



HPS Specials

CUSTOM MANUFACTURED VACUUM COMPONENTS

MKS offers a complete line of standard flanges, fittings, valves, gauges, heaters, and process solutions that can be modified or combined together in various configurations to create a custom solution. With the help of advanced CAD/CAM and 3D design software, each product is specifically engineered to meet each customer's needs. By combining our large inventory, experienced staff and the latest automated equipment, we produce a more cost effective and higher quality product.

MKS' extensive surface treatment and cleaning procedures minimize outgassing and contamination. All components are carefully cleaned for high vacuum use, helium leak tested, and then packaged to remain clean until the time of installation.

Examples of HPS Specials

Vacuum Chambers, Manifolds & Fittings

- Cylindrical chambers up to 72" long and 48" diameter
- Square chambers up to 48" square
- Rectangular chambers up to 72" by 48" by 17"
- Larger chambers available
- 304, 316, 321 and other stainless steel alloy options
- Experienced with Inconel®, Hastelloy® and Titanium
- Leak testing is possible down to 10^{-10} standard cubic centimeters per second (std cc/s)
- Flanges up to 48" in diameter
- Variety of finishes available



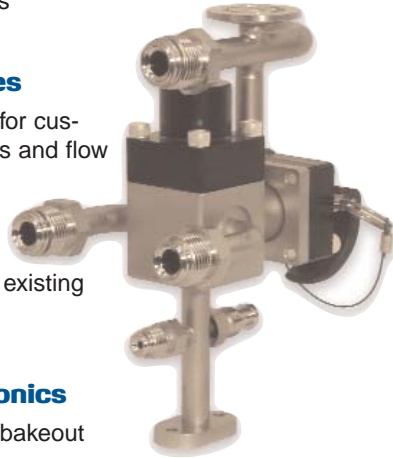
Capabilities and Ordering Information

Custom Heated Lines

- Variety of temperatures and control systems
- Voltage variation
- Designs to fit unique components and manifolds
- Power cord variations

Custom Vacuum Valves

- Multiple ports and stages for customer required pump times and flow
- Variety of seals, including elastomer and metal are available
- Dimensions to conform to existing machine design modulus
- Heated valves available

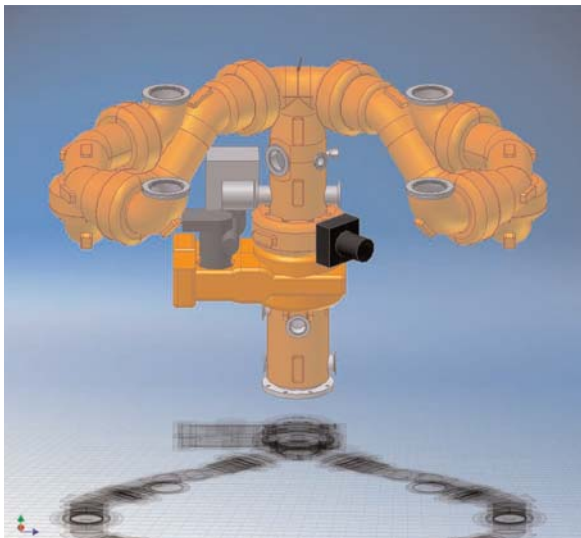


Vacuum Gauge Electronics

- Modified sensors to meet bakeout requirements
- Able to add shielding and coatings as needed
- Variety of flanging options available

Effluent Management Subsystems™

MKS can tailor the subsystem to the chemistries of the process using a combination of standard or custom products including heaters, traps, valves, gauges, process components, manifolds, flow controllers, and Baratron®.



Capabilities

MKS has over 30 years of vacuum design and fabrication experience as well as semiconductor process knowledge to handle many design challenges, ranging from building complete process vacuum piping to making a slight variation of a standard product.

Our knowledge of semiconductor processes allows us to provide unique Effluent Management Subsystems™ using heating technology to improve uptime and yield in semiconductor manufacturing tools.

In addition to our mechanical and electrical engineers, MKS also has chemical process engineers, metallurgists and physicists on staff.



Ordering Information

When MKS receives a request for quotation for a special product, the MKS staff performs an analysis of the design, and a new part number is generated. When the order is placed, a drawing and bill of material are prepared and the product is added to our current parts list for instant retrieval when a customer orders it again. This system allows us to quickly manufacture and ship the custom product.

With the breadth of products available through MKS, we are able to integrate and modify standard catalog components.

For more information about HPS® Specials, call (800) 345-1967 or (303) 449-9861.



MKS Global Headquarters

2 Tech Drive, Suite 201
Andover, MA 01810
Tel: (978) 645.5500
Tel: (800) 227.8766 (in USA)
Web: www.mksinst.com
Email: mks@mksinst.com

MKS Vacuum Technology

HPS® Products
5330 Sterling Drive
Boulder, CO 80301
Tel: (303) 449.9861
Tel: (800) 345.1967 (in USA)