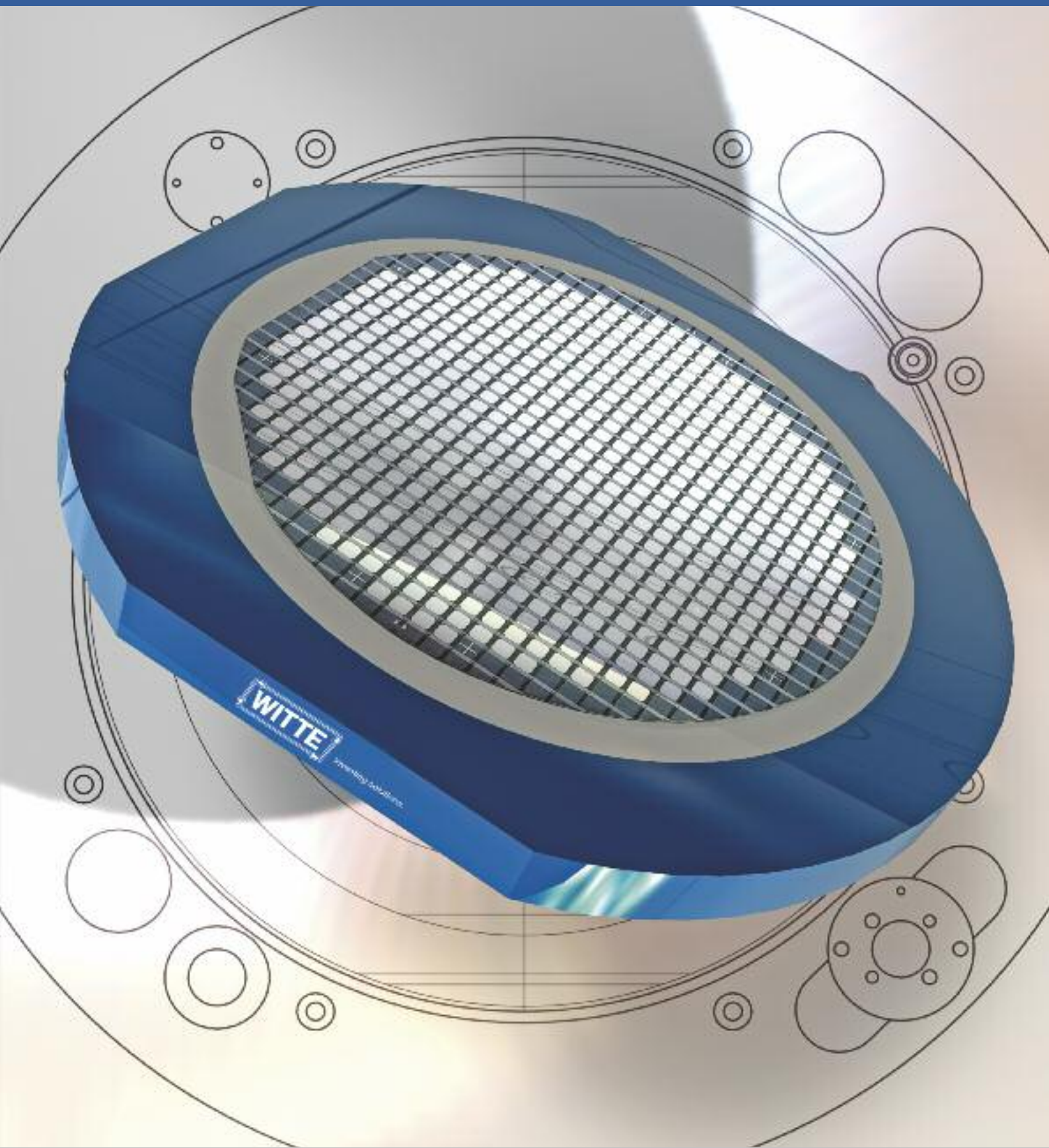


# Witte Vacuum Chucks

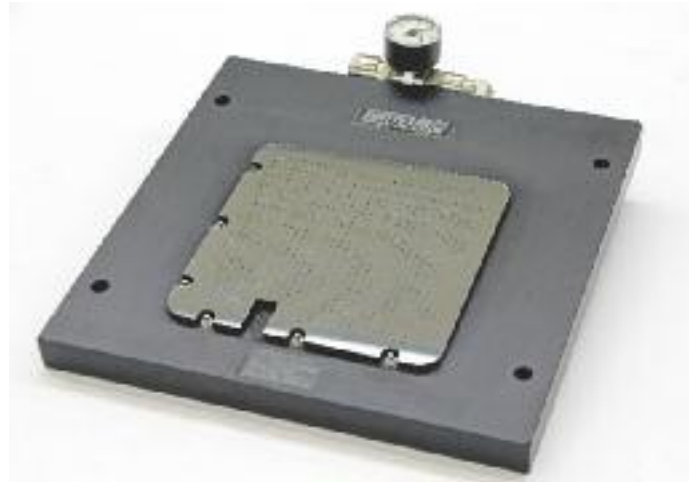


Vacuum Clamping Systems  
Modular Fixturing Systems for measuring





Clamping technology for  
semi-conductor industry



# Witte Vacuum Chucks

## Vacuumclamping with Witte Vacuum Chucks

Witte Vacuum Chucks for gentle and fast clamping i.e. in the semi-conductor industry.

These light but nevertheless accurate vacuum chucks made of aluminium alloys are especially suitable for workpiece handling on machining centers, whereas the stainless steel versions are designed for the actual machining job.

Extremely thin workpieces or foils i.e. 0,01 mm thickness can be clamped evenly and securely on areas made of microporous Metapor™.

### Flexible:

Apart from the standard circular or square versions upto several square meters, Witte Vacuum Chucks can be supplied according to customers request and the specific contours and geometry of the workpiece involved.

They are therefore suitable for both one-offs and series production-

Individual design – according to your requirements

### Accurate:

The high quality measuring machines and fixtures in our climate controlled measuring department guarantee high accuracy, even for large batch sizes. Witte vacuum chucks can be supplied with a evenness and and parallelism of approx. 3-5µm

