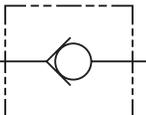
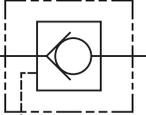
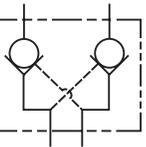
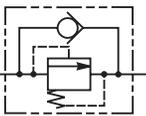


|   | SERIES  | CAVITY                            | DESCRIPTION                         | FLOW<br>LPM/GPM                                     | PRESSURE<br>BAR/PSI                | PAGE NO. |          |      |
|---|---|-----------------------------------|-------------------------------------|---|------------------------------------|----------|----------|------|
|    | <b>STANDARD CHECKS</b>  |                                   |                                     |   |                                    |          |          |      |
|   |   | D1A060                            | 2U                                  | Check Valve Insert, Ball Type                       | 145/38                             | 420/6000 | CV5      |      |
|   |   | D1B125                            | 2C                                  | Check Valve Insert, Ball Type                       | 500/132                            | 420/6000 | CV6      |      |
|   |   | D0WB2                             | CAVOW-2                             | Cartridge Check, Ball Type                          | 3.5/0.9                            | 420/6000 | CV7      |      |
|   |   | D02B2                             | C08-2                               | Cartridge Check, Ball Type                          | 45/12                              | 420/6000 | CV8      |      |
|   | ☆   | CVH081P                           | C08-2                               | Cartridge Check, Poppet Type                        | 38/10                              | 350/5000 | CV9      |      |
|   | ☆   | CVH103P                           | C10-2                               | Cartridge Check, Poppet Type                        | 60/16                              | 350/5000 | CV10     |      |
|   |   | D04B2                             | C10-2                               | Cartridge Check, Ball Type                          | 160/42                             | 420/6000 | CV11     |      |
|   |   | CVH121P                           | C12-2                               | Cartridge Check, Poppet Type                        | 121/32                             | 350/5000 | CV12     |      |
|   |   | D06B2P                            | C16-2                               | Cartridge Check, Poppet Type                        | 280/74                             | 420/6000 | CV13     |      |
|   |   | CVH161P                           | C16-2                               | Cartridge Check, Poppet Type                        | 226/60                             | 350/5000 | CV14     |      |
|   |   | CVH201P                           | C20-2                               | Cartridge Check, Poppet Type                        | 303/80                             | 350/5000 | CV15     |      |
|   | ☆   | CVH104P                           | C10-2                               | Cartridge Check, Poppet Type<br>2 to 1 Flow Path    | 19/5                               | 350/5000 | CV16     |      |
|   |   | D06C2                             | C16-2                               | Cartridge Check, Poppet Type<br>2 to 1 Flow Path    | 500/132                            | 420/6000 | CV17     |      |
|   |  | <b>PILOT OPERATED CHECKS</b>      |                                     |   |                                    |          |          |      |
|   |   |                                   | CP084P                              | C08-3   | Single P.O. Check, Pilot on Port 1 | 19/5     | 207/3000 | CV18 |
|   |   | ☆                                 | CPH104P                             | C10-3   | Single P.O. Check, Pilot on Port 1 | 30/8     | 350/5000 | CV19 |
|   |   |                                   | CPH124P                             | C12-3   | Single P.O. Check, Pilot on Port 1 | 75/20    | 350/5000 | CV20 |
| ☆   |   | CSP(H)081                         |                                     | Single P.O. Check Package                           | 38/10                              | 350/5000 | CV21-22  |      |
| ☆   |   | CSP(H)103                         |                                     | Single P.O. Check Package                           | 60/16                              | 350/5000 | CV23-24  |      |
|   |   | CSP(H)161                         |                                     | Single P.O. Check Package, Steel Body               | 226/60                             | 350/5000 | CV25-26  |      |
|   |   | D4A020                            | 53-1                                | Single P.O. Check, Pilot on Port 3                  | 30/8                               | 420/6000 | CV27     |      |
|   |   | D4A040                            | 68-1                                | Single P.O. Check, Pilot on Port 3                  | 60/16                              | 420/6000 | CV28     |      |
|   |   | D3B125                            | 3C                                  | Single P.O. Check, Pilot on Port 3                  | 150/40                             | 420/6000 | CV29     |      |
|   |   | CPC101P                           | C10-3                               | Pilot to Close Check, Pilot on Port 3               | 20/5                               | 420/6000 | CV30     |      |
|  |   | <b>DUAL PILOT OPERATED CHECKS</b> |                                     |   |                                    |          |          |      |
|   |   | CPD084P                           | C08-4                               | Dual P.O. Check Cartridge                           | 19/5                               | 207/3000 | CV32     |      |
|   | ☆   | CDP(H)081                         |                                     | Dual P.O. Check Package                             | 38/10                              | 350/5000 | CV33-34  |      |
|   | ☆   | CDP(H)103                         |                                     | Dual P.O. Check Package                             | 60/16                              | 350/5000 | CV35-36  |      |
|   | CDP(H)161   |                                   | Dual P.O. Check Package, Steel Body | 226/60  | 350/5000                           | CV37-38  |          |      |
|  | <b>CHECK WITH RELIEF</b>  |                                   |                                     |   |                                    |          |          |      |
|   |   | D04F2                             | C10-2                               | Check With Thermal Relief,<br>Relieving Port 2 to 1 | 130/40                             | 420/6000 | CV39     |      |

