



VACGEN

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PRODUCT OVERVIEW

Sample Manipulation

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Sample Manipulation

Engineered Solutions for Vacuum Technology.

Precision movement and positioning of samples and substrates within a vacuum system is an essential process in material analysis or deposition. Our extensive range of customisable Ultra High Vacuum (UHV) sample manipulators are designed specifically for vacuum systems.

VACGEN are an ISO9001:2015 Quality approved supplier and have over 50 years experience in supplying sample manipulation and vacuum chambers to the vacuum industry.



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Omniux UHV Sample Manipulator

Omniux Widebore UHV Sample Manipulator

Triax UHV Sample Manipulator

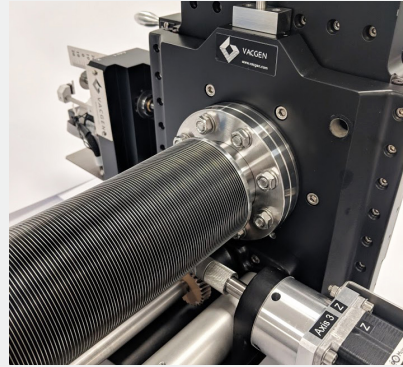
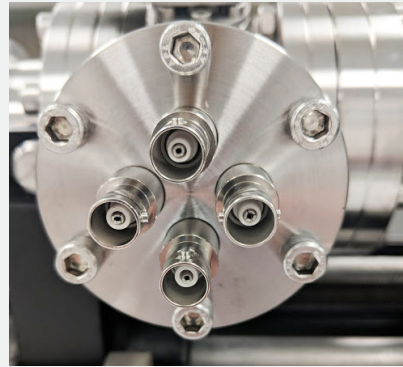
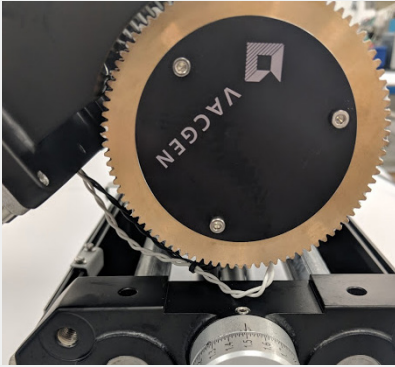
Miniux UHV Sample Manipulator

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About Us

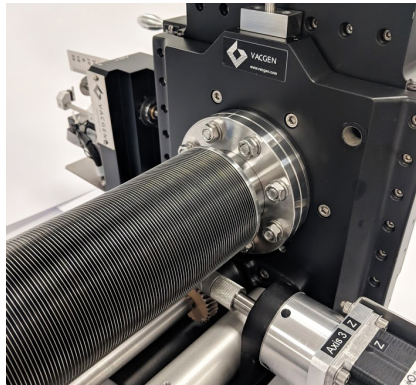
Since 1964, VACGEN (VG) has been the name synonymous with high quality ultra high vacuum products and services. From the manufacture of the first UHV valve to some of the most advanced vacuum research systems built, over 50 years in the research and scientific industry has given us an incredible grounding in the needs of our customers, how we can support new projects through the design phase, delivered product and ongoing support.

VACGEN remains the partner of choice for the next generation of researchers, innovators and builders. From our UK high tech manufacturing base, our focus is on delivering enabling technologies and supporting our customers across industry and academia.

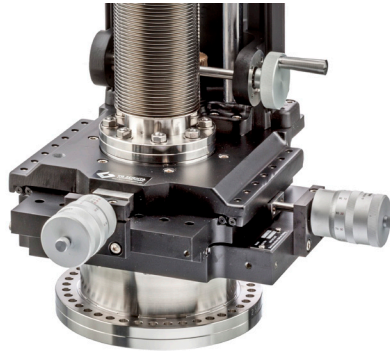
UKAS and BSI ISO 9001:2015 Accredited.

