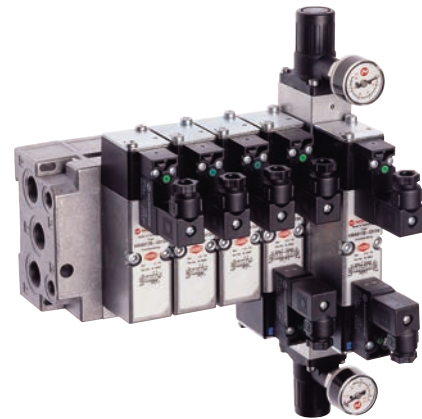


- > 2x3/2, 5/2 and 5/3 valves, ISO 15407-1/VDMA 24 563, Size 26 mm
- > Solenoid and pilot actuated
- > High performance, compact design
- > Flexible sub-base system
- > Multipressure system capability
- > Dual spool technology:
  - V44 Glandless spool and sleeve (long life)
  - V45 Softseal spool (high flow)
- > Collected pilot exhaust with internal pilot air supply
- > Easy to convert from internal to external pilot supply
- > Valve exchange under pressure



### Technical features

#### Medium:

Compressed air, filtered to 40 µm, lubricated or non-lubricated

#### Operation:

V44: Glandless spool valve, solenoid pilot or air pilot actuated  
 V45: Softseal spool valve, solenoid pilot or air pilot actuated

#### Flow:

| Funktion  | l/min | Cv | Kv |
|-----------|-------|----|----|
| Softseal  |       |    |    |
| 2x3/2 NC  | 1100  |    |    |
| 2X3/2 NO  | 1000  |    |    |
| 5/2       | 1200  |    |    |
| 5/3       | 1150  |    |    |
| Glandless |       |    |    |
| 5/2       | 900   |    |    |
| 5/3       | 900   |    |    |

#### Mounting:

Sub-base

#### Ports 2+4:

#### Operating pressure:

See tables for individual details

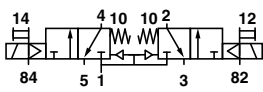
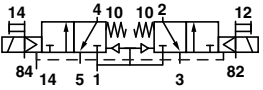
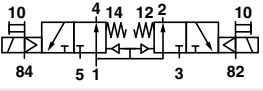
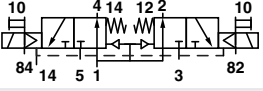
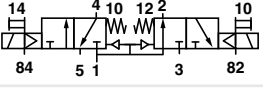
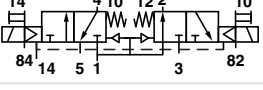
#### Media/Ambient temperature:

-15 ... +50°C (+5 ... 122°F)  
 V44/V45 solenoid and V45 air pilot models  
 -15 ... +80°C (+5 ... 176°F)  
 V44 air pilot models  
 Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

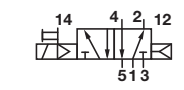
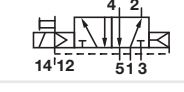
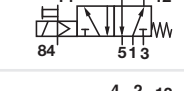



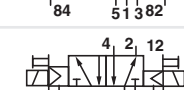
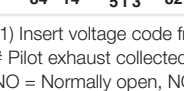




#### Materials:

Body and sub-base: die cast aluminium  
 Spool and sleeve: hard anodized, Teflon coated, matched aluminium (V44); aluminium alloy spool with HNBR Seals (V45)  
 Plastic parts: POM  
 Static seals: NBR  
 End cover and screws: zinc plated  
 Springs: stainless steel

### 2 x 3/2 Solenoid pilot actuated softseal valves

| Symbol   | Function<br>2 x 3/2 | Actuation/<br>return | Pilot<br>supply | Pilot<br>exhaust | Operating<br>pressure (bar) | Pilot pressure<br>(bar)           | Flow<br>(l/min) | Model        |
|--|---------------------|----------------------|-----------------|------------------|-----------------------------|-----------------------------------|-----------------|--------------|
|  | NC                  | Solenoid/Spring      | Internal        | Collected#       | 3 ... 10                    | –                                 | 1000            | V45AA11D-*1) |
|  | NC                  | Solenoid/Spring      | External        | Not collected    | 0 ... 10                    | 1,5 + (0,35 x operating pressure) | 1000            | V45AA22D-*1) |
|  | NO                  | Solenoid/Spring      | Internal        | Collected#       | 3 ... 10                    | –                                 | 1000            | V45AB11D-*1) |
|  | NO                  | Solenoid/Spring      | External        | Not collected    | 0 ... 10                    | 1,5 + (0,35 x operating pressure) | 1000            | V45AB22D-*1) |
|  | NO/NC               | Solenoid/Spring      | Internal        | Collected#       | 3 ... 10                    | –                                 | 1000/1100       | V45AC11D-*1) |
|  | NO/NC               | Solenoid/Spring      | External        | Not collected    | 0 ... 10                    | 1,5 + (0,35 x operating pressure) | 1000/1100       | V45AC22D-*1) |

### 5/2 Solenoid pilot actuated glandless and softseal valves

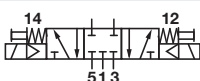
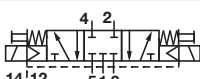



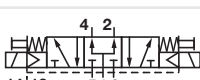
| Symbol   | Pilot<br>supply | Pilot<br>exhaust | Operator<br>14      | Operator<br>12 | Operating pressure<br>(bar) | Pilot pressure<br>(bar) | Sealing<br>system | Flow<br>(l/min) | Model        |
|--|-----------------|------------------|---------------------|----------------|-----------------------------|-------------------------|-------------------|-----------------|--------------|
|  | Internal        | Collected #      | Solenoid            | Air spring     | 1 ... 10                    | –                       | Glandless         | 900             | V44A513D-*1) |
|  | External        | Not collected    | Solenoid            | Air spring     | -0,9 ... 16                 | 1 ... 10                | Glandless         | 900             | V44A523D-*1) |
|  | Internal        | Collected #      | Solenoid            | Spring         | 1,6 ... 10                  | –                       | Glandless         | 900             | V44A517D-*1) |
|  | Internal        | Collected #      | Solenoid            | Spring         | 2 ... 10                    | –                       | Soft              | 1200            | V45A517D-*1) |
|  | External        | Not collected    | Solenoid            | Spring         | -0,9 ... 16                 | 1,6 ... 10              | Glandless         | 900             | V44A527D-*1) |
|  | External        | Not collected    | Solenoid            | Spring         | -0,9 ... 10                 | 2 ... 10                | Soft              | 1200            | V45A527D-*1) |
|  | Internal        | Collected #      | Solenoid            | Solenoid       | 2 ... 10                    | –                       | Glandless         | 900             | V44A511D-*1) |
|  | Internal        | Collected #      | Solenoid            | Solenoid       | 2 ... 10                    | –                       | Soft              | 1200            | V45A511D-*1) |
|  | External        | Not collected    | Solenoid            | Solenoid       | -0,9 ... 16                 | 2 ... 10                | Glandless         | 900             | V44A522D-*1) |
|  | External        | Not collected    | Solenoid            | Solenoid       | -0,9 ... 10                 | 2 ... 10                | Soft              | 1200            | V45A522D-*1) |
|  | Internal        | Collected #      | Solenoid (priority) | Solenoid       | 2 ... 10                    | –                       | Glandless         | 900             | V44A591D-*1) |
|  | External        | Not collected    | Solenoid (priority) | Solenoid       | -0,9 ... 16                 | 2 ... 10                | Glandless         | 900             | V44A592D-*1) |

