Vacuum Valves

Ball Valves

Angle Valves

In-line Valves

Special Valves

Gate Valves

Valve Accessories
Contents

Introduction

Ball Valves
2-Way Ball Valves
3-Way Ball Valves

Page 9-4

Page 9-5

Angle Valves
Manual
Pneumatic
Electromagnetic

Page 9-6 to 9-8

Page 9-9 to 9-16

Page 9-17 to 9-18

In-line Valves
Manual
Pneumatic
Electromagnetic

Page 9-19 to 9-21

Page 9-21 to 9-23

Page 9-24

Page 9-25 to 9-26

Special Valves
Smooth Exhaust Angle Valves
Gas Shut-off Valves
Overpressure Valves
Vent Valves
Softvent Valves
High Vacuum Needle Valves
UHV Gas Dosing Valves

Page 9-27

Page 9-28

Page 9-29

Page 9-30

Page 9-31 to 9-32

Gate Valves
Manual
Pneumatic
With Special Equipment

Page 9-33 to 9-34

Page 9-35 to 9-38

Page 9-39

Valve Accessories
Control Valves Including Assembly Kit
Position Indicators
Connectors
Straight Connectors
Baffles
Compressed-air Hoses

Page 9-40 to 9-41

Page 9-42

Page 9-42

Page 9-43 to 9-44

Page 9-44

Page 9-44
Vacuum Valves

Introduction

Vacuum valves are essential shut-off elements for any vacuum system. They are used in vacuum lines or directly at the vacuum chamber. We provide you a large selection of vacuum valves for many applications in rough, medium, high, and ultra high vacuum. In the following we give an overview of the available vacuum valves and their applications.

Ball valves are particularly suitable for rough vacuum. Under certain conditions they can also be used in medium vacuum. We offer two- and three-way ball valves of brass or stainless steel. Two-way ball valves possess an in the flow direction axially bored ball, which by turning 90° opens or closes the flow passage. Actuation is realised by a handle that also serves as position indicator. Pneumatic or electric actuators are available as an option. Three-way ball valves have three ports and the ball has either an L-bore or a T-bore. Depending on the position, several connections can be combined.

Angle and in-line valves are available in a number of versions of usual nominal sizes. They are proven and cost-effective shut-off elements and most valves are suitable for use in high vacuum for industrial and research and development applications. The leak rates of these valves are very low. Special attention has been directed to materials and design, with respect to the demands of vacuum technology. The range covers valves of aluminium and stainless steel. Construction with manual, pneumatic and electromagnetic variants are available. Depending on the design KF, ISO-K, QCF or CF ports are available. Usually the valves are FKM sealed. Angle valves for UHV applications are also equipped with metal seals. The valve drive is bellows-sealed using hydroformed or edge welded bellows. The description of all variants and models is beyond the scope of this introduction but we will be pleased to help you choose the optimal product for your application.

Gate valves are suitable for both high and ultra high vacuum applications. They have a very small installation length with maximum conductance and are primarily used as stop valves for pumping or sluice systems. High vacuum and ultra high vacuum valves are available, depending on application. Housings and valve seats of high-vacuum valves are FKM-sealed whereas metal seals are used in valves intended for UHV applications. The drives are manually or pneumatically actuated and the linear feedthroughs are bellows-sealed.

New in this catalog are UHV compatible angle valves with Quick-CF connection. QCF components and the appendant clamp chains VaCFix® are developed by VACOM. They enable time- and space-saving mounting and can be connected with all existing vacuum installations through adapters. Please find further information on QCF components in chapter 3 Standard Components.

In addition to the above mentioned valves we also offer a wide range of special valves. There are vent valves with manual or electromagnetic drive. Mechanical overpressure valves for rough and medium vacuum help to protect your vacuum system.

Furthermore, we supply gas dosing valves and shut-off valves with manual and/or electric drive. Depending on the model, they are applicable for HV to UHV and our UHV all-metal gas dosing valves comply with the highest standards of reproducibility and precision.

Soft start and soft vent valves are especially designed for use in automated systems. Using a special two-stage switch they prevent turbulence and provide the controlled evacuation or venting of the vacuum systems.

Special gate valves, such as 3-position gate valves or control gate valves are available on request.

At the end of the chapter you will find accessories for the installation of our valves, e. g. position indicators.
Ball Valves

2-way ball valves, manual

Brass (nickel plated) housing

Technical data
- Series: ZKH-M
- Description: 2-way ball valve for use in rough vacuum - applicable for noncorrosive media
- Actuation: manual with handle
- Connection: KF flange
- Pressure range: 1 mbar to atmosphere
- Pressure resistance of housing: PN20 (without flange tube)
- Pass: optically free
- He leak rate: < 1.0E-7 mbar l/s
- Housing construction: one-part
- Housing material: brass, nickel plated
- Flange material: stainless steel
- Ball seal material: PTFE
- Drive seal material: stainless steel
- Thread seal material: PTFE (fixed with glue)
- Operating temperature: 20 ... 150 °C
- Mounting position: any
- Visual position indicator position handle
- Options: - other connections on request - pneumatic and electric drives on request

Order code | Connection | H | L | L2
--- | --- | --- | --- | ---
ZKH-16M | DN16KF | 50 | ca. 88 | 90
ZKH-25M | DN25KF | 72 | ca. 110 | 120
ZKH-40M | DN40KF | 90 | ca. 144 | 150
ZKH-50M | DN50KF | 98 | ca. 156 | 150

Stainless steel housing

Technical data
- Series: ZKH-S
- Description: 2-way ball valve for use in rough vacuum - applicable for noncorrosive or slightly corrosive media
- Actuation: manual with handle
- Connection: KF flange
- Pressure range: 1 mbar to atmosphere
- Pass: optically free
- Pressure resistance of housing: PN30 (without flange tube)
- He leak rate: < 1.0E-7 mbar l/s
- Housing construction: one-part
- Housing material: stainless steel
- Flange material: stainless steel
- Ball seal material: PTFE
- Drive seal material: PTFE
- Thread seal material: PTFE (fixed with glue)
- Operating temperature: 20 ... 150 °C
- Mounting position: any
- Visual position indicator position handle
- Options: - other connections on request - pneumatic and electric drives on request

Order code | Connection | H | L | L2
--- | --- | --- | --- | ---
ZKH-16S | DN16KF | 45 | ca. 107 | 102
ZKH-25S | DN25KF | 55 | ca. 126 | 123
ZKH-40S | DN40KF | 75 | ca. 166 | 168
ZKH-50S | DN50KF | 86 | ca. 191 | 168

www.vacom-vacuum.com
Ball Valves

3-way ball valves, manual

Stainless steel housing

Technical data
- **Series**: DKH-S
- **Description**: 3-way ball valve with L or T boring for use in rough vacuum
  - applicable for non or slightly corrosive media
- **Actuation**: manual with handle, switchover possibly overlapping
- **Connection**: KF flange
- **Pressure range**: 1 mbar to atmosphere
- **Pressure resistance of housing**: PN30 (without flange tube)
- **He leak rate**: < 1.0E-7 mbar l/s
- **Housing construction**: one-part
- **Housing material**: stainless steel
- **Flange material**: stainless steel
- **Ball seal material**: PTFE
- **Drive seal material**: FKM / PTFE
- **Thread seal material**: PTFE (fixed with glue)
- **Operating temperature**: 20 ... 150 °C
- **Mounting position**: any
- **Visual position indicator**: position handle
- **Options**: - other connections on request
  - pneumatic and electric drives on request

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Boring</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>DKH-16S</td>
<td>DN16KF</td>
<td>L</td>
<td>65</td>
<td>120</td>
<td>160</td>
<td>60</td>
</tr>
<tr>
<td>DKH-25S</td>
<td>DN25KF</td>
<td>L</td>
<td>81</td>
<td>144</td>
<td>190</td>
<td>72</td>
</tr>
<tr>
<td>DKH-40S</td>
<td>DN40KF</td>
<td>L</td>
<td>93</td>
<td>171</td>
<td>250</td>
<td>86</td>
</tr>
<tr>
<td>DKH-50S</td>
<td>DN50KF</td>
<td>L</td>
<td>105</td>
<td>200</td>
<td>250</td>
<td>100</td>
</tr>
<tr>
<td>DKH-16S-T</td>
<td>DN16KF</td>
<td>T</td>
<td>65</td>
<td>120</td>
<td>160</td>
<td>60</td>
</tr>
<tr>
<td>DKH-25S-T</td>
<td>DN25KF</td>
<td>T</td>
<td>81</td>
<td>144</td>
<td>190</td>
<td>72</td>
</tr>
<tr>
<td>DKH-40S-T</td>
<td>DN40KF</td>
<td>T</td>
<td>93</td>
<td>171</td>
<td>250</td>
<td>86</td>
</tr>
<tr>
<td>DKH-50S-T</td>
<td>DN50KF</td>
<td>T</td>
<td>105</td>
<td>200</td>
<td>250</td>
<td>100</td>
</tr>
</tbody>
</table>

- Dimensions H, L, L2 and T are approximate dimensions.
Angle Valves

Compact, manual

Aluminum housing

Technical data
- Series: 2AVM..-A
- Description: compact and light high vacuum angle valve, aluminum
  - applicable for noncorrosive processes and applications
- Actuation: manual with handwheel
- Connection: KF flange
- Pressure range: 1.0E-8 mbar to atmosphere
- He leak rate: < 1.0E-9 mbar l/s
- Seal drive: hydroformed bellow
- Housing construction: 2-parts, actuator removable
- Housing material: aluminum
- Bellows material: stainless steel
- Valve plate material: stainless steel
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Mounting position: any
- Visual position indicator: within handwheel
- Durability until first service: 100,000 cycles

Order code

| 2AVM-16KF-VV-A | DN16KF | 5   | 101 | 38 | 40 |
| 2AVM-25KF-VV-A | DN25KF | 14  | 114 | 48 | 50 |
| 2AVM-40KF-VV-A | DN40KF | 45  | 163 | 66 | 65 |
| 2AVM-50KF-VV-A | DN50KF | 80  | 180 | 79 | 70 |

Stainless steel housing

Technical data
- Series: 2AVM..-S
- Description: compact high vacuum angle valve, stainless steel
  - for all vacuum applications
  - applicable for corrosive processes
- Actuation: manual with handwheel
- Connection: KF flange
- Pressure range: 1.0E-8 mbar to atmosphere
- He leak rate: < 1.0E-9 mbar l/s
- Seal drive: hydroformed bellow
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: stainless steel
- Valve plate material: stainless steel
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Mounting position: any
- Visual position indicator: within handwheel
- Durability until first service: 100,000 cycles
- Option: - other sealing materials on request

Order code

| 2AVM-16KF-VV-S | DN16KF | 5   | 101 | 38 | 40 |
| 2AVM-25KF-VV-S | DN25KF | 14  | 114 | 48 | 50 |
| 2AVM-40KF-VV-S | DN40KF | 45  | 163 | 66 | 65 |
| 2AVM-50KF-VV-S | DN50KF | 80  | 180 | 79 | 70 |
**Angle Valves**

**KF Valve, HV, manual**

Aluminum or stainless steel housing

**Technical data**
- **Series**: 3AVM
- **Description**: manual used angle valve with KF flange for HV applications
- **Actuation**: manual with handwheel
- **Connection**: KF flange
- **Pressure range**: 1.0E-9 mbar to 3 bar
- **Impermeability valve seat**: < 1.0E-9 mbar l/s
- **Impermeability housing**: < 1.0E-9 mbar l/s
- **Seal drive**: bellow
- **Housing material**: stainless steel / aluminum
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: -30 ... 130 °C
- **Mounting position**: any
- **Durability until first service**: 50,000 cycles

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3AVM-16KF-VV-S</td>
<td>DN16KF</td>
<td>5</td>
<td>111</td>
<td>46</td>
<td>40</td>
</tr>
<tr>
<td>3AVM-25KF-VV-S</td>
<td>DN25KF</td>
<td>13</td>
<td>143</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>3AVM-40KF-VV-S</td>
<td>DN40KF</td>
<td>40.5</td>
<td>181</td>
<td>70</td>
<td>65</td>
</tr>
<tr>
<td>3AVM-50KF-VV-S</td>
<td>DN50KF</td>
<td>72.5</td>
<td>185</td>
<td>85</td>
<td>70</td>
</tr>
</tbody>
</table>