Omniax

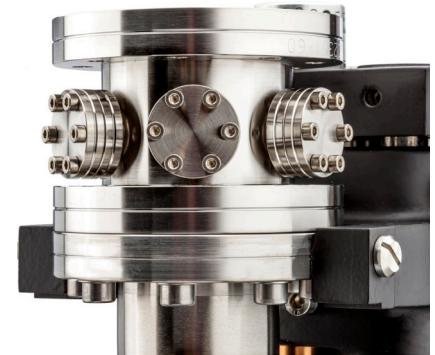
The Omniax is a fully UHV compatible dual bellows manipulator with large probe capacity. The design utilises the unique VACGEN hinged knee assembly and guided support tube to eliminate sample deflection due to vacuum loading, providing extreme stability. The rigidity of the design makes it ideal for long travel lengths, multiple rotations, specimen security and capacity for feedthroughs.



Fully Motorisable Axes



XY Table with $\pm 25\text{mm}$ X and Y Axes



Standard Feedthrough Chamber with 4 Ports and dedicated LN_2 Cooling Port

SPECIFICATION

Omniax

152mm or 203mm OD CF Base Flange

100mm to 1000mm Z Travel

±25mm X and Y Axes

32mm or 54mm OD Support Tube

Mount In Any Orientation

Fully Bakeable to 230°C

Operating Pressure 1 bar to 1×10^{-11} mbar

Leak Rate 1×10^{-10} mbar ls^{-1}

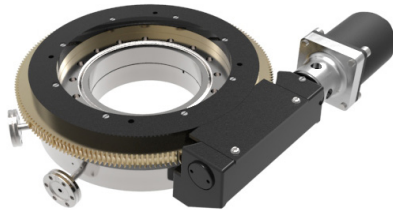
20kg Payload Maximum

Proprietary Design on Hinged Knee
Assembly



Omniax Widebore

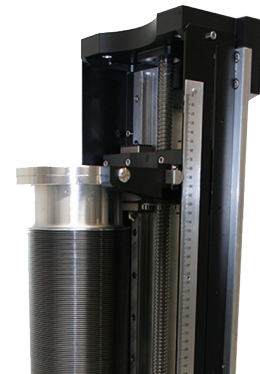
The Omniax Widebore was designed for large cryostat applications, with 152mm OD travelling flange. A choice of 152mm and 203mm OD CF base flange make this the ideal choice of manipulator for heavy duty cryostat and synchrotron applications. A payload of up to 30kg is achievable owing to the proprietary design of the hinged knee assembly and over-engineered Z spine.



Compatible with Rotary Platforms



100mm Clear Bore Bellows



Long Stable Z Travel

SPECIFICATION

Omniax Widebore

152mm or 203mm OD CF Base Flange

100mm to 1000mm Z Travel

±25mm X and Y Axes

Vertical Orientation Only

Fully Bakeable to 230°C

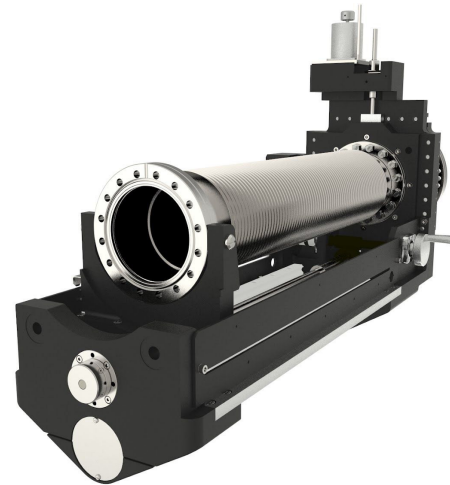
Operating Pressure 1 bar to 1×10^{-11} mbar

Leak Rate 1×10^{-10} mbar ls^{-1}

30kg Payload Maximum

Designed for Cryostat Applications

Proprietary Design on Hinged Knee
Assembly



Triax

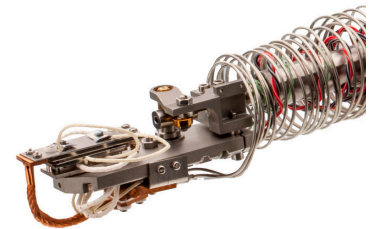
The Triax multi-axes sample manipulator is used for positioning a sample under ultra-high vacuum (UHV) conditions. The wide bore allows 19mm OD instruments to have full vectoral travel and owing to the design, all axes can be fully motorised with digital read out available. The universal orientation and small footprint allows for the end-user to make better use of the air-side chamber space.