\*1) Insert voltage code from tables on page 3

# Pilot exhaust collected and exhausted via port 14

NO = Normally open, NC = Normally closed

**5/3 Solenoid pilot actuated glandless and softseal valves**

| Symbol  | Function | Pilot supply | Pilot exhaust | Operator 14 | Operator 12 | Operating pressure (bar) | Pilot pressure (bar) | Sealing system | Flow (l/min) | Model        |
|---|----------|--------------|---------------|-------------|-------------|--------------------------|----------------------|----------------|--------------|--------------|
|  | APB      | Internal     | Collected #   | Solenoid    | Solenoid    | 2 ... 10                 | –                    | Glandless      | 900          | V44A611D-*1) |
|   | APB      | Internal     | Collected #   | Solenoid    | Solenoid    | 2,5 ... 10               | –                    | Soft           | 1150         | V45A611D-*1) |
|  | APB      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 16              | 2 ... 10             | Glandless      | 900          | V44A622D-*1) |
|   | APB      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 10              | 2,5 ... 10           | Soft           | 1150         | V45A622D-*1) |
|  | COE      | Internal     | Collected #   | Solenoid    | Solenoid    | 2 ... 10                 | –                    | Glandless      | 900          | V44A711D-*1) |
|   | COE      | Internal     | Collected#    | Solenoid    | Solenoid    | 2,5 ... 10               | –                    | Soft           | 1150         | V45A711D-*1) |
|  | COE      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 16              | 2 ... 10             | Glandless      | 900          | V44A722D-*1) |
|   | COE      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 10              | 2,5 ... 10           | Soft           | 1150         | V45A722D-*1) |
|  | COP      | Internal     | Collected #   | Solenoid    | Solenoid    | 2 ... 10                 | –                    | Glandless      | 900          | V44A811D-*1) |
|   | COP      | Internal     | Collected #   | Solenoid    | Solenoid    | 2,5 ... 10               | –                    | Soft           | 1150         | V45A811D-*1) |
|  | COP      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 16              | 2 ... 10             | Glandless      | 900          | V44A822D-*1) |
|   | COP      | External     | Not collected | Solenoid    | Solenoid    | -0,9 ... 10              | 2,5 ... 10           | Soft           | 1150         | V45A822D-*1) |

\*1) Insert voltage code from tables below

# Pilot exhaust collected and exhausted via port 14

APB = All Ports Blocked COE = Centre Open Exhaust COP = Centre open pressure

**Electrical details for solenoid operators**

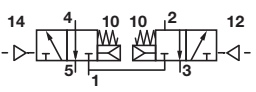
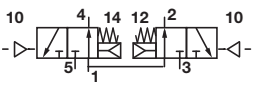
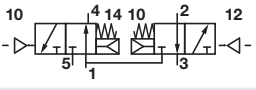
|                              |   |
|------------------------------|---|
| <b>Voltage tolerances</b>    | -10%/+15%   |
| <b>Rating</b>                | 100 % Continuous duty   |
| <b>Inlet orifice</b>         | 0,8 mm  |
| <b>Electrical connection</b> | 15 mm DIN EN 175301-803 (DIN 43 650) Table C  |
| <b>Manual override</b>       | Shrouded push button, spring return<br>Convertible into lockable type with set-up kit,<br>part no. V70532-K00 (see next page) |
| <b>Protection class</b>      | IP 65 with sealed plug (ISO 6952) NEMA 4  |
| <b>Materials</b>             | PPS (body), FPM and NBR (seal)  |

**Voltage codes & spare pilots**

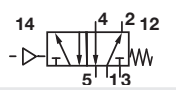
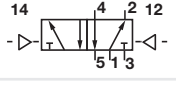
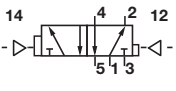
| Voltage        | Coil code | Current    | Spare pilot valve |
|----------------|-----------|------------|-------------------|
| 12 V d.c.      | C312A     | 1 W        | VZC7L2C1-C312A    |
| 24 V d.c.      | C313A     | 1,2 W      | VZC7L2C1-C313A    |
| 24 V 50/60 Hz. | C314A     | 2,1/1,5 VA | VZC7L2C1-C314A    |
| 48 V 50/60 Hz  | C316A     | 2,1/1,5 VA | VZC7L2C1-C316A    |
| 110 V d.c.     | C317A     | 1 W        | VZC7L2C1-C317A    |
| 115 V 50/60 Hz | C318A     | 2,1/1,5 VA | VZC7L2C1-C318A    |
| 230 V 50/60 Hz | C319A     | 2,1/1,5 VA | VZC7L2C1-C319A    |

Other voltages available on request. Spare pilot valves are delivered with mounting screws.

