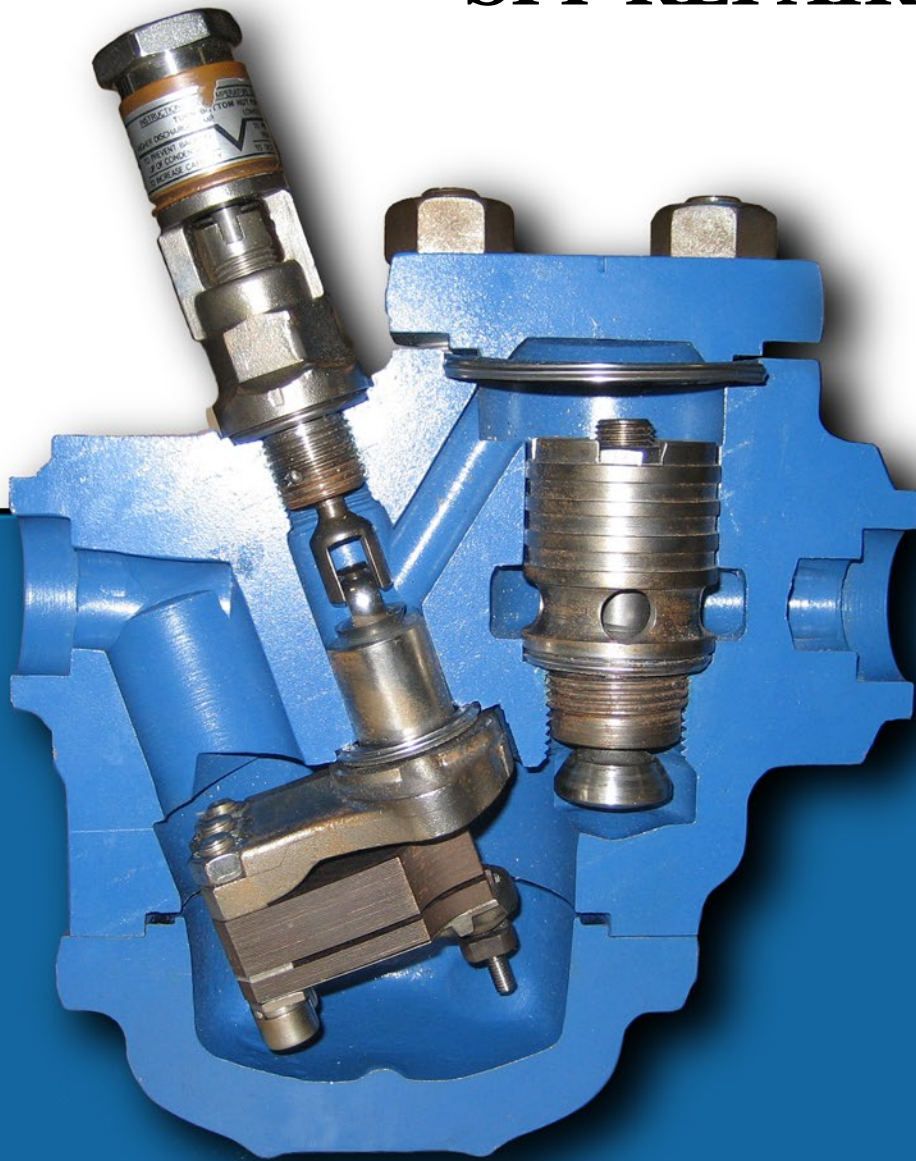


VELAN

STEP BY STEP SPF REPAIR GUIDE



Top Piston Cover

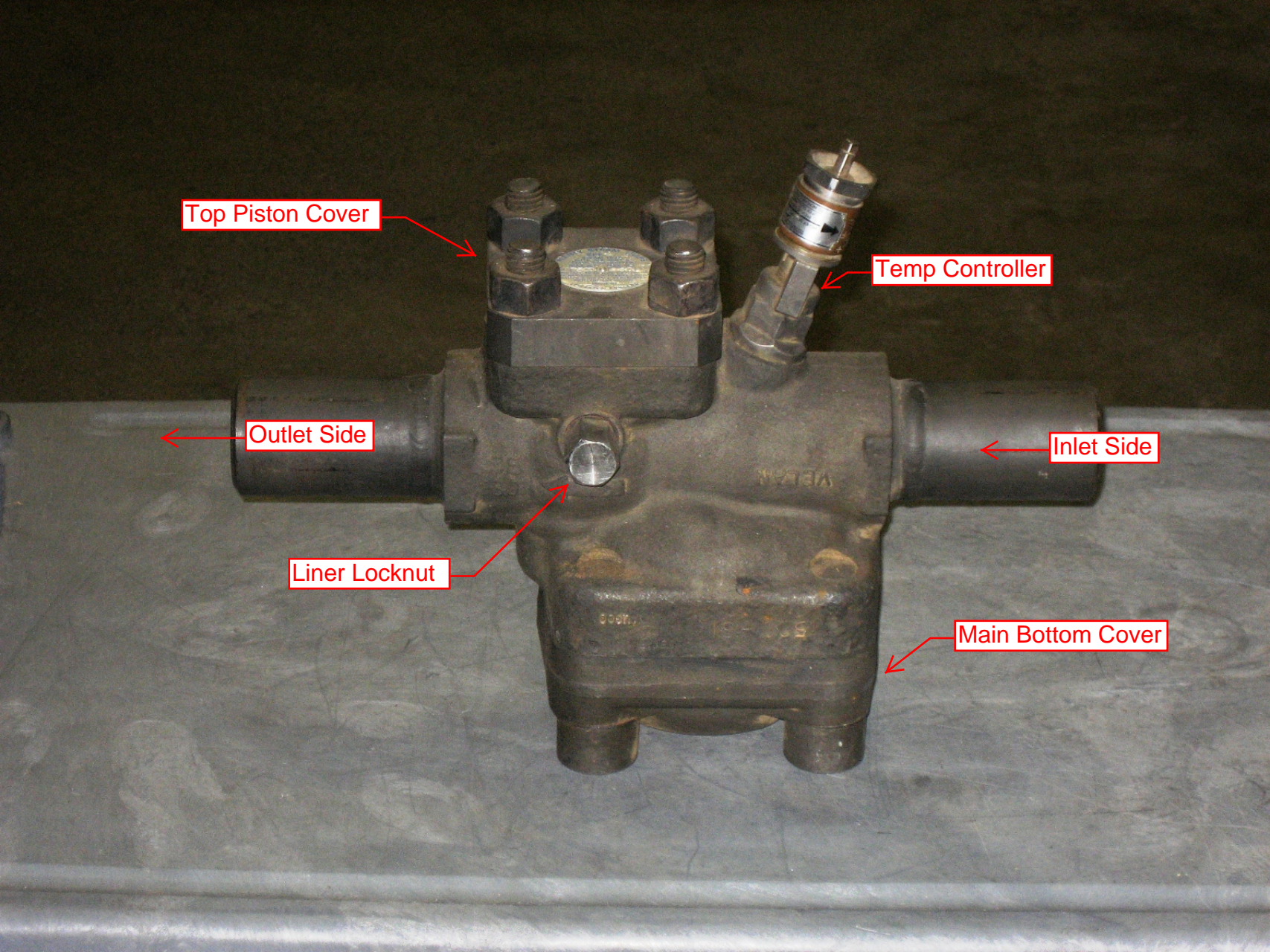
Temp Controller

Outlet Side

Inlet Side

Liner Locknut

Main Bottom Cover



Step-by-step SPF Repair Guide

NOTE: Use a wire brush to clean any residual gasket material, ensuring the body and cover gasket seating faces are clean and undamaged.

