

# Turbomolecular vacuum pumps

## Magnetic Suspension

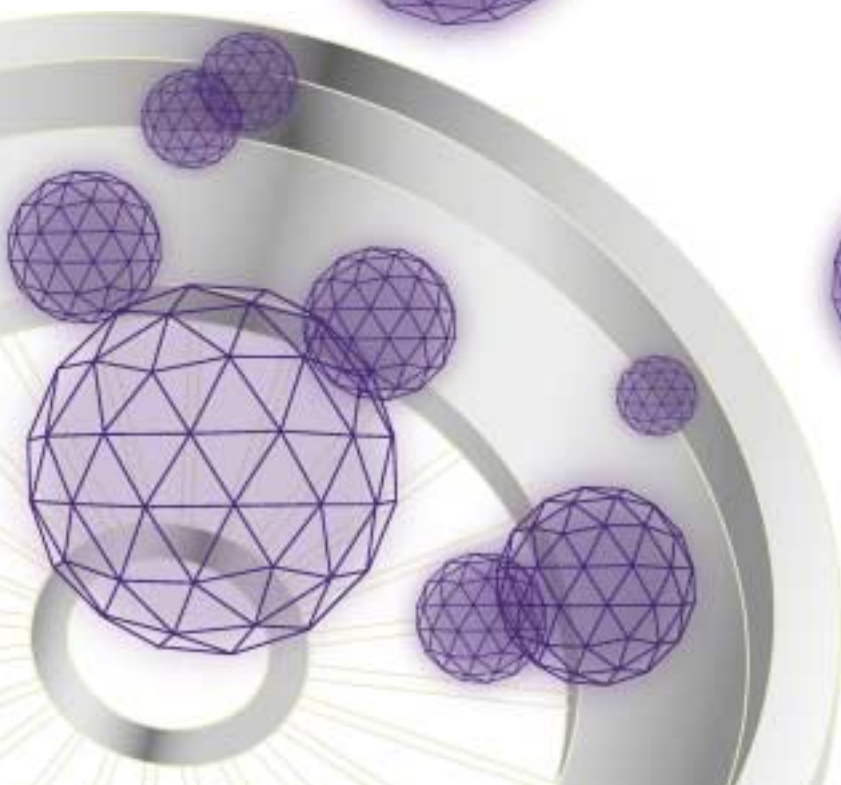
Advantage Range



H Range



STP Range



# The Product Range



## Advantage Range

The Advantage range of magnetically levitated turbo pumps has been designed using advanced rotor technology to offer the highest gas throughputs required by the next generation of semiconductor and thin film etch processes. The products' five axis magnetic bearings provide optimum reliability, hydrocarbon free, clean vacuum and class leading performance.

### Applications

Semiconductor/display manufacturing equipment: dry etching, CVD, sputter, ion implant.



## High Throughput Range

The High Throughput range of magnetically levitated turbo pumps accommodates the high gas flows required by the current generation of semiconductor etch, ion implant and LCD systems. The products' five axis magnetic bearings give superb reliability, maximum performance and oil-free clean vacuum.

### Applications

Semiconductor/display manufacturing equipment: dry etching, CVD, sputter, ion implant.



## Ultra High Vacuum Range

The Ultra High Vacuum range of magnetically levitated turbo pumps are designed to provide the low ultimate pressures required by the latest ion implanters, CD SEM's and high energy particle research applications. Their oil free magnetic bearings give clean, reliable, hydrocarbon-free vacuum and class leading performance.

### Applications

**Scientific** - electron microscopes, mass spectrometers, surface analyzers.

**High energy physics** - accelerators, nuclear fusion, synchrotrons, cyclotrons, experimental equipment.

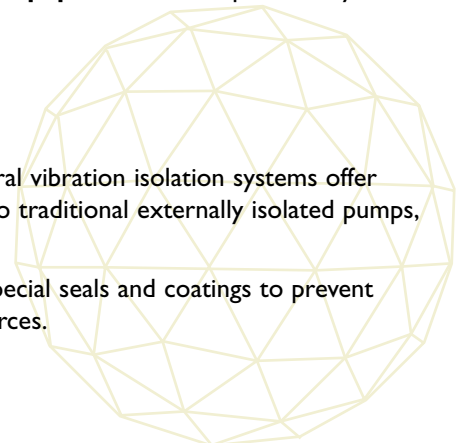
**Semiconductor manufacturing equipment** - ion implanter, dry etcher, MBE units, load locks.



## Special Variants

**Low vibration pumps** with integral vibration isolation systems offer improved performance compared to traditional externally isolated pumps, but in a much smaller package.