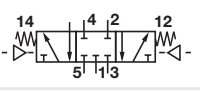
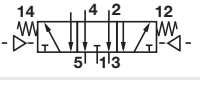
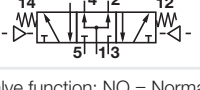
### 2 x 3/2 Air pilot actuated softseal valves

| Symbol   | Function<br>2 x 3/2 | Actuation/return<br>2 x 3/2 | Operating pressure<br>(bar) | Pilot pressure<br>(bar)           | Sealing<br>system | Flow<br>(l/min) | Model          |
|--|---------------------|-----------------------------|-----------------------------|-----------------------------------|-------------------|-----------------|----------------|
|  | NC                  | Air/Spring                  | 0 ... 10                    | 1,7 + (0,35 x operating pressure) | Soft              | 1100            | V45AA33A-X0020 |
|  | NO                  | Air/Spring                  | 0 ... 10                    | 1,7 + (0,35 x operating pressure) | Soft              | 1000            | V45AB33A-X0020 |
|  | NO/NC               | Air/Spring                  | 0 ... 10                    | 1,7 + (0,35 x operating pressure) | Soft              | 1000/1100       | V45AC33A-X0020 |

### 5/2 Air pilot actuated glandless and softseal valves

| Symbol   | Operator<br>14  | Operator<br>12 | Operating<br>pressure (bar) | Pilot<br>pressure (bar) | Sealing<br>system | Flow<br>(l/min) | Model          |
|--|-----------------|----------------|-----------------------------|-------------------------|-------------------|-----------------|----------------|
|   | Air             | Spring         | -0,9 ... 16                 | 1,6 ... 16              | Glandless         | 900             | V44A537A-X0090 |
|  | Air             | Spring         | -0,9 ... 10                 | 2 ... 10                | Soft              | 1200            | V45A537A-X0090 |
|   | Air             | Air            | -0,9 ... 16                 | 2 ... 16                | Glandless         | 900             | V44A533A-X0020 |
|  | Air             | Air            | -0,9 ... 10                 | 2 ... 10                | Soft              | 1200            | V45A533A-X0020 |
|  | Air (priority ) | Air            | -0,9 ... 16                 | 2 ... 16                | Glandless         | 900             | V44A533A-X0070 |

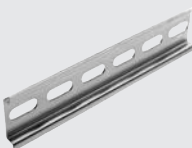





### 5/3 Air pilot actuated glandless and softseal valves

| Symbol   | Function | Operator<br>14 | Operator<br>12 | Operating<br>pressure (bar) | Pilot<br>pressure (bar) | Sealing<br>system | Flow<br>(l/min) | Model          |
|--|----------|----------------|----------------|-----------------------------|-------------------------|-------------------|-----------------|----------------|
|  | APB      | Air            | Air            | -0,9 ... 16                 | 2 ... 16                | Glandless         | 900             | V44A633A-X0020 |
|  | APB      | Air            | Air            | -0,9 ... 10                 | 2,5 ... 10              | Soft              | 1150            | V45A633A-X0020 |
|  | COE      | Air            | Air            | -0,9 ... 16                 | 2 ... 16                | Glandless         | 900             | V44A733A-X0020 |
|  | COE      | Air            | Air            | -0,9 ... 10                 | 2,5 ... 10              | Soft              | 1150            | V45A733A-X0020 |
|  | COP      | Air            | Air            | -0,9 ... 16                 | 2 ... 16                | Glandless         | 900             | V44A833A-X0020 |
|  | COP      | Air            | Air            | -0,9 ... 10                 | 2,5 ... 10              | Soft              | 1150            | V45A833A-X0020 |

Valve function: NO = Normally open, NC = Normally closed







APB = All Ports Blocked, COE = Centre Open Exhaust, COP = Centre Open Pressure

**Accessories**






| DIN EN 50 022 rail (1 m)  | DIN-rail mounting kit   | Blanking disc to modular sub-base   | Manual override set-up kit  | Blanking plate for unused station   | Transition plate V40/V41 » V44/V45  |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| V10009-C00 (35 x 7,5 mm)<br>V10592-C01 (35 x 15 mm)                               | V70531-KA0  | V70522-K00 (Ports 1,3,5)<br>V70523-K00 (Ports 12 & 14)                            | V70532-K00  | V70500-KA0  | V70436-K00<br>V70436-B00 *1)  |

\*3) With supply and exhaust ports

**Sandwich plates**

| Intermediate supply/exhaust manifold  | Single valve shut-off plate   | Single pressure regulator plate   | Double pressure regulator plate  | Flow regulator plate  | Sandwich plate with additional pressure port 1                                      |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| Page 9  | Page 9  | Page 11 & 12  | Page 12  | Page 9  | Page 10   |
| V70529-BA0 (G1/4)   | V70530-KA0 (Port 1 blocked)   | V70527-KA1 (Port 1 reg.)<br>V70527-KA2 (Port 2 reg.)<br>V70527-KA3 (Port 4 reg.)  | V70527-KA4 (Ports 2+4 reg.)  | V70528-KA0 (Ports 3+5 reg.)   | V70535-B50 (G1/4)   |

**Sub-bases and end plates**

| Single station sub-base   | Double station modular sub-base   | Single station modular sub-base   | End plate kit   | Fixed length sub-base   |
|---|---|---|---|---|
|  |  |  |  |  |
| Page 8  | Page 7  | Page 7  | Page 7  | Page 8  |

**Connector plug - ordered separately**

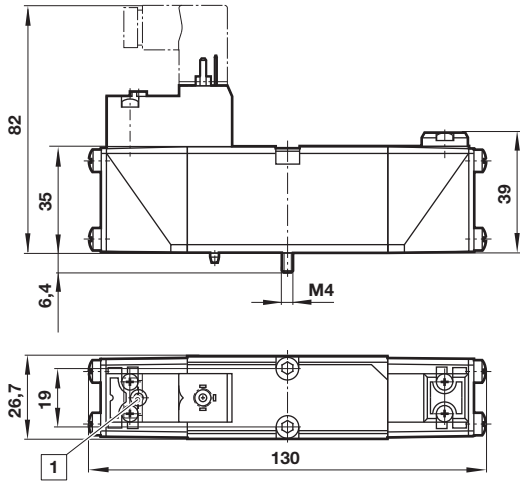
I15 mm DIN EN 175301-803  
(DIN 43 650) Table C



V10027-D00  
250 V a.c./300 V d.c.

