

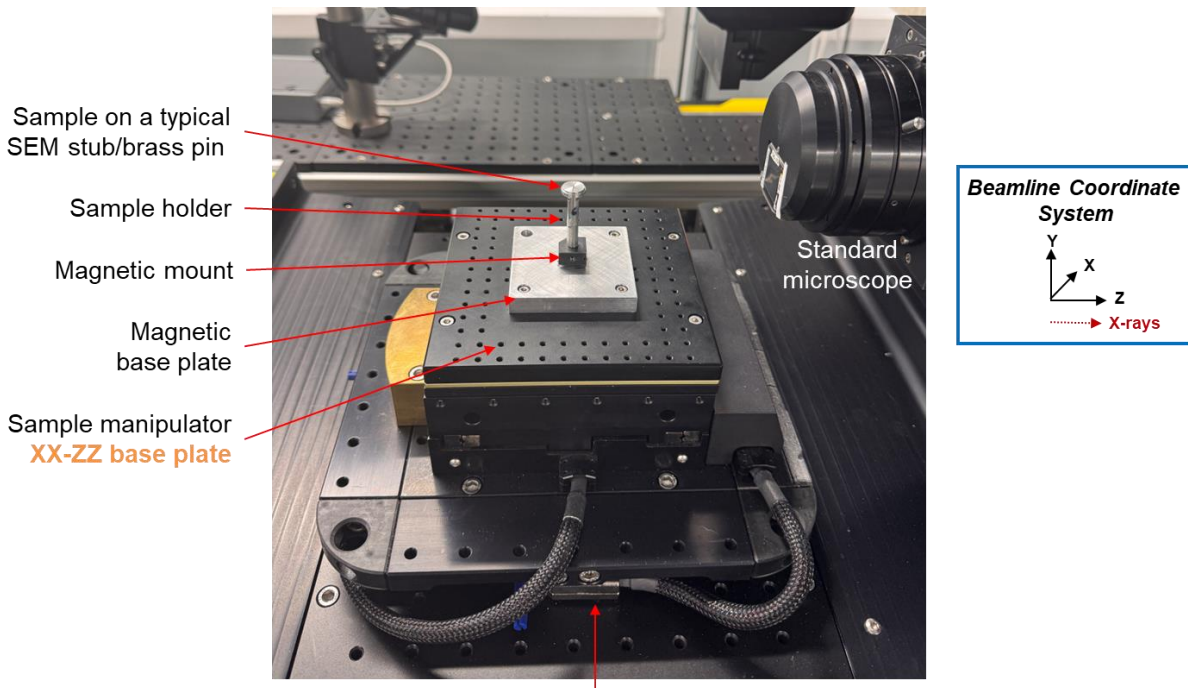
SLS - TOMCAT

Sample holder specs for users of S- and I-TOMCAT

Version 02.2026

S-TOMCAT (X02DA) End Station 1 (ES1)

