

Modifications to JEOL 5600 Scanning Electron Microscope to allow EBSD Mapping at constant working distance using X and Y stage axes

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Outline of modifications to SEI Detector position required to the allow tilting of the stage towards the EBSD camera.

Photos showing the removal of the stage and tilting towards the EBSD camera.

Port geometry of the JEOL 5600

Detail of the SEI Port

Outline of the WDS plate with position of the hole for SEI dectector

Plan of WDS plate

Sideview plane of WDS plate

Photos of SEI mounted on WDS plate

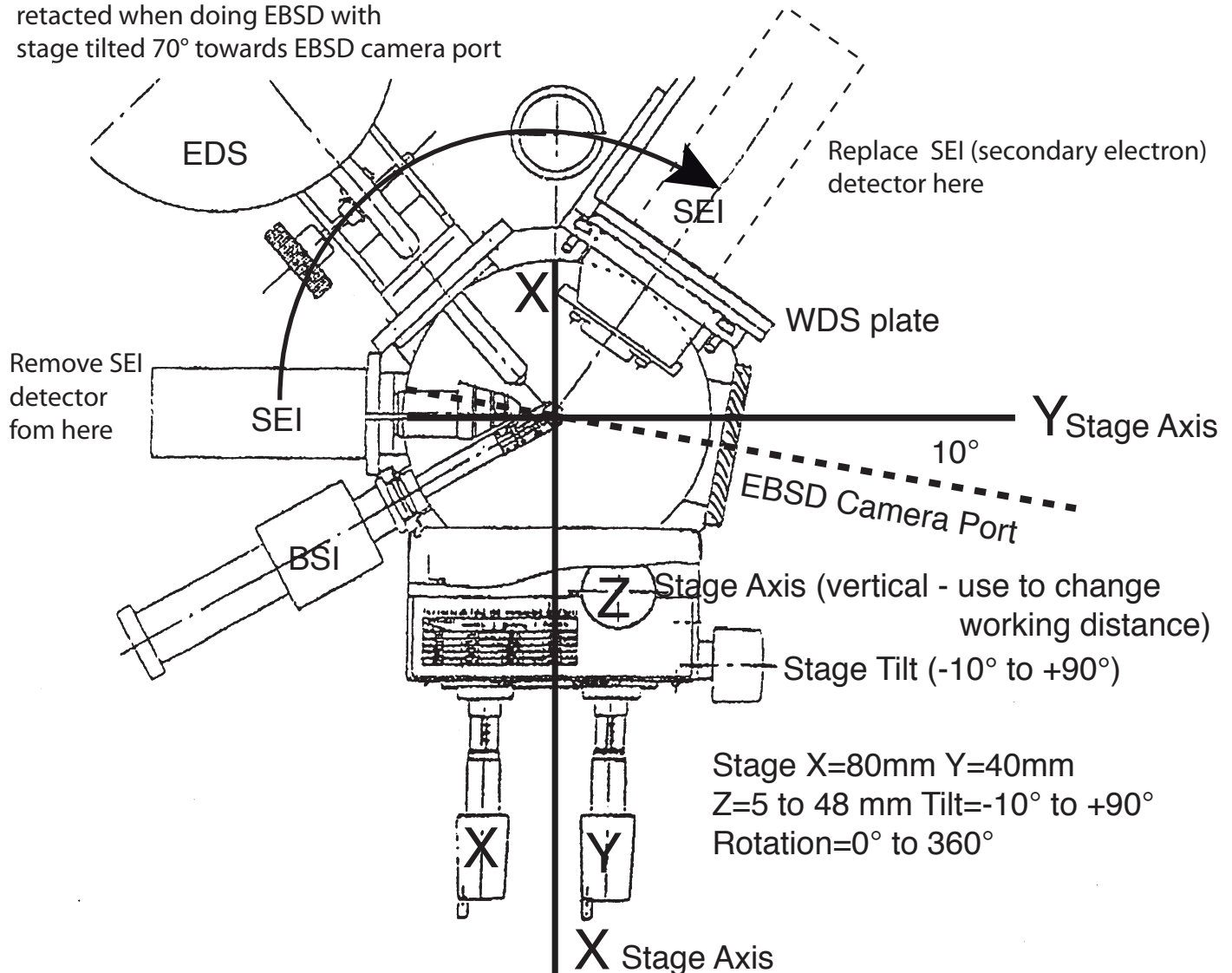
Photos of EBSD sample holder

Plans of EBSD sample holder

JSM-5600 Chamber