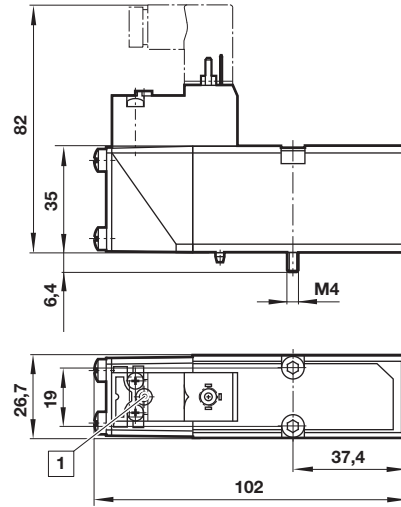
**Valve dimensions**

V44A5\*3D-C3\*\*\*  
5/2 Single solenoid pilot valve  
Air spring return

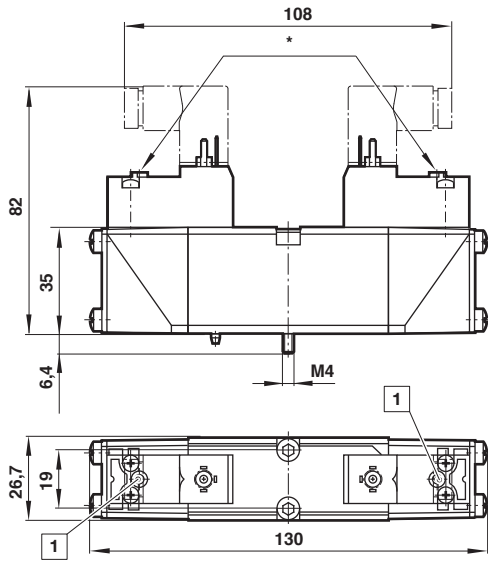


V44A5\*7D-C3\*\*\* & V45A5\*7D-C3\*\*\*  
5/2 Single solenoid pilot valve  
Mechanical spring return

Dimensions in mm  
Projection/First angle

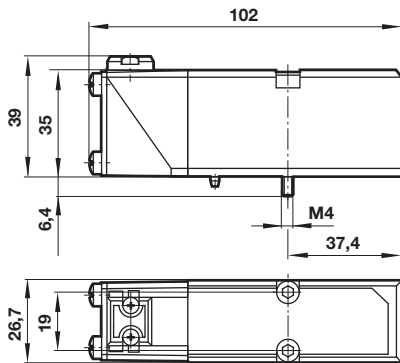


V44A5\*\*D-C3\*\*\* & V45A5\*\*D-C3\*\*\*  
5/2 Double solenoid pilot valve  
V44A\*\*\*D-C3\*\*\* & V45A\*\*\*D-C3\*\*\*  
2x3/2 + 5/3 Double solenoid pilot valve

