

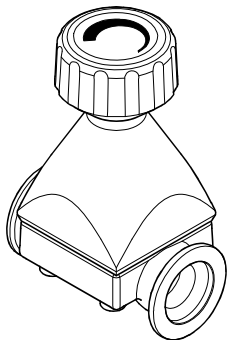
Inline Valve

manually actuated
diaphragm sealed

VIH016-AD

VIH025-AD

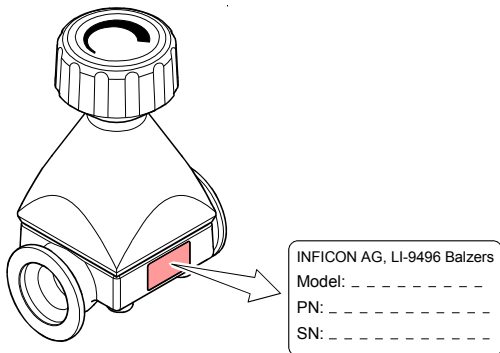
VIH040-AD



Operating Manual
Incl. Manufacturer's Declaration

Product Identification

In all communications with INFICON, please specify the information given on the product nameplate. For convenient reference copy that information into the space provided below.



Validity

This document applies to products with the following part numbers:

253-481	(DN 16 ISO-KF)
253-482	(DN 25 ISO-KF)
253-483	(DN 40 ISO-KF)

The part number (PN) can be taken from the product nameplate. If not indicated otherwise in the legends, the illustrations in this document correspond to the valve with the vacuum connection DN 25 ISO-KF. They apply to valves with other vacuum connections by analogy.

We reserve the right to make technical changes without prior notice.


All dimensions in mm.

Intended Use

The valves are used as shut-off, dosing and venting devices for vacuum applications.

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For cross-references within this document, the symbol (→  XY) is used.

1 Safety

1.1 Symbols Used



DANGER

Information on preventing any kind of physical injury.



WARNING

Information on preventing extensive equipment and environmental damage.



Caution

Information on correct handling or use. Disregard can lead to malfunctions or minor equipment damage.


1.2 Personnel Qualifications



Skilled personnel

All work described in this document may only be carried out by persons who have suitable technical training and the necessary experience or who have been instructed by the end-user of the product.

1.3 General Safety Instructions

- Adhere to the applicable regulations and take the necessary precautions for the process media used.
Consider possible reactions between the materials (→  7) and the process media.
- Adhere to the applicable regulations and take the necessary precautions for all work you are going to do and consider the safety instructions in this document.
- Before beginning to work, find out whether any vacuum components are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Communicate the safety instructions to all other users.

1.4 Liability and Warranty

INFICON assumes no liability and the warranty becomes null and void if the end-user or third parties

- disregard the information in this document
- use the product in a non-conforming manner
- make any kind of interventions (modifications, alterations etc.) on the product
- use the product with accessories not listed in the product documentation.

The end-user assumes the responsibility in conjunction with the process media used.

2 Technical Data

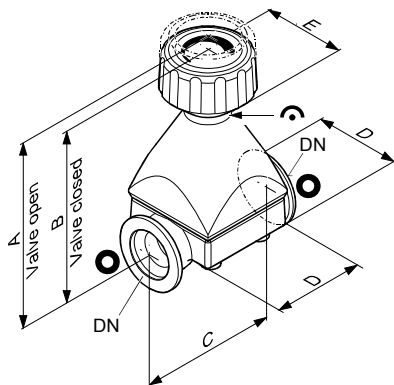
Vacuum connection	DN 16 ISO-KF	DN 25 ISO-KF	DN 40 ISO-KF
Stroke (diaphragm)	6 mm	10 mm	14 mm
Rotations	≈3.5	≈4.5	≈7
Conductance ¹⁾	2 l/s	5 l/s	17 l/s
Service life ²⁾	10'000 cycles		
Tightness	1×10 ⁻⁹ mbar l/s		
Pressure max.	5 bar (absolute)		
Operating pressure min.	1×10 ⁻⁷ mbar		
Operating pressure max.	5 bar		
Temperatures	0 °C ... +50 °C		
Ambiance			
Bakeout			
Housing			
Actuator	50 °C		
Use	altitude up to 2500 m NN		
Mounting orientation	any, ensure swift access		
Flow direction	any		
Materials	EN AW-6082 T6 FPM PA66 GF POM PE carton box, PE		
Housing			
Diaphragm			
Actuator			
Rotary knob			
Protective lid			
Packing material	carton box, PE		
Weight	0.16 kg	0.50 kg	1.2 kg

