

Fabrication of the Superferric Cyclotron Gas-stopper Magnet at NSCL at Michigan State University

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Abstract - The magnet for the cyclotron gas stopper is a newly designed, large warm-iron superconducting cyclotron sector gradient dipole. The maximum field in the centre (gap = 0.18 m) is 2.7 T. The outer diameter of magnet yoke is 4.0 m, with a pole radius of 1.1 m and $B \cdot \rho = 1.8$ T m. The fabrication and assembly of the iron return yoke and twelve pole pieces is complete. Separate coils are mounted on the return yokes that have a total mass of about 167 metric tons of iron. This paper illustrates the design and the fabrication process for the cyclotron gas-stopper magnet that is being fabricated at MSU.

Keywords – magnet, superconducting magnet, iron-yoke superconducting magnet, gradient dipole magnet, cyclotron gas-stopper magnet