Important!
Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.

NB!
All technical data in this catalogue is typical only. The air quality is decisive for the valve life: see ISO 8573.

WARNING
FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.
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Clamp cylinders are single acting pneumatic cylinders with built-in oleo-pneumatic intensifiers. They can be used to solve most clamping, tightening etc. problems.

- Compact size for large forces (up to 2100 daN depending on the model and air pressure).
- Operated using a compressed air supply (no special installation required)
- Easy adjustment thanks to a fully threaded body
- Simple and rapid installation.

**Clamping examples**

- **Clamping with intensified force**
  \[ \frac{L_1}{L_2} < 2 \]

- **Horizontal clamping**

- **Clamping of cylindrical component using V groove clamp end**

- **Vertical clamping**
Ordering references

<table>
<thead>
<tr>
<th>Order code</th>
<th>Max stroke (mm)</th>
<th>Ø external</th>
<th>Weight - g (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
<td>36</td>
<td>570 (1.3)</td>
</tr>
<tr>
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<td>6</td>
<td>36</td>
<td>640 (1.4)</td>
</tr>
<tr>
<td>VB369C</td>
<td>9</td>
<td>36</td>
<td>890 (2.0)</td>
</tr>
<tr>
<td>VB483C</td>
<td>3</td>
<td>48</td>
<td>1050 (2.3)</td>
</tr>
<tr>
<td>VB486C</td>
<td>6</td>
<td>48</td>
<td>1350 (3.0)</td>
</tr>
<tr>
<td>VB489C</td>
<td>9</td>
<td>48</td>
<td>1152 (2.5)</td>
</tr>
<tr>
<td>VB4812C</td>
<td>12</td>
<td>48</td>
<td>1840 (4.0)</td>
</tr>
<tr>
<td>VBH483C</td>
<td>3</td>
<td>48</td>
<td>1240 (2.7)</td>
</tr>
<tr>
<td>VB606C</td>
<td>6</td>
<td>60</td>
<td>2360 (5.2)</td>
</tr>
<tr>
<td>VB609C</td>
<td>9</td>
<td>60</td>
<td>3120 (6.9)</td>
</tr>
<tr>
<td>VB6012C</td>
<td>12</td>
<td>60</td>
<td>3810 (8.4)</td>
</tr>
<tr>
<td>VBH603C</td>
<td>3</td>
<td>60</td>
<td>2360 (5.2)</td>
</tr>
<tr>
<td>VBH606C</td>
<td>6</td>
<td>60</td>
<td>3700 (8.1)</td>
</tr>
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</table>

Mounting accessories

- Mounting block
- Rounded clamp piston end
- V groove clamp piston end

<table>
<thead>
<tr>
<th>Mounting for VB</th>
<th>Mounting block</th>
<th>Rounded end</th>
<th>V groove end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 36</td>
<td>FVA36-1</td>
<td>BVA36-16</td>
<td>BVA36-17</td>
</tr>
<tr>
<td>Ø 48</td>
<td>FVA48-1</td>
<td>BVA48-16</td>
<td>BVA48-17</td>
</tr>
<tr>
<td>Ø 60</td>
<td>FVA60-1</td>
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<td>BVA60-17</td>
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Seal kit for

Order code

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<tr>
<th>VB Ø 36</th>
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<th>VBH Ø 48</th>
<th>VB Ø 60</th>
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<td>JJVB36</td>
<td>JJVB48</td>
<td>JJVBH48</td>
<td>JJVB60</td>
<td>JJVBH60</td>
</tr>
</tbody>
</table>

Oil container suitable for all types of cylinder (250 ml capacity)
Model No.: BH680VB

Technical data

**Material specification**
- Body: Nickel plated steel
- Piston rod: Hardened steel
- Locking rings: Zinc plated steel
- End cap: Zinc plated steel
- Seals: Nitrile

**Operation**
- Temperature range: +5°C to +50°C (41°F to 122°F)
- Storage temperature: -20°C to +60°C (-4°F to 140°F)
- Pressure range: 1 to 9 bar (15 to 130 psi) (except VBH603 and VBH606: 7 bar (101psi max.)
- Air condition: Filtered air 40µ lubricated or non lubricated

**Maintenance**
For all operations see our maintenance instructions
All safety requirements must be observed.
PDE2636TCUK
VB Hydraulic Clamp

Technical data

Cylinder force

Note: The clamping time is given from the moment the clamp cylinder is pressurised to the time at when 90% of the clamping force is obtained, the cylinder completing a full stroke.

