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Oxford AS400/54

Project No.: 138441

Magnet No.: S0144

Cryostat No.: Actively Shielded Family Type 3

Magnet Operating Data

Weight (empty)	380 Kg
Weight (full)	440 Kg
Room temperature bore diameter	54 mm
Central field	9.395 Tesla
Current for central field	64.52 Amps
Field current ratio	0.14561 Tesla/Amp
Current control setting	64.5 Amps
Overfield current	See page A-4
Inductance	100 Henry
Switch "open" resistance	10 ohms
Switch heater resistance	100 ohms
Switch heater current	60 mA
Recommended power supply trip voltage	4 volts
Distance between cryostat base plate and magnet centre line	334 mm
Distance between OXFR RT Shim coil mounting flange and magnet centre line	341 mm
Required spacer length for OXFR RT Shim coil	7 mm

Magnet Energisation Rates

Maximum Charging Rate Constant Current			
Sweep Time Setting	From (Amps)	To (Amps)	Amps Per Minute
50 mins	0	40	1.5
100 mins	40	48	0.75
200 mins	48	56	0.375
500 mins	56	60	0.15
1000 mins	60	Field (-1/2 Amp)	0.075

**When de-energising the magnet, reverse the procedure above.
This magnet will require a top up at 60 Amps.**

Cryogenic Performance

Liquid nitrogen required during commissioning	250 Litres
Liquid helium required during commissioning	250 Litres
Liquid nitrogen evaporation rate	Less than 200 cc/hr
Nitrogen refill volume	68 litres (total vol: 73 l)
Nitrogen refill interval	14 days minimum
Liquid helium evaporation rate	Less than 12 cc/hr
Helium refill volume	52 litres
Helium refill interval	183 days minimum

Shim Data and Homogeneity Guidelines

Coil	Switch heater resistance (ohms)	Switch heater current (milliamps)	Recommended Operating current (Amps)
Z1	100	60	1.494
Z2	100	60	-2.165
X	100	60	-1.172
Y	100	60	-1.499
ZX	100	60	0.896
ZY	100	60	-4.823
C2	100	60	2.718
S2	100	60	1.495
Z0	100	60	0.00

Axial Homogeneity Guideline: Scaling radius $R_0 = 1$ cm

Gradient	Z3	Z4	Z5	Z6
Residual Gradient in Proton Hz	115.11	-13.03	0.00	0.00



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