



VACGEN

[www.vacgen.com](http://www.vacgen.com)



PRODUCT OVERVIEW

# Vacuum Valves

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# Vacuum Valves

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Engineered Solutions for Vacuum Technology.

VACGEN's range of vacuum valves are used to isolate or control the flow of gas into the vacuum system. We supply a comprehensive range of ultra-high vacuum (UHV) valves, from fully bakeable all-metal right angle valves for true UHV applications, to ultra-fine controllable leak valves, designed with fine pressure control with extremely low hysteresis.

VACGEN are an ISO9001:2015 Certified Quality Management System supplier and have over 50 years experience in supplying vacuum valves to industry.



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CR All-Metal Right Angle Valves

CRD All-Metal Right Angle Valves

VR Elastomer Sealed Valves

LVM All-Metal Leak Valves

MD All-Metal Leak Valves

Nuclear UF<sub>6</sub> Isolation Valves

Nuclear UF<sub>6</sub> Control Valves

SoftShut Gate Valves





## About Us

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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 Certified.

# Valves Overview

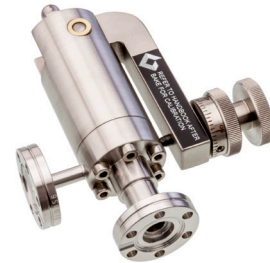
VACGEN have a long standing history of valve manufacture, beginning with the very first true UHV valve developed by VG in 1964. Our wide ranging portfolio of valves includes all-metal right angle valves, leak valves and gate valves.



Right-Angle Valves

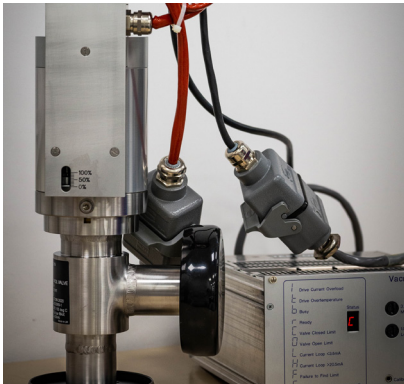


Insertable Valves

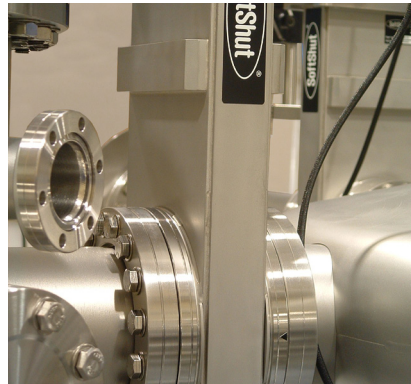


Leak Valves

We also supply a range of UF<sub>6</sub> nuclear valves, designed for the nuclear energy industry. All valves are supplied under strict export control with all licenses active.



Control Valves



Gate Valves



Nuclear Valves

# CR Right Angle Valve

The CR all metal right angle valve series offers excellent conductance and is available in 3 standard body sizes. The proprietary design of the sealing pad and fully welded bonnet construction allows for superior shut off, and an exceptional repeatable seal.



ZCR20R



ZCR40R



ZCR60R



## SPECIFICATION

## CR

All Metal Construction

Optional 316LN SS (1.4406) Flanges

Fully Welded Bonnet Construction

10,000 Cycles Between Services

100,000 Lifecycle

Serviceable In The Field

Rotatable Flanges on Both Axes

Available in 3 Sizes

Pressure Range 4 bar to  $1 \times 10^{-10}$  mbar

Leak Rate  $1 \times 10^{-10}$  mbar l.s<sup>-1</sup>

Fully Bakeable to 450°C Open & 300°C Closed

Extremely Reliable



# CRD Right Angle Valve

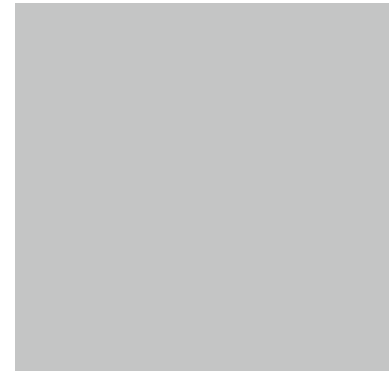
The CRD all metal right angle valve series offers excellent conductance. A demountable bonnet construction allows the user to remove the bellows assembly to replace the sealing pad at service intervals. This design is typically used where a fixed manifold is present and the sealing pad cannot be changed via the side port.