\*Rated to 207 Bar/3000 PSI with Aluminum Body.

☆ Denotes New Winner's Circle Product Line.



CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

Technical Data

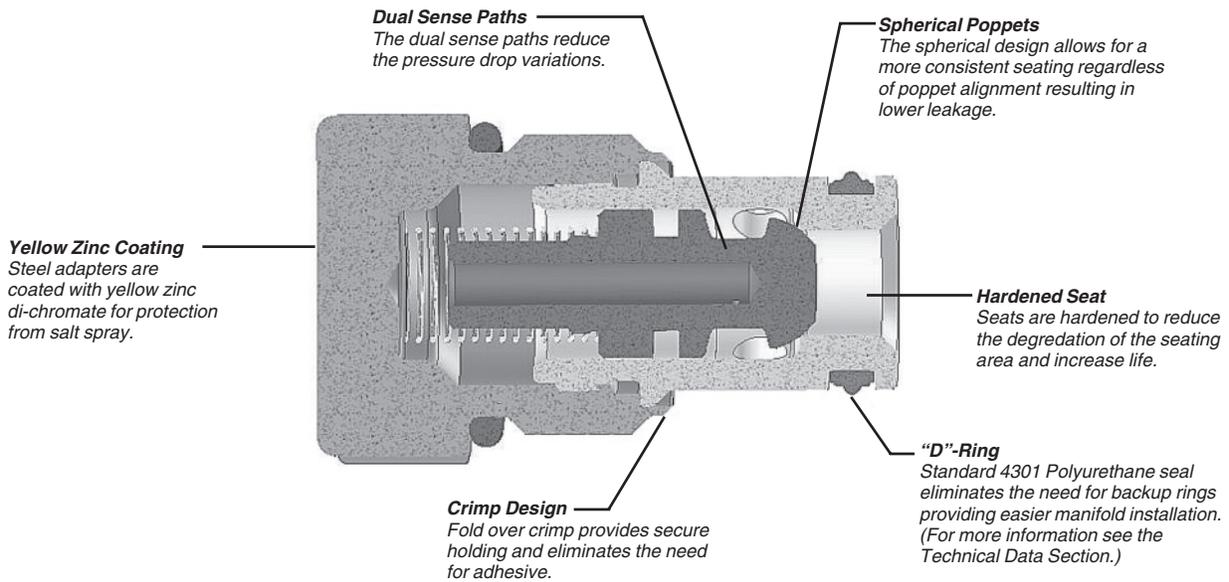
**INTRODUCTION:**

This technical tips section is designed to help familiarize you with the Parker line of Check Valves. In this section we present the products that are new to this catalog as well as some design features of our checks valves. In addition, we present common options available to help you in selecting products for your application. Finally we give a brief synopsis of the operation and applications of the various product offered in this section.

**NEW PRODUCTS:**

There are several new additions and product improvements to our Check Valve product line.

*Here are just some of the general design features and advantages to the "Winner's Circle" check valve.*



**COMMON OPTIONS:**

Since check valves and shuttles are fairly simple components, there are very few options. Here are the standard options you will find.

**Seals:** The Winner's Circle products feature a standard 4301 Polyurethane "D"-Ring. The "D"-Ring eliminates the need for backup rings. The majority of the products are available in Nitrile or Fluorocarbon Seals. You should match the seal compatibility to the temperature and fluid being used in your application.

**Crack Pressure:** Parker offers a number of standard crack pressure options for each valve. Check the model code pages for these options. The crack pressure is defined as the minimum amount of pressure that is needed to unseat the poppet. In pilot operated check applications, you may want to go with a slightly higher cracking pressure to keep the piston weight, friction, and drag from accidentally unseating the poppet.

