

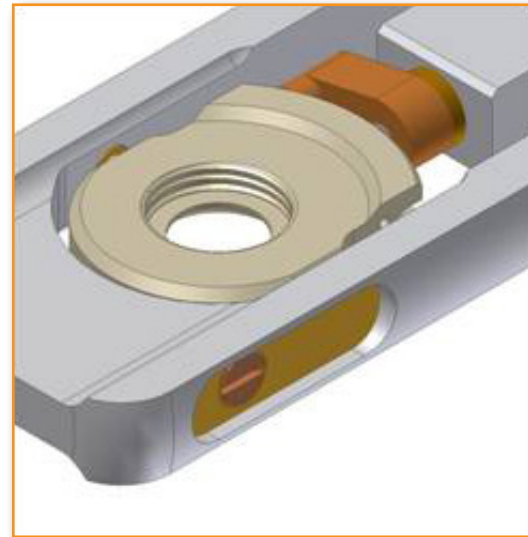
Double Tilt Heating Holder

Model 652



The 652 Double Tilt Heating Holder is a furnace type holder designed to allow the direct observation of micro structural phase changes, nucleation, growth and dissolution process at elevated temperatures.

The furnace of the 652 can be made from either tantalum or Inconel®. The specimen is gently and securely held in place using Gatan's Hexring® specimen clamping system to ensure good thermal contact between the specimen and the furnace. The tantalum furnace provides high-temperature strength and resistance to solid state welding to most materials including silicon. Tantalum anti-welding rings provide a safety interface between the specimen and the furnace. The Inconel® furnace is used for atmospheric applications. The HotHinge™ feature incorporates miniature, fatigue-resistant heater-wire connections to the furnace of the holder. The low mass of the specimen furnace ensures a rapid response to changes in the heater current. The rate of increase of specimen temperature can be controlled as required, manually adjusted, or held at any selected temperature for long periods for the study of diffusion processes and precipitation kinetics.



Furnace and Hexring® clamping system

The robust ToggleTilt™ drive mechanism allows the specimen to be tilted in the beta tilt axis with no mechanical binding of the specimen cradle at the high tilt limit of the specimen furnace; +/- 30° using either TEM or Accutroller control.¹

Features	Benefits
High performance material	Mechanical link between the heater and the stage is made of a material with near zero coefficient of expansion to minimize thermal drift.
Effective temperature control	Temperature at specimen holder tip is maintained near the temperature of the specimen stage using water cooled specimen rod.
Minimal heat loss design	Heat loss from the furnace to the specimen tip is minimized by careful design of the ceramic furnace supports.
Robust beta tilt mechanism	ToggleTilt™ drive mechanism provides maximum tilt with no mechanical binding.

¹ Tilt ranges and compatibility of specimen holders vary according to the TEM manufacturer, model, pole piece gap, and the presence of in-gap accessories. Please contact your local Gatan representative for more information.

Specifications ²	
Drift rate	0.2 nm/sec (at 0° tilt and 500 °C or below)
Resolution	0.34 nm (at 0° tilt and 500 °C or below)
Specimen size	3 mm
Observable area at 0° tilt	3.24 mm ² (2.03 mm diameter)
Standard specimen cup	Tantalum
Optional specimen cup	Inconel®
Standard holder tip material	Beryllium Copper
Capacity	1 sample, 3 mm diameter up to 200 microns thick
α Tilt Maximum ¹	+/- 45°
β Tilt Maximum ¹	+/- 30°
Maximum operating temperature for standard pole piece gap holder with tantalum furnace	1000°C
Maximum operating temperature for standard pole piece gap holder with Inconel® furnace	850°C
Maximum operating temperature for small pole piece gap holders with tantalum furnace	900°C
Maximum operating temperature for small pole piece gap holder with Inconel® furnace	700°C
Minimum operating temperature	Room temperature
Faraday cup	Not available
Electrical Feedthroughs	Optional (2 leads maximum)
Power requirements	60 Watts maximum at 100, 120, 220 or 240 VAC

²The specifications provided herein are approximate and are intended only as guidelines. Drift rate and high resolution performance are dependent upon ambient conditions and installation of the TEM pursuant to the manufacturer's specifications. All specifications are subject to change.

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Ordering information

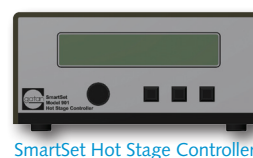
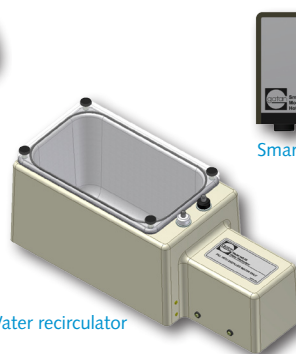
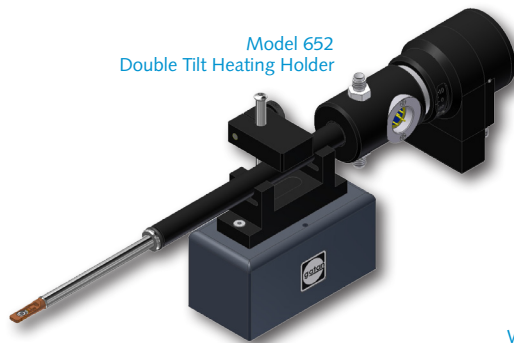
Model	Description
652.MA	Double tilt heating with tantalum furnace, motorized second tilt and angle readout sensor
652.INMA	Double tilt heating with Inconel® furnace, motorized second tilt and angle readout sensor
652.F	Double tilt heating with tantalum furnace for JEOL 2-axis and 5-axis FasTEM
652.INF	Double tilt heating with Inconel® furnace for JEOL 2-axis and 5-axis FasTEM
652.09J	Water recirculator
901	SmartSet Hot Stage Controller with cable
902	Accutroller for double tilt, rotation or strain control of the specimen. Unit must be configured for type when ordered

Other products to consider:

- 950 Solarus® Advanced Plasma Cleaning System
- 655 Turbo Pumping Station
- Gatan Microscopy Suite®

Primary Applications:

Materials Science



Certified Quality Management System

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