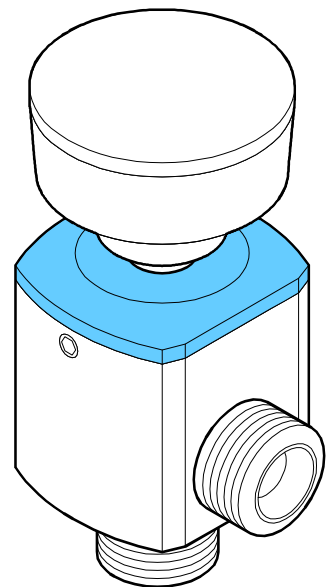


Angle Valve

manually operated

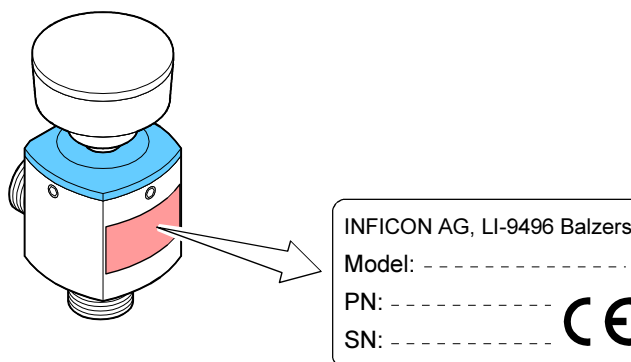
VAH005-X



CE

Product Identification

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



Validity

This document applies to products with part number 250-070.
 The part number (PN) can be taken from the product nameplate.

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

All dimensions in mm.

Intended Use

The angle valve is universally used in vacuum systems.

Functional Principle


The angle valve is opened and closed by turning the rotary knob. The longitudinal movements of the valve plate are produced by the spindle drive.

Contents

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Intended Use	2
Functional Principle	2
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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.


→  See page ...

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 (→  6) 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 corresponding product documentation.

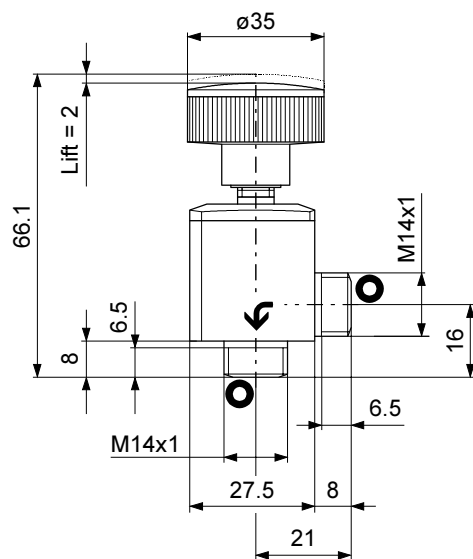
The end-user assumes the responsibility in conjunction with the process media used.

2 Technical Data

Vacuum connection	ø5 mm / M14×1
Vacuum connection (accessories)	<ul style="list-style-type: none"> flange fitting DN 10 ISO-KF pipe connection OD ¼" pipe connection OD 6 mm
Conductance for air Molecular flow Laminar flow	0.4 l/s 4 l/s
Mounting orientation	any
Tightness	1×10^{-9} mbar l/s
Pressure range	1×10^{-8} mbar ... 5 bar (absolute)
Pressure difference Δp In closing direction In opening direction	4 bar 4 bar
Opens against Δp	4 bar
Temperatures Ambiance Bakeout	5 °C ¹⁾ ... 70 °C 150 °C (actuator 70 °C)
Materials Housing Bellows Actuator Seals	stainless steel 1.4301 stainless steel 1.4301 aluminum and plastic FPM
Weight	0.15 kg

¹⁾ -15 °C, if the ambiance is free of condensable gases.

