µ-porous Vacuum chucks

Modular version in standard sizes or special design

These chucks have a porous surface area made out of sinterbronze, ceramic or porous aluminium depending on the application and workpiece. METAPOR© opens a whole new perspective for different clamping solutions

Application
Preferred workpieces:
- Thin walled (i.e. paper, foils, plate bars, metal strips)
- Fine (i.e. optical)
- Soft materials (i.e. rubbers)

for work such as:
- High precision measuring
- Precision milling
- Silicon wafer production

Advantages
- Due to the absence of grooves and holes workpieces are not deformed for instance on inserts in the clamping area
- Milling through the workpiece is possible with the use of our Friction booster
- METAPOR© has different quality grades and can also qualify for clean room surroundings (Kl. 10)

Handling
- Modular chucks can be interconnected to enlarge the surface area.
- Part specific special designs available

µ-porous Vacuum chuck

with METAPOR© CE100 White

Nr.	A	B	C	
91488	300	200	38	5,7
92294	400	300	38	11,4
92296	600	400	38	23

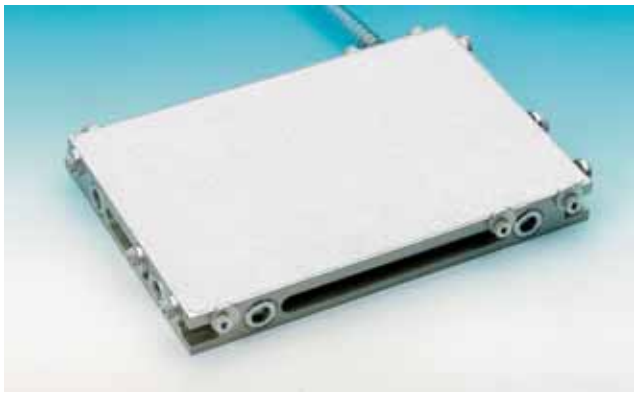
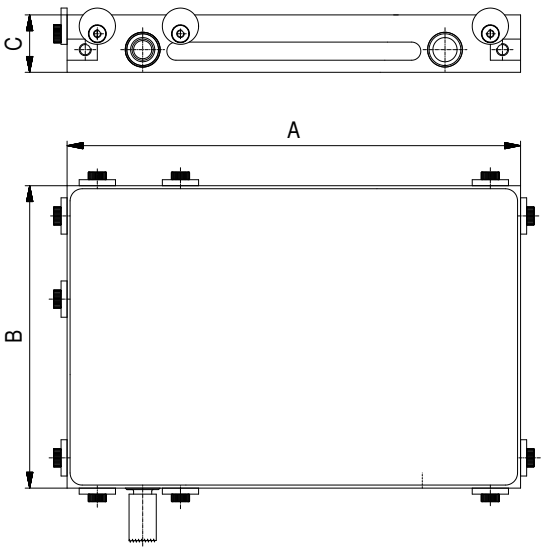


Plate inlay in Metapor CE 100 WHITE fine porous material with low pore diameter and very homogenic total porosity



Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

µ-porous Vacuum chuck

with METAPOR© MC100 White

Nr.	A	B	C	
91021	300	200	38	5,7
92290	400	300	38	11,4
92291	600	400	38	23

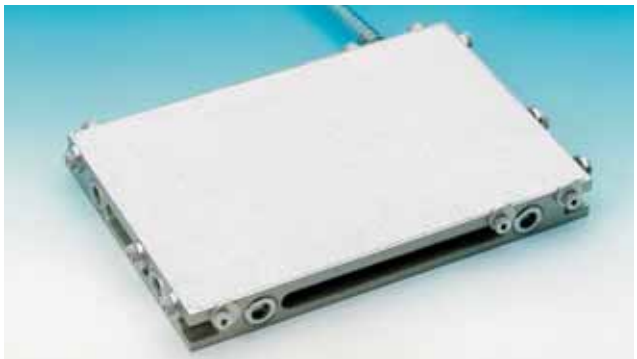
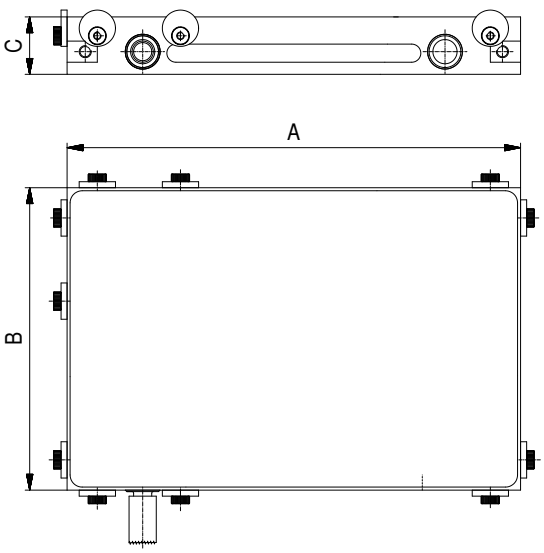


Plate inlay in Metapor MC 100 WHITE fine porous material with low pore diameter and very homogenic total porosity, with larger porosity compared to BF 100 AL

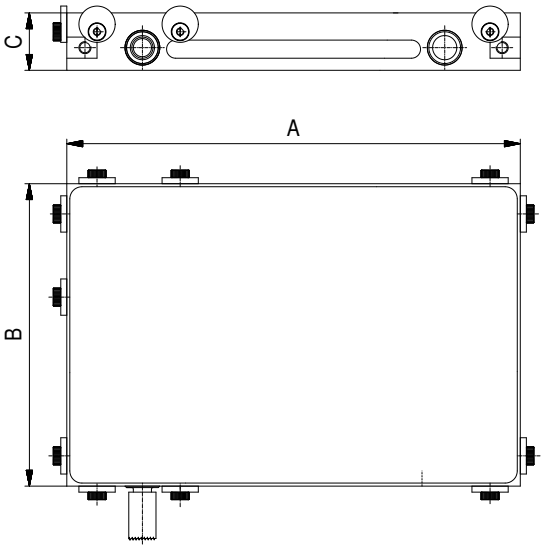


Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

Other Dimensions available on request.

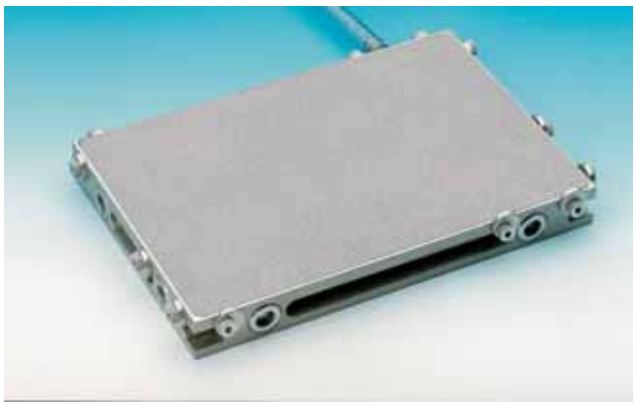
Further information on Metapor see page 96



µ-porous Vacuum chuck

with METAPOR© BF100 Al

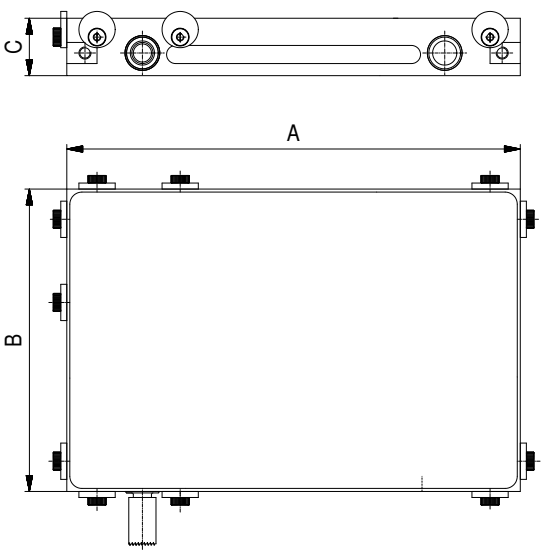
Nr.	A	B	C	
83401	300	200	38	5,7
84380	400	300	38	11,4
84381	600	400	38	23