1. Reset the **Temperature Controller** to the centered neutral position



2. Remove the **Main Bottom Cover Bolts** using a $\frac{3}{4}$ " hex allen head X $\frac{3}{4}$ " drive socket (a "cheater bar" may be needed)



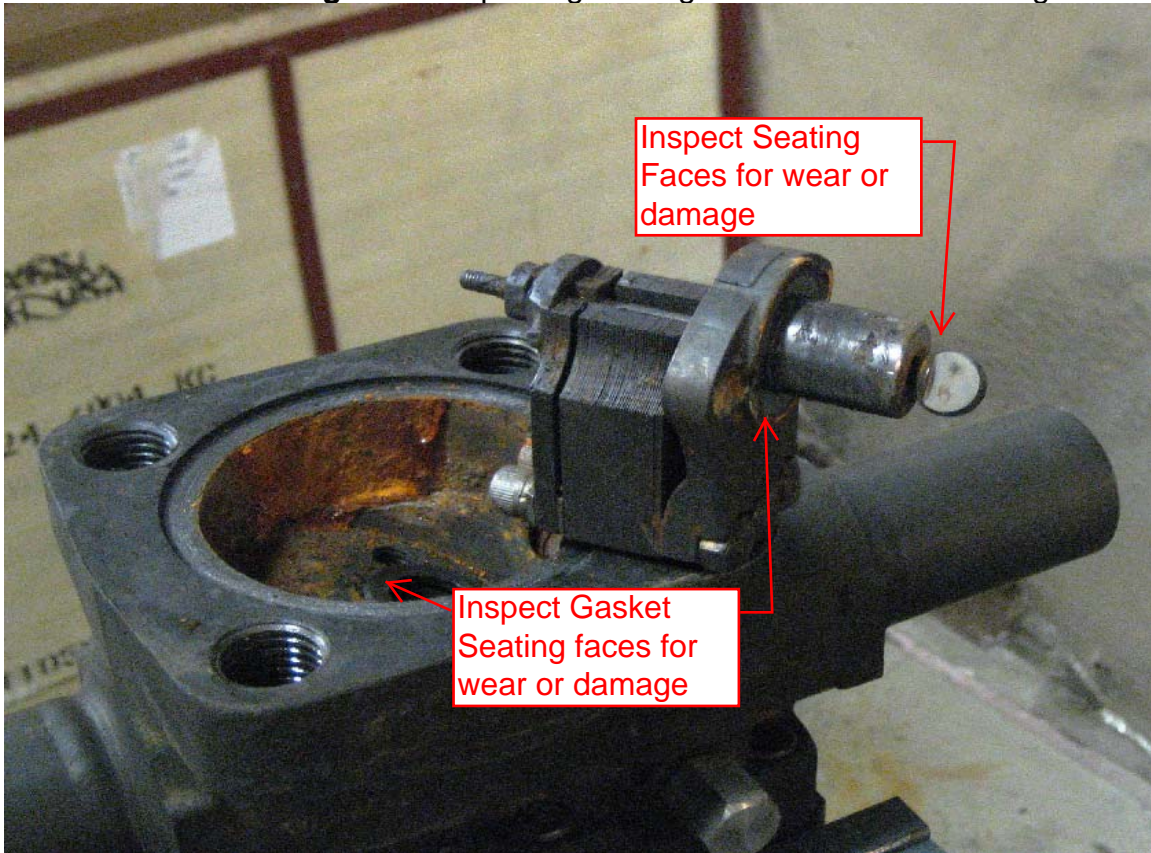
3. Remove the **Main Bottom Cover Gasket** and discard.



