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Magnetic Septa for the SIS100 Accelerator at FAIR

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The future heavy ion synchrotron SIS100 will have series of two dc magnetic septa for the injection and three dc septa on the extraction line. The extraction line will allow for two different extraction schemes for vertical fast extraction and initially horizontal slow extraction. The latter requires among other components two additional Lambertson-type septa. The design of the magnets had to account not only for creating a high field with a narrow septum width. A way of providing bakeout jackets while limiting the technicians' exposure to radiation had to be found. Another issue was to minimise the chance of failure e. g. by limiting the number of soldered joints with contact to the cooling channels and by reducing the current density with help of wedge-shaped conductors. While the injection septa are under construction, still some design work is in process for the extraction septa. We will present some of our solutions and concepts.

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