Fully Motorisable Axes



40mm Clear Bore Bellows



Compatible with All Sample Accessories

SPECIFICATION

Triax

114mm or 152mm OD CF Base Flange

50mm to 600mm Z Travel

$\pm 12.5\text{mm}$ X and Y Axes

Mount In Any Orientation

Fully Bakeable to 230°C

Operating Pressure 1 bar to 1×10^{-11} mbar

Leak Rate 1×10^{-10} mbar ls^{-1}

10kg Payload Maximum

Digital Read Out

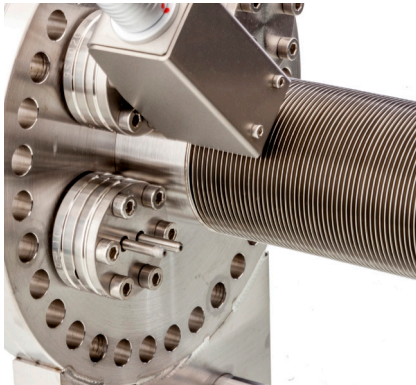
NEMA17 Motors

40mm Clear Bore

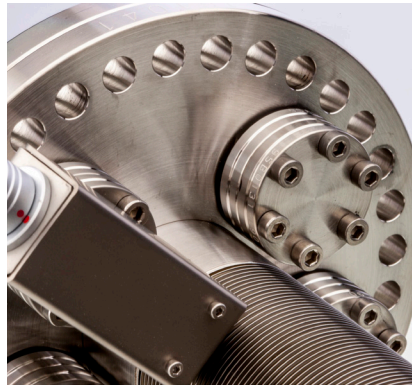


Miniax

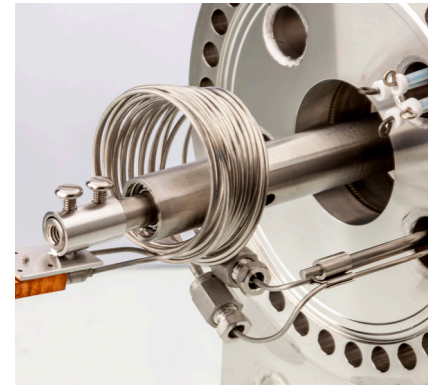
The Miniax is a simple XYZ manipulator, ideal for sample storage and basic sample handling. The all-metal cross roller bearings provide smooth operation in the XY axes and allow for up to 200°C bakeout temperatures. The compact manual design makes it easy to fit in any orientation, whilst taking up limited system space. Situated either on a 70mm or 152mm OD CF base flange. The 152mm base flange option accommodates 4 feedthrough ports, perfect for configuring to meet your system requirements.