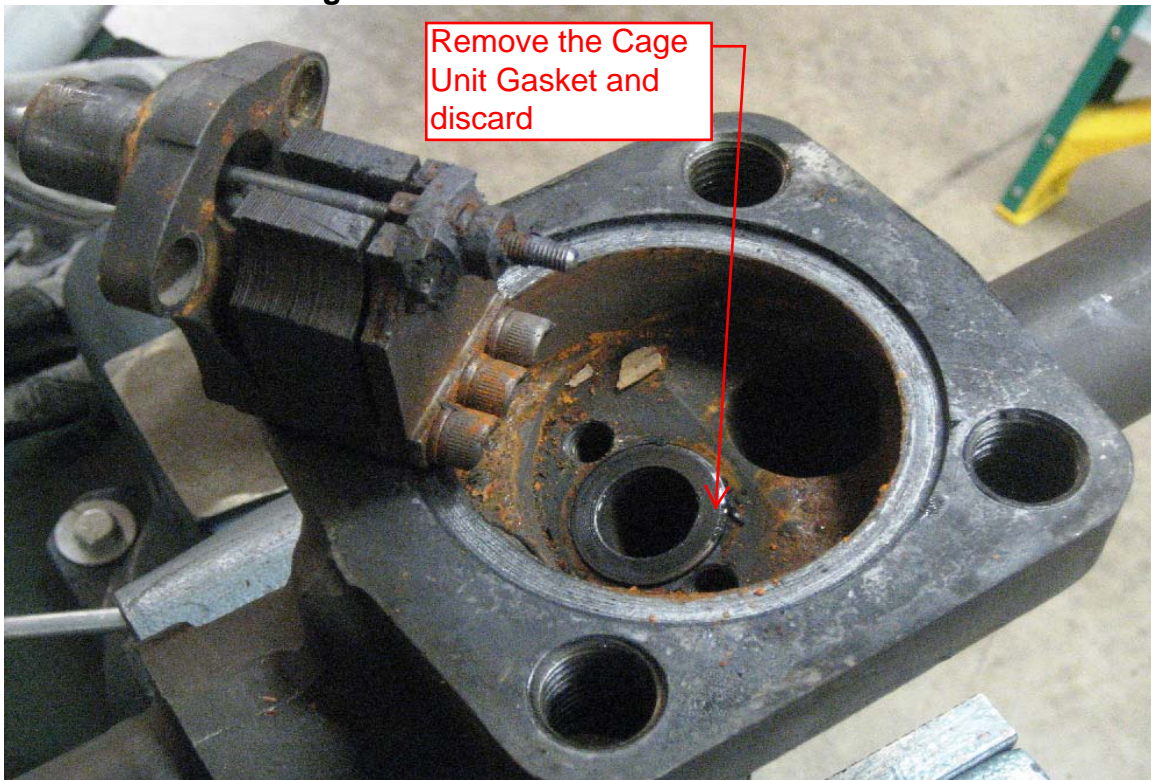
4. Remove the allen head **Cage Unit Bolts** and save for re-assembly



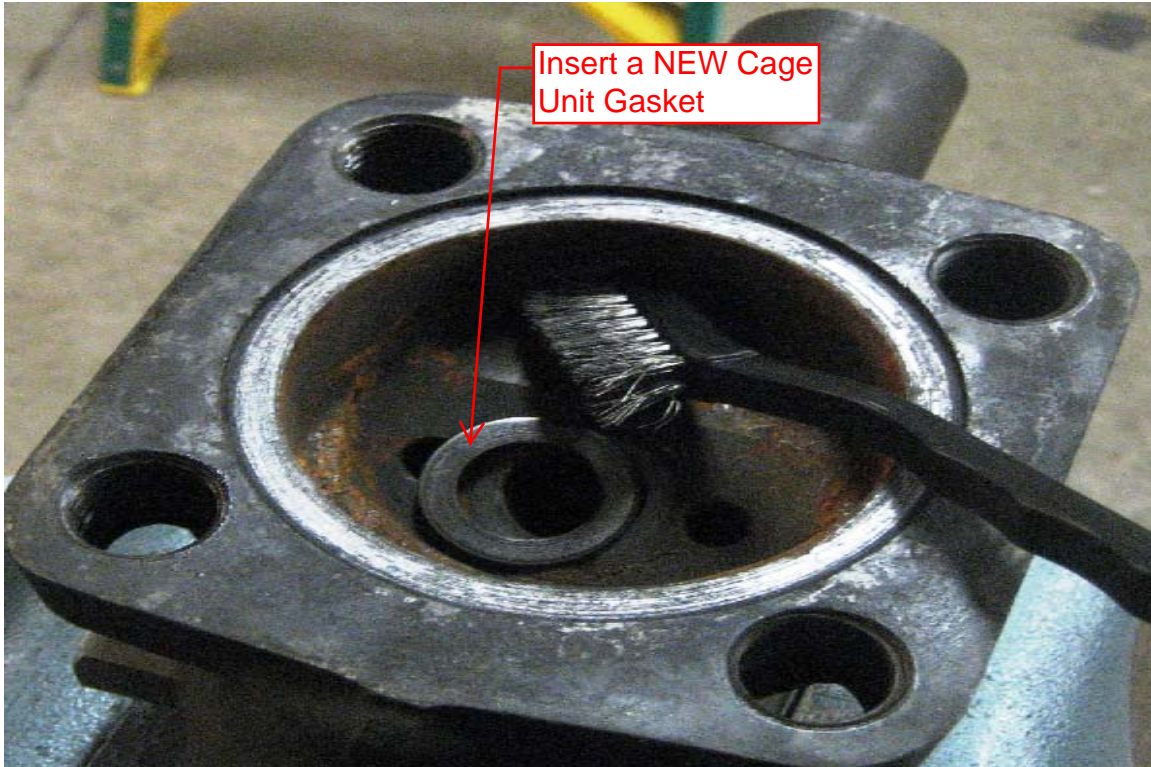
5. Remove the **Cage Unit** inspecting seating faces for wear or damage