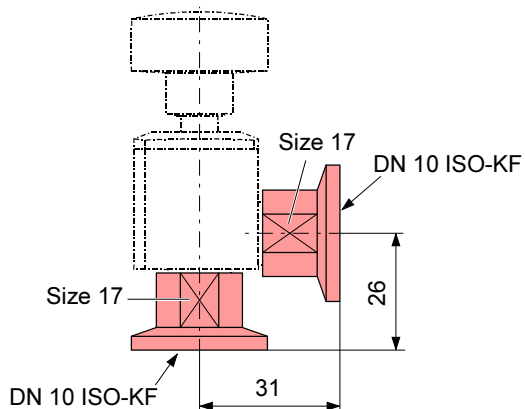
Dimensions [mm]



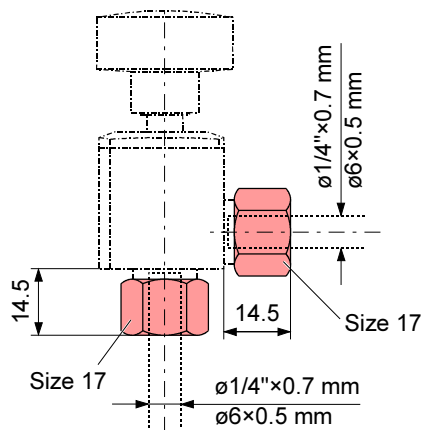
- Recommended flow direction
- Protective lid

Space requirements for installation with accessories
(accessories → 19)

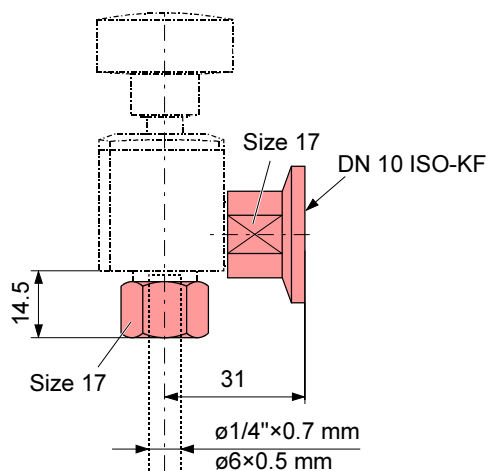
Flange fittings



Pipe connections



Flange fitting and pipe connection



3 Installation

3.1 Vacuum Connection



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.



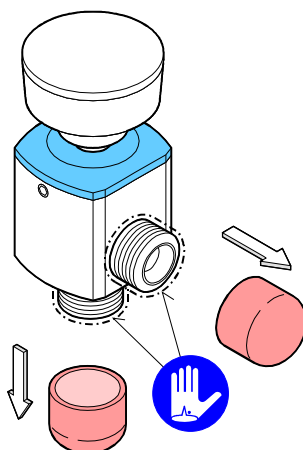
Caution



Caution: dirt sensitive area
Touching the product or parts thereof with one's bare hands increases the desorption rate.
Always wear clean, lint-free gloves and use clean tools when working in this area.