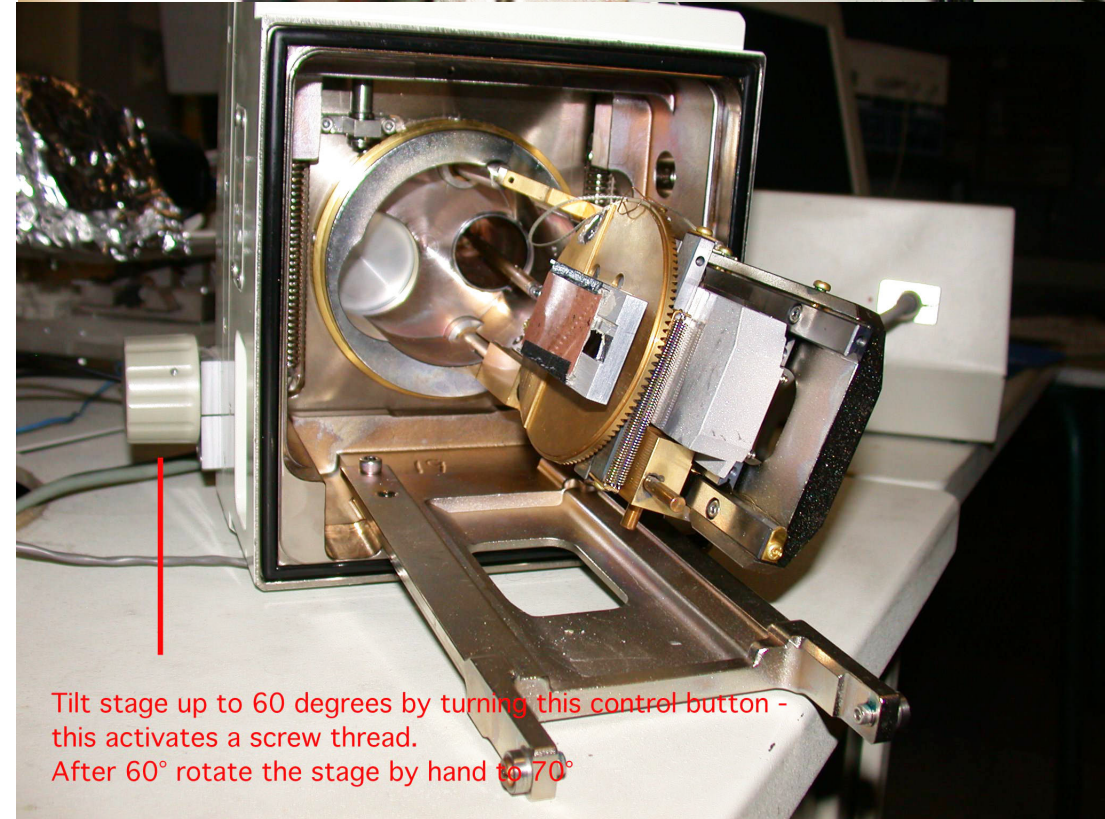
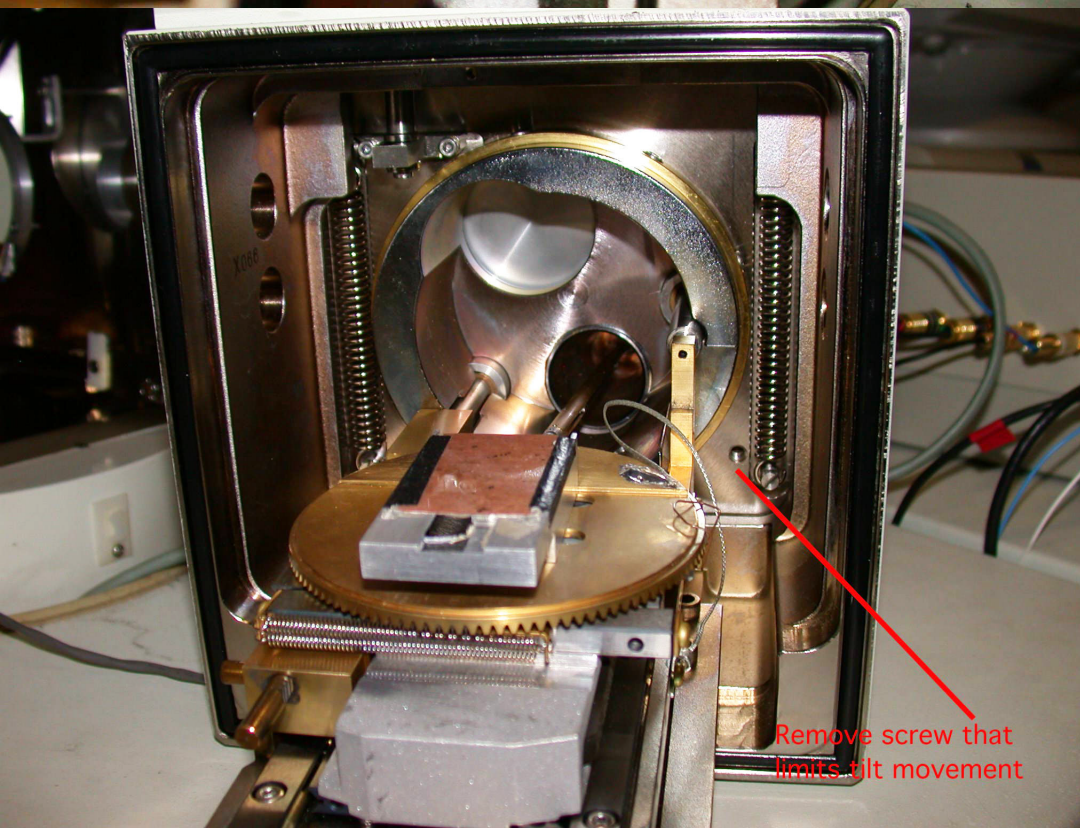
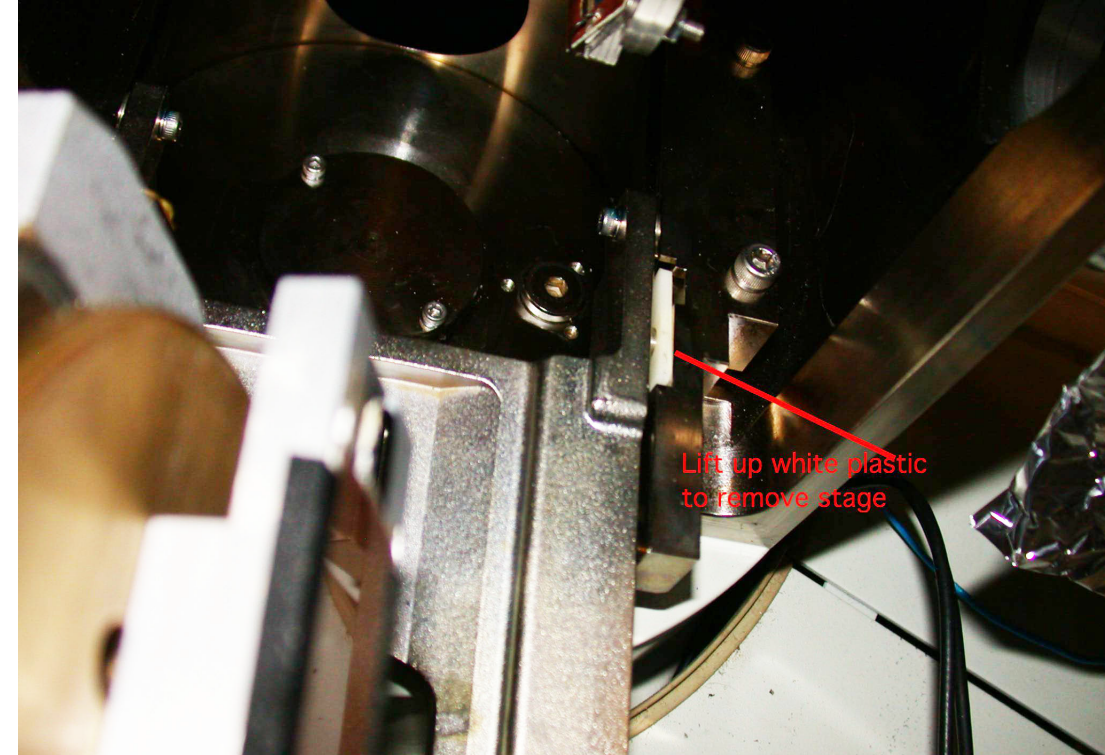
Modifications of SEI detector position to allow the eucentric stage to tilt towards the EBSD camera port and use of eucentric stage to preserve the working distance constant while using X and Y stage displacement for EBSD mapping.

