

3.4 Glycol Draining

Operational Guidance

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These instructions cover the draining of a glycol filled hydraulic system. If the inner vessel is in place, **CF₃I must be drained first**. Unlike glycol filling, glycol draining will not expose the inner vessel to unusually large pressure changes, thus there is more room for error.

This document serves as an operational guidance to glycol filling. These instructions may be modified as the situation or hardware warrants as long as 3 [Glycol Handling Procedure](#) is followed in conjunction with filling.

Valve labels in this instruction assume that the hydraulic cart with an attached pressure vessel and inner vessel are being drained. All that is required for this procedure is a hydraulic system with a high port and a low filling port.

1. Review Procedure 3 "[Glycol Handling Procedure](#)" and have it available.
2. Close MV-4 to AC-2.
3. Run the Cart Commissioning tool and begin data logging every 60 seconds. Note the inner vessel position.
4. The pneumatic system should be just under atmospheric pressure with the pneumatic system depressurized. Check the inner vessel position if changing pressure.
5. Follow the "Before Glycol Handling" section of Procedure 3. Set up the work area and don PPE. Respirators may be required if large surfaces of glycol are allowed to evaporate.
6. Assemble and connect an empty glycol container, and a hose between MV-15 and the container. A 7/8" wrench is required to connect the draw hose.
7. Slowly open the top port, MV-14, and release the glycol to atmospheric pressure. If glycol starts to flow out of MV-14, close the valve, reduce the pressure inside the hydraulic system, and try again.
8. Begin draining by slowly opening MV-15 and any valves on the drain tube. Avoid splashing. Monitor the inner vessel position and the fill level of the glycol container as the glycol drains.
9. While glycol is draining, lower the hydraulic ram to it's bottom stop.
10. When 2" of headspace remains in the glycol container, close MV-15, transfer the drain hose to a new container, and reopen MV-15.

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11. If the glycol container is not the low point of the system, there will be a small amount of glycol left in the system. Drain this volume into a smaller container, then pour the glycol into the large container.
12. When glycol draining is complete, close MV-15 and MV-14. With paper absorber ready, disconnect the draw hose from MV-15. Raise the hose vertically over the glycol container to ensure all the glycol has been drained.
13. Clean up any glycol spillage and glycol residue from off the drain hose. Bag the draw hose for storage. Clean glycol residue out of any empty containers and dump the glycol/water into a 'Waste Propylene Glycol' bucket.
14. Cap the open ports on the hydraulic system.
15. Complete the “After Glycol Handling” section of Procedure 3.