Supply includes:

- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

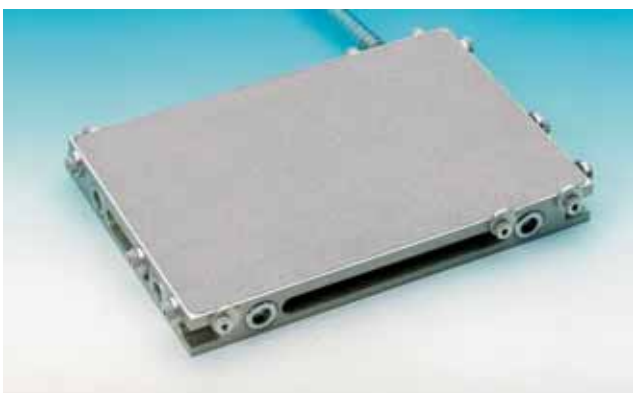
Plate inlay in porous material Metapor BF100 AL details on page 96



µ-porous Vacuum chuck

with METAPOR© HD 210

Nr.	A	B	C	
94315	300	200	38	6,1
94316	400	300	38	12,2
94317	600	400	38	25



Supply includes:

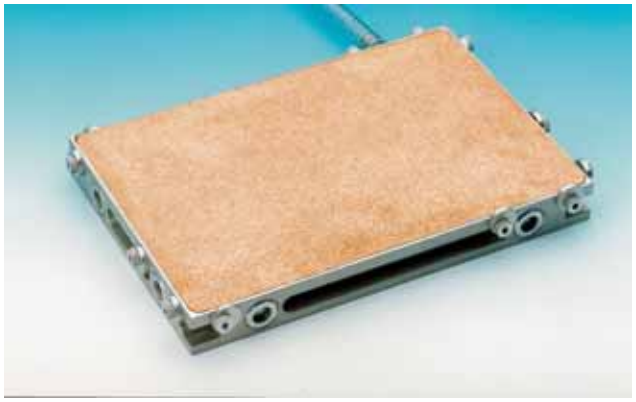
- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

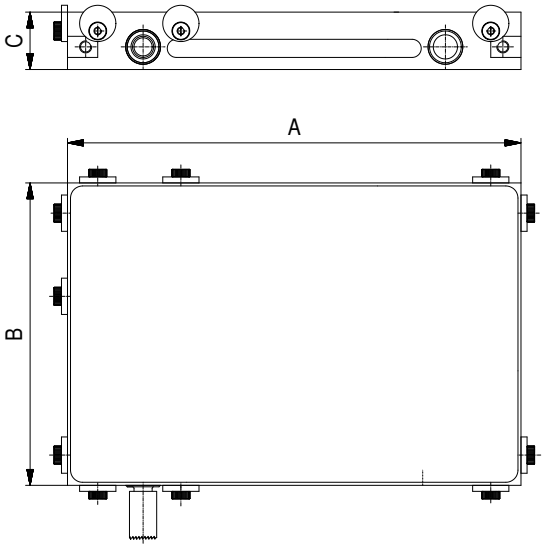
Plate inlay in porous material Metapor HD210 AL for temperatures up to 210°C

Sintermetal Vacuum chuck

Double layered, hardwearing sinterbronze inlay

Nr.	A	B	C	
84686	300	200	38	7,1
84687	400	300	38	14,2
84688	600	400	38	28,4





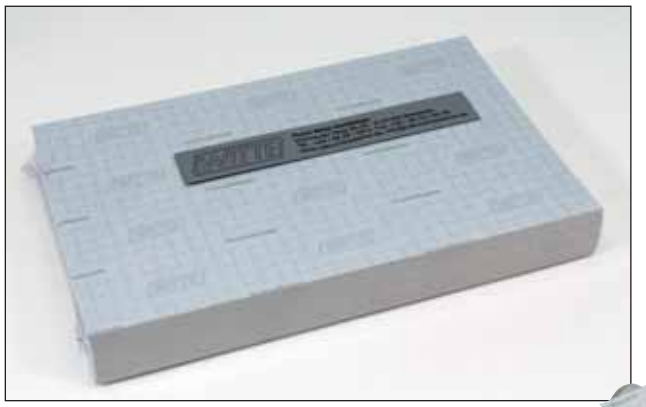
Supply includes:

