

# Cryomagnet manual control instructions

Before connecting the PS120-10 to the mains connect both ends of the magnet current leads and the persistent mode switch heater.

Press **'On/Off'**. The **'Standby'** light extinguishes. The **'Power on'** light indicates the unit displays P52.04, then 0.00 and after a short time the **'Output Clamped'** light indicates.

Press **'Hold'** on sweep control. There is an audible clunk as the **'Forward'** and **'Hold'** lights indicate. **Note** : Forward is with the North pole at the top.

If the tesla light isn't illuminated, press **'Current / Field'** to toggle the display.

Press **'Heater on'** until the Switch heater output light stays on.

Hold down **'Set point'** on the display panel and press **'Raise'** on the adjust panel until the required field is shown.

Hold down **'Set rate'** and press **'Raise'** until 0.400 T/min is shown.

Press **'Set point'** on Sweep control (not display). Both Output Current and Output Voltage meters will display Forward and Charge respectively. Once the set field has been attained the Output Voltage will fall to zero and the output will be at a value equivalent to the set field (70 amps at 5T). The Hold light will be off and the rate limiting light will remain on throughout.

Press **'Hold'** on sweep control. The hold light illuminates.

Once the required field has been attained and the system is on hold the cryomagnet may now be put into persistent mode as follows.

Hold **'Heater On'** until the Switch heater output light extinguishes.

Wait for up to 20 minutes.

Press **'Zero'** on Sweep Control and immediately the display will show the field apparently falling ( it is actually the power supply current falling ).

If the display does not reach zero and rises back to its original set point repeat step 13.

The cryomagnet is now persistent and as both meters are at zero the only visible indication that a field exists are the two warning lights. ( One on the cryomagnet and one on the control rack). The PS120-10 is programmed with maximum energising rates for all field values.

**In the event of a quench.** Do not switch off the magnet power supply: the controller will automatically run the power supply down to zero at a controlled rate.

**To change the field to a different value, or to zero it; the cryomagnet must be taken out of persistent mode as follows.**

Press **'Set Point'** on Sweep control. The current ('field') will now rise to its original set point value.

Hold **'Heater on'** down until the Switch Heater Output light remains on when the button is released. This is only possible when the set point has been achieved.

Press **'Hold'**, the hold light illuminates.

**To change the field to a different value**

Adjust **'Set Point'** on the display panel to the new value.

Press **'Set Point'** on Sweep Control. (Follow steps 8 - 14, page 1).  
Ensure the cryomagnet is returned to persistent mode to conserve Helium.

**To zero the field**

Press **'Zero'** on sweep control; at zero field **ensure** that the switch heater is turned off.

**WARNINGS:**

If the instrument needs to be degaussed a PC based program is available. Degaussing **Must** be carried out at zero field.

Only move the cryomagnet when at zero field.

Only reverse the cryomagnets polarity at zero field.

When controlling the needle valve on Auto gas flow **do not** set the temperature below 2k.