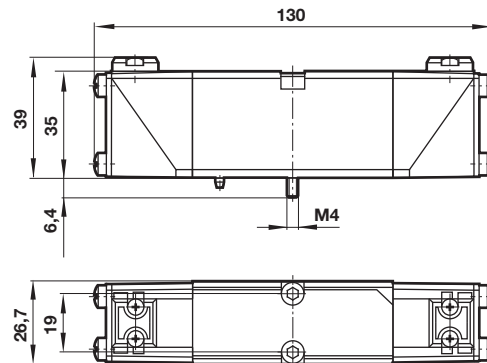


1 Manual override

V44A537A-X00\*0 & V45A537A-X00\*0  
5/2 Single air pilot valve

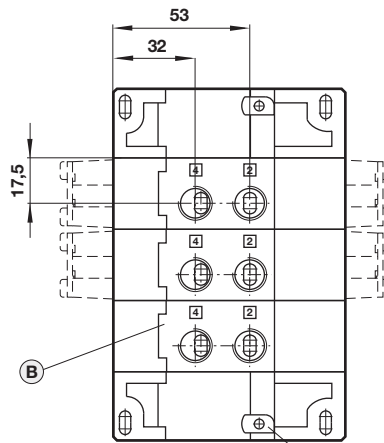


V44A\*33A-X00\*0 & V45A\*33A-X00\*0  
2 x 3/2, 5/2 + 5/3 Double air pilot valve

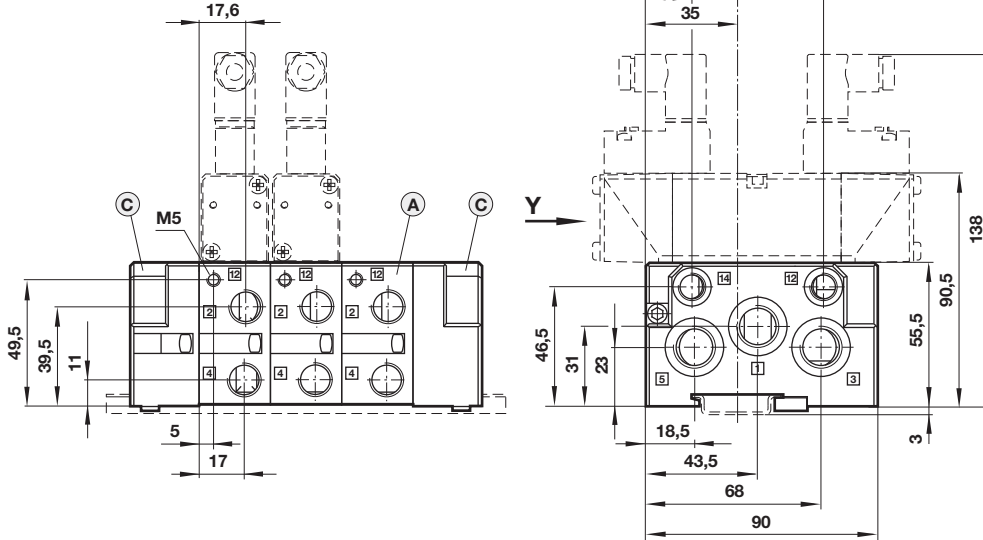


**Modular sub-bases parts for DIN rail or surface mounting**  
**Bottom ported sub-base**

Dimensions in mm  
Projection/First angle

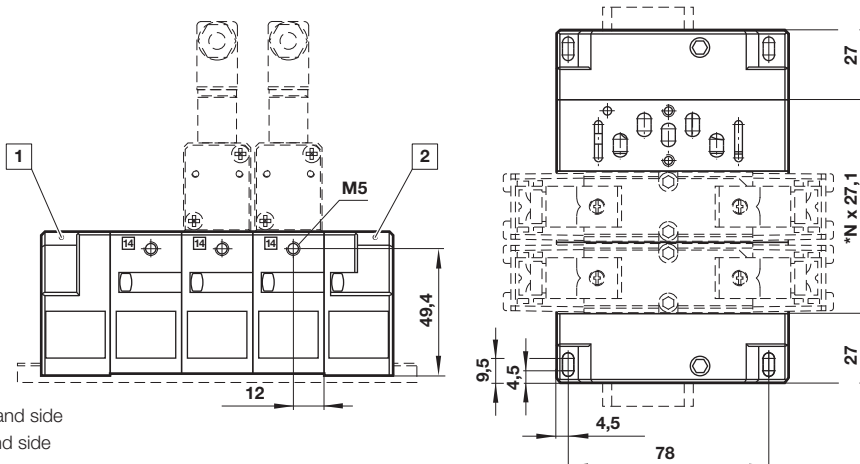


**Side ported sub-base**



**Bottom and side ported sub-base**

View Y



| Code | Ports 2 & 4 | Ports 12/14 |
|------|-------------|-------------|
| B    | G1/4        | M5          |
| P    | 1/8 NPTF    | M5          |
| R    | 1/4 NPTF    | M5          |
| 8    | Ø 8 mm PIF  | M5          |
| Y    | Ø 6 mm PIF  | M5          |
| 2    | Ø 3/8 PIF   | M5          |

N = number of stations

x = Insert port type from table below

Note: Port 14 either used for external pilot air supply or for collected pilot air exhaust.

**Therefore, never plug port 14 when using valves with internal pilot air supply.**

Port 12 is not used, plugging not necessary.

- 1 Right hand side
- 2 Left hand side

**Individual components**

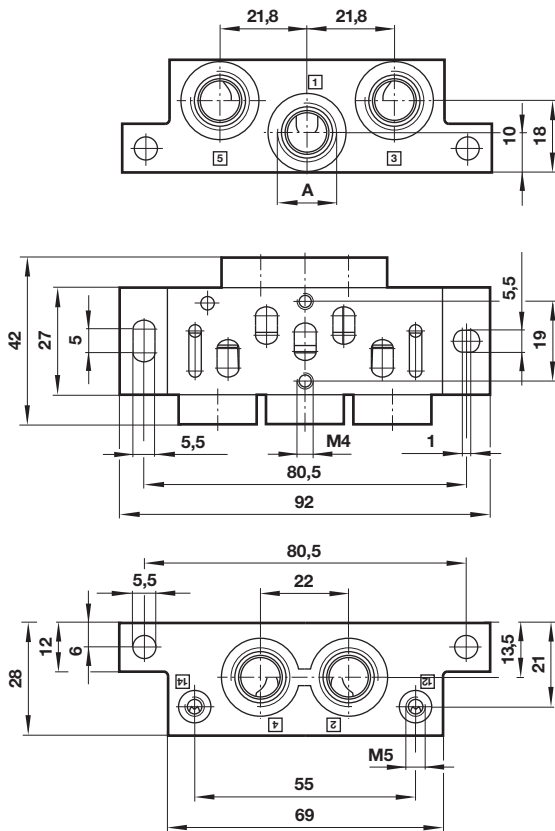
|                             |                     |  |  |   |
|-----------------------------|---------------------|--|--|---|
| <b>Modular sub-base (A)</b> | Ports 2+4 on side   | V70525-x5F (0,18 kg)                           |  |   |
| <b>Modular sub-base (A)</b> | Ports 2+4 on side   | Pilot ports 12+14 V70526-x5F (0,18 kg)         |  |   |
| <b>Modular sub-base (B)</b> | Ports 2+4 on bottom | V70525-BAE (0,18 kg)                           |  |   |
| <b>Modular sub-base (B)</b> | Ports 2+4 on bottom | Pilot ports 12+14 on side V70526-BAE (0,18 kg) |  |   |
| <b>End plate kit (C)</b>    | Side ported         | V70524-CAC (0,36 kg) (G3/8, 12 & 14 G1/8)      | V70524-SAC (0,36 kg) (3/8 NPTF 12 & 14 1/8 NPTF) | End ported end caps<br>1 left hand and 1 right hand |

**Accessories**

|  |                 |                      |
|--|-----------------|----------------------|
| <b>DIN EN 50022 rail</b>                 | 35 x 7,5 mm, 1m | V10009-C00 (0,31 kg) |
| <b>DIN EN 50022 rail</b>                 | 35 x 15 mm, 1m  | V10592-C01 (1,02 kg) |
| <b>DIN rail (D)</b>                      | Mounting kit    | V70531-KAO (0,01 kg) |
| <b>Blanking disk to modular sub-base</b> | Ports 1, 3, 5   | V70522-K00 (0,01 kg) |
| <b>Blanking disk to modular sub-base</b> | Ports 12+14     | V70523-K00 (0,01 kg) |

Single station sub-base – side ported with pilot ports

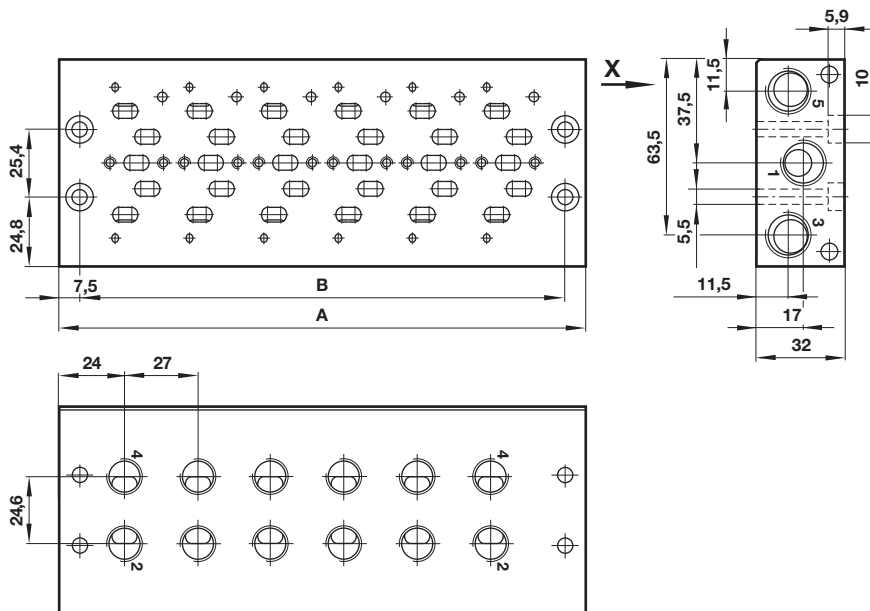
Dimensions in mm  
Projection/First angle



| Symbol | Port size A                                     | Model      |
|--------|---|------------|
|        | G1/4 side ported with pilot ports<br>0,11 kg    | V70501-BAB |
|        | NPTF1/4 side ported with pilot ports<br>0,24 kg | V70501-RAB |

