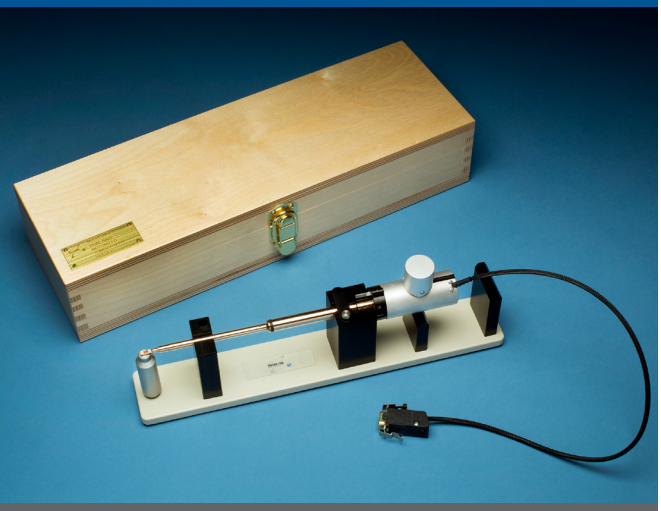
MODEL 2045

Motorized Dual-Axis Tomography Holder

Precise, in situ planar rotation

FISCHIONE INSTRUMENTS



MODEL **2045**

Motorized Dual-Axis Tomography Holder

A holder that features an optimal tilt angle range in narrow gap (~ 5 mm) pole-piece geometries, while maintaining microscope resolution.

- **Motorized rotational control for high-throughput applications**
- **Interfaces with the Thermo Fisher Scientific's transmission electron microscope (TEM) control system**
- **Maximizes tomographic data obtained from the specimen**
- **Allows for remote control of rotation and dual-axis functionality**
- **Extended field of view even at high-tilt angles**
- **FlexiClamp provides an easy, secure means of specimen retention**

PLASMA CLEANING

Fischione Instruments recommends that you clean the specimen and specimen holder with its Model 1020 Plasma Cleaner or Model 1070 NanoClean before insertion into the TEM.

During collection of tomographic data, the electron beam will be on the same area of the specimen for an extended time. As a result, organic contamination may build up on the specimen. A plasma cleaning time of 10 seconds to 2 minutes removes the contamination. Longer cleaning times can remove contamination spots caused by previous TEM viewing of non-plasma cleaned specimens.

When not in use, the holders should be stored under vacuum in Fischione Model 9010 Vacuum Storage Containers or the Model 9020 Vacuum Pumping Station.

Precise, *in situ* planar rotation

The Model 2045 Motorized Dual-Axis Tomography Holder is based on the revolutionary Model 2040 Dual-Axis Tomography Holder. The Model 2045 is designed for room-temperature applications when TEM tomographic imaging or analysis requires software-controlled, automated, in-plane rotation of the specimen. The specimen drive is motorized and interfaces with the microscope's control system, which allows full software integration of both specimen tilt and rotation.

An optimal tilt angle range in narrow gap (~ 5 mm) pole-piece geometries

The Dual-Axis Tomography Holder features an optimal tilt-angle range in narrow gap (~5 mm) pole piece geometries. A mechanism provides ultra-precise, in-plane, specimen rotation while maintaining eucentric height.

The specimen can be rotated in one direction to initially orient either the grid bars or a specimen feature to the alpha-tilt axis. After the acquisition of the first tilt series, the specimen can then be rotated 90° in the same direction with respect to the first orientation for the subsequent acquisition of the second tilt series.

Acquiring a dual-axis tilt series enhances the quality of information contained in the tomogram. Motorization is essential when conducting conical tilt tomography, as well as any other high-throughput application.

Automation through the microscope facilitates dual-axis tomography via remote operation, which is especially useful for TEMs that are located in an enclosed environment.

The holder features a FlexiClamp, a spring-type, annular ring that securely clamps the specimen into the specimen cup. It maximizes specimen visibility, even at high-tilt angles.

Touch protection

Fischione Instruments' advanced tomography holders are compatible with the TEM's touch-alarm that stops goniometer movement in the event that a pole touch occurs. Always be aware of the TEM's pole piece configuration and follow the microscope manufacturer's recommendation for operating the goniometer at high-tilt angles.

Ordering information

All Fischione Instruments' advanced tomography holders come with a dedicated loading station for secure specimen handling, tools to assist in specimen clamping, and a Fischione Model 9010 Vacuum Storage Container for storing the holder in a clean, vacuum environment.

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