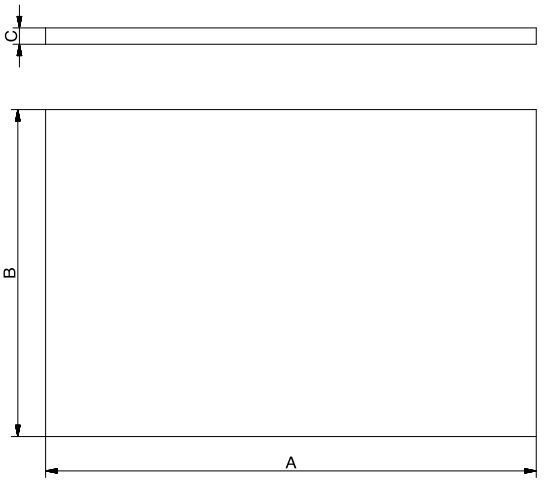
- Modular Metapor™ vacuum chuck
- 12x Height adjustable excentric end stops
- Vacuum chuck adapter
- 1m Vacuum suction hose with plug
- 2 x Step heel clamps, alu
- Tools for setting up

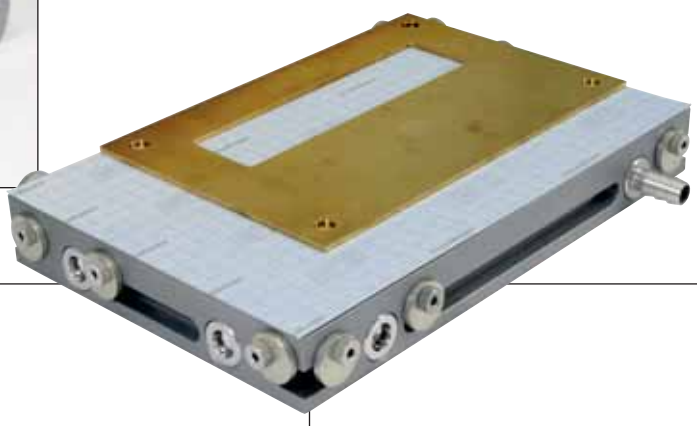
Friction Booster

Protects Metapor chucks from damage when through cutting or lasering parts

Nr.	A	B	C	Stck	kg
00839	300	200	<1	50	1,8
00840	400	300	<1	25	1,8
00841	600	400	<1	25	3,6







Other Dimensions available on request.

Further information on Metapor see page 96

Vacuum Clamping Technology

for new technologies in research and development

Special version with integrated heating and electronic temperature control

1. Clamping with Witte vacuum chucks
Vacuum chucks from Witte have proven successful in many areas of semiconductor technology and made a name for accurate, fast and "gentle" clamping.
These lightweight, yet very accurate vacuum chucks are made of aluminum alloy and usually have a micro-porous clamping surface of Metapor material.
However, custom-built perforated-grid chucks with small holes arranged in a specific pattern can also be implemented.
(See pictures)

2. Flexible
Besides standard versions of this vacuum chucks, Witte offers every conceivable specific design and dimension. We analyze technical requirements and environmental conditions of customers' processes, and develop a concept together with them. Various technically feasible configurations have already been manufactured.