Note: Pilot ports = M5

Fixed length sub-base - bottom ported

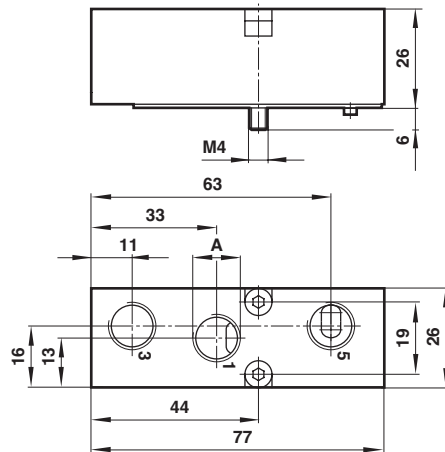


| Number of stations | A   | B   | Weight (kg) | Model      | Code | Ports 2 & 4 | Ports 1,3 & 5 |
|--------------------|-----|-----|-------------|------------|------|-------------|---------------|
| 2                  | 83  | 68  | 0,4         | V70502-xA0 | B    | G1/4        | G3/8          |
| 4                  | 137 | 122 | 0,65        | V70504-xA0 | R    | 1/4NPTF     | 3/8 NPTF      |
| 6                  | 191 | 176 | 0,91        | V70506-xA0 |      |             |               |
| 8                  | 245 | 230 | 1,15        | V70508-xA0 |      |             |               |
| 10                 | 299 | 284 | 1,41        | V70510-xA0 |      |             |               |
| 12                 | 353 | 338 | 1,66        | V70512-xA0 |      |             |               |

Note: This sub-base is suitable for solenoid pilot actuated valves with internal pilot air supply only

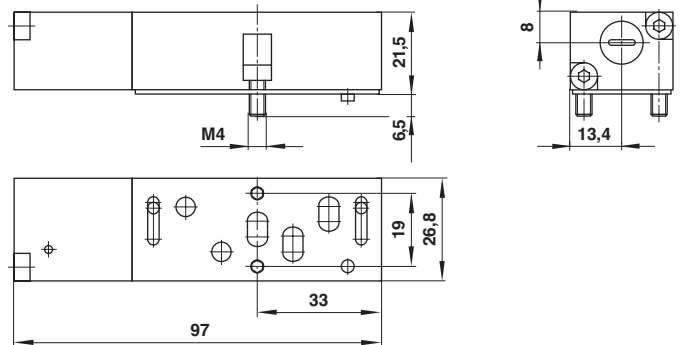
x = Insert port type from table

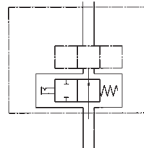


**Intermediate supply/exhaust manifold**


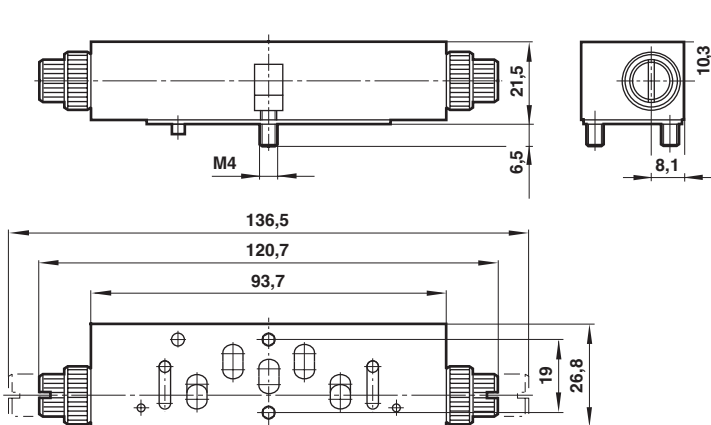
| Port size A    | Model      |
|----------------|------------|
| G1/4 (0,12 kg) | V70529-BA0 |

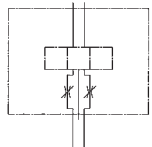
**Single valve shut-off plate**

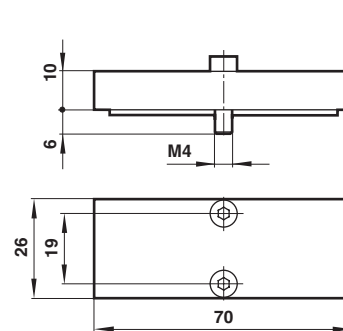
 Dimensions in mm  
Projection/First angle


| Symbol   | Description  | Model      |
|--|--|------------|
|  | Single shut-off plate supplied with gasket (0,13 kg) | V70530-KA0 |

Allows individual exchange of valve, while valve island is pressurised by port 1.  
Note: Flow restricted to max. 500 l/min.

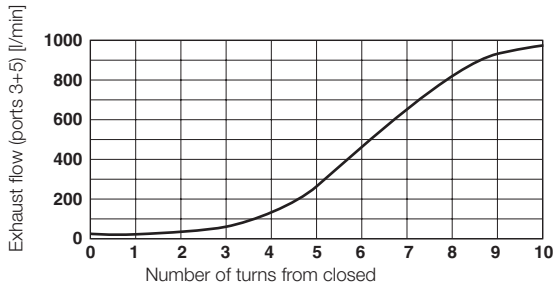
**Flow regulator plate**


| Symbol  | Description                                   | Model      |
|---|---|------------|
|  | Flow regulator supplied with gasket (0,17 kg) | V70528-KA0 |

**Blanking plate**


| Description  | Model      |
|--|------------|
| Blanking plate for blocking of unused stations (supplied with gasket, 0,05 kg) | V70500-KA0 |