The release time is given from the moment the clamp cylinder starts to exhaust until the rod is fully retracted.

When the cylinder remains pressurised for more than 10 min. add 0.20 sec. to the release time.

These average times are given for information only. They will vary depending on the application and the cylinder inlet and exhaust circuits.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Max. stroke (mm)</th>
<th>Force at 6 bar daN (lbs)</th>
<th>Clamping time (s)</th>
<th>Release time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VB363C</td>
<td>3</td>
<td>240 (540)</td>
<td>0.10</td>
<td>1.00</td>
</tr>
<tr>
<td>VB366C</td>
<td>6</td>
<td>240 (540)</td>
<td>0.15</td>
<td>1.30</td>
</tr>
<tr>
<td>VB369C</td>
<td>9</td>
<td>240 (540)</td>
<td>0.20</td>
<td>1.50</td>
</tr>
<tr>
<td>VB483C</td>
<td>3</td>
<td>530 (1190)</td>
<td>0.30</td>
<td>1.30</td>
</tr>
<tr>
<td>VB486C</td>
<td>6</td>
<td>530 (1190)</td>
<td>0.40</td>
<td>1.60</td>
</tr>
<tr>
<td>VB489C</td>
<td>9</td>
<td>530 (1190)</td>
<td>0.50</td>
<td>1.90</td>
</tr>
<tr>
<td>VB4812C</td>
<td>12</td>
<td>530 (1190)</td>
<td>0.60</td>
<td>2.20</td>
</tr>
<tr>
<td>VBH483C</td>
<td>3</td>
<td>1060 (2380)</td>
<td>0.50</td>
<td>0.70</td>
</tr>
<tr>
<td>VB606C</td>
<td>6</td>
<td>1140 (2560)</td>
<td>0.50</td>
<td>1.90</td>
</tr>
<tr>
<td>VB609C</td>
<td>9</td>
<td>1140 (2560)</td>
<td>0.60</td>
<td>2.30</td>
</tr>
<tr>
<td>VB6012C</td>
<td>12</td>
<td>1140 (2560)</td>
<td>0.70</td>
<td>2.50</td>
</tr>
<tr>
<td>VBH603C</td>
<td>3</td>
<td>1800 (4000)</td>
<td>0.50</td>
<td>0.70</td>
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<tr>
<td>VBH606C</td>
<td>6</td>
<td>1800 (4000)</td>
<td>0.60</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Principle of operation

Air pressure applied to the pneumatic piston (1) causes the plunger to displace the enclosed oil in the hydraulic section of the cylinder (2). A high-pressure stroke results at the hydraulic piston (3) due to the differential areas of the two pistons.

The return of pistons (1) and (3) is caused by a return spring (4) when the air pressure is removed.
Technical data

Working conditions

Clamp cylinders must be installed so that the force is directed along the axis. (Take care that the exhaust ports are not blocked and that they are protected from swarf, cutting oil, dust, etc.)

Do not operate the cylinder at no-load. The clamp cylinder must always be operated in conjunction with a clamping fixture (clamp or block) to limit the stroke to within the maximum length specified in the ordering reference table.

We recommend an effective stroke equal to the max. length minus 1mm.

Please contact us for applications requiring force during part of the stroke (marking, crimping, punching, etc.) and high speeds.

