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MS-INS-WELD-60  
CP Revision E  
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## IMPORTANT

WARNING: Before servicing any installed valve, you must



- depressurize the system
- cycle valve

WARNING: Residual material may be left in the valve and system

### **Welding/Brazing Instructions for 4-Bolt “60” Series Ball Valves**

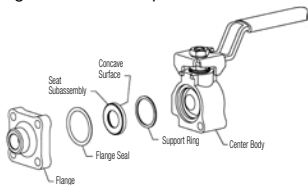
***This procedure is not necessary when using SWAGelok orbital welding machine or for 3 inch or longer tube/pipe extension ends. For SWAGelok non-swing out models, see separate instructions.*** Swing out the center body of the valve prior to welding. Damage to the flange seal O-Rings and plastic seats may occur if they are exposed to excessive heat from the welding operation.

**NOTE: Welding/Brazing should be done by qualified personnel as outlined in Section IX of the ASME Boiler Code. Weld filler material, if required for the particular welding process, should be the same as the base material.**

1. Open the valve.
2. Remove the body fastener from the “C” location on the swing-away side of the valve. (See diagram on inside.)
3. Loosen the remaining body fasteners.
4. Swing out the center body and remove the O-ring seals, the seats, (and back seats on 60M series) and the seat support rings. Do not clean lubricant off these parts. Set aside for reinstallation.≠

*continued on inside*

5. Wrap center body to protect its surface from weld spatter.
6. After welding/brazing and cooling processes are complete, reassemble the valve by reversing the previous steps, making certain the components are free of contaminants such as lint or dirt.



7. Torque the body bolts in the alphabetical (crisscross) sequence shown in the diagram to the value listed in the "1st" column of the chart below, according to the appropriate valve series. Repeat the sequence for the 2nd, 3rd, 4th, and 5th torques.



8. Purge the valve and system of scale, contaminants, and dirt while still in the open position and before cycling.

| Valve Series/<br>Body Material        | Fastener Type/<br>Material              | Torque Value, in.-lb |     |     |     |     |
|---------------------------------------|---|----------------------|-----|-----|-----|-----|
|                                       |   | 1st                  | 2nd | 3rd | 4th | 5th |
| 62 Series Brass                       | Carbon Steel Bolts                      | 5                    | 10  | 20  | 30  | 30  |
| 62 Series Carbon -or- Stainless Steel | Stainless -or- Carbon Steel Studs/Bolts | 5                    | 10  | 20  | 40  | 40  |
| 62X Series Stainless Steel            | Stainless Steel Studs/Bolts             |                      |     |     |     |     |
| 63 Series Brass                       | Carbon Steel Bolts                      | 10                   | 20  | 40  | 60  | 60  |
| 63 Series Carbon -or- Stainless Steel | Stainless -or- Carbon Steel Studs/Bolts | 10                   | 20  | 40  | 100 | 100 |
| 63X Series Stainless Steel            | Stainless Steel Studs/Bolts             |                      |     |     |     |     |
| 65 Series Brass                       | Carbon Steel Bolts                      | 25                   | 50  | 100 | 180 | 180 |
| 65 Series Carbon -or- Stainless Steel | Stainless -or- Carbon Steel Studs/Bolts | 25                   | 50  | 100 | 300 | 300 |
| 65X Series Stainless Steel            | Stainless Steel Studs/Bolts             |                      |     |     |     |     |
| 67 & 67X Series Stainless Steel       | Stainless Steel Studs/Bolts             | 35                   | 75  | 150 | 300 | 300 |
| 67 Series Carbon -or- Stainless Steel | Carbon Steel Bolts                      | 35                   | 75  | 150 | 400 | 400 |
| 68 & 68X Series Stainless Steel       | Stainless Steel Studs/Bolts             | 40                   | 100 | 200 | 500 | 500 |
| 68 Series Carbon -or- Stainless Steel | Carbon Steel Bolts                      | 40                   | 100 | 200 | 600 | 600 |