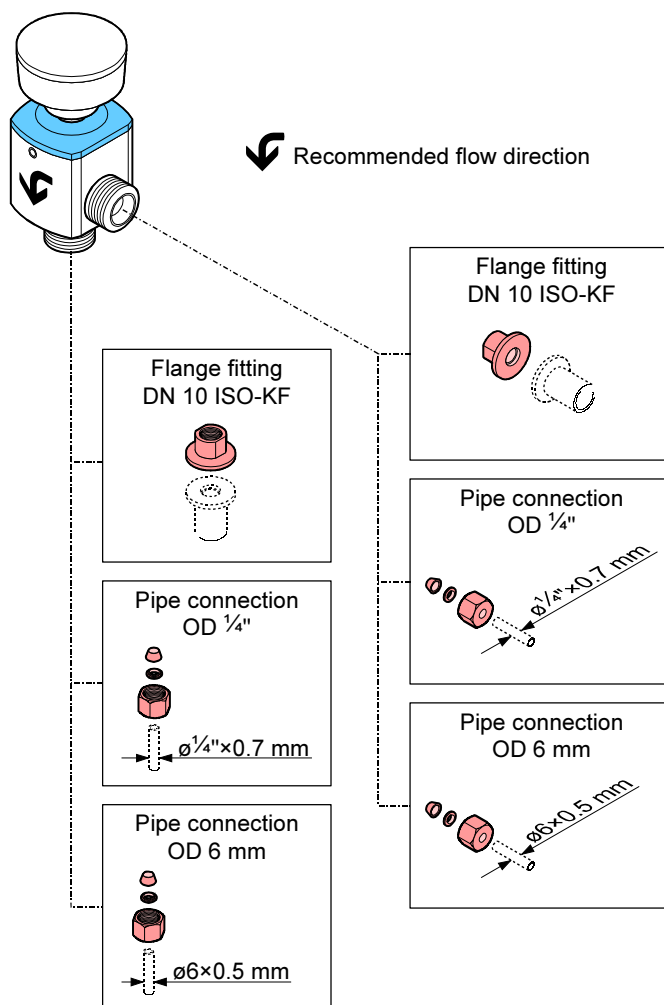


Remove the protective lids.



Keep the protective lids.

2 Establish the vacuum connections by means of the accessories (→ 19).

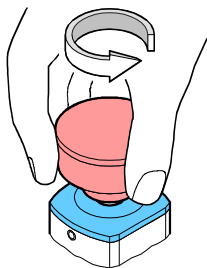


Install the accessories according to the instructions supplied with the parts.

4 Operation

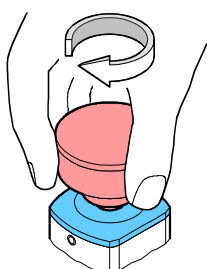
The product is ready for operation as soon as it has been installed.
The angle valve is slightly opened when delivered ex works.

Opening the valve



The maximum flow is reached by turning the rotary knob $\approx 1\frac{1}{2}$ times from the closed position.

Closing the valve



The closing position is reached as soon as the closing resistance is decreased.
The seal of the valve is pressed against the valve seat by a spring.

Pressure difference Δp in closing direction

Caution

Caution: pressure difference
With $\Delta p > 4$ bar the valve may be damaged.
Avoid pressure differences $\Delta p > 4$ bar.

Pressure difference Δp in opening direction

Caution

Caution: pressure difference
With $\Delta p > 4$ bar the valve is opened.
Avoid pressure differences $\Delta p > 4$ bar.

Opens against a pressure difference Δp

Caution

Caution: pressure difference
 With $\Delta p > 4$ bar the valve may be damaged.
 Avoid pressure differences $\Delta p > 4$ bar.

5 Deinstallation

DANGER



Caution: 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

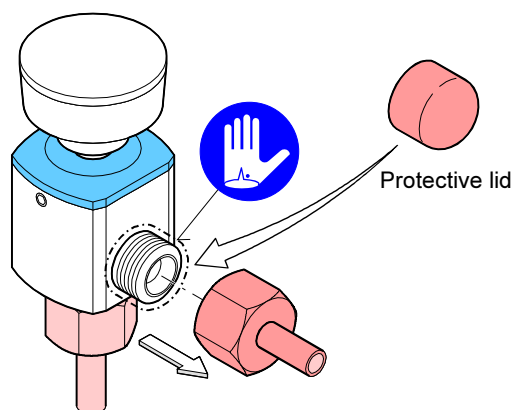


Caution: dirt sensitive area
 Touching the product or parts thereof with one's bare hands increases
 the desorption rate.
 Always wear clean, lint-free gloves and use clean tools when working
 in this area.



The vacuum system must be vented and the valve cooled down to
 <math>< 50\text{ }^\circ\text{C}</math>.

Deinstall the vacuum connections and place the protective lids.



6 Maintenance, Repair

6.1 Cleaning the Valve / Replacing Parts



DANGER

Caution: 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.

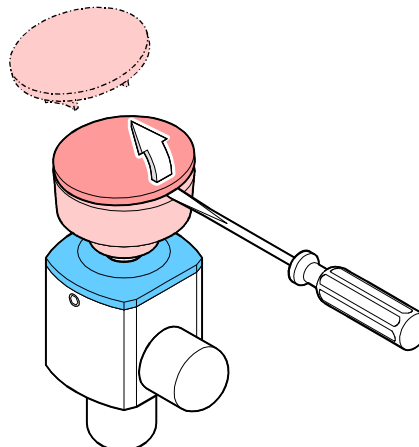
Preconditions

Valve deinstalled (→ 12).