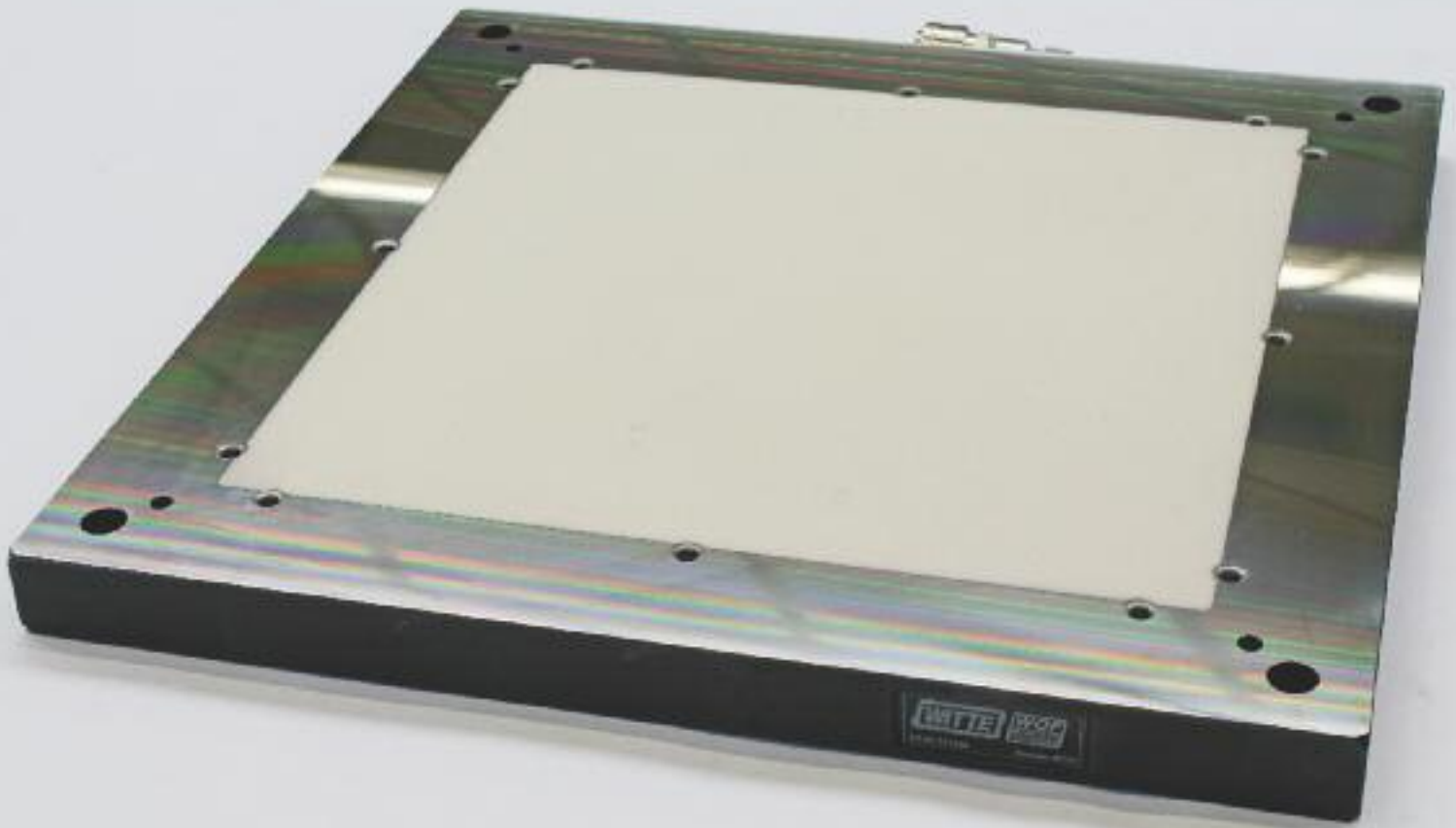


### Reliable:

The vacuum clamping areas is made of a microporous material which ensures a flat clamping without deformations thru vacuum holes or other vacuum supplies. Its high porosity of approx 45% together with a medium grain size of approx. 30 µm allow gentle fixation of workpieces with a strong holding force. The light weight combined with the the accuracy of Witte Vacuum Chucks ensure trouble-free machining in automated systems.







#### Universal:

Witte Vacuum Chucks are especially suitable for fast and secure clamping of wafer plates made of silicon or polyamide in the semi-conductor industry. Because of their own special properties they can also be used in:

- ▶ Optical industry
- ▶ Research and development
- ▶ Foil measuring
- ▶ Measuring technology

#### Complete systems:

Witte-Gerätebau will supply you with equipment custom built for your application or with modular standard components. All required accessories from a simple pump to powerful vacuum units, rotating joints, hoses, additional vacuum tanks, magnetic valves right up to automatic liquid separators are available short-term.

Call our experts.

Complete vacuum systems from one source – Witte



# Heated vacuum chuck for processing wafers

This heated vacuum chuck holds wafers securely without leaving any marks. The supporting and clamping surface with a diameter of 205 millimeters is made of micro-porous, air-permeable material. This material is often used for holding very thin-walled work pieces like paper, foils