6. Remove the **Cage Unit Gasket** and discard



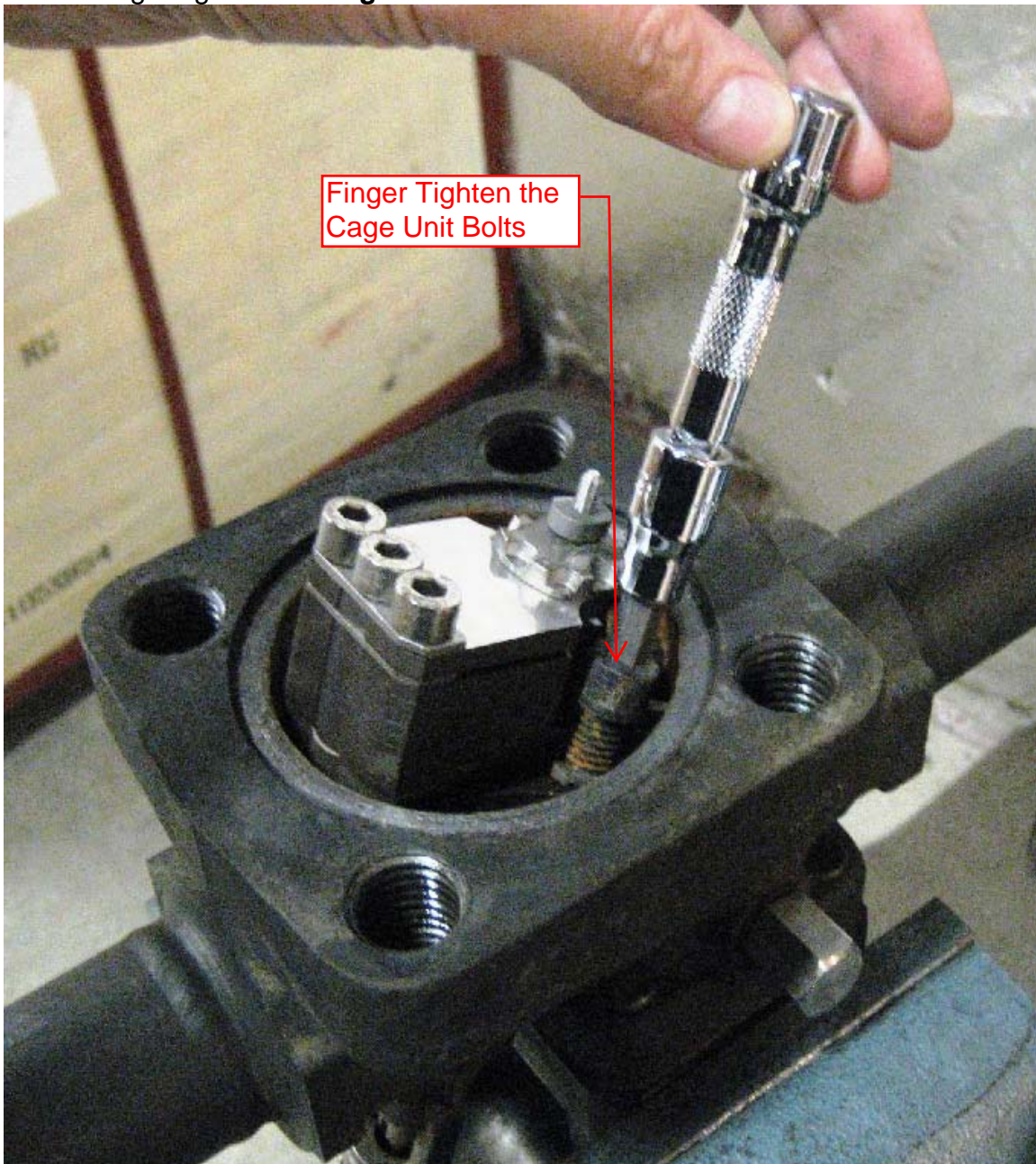
7. Insert the **NEW Cage Unit Gasket** making sure the area is clean of dirt and debris



8. Compare the **NEW Cage Unit** to the **OLD Cage Unit** to ensure it is physically identical.



9. Insert the **NEW Cage Unit** into the trap carefully aligning the slotted valve assembly with the temperature controller. Make sure that the bimetal plates are clean and that the space between the segments is clear. Finger tighten the **Cage Unit Bolts**