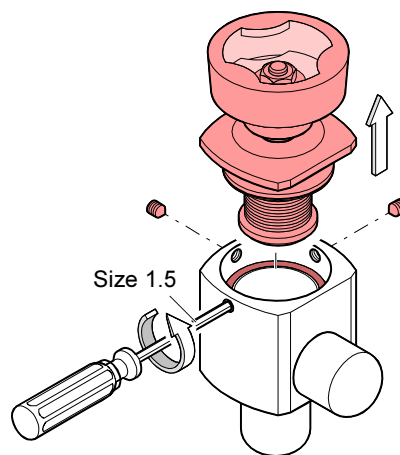
Disassembly



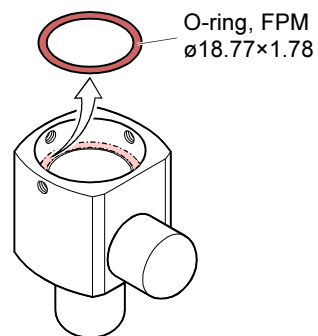
Remove the cover of the rotary knob.



- 2** Remove the actuator.



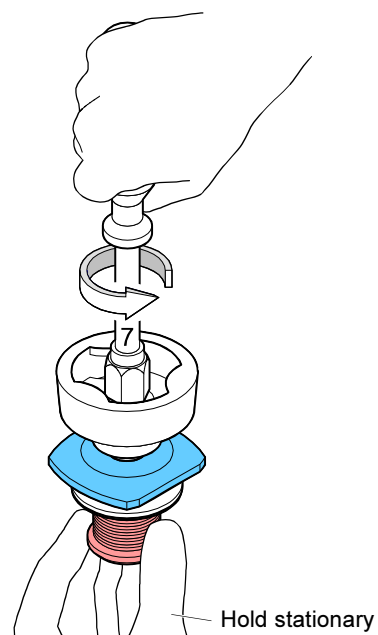
- 3** Remove the seal (O-ring) from the housing.



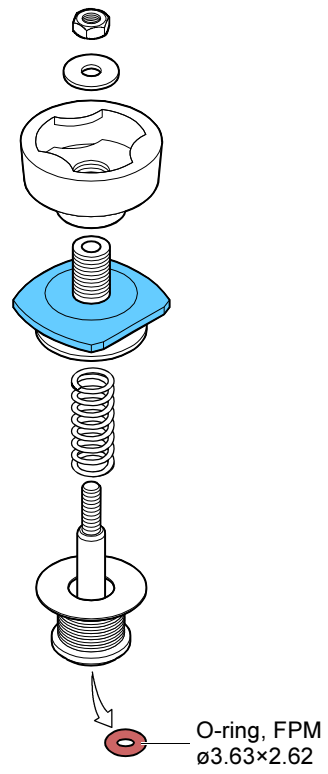
- 4** Loosen the hex nut by ≈ 1 turn.



The hex nut is secured with Loctite 270 and thus difficult to loosen.