and circuit boards. Since the surface is completely flat, without slots or holes, deformation of wafers is impossible. Clamping with vacuum over the whole surface ensures that the wafers lie completely flat. Covering of free surface areas, a must with many other vacuum systems, is not necessary.

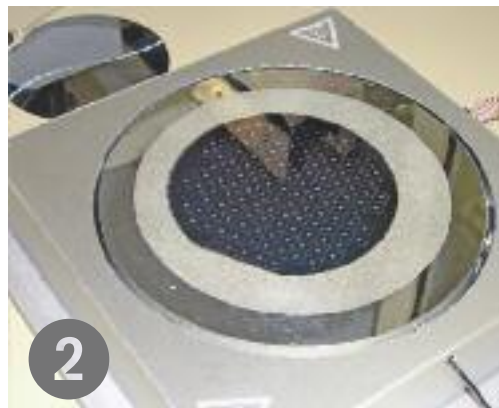
This vacuum chuck was additionally equipped with a heating element, which is applied for releasing temperature-soluble foils.

Since the pore size of the clamping surface is approx. 10 -12 micrometers damage-free clamping of such sensitive wafers is guaranteed.

*„After grinding we put wafer piles on the vacuum chuck and switch on the heating element. The warmth reduces the sticking effect of the foil and the wafers separate from carrier wafers, which only have a stabilization function. The thinned wafer can then be removed“*

(Christof Landesberger from The Fraunhofer IZM (Institute for Reliability and Micro integration)

- 1 70 µm thin (and curved) silicon wafer before the vacuum chuck is activated.
- 2 Thin silicon wafer, after vacuum has been switched on
- 3 Removal of thinned wafer after applying heat; the carrier wafer still is on the clamping surface
- 4 If the thin wafer is held with vacuum tweezers then the shape of the vacuum channels stand out on the flexible silicon surface. For even thinner wafers such tweezer handling is no longer suitable.



**Witte –**  
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**Subcontracting**

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