10. Carefully tighten the **Cage Unit Bolts** evenly (a $\frac{1}{2}$ turn alternating back and forth until you reach the desired bolting torque of 35 ft-Lb)
11. Insert a **NEW Main Bottom Cover Gasket**, replace the **Main Bottom Cover** and finger tighten the **Main Cover Bolts**. Utilizing ANTI-SEIZE or some comparable product on the bolt threads will make future trap repairs quicker and easier. **DO NOT TIGHTEN MAIN COVER BOLTS YET.**

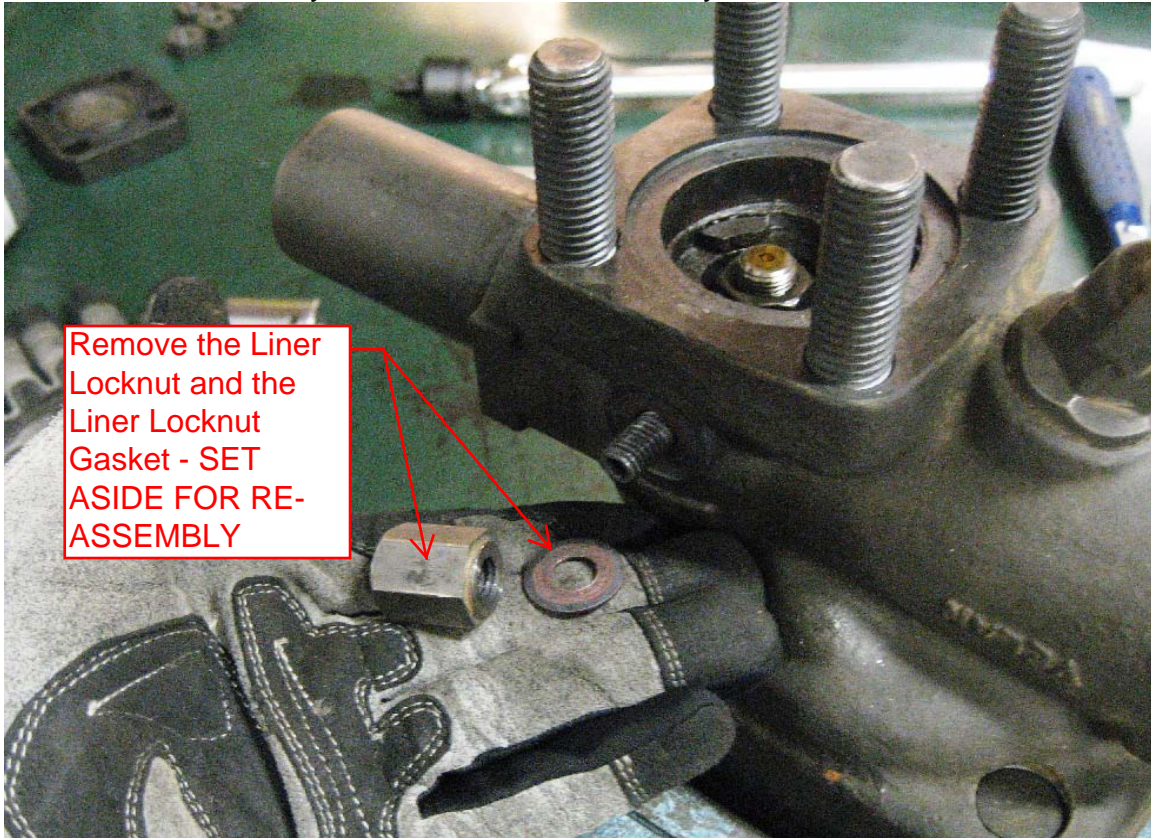
12. Remove the **Top Piston Cover Nuts** using a 1-1/16" X 3/4" drive socket



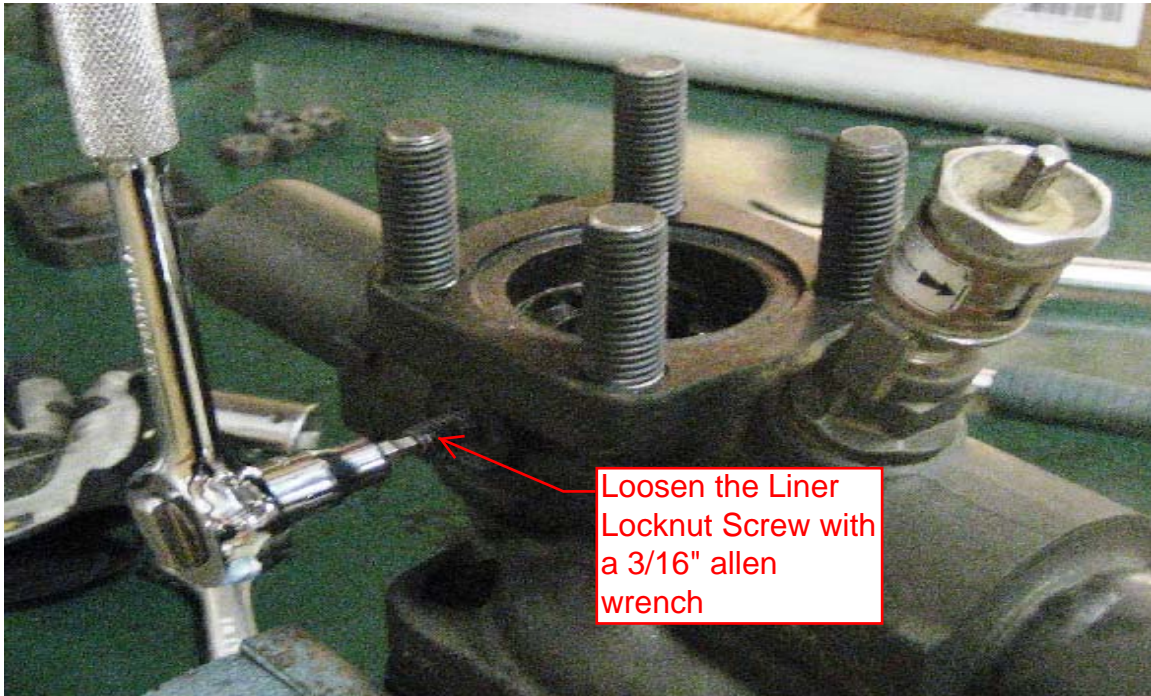
13. Remove the **Top Piston Cover Gasket** and discard