### Dual regulation of exhaust ports 3 & 5

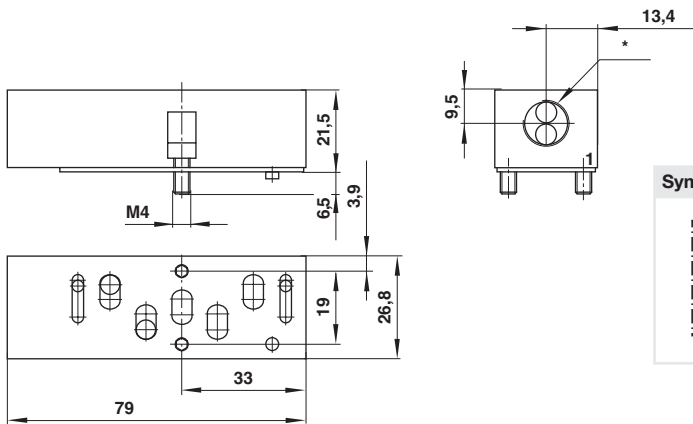


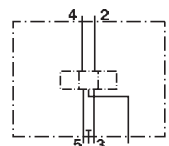

Flow: Port 1 > 2 & 1 > 4: remains unchanged  
Flow measured at 6 bar inlet, pressure drop 1 bar

### Flow characteristics for pressure regulator plates

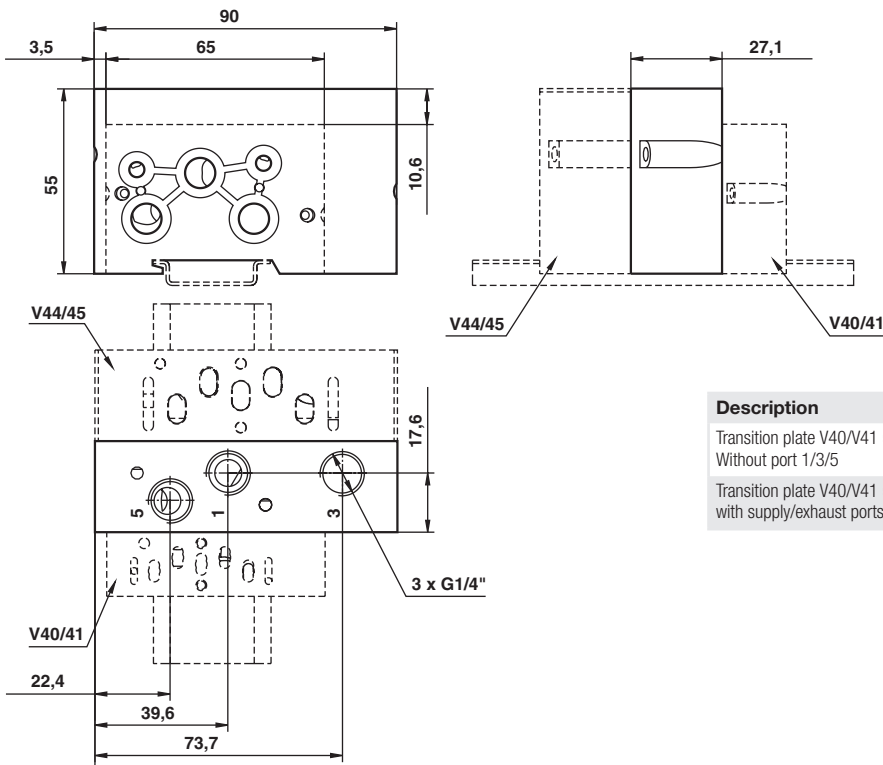
Dimensions in mm  
Projection/First angle

#### Sandwich plate with additional pressure port 1



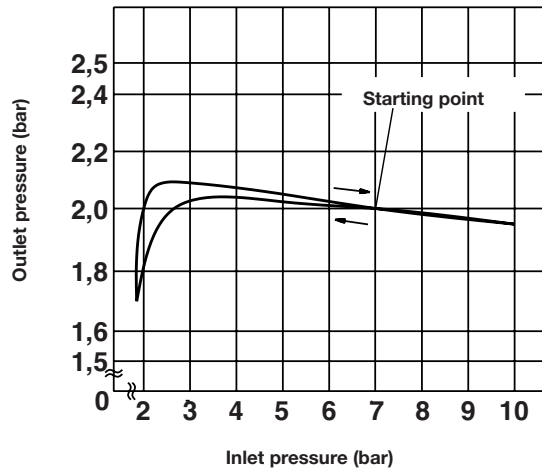
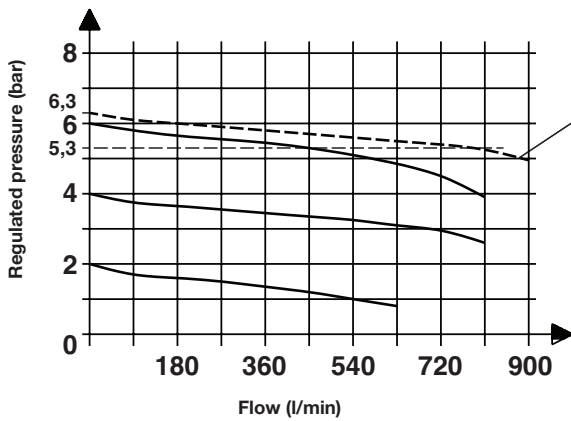
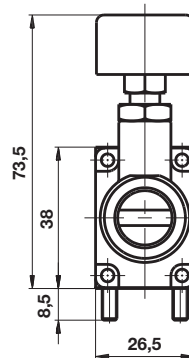
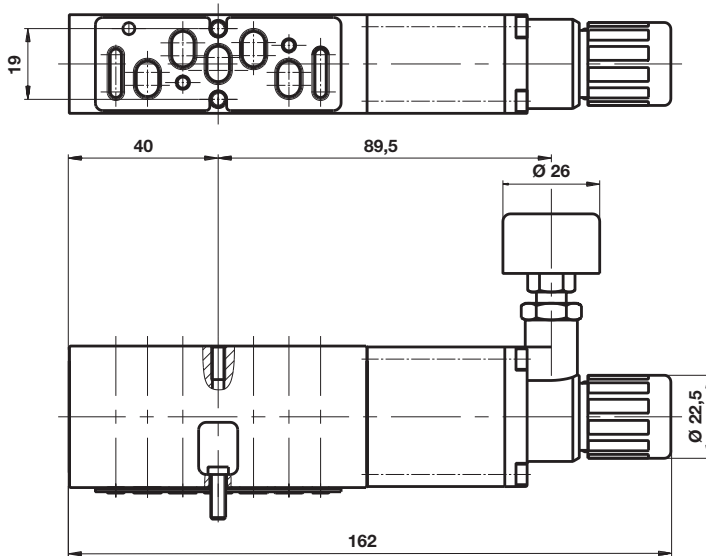
| Symbol  | Description  | Model      |
|---|--|------------|
|   | Sandwich plate with additional port 1 G1/4, supplied with gasket (0,12 kg) | V70535-BA0 |
|  | Sandwich plate with additional port 1 G1/4, supplied with gasket (0,12 kg) | V70535-RA0 |