**Standard HV, manual**

Stainless steel housing

**Technical data**
- **Series**: 4AVM-...-VV
- **Description**: rugged, versatile applicable HV angle valve, stainless steel - O-ring sealed housing
- **Actuation**: manual with handwheel
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: diaphragm bellow
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 ... 150 °C
- **Mounting position**: any
- **Visual position indicator**: handwheel position
- **Durability until first service**: 100,000 cycles

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4AVM-16KF-VV-S</td>
<td>DN16KF</td>
<td>142</td>
<td>57</td>
<td>40</td>
</tr>
<tr>
<td>4AVM-25KF-VV-S</td>
<td>DN25KF</td>
<td>147</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>4AVM-40KF-VV-S</td>
<td>DN40KF</td>
<td>199</td>
<td>76</td>
<td>65</td>
</tr>
<tr>
<td>4AVM-50KF-VV-S</td>
<td>DN50KF</td>
<td>236</td>
<td>89</td>
<td>70</td>
</tr>
<tr>
<td>4AVM-63ISOK-VV-S</td>
<td>DN63ISO-K</td>
<td>292</td>
<td>102</td>
<td>88</td>
</tr>
</tbody>
</table>
Angle Valves

CF Standard UHV, manual

Stainless steel housing

Technical data
- Series: 4AVM-...-MV
- Description: competitive, rugged and versatile applicable UHV angle valve
  - metal sealed housing
- Actuation: manual with handwheel
- Pressure range: 1.0E-9 mbar to atmosphere
- Impermeability valve seat: < 1.0E-9 mbar l/s
- Impermeability housing: < 1.0E-10 mbar l/s
- Seal drive: diaphragm bellow
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Valve plate material: stainless steel
- Housing seal material: copper
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Bakeout temperature opened: max. 200 °C
- Mounting position: any
- Visual position indicator: handwheel position
- Durability until first service: 100,000 cycles

Order code | Connection | H | L | SL |
--- | --- | --- | --- | --- |
4AVM-16CF-MV-S | DN16CF-R | 139 | 57 | 38 |
4AVM-40CF-MV-S | DN40CF-R | 202 | 76 | 63 |
4AVM-63CF-MV-S | DN63CF-R | 309 | 102 | 105 |

All-metal, manual

Stainless steel housing

Technical data
- Series: 4AVM-...-MM
- Description: all metal UHV angle valve
  - copper sealed housing and valve seat
  - for use in UHV and extreme UHV
- Actuation: manual with hexagon key (torque wrench)
- Connection: CF flanges - rotatable
- Pressure range: 1.0E-11 mbar to atmosphere
- He leak rate: < 1.0E-10 mbar l/s
- Seal drive: diaphragm bellow
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Housing seal material: copper
- Seal valve plate material: replaceable copper gasket
- Bakeout temperature opened: to 350 °C
- Bakeout temperature closed: to 300 °C
- Mounting position: any
- Visual position indicator: position hexagon bolt
- Note: gasket exchange through lateral flange

Order code | Connection | H | L | SL |
--- | --- | --- | --- | --- |
4AVM-16CF-MM-S | DN16CF-R | 122 | 38 | 38 |
4AVM-40CF-MM-S | DN40CF-R | 170 | 54 | 63 |
Angle Valves

KF Valve, HV, pneumatic

Aluminum or stainless steel housing

Technical data
- Series: 3APV
- Description: pneumatic driven angle valve with KF flange for HV applications
- Actuation: pneumatic NC (NO on request)
- Connection: KF
- Pressure range: 1.0E-8 mbar to 3 bar
- Impermeability valve seat: < 1.0E-9 mbar l/s
- Impermeability housing: < 1.0E-9 mbar l/s
- Seal drive: bellow
- Housing material: stainless steel / aluminum
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: -30 ... 130 °C
- Mounting position: any
- Position Indicator/ control valve: on request
- Durability until first service: 1,000,000 cycles

Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>HL</th>
<th>L</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3AVP-16KF-VV-A</td>
<td>3AVP-16KF-VV-S</td>
<td>123</td>
<td>152</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>3AVP-25KF-VV-A</td>
<td>3AVP-25KF-VV-S</td>
<td>148</td>
<td>177</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>3AVP-40KF-VV-A</td>
<td>3AVP-40KF-VV-S</td>
<td>178</td>
<td>207</td>
<td>70</td>
<td>65</td>
</tr>
</tbody>
</table>
Angle Valves

Compact, pneumatic

Aluminum housing

Technical data
- Series: 2AVP-..-A
- Description: compact and light vacuum angle valve, aluminum, with pneumatic drive,
  - type 2AVP without solenoid valve
  - type 2AVPS1 with integrated solenoid valve
- Actuation: pneumatic single-acting, pressureless closed
- Connection: KF and ISO-F flange
- Pressure range: 1.0E-8 mbar to atmosphere
- He leak rate: < 1.0E-9 mbar l/s
- Seal drive: hydroformed bellow
- Air pressure: 4 ... 7 bar
- Housing construction: 2-parts, actuator removable
- Housing material: aluminum
- Bellows material: stainless steel
- Valve plate material: stainless steel
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature:
  - type 2AVP: 5 ... 60 °C
  - type 2AVPS1: 5 ... 50 °C
- Power supply control valve: 24 V DC, 0.55 W
- Scope of delivery of the series 2AVPS1-...-A-P:
  - 3 m solenoid connection cable, baffle and plug connection for hose Ø 6 mm incl.
- Mounting position: any
- Visual position indicator: within drive cap
- Electric position indicator: prepared for mounting of electronic autoswitches from nominal width DN25 also Reed-switches
- Durability until first service: 2,000,000 cycles
- Other options:
  - high temperature version to 150 °C
  - other sealing materials
  - double-acting drives
  - other nominal widths on request
  - autoswitches
  - solenoid valves
  - air pressure accessories

Order code

<table>
<thead>
<tr>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>SL</th>
<th>Air pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2AVP-16KF-VV-A</td>
<td>DN16KF</td>
<td>5</td>
<td>103</td>
<td>38</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>2AVP-25KF-VV-A</td>
<td>DN25KF</td>
<td>14</td>
<td>113</td>
<td>48</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>2AVP-40KF-VV-A</td>
<td>DN40KF</td>
<td>45</td>
<td>158</td>
<td>66</td>
<td>-</td>
<td>65</td>
</tr>
<tr>
<td>2AVP-50KF-VV-A</td>
<td>DN50KF</td>
<td>80</td>
<td>170</td>
<td>79</td>
<td>-</td>
<td>70</td>
</tr>
<tr>
<td>2AVP-63ISOK-VV-A</td>
<td>DN63ISO-K</td>
<td>160</td>
<td>196</td>
<td>100</td>
<td>-</td>
<td>88</td>
</tr>
<tr>
<td>2AVPS1-16KF-VV-A-P</td>
<td>DN16KF</td>
<td>5</td>
<td>103</td>
<td>38</td>
<td>16.5</td>
<td>40</td>
</tr>
<tr>
<td>2AVPS1-25KF-VV-A-P</td>
<td>DN25KF</td>
<td>14</td>
<td>113</td>
<td>48</td>
<td>16.5</td>
<td>50</td>
</tr>
<tr>
<td>2AVPS1-40KF-VV-A-P</td>
<td>DN40KF</td>
<td>45</td>
<td>158</td>
<td>66</td>
<td>17.5</td>
<td>65</td>
</tr>
<tr>
<td>2AVPS1-50KF-VV-A-P</td>
<td>DN50KF</td>
<td>80</td>
<td>170</td>
<td>79</td>
<td>17.5</td>
<td>70</td>
</tr>
<tr>
<td>2AVPS1-63ISOK-VV-A-P</td>
<td>DN63ISO-K</td>
<td>160</td>
<td>196</td>
<td>100</td>
<td>29</td>
<td>88</td>
</tr>
</tbody>
</table>
**Angle Valves**

**Compact, pneumatic**

**Stainless steel housing**

**Technical data**

- **Series**: 2AVP-..-S
- **Description**: compact high vacuum angle valve, stainless steel with pneumatic drive,
  - type 2AVP without solenoid valve
  - type 2AVPS1 with integrated solenoid valve
- **Actuation**: pneumatic single-acting, pressureless closed
- **Connection**: KF and ISO-F flange
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: hydroformed bellow
- **Air pressure**: 4 ... 7 bar
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: - type 2AVP 5 ... 60 °C
  - type 2AVPS1 5 ... 50 °C
- **Power supply control valve**: 24 V DC, 0.55 W
- **Scope of delivery**: 3 m solenoid connection cable, baffle and plug connection for hose Ø 6 mm incl.
- **Mounting position**: any
- **Visual position indicator**: within drive cap
- **Electric position indicator**: prepared for mounting of electronic autoswitches from nominal width DN25 also Reed-switches
- **Durability until first service**: 2,000,000 cycles
- **Other options**: - high temperature version to 150 °C
  - other sealing materials
  - double-acting drives
  - autoswitches
  - solenoid valves
  - air pressure accessories

**Order code**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>SL</th>
<th>Air pressure [bar]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2AVP-16KF-VV-S</td>
<td>DN16KF</td>
<td>5</td>
<td>103</td>
<td>30</td>
<td>-</td>
<td>40</td>
<td>M5</td>
</tr>
<tr>
<td>2AVP-25KF-VV-S</td>
<td>DN25KF</td>
<td>14</td>
<td>113</td>
<td>40</td>
<td>-</td>
<td>50</td>
<td>M5</td>
</tr>
<tr>
<td>2AVP-40KF-VV-S</td>
<td>DN40KF</td>
<td>45</td>
<td>158</td>
<td>55</td>
<td>-</td>
<td>65</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>2AVP-50KF-VV-S</td>
<td>DN50KF</td>
<td>80</td>
<td>170</td>
<td>75</td>
<td>-</td>
<td>70</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>2AVP-63ISOK-VV-S</td>
<td>DN63ISO-K</td>
<td>160</td>
<td>209</td>
<td>100</td>
<td>-</td>
<td>88</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>2AVPS1-16KF-VV-S-P</td>
<td>DN16KF</td>
<td>5</td>
<td>103</td>
<td>38</td>
<td>16.5</td>
<td>40</td>
<td>M5</td>
</tr>
<tr>
<td>2AVPS1-25KF-VV-S-P</td>
<td>DN25KF</td>
<td>14</td>
<td>113</td>
<td>48</td>
<td>16.5</td>
<td>50</td>
<td>M5</td>
</tr>
<tr>
<td>2AVPS1-40KF-VV-S-P</td>
<td>DN40KF</td>
<td>45</td>
<td>158</td>
<td>66</td>
<td>17.5</td>
<td>65</td>
<td>M5</td>
</tr>
<tr>
<td>2AVPS1-50KF-VV-S-P</td>
<td>DN50KF</td>
<td>80</td>
<td>170</td>
<td>79</td>
<td>28</td>
<td>70</td>
<td>M5</td>
</tr>
<tr>
<td>2AVPS1-63ISOK-VV-S-P</td>
<td>DN63ISO-K</td>
<td>160</td>
<td>196</td>
<td>100</td>
<td>29</td>
<td>88</td>
<td>-</td>
</tr>
</tbody>
</table>
Angle Valves

Compact - ready for installation, pneumatic

Aluminum housing

Technical data
- Series 2AVP-..-A-A
- Description compact and light high vacuum angle valve, aluminum
- pneumatic drive
- ideal for automated processes
- ready for connection with solenoid valve and autoswitches incl.
- pneumatic single-acting, pressureless closed
- Actuation pneumatic single-acting, pressureless closed
- Connection KF flange
- Air pressure connection internal thread M5
- Electrical connection port RJ45, 8-pin
- Pressure range 1.0E-8 mbar to atmosphere
- He leak rate < 1.0E-9 mbar l/s
- Seal drive hydroformed bellow
- Air pressure 4 ... 7 bar
- Housing construction 2-parts, drive removable, solenoid valve and plate
- contact with touch-proof cover
- Housing material aluminum
- Bellows material stainless steel
- Valve plate material stainless steel
- Housing seal material stainless steel
- Seal valve plate material stainless steel
- Operating temperature 5...50 °C
- Power supply control valve 24 V DC, 0.55 W
- Mounting position any
- Visual position indicator LED-red (closed)-green (open)
- Electric position indicator 2 Reed-switches, 24 V DC, max. 0.2 A switched current
- Durability until first service 2,000,000 cycles

Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2AVPS1-16KF-VV-A-A</td>
<td>DN16KF</td>
<td>5</td>
<td>103</td>
<td>38</td>
<td>16.5</td>
<td>40</td>
</tr>
<tr>
<td>2AVPS1-25KF-VV-A-A</td>
<td>DN25KF</td>
<td>14</td>
<td>113</td>
<td>48</td>
<td>16.5</td>
<td>50</td>
</tr>
<tr>
<td>2AVPS1-40KF-VV-A-A</td>
<td>DN40KF</td>
<td>45</td>
<td>158</td>
<td>66</td>
<td>17.5</td>
<td>65</td>
</tr>
</tbody>
</table>

www.vacom-vacuum.com
Compact with snap closure, pneumatic

Aluminum housing

Technical data

- **Series**: 2AVP-..-Q
- **Description**: high vacuum angle valve, aluminum
  - housing snap closure
  - compact and low weight
  - for applications with maintenance intensive processes
  - pneumatic and valve drive removable for cleaning and maintenance via snap closure without demounting of the valve housing
- **Actuation**: pneumatic single-acting, pressureless closed
- **Connection**: KF flange
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: hydroformed bellow
- **Air pressure**: 4 ... 7 bar
- **Housing construction**: 2-parts, drive with snap closure removable
- **Housing material**: aluminum
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5...60 °C
- **Mounting position**: any
- **Visual position indicator**: within drive cap
- **Electric position indicator**: prepared for mounting of electronic autoswitches
  - from nominal width DN25 also Reed-switches
- **Accessories on request**: - autoswitches
  - - solenoid valves
  - - air pressure accessories
  - - high temperature version to 150 °C
  - - inner surface oxalic acid oxidised
  - - other sealing materials
- **Other options**: - high temperature version to 150 °C
  - - inner surface oxalic acid oxidised
  - - other sealing materials

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>SL</th>
<th>Air pressure connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2AVP-16KF-VV-A-Q</td>
<td>DN16KF</td>
<td>5</td>
<td>120</td>
<td>38</td>
<td>40</td>
<td>M5</td>
</tr>
<tr>
<td>2AVP-25KF-VV-A-Q</td>
<td>DN25KF</td>
<td>14</td>
<td>133</td>
<td>48</td>
<td>50</td>
<td>M5</td>
</tr>
<tr>
<td>2AVP-40KF-VV-A-Q</td>
<td>DN40KF</td>
<td>45</td>
<td>178</td>
<td>66</td>
<td>65</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>2AVP-50KF-VV-A-Q</td>
<td>DN50KF</td>
<td>80</td>
<td>190</td>
<td>79</td>
<td>70</td>
<td>Rc 1/8</td>
</tr>
</tbody>
</table>
Angle Valves

KF Standard HV, pneumatic

Stainless steel housing

Technical data
- Series 4AVP-...-KF
- Description rugged high vacuum angle valve, stainless steel with KF flanges and pneumatic drive
- versatile use
- metric and imperial dimensions
- Actuation pneumatic single-acting, pressureless closed
- Connection KF flange
- Air pressure connection internal thread Rc 1/8
- Pressure range 1.0E-8 mbar to atmosphere
- Blade dimensions ISO- or ANSI standard
- He leak rate < 1.0E-9 mbar l/s
- Seal drive diaphragm bellow
- Air pressure 4 ... 6.5 bar
- Housing construction 2-parts, actuator removable
- Housing material stainless steel
- Bellows material AM350
- Valve plate material stainless steel
- Housing seal material stainless steel
- Seal valve plate material stainless steel
- Operating temperature 5 ... 150 °C
- Mounting position any
- Visual position indicator not available
- Electric position indicator 2 Reed switches (optional)
- Durability until first service 1,000,000 cycles
- Options
  - solenoid valves
  - air pressure accessories

Order code | Connection | H  | L  | SL | Dimensions | Autoswitch |
---|---|---|---|---|---|---|
4AVP-16KF-VV-S | DN16KF | 142 | 57 | 40 | metric | no |
4AVP-25KF-VV-S | DN25KF | 149 | 57 | 50 | metric | no |
4AVP-40KF-VV-S | DN40KF | 199 | 76 | 65 | metric | no |
4AVP-50KF-VV-S | DN50KF | 246 | 89 | 70 | metric | no |
4AVP-16KF-VV-S-Z | DN16KF | 157 | 57 | 55 | imperial | no |
4AVP-25KF-VV-S-Z | DN25KF | 150 | 57 | 52 | imperial | no |
4AVP-40KF-VV-S-Z | DN40KF | 118 | 76 | 61 | imperial | no |
4AVP-50KF-VV-S-Z | DN50KF | 262 | 89 | 86 | imperial | no |
4AVP-16KF-VV-S-L | DN16KF | 158 | 57 | 40 | metric | yes |
4AVP-25KF-VV-S-L | DN25KF | 164 | 57 | 50 | metric | yes |
4AVP-40KF-VV-S-L | DN40KF | 214 | 76 | 65 | metric | yes |
4AVP-50KF-VV-S-L | DN50KF | 251 | 88 | 70 | metric | yes |
4AVP-16KF-VV-S-Z-L | DN16KF | 172 | 57 | 55 | imperial | yes |
4AVP-25KF-VV-S-Z-L | DN25KF | 166 | 57 | 52 | imperial | yes |
4AVP-40KF-VV-S-Z-L | DN40KF | 210 | 76 | 61 | imperial | yes |
4AVP-50KF-VV-S-Z-L | DN50KF | 263 | 89 | 86 | imperial | yes |
**Angle Valves**

**ISO-K Standard HV, pneumatic**

**Stainless steel housing**

---

### Technical data

- **Series**: 4AVP...-ISO
- **Description**: rugged high vacuum angle valve, stainless steel with ISO-K flanges and pneumatic drive
  - versatile use
  - metric and imperial dimensions
- **Actuation**: pneumatic double-acting
- **Connection**: ISO-K flange
- **Air pressure connection**: internal thread Rc 1/8
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **Blade dimensions**: ISO- or ANSI standard
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: diaphragm bellow
- **Air pressure**: 4 ... 6.5 bar
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 ... 150 °C
- **Mounting position**: any
- **Visual position indicator**: not available
- **Electric position indicator**: 2 Reed switches (optional)
  - 4 to 240 V AC/DC, 5 to 40 mA (temperature max. 50 °C)
- **Durability until first service**: 500,000 cycles
- **Options**:
  - solenoid valves
  - air pressure accessories

### Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>SL</th>
<th>Dimensions</th>
<th>Autoswitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4AVP-63ISOK-VV-S</td>
<td>DN63ISO-K</td>
<td>280</td>
<td>102</td>
<td>88</td>
<td>metric</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-100ISOK-VV-S</td>
<td>DN100ISO-K</td>
<td>364.5</td>
<td>165</td>
<td>108</td>
<td>metric</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-63ISOK-VV-S-Z</td>
<td>DN63ISO-K</td>
<td>274</td>
<td>102</td>
<td>83</td>
<td>imperial</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-100ISOK-VV-S-Z</td>
<td>DN100ISO-K</td>
<td>370</td>
<td>165</td>
<td>114</td>
<td>imperial</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-63ISOK-VV-S-L</td>
<td>DN63ISO-K</td>
<td>281</td>
<td>100</td>
<td>88</td>
<td>metric</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-100ISOK-VV-S-L</td>
<td>DN100ISO-K</td>
<td>347</td>
<td>152</td>
<td>108</td>
<td>metric</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-63ISOK-VV-S-Z-L</td>
<td>DN63ISO-K</td>
<td>281</td>
<td>100</td>
<td>88</td>
<td>imperial</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-100ISOK-VV-S-Z-L</td>
<td>DN100ISO-K</td>
<td>347</td>
<td>152</td>
<td>108</td>
<td>imperial</td>
<td>yes</td>
</tr>
</tbody>
</table>
Angle Valves

Standard HV, pneumatic

Stainless steel housing

Technical data
- Series: 4AVP-..-MV
- Description: rugged UHV angle valve, stainless steel with pneumatic drive
- - versatile use
- - metal sealed housing
- Actuation: pneumatic single-acting, pressureless closed
- Connection: CF flanges, rotatable
- Air pressure connection: internal thread Rc 1/8
- Pressure range: 1.0E-9 mbar to atmosphere
- Blade dimensions: ISO- or ANSI standard
- Impermeability valve seat: < 1.0E-9 mbar l/s
- Impermeability housing: < 1.0E-10 mbar l/s
- Seal drive: diaphragm bellow
- Air pressure: 4 ... 6.5 bar
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Valve plate material: stainless steel
- Housing seal material: copper
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Bakeout temperature opened: max. 200 °C
- Mounting position: any
- Visual position indicator: not available
- Electric position indicator: 2 Reed switches (optional)
- 4 to 240 V AC/DC, 5 to 40 mA (temperature max. 50 °C)
- Durability until first service: 1,000,000 cycles
- Options: - solenoid valves
- - air pressure accessories

Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>SL</th>
<th>Dimensions</th>
<th>Autoswitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4AVP-16CF-MV-S</td>
<td>DN16CF-R</td>
<td>140</td>
<td>57</td>
<td>38</td>
<td>metric</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-40CF-MV-S</td>
<td>DN40CF-R</td>
<td>198</td>
<td>76</td>
<td>63</td>
<td>metric</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-16CF-MV-S-Z</td>
<td>DN16CF-R</td>
<td>166</td>
<td>57</td>
<td>64</td>
<td>imperial</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-40CF-MV-S-Z</td>
<td>DN40CF-R</td>
<td>196</td>
<td>76</td>
<td>62</td>
<td>imperial</td>
<td>no</td>
</tr>
<tr>
<td>4AVP-16CF-MV-S-L</td>
<td>DN16CF-R</td>
<td>156</td>
<td>57</td>
<td>38</td>
<td>metric</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-40CF-MV-S-L</td>
<td>DN40CF-R</td>
<td>212</td>
<td>76</td>
<td>63</td>
<td>metric</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-16CF-MV-S-Z-L</td>
<td>DN16CF-R</td>
<td>181</td>
<td>57</td>
<td>64</td>
<td>imperial</td>
<td>yes</td>
</tr>
<tr>
<td>4AVP-40CF-MV-S-Z-L</td>
<td>DN40CF-R</td>
<td>212</td>
<td>76</td>
<td>62</td>
<td>imperial</td>
<td>yes</td>
</tr>
</tbody>
</table>
Angle Valves

Compact, electromagnetic

Aluminum housing

Technical data

- **Series**: 2AVE
- **Description**: electromagnetic high vacuum angle valve, aluminum
  - for closure of prevacuum lines
  - and automatic applications
  - integrated control electronics for coil performance
  - compact and competitive
- **Actuation**: electromagnetic, single-acting, currentless closed
- **Connection**: KF flange
- **Electrical connection**: DIN angle-plug
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: hydroformed bellow
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: aluminum
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 … 40 °C
- **Power supply**: 24 V DC
- **Max. voltage fluctuation**: +/- 10 %
- **Max. switching frequency**: 10/minute
- **Inductor insulation**: class B
- **Mounting position**: any
- **Visual position indicator**: LED (red)
- **Durability until first service**: 500,000 cycles

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Conductance [l/s]</th>
<th>Power input [W]</th>
<th>Current input [A]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>open</td>
<td>hold</td>
<td>open</td>
</tr>
<tr>
<td>DN16KF</td>
<td>5</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>DN25KF</td>
<td>8</td>
<td>48</td>
<td>5</td>
</tr>
</tbody>
</table>

