

Operating the 7 T Superconducting Magnet

- **Safety Precautions**
 - Remove watches and magnetic cards (credit cards, etc) before beginning to run the magnet.
 - Put up the High Magnetic Field warning signs. If none are on the power supply, get some from the Sample Environment lab (B-129).
 - There is no persistence switch, so the current on the leads is what is running through the magnet. This means that whenever the magnet is energized there is substantial current in the leads. Do not let any conductors come in contact with the exposed leads to avoid shorts.
- **Setting up the Power Supply**
 - Use the Oxford 120-10, on the electronics rack with the temperature controller and helium level sensors, as the power supply for this magnet.
 - Connect the power supply to the magnet leads and remove the hose clips to allow gas cooling of the leads inside the cryostat.
 - Connect the RS232 cable from the instrument control computer to the back of the power supply and initialize communication from ICP.
- **Running the Magnet**
 - Control should be done through ICP. The conversion between amps and tesla for this magnet is 0.0778 T/A or 12.85 A/T.
 - Manual control is also possible from the power supply front panel. Appropriate ramp rates are given in the following table.

Field Range (T)	Ramp Rate (A/sec)
0 to 6	0.16
6 to 6.5	0.04
6.5 to 7	0.02

- Note that these ramp rates must be used when ramping down as well as up.
- It is a good idea to use a gauss meter to check that the magnet is correctly set up and you are actually generating the displayed field.
- When you are done, ramp to 0 current and turn off the system.