi. For applications exceeding the maximum pressure rating, please contact Star Pipe Products for recommendations.
- For applications with vertical offsets please contact Star Pipe Products for technical assistance.
- For applications on existing pipe, the surface of the pipe needs to be sufficient for proper wedge engagement. Please contact Star Pipe Products for technical assistance.

STAR® PIPE PRODUCTS



Split Stargrip® series 3100S

Split Wedge Action Restraint
for Ductile Iron Pipe - New or Existing Installations
Sizes 42" - 48"

INSTALLATION INSTRUCTIONS - SIZES 42" - 48"



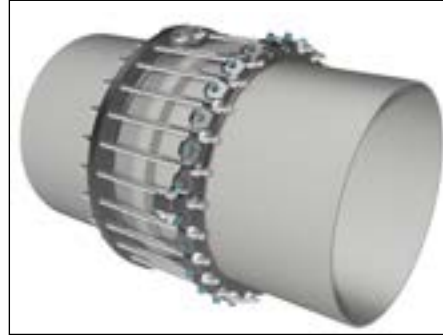
STEP 1

Series 3100S is designed to restrain new and existing installations of Ductile Iron Pipe, conforming to AWWA/ANSI C151 / A21.51 (all thickness classes), push-on pipe bells. It includes a Split Stargrip® Series 3000S restraint gland for the spigot end and a Split Back-Up Ring with links behind the bell.

Assemble Push-On Pipe joint per pipe manufacturer's installation instructions in case of new installations or make sure that Push-On Pipe joint is installed correctly per manufacturers installation instructions in case of existing joints.

Remove the clamping bolts for the Split Stargrip® Series 3000S. Loosely assemble the halves on the spigot end of the pipe with clamping bolts making sure that the lip extension on the halves is towards the mating pipe bell. Do not remove rubber washers prior to installation. Washers have been provided for proper wedge placement during shipment and installation.

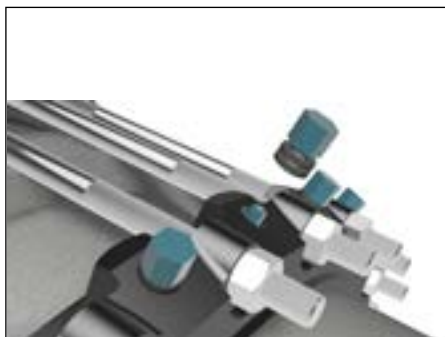
Install the split back up ring, with lip facing towards the pipe bell and it is in firm contact with back of the pipe bell, along with hex head bolts, nuts and links provided on both split ends. Tighten nuts on link to 300-325 ft-lbs. The Split Stargrip is positioned such that split surface of Stargrip is 90° to Split Surface of back up ring.



STEP 2

Pull Split Stargrip® Series 3000S restraint gland away from the joint such that double-ended rods provided sticks out approximately 0.50" past the nuts. Tighten Clamping bolts on the Split Stargrip® to 300-325 ft-lbs.

Install the double-ended rods provided in each bolt hole except the bolt holes directly facing the bolt holes on back-up ring where hex bolts have been used and assemble nuts on the ends of each double-ended rod.



STEP 3

Tighten the torque limiting twist off nuts in clockwise direction until all the wedges are in firm contact with the pipe OD. Continue tightening in an alternative manner going on the opposite sides (Star Pattern), until all of the nuts have been twisted off. Tightening of torque limiting twist off nuts can be performed by use of Wrench (box, ratchet or pneumatic).

If removal of the Split Stargrip® is necessary, utilize the 5/8" hex head provided. If reassembly is required, assemble the joint in the same manner as above and tighten the wedge bolt to 130 ft-lbs

Notes:

- *Stargrip® Series 3100S restraints are designed for use on ductile iron pipe that meets all physical requirements of ANSI/AWWA C151/A21.51. The pipe must be fully annealed to assure primary carbides have been dissolved and pearlite has been converted to ferrite. Please contact Star Pipe Products for technical assistance.*

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HOUSTON CORPORATE | TOLL FREE 1-800-999-3009 | FAX 281-558-9000
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