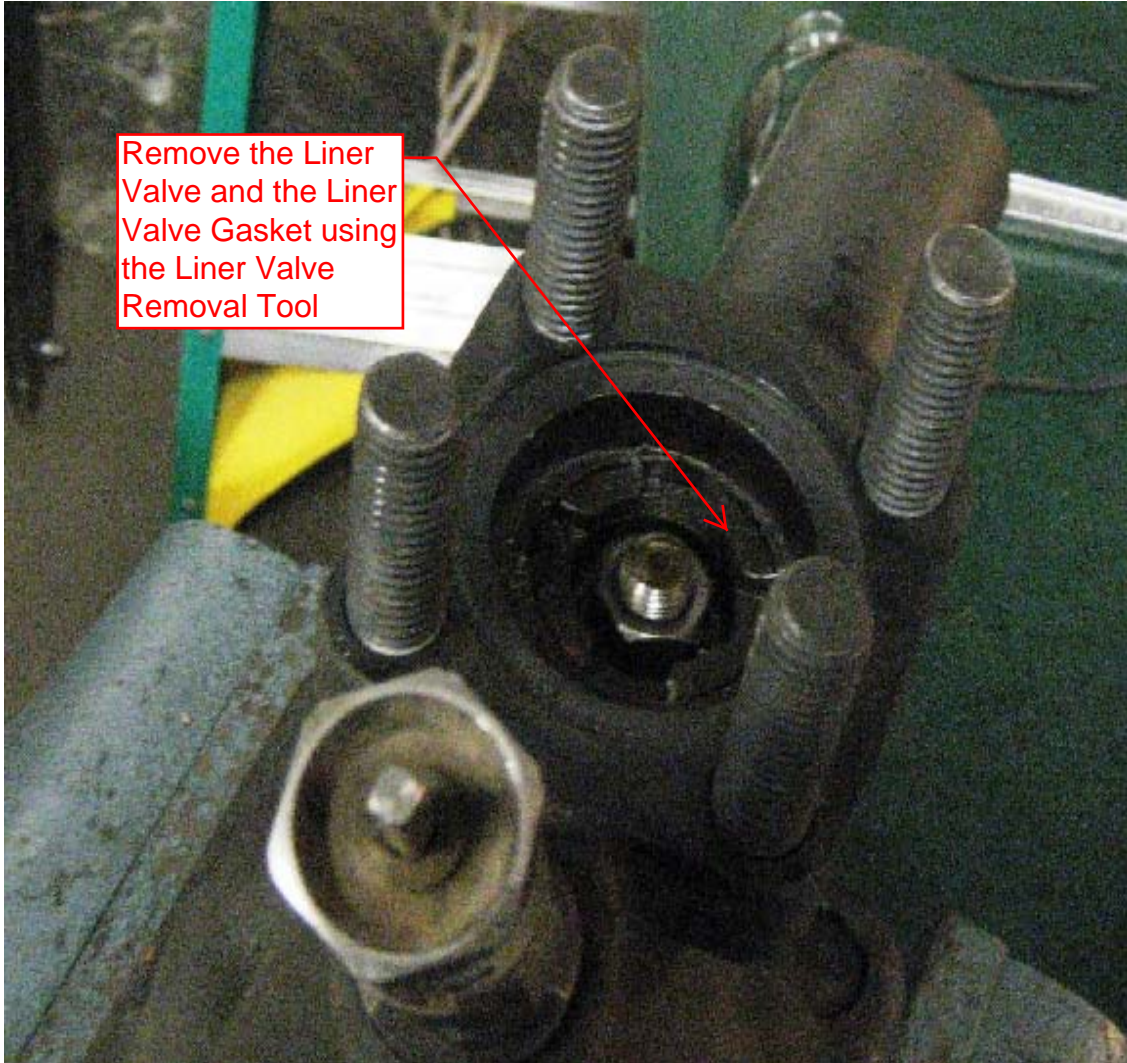
14. Remove the **Liner Locknut** and the **Liner Locknut Gasket** located on the side of the body – set aside for re-assembly.



