

Environmental  
cell  
Heating  
Vacuum transfer



## Gas Reaction or Vacuum transfer for TEM

### Environmental gas reaction and vacuum transfer

Studies of the effect of gas reactions benefit from direct transfer of the specimen for TEM examination immediately following the reaction. The addition of a heating capability extends the range of possible experiments. Applications include studies of catalysis, oxidation and corrosion.

Vacuum (or inert gas) transfer allows reactive specimens to be transferred direct from preparation equipment or 'glove box' to the TEM, without exposure to the atmosphere e.g. avoiding oxidation effects.

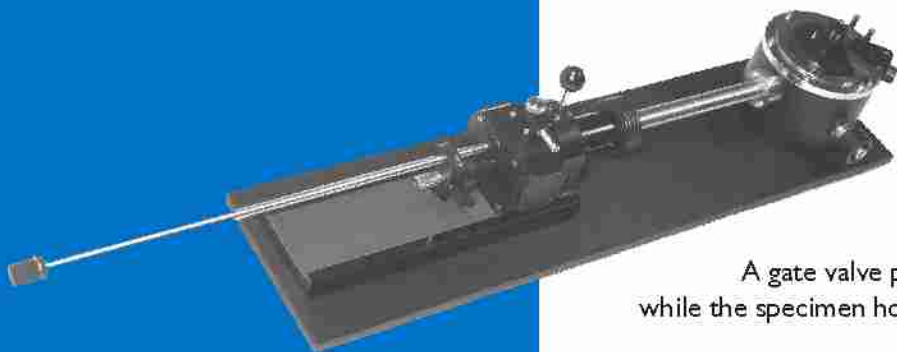
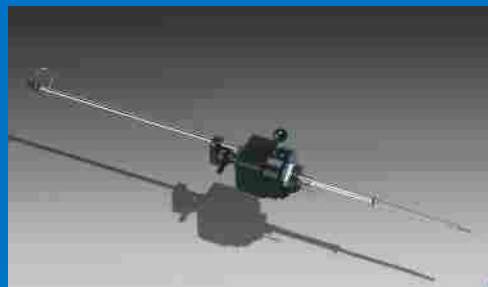
### Environmental cell and vacuum transfer holders

In both cases the technology involves a small diameter single-tilt TEM specimen holder which can slide between an external cell and the TEM imaging position through a standard diameter TEM side-entry holder tube.

A gate valve provides isolation from atmosphere or the TEM while the specimen holder is withdrawn in the cell.

For vacuum transfer the cell can be evacuated or filled with inert gas. The environmental cell holders are supplied with a heating facility for gas reactions.

Heating can be applied either within the cell (up to approx 800°C) Or if higher temperatures (up to 1200°C) are required, a vacuum furnace/workstation can be provided.



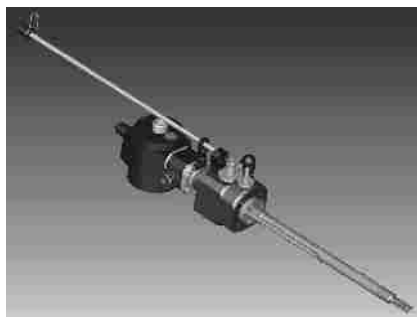
## Environmental cell Vacuum transfer Reaction furnace

Environmental cell/heating holders are supplied together with a digital temperature controller and pump-out plus gas inlet fittings.

All holders are supplied with a tip protection sleeve which can be evacuated to maintain cleanliness.

Options include a viewing window for the cell, beryllium specimen insert for microanalysis (not with heating holders) and interfaces to allow transfer from other apparatus.

A further system that can be provided is the combination of vacuum transfer plus cooling holder (also see CT3500 Cryotrans brochure)



### Specifications

#### VTST 4006

Single tilt holder with vacuum transfer chamber and integral isolation gate valve, screwed insert, tip protection sleeve with pump out fitting, pump-out tool.  
Optional BSI, beryllium sample insert.

#### HHST4004

Environmental cell heating holder (single tilt)  
Temperature range +20°C to approx +800°C (in cell)\* with environmental gas reaction chamber, vacuum pumping port gas inlet fitting and integral isolation gate valve\*\*.

Digital temperature controller:  
Tip protection sleeve with pump out fitting, pump out tool.  
Optional viewing window for the environmental cell.

#### CHVT 3007

Single tilt vacuum transfer cooling holder.  
Temperature range -175°C to +50° C with vacuum transfer chamber, integral gate valve, nitrogen dewar, temperature sensor, heater and digital temperature controller; tip protection sleeve with pump-out fitting, pump-out tool.  
Optional BSI, beryllium sample insert

#### HFST 4005

Single tilt holder with vacuum transfer and furnace  
Temperature range: ambient to +1200°C (in furnace)  
Furnace has a viewing window, water-cooled protection and can be evacuated or supplied with gases\*\*.  
Digital temperature controller  
Specimen holder has detachable end-tip and vacuum transfer chamber, integral isolation gate valve, screwed insert, tip protection sleeve with pump-out fitting, pump-out tool.

#### Important

- \* Please consult Gatan UK regarding TEM model
- \*\* Please consult with Gatan UK regarding specific gas reactions required.

Compatibility and tilt angles depend on TEM model and polepieces fitted – please discuss with Gatan UK.



**Gatan UK**  
Ferrymills 3  
Osney Mead  
Oxford, OX2 0ES  
United Kingdom  
Tel. +44 1865 253630  
Fax. +44 1865 253639  
Contact: [ukinfo@gatan.com](mailto:ukinfo@gatan.com)

**Gatan Inc.**  
Corporate Office  
Western USA Sales  
5933 Coronado Lane  
Pleasanton, CA 95488  
Tel. +1 925 463 0200  
Fax. +1 925 463 0204  
Contact: [info@gatan.com](mailto:info@gatan.com)

**Eastern USA Sales**  
780 Commonwealth Drive  
Warrendale, PA 15086  
Tel. +1 724 776 5260  
Fax. +1 724 776 3360  
Contact: [pmiller@gatan.com](mailto:pmiller@gatan.com)

**Gatan GmbH**  
Ingolstädterstr. 12  
D-80807 München  
Germany  
Tel. +49 89 358084-0  
Fax. +49 89 358084-77  
Contact: [rries@gatan.com](mailto:rries@gatan.com)

**Gatan France**  
3bis, Chemin du Haut Breuil  
78113 GRANDCHAMP  
FRANCE  
Tel. +33 1 34944407  
Fax. +33 1 34871668  
Contact: [dmonville@gatan.com](mailto:dmonville@gatan.com)

**Gatan Singapore**  
10 Eunos Road 8  
#12-06  
Singapore Post Centre  
Singapore 408600  
Tel: +65 6293 3160  
Fax: +65 6293 3307  
Contact: [frankyfl@singnet.com.sg](mailto:frankyfl@singnet.com.sg)

**Gatan On-line**  
<http://www.gatan.com>  
[Info@gatan.uk.com](mailto:Info@gatan.uk.com)

### Distributor address