Pneumatic Circuit

For correct use of clamp cylinders, we recommend applications of the circuit diagram opposite:

Dimensions (mm)

<table>
<thead>
<tr>
<th>Order code</th>
<th>ØA</th>
<th>ØD</th>
<th>ØE</th>
<th>ØF</th>
<th>G</th>
<th>H</th>
<th>K</th>
<th>ØL</th>
<th>P</th>
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<tbody>
<tr>
<td>VB363C</td>
<td>M36 x 1.5</td>
<td>98.0</td>
<td>42</td>
<td>G1/8</td>
<td>22</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB366C</td>
<td>M36 x 1.5</td>
<td>127.5</td>
<td>42</td>
<td>G1/8</td>
<td>22</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB369C</td>
<td>M36 x 1.5</td>
<td>185.0</td>
<td>42</td>
<td>G1/8</td>
<td>22</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB483C</td>
<td>M48 x 1.5</td>
<td>111.0</td>
<td>56</td>
<td>G1/8</td>
<td>32</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB486C</td>
<td>M48 x 1.5</td>
<td>148.0</td>
<td>56</td>
<td>G1/8</td>
<td>32</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB489C</td>
<td>M48 x 1.5</td>
<td>188.0</td>
<td>56</td>
<td>G1/8</td>
<td>32</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
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<tr>
<td>VB4812C</td>
<td>M48 x 1.5</td>
<td>234.0</td>
<td>56</td>
<td>G1/8</td>
<td>32</td>
<td>12</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>VB603C</td>
<td>M60 x 2</td>
<td>175.0</td>
<td>70</td>
<td>G1/4</td>
<td>40</td>
<td>14</td>
<td>5</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>VB606C</td>
<td>M60 x 2</td>
<td>175.0</td>
<td>70</td>
<td>G1/4</td>
<td>40</td>
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<td>5</td>
<td>17</td>
<td>25</td>
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<td>70</td>
<td>G1/4</td>
<td>40</td>
<td>14</td>
<td>5</td>
<td>17</td>
<td>25</td>
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<tr>
<td>VB609C</td>
<td>M60 x 2</td>
<td>249.0</td>
<td>70</td>
<td>G1/4</td>
<td>40</td>
<td>14</td>
<td>5</td>
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<td>25</td>
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<tr>
<td>VB6012C</td>
<td>M60 x 2</td>
<td>314.0</td>
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<td>G1/4</td>
<td>40</td>
<td>14</td>
<td>5</td>
<td>17</td>
<td>25</td>
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VB Hydraulic Clamp

Dimensions (mm)

Mounting accessories

Mounting block

<table>
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<tr>
<th>For VB</th>
<th>Order code</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>ØD</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>P</th>
<th>R</th>
<th>ØV</th>
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<tbody>
<tr>
<td>Ø 36</td>
<td>FVA36-1</td>
<td>24.0</td>
<td>38.0</td>
<td>50.0</td>
<td>36.2</td>
<td>54.0</td>
<td>18.0</td>
<td>-</td>
<td>40.0</td>
<td>70.0</td>
<td>11.0</td>
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<tr>
<td>Ø 48</td>
<td>FVA48-1</td>
<td>30.0</td>
<td>47.0</td>
<td>60.0</td>
<td>48.2</td>
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<td>20.0</td>
<td>-</td>
<td>50.0</td>
<td>90.0</td>
<td>13.5</td>
</tr>
<tr>
<td>Ø 60</td>
<td>FVA60-1</td>
<td>36.0</td>
<td>57.0</td>
<td>70.0</td>
<td>60.2</td>
<td>90.0</td>
<td>20.0</td>
<td>36.0</td>
<td>60.0</td>
<td>110.0</td>
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Rounded clamp piston end

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<th>P</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 36</td>
<td>BVA36-16</td>
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<td>25</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Ø 48</td>
<td>BVA48-16</td>
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<td>40</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td>Ø 60</td>
<td>BVA60-16</td>
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<td>50</td>
<td>18</td>
<td>50</td>
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V groove clamp piston end

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<th>e</th>
<th>P</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 36</td>
<td>BVA36-17</td>
<td>22</td>
<td>5</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Ø 48</td>
<td>BVA48-17</td>
<td>32</td>
<td>5</td>
<td>15</td>
<td>40</td>
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<tr>
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<td>BVA60-17</td>
<td>40</td>
<td>8</td>
<td>18</td>
<td>50</td>
</tr>
</tbody>
</table>
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Tel: +81 (0)3 6408 3901

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Tel: +82 2 559 0400

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