Pilot-to-Open Check Valves

**PILOT OPERATED**

Full Adjustment 5 Turns

- X Control
- B, E, P Controls
- Ext.
- Valves
- L Control
- Load
- Cavity
- Cartridge Dimensions
- Cartridge Model Code
- Cavity
- Installation Torque
- (lb. ft.)
- **See page 244 for information on Control Options**

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Typical Cartridge Model Code</th>
<th>Cavity</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>X,B,E,P</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5 GPM</td>
<td>CKBB – XCN T - 163A</td>
<td>1.22</td>
<td>3/4”</td>
<td>1.25</td>
<td>2.55</td>
<td>25/30</td>
<td></td>
</tr>
<tr>
<td>15 GPM</td>
<td>CKCB – XCN T - 11A</td>
<td>1.38</td>
<td>7/8”</td>
<td>1.19</td>
<td>2.50</td>
<td>30/35</td>
<td></td>
</tr>
<tr>
<td>30 GPM</td>
<td>CKEB – XCN T - 2A</td>
<td>1.38</td>
<td>1 1/8”</td>
<td>1.38</td>
<td>2.81</td>
<td>45/50</td>
<td></td>
</tr>
<tr>
<td>60 GPM</td>
<td>CKGB – XCN T - 17A</td>
<td>1.81</td>
<td>1 1/4”</td>
<td>1.81</td>
<td>3.28</td>
<td>150/160</td>
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</tr>
<tr>
<td>120 GPM</td>
<td>CKIB – XCN T - 19A</td>
<td>2.50</td>
<td>1 5/8”</td>
<td>2.31</td>
<td>3.94</td>
<td>350/375</td>
<td></td>
</tr>
</tbody>
</table>

**Nominal Capacity**
- B *7.5 GPM
- C 15 GPM
- E 30 GPM
- G 60 GPM
- I 120 GPM

**Version**
- B Bleed through Pilot
- D Sealed Pilot Piston
- L Manual Load Release
- B 1/4” BSPP External Pilot Port 3 blocked
- E SAE-4 External Pilot Port 3 blocked
- P 1/4” NPTF External Pilot Port 3 blocked

**Control**
- X Standard Pilot
- A 4 psi
- B 15 psi
- C 30 psi
- D 50 psi
- E 75 psi
- F 100 psi
- N Buna-N
- V Viton

**Cracking Pressure**

**Seal**

**OPTION ORDERING INFORMATION**

*CKBB, CKBD available with C and E Cracking Pressure only.*
Pilot-to-Open Check Valves, External Pilot, Non-vented Applications

Pilot operated checks are used to hold loads in position and for that reason should be mounted as close to the actuator as possible. Pilot-to-open checks are non-modulating, on/off devices that allow free flow through the check valve from port 2 (valve) to port 1 (load). Reverse flow is blocked until a pilot pressure directly proportional to the load pressure is sensed at port 3 (pilot), so that a pilot piston displaces the check from its seat.

Design Concepts and Features

- 3:1 pilot ratio is suitable for most applications.
- Low leakage when closed, less than 1 drop/min.
- Optional, emergency manual release screw, in case pilot pressure is not available.
- Pilot piston leakage is present on CK*B models between port 3 and port 2 in order to purge trapped air in the pilot line. Optional models (CK*D) feature a sealed pilot piston for applications where cross-port leakage is undesirable.

Note: Pressure at port 2 is directly additive to the pilot pressure required at port 3 (pilot). For applications where this occurs, a 4 port vented pilot operated check cartridge (CV*V-***) should be considered.

General Application Requirements

- Operating Temperature Range: Buna-N seals -50° F to 200° F, Viton seals 0° F to 250° F.
- Viscosity Range: 60-3000 SUS.
- Fluid Contamination Level: ISO 4406 18/15 or better; Recommend β10 ≥ 75 to achieve ISO 18/15 or better in most systems.
- Factory Pressure Setting for cartridge is established at cracking flow.