



MHGU TO 5L VCS TANK LH2 TRANSFER PROCEDURE:

Ensure all personnel have proper Personal Protective Equipment:

- Safety glasses and face shields
- Fire retardant coveralls or apron (no shorts)
- Cryogenic gloves
- Closed-toe shoes
- Hand-held or clip-on hydrogen detectors
- Ensure the transfer line is securely connected to the dewar
- Attach helium cylinder supply tubing to the transfer line purge port
- Open purge valve and purge the transfer line with 2 SLPM flow of helium for at least 1 minute using the purging plug (transfer line volume is 0.2 liters)
- Remove the transfer line plug
- Connect the transfer line securely to the VCS tank
- Purge the VCS tank through the transfer line and out the VCS tank vent valve with 5 SLPM of helium for 5 minutes
- Shut helium purge valve
- Disconnect helium supply tubing
- Cap the transfer line purge port with ¼" NPT plug
- Attach helium supply to the helium shroud on the LH2 transfer line
- Turn on a flow of helium to the helium vapor shield at 3 SLPM
- Allow helium to flow for at least 20 seconds to purge the transfer line shroud
- Attach transfer line to VCS tank
- Ensure dewar pressure is approximately 15 psig, adjust pressure as required
- Slowly open liquid valve on dewar to begin flowing hydrogen
- Monitor VCS tank temperature and pressure, DO NOT exceed 30 psig
- Close liquid valve on dewar when vapor temperature sensor reads within 50 mK of liquid temperature, indicating the VCS tank is full
- Detach the transfer line from the VCS tank and cap the transfer line
- Hang the transfer line in the fueling station
- Conduct VCS tank test