

HMS Magnets Routine Pre-run Check Out Sheet

Date: _____

Personnel: _____

Experiment Number: _____

Notes: Record Values in columns where applicable.

Special Notes:	Q1	Q2	Q3	Dipole

A: Physical Observations	Q1	Q2	Q3	Dipole
Magnetic material near magnet cleared				
Electronic equipment near magnet cleared				
Personal near HMS advised of operations				
Magnetic field warning signs in place				
All clear around magnet				

B: Vacuum Checks	Q1	Q2	Q3	Dipole
Condensation of Freezing on OVC				
Vacuum Reading V = Torr				
Spectrometer Vacuum reading V = Torr				

C: Cryogenic and Valve Checks	Q1	Q2	Q3	Dipole
U Tubes inspected for condensation/frosting				
CCR inspected for condensation/frosting except for N2 exhaust line.				
Audible check for gas leaks				
Heater Tape working CCR neck				
Visual check of valve actuators, LVDT settings & motor operations				
Lead flow valves operating and correct position				

Heaters set at ~40C & working				
Manual Valves in correct position: Current Leads flow				
Helium Cool down /Warm up				
From HMI screens:				
Cryo He Supply valve setting %				
Cryo He Return valve setting %				
Helium Liquid Level %				
Helium Pressure atm				
Helium Magnet Average Temperature K				
Helium Temperatures within range [4.2 to 4.8K]				
Cryo LN2 Supply valve setting %				
LN2 Liquid Level %				
LN2 Pressure ATM				
LN2 Magnet Average Temperature K				
LN2 temperatures within range [77 – 80 K]				
Helium and LN2 liquid levels maintained for last 24 hrs.				
Valve Settings				
Open/close valve by 5% via PLC Manual Mode				
Bottom fill Valves at Hard Set [-6%]				
Current lead flow valves at ~10% open and ~10 l/min, no current				
Current lead flow valves at ~100% and ~200 l/min, no current				

ESR Data & Transfer Line Temperature						
		T1	T2	T3	T4	T5
HMS Transfer Line Temperatures K						
SHMS Transfer Line Temps K						
			CPI671SC	CFI6711C	CPI9521	CTD9521
ESR data: 4K Supply Pressure & Flow, 4K Return Pressure & Temp						
ESR and HMS data updating, logging and trending						

D: Electrical & Main Power Supply Checks	Q1	Q2	Q3	Dipole
UPS powered and on				
208V Magnet circuit breakers OFF				
Record Resistance of Left Current bus bar to Ground.				
Record Resistance of Right Current bus bar to Ground				
Inspect current leads connection within PSU				
208V Magnet circuit breakers ON				

Quench Detectors with power and no interlocks				
Energy Dump resets remotely				
LCW Checkout				
LCW to HMS	Supply	Return	Flow	Temp
Record values				
LCW to PSU is ON				
Check for water leaks within PSU				
Close all interlocked PSU doors				
Turn on 480V wall circuit breaker				
Power enable switch ON in counting house				
PSU switched ON				
PSU, Magnet, Quench Detector & Interlock Tests	Q1	Q2	Q3	Dipole
Verify and clear all PSU interlocks				
Turn OFF water to PSU, Verify and reset Interlock				
Verify Remote operation of PSU				
Quench detector Current Channel 1 measured				
Quench detector Channel 2 measured				
Quench detector Channel 3 measured				
Quench detector Current Channel 4 measured				
Broken Cable detection checked				
Verify Remote Polarity switch				
Verify Fast Dump Switch from Counting House				
PSU turned on and ramps to 100A				
Hall Probes / NMR working				
PSU ramped to 0 A and placed in standby				
Keep Alive Relays working				