Order code

| 2AVE5-16KF-VV-A-R | DN16KF | 110  | 145  | 38  | 40  |
| 2AVE5-25KF-VV-A-R | DN25KF | 140  | 175  | 48  | 50  |

Power Supply Control

- **Model**: DIN - angular connector
- **Supply voltage**: 22...24...30 V DC, ripple smaller 2.0 V
- **Inverse-polarity protection**: yes
- **Current draw**: approximately 1.8 A für approximately 150 ms to open
  approximately 0.15 A to hold
- **Switching frequency**: max. 0.5 Hz
- **Signaling**: LED bright to open (24 V at magnetic valve)
  LED dark to hold (6 V after 150 ms at magnetic valve)

Control Possibilites

- **Option 1**: Relay control: Jumper plugged, 24 V are directly switched, for
  approximately 150 ms a current of 1.8 A flows through the contact,
  double poled circuit
- **Option 2**: SPS control: jumper open, 24 V (static), the valve is switched
  via a control input (24 V / 3 mA)
Angle Valves

KF Standard HV, electromagnetic

Aluminum or stainless steel housing

**Technical data**
- **Series**: 8AVE
- **Description**: electromagnetic high vacuum angle valve
  - versatile use
  - versions made of aluminum or stainless steel
  - autoswitches incl.
  - high conductivity
  - rugged
- **Actuation**: electromagnetic, single-acting, currentless closed
- **Connection**: KF flange
- **Electrical connection**: DIN angle-plug
- **Pressure range**: 1.0E-9 mbar to 2.1 bar
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: hydroformed bellow
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: aluminum or stainless steel
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Power supply**: 240 V AC, 50/60 Hz
- **Max. switching frequency**: 400 /h
- **Max. pressure difference during opening**: 1 bar
- **Mounting position**: any
- **Electric position indicator**: 2 Reed-switches, max. 24 V AC/ V DC, max. 0.25 A, max 3 W
- **Options**:
  - assembled flanges
  - unequal flanges
  - pneumatic drive

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Conductance [l/s]</th>
<th>Lifetime (cycles)</th>
<th>Max. operating temperature [°C]</th>
<th>Power input [VA]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>open</td>
<td>hold</td>
</tr>
<tr>
<td>DN16KF</td>
<td>4</td>
<td>500,000</td>
<td>45</td>
<td>417</td>
</tr>
<tr>
<td>DN25KF</td>
<td>10</td>
<td>130,000</td>
<td>50</td>
<td>993</td>
</tr>
<tr>
<td>DN40KF</td>
<td>34</td>
<td>130,000</td>
<td>50</td>
<td>1986</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>SL</th>
<th>T</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>8AVE6-16KF-VV-A-L</td>
<td>DN16KF</td>
<td>160</td>
<td>40</td>
<td>126</td>
<td>aluminum</td>
</tr>
<tr>
<td>8AVE6-25KF-VV-A-L</td>
<td>DN25KF</td>
<td>182</td>
<td>50</td>
<td>142</td>
<td>aluminum</td>
</tr>
<tr>
<td>8AVE6-40KF-VV-A-L</td>
<td>DN40KF</td>
<td>230</td>
<td>65</td>
<td>170</td>
<td>aluminum</td>
</tr>
<tr>
<td>8AVE6-16KF-VV-S-L</td>
<td>DN16KF</td>
<td>160</td>
<td>40</td>
<td>126</td>
<td>stainless steel</td>
</tr>
<tr>
<td>8AVE6-25KF-VV-S-L</td>
<td>DN25KF</td>
<td>182</td>
<td>50</td>
<td>142</td>
<td>stainless steel</td>
</tr>
<tr>
<td>8AVE6-40KF-VV-S-L</td>
<td>DN40KF</td>
<td>230</td>
<td>65</td>
<td>170</td>
<td>stainless steel</td>
</tr>
</tbody>
</table>
### In-line Valves

#### Diaphragm valve, manual

**Aluminum housing**

![Diaphragm Valve Diagram](image)

**Technical data**

<table>
<thead>
<tr>
<th>Series</th>
<th>15DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>diaphragm valve, aluminum for use in rough and medium vacuum - simple and compact</td>
</tr>
<tr>
<td>Actuation</td>
<td>manual with handwheel</td>
</tr>
<tr>
<td>Connection</td>
<td>KF flange</td>
</tr>
<tr>
<td>Pressure range</td>
<td>1.0E-6 mbar to atmosphere</td>
</tr>
<tr>
<td>He leak rate</td>
<td>&lt; 1.0E-7 mbar l/s</td>
</tr>
<tr>
<td>Seal drive</td>
<td>FKM-diaphragm</td>
</tr>
<tr>
<td>Housing construction</td>
<td>2-parts, actuator removable</td>
</tr>
<tr>
<td>Housing material</td>
<td>aluminum</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>5 ... 150 °C</td>
</tr>
<tr>
<td>Mounting position</td>
<td>any</td>
</tr>
<tr>
<td>Visual position indicator</td>
<td>handwheel position</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>15DVM-10KF-VV-A</td>
<td>DN10KF</td>
<td>85</td>
<td>80</td>
</tr>
<tr>
<td>15DVM-16KF-VV-A</td>
<td>DN16KF</td>
<td>85</td>
<td>80</td>
</tr>
<tr>
<td>15DVM-25KF-VV-A</td>
<td>DN25KF</td>
<td>140</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Butterfly valve, manual

**Aluminum or stainless steel housing**

![Butterfly Valve Diagram](image)

**Technical data**

<table>
<thead>
<tr>
<th>Series</th>
<th>3BVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>high vacuum butterfly valve - versions of aluminum or stainless steel - O-ring sealed rotary feedthrough manual with T-handle</td>
</tr>
<tr>
<td>Actuation</td>
<td>manual with T-handle</td>
</tr>
<tr>
<td>Connection</td>
<td>KF flange</td>
</tr>
<tr>
<td>Pressure range</td>
<td>1.0E-8 mbar to atmosphere</td>
</tr>
<tr>
<td>He leak rate</td>
<td>&lt; 1.0E-9 mbar l/s</td>
</tr>
<tr>
<td>Seal drive</td>
<td>O-rings</td>
</tr>
<tr>
<td>Housing material</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>Housing seal material</td>
<td>stainless steel</td>
</tr>
<tr>
<td>Seal valve plate material</td>
<td>stainless steel</td>
</tr>
<tr>
<td>Max. operating temperature</td>
<td>- aluminum: 80 °C - stainless steel: 150 °C</td>
</tr>
<tr>
<td>Mounting position</td>
<td>any</td>
</tr>
<tr>
<td>Visual position indicator</td>
<td>T-handle position</td>
</tr>
<tr>
<td>Durability until first service</td>
<td>after 3,000 cycles first maintenance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>3BVM-25KF-VV-A</td>
<td>DN25KF</td>
<td>117</td>
<td>50</td>
<td>aluminium</td>
</tr>
<tr>
<td>3BVM-40KF-VV-A</td>
<td>DN40KF</td>
<td>132</td>
<td>60</td>
<td>aluminium</td>
</tr>
<tr>
<td>3BVM-50KF-VV-A</td>
<td>DN50KF</td>
<td>140</td>
<td>60</td>
<td>aluminium</td>
</tr>
<tr>
<td>3BVM-25KF-VV-S</td>
<td>DN25KF</td>
<td>117</td>
<td>50</td>
<td>stainless steel</td>
</tr>
<tr>
<td>3BVM-40KF-VV-S</td>
<td>DN40KF</td>
<td>132</td>
<td>60</td>
<td>stainless steel</td>
</tr>
<tr>
<td>3BVM-50KF-VV-S</td>
<td>DN50KF</td>
<td>140</td>
<td>60</td>
<td>stainless steel</td>
</tr>
</tbody>
</table>
In-line Valves

**KF Valve, HV, manual**

Aluminum or stainless steel housing

Technical data
- **Series**: 3IVM
- **Description**: manual used gate valve with KF flange for HV applications
- **Actuation**: handwheel
- **Connection**: KF
- **Pressure range**: 1.0E-9 mbar to 3 bar
- **Impermeability valve seat**: < 1.0E-9 mbar l/s
- **Impermeability housing**: < 1.0E-9 mbar l/s
- **Seal drive**: bellow
- **Housing material**: stainless steel / aluminum
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: -30 ... 130 °C
- **Mounting position**: any
- **Durability until first service**: 50,000 cycles

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3IVM-16KF-VV-A</td>
<td>DN16KF</td>
<td>111</td>
<td>46</td>
<td>70</td>
</tr>
<tr>
<td>3IVM-25KF-VV-A</td>
<td>DN25KF</td>
<td>143</td>
<td>57</td>
<td>80</td>
</tr>
<tr>
<td>3IVM-40KF-VV-A</td>
<td>DN40KF</td>
<td>181</td>
<td>70</td>
<td>110</td>
</tr>
</tbody>
</table>

**KF Standard-HV, manual**

Stainless steel housing

Technical data
- **Series**: 4IVM
- **Description**: competitive and rugged high vacuum in-line valve, stainless steel - versatile use
- **Actuation**: manual with handwheel
- **Connection**: KF flange
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-9 mbar l/s
- **Seal drive**: diaphragm bellow
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 ... 150 °C
- **Mounting position**: any
- **Visual position indicator**: handwheel position
- **Durability until first service**: 100,000 cycles

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4IVM-16KF-VV-S</td>
<td>DN16KF</td>
<td>113</td>
<td>102</td>
<td>57</td>
</tr>
<tr>
<td>4IVM-25KF-VV-S</td>
<td>DN25KF</td>
<td>113</td>
<td>107</td>
<td>57</td>
</tr>
<tr>
<td>4IVM-40KF-VV-S</td>
<td>DN40KF</td>
<td>147</td>
<td>130</td>
<td>76</td>
</tr>
<tr>
<td>4IVM-50KF-VV-S</td>
<td>DN50KF</td>
<td>173</td>
<td>178</td>
<td>88</td>
</tr>
</tbody>
</table>
In-line Valves

CF Standard UHV, manual

Stainless steel housing

Technical data
- Series: 4IVM-..-MV
- Description: rugged UHV in-line valve
  - versatile use
  - metal sealed housing
- Actuation: manual with handwheel
- Connection: CF flanges - rotatable
- Pressure range: 1.0E-9 mbar to atmosphere
- Impermeability valve seat: < 1.0E-9 mbar l/s
- Impermeability housing: < 1.0E-10 mbar l/s
- Seal drive: diaphragm bellow
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Valve plate material: stainless steel
- Seal valve plate material: stainless steel
- Housing seal material: copper
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Bakeout temperature opened: max. 200 °C
- Mounting position: any
- Visual position indicator: handwheel position
- Durability until first service: 100,000 cycles

Order code | Connection | H | L | L2 |
---|---|---|---|---|
4IVM-16CF-MV-S | DN16CF-R | 120 | 119 | 69 |
4IVM-40CF-MV-S | DN40CF-R | 149 | 133 | 83 |

KF Valve, HV, pneumatic

Aluminum or stainless steel housing

Technical data
- Series: 3IVP
- Description: pneumatic driven gate valve with KF flange for HV applications
- Actuation: pneumatic NC
- Connection: KF
- Pressure range: 1.0E-8 mbar to 3 bar
- Impermeability valve seat: < 1.0E-8 mbar l/s
- Impermeability housing: < 1.0E-9 mbar l/s
- Seal drive: bellow
- Housing material: stainless steel / aluminum
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: -30 ... 130 °C
- Mounting position: any
- Position Indicator/ control valve: on request
- Durability until first service: 1,000,000 cycles

Order code | Connection | H | HL | L | L2 |
---|---|---|---|---|---|
3IVP-16KF-VV-A | 3IVP-16KF-VV-S | DN16KF | 123 | 152 | 48 | 80 |
3IVP-25KF-VV-A | 3IVP-25KF-VV-S | DN25KF | 153 | 182 | 57 | 100 |
3IVP-40KF-VV-A | - | DN40KF | 166 | 215 | 65 | 110 |
In-line Valves