ZCRD20R



ZCRD40R



ZCRD60R

## SPECIFICATION

## CRD

All Metal Construction

Demountable Bonnet Construction

10,000 Cycles Between Services

100,000 Lifecycle

Serviceable In The Field

Rotatable Flanges on Both Axes

Available in 3 Sizes

Pressure Range 4 bar to  $1 \times 10^{-10}$  mbar

Leak Rate  $1 \times 10^{-10}$  mbar l.s<sup>-1</sup>

Fully Bakeable to 450°C Open & 300°C Closed

Extremely Reliable



# VR Right Angle Valve

The VR right angle valve is designed for HV environments with an elastomer gate seal. The body construction is the same as the CR with a fully welded bonnet construction and bellows operating mechanism. The VR range is available in 2 sizes and fully bakeable to 200°C in the open position.



ZVR40R



ZVR60R

## SPECIFICATION

## VR

Elastomer Seal - Viton Gasket

Fully Welded Bonnet Construction

10,000 Cycles Between Services

100,000 Lifecycle

Serviceable In The Field

Rotatable Flanges on Both Axes

Available in 2 Sizes

Pressure Range 4 bar to  $1 \times 10^{-9}$  mbar

Leak Rate  $1 \times 10^{-9}$  mbar l.s<sup>-1</sup>

Fully Bakeable to 200°C Open & 150°C Closed

Extremely Reliable



# LVM Leak Valve

The LVM leak valve series offer a superior seal compared to competitor design, owing to the internal Mallory® pad. Leak valves are designed to control a precise flow of gas into the vacuum chamber, and due to the low internal gas volume these valves are extremely repeatable and easy to control.



ZLVM940R



ZLVM263R

## SPECIFICATION

## LVM

All Metal Construction

Adjustable Index Ring

Low Internal Volume Providing A Wide Dynamic Range

Serviceable In The Field

Rotatable Flanges on Both Axes

Available in 2 Sizes

Pressure Range 100 mbar to  $1 \times 10^{-11}$  mbar

Leak Rate  $1 \times 10^{-12}$  mbar l.s<sup>-1</sup>

Max Inlet Pressure 10 bar

Fully Bakeable to 450°C Open & 250°C Closed

Extremely Repeatable



# MD Leak Valve

The MD leak valve is the perfect addition to any system utilising hot or corrosive gaseous elements. The internal nickel sealing disk and diaphragm can withstand many different elements and is fully UHV compatible. The design also allows for a high maximum inlet pressure of 10 bar and is fully bakeable to over 300°C.



ZMD95



## SPECIFICATION

## MD

All Metal Construction 304L Body

Nickel Sealing Disk

Designed for Hot & Corrosive Gases

Max Inlet Pressure 10 bar

UHV Compatible

Serviceable In The Field

Fixed Flanges

Pressure Range 1 bar to  $1 \times 10^{-7}$  mbar

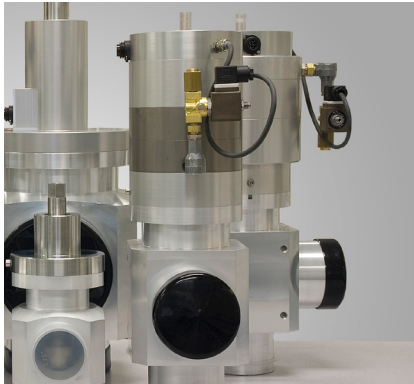
Leak Rate  $1 \times 10^{-11}$  mbar l.s<sup>-1</sup>

Fully Bakeable to 450°C Open & 250°C Closed



# Qualified Range UF<sub>6</sub> Valves

Our range of qualified UF<sub>6</sub> valves includes Isolation Valves and Control Valves. All valves fully conform to nuclear standard specifications and are controlled via export licenses. Stop valves can be supplied in pneumatic or manual, and control valves are supplied with an integrated stepper motor designed to be used with a controller or can be manually operated.



