

Room Temperature Usage

Standby Condition

1. Pump (0 Hz, isolated from atmosphere, vent valve closed), compressor, tool should be off
2. Coax cables and control cable should be disconnected
3. Nothing between magnets (CCR head back, Oven/RT off to side)
4. Tables should be clean (look at pictures)

Operating Room Temperature Tool

1. **Turn on Lakeshore system (below the magnets).**
2. **Calibrate the magnets.**
 - a. Unscrew and remove the RT head from its station (right-most head) and place it onto the measurement station (between the magnets).
 - b. Unscrew the pole from the RT head and remove it. Connect the "Field Calibration Card" and insert the pole back into the head.
 - c. Set desired magnet position (1 or 3 only).
NOTE:
Setting must be 3 for Oven/CCR head.
Setting must be 1 if $> 0.9T$ is desired (RT head only).
 - d. Connect all 8 coax cables and control cable to RT head (numbers must match)
 - e. Run "Field calibration" under Toolbox. Run DC calibration (only run AC if you will use AC measurements). Sensor sensitivity = 0.1933 V/T. Should take about 10 minutes (and several minutes longer if AC is run).
3. **Measure your sample (RT head only)**
 - a. Mount your sample in the appropriate card and insert it into the RT pole. Be very careful with any pins and do not overtighten the screws. Note that soldering onto the large RT probe card is prohibited.
 - b. Insert the pole back into the head and connect cables.
 - c. Under *Measure*
 - i. Run Ohmic check to confirm the contacts are good. Be careful to use a max current that is safe for your sample. Note that the voltage compliance is 20V by default. Note the correlation, you want it as close to 1 as possible (recommended at least 0.999).
 - ii. Run resistivity and hall measurements.
 - iii. Save results by exporting data under the "Results" tab. Make sure to save results in your own personal folder.
4. **Unload sample**
 - a. Disconnect the coax cables and control cable before removing the pole to retrieve your sample.
 - b. Leave the entire station the exact way you found it.
5. **Turn off magnets**
6. **Ensure station is in Standby condition**
7. **Fill out log book. Single entry for every head used**

Do's and Dont's:

Mounting Sample

- Grip the pole by the base when removing from head
- Do not solder onto the large RT prober card.
- Wear gloves when mounting or removing sample.
- **NO silver paste!** This RT prober card is used by many users and must be kept clean. If you use any paste, you may lose access to the tool. This is an expensive component
- Kapton tape is allowed for mounting your sample.