¹⁾ For air with molecular flow

²⁾ Cycles without expendable parts (diaphragm) and under clean operating conditions

Dimensions [mm]

DN 16 / DN 25

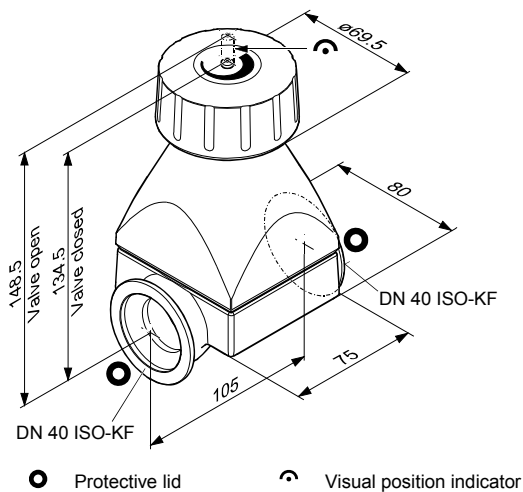


○ Protective lid

◐ Visual position indicator

DN	A	B	C	D	E
DN 16	66	62	52	32.5	29.5
DN 25	111	101	80	54	47

DN 40



3 Installation



DANGER



DANGER: overpressure in the vacuum system
>1 bar

Injury caused by released parts and harm caused by escaping process gases can result if clamps are opened while the vacuum system is pressurized.

Do not open any clamps while the vacuum system is pressurized. Use the type clamps which are suited to overpressure.



DANGER



DANGER: overpressure in the vacuum system
>2.5 bar

KF flange connections with elastomer seals (e.g. O-rings) cannot withstand such pressures. Process media can thus leak and possibly damage your health.

Use O-rings provided with an outer centering ring.



Caution



Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.



Caution

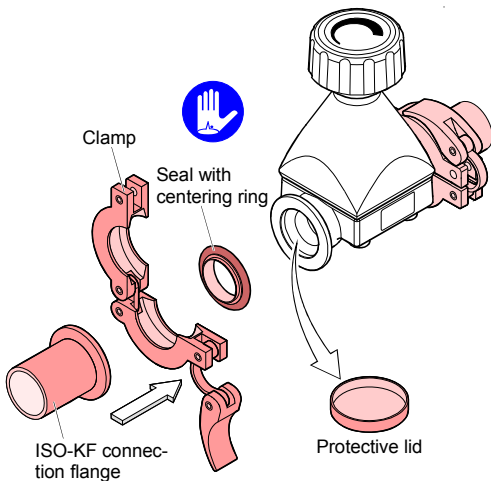


Caution: dirt sensitive area

Touching the product or parts thereof with bare hands increases the desorption rate.

Always wear clean, lint-free gloves and use clean tools when working in this area.

Remove the protective lids and connect the product to the vacuum system.



Keep the protective lids.

4 Operation

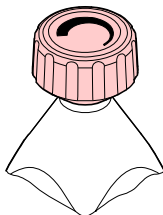
The product is ready for operation as soon as it has been installed.

Number of rotations required for completely opening or closing the valve:

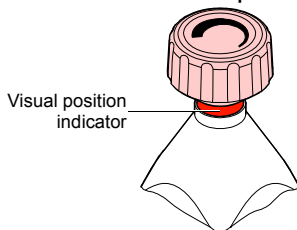
	DN 16	DN 25	DN 40
Rotations	≈3.5	≈4.5	≈7

DN 16 / DN 25

Valve closed

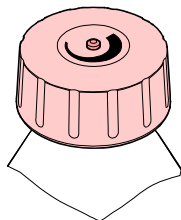


Valve open

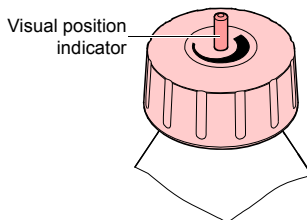


DN 40

Valve closed




Valve open




5 Deinstallation

Precondition

Vacuum system vented.