KF Standard-HV, pneumatic

Stainless steel housing

Technical data

- Series: 4IVP
- Description: rugged high vacuum in-line valve, stainless steel with pneumatic drive
- Actuation: pneumatic single-acting, pressureless closed
- Connection: KF flange
- Air pressure connection: internal thread Rc 1/8
- Pressure range: 1.0E-8 mbar to atmosphere
- He leak rate: < 1.0E-9 mbar l/s
- Seal drive: diaphragm bellow
- Air pressure: 4 ... 6.5 bar
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Valve plate material: stainless steel
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Mounting position: any
- Visual position indicator: not available
- Electric position indicator: 2 Reed switches (optional)
- 4 to 240 V AC/DC, 5 to 40 mA (temperature max. 50 °C)
- Durability until first service: 1,000,000 cycles
- Options: - solenoid valves
- - air pressure accessories

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>Autoswitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4IVP-16KF-VV-S</td>
<td>DN16KF</td>
<td>105</td>
<td>102</td>
<td>57</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-25KF-VV-S</td>
<td>DN25KF</td>
<td>106</td>
<td>107</td>
<td>57</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-40KF-VV-S</td>
<td>DN40KF</td>
<td>145</td>
<td>130</td>
<td>76</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-50KF-VV-S</td>
<td>DN50KF</td>
<td>182</td>
<td>178</td>
<td>88</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-16KF-VV-S-L</td>
<td>DN16KF</td>
<td>105</td>
<td>102</td>
<td>57</td>
<td>yes</td>
</tr>
<tr>
<td>4IVP-25KF-VV-S-L</td>
<td>DN25KF</td>
<td>106</td>
<td>107</td>
<td>57</td>
<td>yes</td>
</tr>
<tr>
<td>4IVP-40KF-VV-S-L</td>
<td>DN40KF</td>
<td>145</td>
<td>130</td>
<td>76</td>
<td>yes</td>
</tr>
<tr>
<td>4IVP-50KF-VV-S-L</td>
<td>DN50KF</td>
<td>182</td>
<td>178</td>
<td>88</td>
<td>yes</td>
</tr>
</tbody>
</table>
**In-line Valves**

**Standard-UHV, pneumatic**

**Stainless steel housing**

### Technical data

- **Series**: 4IVP-..-MV
- **Description**: rugged UHV in-line valve, stainless steel with pneumatic drive
  - optically free channel
  - metal sealed housing
- **Actuation**: pneumatic single-acting, pressureless closed
- **Connection**: CF flanges, rotatable
- **Air pressure connection**: internal thread Rc 1/8
- **Pressure range**: 1.0E-9 mbar to atmosphere
- **Impermeability valve seat**: < 1.0E-9 mbar l/s
- **Impermeability housing**: < 1.0E-10 mbar l/s
- **Seal drive**: diaphragm bellow
- **Air pressure**: 4 ... 6.5 bar
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: copper
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 ... 150 °C
- **Bakeout temperature opened**: max. 200 °C
- **Mounting position**: any
- **Visual position indicator**: not available
- **Electric position indicator**: 2 Reed switches (optional)
  - 4 to 240 V AC/DC, 5 to 40 mA (temperature max. 50 °C)
- **Durability until first service**: 1,000,000 cycles
- **Options**:
  - solenoid valves
  - air pressure accessories

### Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>Autoswitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4IVP-16CF-MV-S</td>
<td>DN16CF-R</td>
<td>105</td>
<td>119</td>
<td>57</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-40CF-MV-S</td>
<td>DN40CF-R</td>
<td>142</td>
<td>133</td>
<td>76</td>
<td>no</td>
</tr>
<tr>
<td>4IVP-16CF-MV-S-L</td>
<td>DN16CF-R</td>
<td>105</td>
<td>119</td>
<td>57</td>
<td>yes</td>
</tr>
<tr>
<td>4IVP-40CF-MV-S-L</td>
<td>DN40CF-R</td>
<td>158</td>
<td>133</td>
<td>76</td>
<td>yes</td>
</tr>
</tbody>
</table>
In-line Valves

**KF Standard-HV, electromagnetic**

**Aluminum or stainless steel housing**

**Technical data**
- **Series**: 8IVE
- **Description**: electromagnetic high vacuum in-line valve
- **Connection**: KF flange
- **Electrical connection**: DIN angle-plug
- **Pressure range**: 1.0E-9 mbar to atmosphere
- **He leak rate**: < 1.0E-8 mbar l/s
- **Seal drive**: hydroformed bellow
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: aluminum or stainless steel
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Seal material**: stainless steel
- **Valve plate seal material**: stainless steel
- **Power supply**: 240 V AC, 50/60 Hz
- **Max. switching frequency**: 400 /h
- **Max. pressure difference during opening**: 1 bar
- **Mounting position**: any
- **Electric position indicator**: 2 Reed-switches, max. 24 V AC/ V DC, max. 0.25 A, max 3 W

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Conductance [l/s]</th>
<th>Lifetime [cycles]</th>
<th>Max. operating temperature [°C]</th>
<th>Power input [VA]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>open</td>
<td>hold</td>
</tr>
<tr>
<td>DN16KF</td>
<td>4</td>
<td>500,000</td>
<td>45</td>
<td>417</td>
</tr>
<tr>
<td>DN25KF</td>
<td>10</td>
<td>130,000</td>
<td>50</td>
<td>993</td>
</tr>
<tr>
<td>DN40KF</td>
<td>34</td>
<td>130,000</td>
<td>50</td>
<td>1986</td>
</tr>
</tbody>
</table>

**Order code**
- 8IVE6-16KF-VV-A-L: DN16KF 143 80 38 Aluminium
- 8IVE6-25KF-VV-A-L: DN25KF 172 100 51 Aluminium
- 8IVE6-40KF-VV-A-L: DN40KF 222 130 76 Aluminium
- 8IVE6-16KF-VV-S-L: DN16KF 143 80 38 Edelstahl
- 8IVE6-25KF-VV-S-L: DN25KF 172 100 51 Edelstahl
- 8IVE6-40KF-VV-S-L: DN40KF 222 130 76 Edelstahl
Special Valves

Smooth exhaust angle valves, pneumatic

Aluminum housing

Technical data
- **Series**: 2AVP-..-A-S
- **Description**: high vacuum angle valve with smooth exhaust
  - for evacuation of vacuum systems and chambers without turbulences
  - compact aluminum housing
  - pneumatic drive
  - type 2AVP without solenoid valve
  - type 2AVPS1 with integrated solenoid valve
- **Actuation**: pneumatic, single acting, 2-parts switchable, atmospheric pressure closed
- **Connection**: KF and ISO-F flange
- **Pressure range**: 1.0E-7 mbar to atmosphere
- **He leak rate**: < 1.0E-8 mbar l/s
- **Seal drive**: hydroformed bellow
- **Air pressure**: 4 ... 7 bar
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: aluminum
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: - type 2AVP 5 ... 60 °C
  - type 2AVPS1 5 ... 50 °C
- **Power supply control valve**: 24 V DC, 0.55 W
- **Scope of delivery**: 3 m solenoid connection cable, baffle and plug connection for hose Ø 6 mm incl.
- **Visual position indicator**: within drive cap
- **Electric position indicator**: prepared for mounting of electronic autoswitches for position of main valve
- **Durability until first service**: - nominal diameter DN25 to DN63 up to 2,000,000 cycles
  - nominal diameter DN100 to DN160 up to 1,000,000 cycles
- **Other options**: - high temperature version to 150 °C (only type 2AVP)
  - other sealing materials
  - other nominal diameters on request
  - autoswitches
  - solenoid valves
  - air pressure accessories

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Conductance main valve [l/s]</th>
<th>Conductance initial valve [l/s]</th>
<th>Air pressure connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2AVP</td>
</tr>
<tr>
<td>DN25KF</td>
<td>14</td>
<td>0.5 - 3</td>
<td>M5</td>
</tr>
<tr>
<td>DN40KF</td>
<td>45</td>
<td>2 - 3</td>
<td>M5</td>
</tr>
<tr>
<td>DN50KF</td>
<td>80</td>
<td>2.5 - 11</td>
<td>M5</td>
</tr>
<tr>
<td>DN63ISO</td>
<td>160</td>
<td>4 - 18</td>
<td>M5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>L2</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>without solenoid valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2AVP-40KF-VV-A-S</td>
<td>DN40KF</td>
<td>170</td>
<td>66</td>
<td>12</td>
<td>65</td>
</tr>
<tr>
<td>2AVP-50KF-VV-A-S</td>
<td>DN50KF</td>
<td>183</td>
<td>79</td>
<td>12</td>
<td>70</td>
</tr>
<tr>
<td>with solenoid valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2AVPS1-25KF-VV-A-SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2AVPS1-40KF-VV-A-SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2AVPS1-50ISO-VV-A-SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2AVPS1-63ISO-VV-A-SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Special Valves

Smooth exhaust angle valves, pneumatic

Stainless steel housing

Technical data
- **Series**: 2AVP-..-S-S
- **Description**: High vacuum angle valve with smooth exhaust
  - for evacuation of vacuum systems and chambers without turbulences
  - compact stainless steel housing
  - pneumatic drive
- **Actuation**: Pneumatic, single-acting, two-stage switchable, pressureless closed
- **Connection**: KF and ISO-F flange
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **He leak rate**: < 1.0E-8 mbar l/s
- **Seal drive**: Hydroformed bellow
- **Air pressure**: 4 ... 7 bar
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: Stainless steel
- **Bellows material**: Stainless steel
- **Valve plate material**: Stainless steel
- **Housing seal material**: Stainless steel
- **Seal valve plate material**: Stainless steel
- **Operating temperature**: 5...60 °C
- **Mounting position**: Any
- **Visual position indicator**: Within drive cap
- **Electric position indicator**: Prepared for mounting of electronic autoswitches for position of main valve
- **Durability until first service**: 2,000,000 cycles
- **Accessories on request**: - Autoswitches
  - Solenoid valves
  - Air pressure accessories
  - High temperature version to 150 °C
  - Other sealing materials

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Conductance main valve [l/s]</th>
<th>Conductance initial valve [l/s]</th>
<th>Air pressure connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN25KF</td>
<td>14</td>
<td>0.5 - 3</td>
<td>M5</td>
</tr>
<tr>
<td>DN40KF</td>
<td>45</td>
<td>2 - 8</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>DN50KF</td>
<td>80</td>
<td>2.5 - 11</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>DN63/ISO</td>
<td>160</td>
<td>4 - 18</td>
<td>Rc 1/8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2AVP-25KF-VV-S-S</td>
<td>DN25KF</td>
<td>123</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>2AVP-40KF-VV-S-S</td>
<td>DN40KF</td>
<td>170</td>
<td>66</td>
<td>65</td>
</tr>
<tr>
<td>2AVP-50KF-VV-S-S</td>
<td>DN50KF</td>
<td>183</td>
<td>79</td>
<td>70</td>
</tr>
<tr>
<td>2AVP-63ISOK-VV-S-S</td>
<td>DN63ISOK</td>
<td>217</td>
<td>100</td>
<td>88</td>
</tr>
</tbody>
</table>

www.vacom-vacuum.com
Special Valves

Gas shut-off valves, electromagnetic

Stainless steel housing

Technical data

- **Series**: 20..VE
- **Description**: high vacuum gas shut-off valve for ventilation and inlet of process gases
- **Actuation**: electromagnetic, single-acting, currentless closed
- **Connection**: gas bolting VCR or Swagelok
- **Electrical connection**: DIN angle-plug
- **Pressure range on vacuum side**: to 1.0E-8 mbar
- **He leak rate**: < 1.0E-8 mbar l/s
- **Seal drive**: welded
- **Housing construction**: 2-parts, actuator removable
- **Housing material**: stainless steel
- **Bellows material**: stainless steel
- **Valve plate material**: stainless steel
- **Housing seal material**: stainless steel
- **Seal valve material**: stainless steel
- **Operating temperature**: 5 ... 40 °C
- **Power supply**: 24 V DC, 5 ... 11 W
- **Max. voltage fluctuation**: +/- 10 %
- **Max. pressure difference during opening**: 3 ... 10 bar (see table)
- **Mounting position**: any
- **Visual position indicator**: not available
- **Durability until first service**: 2,000,000 cycles

