Abstract Submitted
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Plasma Chamber Design and Fabrication Activities[1] B. PARODI, Ansaldo, Italy, A. BIANCHI, A. CUCCHIARO, ENEA, Italy, A. COLETTI, P. FROSI, G. MAZZONE, A. PIZZUTO, G. RAMOGIDA, B. COPPI, MIT — A fabrication procedure for a typical Plasma Chamber (PC) sector has been developed to cover all the manufacturing phases, from the raw materials specification (including metallurgical processes) to the machining operations, acceptance procedures and vacuum tests. Basically, the sector is made of shaped elements (forged or rolled) welded together using special fixtures and then machined to achieve the final dimensional accuracy. An upgraded design of the plasma chamber's vertical support that can withstand the estimated electromagnetic loads (Eddy and Halo current plus horizontal net force resulting from the worst plasma disruption scenario VDE, Vertical Displacement Event) has been completed. The maintenance of the radial support can take place hands-on with a direct access from outside the cryostat. With the present design, vacuum tightness is achieved by welding conducted with automatic welding heads. On the outer surface of the PC a dedicated duct system, filled by helium gas, is included to cool down the PC to room temperature when needed.

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