Liquid Nitrogen Cooling Port on
152mm OD CF Base Flange



Feedthrough Ports on 152mm OD CF
Base Flange



Liquid Nitrogen Cooling Coils

SPECIFICATION

Miniax

70mm or 152mm OD CF Base Flange

50mm or 100mm Z Travel

$\pm 12.5\text{mm}$ X and Y Axes

Mount In Any Orientation

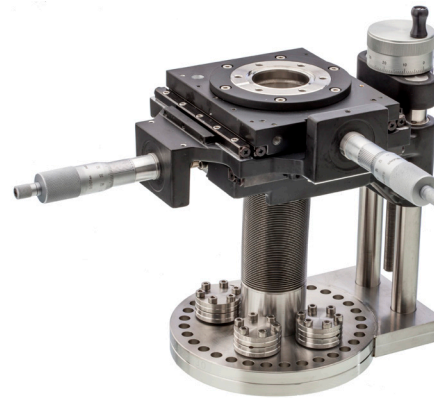
Fully Bakeable to 200°C

Operating Pressure 1 bar to 1×10^{-11} mbar

Leak Rate 1×10^{-10} mbar ls^{-1}

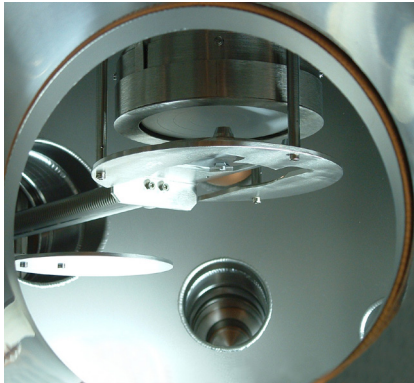
152mm Base Flange with 4 Mini
Feedthrough Ports, Provides LN_2 and
Feedthrough Options

Ideal For Sample Storage

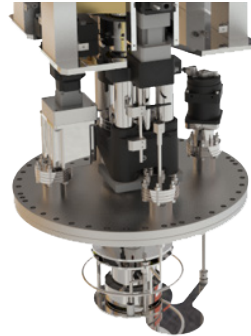


OLED Manipulators

Deposition substrate manipulators are designed to take up to 100mm substrate or wafers. With up to 60RPM rotation speeds for uniform deposition onto the substrate. An adjustable $\pm 50\text{mm}$ Z travel accommodates the wafer transfer and then adjusts into position for the deposition process. These precision stages have micron level accuracy.



Wafer Transfer



Optional Gas Dosing Ring



Fully Motorised Axes

SPECIFICATION

OLED Manipulators

100mm Substrate or Wafer

60RPM Rotation Speed

1000°C Heating

±50mm Z Travel

±25mm Sample to Heater Adjustment

Integrated Tilt

Gas Dosing Ring

Optional DC & RF Bias

Optional Helium Clamping

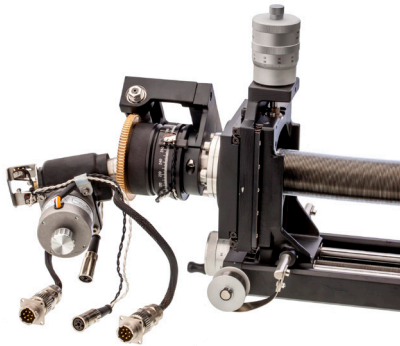
Optional Heater Materials

2 Film Thickness Monitor Port

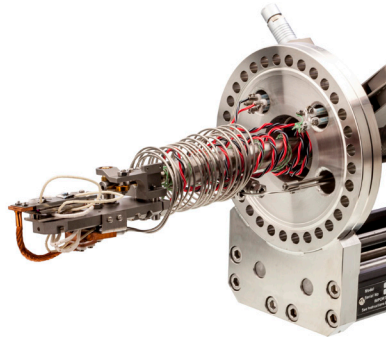


HPT

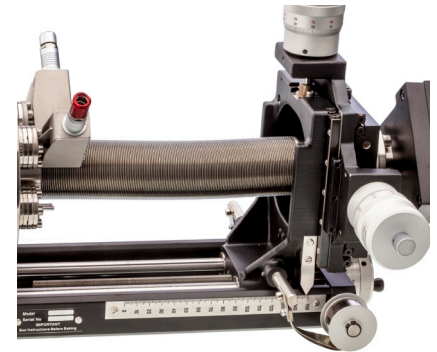
The HPT is a high precision customisable sample manipulator, designed on a compact footprint. Situated on a 152mm OD CF base flange, the design offers space for up to 4 feedthroughs and liquid nitrogen cooling options, when a rotary drive and sample holder are fitted to the manipulator. A precision tilt adaptor is also available on request, offering the user flexibility in the modular components.