S-TOMCAT – ES1 Standard sample mounting



2 Customized Dsub DB25

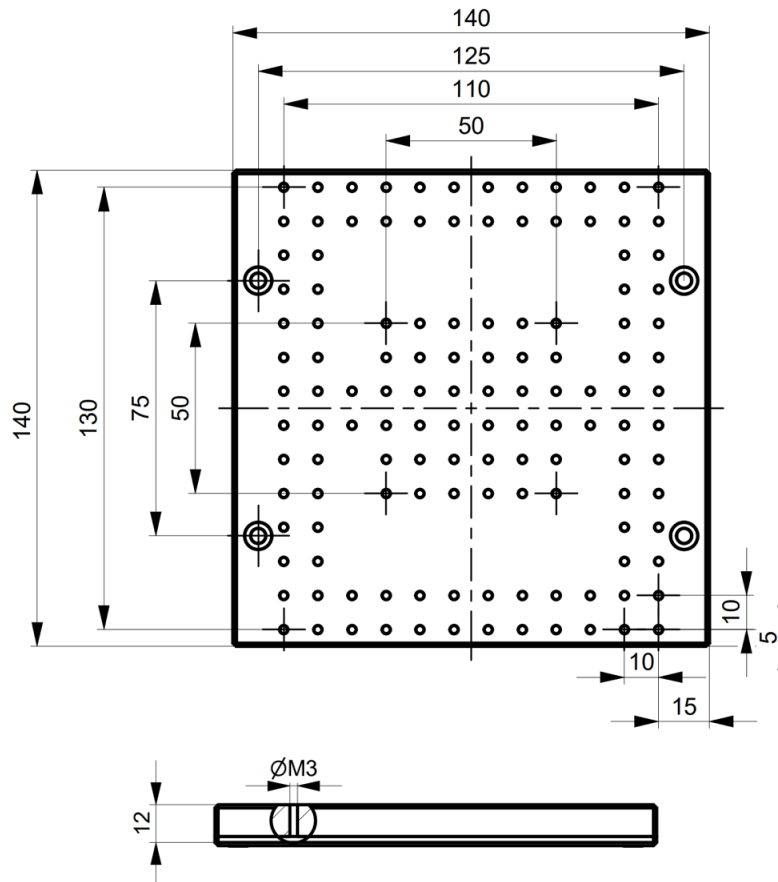


The sample stage features two Dsub DB25 connectors providing connectivity to the rotating sample through a slip ring for custom installations. The maximum supported electrical current is **1 A per wire with a maximum voltage of 240V.**

The connectors on the stage are female. Note that Pin#25 is not connected! In case you plan to use electrical feedthrough connections, please contact your local contact.

S-TOMCAT – ES1 Sample manipulator base plate

Different aluminum and plexiglass-based mounting plates are available at TOMCAT. In case you need to bring your own sample holder or specific equipment refer to the following drawing of the XX-ZZ base plate for interfacing:



The base plate is 12 mm thick, and the holes are M3 blind holes.

S-TOMCAT – ES1 Travel range, pay load information

The XX-ZZ cross linear stages (ANT95XY-050 from Aerotech) has a travel range of **+/- 25mm**.

The **maximum weight** supported in this configuration (XX-ZZ on top of the rotation stage) is **6kg**, and assuming that the load is <50mm from the top surface of the XX-ZZ) stage.

For specific setup, you can also bypass these stages to bring your own equipment. In this case, please contact the Local Contact or a beamline scientist.

