

Magnet/Iron Yoke task list(Rev. May 18, 2005)

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<u>Task list for the solenoid magnet</u>	Priority
Coil/superconductor design	
- Optimize coil configuration	1
2 layers coil+ Al support cylinder + Correction coil?	
→ Calculation: Magnetic force on the coil	1
- Superconductor design	
Conductor size, Material(Al?, Cu?)	1
→ Calculation: Load line, Quench simulation	2,3
Coil support system	
- Configuration(Rod?, triangle shape?, string?), size?	3
- Calculation: De-centering/shifted force	2
Cryostat design	
- Calculate required wall thickness.	1
Calorimeter is supported on the inner vacuum wall.	
- Support structure	2
Make an engineering drawing	
- Rough	2
- Detail	3
Assembly/Installation	
- Assembling procedure.	2
- How install/support the magnet into iron yoke.	3
Cooling scheme	3
Thermal design	2
Cryogenics system	3
Power Supply	3

<u>Task list for the Iron Yoke</u>	Priority
Magnetic field calculation	
- Optimize iron yoke configuration	1
Field uniformity<2mm +Correction coil	
Support structure for iron yoke (barrel yoke/end yoke)	
Fixture, Bolts? Configuration, Size	1
How support the yoke against the following forces.	
→ Calculation: Self-weight, magnetic force, seismic force?	1
Yoke assembling	
Size/Weight of one layer(plate)	
→ Out of (Fabrication, transportation,crane?) limit.	
→ Assembled from several piece of segments.	2
Make an engineering drawing	
- Rough	2
- Detail	3
Construction	
Make a construction procedure	
→ Easy/quick construction with high assembling accuracy.	3
Adjust way to the beam line/level	3
Maintenance procedures	3
Design: Easy/quick access mechanism to the inner detector.	2
Design support structure for inner detector	3
Estimation of required space for;	2
- Coil winding	
- Cryogenic system	
- Yoke assembling.	
Required crane capacity	2