Fully Motorisable Axes



Customisable Modular Design



Re-circulating Metal Bearings on Z Slide

SPECIFICATION

HPT

152mm OD CF Base Flange

50mm to 250mm Z Travel

$\pm 12.5\text{mm}$ X and Y Axes

Mount In Any Orientation

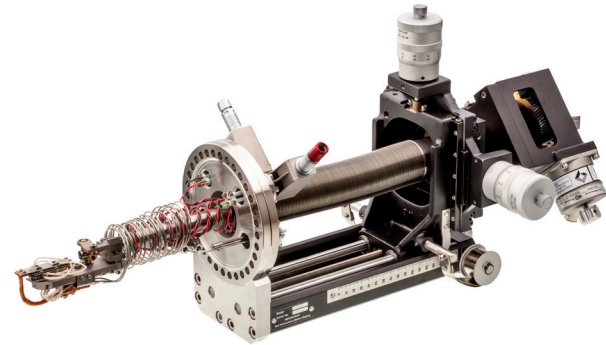
Fully Bakeable to 230°C

Precision Tilt Adaptor Available

Operating Pressure 1 bar to 1×10^{-11} mbar

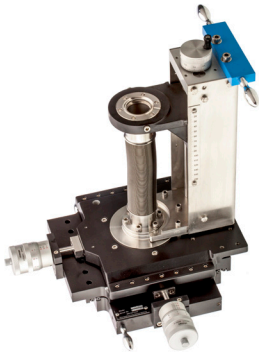
Leak Rate 1×10^{-10} mbar ls^{-1}

152mm Base Flange with 4 Mini
Feedthrough Ports, Provides LN_2 and
Feedthrough Options



Transax

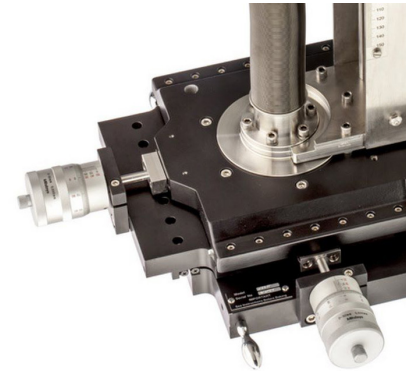
The Transax is a fully UHV compatible sample manipulator. Offering the user a stable and versatile platform, which can accommodate up to 600mm Z travel length. The design offers a flexible range of modular components, which can be upgraded with ease, and the internal support tube offers a greater rigidity for sample handling.



