

Informative Appendix**TCPH IO Site Fabrication**

IDM #	ITER_D_S2AMNH
Version	2.6
Ref.#	APB3_F
Page	1 of 3

TECHNICAL SPECIFICATION FOR THE SUPPLY OF THE TORUS
CRYOPUMP HOUSINGS TO THE ITER ORGANISATION

INFORMATIVE APPENDIX APB3_F**TCPH IO SITE FABRICATION**

IDM	ITER_D_S2AMNH
Ref.#	APB3_F
File Name	APB3_F_TCPH_IO_Site_Fabrication

Author	Reviewer	Approver
H. Xie M. Wykes	I. Sekachev S. Wu P. Miele P. Vertongen C. Seropian J. Reich J.Sa S. Maruyama P. Petit J. Friconneau M. Dremel G. Vayakis E. Veshchev V. Barabash	A. Alekseev

MODIFICATIONS			
PA Version Number	Date	Document Version Number	Modifications
1.0	30 Oct 2015	1.0	First Draft
1.0	25 Jan 2016	2.2	On-site activity revised
1.0	28 Jan 2016	2.3	Version number updated
1.0	24 April 2017	2.5	Version number updated
1.0	20 June 2017	2.6	Version number updated

Informative Appendix
TCPH IO Site Fabrication

IDM #	ITER_D_S2AMNH
Version	2.6
Ref.#	APB3_F
Page	2 of 3

Table of Content

1. Scope 3

2. As delivered status of TCPH 3

Informative Appendix
TCPH IO Site Fabrication

IDM #	ITER_D_S2AMNH
Version	2.6
Ref.#	APB3_F
Page	3 of 3

1. Scope

This appendix covers the work that has to be performed at the ITER site, following delivery and acceptance of the TCPH, to allow the TCPH to be assembled to the ITER machine.

2. As delivered status of TCPH

The six TCPH main structures are delivered completely fabricated to their final configuration.

To compensation for toroidal and vertical misalignment of the VV lower port extension opening and cryostat the Wall Flange of each of the six TCPH has a trim allowance of 120 mm on the faces that abut with the Cryostat wall, which are custom machined following surveys to quantify the toroidal and vertical misalignment. The Wall Flanges (with their 120 mm trim allowance) are integral with the TCPH as delivered condition to the ITER site.

The TCPH bellows are to be integrated with TCPH by welding the bellows flange with TCPH inner cylinder in factory. The other side flange of bellows is connected with VV port extension by welding of adapter in pit. The specific restrain fixture should be designed and manufactured by bellows supplier considering the requirement of protection, packing, transportation as well as the final assembly in Tokamak pit.

Additionally, the VV Port Extension Adaptor, Reinforced Ribs and Docking Flange are supplied as a loose component.

- VV Port Extension Adaptor is required to be custom machined after surveys to quantify the radial misalignment of the VV Lower Port Extension and Cryostat Lower Cylinder openings. It is to be welded to the VV Port Extension and the Double Bellows after custom machining.
- The Reinforced Ribs is installed and welded after the completion of welding between TCPH and Cryostat opening.
- Docking Flange is used only in case of maintenance for Torus Cryopump.

All on-site work including on-site acceptance tests, custom machining, all assembly activity including welding and NDE for TCPH and associate bellows is the IO responsibility.