<table>
<thead>
<tr>
<th>Order code</th>
<th>Max. pressure difference during opening [bar]</th>
<th>Max. inverse pressure difference [bar]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2O2VE5-14S-VM-S</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>2O3VE5-14S-VM-S</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2O4.5VE5-14S-VM-S</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>2O2VE5-14V-VM-S</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>2O3VE5-14V-VM-S</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2O4.5VE5-14V-VM-S</td>
<td>8</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>Inner diameter</th>
<th>CV value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2O2VE5-14S-VV-S</td>
<td>Swagelok 1/4&quot;</td>
<td>64</td>
<td>56</td>
<td>2</td>
<td>0.17</td>
</tr>
<tr>
<td>2O3VE5-14S-VV-S</td>
<td>Swagelok 1/4&quot;</td>
<td>75.5</td>
<td>61</td>
<td>3</td>
<td>0.33</td>
</tr>
<tr>
<td>2O4.5VE5-14S-VV-S</td>
<td>Swagelok 1/4&quot;</td>
<td>82</td>
<td>61</td>
<td>4.5</td>
<td>0.6</td>
</tr>
<tr>
<td>2O2VE5-14V-VV-S</td>
<td>VCR 1/4&quot;</td>
<td>64</td>
<td>51</td>
<td>2</td>
<td>0.17</td>
</tr>
<tr>
<td>2O3VE5-14V-VV-S</td>
<td>VCR 1/4&quot;</td>
<td>75.5</td>
<td>57</td>
<td>3</td>
<td>0.33</td>
</tr>
<tr>
<td>2O4.5VE5-14V-VV-S</td>
<td>VCR 1/4&quot;</td>
<td>82</td>
<td>57</td>
<td>4.5</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Overpressure valves, manual

Stainless steel housing

Technical data
- Series: 9SVM
- Description: overpressure valve for rough and medium vacuum, stainless steel
  - easy handling
  - merely mechanical operating mode
  - low maintenance
- Connection: external thread G 1/4"
- Trigger pressure: approx. 0.3 bar overpressure
- Pressure range: 1.0E-6 mbar to 2 bar
- Adjustment: fixed adjusted
- He leak rate: < 3.0E-8 mbar l/s
- Housing material: stainless steel
- Valve plate material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: 20 ... 150 °C
- Mounting position: vertical
- Other options: other trigger pressures on request

Order code | Connection | H | L
--- | --- | --- | ---
9SVM-14GA-VV-S | G 1/4" | 65 | 20

Adapters

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>KF10GI14</td>
<td>KF-G adapter, stainless steel</td>
<td>DN10KF - G 1/4&quot;</td>
</tr>
<tr>
<td>KF16GI14-316</td>
<td>KF-G adapter, stainless steel</td>
<td>DN16KF - G 1/4&quot;</td>
</tr>
<tr>
<td>KF25GI14</td>
<td>KF-G adapter, stainless steel</td>
<td>DN25KF - G 1/4&quot;</td>
</tr>
<tr>
<td>VR11.5-3</td>
<td>O-ring, FKM</td>
<td>-</td>
</tr>
</tbody>
</table>
Special Valves

Vent valves, manual

Stainless steel housing

Technical data
- Series: 13VVM
- Description: high vacuum venting valve, stainless steel
  - easy handling
  - low maintenance
- Connection: KF flange
- Pressure range: 1.0E-9 mbar to 2 bar
- Closure principle: manual with knurled screw
- He leak rate: < 1.0E-8 mbar l/s
- Seal lock: O-ring
- Housing material: stainless steel
- Knurled nut material: stainless steel
- Seal material: stainless steel
- Operating temperature: 5 ... 150 °C
- Mounting position: any

Order code | Connection | H  |
---|---|---|
13VVM-16KF-VV-S | DN16KF | 32 |
13VVM-25KF-VV-S | DN25KF | 32 |
13VVM-40KF-VV-S | DN40KF | 32 |

Vent valves, electromagnetic

Aluminum housing

Technical data
- Series: 6VVE
- Description: high vacuum venting valve, aluminum
  with electromagnetic drive
  - easy mounting
  - for inert gas and air
- Actuation: electromagnetic, single-acting,
  currentless closed or opened
- Connection: DN16KF flange
- Electrical connection: DIN angle-plug
- Pressure range: < 1.0E-8 mbar to 1 bar
- He leak rate: < 1.0E-8 mbar l/s
- Seal valve plate material: stainless steel
- Operating temperature: -20 ... 55 °C
- Media temperature: -10 ... 130 °C
- Max. switching frequency: 100/minute
- Max. flow: ~10 l in 12 s (Kv=0.21m³/h)
- Cycle time: 30 ms
- Inductor insulation: class F
- Degree of protection: IP65
- Durability until first service: 500,000 cycles

Order code | Power supply | Power input activate | Power input hold | Drive dead |
---|---|---|---|---|
6VVE6-16KF-VV-A | 240 VAC | 9.5 VA | 6.3 VA | closed |
6VVE5-16KF-VV-A | 24 VDC | 5 W | 5 W | closed |
6VVE6-16KF-VV-A-NO | 240 VAC | 9.5 VA | 6.3 VA | open |
6VVE5-16KF-VV-A-NO | 24 VDC | 5 W | 5 W | open |
Special Valves

Softvent valves, pneumatic

Stainless steel housing

Technical data
- **Series**: 2VVP-..-S-S
- **Description**: high vacuum ventilation valve with softvent function to dose ventilation of vacuum systems and chambers, pneumatic drives, for air and inert gases
- **Actuation**: single-acting, two-stage switchable, pressureless closed
- **Connection**: gas bolting 1/4" VCR or 1/4" Swagelok
- **Air pressure connection**: internal thread M5
- **Pressure range**: 1.0E-8 mbar to 2 bar
- **He leak rate**: < 1.0E-8 mbar l/s
- **Seal drive**: hydroformed bellow
- **Air pressure**: 4 ... 7 bar
- **Valve housing material**: stainless steel, internal elctropolished
- **Bellows material**: stainless steel
- **Drive housing material**: aluminum
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel diaphragm
- **Operating temperature**: 5...50 °C
- **Ausheiztemperatur Max.**: 150 °C
- **Eff. cross-section inlet**: 4.6 mm²
- **Eff. cross-section softvent inlet**: 0.2 to 4.6 mm²
- **Diameter inlet bore**: 3 mm²
- **Visual position indicator**: within drive cap
- **Durability until first service**: 500,000 cycles
- **Accessories**: - solenoid valves
- **- air pressure accessories**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2VVP-14S-VM-S-S</td>
<td>Swagelok 1/4&quot;</td>
</tr>
<tr>
<td>2VVP-14V-VM-S-S</td>
<td>VCR 1/4&quot;</td>
</tr>
</tbody>
</table>

High vacuum needle valves, manual

Aluminum housing

Technical data
- **Series**: 8LVM
- **Description**: needle valve for rough, medium and high vacuum
- **Actuation**: manual with handwheel
- **Connection**: KF flange
- **Pressure range**: 1.0E-5 mbar to atmosphere
- **He leak rate**: < 1.0E-7 mbar l/s
- **Housing material**: aluminum
- **Drive housing material**: brass
- **Needle material**: stainless steel
- **Housing seal material**: stainless steel
- **Max. flow**: 0.1 l/s (at 1 bar pressure difference)
- **Mounting position**: any
- **Visual position indicator**: 100-division scale at handwheel

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>H</th>
<th>L</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>8LVM-10KF-VV-A</td>
<td>DN10KF</td>
<td>68</td>
<td>62</td>
<td>30</td>
</tr>
</tbody>
</table>
Special Valves

UHV gas dosing valves, manual

Stainless steel housing

Technical data
■ Series
  10LVM
■ Description
  all metal UHV gas dosing valve with diaphragm-sealed valve seat
  - precise and reproducible proportioning
  - durable and low maintenance
  - motor drive retrofit
■ Actuation
  manual with handwheel
■ Connection
  CF flanges - rotatable, 1/4” VCR- or 1/4” Swagelok connection
■ Range of control
  1.0E-10 mbar l/s to 1 mbar l/s
■ Pressure range
  1.0E-10 mbar to 10 bar
■ He leak rate
  < 1.0E-10 mbar l/s
■ Housing construction
  multipart, drive removable (not demountable)
■ Housing material
  stainless steel
■ Seal drive and housing
  One combined gold plated stainless steel diaphragm
■ Dead volume: main flange side
  1.0 ... 1.4 cm³
■ Dead volume: lateral flange side
  4.6 cm³
■ Bakeout temperature opened
  to 450 °C
■ Max. operating temperature
  to 300 °C
■ Max. differential pressure
  10 bar from each side
■ Mounting position
  any
■ Visual position indicator
  position handwheel, 0 ... 10 cycles
■ Durability until first service
  100,000 cycles
■ Accessories on request
  - heating element with integrated thermocouple
  - controller for heating element
  - step motor with controller (retrofit)
  - controllable via analog signal 0 ... 10 V DC
  - other connection combinations
■ Option
  - other connection combinations

Order code

<table>
<thead>
<tr>
<th>Manual drive</th>
<th>Step motor drive</th>
<th>Connection 1</th>
<th>Connection 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10LVM-16CF-MM-S</td>
<td>10LVS-16CF-MM-S</td>
<td>DN16CF-R</td>
<td>DN16CF-R</td>
</tr>
<tr>
<td>10LVM-4016CF-MM-S</td>
<td>10LVS-4016CF-MM-S</td>
<td>DN40CF-R</td>
<td>DN16CF-R</td>
</tr>
<tr>
<td>10LVM-14S-MM-S</td>
<td>10LVS-14S-MM-S</td>
<td>Swagelok 1/4&quot;</td>
<td>Swagelok 1/4&quot;</td>
</tr>
<tr>
<td>10LVM-14V-MM-S</td>
<td>10LVS-14V-MM-S</td>
<td>VCR 1/4&quot;</td>
<td>VCR 1/4&quot;</td>
</tr>
</tbody>
</table>

www.vacom-vacuum.com
UHV gas dosing valves, manual

Stainless steel housing

Technical data

- **Series**: 11LVM
- **Description**: all metal UHV gas metering valve with sapphire sealing
  - precise metering
  - easy handling
- **Actuation**: manual with handwheel
- **Connection**: CF flanges - inlet rotatable - outlet trapped
- **Range of control**: 2.0E-10 ... 1 mbar l/s
- **Pressure range**: 1.0E-11 mbar to 1 bar
- **He leak rate**: < 1.0E-10 mbar l/s
- **Seal drive**: stainless steel diaphragm
- **Housing construction**: welded
- **Housing material**: stainless steel
- **Valve plate material**: copper alloy sealing elements (replaceable)
- **Seal drive plate material**: sapphire sealing gasket
- **Dead volume: main flange side**: 1.0 ... 1.4 cm³
- **Dead volume: lateral flange side**: 4.6 cm³
- **Bakeout temperature**: to 450 °C
- **Max. differential pressure**: 10 bar from each side
- **Mounting position**: any
- **Durability until first service**: - approx. 300 cycles without baking
  - approx. 100 cycles at bakeout temperature 250° C
  - approx. 20 to 30 cycles at bakeout temperature 450° C

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection vacuum</th>
<th>Connection inlet</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>11LVM-4016CF-MS-S</td>
<td>DN40CF-F</td>
<td>DN16CF-R</td>
<td>109</td>
</tr>
<tr>
<td>11LVM-16CF-MS-S</td>
<td>DN16CF-F *</td>
<td>DN16CF-R</td>
<td>98</td>
</tr>
</tbody>
</table>