Z Travel Up To 600mm



Modular Components



Stable Dual Bellows Design

SPECIFICATION

Transax

70mm or 152mm OD CF Base Flange

150mm to 600mm Z Travel

±25mm X and Y Axes

32mm OD Support Tube

Probes Up To 28mm OD

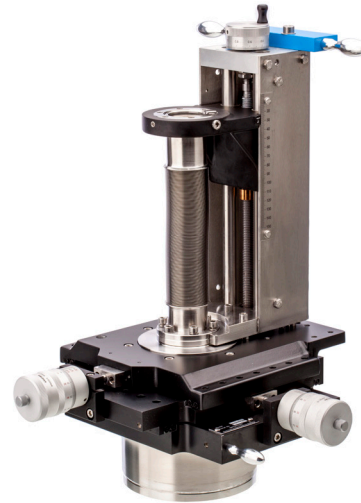
Mount In Any Orientation

Fully Bakeable to 230°C

Operating Pressure 1 bar to 1×10^{-11} mbar

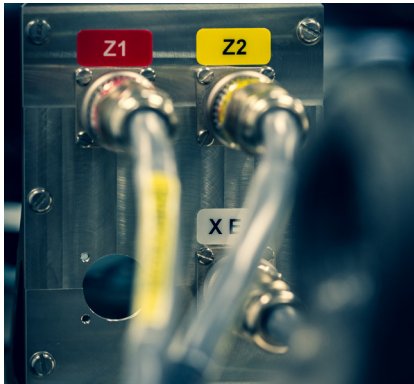
Leak Rate 1×10^{-10} mbar ls⁻¹

10kg Payload Maximum

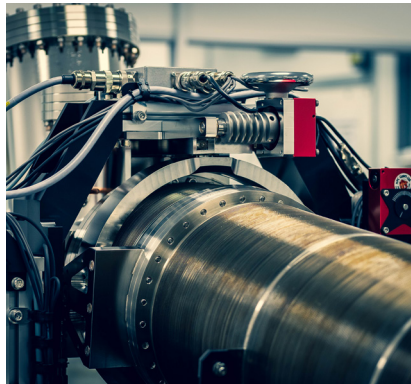


Custom Manipulators

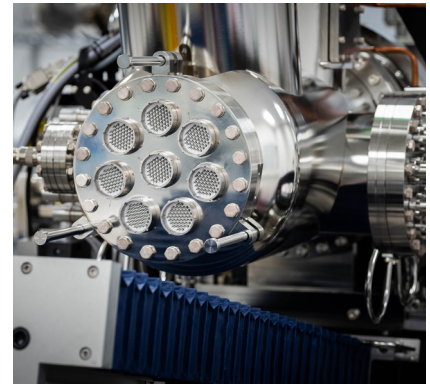
High mass and high precision stages for use in semiconductor applications such as EUV lithography, actinic mask inspection, multi e-beam inspection and processing. We offer vibrational and acoustical isolation for resonant frequencies <100hz, CAD support, thermal dynamics experience and structural analysis input to ensure your design functions to its full potential.



Fully Motorisable Axes



Large Clear Bore



Multiple Feedthroughs

SPECIFICATION

Custom Manipulators

90Kg Payload Maximum

Vibrational Isolation

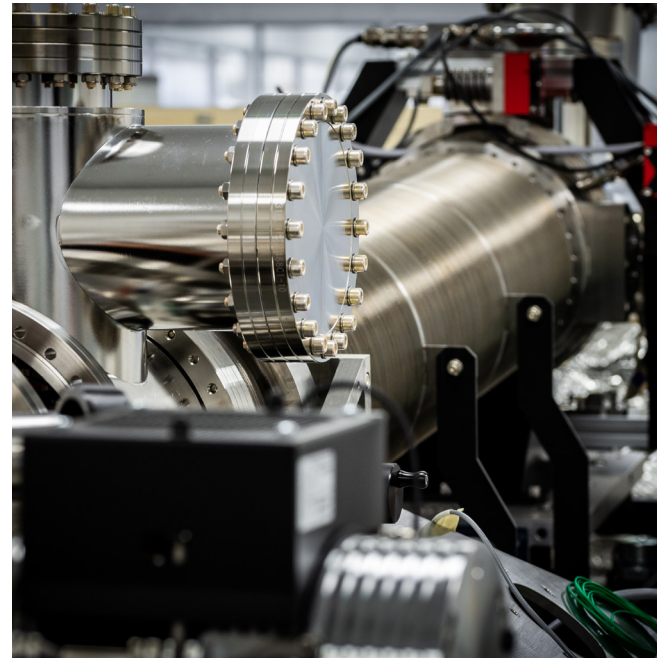
High Precision

Thermal Dynamics

Structural Analysis

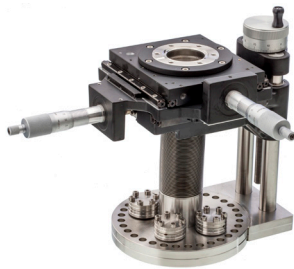
Acoustical Isolation for Resonant
Frequencies <100hz

Supported by design and concept
optioneering. Our approach is tailored to
each project and is based on finding the
best solution for your vacuum system,
providing quality through competence.

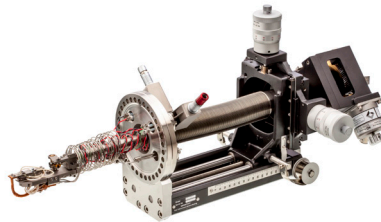


Sample Manipulators

Our extensive range of customised Ultra High Vacuum (UHV) sample manipulators are designed specifically for vacuum systems. Precision movement and positioning of samples and substrates within a vacuum system is an essential process in material analysis or deposition.



