

RAMPING THE MAGNET UP FROM THE COMPUTER

Assumptions:

Power supply is off
Magnet is at zero field
Safety policies permit operation of magnet
Cryostat is cold, at least 20% LHe level in magnet reservoir

Restrictions:

DO NOT run up the magnet with the shim heater off - magnet will quench
DO NOT exceed rate limits listed below - magnet can quench
DO NOT allow loss of cryostat isolation vacuum - magnet can rupture
DO NOT allow persons with medical implants near magnet - death can occur

Procedure:

Turn on magnet power supply, if necessary
Turn shim heater on to 0.1 A, if necessary (on top of Magnet PS, Rack D)
Remove any unsecured magnetic objects from area within 4m of magnet
If no hall access has been made since last magnet use, search can be skipped
Hit "Unlock Magnet Controls" button
Verify that there is no current in the leads (Power supply icon, far left)
Hit "Hold" button
Hit "Heater On" button, you'll need to confirm this action
Wait until timer counts down to zero
Type the value 60.0 into the "Setpoint" box
Type the value 1.50 into the "Setrate" box
Hit the "To Setpoint" button
Magnet power supply makes a "clunk" sound around 4 amps - this is normal
Wait for magnet to reach 60.0 A (40 min)
Type the value 1.00 into the "Setrate" box
Type the value 72.0 into the "Setpoint" box
Wait for magnet to reach 72.0 A (12 min)
Type the value 0.50 into the "Setrate" box
Type the desired magnet current into the "Setpoint" box
Currents for full-field and for baseline measurements are on whiteboard
Wait until magnet current reaches the requested value (5 to 11 min)
Hit the "Hold" button
If persistent mode is not desired, stop here
Wait for 30 seconds
Hit the "Heater Off" button
Wait until timer counts down to zero
Hit "To Zero" button to ramp leads down
Hit "Lock Magnet Controls" button

Possible Problems:

A quench at around 10 amps usually means that the shim heater is off
A quench at other currents could indicate several things - contact an expert
Power supply usually indicates correct residual current after a quench
After a quench, hit the "Hold" button, turn on heater, and resume