**Tritium resistant pumps** with special seals and coatings to prevent pump damage from radioactive sources.



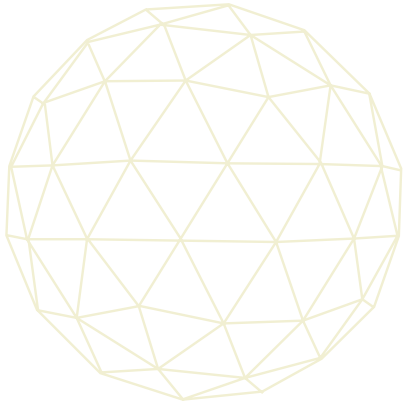
*Performance*

*Productivity*

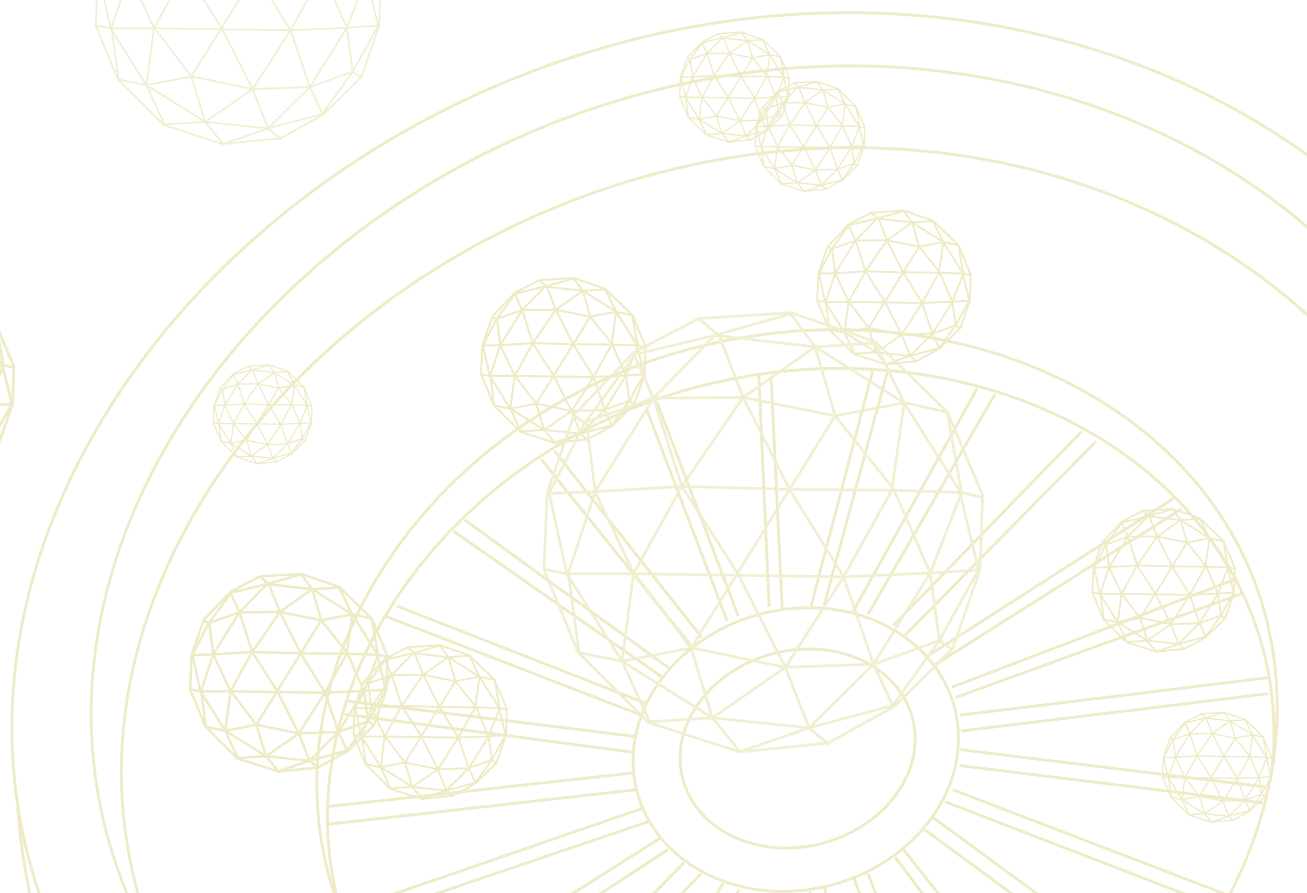
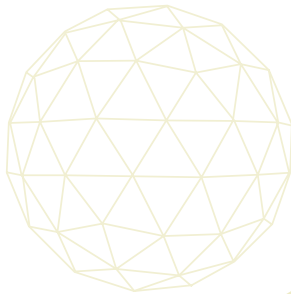
*Durability*

*Intelligence*

*Support*



**The products listed in this brochure can be configured to fit your exact process needs. Please contact a member of our sales team.**



# Advantage Range

*Giving you the advantage*

## Optimisation Advantage

- Wide product range to suit all applications
- Optimised performance for your process
- Fully configurable to your tool

## Support Advantage

- Global support by BOC Edwards

## Cost Advantage

- Zero maintenance

## Control Advantage

- Half rack controller
- Integrated TMS control
- Autotuning
- Advanced diagnostic features

## Performance Advantage

- Improved compression ratio
- Increased pumping speed
- Greater throughput at inlet pressure
- Very low vibration and noise
- Process proven reliability

