

# Fridge Fill Procedure

## Procedure for Filling the Fridge with LHe

The fridge is supposed to have no LHe at the beginning. You can/should use [this preset page](#) to monitor the key parameters.

A serious failure during this procedure is an overfill of LHe to the fridge (above the separator). When you lose track of the liquid level, you must close the bypass valve (on [Fridge\\_Valve\\_Main.vi](#)).

1. Change the separator flow to 20 SLM (from 7 SLM usually).
2. Wait for 1.5-2.0 hours.
3. Change the separator flow to 25 SLM.
4. Change the setting of the gate-valve bypass as follows:
  - a. The auto control is disabled.
  - b. The absolute valve position is 0.08 turns.
5. Change the setting of the fridge valve system as follows (on [Fridge\\_Valve\\_Main.vi](#)):
  - a. The level-probe mode is "CONT" (not "HOLD").
  - b. The Interlock with Heat-Ex Top is enabled.
6. Open the bypass valve at 2.0 turns. Confirm that the fridge return flow goes up.
7. Open the bypass valve at 3.0 turns.
8. Change the separator flow to 30 SLM.
9. Wait until the **Ann-Plate Top** resistor goes up to 1400 Ohm, which indicates that the liquid started accumulating. It usually takes 30 minutes from step #3. If it takes longer than 40 minutes, search for unexpected conditions.
10. Wait until the **nose LHe level** reaches 100%. It usually takes 15 minutes from the previous step.
11. Wait until the **Heat-Ex Bottom** resistor goes down from 1400 Ohm and then up. It usually takes 10 minutes from the previous step.
12. Wait until the **Heat-Ex Top** resistor goes up to 1400 Ohm, which indicates that the liquid is as high as Heat-Ex Top. It usually takes 10 minutes from the previous step.
13. Close the bypass valve.
  - a. Usually the software interlock sets it at 0.5 turns automatically.
  - b. Anyway you set it at 0.0 turns manually.
14. Change the separator flow to 7 SLM.
15. Change the setting of the gate-valve bypass as follows:
  - a. The set point for the auto control is 40 Torr.
  - b. The auto control is enabled.
16. Change the level-probe mode back to "HOLD" if you changed it in step 5.

**This attached PDF version of the Fridge filling procedure is exactly the same as we have above, along with the annotated pictures. 14 Jan 2024**  
[Filling\\_Procedure.pdf](#)

**The following procedure is the same as the above procedure but written in such a way with annotated pictures.**

[Fridge Filling Procedure \(Annotated Procedure\)](#)