

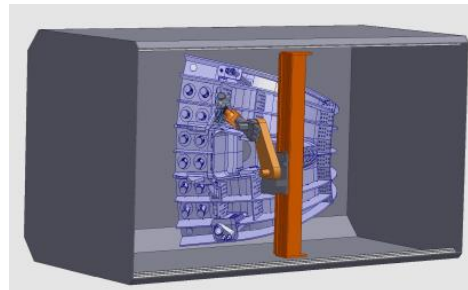


New electron beam welding technology for very large structures assembly

PRO-BEAM and F4E have developed a new electron beam welding solution dedicated to the manufacturing of huge and complex structures. Its combination of high accuracy, productivity and ability to weld very large structures, is a complete breakthrough and show promising applications in nuclear, maritime, railway or wind power.

The technology

Developed to weld 5 of 9 sectors of the ITER vacuum vessel with high accuracy, the technology offers a beam power of 40kW, an acceleration voltage of 80kV and a velocity movement up to 5mm/s. The large volume of the chamber of the solution (630m³) and positioning tools facilitate the handling of very large equipments.



The first electron beam welding solution for very large structure

The main benefits of this solution relies in the possibility to handle very larges structures and equipment with a high welding speed and high accuracy. Fully reproducible and easy to automate (thanks to a robotic arm which can increase the freedom of movement), this technology has an unlimited process design and outstanding metal and engineering flexibility. The welding process is only in one step and allows narrow, deep and parallel welding seams adapted to various metals.

Applications in nuclear, maritime, railway or wind power.

This electron beam welding technology has been specially designed for the manufacturing of large structures used a really harsh environments such as nuclear fusion and is now open for further use. It has already been used in the shipment industry for the building of a full-scale demonstrator and could now find promising applications in nuclear (nuclear waste containers welding), maritime, railway, space components or wind power.

Collaboration opportunities

The electron beam welding technology is available for direct use as a service or purchase (K2S or K6000 machines for instance) . Engineering services and technical adaptations for new applications, components or other welding requirements are also possible

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