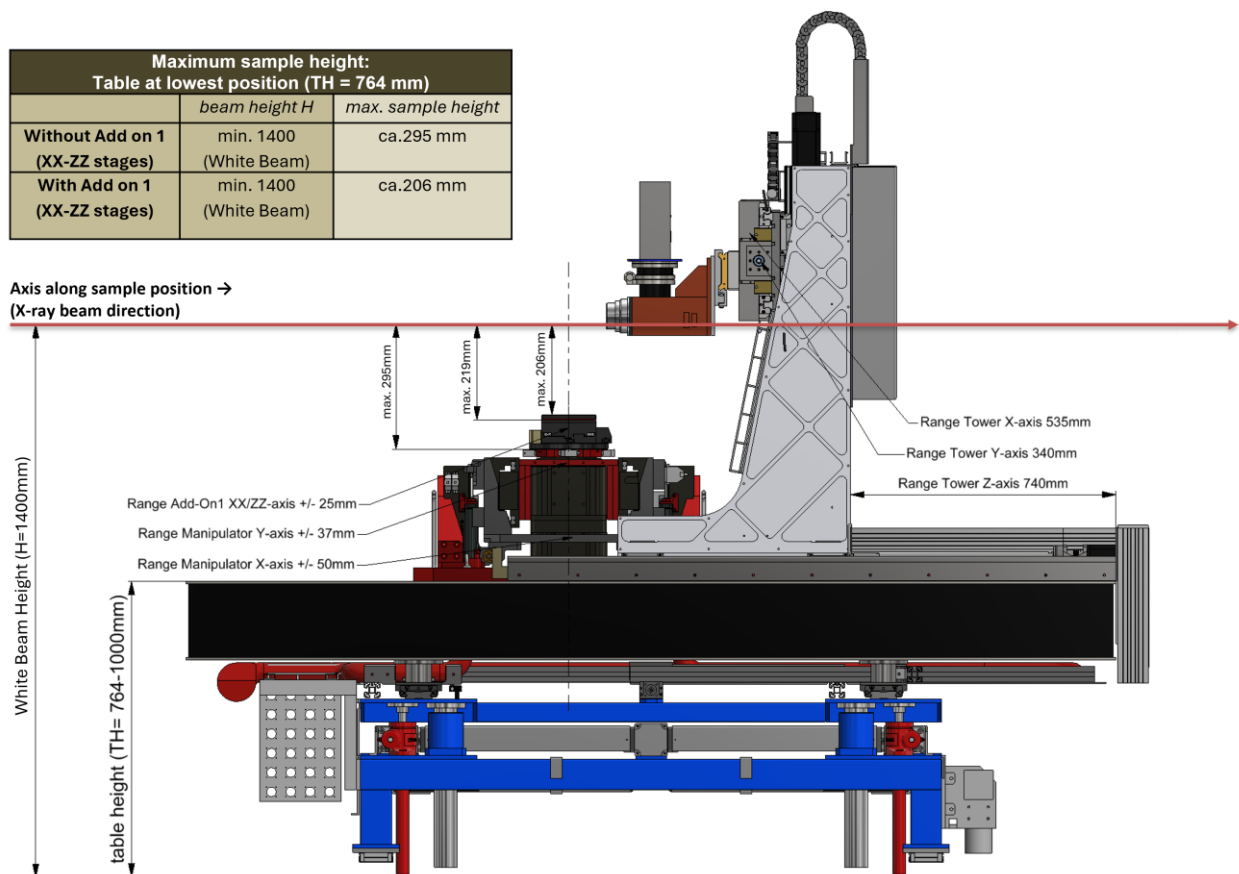
Without the XX-ZZ stages, you can place a setup up to 20kg with a center of gravity <125mm above the interface plate on top of the rotation stage (ABRT200).

S-TOMCAT – ES1 Sample height information

The travel range of the **vertical axis (Y)** relative to its nominal zero position is **+/- 37mm** (75mm total).

The total sample height (sample at point of interest plus holder height with the optical table at its lowest position) cannot be more than 206 mm from the top surface of the XX-ZZ stage or 295 mm without the XX-ZZ stage (assuming you have your own stages to place the sample into the center of rotation).

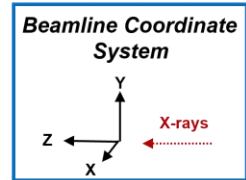
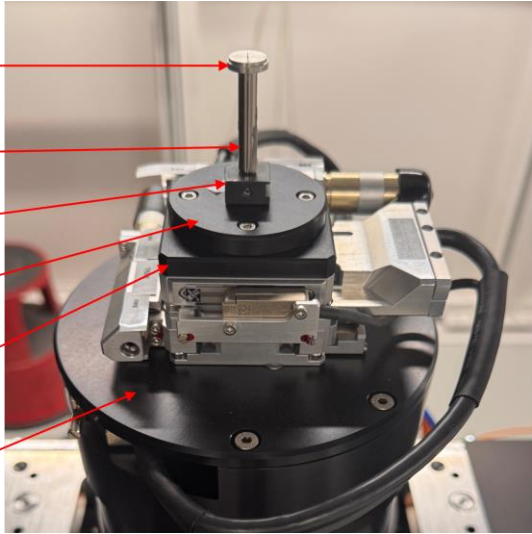
These heights correspond to the distance from the top of the standard base plate to the beam reference height. The heights are calculated for the ES1 table down at its lowest possible Y position, and the sample Y stage at its nominal zero position.