15. Loosen the **Liner Locknut Screw** with an allen wrench to allow rotation of the **Liner Valve**.

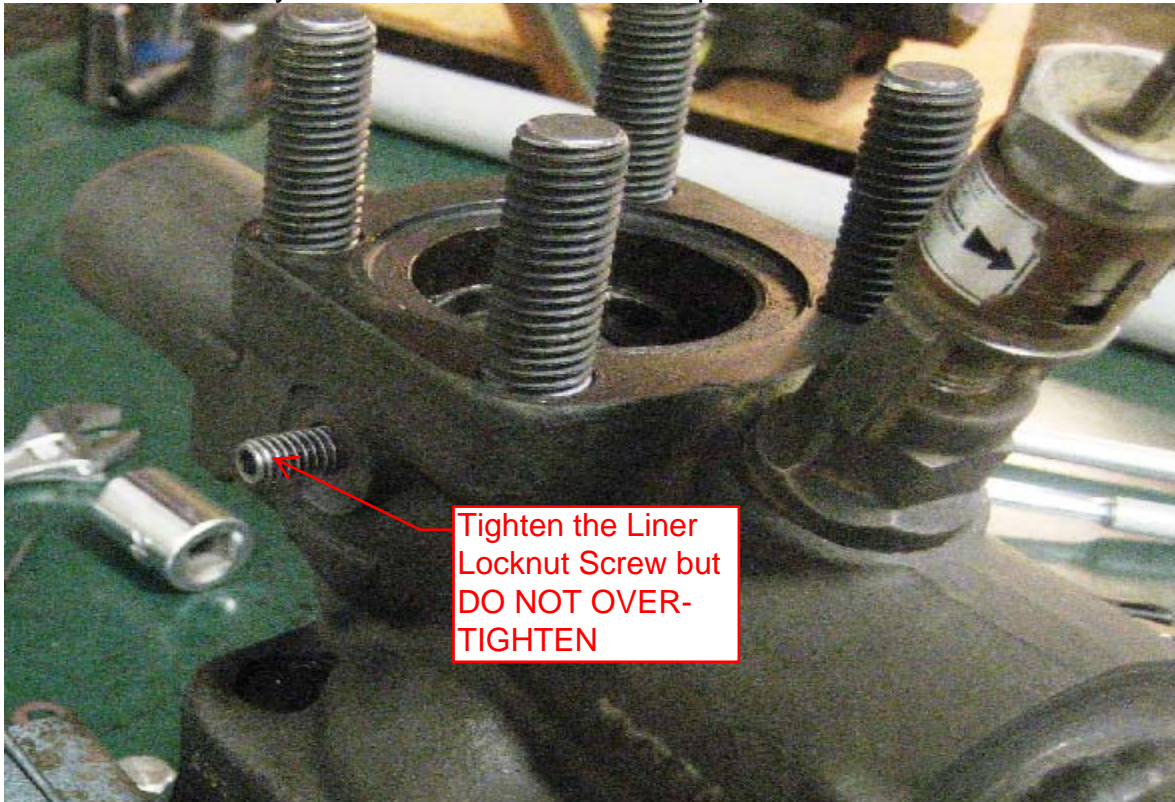


16. Use the **Liner Valve Removal Tool** to remove the **Liner Valve** and **Liner Valve Gasket**. Carefully inspect the seating faces for wear or damage. Discard the **OLD Liner Valve Gasket**.



17. Insert the **NEW Liner Valve Gasket** making sure the area is clean of dirt and debris
18. Insert the **NEW Liner Valve** and ensure the liner valve is effectively tightened to seal the gasket.

19. Tighten the **Liner Locknut Screw** to secure the **Liner Valve** but DO NOT over-tighten. Over-tightening may cause distortion in the liner bore, which will adversely affect free movement of the piston



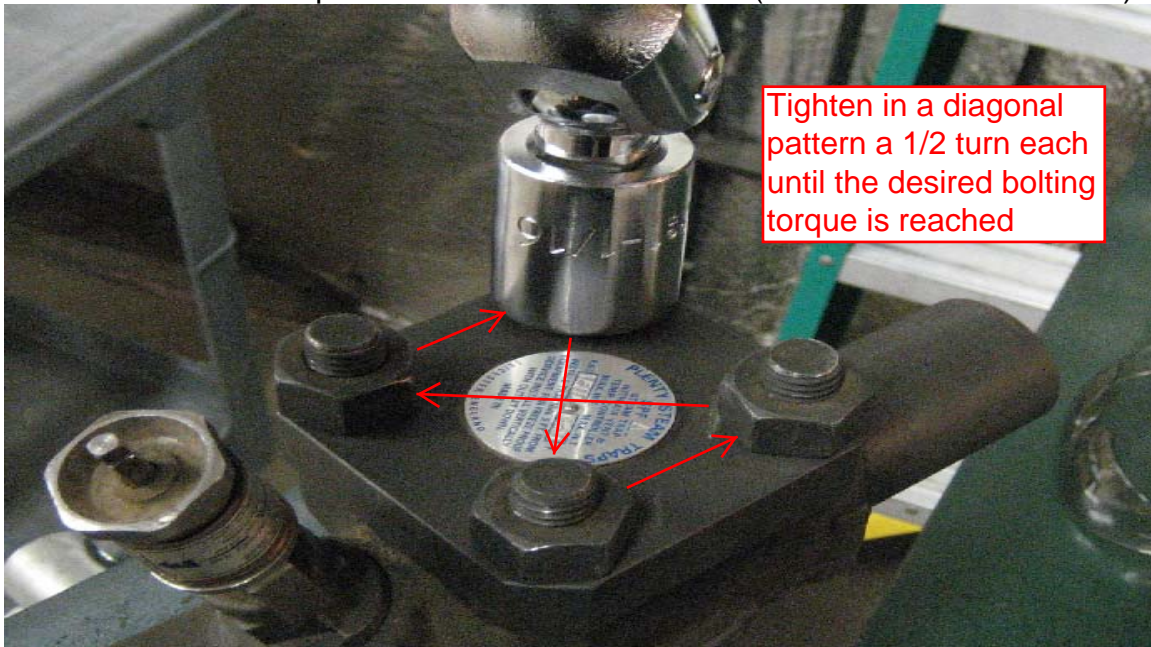
20. Install a **NEW Liner Locknut Gasket** and secure the **Liner Locknut** to prevent loosening of the **Liner Locknut Screw**.