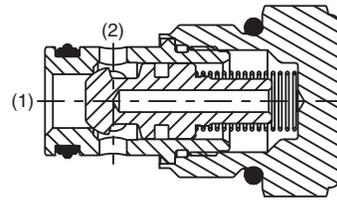
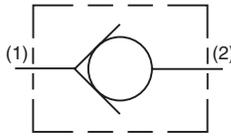
**Pilot Piston Seal:** On the pilot piston style pilot operated check valves, Parker offers the option to place a seal on the piston to reduce the leakage across the piston. **Note:** Sealing the pilot piston does not decrease the leakage across the poppet. In other words, if you are trying to reduce the leakage from the actuator port, sealing the piston will not help. While most applications do not require a seal on the piston, it can be advantageous in applications with very small pump flows where the lost fluid would have a high impact on actuator speed.

**PRODUCT TYPES / APPLICATIONS**

**Check Valve - Poppet Type**

Check valves are poppet style elements that allow free flow in one direction while preventing flow in the reverse direction.

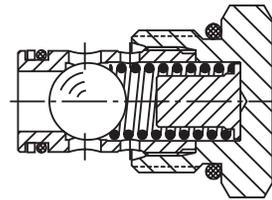
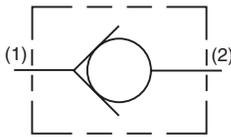
They can be used to isolate portions of a hydraulic circuit or to provide a free flow path around a restrictive valve.



**OPERATION** - Pressure on the inlet (port 1) of the check valve creates a force against the poppet, pushing it off its seat and permitting free flow to port 2. Reverse flow through the check is blocked by the poppet.

**Check Valve - Ball Type**

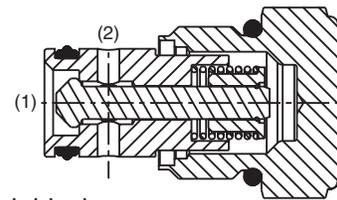
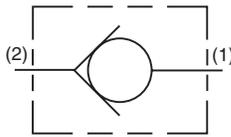
Ball type check valves are check valves that use a hardened steel ball to seal against the valve seat as opposed to a poppet. They are simple in their design and provide low leakage over the life of the system.



**OPERATION** - Pressure on the inlet (port 1) of the check valve creates a force on the steel ball pushing it off of its seat and permitting free flow to port 2. Reverse flow through the check is blocked by the steel ball on the seat.

**Side to Nose Check Valve**

Side to nose check valves are a special type of check valve where the free flow path is from the side of the cartridge valve to the nose. They functionally are the same as the standard check valve. Side to nose check valves are occasionally used by manifold designers to simply the flow path design of their blocks.



**OPERATION** - Pressure on the inlet (port 2) of the check valve creates a force against the poppet, pushing it off its seat and permitting free flow to port 1. Reverse flow through the check is blocked by the poppet.

|                      |
|----------------------|
| <b>CV</b>            |
| Check Valves         |
| <b>SH</b>            |
| Shuttle Valves       |
| <b>LM</b>            |
| Load/Motor Controls  |
| <b>FC</b>            |
| Flow Controls        |
| <b>PC</b>            |
| Pressure Controls    |
| <b>LE</b>            |
| Logic Elements       |
| <b>DC</b>            |
| Directional Controls |
| <b>MV</b>            |
| Manual Valves        |
| <b>SV</b>            |
| Solenoid Valves      |
| <b>PV</b>            |
| Proportional Valves  |
| <b>CE</b>            |
| Coils & Electronics  |
| <b>BC</b>            |
| Bodies & Cavities    |
| <b>TD</b>            |
| Technical Data       |

CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

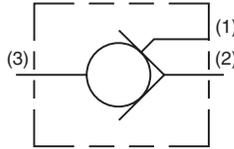
Bodies & Cavities

TD

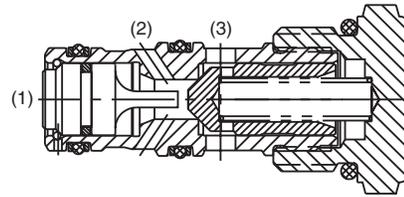
Technical Data

**Pilot Operated Check Valve**

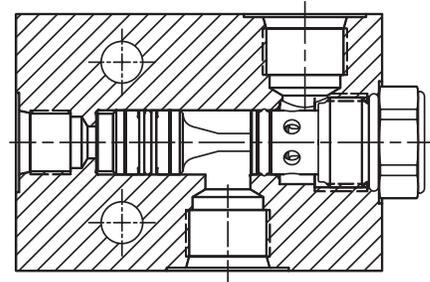
Pilot operated check valves (also referred to as P.O. check valves), are check valves which can be opened by an external pilot pressure. Thus, P.O. checks, block flow in one direction, like standard check valves, but can be released once an adequate pilot pressure is applied. Free flow is allowed in the reverse direction. P.O. checks are often used to positively lock a dual acting cylinder. There are two types of pilot operated check valves; threaded cartridge style and pilot piston style. These valves work best when used in conjunction with a control valve that vents the valve ports to tank when centered.



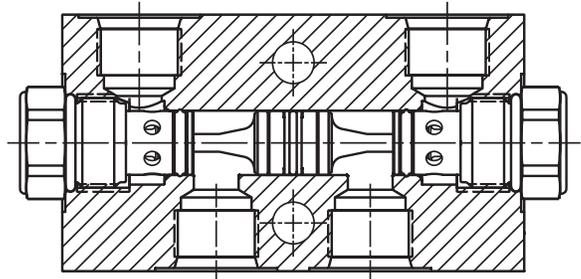
**Cartridge Style P.O. Check Valve**



**Single Pilot Piston Style P.O. Check Valve**



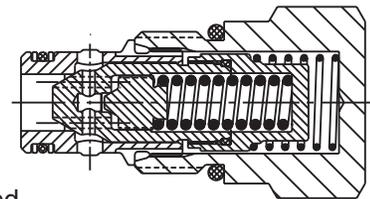
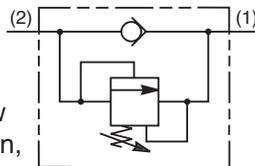
**Dual Pilot Piston Style P.O. Check Valve**



**OPERATION** - In the absence of adequate pilot pressure, the poppet remains seated preventing flow from the actuator port (port 3) to the valve port (port 2). Once adequate pilot pressure is applied at the pilot port (port 1), the internal pilot piston unseats the check poppet permitting flow from port 3 to port 2. The amount of pressure needed at port 1 to unseat the check valve is determined by the pilot ratio of the pilot piston to the poppet seat diameter. If you have a pilot operated check valve with a 3:1 ratio pilot piston, then you would need a pilot pressure at port 1 that is 1/3 of the pressure being checked at port 3 plus the spring. For example, if you had 3000 psi on port 3 and a 5 psi spring and a 3:1 pilot ratio, it would take 1002 psi  $[(3000 \text{ psi} + 5 \text{ psi}) / 3]$  to release the check valve. Free flow is permitted from the valve port (port 2) to the cylinder port (port 3).

**Check Valve With Thermal Relief**

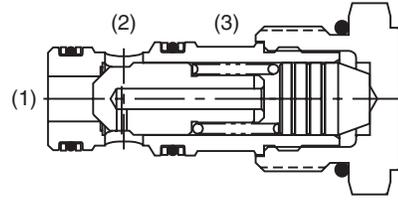
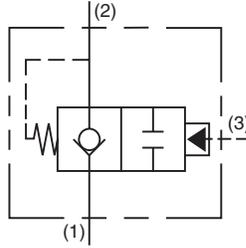
The check valve with thermal relief performs the same function as a standard check valve. It allows free flow in one direction. In the opposite direction, it performs as a normal check valve preventing flow, while also venting excess pressure caused by the thermal expansion of fluid. This type of valve can be used with an external pilot piston to provide a pilot operated valve that will vent trapped pressure due to thermal expansion. These valves work best when used in conjunction with a control valve that vents the valve ports to tank when centered.



**OPERATION** - The check valve is a guided poppet design. As the pressure on the inlet exceeds the spring rate, the poppet is pushed off of its seat allowing flow to pass. Once the pressure on the inlet side drops below the spring force, the spring then pushes the poppet back on its seat blocking flow from the outlet to the inlet of the check valve. If the pressure on the outlet side of the check valve (when it is in a load holding function) rises (through thermal expansion), the direct acting relief will vent the excess pressure caused by the thermal expansion to the inlet side of the check.