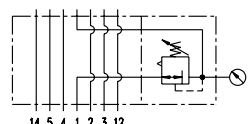
#### Transition plate #18 mm > #26 mm



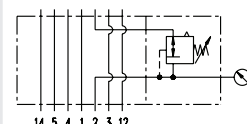
| Description  | Model      |
|--|------------|
| Transition plate V40/V41 » V44/V45<br>Without port 1/3/5             | V70436-K00 |
| Transition plate V40/V41 » V44/V45<br>with supply/exhaust ports G1/4 | V70436-B00 |

**Flow characteristics for pressure regulator plates**

 Dimensions in mm  
Projection/First angle

**Pressure regulator plates (including gauges)**


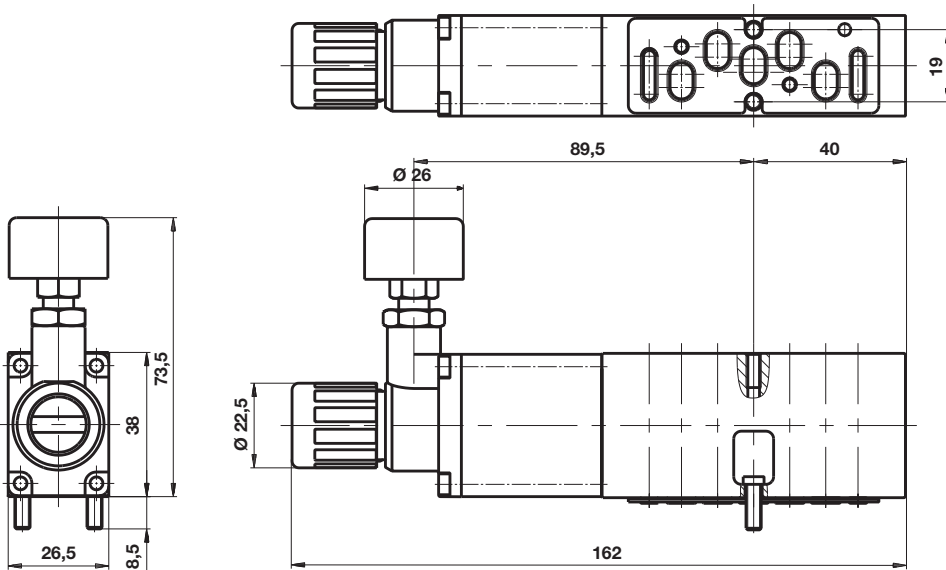
| Symbol  | Description                    | Model      |
|---|--------------------------------|------------|
|  | Regulation of port 1 (0,36 kg) | V70527-KA1 |

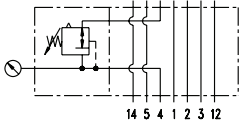
Maximum inlet pressure 16 bar. Regulated pressure 1 ... 10 bar

| Symbol   | Description                    | Model      |
|--|--------------------------------|------------|
|  | Regulation of port 2 (0,36 kg) | V70527-KA2 |

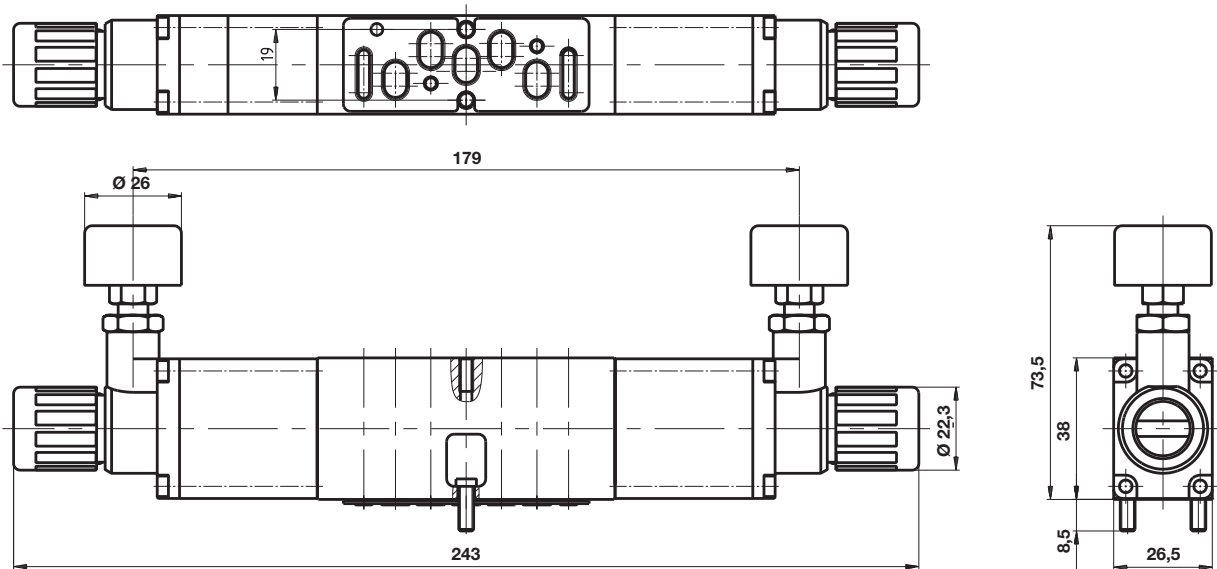
Maximum inlet pressure 16 bar. Regulated pressure 1 ... 10 bar

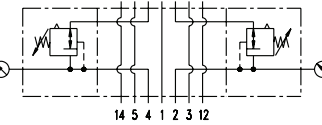
Dimensions in mm  
Projection/First angle



| Symbol   | Description                    | Model      |
|--|--------------------------------|------------|
|  | Regulation of port 4 (0,36 kg) | V70527-KA3 |

Maximum inlet pressure 16 bar. Regulated pressure 0,5 ... 10 bar



| Symbol   | Description                       | Model      |
|--|-----------------------------------|------------|
|  | Regulation of ports 2+4 (0,56 kg) | V70527-KA4 |

Maximum inlet pressure 16 bar. Regulated pressure 0,5 ... 10 bar

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under

### »Technical features/data«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult IMI NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.