## Size Advantage

- Small footprint
- Integrated TMS system

## Clean Advantage

- TMS particulate reduction system
- Hydrocarbon lubricant free

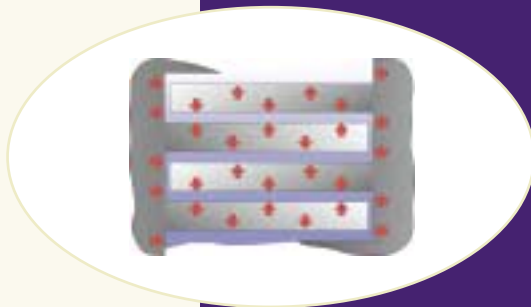


*Available in flange sizes ISO160 to ISO320 and equivalent*





Advanced 3 dimensional rotor design gives improved throughput.



Reduced internal rotor-stator gap improves pumping performance.



Advanced Holweck design improves throughput.



Advanced materials of construction give improved performance.



# High Throughput Range

*Small Powerful Clean Reliable*



## High Throughput

Holweck stage on rotor provides the high throughput required by harsh gas or etch processes.

## Global Support

BOC Edwards vacuum expertise and global presence offers extensive worldwide support.

## Clean

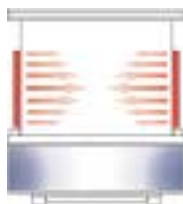
The BOC Edwards advanced particle reduction system keeps the pump cleaner for better reliability and longer lifetime.

## Reliable

Huge global installed base on a wide range of etch and ion implantation tools.

## Compact Robust Design

The high throughput range has been designed to provide class leading performance in a compact, robust package.

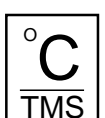
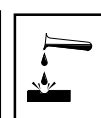
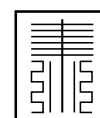


The advanced particle reduction system available for the high throughput range minimises deposition from even the harshest etch or deposition processes.



The compound blade design maximises throughput to accommodate high gas flow processes.

*Available in flange sizes ISO100 to ISO200 and equivalents*



# Ultra High Vacuum Range

*High Vacuum Low Vibration Total Reliability*



## Total Reliability

The latest generation UHV pumps are all continuous improvements on existing designs. This gives them the reliability that only comes with an installed base of thousands.

## Global Support

BOC Edwards vacuum expertise and global presence offers extensive worldwide support.

## Maintenance Free

High manufacturing standards combined with non-contact magnetically levitated bearings mean the pumps are virtually maintenance free.

## Low Vibration, Low Noise

Advanced manufacturing techniques combined with magnetically levitated bearing technology make these pumps the number one choice for your SEM.

## Small Footprint

Designed to give class leading performance from the smallest possible footprint.



The zero contact bearings in all magnetically levitated pumps gives a vibration-free operation, maintenance free operation and dramatically improves reliability.



The fully bladed rotor of the ultra high vacuum range gives excellent light gas pumping performance for minimum background pressure in electron and ion beam applications, and research environments.

*Available in flange sizes ISO100 to ISO200 and equivalents*



# Controllers

*Compact Intelligent Control*

**Autotuning**

**Compact half rack**

**Integrated TMS control**

**Pump status display**



# Accessories

## Temperature Management Systems

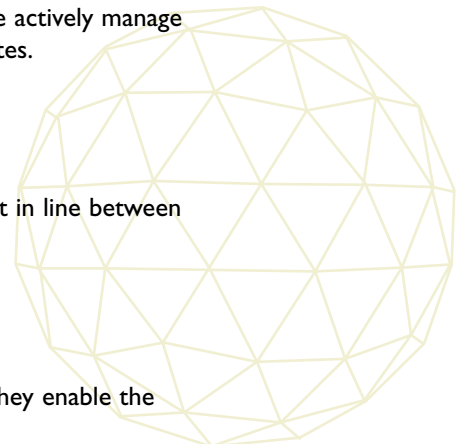
Temperature Management Systems are available for all relevant pump models. These actively manage the temperature of the gas paths in the pump to reduce the generation of particulates.

## Vibration Isolators

Vibration Isolators are available as separate units in ISO100 or ISO160 size. These fit in line between the pump and the chamber to greatly reduce the vibration interference conducted.

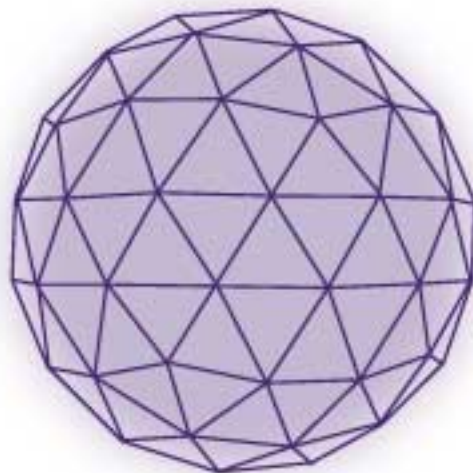
## Shipping Kits

Shipping Kits protect the pump once it is removed from the application chamber. They enable the pump to be purged and sealed and also protect it during transportation.









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