DANGER




DANGER: contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.



Caution




Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.


Caution

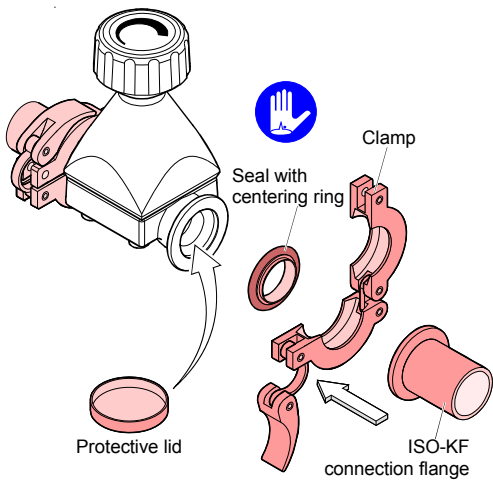


Caution: dirt sensitive area

Touching the product or parts thereof with bare hands increases the desorption rate.

Always wear clean, lint-free gloves and use clean tools when working in this area.


Remove the valve from the vacuum system and install the protective lids.




6 Maintenance, Repair

Precondition

The valve has been deinstalled (Deinstallation → 13).




DANGER




DANGER: contaminated parts
Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.




Caution




Caution: vacuum component
Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.



Caution

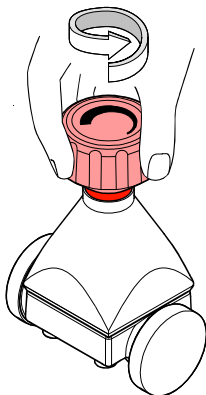


Caution: dirt sensitive area
Touching the product or parts thereof with bare hands increases the desorption rate.

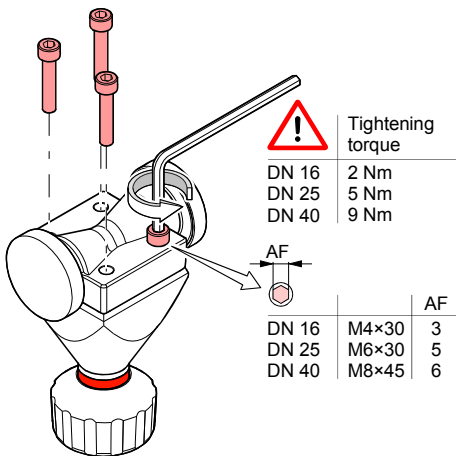
Always wear clean, lint-free gloves and use clean tools when working in this area.

Procedure

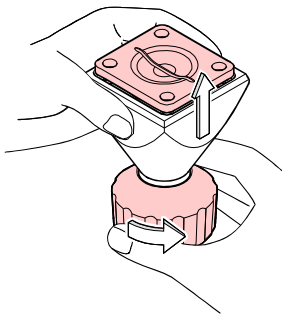
- 1 Open the valve halfway.



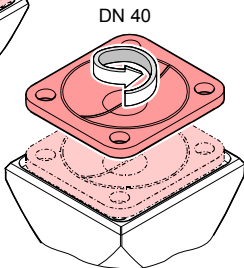
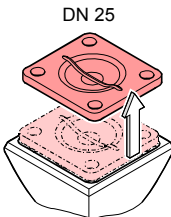
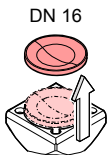
2 Remove the cap screws.



3 Close the valve ...



... and remove the diaphragm.



When reassembling the valve, make sure the diaphragm is free of grease.





DN 25 and DN 40:
Watch position of diaphragm when reassembling the valve.



When reassembling the valve, we recommend using a new diaphragm.

- 4 Remove the protective lids and clean the parts.