MiniAx

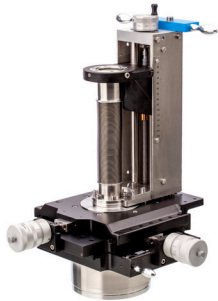


HPT



TriAx

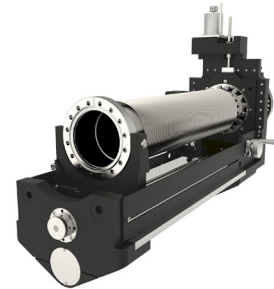
Each VACGEN manipulator family offers unique characteristics, ensuring that users have access to the widest possible range of stability, cost-effectiveness, and process conditions. Many can be built up with additional accessories including rotary drives, sample holders, sample heating, liquid nitrogen cooling, support stands, motor controllers and rotary platforms or DPRFs, to provide the ideal solution for your vacuum system.



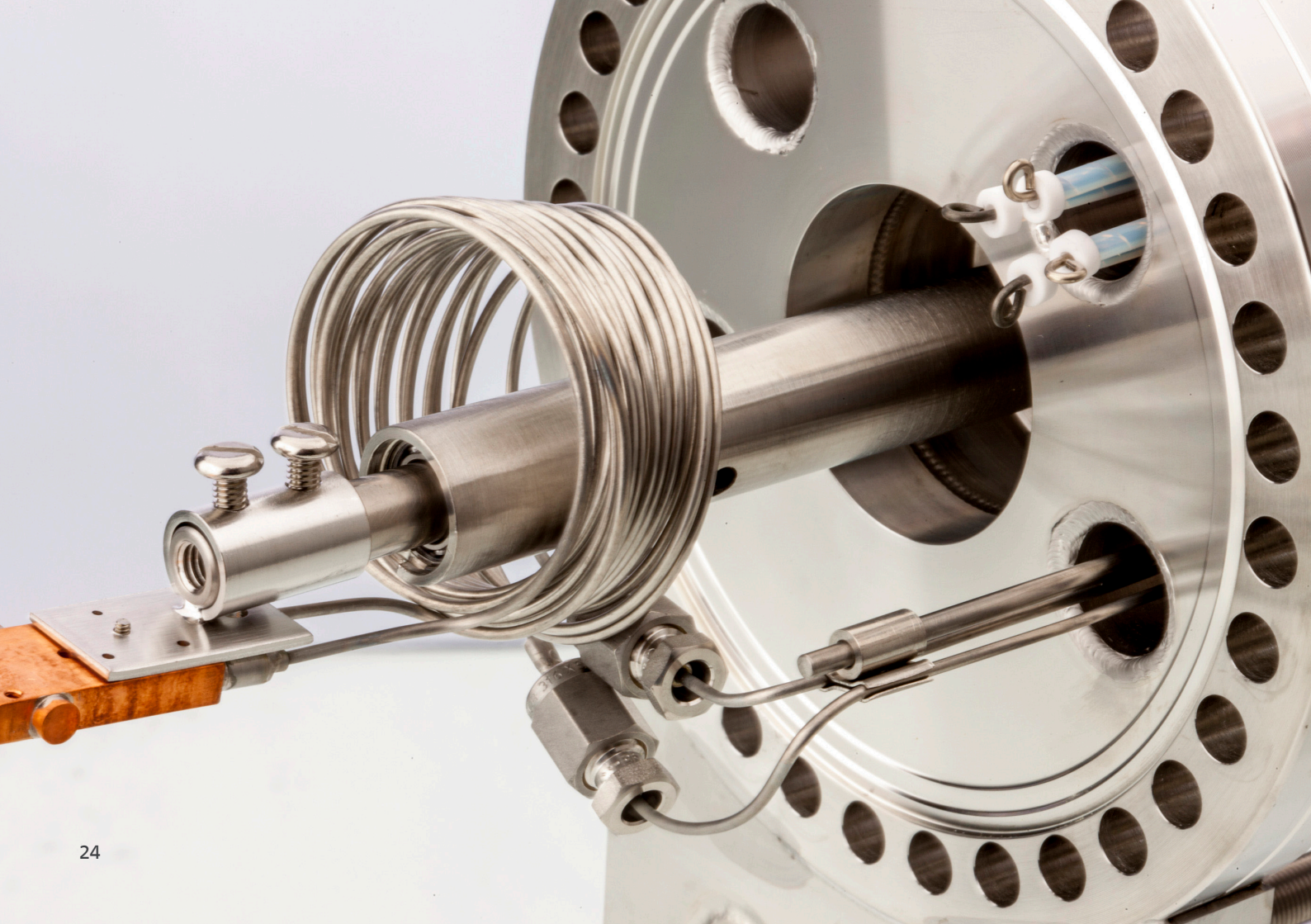
Transax



Omni-ax



Omni-ax Widebore



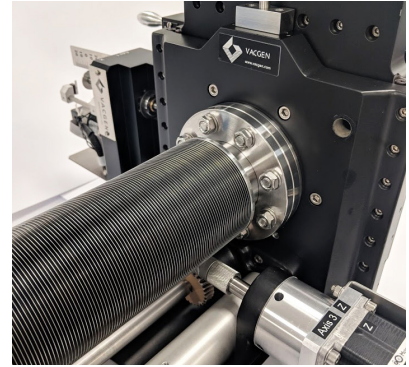
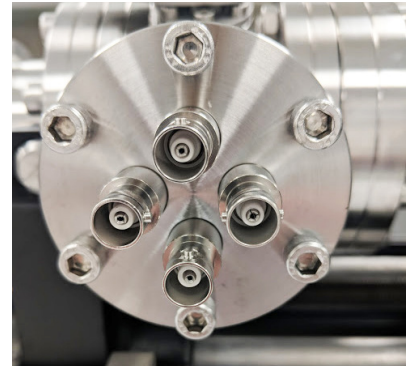
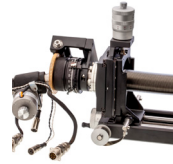
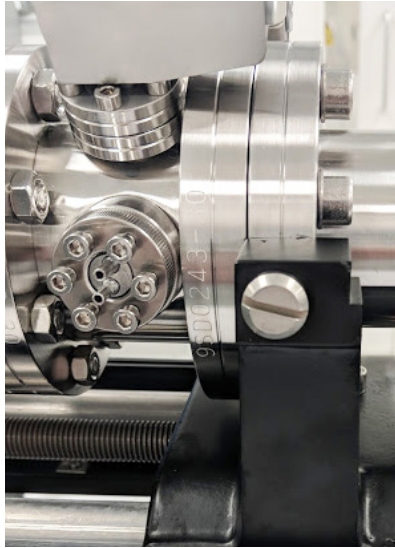
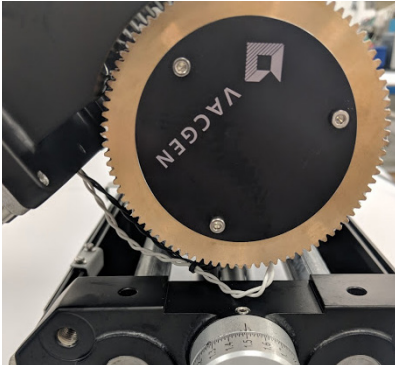
The Value of Partnership

In a high technology business, you have to be confident in the partners you choose to provide mission critical technology, equipment and services. You need to know that your partners can deliver and support what you need, when you need it. As your business grows and develops your need to work with partners that can support that growth. That's where we come in.

We're a fully-fledged UHV equipment manufacturer. At our factory in the UK we exploit extensive engineering resources to take raw materials right through the entire manufacturing workflow, producing finished UHV components, everything happens here.

Our in house design and development functions are world class, and production is supported by extensive CNC machining resources feeding a large clean room assembly area. We can react quickly with significant resources as needed. We take pride in being an agile responsive business.

Owning our product lifecycle ensures unparalleled control of quality, and gives us a deep understanding of each and every one of our products, from the simplest component through to the most complex assembly. We understand how they perform and interact across a host of applications and within numerous environments.





Contact Us

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