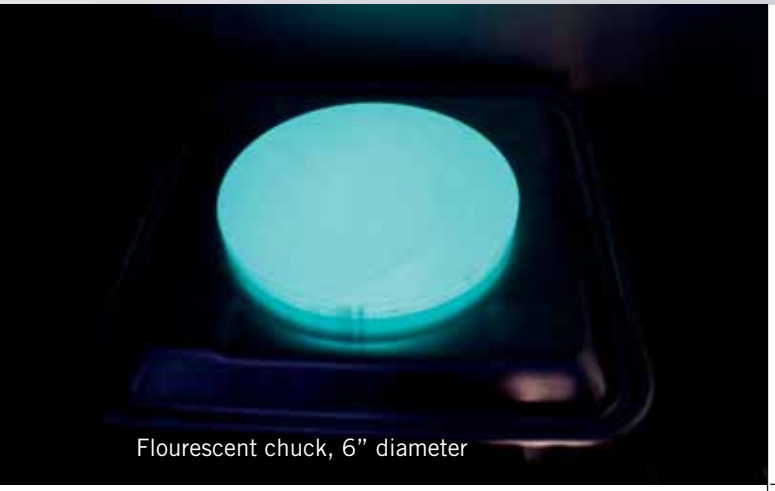
3. Accurate
A modern machine shop and climatized measuring rooms with high precision measuring machines ensure excellent quality of products. Vacuum chucks are available **with flatness and / or parallelism of < 5µm** if the application profile of the customer requires it.

4. Reliability
A chuck surface comprising of micro-porous material guarantees completely "flat" clamping. Thin carrier foils or wafers are not deformed by suction holes, suction grooves or similar which occurs during conventional clamping methods. The low weight and accuracy of such Witte chucks is also advantageous for automated applications.

5. Universal
Another major advantage of micro-porous vacuum chucks is that the vacuum still works extremely effectively even when the micro-porous surface is not covered completely. This enables clamping of different sized parts on the same chuck. The porous surface may also be divided into separately operable areas with individual switches. (See example opposite)
Integrated hovercraft technology, ejector and lifting pins are some of the technical ingredients of these innovative concepts.
Furthermore, vacuum chucks for certain processes can be **"heatable"** up to a temperature as high as 150°C with corresponding temperature controls (see picture above.).
Likewise, **cooling** systems or **light transparency** applications are possible.

6. Everything from one source
In addition to standard and custom vacuum chucks Witte supplies all necessary accessories such as simple ejectors, vacuum pumps, rotary joints, hoses, solenoid valves and much more.
Our expert staff can advise you and look forward to your inquiry.

Specially designed porous chuck with three individual clamping areas, stops for part positioning and lifting pins for easy removal of wafers.