	<div style="background-color: red; color: white; padding: 5px; display: flex; align-items: center;">  DANGER </div> <p>DANGER: cleaning agents Cleaning agents can be detrimental to health and environment.</p> <p>Adhere to the relevant regulations and take the necessary precautions when handling and disposing of cleaning agents. Consider possible reactions with the product materials (→ 7).</p>
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- 5 Reassemble the product by performing the above steps in reverse order.

7 Spare Parts

	Ordering number
1 diaphragm DN 16 ISO-KF	299-031
1 diaphragm DN 25 ISO-KF	299-032
1 diaphragm DN 40 ISO-KF	299-033

8 Returning the Product



WARNING



WARNING: forwarding contaminated products
Contaminated products (e.g. radioactive, toxic, caustic or microbiological hazard) can be detrimental to health and environment.

Products returned to INFICON should preferably be free of harmful substances. Adhere to the forwarding regulations of all involved countries and forwarding companies and enclose a duly completed declaration of contamination.

Products that are not clearly declared as "free of harmful substances" are decontaminated at the expense of the customer. Products not accompanied by a duly completed declaration of contamination are returned to the sender at his own expense.

9 Disposal



DANGER



DANGER: contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.



WARNING



WARNING: substances detrimental to the environment

Products or parts thereof (mechanical and electric components, operating fluids etc.) can be detrimental to the environment.

Dispose of such substances in accordance with the relevant local regulations.

Separating the components

After disassembling the product, separate its components according to the following criteria:

- Contaminated components
Contaminated components (radioactive, toxic, caustic or biological hazard etc.) must be decontaminated in accordance with the relevant national regulations, separated according to their materials, and disposed of.
- Other components
Such components must be separated according to their materials and recycled.

Declaration of Contamination

The service, repair, and/or disposal of vacuum equipment and components will only be carried out if a correctly completed declaration has been submitted. Non-completion will result in delay.

This declaration may only be completed (in block letters) and signed by authorized and qualified staff.

1 Description of product

Type _____

Part number _____

Serial number _____


2 Reason for return

3 Operating fluid(s) used (Must be drained before shipping.)

4 Used in copper process

no yes → Seal product in plastic bag and mark it with a corresponding label.

5 Process related contamination of product:

toxic	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	
caustic	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	
biological hazard	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
explosive	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
radioactive	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
other harmful substances	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	

1) or not containing any amount of hazardous residues that exceed the permissible exposure limits

2) Products thus contaminated will not be accepted without written evidence of decontamination.

6 Harmful substances, gases and/or by-products

Please list all substances, gases, and by-products which the product may have come into contact with:

Trade/product name	Chemical name (or symbol)	Precautions associated with substance	Action if human contact

7 Legally binding declaration:

We hereby declare that the information on this form is complete and accurate and that we will assume any further costs that may arise. The contaminated product will be dispatched in accordance with the applicable regulations.

Organization/company _____

Address _____ Post code, place _____

Phone _____ Fax _____

Email _____

Name _____

Date and legally binding signature _____ Company stamp _____

This form can be downloaded from our website.

Copies: Original for addressee - 1 copy for accompanying documents - 1 copy for file of sender

Manufacturer's Declaration

as defined by the Directive relating to machinery 98/37/EC, Appendix IIB

We, INFICON, hereby declare that putting the incomplete equipment mentioned below into operation is not permitted until evidence is given that the system into which that incomplete equipment shall be installed is in conformity with the provisions of the EC Directive relating to machinery.

Inline Valve

VIH016-AD, VIH025-AD, VIH040-AD

Part numbers

253-481 253-482 253-483

Standards

Harmonized and international/national standards and specifications:

- EN ISO 12100-1/-2 (Safety of machinery)
- EN 294 (Safety distances to prevent danger zones being reached by the upper limits)
- EN 349 (Minimum gaps to avoid crushing of parts of the human body)

Signatures

INFICON AG, Balzers

24 July 2008



Dr. Urs Wälchli
Managing Director

24 July 2008



Marko Kern
Product Manager

Original: German sinb09d1 (2008-07)



si nb09e1



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