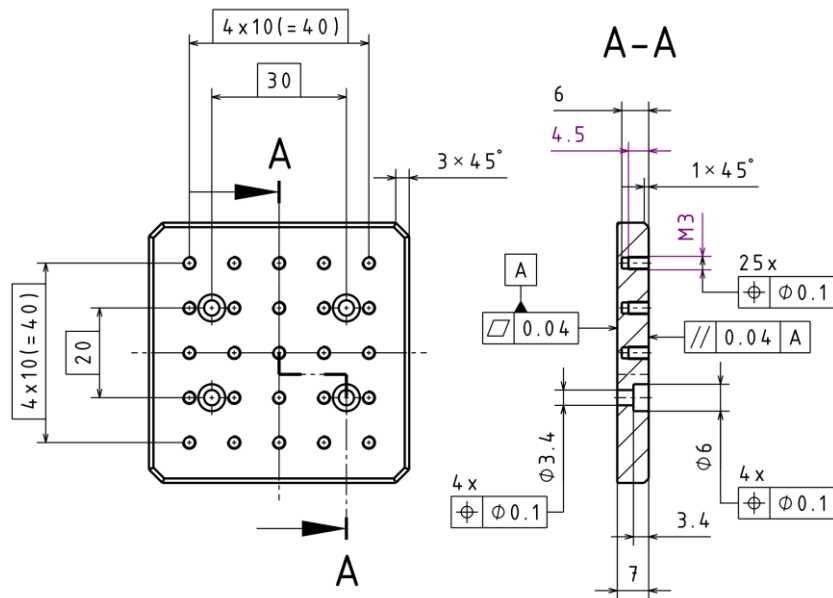
I-TOMCAT X02SA End Station 2 (ES2)

I-TOMCAT – ES2 Standard sample mounting

- Sample on a typical SEM stub/brass pin
- Sample holder
- Magnetic mount
- Magnetic base plate
- Sample manipulator **XX-ZZ base plate**
- Rotation Stage ABRX150



I-TOMCAT – ES2 Sample manipulator base plate



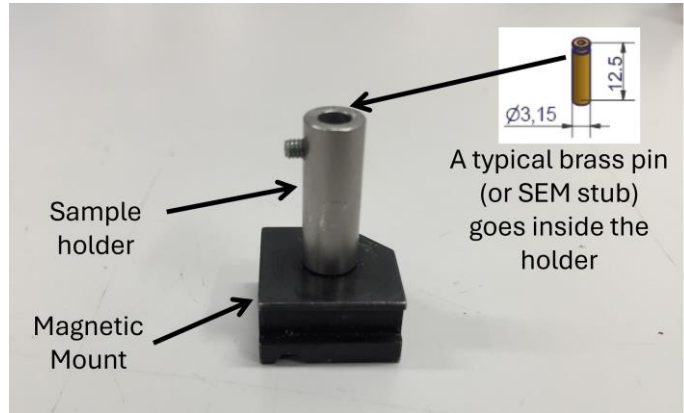
The sample manipulator base plate has a 10 x 10 mm pattern of M3 holes. The threads are 4.5 mm deep.

I-TOMCAT – ES2 Travel range, rotation stage information

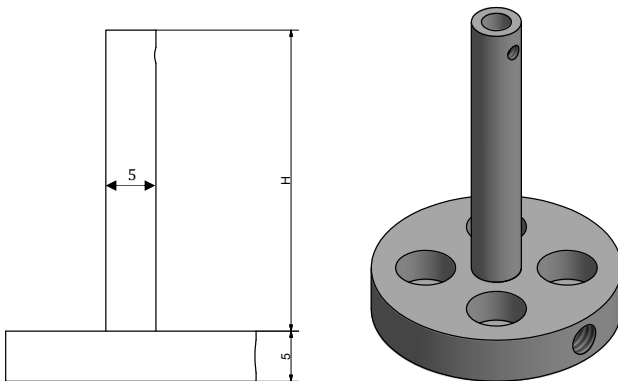
In this table you can find the travel ranges of the different axes:

Axis	Travel Range (mm)
XX-ZZ stages	25mm (+/- 12.5mm)
Vertical (Y)	100 mm (+20/-80 mm)
Horizontal (X)	80mm (+/-40 mm)
Along beam Axis (Z)	300 mm

The **maximum radial load** supported by the ABRX150 rotation stage (without the XX-ZZ stages) is **14kg**.