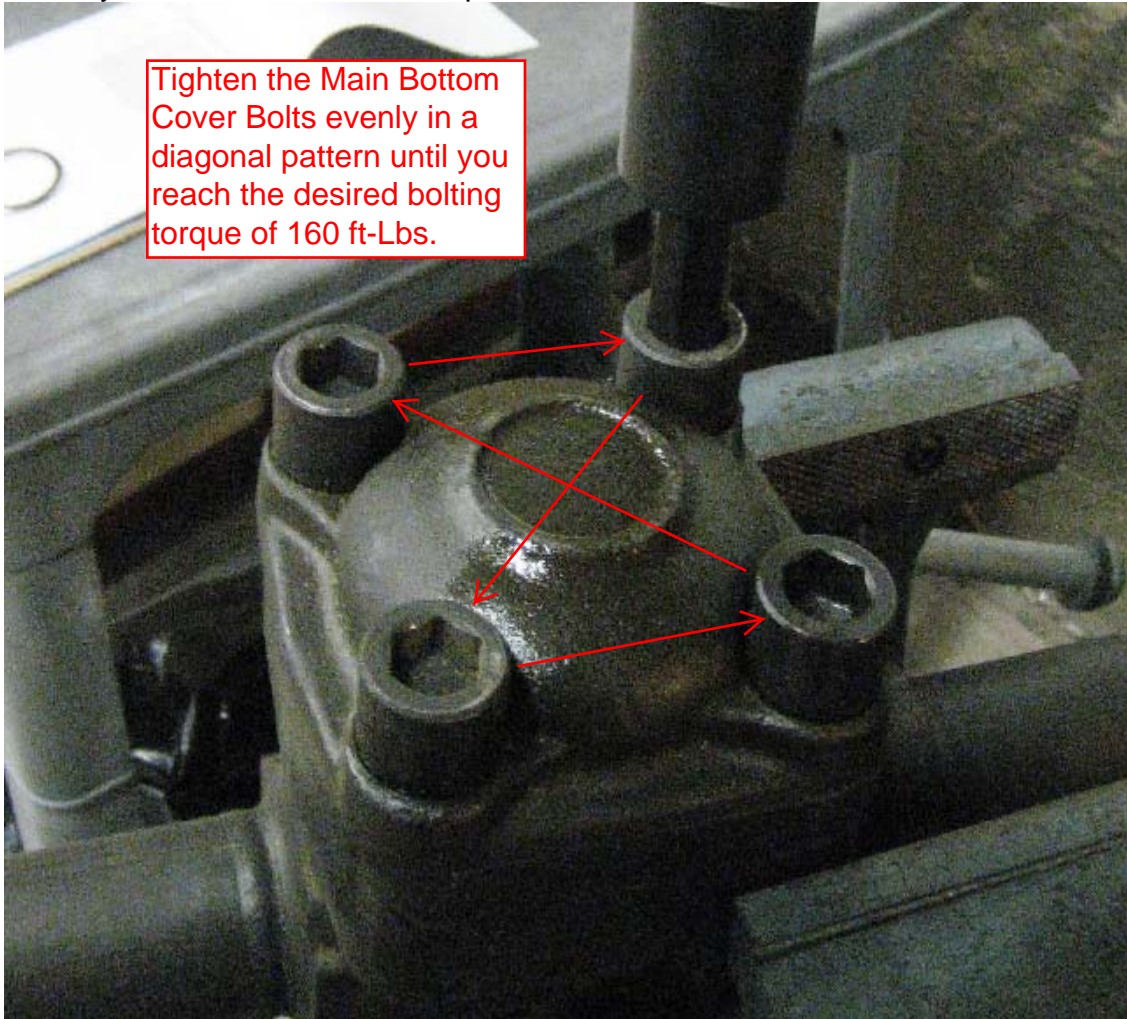
21. Insert a **NEW Piston Cover Gasket**, replace the **Top Piston Cover** and finger tighten the **Piston Cover Nuts**. Utilizing **ANTI-SEIZE** or some comparable product on the bolt threads will make future trap repairs quicker and easier.



22. When you are certain ALL steps have been completed successfully, tighten the **Piston Cover Nuts** evenly in a diagonal pattern until you reach the desired torque of 60 ft-Lbs for the SPF0-3 (100 ft-Lbs for the SPF4-7)



23. Tighten the **Main Bottom Cover Bolts** evenly in a diagonal pattern until you reach the desired torque of 160 ft-Lbs



24. Once the trap is put into service and the system has stabilized you can adjust the temperature controller to achieve maximum efficiency
25. After the trap has been in service for a few hours re-check the **Top Piston Cover Nuts** and the **Main Bottom Cover Bolts** to ensure the bolting torque remains within specifications. Thermal cycling and vibration could affect bolting tightness.