

# CHESTERTON®

## 5900

### INSTALLATION INSTRUCTIONS

**CAUTION: Observe all depressurizing, cooling and safety procedures before installation. Read all instructions before proceeding.**

1. Before disassembly of valve, measure and record the valve stroke and check the (as found) torque of the bonnet bolts.
2. After disassembly, inspect the internals of the valve body. Measure and record stack up of segment ring, backing ring and pressure seal height to see where the seal ring contacts the valve body. This may assist in inspection and identifying leakage areas in the valve body or bonnet.
3. The seal area surface should be free of residual material, wear, scale, corrosion, burrs, pits and scratches. Scratches and pits of .010" to .030" are sealable with graphite pressure seals. For first time use of graphite seals, complete and record all dimensional information of sealing components and supply to engineering. Surface finishes should generally be 32-64 RMS.
4. A thin film of lubricant should be applied to graphite pressure seal before installing it in the valve body. The lubricant should be approved by the utility. The lubricant will assist in more efficient consolidation of the graphite pressure seal. Care should be taken not to use excessive amounts of lubricant because it may create voids in the pressure seal area.
5. Before installing bonnet, make sure the bonnet moves freely in the valve body.
6. Carefully install the graphite pressure seal into the valve body. Pay close attention to the valve manufacturer's assembly instructions making sure proper alignment of the bonnet during take-up and torquing. Care should be taken not to dent or bang the graphite pressure seal during assembly process.
7. Proper torquing of the bonnet bolting is critical to keeping the bonnet aligned properly. Identify valve manufacturer torque requirements and use a cross pattern torquing procedure. Bolts should be lubricated with Chesterton Nickel Anti-Seize or equivalent. The bottom of the nuts should also be lubricated.
8. Before applying the torque, locate an accessible area around the bonnet to take measurements of the alignment of the bonnet.
9. Once the bonnet is brought up snug and is properly aligned, torque the bolts up to 30% of final torque using cross pattern process and check alignment.
10. Following the cross bolt torquing pattern, torque the bolts up to 60% of the final torque. Again, check alignment.
11. Following the cross bolt torquing pattern, torque bolts to 100% of final torque. Again, check alignment.
12. Continue torquing the nuts using the final 100% torque. Use a clockwise pattern around the bonnet until all the nuts are at the required torque.
13. If possible, after torquing is complete, use the hand wheel to stroke the valve open and force the stem backseat into the bonnet to help seat the bonnet. Use caution when utilizing the hand wheel so that the allowable backseat loads are not exceeded. If the bonnet is cocked or in the wrong position, the valve stem length will be different when compared to the length measured before disassembly. The stroke would be too short due to the stem contacting the bonnet prematurely. Verify final torque after final assembly and the valve stroke has been checked.
14. Bonnet bolting on the pressure seal should be retorqued at normal system operating pressure to keep the bonnet joint as tight as possible.  
Note: The Chesterton Flange Live Loading can be utilized to maintain bolt stretch and increase elasticity of the studs.