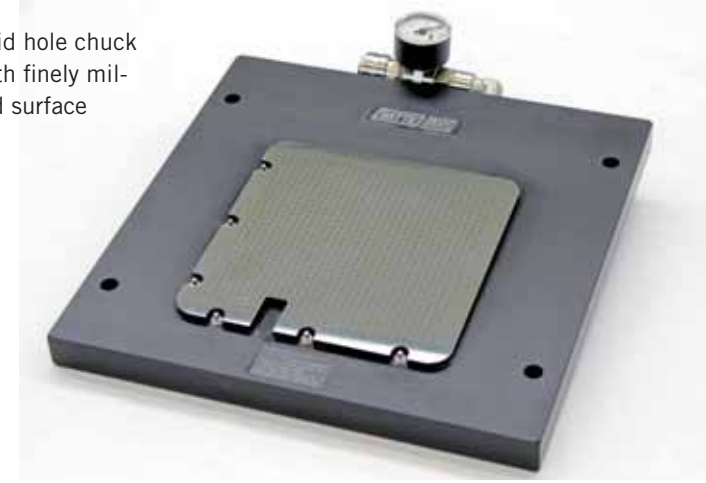


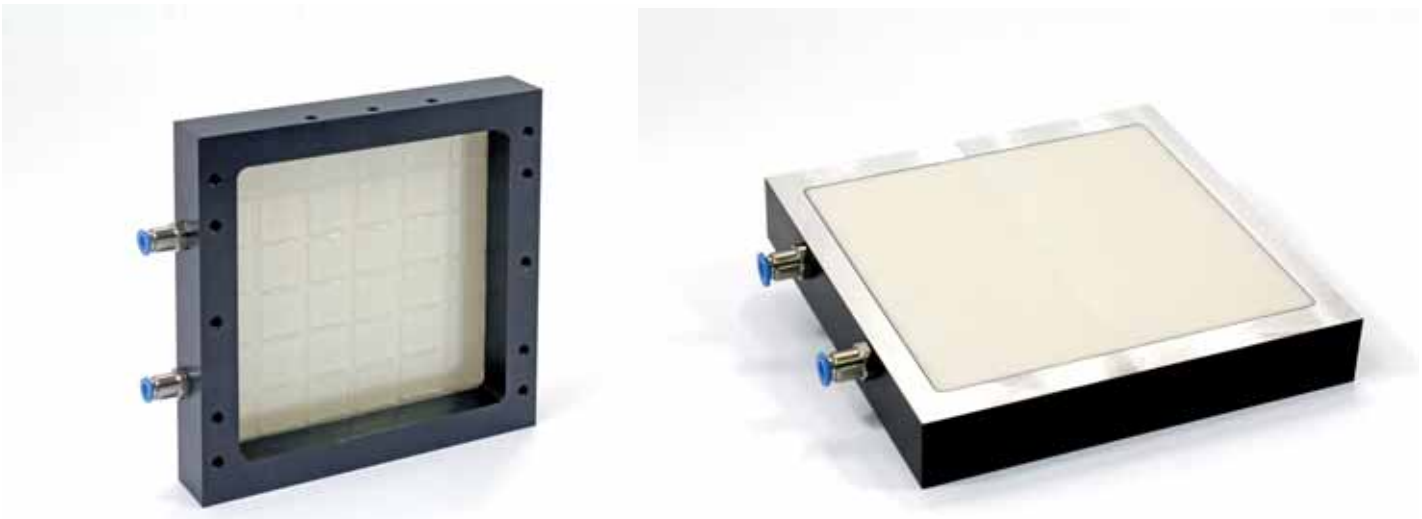
Flourescent chuck, 6" diameter

Independent vacuum chuck.
Clamping of parts on chuck completely free of external supply lines.
Battery, vacuum pump, controls, display and valves are all integrated

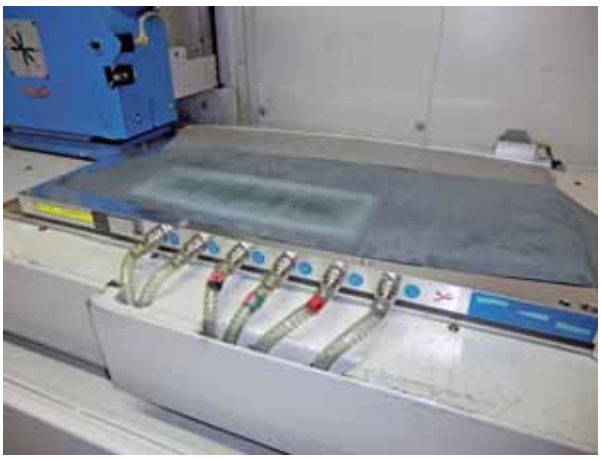
Finely milled vacuum chuck for clamping wafers, clamping area microporous material Witte MP CE100 WHITE flatness accuracy <0,005mm

Grid hole chuck with finely milled surface





DLC light transmitting chuck for clamping parts, views from above and below



Application in automotive industry, leather clamped on visible side for grinding predetermined breaking points in areas of airbags on reverse side

