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## Reverse Processing of CFETR Vacuum Vessel Mock-up

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The 1/32 sector of CFETR vacuum vessel mock-up is welded together with four poloidal segments (PS), which are made by forming and welding. So each PS has certain machining allowance and contour error, lacks the processing datum in the process of machining welding groove. Considering each PS has complex surface profile, the method of reverse engineering is adopted to get the 3D model of each PS which has been made. On the basis of this 3D model, the model for CNC machining can be designed. 3D datum transformation is used for solving the problem of lacking the processing datum. An additional part with regular shape is used for converting the model for CNC machining into the machine tool coordinate system. Now, four poloidal segments have completed the welding groove processing. The machining deviation of welding groove is less than 0.5 mm, which has meet the requirements of assembly and welding.

### Eligible for student paper award?

Yes

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