

## SHMS Magnets Routine Pre-run Check Out Sheet

Date: \_\_\_\_\_

Personnel: \_\_\_\_\_

Experiment Number: \_\_\_\_\_

Notes: Record Values in columns where applicable.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Special Notes:	HB	Q1	Q2	Q3	Dipole

<b>A: Physical Observations</b>	HB	Q1	Q2	Q3	Dipole
Magnetic material near magnet cleared					
Electronic equipment near magnet cleared					
Personal near SHMS advised of operations					
Magnetic field warning signs in place					
All clear around magnet					

<b>B: Vacuum Checks</b>	HB	Q1	Q2	Q3	Dipole
Condensation of Freezing on OVC					
Vacuum Reading <span style="float: right;">V = Torr</span>					
Spectrometer Vacuum reading <span style="float: right;">V = Torr</span>					

<b>C: Cryogenic and Valve Checks</b>	HB	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					
External Heaters working					

Manual Valves in correct position: Warm return Valve					
<b>From HMI screens:</b>					
Cryo He Supply valve setting [5]	%				
Cryo He Return valve setting [6]	%				
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 [2]	%				
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.					
Valves operating in normal range					
Valves at Hard Set [-6%] [1,3,4]					
Current lead flow valves at ~30% open and ~55 l/min, no current, Flow factor =1					
Current lead flow valves at ~100% and ~200 l/min, no current, flow factor=1					

<b>ESR Data &amp; Transfer Line Temperature</b>		<b>T1</b>	<b>T2</b>	<b>T3</b>	<b>T4</b>	<b>T5</b>
HMS Transfer Line Temperatures	K					
		<b>He Supply</b>	<b>He Return</b>	<b>LN2 Supply</b>	<b>Vacuum</b>	
SHMS Transfer Line Temps	K, Torr					
		<b>CPI671SC</b>	<b>CFI6711C</b>	<b>CPI9521</b>	<b>CTD9521</b>	
ESR data: 4K Supply Pressure & Flow, 4K Return Pressure & Temp						
ESR and SHMS data updating, logging and trending						

<b>D: Electrical &amp; Main Power Supply Checks</b>	<b>HB</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Dipole</b>
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					
<b>LCW Checkout</b>					
LCW to SHMS		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					
<b>PSU, Magnet, Quench Detector &amp; Interlock Tests</b>	<b>HB</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Dipole</b>
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					

Hall C Engineer or Designate Sign Off Signature \_\_\_\_\_ Date \_\_\_\_\_