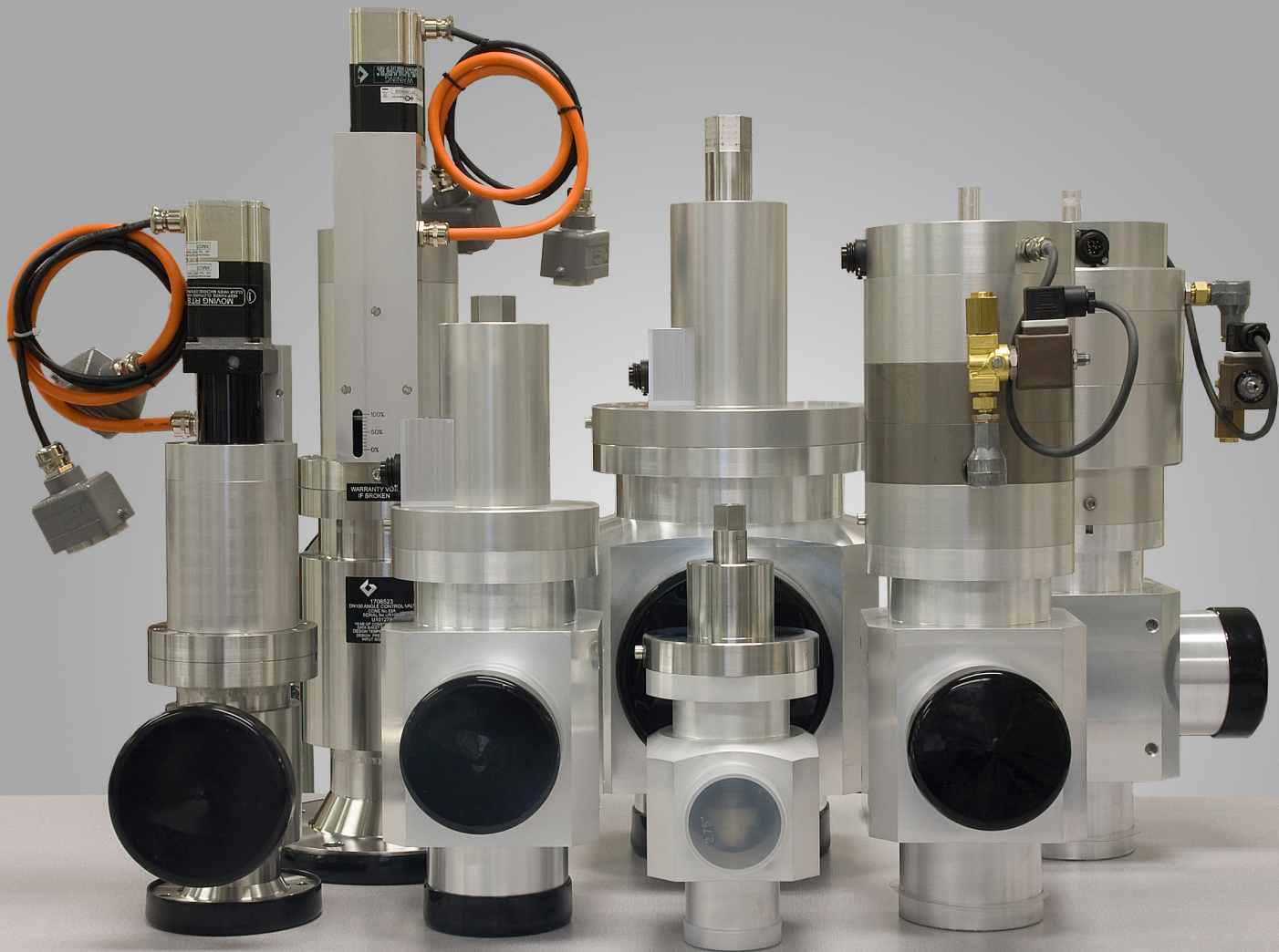
Isolation Valves



Control Valves

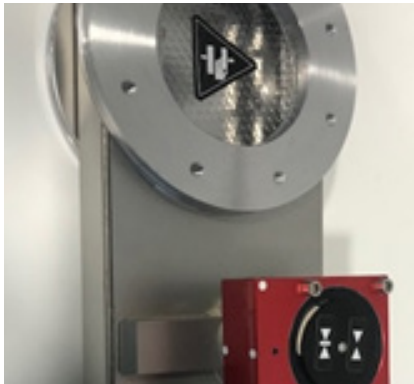


Motorised & Manual Versions



# SoftShut Gate Valves

Our range of niche gate valves include UHV SoftShut gate valves, HV SoftShut gate valves, insertable gate valves and pressure control gate valves. We manufacture to customer drawings or we can offer a project engineer to help with a new design.



Pressure Control Gate Valve



UHV Gate Valve



HV Gate Valve

## EXAMPLE APPLICATIONS

## Gate Valves

UHV SoftShut Valves with Internal Viewports for Laser Alignment

HV SoftShut Valves - Supplied with Carriage End Baffle to Shield Internal Mechanism for Enhanced Performance in Corrosive Environments

Insertable Gate Valves for Direct Integration with Vacuum Chambers for Applications with Space Restrictions

Pressure Control Gate Valves with Gear Box and Motor Assembly for Pressure Control Applications

Fully Motorisable with Limit Switches for Enhanced Vacuum System Protection





# 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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