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## STYLE CSTSL- Super Light Tapping Sleeve Installation Instructions

1. Verify pipe O.D. and sleeve range, to ensure proper sleeve is being installed.
2. Thoroughly clean all gaskets and entire pipe surface to be covered by sleeve. Lubricate both the sleeve gaskets and pipe surface with suitable pipe lubricant.

### LUBRICATE GASKETS THOROUGHLY

3. Position the tapping sleeve with Test Outlet facing up. Block pipe and branch to support during valve connection.
4. While installing the tapping sleeve, make sure the flaps are extended fully around pipe. Do not rotate tapping sleeve on pipe. (This may cause the gasket to roll.)
5. Place back shell into position around pipe with studs located between finger lugs.
6. Place washer plates over stud ends & **Finger Tighten** one nut at the center-most position on both the top & bottom side of sleeve. Level sleeve to final position. Adjust blocking.
7. Install remaining washers and nuts and tighten until **Finger Tight**. \*Replace Belleville washers on HDPE pipe sleeves in the same order they were received.
8. Inspect gaskets to verify that they have not rolled or distorted during steps 1) through 7). **A rolled gasket will create a leak path.**
9. Snug nuts down, working from top to bottom, and from the center outward, making sure the top gap and the bottom gap stays even.

### MAINTAIN EVEN GAP BETWEEN SHELLS

10. Tighten to final torque. **Upper end of torque ranges should be reserved for applications with higher ACTUAL line pressures and/or larger flange sizes.** \*HDPE pipe requires a "PECSTSL sleeve. HDPE pipe should generally follow C900 torque guidelines but may require something lower based on DR number of the host pipe. Place Belleville washers back on sleeve in the same orientation as they were received.

| Nominal Pipe Size | Thin Wall PVC   | *C900/905      | RIGID (DI, Steel) |
|-------------------|-----------------|----------------|-------------------|
| 4 – 8             | 45-65 ft.-lbs.  | 65-75 ft.-lbs. | 70-85 ft.-lbs.    |
| 10 – 24           | 55-75 ft.-lbs.  | 70-90 ft.-lbs. | 80-100 ft.-lbs.   |
| Not listed        | Consult Factory |                |                   |

***Correct torque indicated by use of torque wrench.***

11. Once Sleeve and Valve are installed, a hydrostatic test must be done prior to tapping the line. If a leak is experienced, **LOWER THE TEST PRESSURE, PRIOR TO INCREASING THE TORQUE.** This will allow the Sleeve to achieve compression-set far sooner than if attempting to stop the leak under full test pressure. The reduction in torque will prevent unnecessary stress on pipe and Sleeve.

**FAILURE TO TEST ALL SLEEVES PRIOR TO TAP VOIDS ALL WARRANTIES.**

**SIZE-ON-SIZE SLEEVES REQUIRE A 1/2" UNDERSIZED CUTTER.**

**CASCADE WATERWORKS MANUFACTURING COMPANY**

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## **TIPS (Best Practices)**

1. Do **NOT** attempt to increase torque under full test pressure. Backing the test pressure off a bit will make it much easier to achieve a seal than fighting against the test pressure. Additionally, the reduced level of torque will lower stress on the pipe and sleeve.
2. Lubricating the gaskets will aid in allowing the gasket to achieve compression-set and reduce issues with damaged gaskets.
3. Blocking the sleeve reduces stress on the pipe and helps maintain alignment.
4. The level of torque needed is a systemic dynamic. Lower **ACTUAL** host line pressures require less torque, as do smaller branch sections (flanges). Unnecessarily high torque creates unnecessary stress and/or leaks from distortion of the pipe. High torque values should be reserved for situations that require it. Situations where higher torque values should be considered are:
  - A. High ACTUAL line pressure (not arbitrary pipe or valve ratings).
  - B. Large Host pipe sizes.
  - C. Large branch (flange) sizes.
  - D. Any combination of the above. The more of these characteristics that apply, the more likely a higher torque value will be needed.
5. Maintaining even gaps and applying even torque values all the way around the sleeve will reduce issues with achieving a seal. **Leaks should be addressed by lowering the test pressure and applying more torque near the branch (innermost bolts), not the outermost bolts.**
6. Any Sleeve for HDPE pipe should be for underground use only.

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