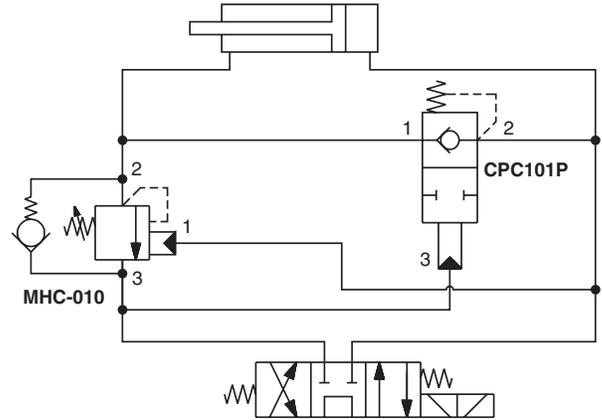
**Pilot to Close Check**

Pilot to close check valves are unique 2 way valves that act as a check valve, allowing free flow in one direction and blocking flow from the opposite direction. When an external pilot pressure is applied, flow is blocked from both directions.



These products are ideal for regeneration circuits. See sample diagram shown.

**OPERATION** - In the absence of adequate pilot pressure, the valve functions as a simple check valve, allowing free flow from port 1 to port 2. When adequate pilot pressure at port 3 is applied, the pilot piston holds the poppet closed, blocking flow in both directions.



|                      |
|----------------------|
| <b>CV</b>            |
| Check Valves         |
| <b>SH</b>            |
| Shuttle Valves       |
| <b>LM</b>            |
| Load/Motor Controls  |
| <b>FC</b>            |
| Flow Controls        |
| <b>PC</b>            |
| Pressure Controls    |
| <b>LE</b>            |
| Logic Elements       |
| <b>DC</b>            |
| Directional Controls |
| <b>MV</b>            |
| Manual Valves        |
| <b>SV</b>            |
| Solenoid Valves      |
| <b>PV</b>            |
| Proportional Valves  |
| <b>CE</b>            |
| Coils & Electronics  |
| <b>BC</b>            |
| Bodies & Cavities    |
| <b>TD</b>            |
| Technical Data       |

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

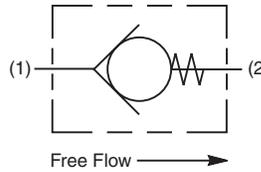
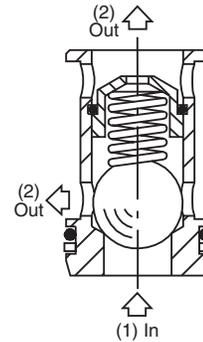
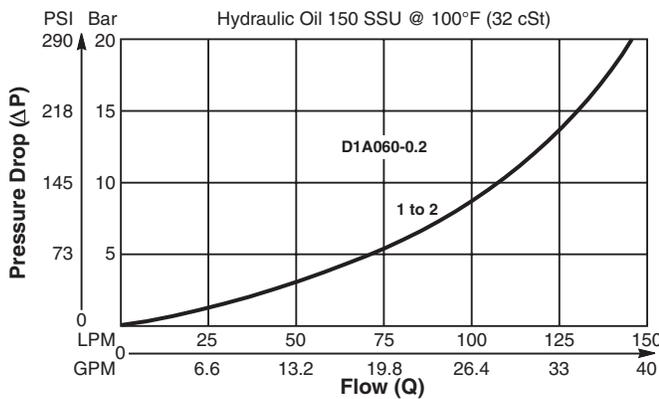
Ball Type, Check Valve Insert.

Features

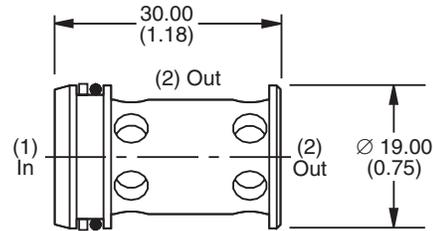
- For inserting inside manifold blocks
- High flow capacity
- Minimal leakage - less than 3 drops/min.
- Simple construction - extremely cost effective
- Range of cracking pressures available
- Good contamination tolerance
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



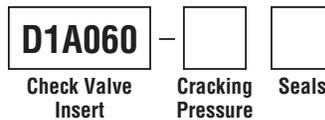
Dimensions Millimeters (Inches)



Specifications

|                                |  |
|--------------------------------|--|
| Rated Flow                     | 145 LPM (38 GPM)   |
| Nominal Flow @ 7 Bar (100 PSI) | 90 LPM (24 GPM)  |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | Less than 3 drops/min.   |
| Cartridge Material             | Steel operating parts, hardened steel ball.  |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .085 kg (.19 lbs.)   |
| Cavity                         | 2U (See BC Section for more details)   |