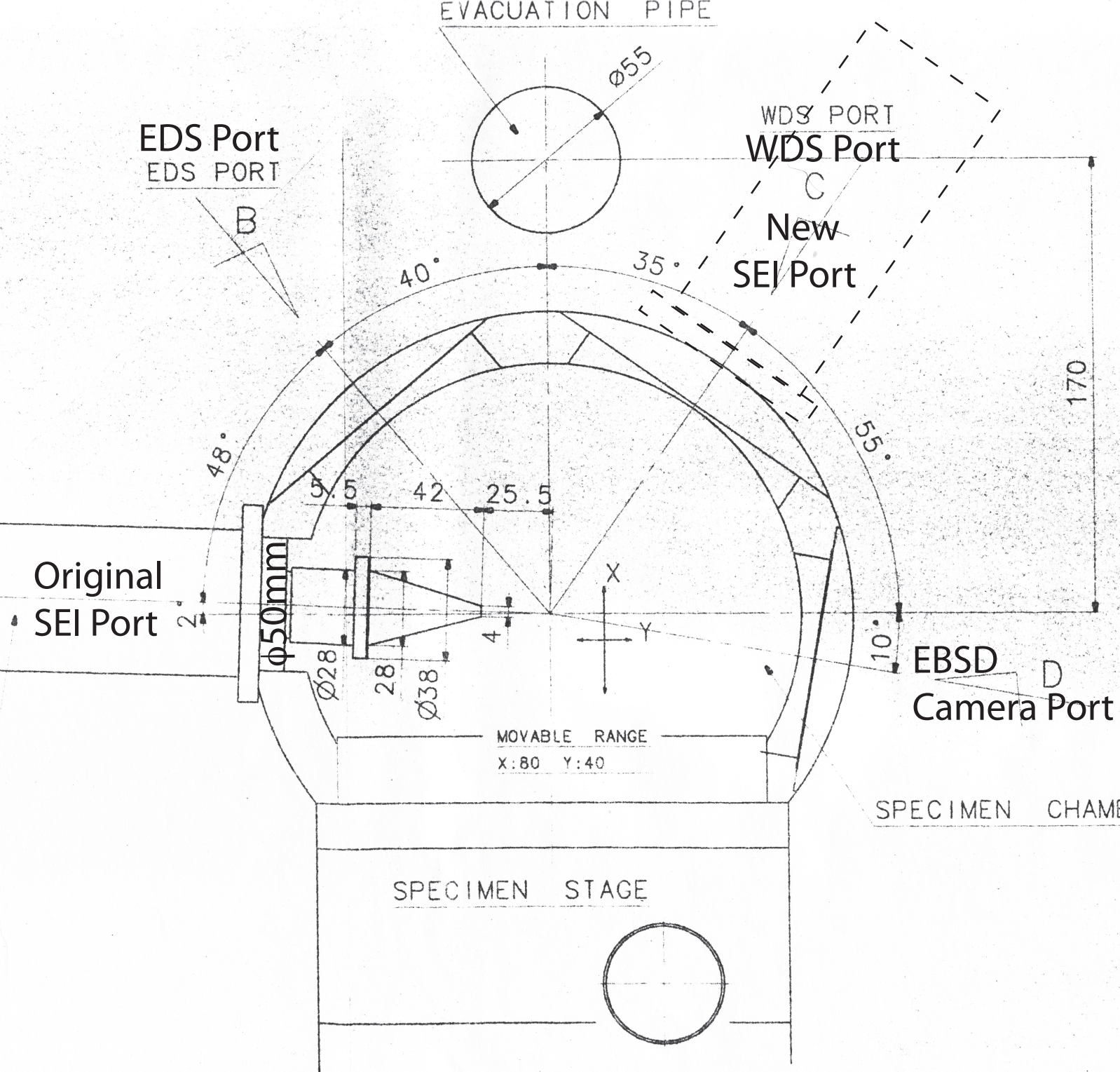
IMPORTANT : EDS detector will have to be retracted when doing EBSD with stage tilted 70° towards EBSD camera port