* Flange with imperial tapped holes.
Gate Valves

Standard HV, manual

Stainless steel housing

Technical data
- Series: 5GVM-..-VV
- Description: high vacuum gate valve, stainless steel
  - housing and valve seat O-ring sealed (replaceable)
  - intern and extern electropolished
  - rugged and durable
- Actuation: manual with handwheel
- Connection: KF and ISO-F flange
- Pressure range: 1.0E-9 mbar to atmosphere
- He leak rate: < 2.0E-9 mabr l/s
- Seal drive: diaphragm bellow
- Housing construction: 2-parts, actuator removable
- Housing material: stainless steel
- Bellows material: AM350
- Valve plate material: stainless steel
- Housing seal material: stainless steel
- Seal valve plate material: stainless steel
- Operating temperature: 5 ... 150 °C
- Max. pressure difference during opening: 25 mbar
- Mounting position: arbitrary (from DN200 onwards please specify with ordering)
- Visual position indicator: within handwheel
- Durability until first service: 100,000 cycles
- Other options:
  - other flange standards
  - lateral measuring flange

Order code | Connection | Conductance [l/s] | H | L | T |
--- | --- | --- | --- | --- | --- |
5GVM-16KF-VV-S | DN16KF | 13 | 103 | 40 | 48 |
5GVM-40KF-VV-S | DN40KF | 88 | 206 | 51 | 84 |
5GVM-50KF-VV-S | DN50KF | 317 | 227 | 51 | 97 |
5GVM-63ISO-F-VV-S | DN63ISO-F | 615 | 273 | 52 | 90 |
5GVM-100ISO-F-VV-S | DN100ISO-F | 2122 | 477 | 61 | 178 |
5GVM-160ISO-F-VV-S | DN160ISO-F | 7140 | 574 | 60 | 222 |
5GVM-200ISO-F-VV-S | DN200ISO-F | 11597 | 687 | 68 | 286 |
5GVM-250ISO-F-VV-S | DN250ISO-F | 24990 | 907 | 80 | 344 |
5GVM-320ISO-F-VV-S | DN320ISO-F | 43268 | 1050 | 80 | 403 |
Gate Valves

CF Standard UHV, manual

Stainless steel housing

Technical data

- **Series**: 5GVM-..-MV
- **Description**: UHV gate valve, stainless steel
  - housing metal sealed
  - valve seat O-ring sealed (replaceable)
  - intern and extern electropolished
  - rugged and long-lasting
- **Actuation**: manual with handwheel
- **Connection**: CF flanges - fixed, with metric threaded holes
- **Pressure range**: 1.0E-10 mbar to atmosphere
- **He leak rate**: < 2.0E-9 mabr l/s
- **Seal drive**: diaphragm bellow
- **Housing construction**: 2-parts, actuator removable, inside and outside electropolished
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: copper
- **Seal valve plate material**: stainless steel
- **Operating temperature**: 5 ... 150 °C
- **Bakeout temperature opened**: max. 200 °C
- **Max. pressure difference during opening**: 25 mbar
- **Mounting position**: arbitrary (from DN200 onwards please specify with ordering)
- **Visual position indicator**: within handwheel
- **Durability until first service**: 100,000 cycles
- **Other options**: - lateral measuring flange

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>5GVM-16CF-MV-S</td>
<td>DN16CF-F</td>
<td>12</td>
<td>103</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>5GVM-40CF-MV-S</td>
<td>DN40CF-F</td>
<td>128</td>
<td>206</td>
<td>52</td>
<td>84</td>
</tr>
<tr>
<td>5GVM-63CF-MV-S</td>
<td>DN63CF-F</td>
<td>524</td>
<td>264</td>
<td>61</td>
<td>111</td>
</tr>
<tr>
<td>5GVM-100CF-MV-S</td>
<td>DN100CF-F</td>
<td>1726</td>
<td>473</td>
<td>75</td>
<td>178</td>
</tr>
<tr>
<td>5GVM-160CF-MV-S</td>
<td>DN160CF-F</td>
<td>5289</td>
<td>563</td>
<td>81</td>
<td>222</td>
</tr>
<tr>
<td>5GVM-200CF-MV-S</td>
<td>DN200CF-F</td>
<td>12006</td>
<td>671</td>
<td>85</td>
<td>286</td>
</tr>
<tr>
<td>5GVM-250CF-MV-S</td>
<td>DN250CF-F</td>
<td>21497</td>
<td>896</td>
<td>99</td>
<td>344</td>
</tr>
</tbody>
</table>

www.vacom-vacuum.com
Gate Valves

Standard-HV, pneumatic

Stainless steel housing

Technical data

- **Series**: 5GVP-...
- **Description**: High vacuum gate valve, stainless steel with pneumatic drive
  - Solenoid valve and autoswitches incl.
  - Housing and valve seat O-ring sealed (replaceable)
  - Intern and extern electropolished
  - Rugged and durable
- **Actuation**: Pneumatic double-acting
- **Connection**: KF and ISO-F flange
- **Air pressure connection**: Internal thread NPT 1/8
- **Pressure range**: 1.0E-9 mbar to atmosphere
- **He leak rate**: < 2.0E-9 mabr l/s
- **Seal drive**: Diaphragm bellow
- **Air pressure**: 4 ... 6 bar
- **Housing construction**: 2-parts, actuator removable, inside and outside electropolished
- **Housing material**: Stainless steel
- **Bellows material**: AM350
- **Valve plate material**: Stainless steel
- **Housing seal material**: Stainless steel
- **Seal valve plate material**: Stainless steel
- **Operating temperature**: Valve and housing 5 ... 150 °C
  - Pneumatic drive to 60 °C
- **Power supply control valve**: 220 VAC, 4 W
- **Max. pressure difference during opening**: 25 mbar
- **Mounting position**: Arbitrary (from DN200 onwards please specify with ordering)
- **Visual position indicator**: Not available
- **Electric position indicator**: 2 Reed-switches, to 28 V DC, to 20 mA (only for valves from DN40)
- **Durability until first service**: 100,000 cycles
  - Other flange standards
  - High temperature microswitch
  - Differing operating voltage
  - Lateral measurement flange

Order code

- **Conductance [l/s]**
- **Connection**
- **H**
- **L**
- **T**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>5GVPS3-16KF-VV-S-L</td>
<td>DN16KF</td>
<td>13</td>
<td>109</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>5GVPS3-40KF-VV-S-LR</td>
<td>DN40KF</td>
<td>88</td>
<td>251</td>
<td>51</td>
<td>84</td>
</tr>
<tr>
<td>5GVPS3-50KF-VV-S-LR</td>
<td>DN50KF</td>
<td>317</td>
<td>272</td>
<td>51</td>
<td>97</td>
</tr>
<tr>
<td>5GVPS3-63ISO-F-VV-S-LR</td>
<td>DN63ISO-F</td>
<td>615</td>
<td>318</td>
<td>52</td>
<td>111</td>
</tr>
<tr>
<td>5GVPS3-100ISO-F-VV-S-LR</td>
<td>DN100ISO-F</td>
<td>2122</td>
<td>456</td>
<td>61</td>
<td>178</td>
</tr>
<tr>
<td>5GVPS3-160ISO-F-VV-S-LR</td>
<td>DN160ISO-F</td>
<td>7140</td>
<td>553</td>
<td>60</td>
<td>222</td>
</tr>
<tr>
<td>5GVPS3-200ISO-F-VV-S-LR</td>
<td>DN200ISO-F</td>
<td>11597</td>
<td>666</td>
<td>68</td>
<td>266</td>
</tr>
<tr>
<td>5GVPS3-250ISO-F-VV-S-LR</td>
<td>DN250ISO-F</td>
<td>24990</td>
<td>863</td>
<td>80</td>
<td>344</td>
</tr>
<tr>
<td>5GVPS3-320ISO-F-VV-S-LR</td>
<td>DN320ISO-F</td>
<td>43268</td>
<td>1006</td>
<td>80</td>
<td>403</td>
</tr>
<tr>
<td>5GVPS3-400ISO-F-VV-S-LR</td>
<td>DN400ISO-F</td>
<td>74905</td>
<td>1247</td>
<td>109</td>
<td>503</td>
</tr>
<tr>
<td>5GVPS3-500ISO-F-VV-S-LR</td>
<td>DN500ISO-F</td>
<td>132197</td>
<td>1500</td>
<td>121</td>
<td>645</td>
</tr>
<tr>
<td>5GVPS3-600ISO-F-VV-S-LR</td>
<td>DN600ISO-F</td>
<td>228856</td>
<td>1746</td>
<td>121</td>
<td>813</td>
</tr>
</tbody>
</table>
Gate Valves

CF Standard-UHV, pneumatic

Stainless steel housing

Technical data

- **Series**: 5GVP-...-MV
- **Description**: UHV gate valve, stainless steel with pneumatic drive
- - solenoid valve and autoswitches incl.
- - metal sealed housing
- - valve seat O-ring sealed (replaceable)
- - intern and extern electropolished
- - rugged and durable
- **Actuation**: pneumatic double-acting
- **Connection**: CF flanges - fixed, with metric threaded holes
- **Air pressure connection**: internal thread NPT1/8
- **Pressure range**: 1.0E-10 mbar to atmosphere
- **He leak rate**: < 2.0E-9 mabr l/s
- **Seal drive**: diaphragm bellow
- **Air pressure**: 4 ... 6 bar
- **Housing construction**: 2-parts, actuator removable, inside and outside electropolished
- **Housing material**: stainless steel
- **Bellows material**: AM350
- **Valve plate material**: stainless steel
- **Housing seal material**: copper
- **Seal valve plate material**: stainless steel
- **Operating temperature**: valve and housing 5 ... 150 °C
- pneumatic drive to 60 °C
- **Bakeout temperature opened**: max. 200 °C, with high temperature micro switches and drives
- **Power supply control valve**: 220 VAC, 4 W
- **Max. pressure difference during opening**: 25 mbar
- **Mounting position**: arbitrary (from DN200 onwards please specify with ordering)
- **Visual position indicator**: not available
- **Electric position indicator**: 2 Reed-switches, to 28 V DC, to 20 mA (only for valves from DN40)
- **Durability until first service**: 100,000 cycles
- **Other options**:
- - other flange standards
- - high temperature microswitch
- - high temperature actuation
- - differing operating voltage
- - lateral measuring flange

Order code

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Conductance [l/s]</th>
<th>H</th>
<th>L</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>5GVPS3-16CF-MV-S</td>
<td>DN16CF-F</td>
<td>12</td>
<td>108</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>5GVPS3-40CF-MV-S-LR</td>
<td>DN40CF-F</td>
<td>128</td>
<td>251</td>
<td>52</td>
<td>84</td>
</tr>
<tr>
<td>5GVPS3-63CF-MV-S-LR</td>
<td>DN63CF-F</td>
<td>524</td>
<td>309</td>
<td>61</td>
<td>111</td>
</tr>
<tr>
<td>5GVPS3-100CF-MV-S-LR</td>
<td>DN100CF-F</td>
<td>1726</td>
<td>452</td>
<td>75</td>
<td>178</td>
</tr>
<tr>
<td>5GVPS3-160CF-MV-S-LR</td>
<td>DN160CF-F</td>
<td>5289</td>
<td>542</td>
<td>81</td>
<td>222</td>
</tr>
<tr>
<td>5GVPS3-200CF-MV-S-LR</td>
<td>DN200CF-F</td>
<td>12006</td>
<td>650</td>
<td>85</td>
<td>286</td>
</tr>
<tr>
<td>5GVPS3-250CF-MV-S-LR</td>
<td>DN250CF-F</td>
<td>21497</td>
<td>852</td>
<td>99</td>
<td>344</td>
</tr>
</tbody>
</table>

www.vacom-vacuum.com
Rectangular gate valve, pneumatic

**Technical data**
- **Series**: 2RVP
- **Description**: rectangular gate valve, aluminum, with pneumatic drive for use in semiconductor production
  - versions as rectangular door or with cassette housing
  - autoswitches incl.
  - high durability
  - lowest particle emission
- **Actuation**: pneumatic double-acting
- **Connection**:
  - cassette housing standard
  - cassette housing MESC-compatible (half height)
  - cassette housing MESC-compatible (complete height)
  - rectangular door without flange
- **Pressure range**: 1.0E-8 mbar to atmosphere
- **Closure principle**: L-motion
- **Impermeability valve seat**: < 1.0E-8 mbar l/s
- **Impermeability housing**: < 1.0E-8 mbar l/s
- **Seal drive**: diaphragm bellow
- **Air pressure**: 4.5 ... 6 bar
- **Housing material**: aluminum
- **Valve plate material**: aluminum
- **Housing seal material**: stainless steel
- **Seal valve plate material**: stainless steel
- **Operating temperature**: valve and housing 5 ... 150 °C
  - pneumatic drive 5 ... 60 °C
- **Max. pressure difference during opening**: 40 mbar
- **Mounting position**: vertical
- **Visual position indicator**: not available
- **Electric position indicator**: 2 Reed switches, to 24 V DC, to 40 mA, with circular connector (6-pin)
- **Durability until first service**: 2,000,000 cycles