5 Disassemble the actuator.



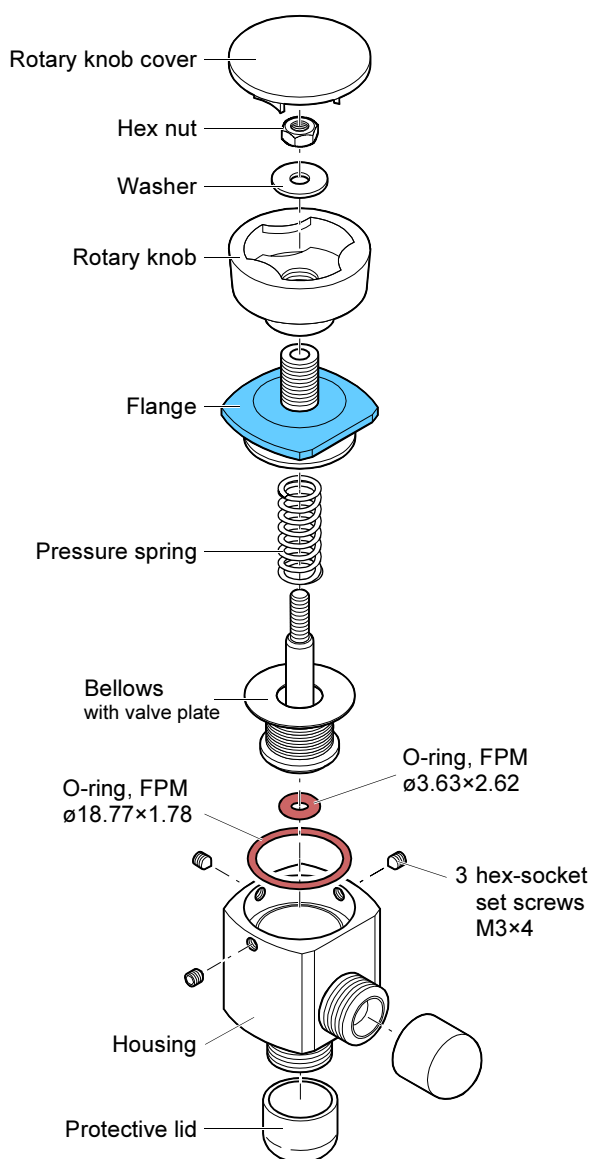
6 Cleaning the valve / Replacing parts.

STOP DANGER



Caution: cleaning agents
Cleaning agents can be detrimental to health and environment. Adhere to the relevant regulations and take the necessary precautions when handling and disposing of cleaning agents. Consider possible reactions with the product materials (→ 6).

- Carefully clean the parts with a grease solving, non-scouring cleaner.
- After cleaning the parts should preferably be rinsed with alcohol and subsequently heated to $\approx 50^{\circ}\text{C}$ in an oven or with an industrial blower.
- Carefully clean the sealing surfaces with a lint-free cloth wet with alcohol. Allow them to dry.
- Wipe the O-rings with a lint-free cloth slightly moistened with vacuum oil.



Further information → 20.

6.2 Reassembling the Valve

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

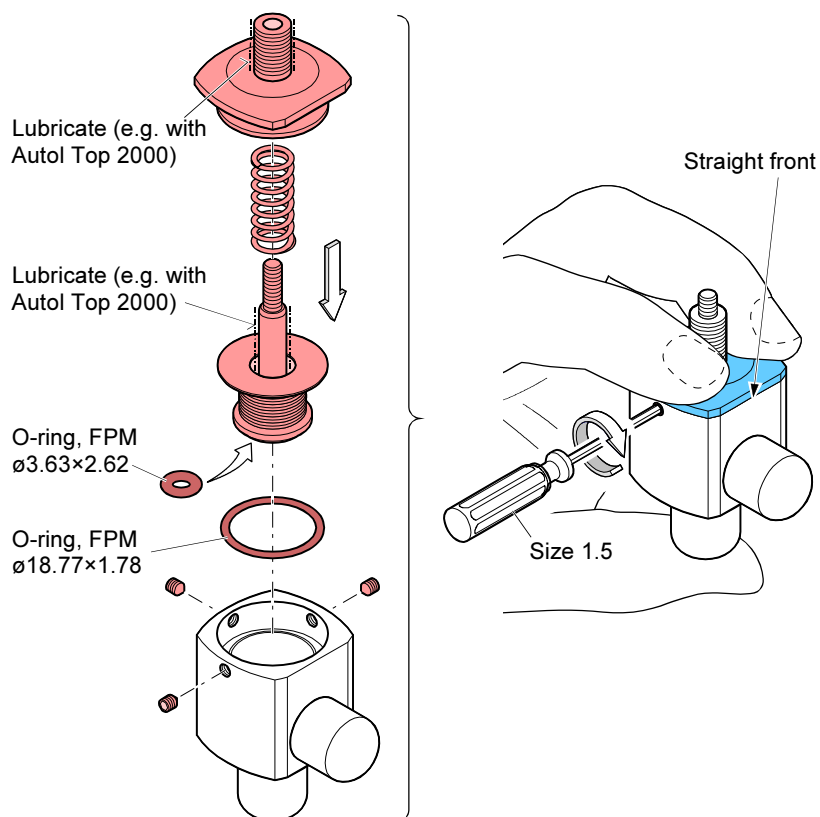


Caution: dirt sensitive area
Touching the product or parts thereof with one's bare hands increases the desorption rate.
Always wear clean, lint-free gloves and use clean tools when working in this area.