View with stage horizontal (Stage tilt = 0°)

Note: If the Z stage axis is not motorized this is the only way to keep the working distance constant during EBSD mapping. A change in working distance will result in the loss of the calibration for indexing and poor or no indexing.





Ø36上等分2×2-M3深7

Ø44

102

基準面より214±0.2
2ヶ所、同寸法同加工

Ø31±0.08

22

7

C0.5

108.5

Ø64上等分4-M4深7

(4.5)

0.4

6.3S

45°

Ø75

Ø58

Ø50^{+0.1}₀

Original
SEI Port

30°

2°

50°

27°

5°

55°

中心O

111.5

基準面より100

Ø26H8^{+0.033}₀

Ø50

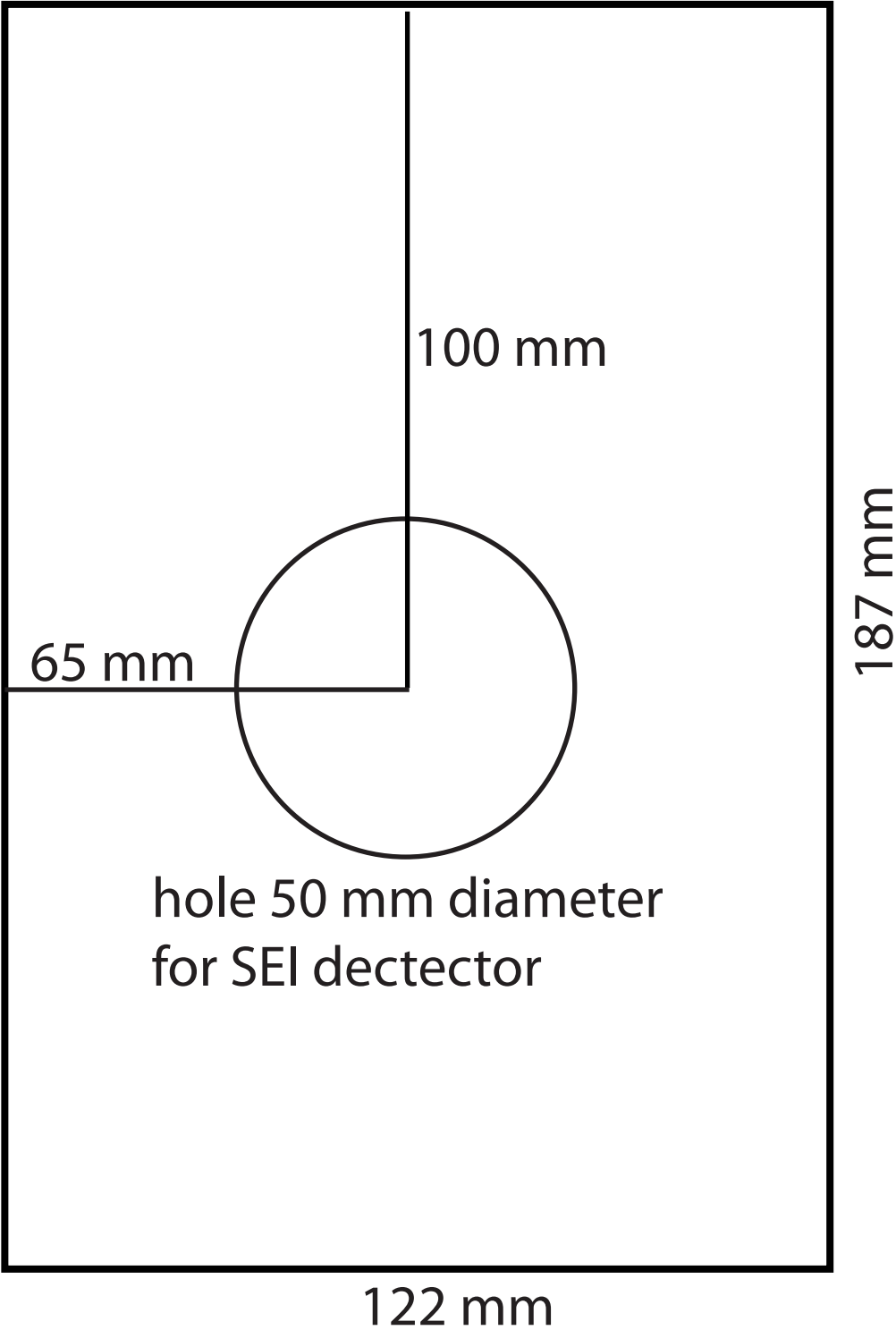
12

3.2S

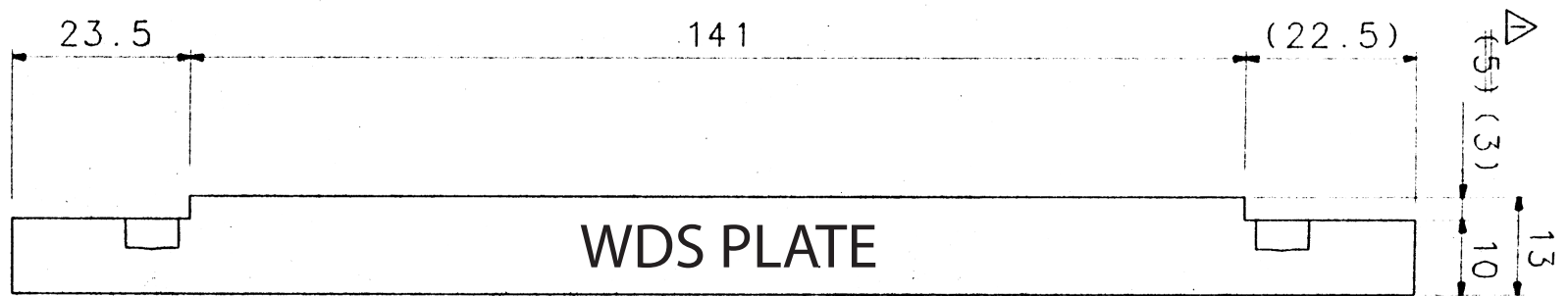
C1

A

Top of chamber



