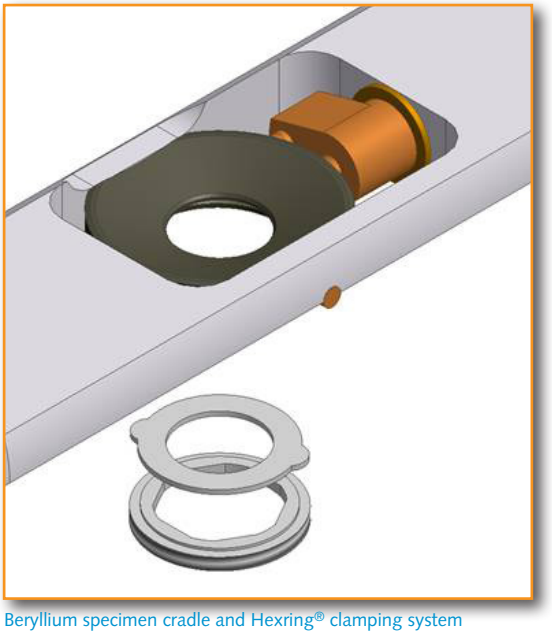
Double Tilt Liquid Nitrogen Cooling Holder

Model 636

The 636 double tilt liquid nitrogen cooling holder is used in applications to observe low temperature *in-situ* phase transitions and to reduce contamination due to carbon migration. It can also be used to reduce unwanted thermal effects in various analytical techniques and to facilitate EDS and EELS analyses by reducing contamination and mass loss.

The holder is cooled via a well insulated, bubble-free liquid nitrogen dewar. The high mechanical stability of the dewar helps to minimize drift during use. Precise temperature control of the specimen is achieved through a conductor rod connecting the specimen holder to the liquid nitrogen dewar which contains an electric heater to control the specimen temperature. The temperature of the holder is monitored by a calibrated silicone diode which provides a sensitive, linear response for precise temperature control of the specimen.

Excellent thermal contact between the specimen and the beryllium specimen cradle is achieved using Gatan's patented Hexring® and Anti-twist washer which are made of beryllium for analytical applications. The ToggleTilt™ beta drive mechanism provides robust operation for tilting the specimen, with no mechanical binding of the specimen cradle at the tilt limits. Beta tilt is accomplished via TEM control or the Gatan Accutroller for beta tilt maximums of +/- 30° or +/- 45° respectively.[1]



Beryllium specimen cradle and Hexring® clamping system

Features	Benefits
ToggleTilt™ beta drive	Provides robust operation with no mechanical binding of the specimen cradle at tilt limits.
Analytical design	Specimen cradle, Hexring® and Anti-twist washers are made of beryllium.
Low drift design	High mechanical stability by conduction cooling from well-insulated, bubble-free dewar.
Precise temperature measurement	Temperature of the holder is monitored by a calibrated silicon diode that provides a sensitive, linear temperature response. The conductor rod connecting the specimen holder tip to the liquid nitrogen dewar contains an electric heater to change the specimen temperature.

[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	1.5 nm/min at 0° tilt
Resolution	0.34 nm at 0° tilt
Observable area at 0° tilt	3.24 mm^2 (2.03 mm diameter)
Observable area at 60° alpha tilt	0.79 mm^2
Observable area at 45° beta tilt	1.84 mm^2
Specimen cradle material	Beryllium
Standard holder tip material	Aluminum
Faraday cup	Optional
Capacity	1 TEM grid, 3 mm diameter, 100 micron maximum grid thickness
Cryogen	Liquid nitrogen
Maximum operating temperature	90 – 110 °C
Maximum bake-out temperature	90 – 110 °C
Minimum operating temperature	< -170 °C
Temperature stability	+/- 1 °C in the range from -170 °C to 110 °C
Time to reach minimum operating temperature	~ 30 minutes
Dewar capacity	175 mL
Dewar hold time at minimum temperature	3.5 – 4 hours

[2]The 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.

Ordering information

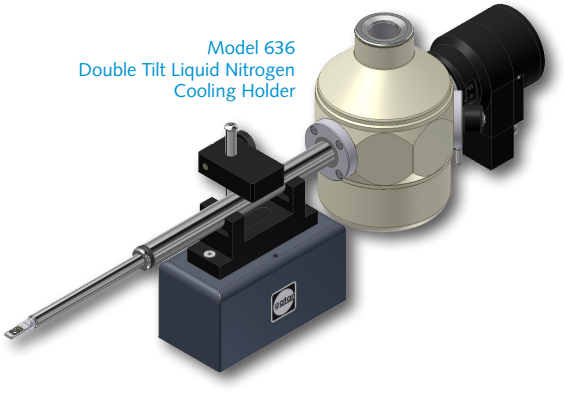
Model	Description
636.MA	Double tilt liquid nitrogen cooling holder with motorized second tilt, angle readout sensor, holder stand and tools
636.F	Double tilt liquid nitrogen cooling holder for JEOL 2-axis and 5-axis FasTEMs, holder stand and tools
900	SmartSet cold stage controller with cable
902	Accutroller 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
- TAC100 Series Liquid Nitrogen Anti-Contaminator
- Gatan Microscopy Suite®

Primary Applications:

Materials Science



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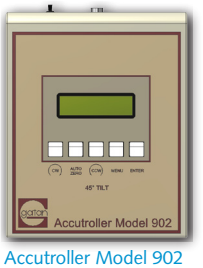
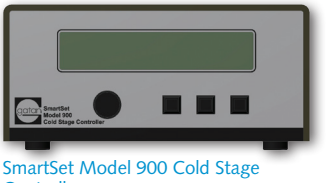
Cooling Holder



Accutroller Model 902



SmartSet Model 900 Cold Stage Controller

www.gatan.com

ISO 9001
BUREAU VERITAS Certification

Certified Quality Management System

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