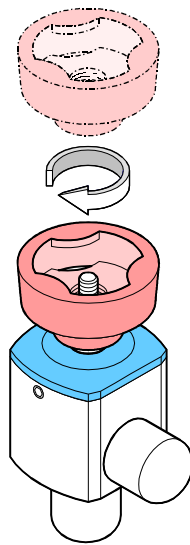
1 Reassemble the actuator (without rotary knob).



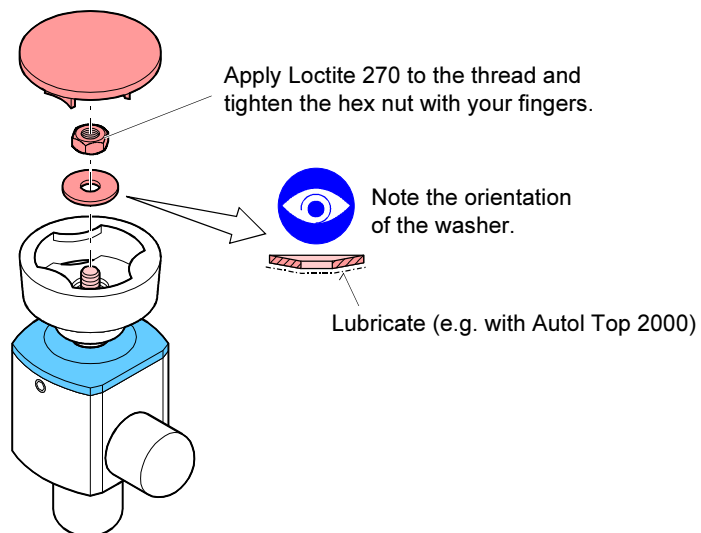
Be careful to insert the O-rings level into the grooves without twisting them.



- 2** Screw the rotary knob onto the flange until the mechanical stop is reached.



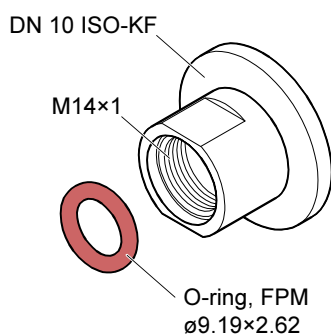
- 3** Mount the washer, hex nut and rotary knob cover.



Allow the Loctite 270 to harden for about 30 min. before operating the valve.