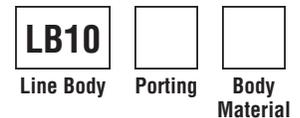
Ordering Information



| Code | Cracking Pressure    |
|------|----------------------|
| 0.2  | 0.2 Bar (3 PSI) Std. |
| 1.0  | 1.0 Bar (15 PSI)     |
| 2.0  | 2.0 Bar (30 PSI)     |
| 3.0  | 3.0 Bar (45 PSI)     |
| 5.0  | 5.0 Bar (72 PSI)     |
| 7.0  | 7.0 Bar (100 PSI)    |
| 10.0 | 10.0 Bar (145 PSI)   |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30019N-1) |
| V    | Fluorocarbon / (SK30019V-1)    |

Order Bodies Separately



| Code | Porting  |
|------|----------|
| 205  | 1/2" BSP |
| 220  | 1/2" SAE |

| Code | Body Material |
|------|---------------|
| S    | Steel         |

Technical Information

General Description

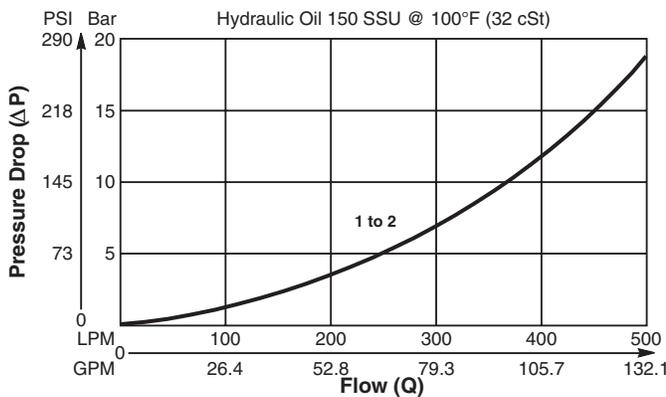
Poppet Type, Check Valve Insert.

Features

- For inserting inside manifold blocks
- High flow capacity
- Minimal leakage - less than 3 drops/min.
- Simple construction - extremely cost effective
- Range of cracking pressures available
- Good contamination tolerance
- All external parts zinc plated

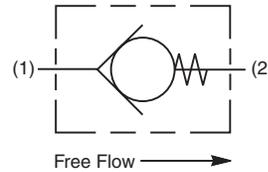
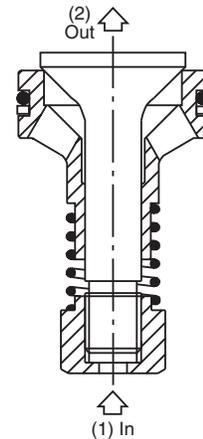
Performance Curve

Pressure Drop vs. Flow (Through cartridge only)

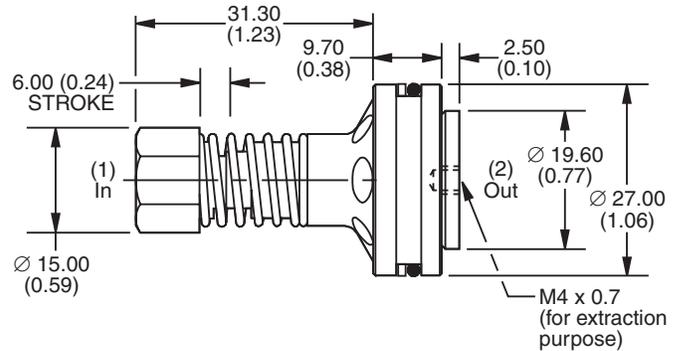


Specifications

|                                       |  |
|---------------------------------------|--|
| <b>Rated Flow</b>                     | 500 LPM (132 GPM)  |
| <b>Nominal Flow @ 7 Bar (100 PSI)</b> | 300 LPM (79 GPM)   |
| <b>Maximum Inlet Pressure</b>         | 420 Bar (6000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>    | Less than 3 drops/min.   |
| <b>Cartridge Material</b>             | Steel operating parts, hardened steel poppet.  |
| <b>Operating Temp. Range/Seals</b>    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Fluid Compatibility/Viscosity</b>  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| <b>Filtration</b>                     | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                 | .06 kg (.13 lbs.)  |
| <b>Cavity</b>                         | 2C (See BC Section for more details)   |