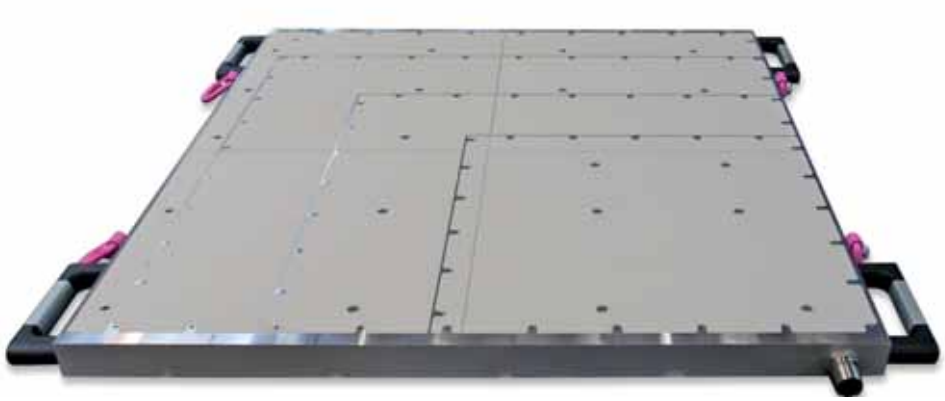
µ-porous vacuum chucks

Further examples

Same chuck shown without leather parts

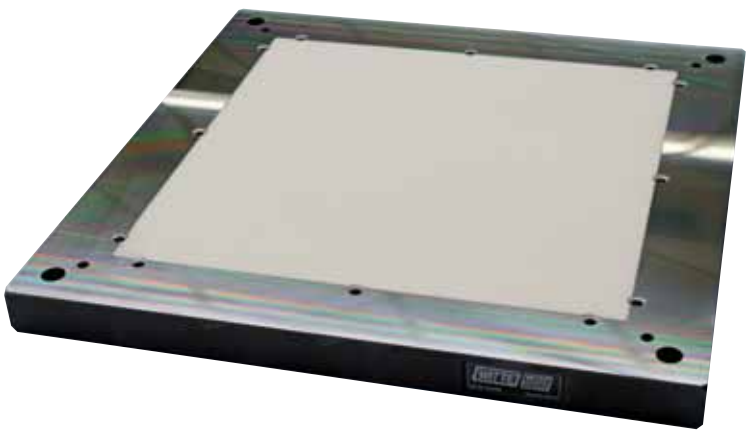
Vacuum clamping system for laser application. Detail shows both clamping areas and cutting channels.

Small size micro finely machined chuck



Vacuum chuck with four separately usable clamping areas

Vacuum chuck with micro porous clamping surfaces and holes for applications using light transference



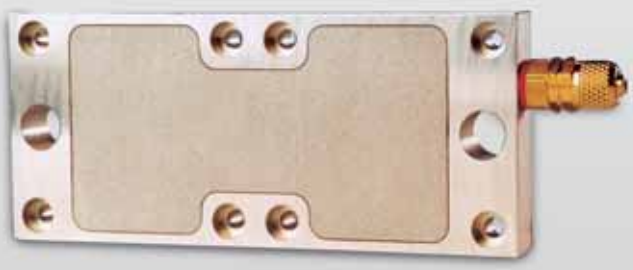
Vacuum chuck with two clamping areas and lifting pins for **automatic** controlled process

Vacuum chuck with three clamping areas and lifting pins for **manually** controlled process

DLC (Durchlicht chuck), light transmitting chuck for gentle clamping of parts during optical analysis process

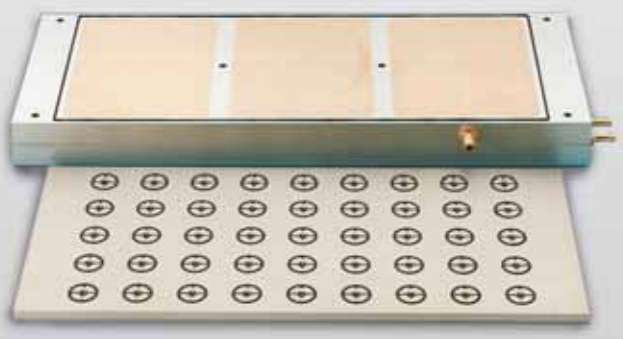
Picture shows a special sinter metal vacuum fixture used in quality control department of CD manufacturer

Sintermetal vacuum fixtures



Vacuum chuck for credit cards

3D Vacuum chuck



Sinter metal vacuum chuck with special adapter plate for clamping hard metal blanks during laser machining process.
It has an integrated cooling labyrinth which prevents inaccuracies, due to development of warmth which occurs during the laser machining process