TOMCAT sample holder description
1. Standard sample holder (magnetic)


Note that a typical SEM stub or brass pin is fixed with a screw on the side of the sample holder. Ideally, the stub or pin should have a diameter of 3.15mm or smaller but not larger.

2. Tall sample holder (not magnetic):


This tall sample holder is for pin diameter of 3.15mm.

The fixation of the pin is easily done by a screw like for the standard sample holder.

This sample holder is fixed directly onto the XX-ZZ base plate with M3 screws, max length 8mm.

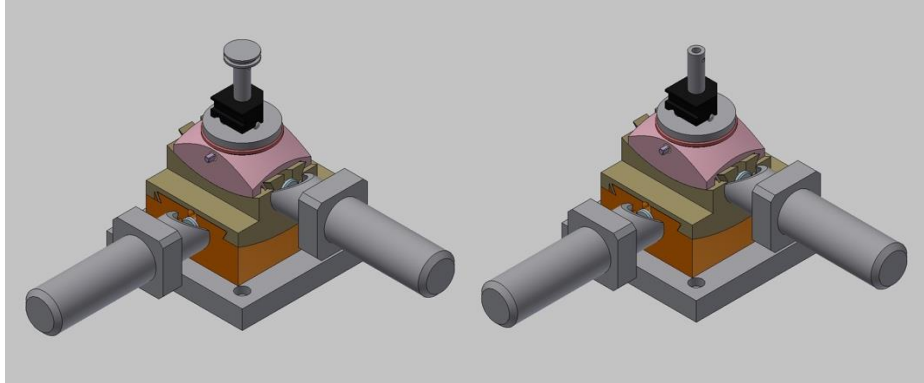
Different heights are available:

- H=20 mm
- H=35 mm
- H=50 mm
- H=65 mm

3. Goniometer for standard sample holder (only for **S-TOMCAT End Station 1**)

If you need to tilt your sample, you can use our goniometer.

The sample on a typical SEM stub placed on a standard sample holder will be 84 mm from the XX-ZZ base plate.



Sample holder references:

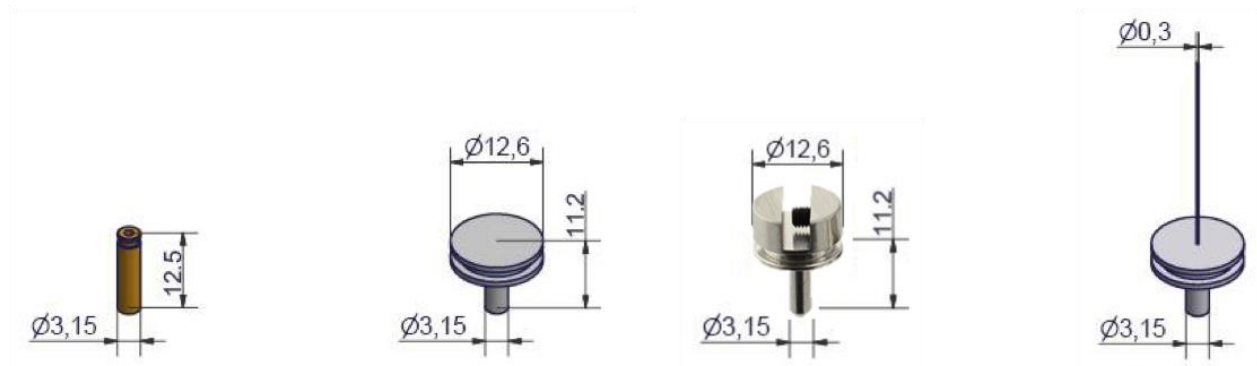
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Fax: +49 (0) 6441 976565
e-mail: plano@plano-em.de
Order No.: G301 Probensteller / G301S
Stiftprobensteller mit Schlitz

Special sample pin with
0.3mm diameter
For very small samples



For support or further information please contact us:

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