

PUMP DOWN PROCEDURES

A/ GENERAL PUMP DOWN PROCEDURE

1. Make sure that all silicon and CsI biases (CAEN, TENNELEC) are OFF
2. Turn off chip power (Sparky), VME crate and 12V for thermocouples
3. Make sure that the vacuum interlock system is properly installed
4. Make sure that the chamber is free from tools, kimwipes, ...
5. Check with the multimeter that the tower and thermocouple box are electrically isolated from the chamber
6. Check that the towers have screens and are locked in place
7. Check that covers on silicons are removed
8. Check that no cables are interfering with the detector front plane
9. Check that cables inside chamber are properly connected and grounded
10. Close the door and tighten the screws (just with screwdriver, no allen wrench needed)
11. Close the needle valve on the chamber
12. Close the valve on the rough pump
13. Plug the rough pump into power (turbo pump is still off!)
14. Monitor pressure on the output from rough pump – after it goes down slowly open rough pump valve
Note: rough pump will start to vibrate upon sucking the air from the chamber and turbo pump vanes will start to rotate due to air passing through them
15. After pressure in chamber decreases below ~200 mTorr start the turbo pump

16. Wait until the pressure reaches $\sim 5 \cdot 10^{-5}$ Torr or below before start working (should not take longer than 45-60 minutes)

B/ FIRST PUMP DOWN PROCEDURE AFTER ANY ACTION WHICH INVOLVED DISCONNECTING OR RECONNECTING OF WATER TUBING INSIDE CHAMBER

1. Remove all detectors from the chamber
2. Check that the water tubing is connected and tighten properly
3. Run chiller with chamber on air to check for any immediate leaks
4. Turn off chiller
5. Pump down the chamber to double check on leaks under vacuum:
 - I. Make sure that power for chips (Sparky), all biases, VME crate and 12V for thermocouples are OFF
 - II. Make sure that the chamber is free from tools, kimwipes, etc. and follow steps 8. – 13. from paragraph A/
 - III. Wait until pressure decreases below $\sim 5 \cdot 10^{-5}$ Torr (should not take longer than 45-60 minutes)
 - IV. Run the chiller under vacuum
6. If no leaks observed under vacuum (high vacuum reached) vent the chamber (see venting procedure), insert detectors and continue with general pump down procedure below