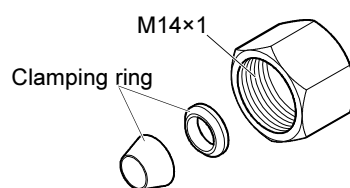
7 Accessories

Flange fitting



	Ordering number
1 flange fitting DN 10 ISO-KF	250-080

Pipe connections



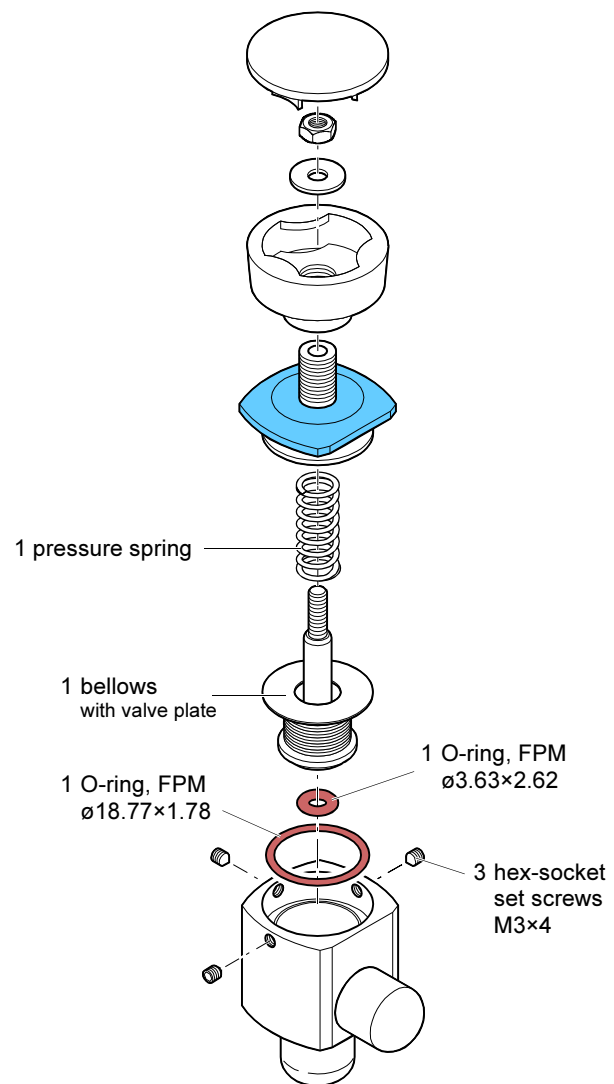
	Ordering number
1 pipe connection OD 1/4"	250-085
1 pipe connection OD 6 mm	250-086

Further information → 9.

8 Spare Parts

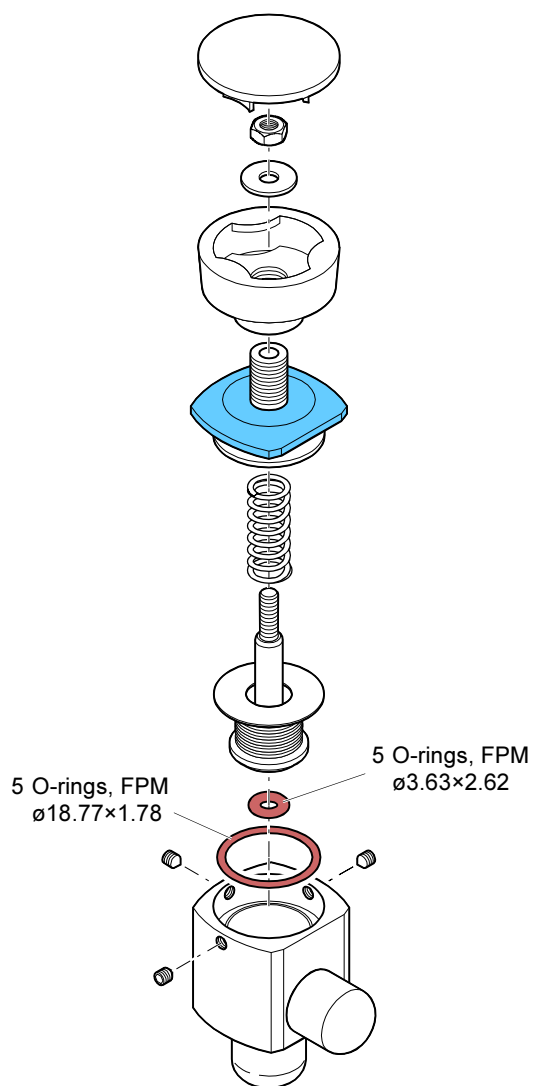
Spare parts kit

Ordering number 215-369
comprising:



Seal kit

Ordering number 215-373
comprising:



9 Returning the Product

WARNING

Caution: 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 (→ 23).

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.

10 Disposal

DANGER

Caution: 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

Caution: 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 Process related contamination of product:

toxic	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	<p>2) Products thus contaminated will not be accepted without written evidence of decontamination!</p>
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

The product is free of any substances which are damaging to health

yes

↓

5 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

↓

6 Legally binding declaration:

I/we hereby declare that the information on this form is complete and accurate and that I/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

Original: German sina11d1 (0108)



sina11e1



*LI-9496 Balzers
Liechtenstein
Tel +423 / 388 3111
Fax +423 / 388 3700
reach.liechtenstein@inficon.com*

www.inficon.com