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P2.143 The welding deformation control of large complex heavy-load vacuum Vessel port hub

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Tailor-welded blanks are used in the manufacture of CFETR (China Fusion Engineering Test Reactor) port hub.In order to obtain high manufacturing precision, CFETR port hub is welded into a whole by EBW which has features of higher precision □smaller deformation then melt welding methods.According to the inherent strain theory, the inherent strain of EBW welding is calculated ,then the result is imported into software.Simulation of welding deformation of four kinds of port hub welding program without clamp is to determine the optimal welding sequence and fixture constraints,then do the simulation of welding deformation of four kinds of port hub welding program with clamp.The results show that port hub with a different welding sequence results in different welding deformation.Fixture constraint can effectively reduce welding deformation.The results provide a reference for the actual welding process of port hub.

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