WDS Plate - view from outside Chamber

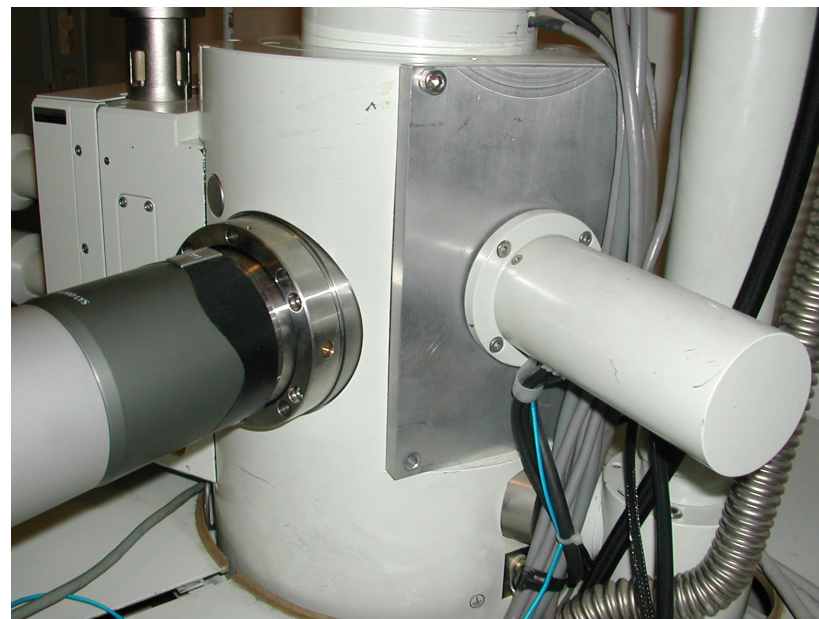




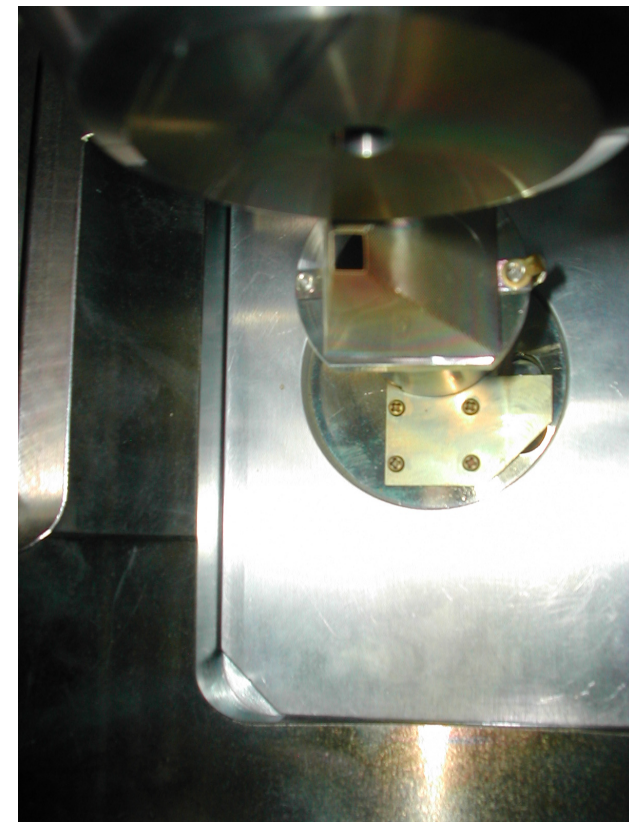
Overview of JEOL 5600 with stage tilted at 70° and SEI mounted on WDS plate



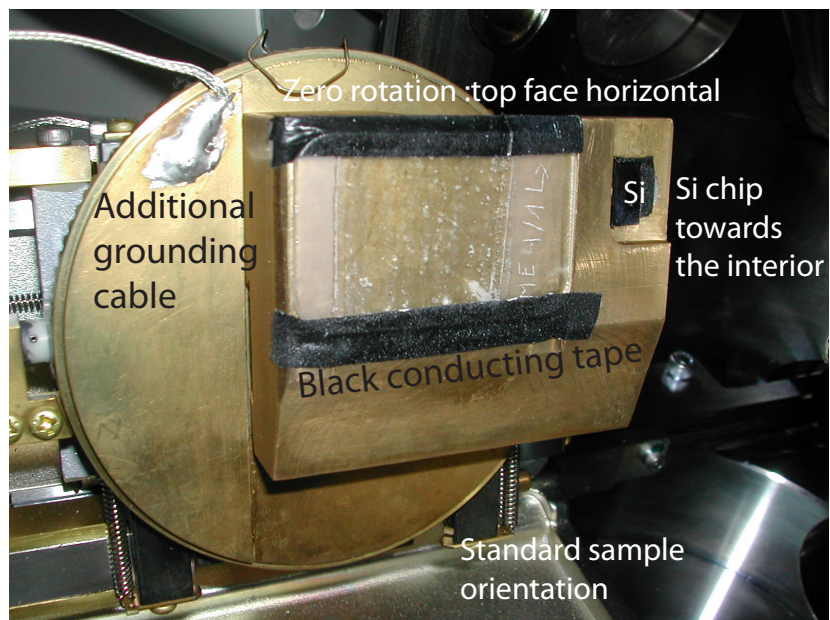
Original SEI port with blank plate



SEI mounted on WDS plate (exterior view)



