

Abstract Submitted
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Auxiliary Heating Systems for the Ignitor Project* M. SASSI, CREATE, S. MANTOVANI, CIFS, B. COPPI, MIT — Auxiliary plasma heating systems directed at extending the range of plasma regimes that can be accessed by Ohmic heating only are important components of the Ignitor machine. In order to affect the entire plasma column an appropriate ICRH system has been designed and components of it have been tested. The adoption of a 280 GHz system affecting, by ECRH, the outer edge of the plasma column has been proposed in order to influence temperature and density profiles in this important region. The ICRH system will operate over the range 80-120 MHz, consistent with magnetic fields in the range 9-13 T. The maximum delivered power goes from 8 MW (at 80 MHz) to 6 MW (at 120 MHz) distributed over 4 ports. A full size prototype of the VTL between the port flange and the antenna straps, with the external support and precise guiding system has been constructed. The innovative quick latching system located at the end of the coaxial cable has been successfully tested, providing perfect interference with the spring Be-Cu electrical contacts. Vacuum levels of 10^{-6} , compatible with the limit of material degassing, and electrical tests up to 12 kV without discharges have been obtained. Special attention was given to the finishing of the inox surfaces, and to the TIG welds. *U.S. DOE sponsored.

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