**Connection: standard cassette housing**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Wafer size</th>
<th>H</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>L</th>
<th>L2</th>
<th>L3</th>
<th>T</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2RVP-32222RS-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>36</td>
<td>32</td>
<td>222</td>
<td>184</td>
<td>340</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>2RVP-46236RS-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>36</td>
<td>46</td>
<td>236</td>
<td>184</td>
<td>340</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>2RVP-50336RS-VV-A-LR</td>
<td>Ø 300</td>
<td>377</td>
<td>112</td>
<td>50</td>
<td>50</td>
<td>336</td>
<td>224</td>
<td>440</td>
<td>59</td>
<td>60</td>
</tr>
</tbody>
</table>
Gate Valves

Rectangular gate valve, pneumatic

Connection: half height MESC standard cassette housing

<table>
<thead>
<tr>
<th>Order code</th>
<th>Wafer size</th>
<th>H</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
<th>L</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>T</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2RVP-46236RHM-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>50</td>
<td>36</td>
<td>44</td>
<td>236</td>
<td>184</td>
<td>340</td>
<td>305</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>2RVP-50336RHM-VV-A-LR</td>
<td>Ø 300</td>
<td>377</td>
<td>112</td>
<td>50</td>
<td>36</td>
<td>45</td>
<td>336</td>
<td>244</td>
<td>440</td>
<td>405</td>
<td>59</td>
<td>60</td>
</tr>
</tbody>
</table>

Connection: full height MESC cassette housing

<table>
<thead>
<tr>
<th>Order code</th>
<th>Wafer size</th>
<th>H</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
<th>L</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>T</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2RVP-46236RM-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>50</td>
<td>36</td>
<td>85</td>
<td>236</td>
<td>184</td>
<td>340</td>
<td>305</td>
<td>49</td>
<td>50</td>
</tr>
</tbody>
</table>

Connection: rectangular door without flange

<table>
<thead>
<tr>
<th>Order code</th>
<th>Wafer size</th>
<th>H</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>L</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>2RVP-32222R-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>45</td>
<td>235</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>2RVP-46236R-VV-A-LR</td>
<td>Ø 200</td>
<td>365</td>
<td>112</td>
<td>59</td>
<td>249</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>2RVP-50336R-VV-A-LR</td>
<td>Ø 300</td>
<td>377</td>
<td>97</td>
<td>62</td>
<td>348</td>
<td>59</td>
<td></td>
</tr>
</tbody>
</table>
Gate Valves

With special equipment

**Laminar flow gate valves**

*Technical data*

- These valves have a gas inlet through which an inert gas can be let into the valve to avoid a destruction of the valve mechanics while eliminating contact of the corrosive process gas.

**3-position gate valves**

*Technical data*

- These electropneumatic valves can be used maintenance-free up to 1,000,000 cycles (depending on application) and they can, besides the open and closed position, take any set third position. Thus, the pumping speed of the attached pump can be reduced.

**Throttle gate valves**

*Technical data*

- These electropneumatic valves can take each position between the open and closed status. Thus, together with pressure and flow controller, a pressure and flow regulation is possible. For these valves a maintenance-free handling up to 1,000,000 cycles (depending on application) can be warranted as well.
## Valve Accessories

### Control valves including assembly kit for single-acting pneumatic valves

#### Technical data
- Monostable. Currentless closed, opened under voltage.
- Pressure 4 ... 7 bar.

#### 230 V AC, 1/8" connection

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV1-230-18</td>
<td>EVZ512M-4DO-01F</td>
<td>solenoid valve, monostable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SD18F</td>
<td>silencer for solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>DN18R</td>
<td>double nipple with external thread</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KQH06-U01</td>
<td>straight connectors for thread 6 mm</td>
<td>1</td>
</tr>
</tbody>
</table>

#### 24 V DC, 1/8" connection

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV1-24-18</td>
<td>EVZ512M-5DO-01F</td>
<td>solenoid valve, monostable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SD18F</td>
<td>silencer for solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>DN18R</td>
<td>double nipple with external thread</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KQH06-U01</td>
<td>straight connectors for thread 6 mm</td>
<td>1</td>
</tr>
</tbody>
</table>

#### 230 V AC, M5-connection

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV1-230-M5</td>
<td>VZ110-4DO-M5</td>
<td>solenoid valve, monostable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>AN120-M5</td>
<td>silencer for solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M-5UN</td>
<td>double nipple for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KJH06-M5</td>
<td>straight connection for compressed air</td>
<td>1</td>
</tr>
</tbody>
</table>

#### 24 V DC, M5-connection

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV1-24-M5</td>
<td>VZ110-5DO-M5</td>
<td>solenoid valve, monostable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>AN120-M5</td>
<td>silencer for solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M-5UN</td>
<td>double nipple for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KJH06-M5</td>
<td>straight connection for compressed air</td>
<td>1</td>
</tr>
</tbody>
</table>
## Control valves including assembly kit for double-acting pneumatic valves

### Technical data
- Impulse control. Position change via piloting each connection.
- Bistable, holds currentless the chosen position.
- Pressure 4 ... 7 bar.

### 230 V AC, 1/8" connection, bistable

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV22-230-18</td>
<td>SY5220-4YO-01F-Q</td>
<td>solenoid valve, bistable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K41</td>
<td>DIN socket</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SD18F</td>
<td>silencer for solenoid valve</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>WA18R</td>
<td>angular connector with external thread</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KQH06-U01</td>
<td>straight connectors for thread 6 mm</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>KQL06-U01</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>TU0604BU</td>
<td>compressed air hose, polyurethane, blue, 6 mm</td>
<td>0.2 m</td>
</tr>
</tbody>
</table>

### 24 V DC, 1/8" connection, bistable

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV22-24-18</td>
<td>SY5220-5YO-01F-Q</td>
<td>solenoid valve, bistable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K41</td>
<td>DIN socket</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SD18F</td>
<td>silencer for solenoid valve</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>WA18R</td>
<td>angular connector with external thread</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KQH06-U01</td>
<td>straight connectors for thread 6 mm</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>KQL06-U01</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>TU0604BU</td>
<td>compressed air hose, polyurethane, blue, 6 mm</td>
<td>0.2 m</td>
</tr>
</tbody>
</table>

### 230 V AC, M5-connection, bistable

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV22-230-M5</td>
<td>VZ3223-4DO-M5</td>
<td>solenoid valve, bistable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AN120-M5</td>
<td>silencer for solenoid valve</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>M-5UN</td>
<td>double nipple for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M-5UL</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KJH06-M5</td>
<td>straight connection for compressed air</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>KJL06-M5</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>TU0604BU</td>
<td>compressed air hose, polyurethane, blue, 6 mm</td>
<td>0.2 m</td>
</tr>
</tbody>
</table>

### 24 V DC, M5-connection, bistable

<table>
<thead>
<tr>
<th>Order code</th>
<th>Constituents</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITSTV22-24-M5</td>
<td>VZ3223-5DO-M5</td>
<td>solenoid valve, bistable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>K31</td>
<td>DIN socket</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AN120-M5</td>
<td>silencer for solenoid valve</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>M-5UN</td>
<td>double nipple for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M-5UL</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KJH06-M5</td>
<td>straight connection for compressed air</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>KJL06-M5</td>
<td>angular connector for compressed air</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>TU0604BU</td>
<td>compressed air hose, polyurethane, blue, 6 mm</td>
<td>0.2 m</td>
</tr>
</tbody>
</table>
Valve Accessories

Position indicator

Reed switch with LED, 2-pole

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Length [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-A93L</td>
<td>cable</td>
<td>3</td>
</tr>
<tr>
<td>D-A93-M8</td>
<td>M5 plug</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Electronic switch with LED, 2-pole

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Length [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-M9BL</td>
<td>cable</td>
<td>3</td>
</tr>
<tr>
<td>D-M9BSAPC</td>
<td>M5 plug</td>
<td>0.5</td>
</tr>
<tr>
<td>D-M9BL-PAAR</td>
<td>cable</td>
<td>2 x 3</td>
</tr>
</tbody>
</table>

Electronic switch with LED, 3-pole

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Length [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-M9PL</td>
<td>cable</td>
<td>3</td>
</tr>
<tr>
<td>D-M9PSAPC</td>
<td>M5 plug</td>
<td>0.5</td>
</tr>
<tr>
<td>D-M9PL-PAAR</td>
<td>cable</td>
<td>2 x 3</td>
</tr>
</tbody>
</table>

Power socket with cable

For integrated control valves of series 2AVPS1 without switching

<table>
<thead>
<tr>
<th>Order code</th>
<th>Length [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY100-30-4A-10</td>
<td>1</td>
</tr>
<tr>
<td>SY100-30-4A-20</td>
<td>2</td>
</tr>
<tr>
<td>SY100-30-4A-30</td>
<td>3</td>
</tr>
</tbody>
</table>
### Valve Accessories

#### Straight connectors

**External thread double-sided**

- **M-5UN**
  - Connection: M5
  - Type: pivoting
  - H: 10
  - Screw connection with double-sided external thread as connection between internal threads.

**Internal thread double-sided**

- **MU18G**
  - Connection: G1/8
  - Type: fixed
  - H: 18
  - Screw connection with double-sided internal thread as connection between external threads.

**Internal and external thread**

- **M-5B**
  - Connection: M5
  - Order code: R1/8
  - H: 7
  - Screw connection with double-sided external and internal thread as connection between threads of different sizes.

**Plug connection from thread to 6 mm hose**

- **M-SH6**
  - Connection: M5
  - Type: fixed
  - H: 12.5

- **KJH06-M5**
  - Connection: M5
  - Type: rotatable
  - H: 14.7

- **M-01H-6**
  - Connection: R1/8
  - Type: fixed
  - H: 16.5

- **KJH06-01S**
  - Connection: R1/8
  - Type: rotatable
  - H: 15.4

- **KQH06-U01**
  - Connection: universal thread 1/8
  - Type: rotatable
  - H: 15.4

- * Thread Teflon® plated.
- ** gasket over gasket

#### Angular connectors, pivoting

**Internal and external thread**

- **M-5UL**
  - Connection: M5
  - H: 11.3
  - L: 13

- * Straight connection between internal thread and hose (nylon, soft nylon, polyurethane) with external diameter 6 mm.
Valve Accessories

Angular connectors, pivoting

External thread double-sided

Plug connection - angular connectors from thread to 6 mm hose

Silencers

Compressed-air hose, polyurethane, sold by meter
Valve Accessories

Angular connectors, pivoting

External thread double-sided

Plug connection - angular connectors from thread to 6 mm hose

Silencers

Compressed-air hose, polyurethane, sold by meter

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Material</th>
<th>Attenuation [dB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN120-M5</td>
<td>M5</td>
<td>sintered bronze</td>
<td>&gt; 18</td>
</tr>
<tr>
<td>AN110-01</td>
<td>R1/8</td>
<td>sintered bronze</td>
<td>&gt; 19</td>
</tr>
<tr>
<td>AN103-01</td>
<td>R1/8</td>
<td>plastics</td>
<td>&gt; 25</td>
</tr>
<tr>
<td>SD18F</td>
<td>G1/8</td>
<td>sintered bronze</td>
<td>-</td>
</tr>
</tbody>
</table>

* Thread Teflon® plated.
** gasket over gasket

- 90° connection between inner thread and hose (nylon, soft nylon, polyurethane) with external diameter 6mm.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Connection</th>
<th>Outer diameter</th>
<th>Inner diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>TU0604BU</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>