SEI mounted on WDS plate (interior view)



Sample holder in SEM - Si calibration chip on the right



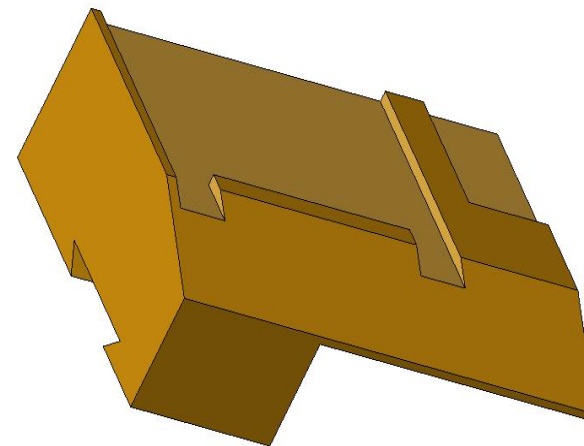
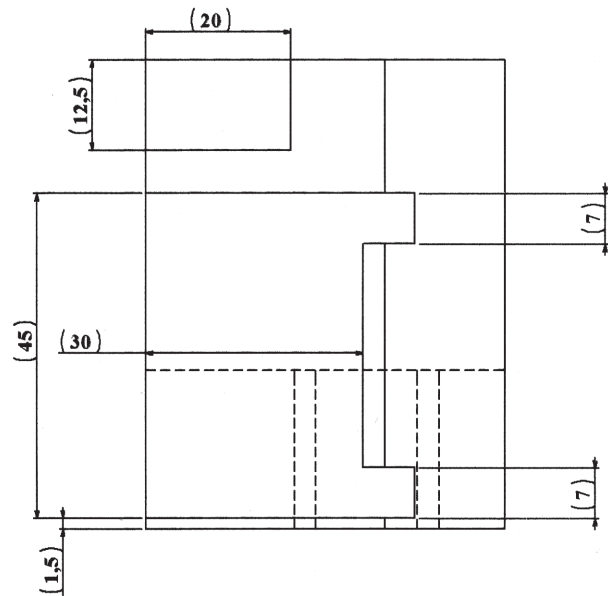
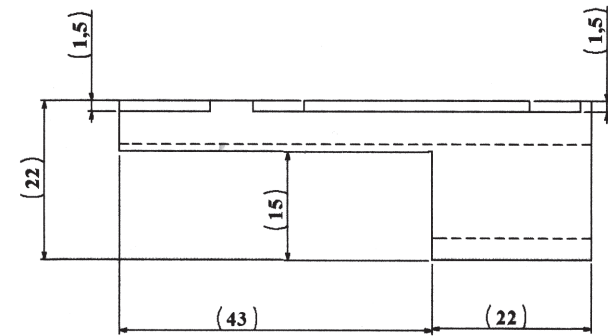
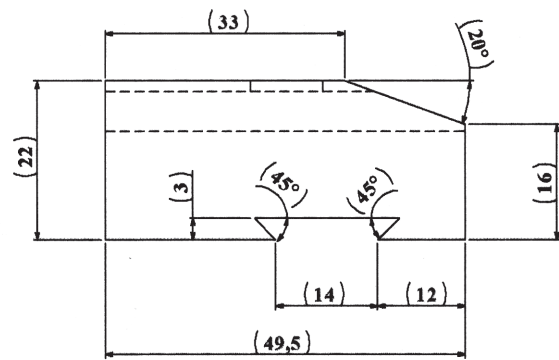
Note - Rotation must be kept at zero to maintain orientation reference frame constant for mapping



Sample holder



Sample holder



EBSD Sample Holder for JEOL 5600 at Montpellier (designed by Pierre Azis)