Dimensions Millimeters (Inches)



Ordering Information

**D1B125** —     
 Check Valve Insert    Cracking Pressure    Seals

| Code | Cracking Pressure     |
|------|-----------------------|
| 0.0  | 0 Bar (0 PSI)         |
| 0.1  | 0.1 Bar (1.5 PSI)     |
| 0.2  | 0.2 Bar (3 PSI)       |
| 1.0  | 1.0 Bar (15 PSI) Std. |
| 2.0  | 2.0 Bar (30 PSI)      |
| 3.0  | 3.0 Bar (45 PSI)      |
| 5.0  | 5.0 Bar (72 PSI)      |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30014N-1) |
| V    | Fluorocarbon / (SK30014V-1)    |

Order Bodies Separately

**LB10**     
 Line Body    Porting    Body Material

| Code | Porting |
|------|---------|
| 210  | 1" BSP  |
| 212  | 1" SAE  |

| Code | Body Material |
|------|---------------|
| S    | Steel         |

CV

Check Valves

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Shuttle Valves

LM

Load/Motor Controls

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Flow Controls

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Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

Technical Data

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

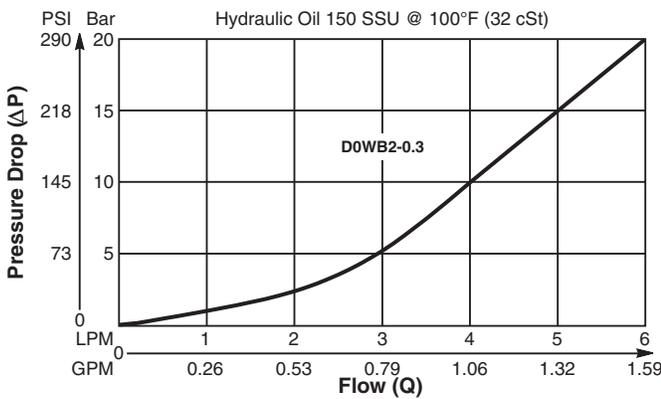
Miniature Ball Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

Features

- Low leakage - less than 3 drops/min.
- Ball type construction for cost effective design
- Extremely compact
- Good contamination tolerance
- All external parts zinc plated

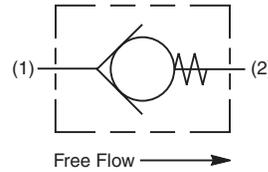
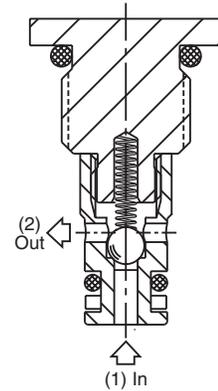
Performance Curve

Pressure Drop vs. Flow (Through cartridge only)

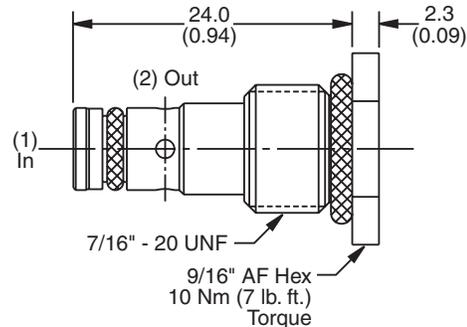


Specifications

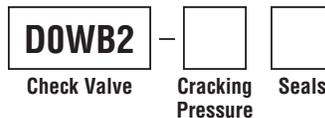
|                                |  |
|--------------------------------|--|
| Rated Flow                     | 6 LPM (1.6 GPM)  |
| Nominal Flow @ 7 Bar (100 PSI) | 3.5 LPM (0.9 GPM)  |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | Less than 3 drops/min.   |
| Cartridge Material             | Steel operating parts, hardened steel ball.  |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .012 kg (.026 lbs.)  |
| Cavity                         | CAV0W-2 (See BC Section for more details)  |



Dimensions Millimeters (Inches)



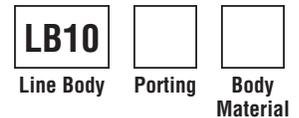
Ordering Information



| Code | Cracking Pressure |
|------|-------------------|
| 0.3  | 0.3 Bar (4 PSI)   |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30519N-1) |
| V    | Fluorocarbon / (SK30519V-1)    |

Order Bodies Separately



| Code | Porting  |
|------|----------|
| 795  | 1/4" SAE |
| 796  | 1/4" BSP |

| Code | Body Material |
|------|---------------|
| A    | Aluminum      |
| S    | Steel         |

