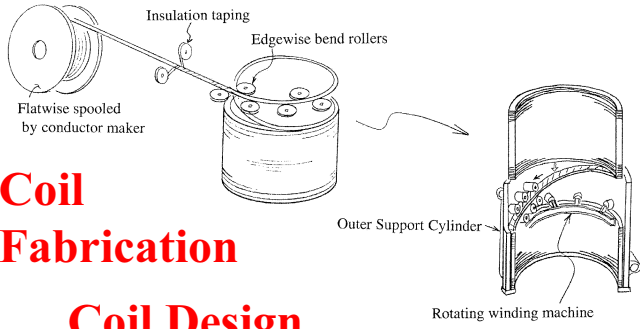


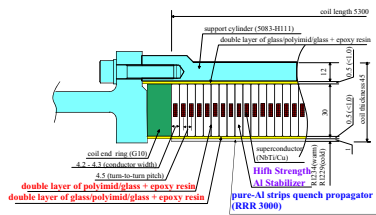
ATLAS Central Solenoid

R.J.M.Y. Ruber, 26 June 2003

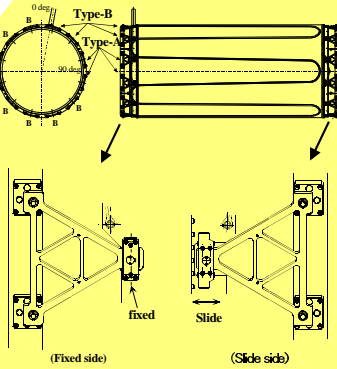


Coil Fabrication

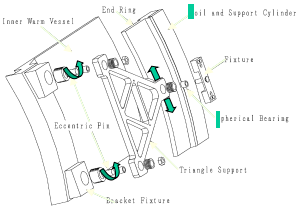
Coil Design



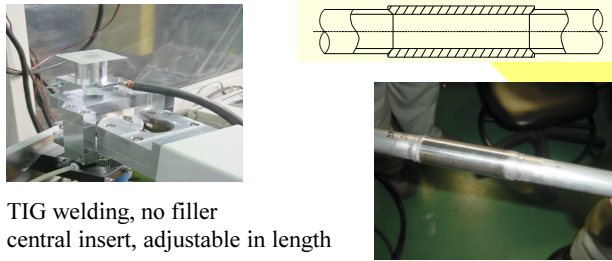
Coil Support



Support Alignment

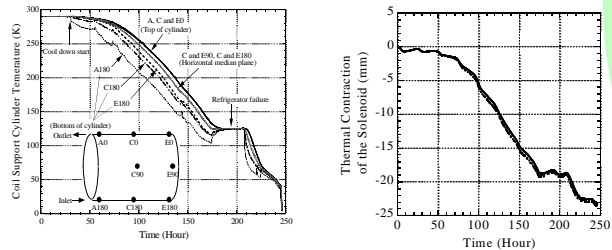


Cooling Line Orbital Welding



Cryogenic Behaviour

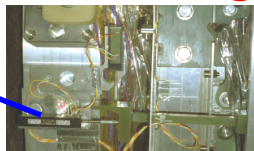
thermal contraction: 23.5 mm = 0.41%
(coil length = 5700mm)



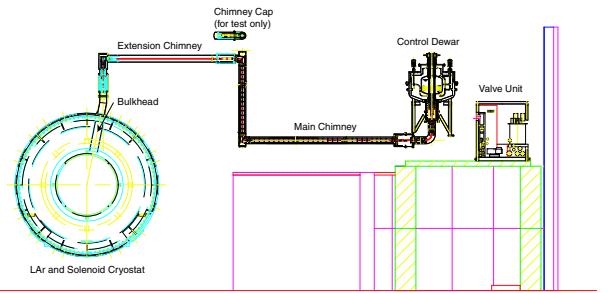
Position Monitoring

Measured heat leakage:
- control dewar: 9.3 W
- chimney: 1.2 W
- coil: 10.5 W
TOTAL: 21 W

linear potentiometer



eddy current loss: 25.5 W

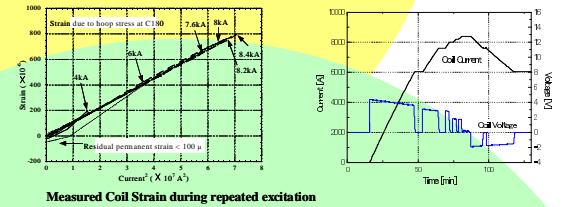


On-surface Test Setup at CERN

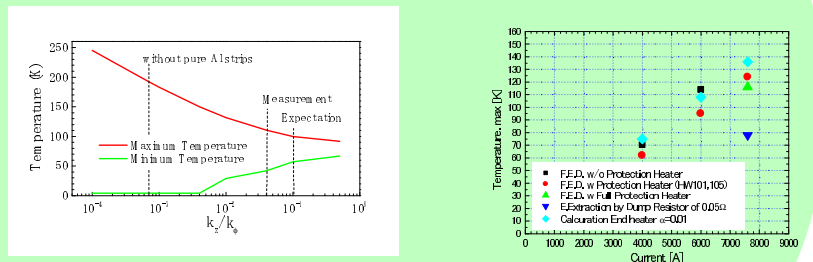


Excitation

up to 8400A (110% Iop, 105% Bop)
residual permanent strain < 100 μStr (elastic)



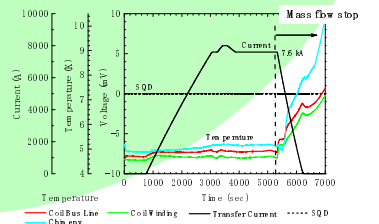
Quench Tests



Tested quench protection:

- pure Al Strips
- protection heaters

Tested discharge in absence of cooling flow



Test & Installation