Technical Information

General Description

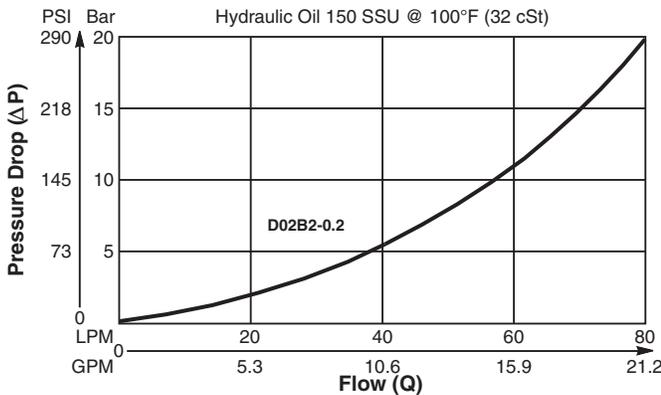
Ball Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

Features

- Low leakage - less than 3 drops/min.
- Ball type construction for cost effective design
- Single and dual pilot pistons available to create pilot to open check
- Range of cracking pressures available - up to 25 Bar (362 PSI)
- Good contamination tolerance
- All external parts zinc plated

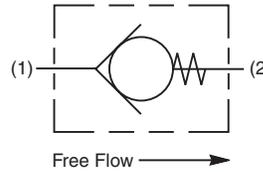
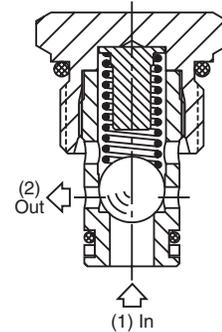
Performance Curve

Pressure Drop vs. Flow (Through cartridge only)

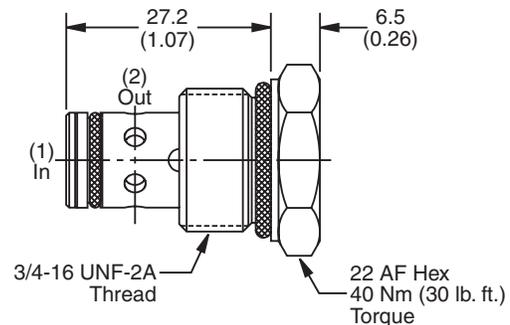


Specifications

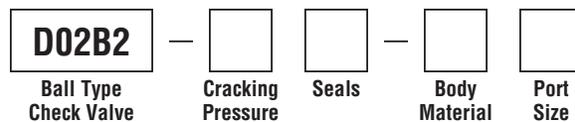
|                                       |  |
|---------------------------------------|--|
| <b>Rated Flow</b>                     | 80 LPM (21 GPM)  |
| <b>Nominal Flow @ 7 Bar (100 PSI)</b> | 45 LPM (12 GPM)  |
| <b>Maximum Inlet Pressure</b>         | 420 Bar (6000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>    | Less than 3 drops/min.   |
| <b>Cartridge Material</b>             | Steel operating parts, hardened steel ball.  |
| <b>Operating Temp. Range/Seals</b>    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Fluid Compatibility/Viscosity</b>  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| <b>Filtration</b>                     | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                 | .05 kg (.11 lbs.)  |
| <b>Cavity</b>                         | C08-2 (See BC Section for more details)  |



Dimensions Millimeters (Inches)



Ordering Information



| Code | Cracking Pressure    |
|------|----------------------|
| 0.0  | 0.0 Bar (0 PSI)      |
| 0.2  | 0.2 Bar (3 PSI) Std. |
| 1.0  | 1.0 Bar (15 PSI)     |
| 1.5  | 1.5 Bar (22 PSI)     |
| 2.1  | 2.1 Bar (30 PSI)     |
| 2.5  | 2.5 Bar (36 PSI)     |
| 3.4  | 3.4 Bar (50 PSI)     |
| 4.0  | 4.0 Bar (58 PSI)     |
| 6.0  | 6.0 Bar (87 PSI)     |
| 6.9  | 6.9 Bar (100 PSI)    |
| 10.0 | 10.0 Bar (145 PSI)   |
| 17.0 | 17.0 Bar (247 PSI)   |
| 20.0 | 20.0 Bar (290 PSI)   |
| 25.0 | 25.0 Bar (362 PSI)   |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30515N-1) |
| V    | Fluorocarbon / (SK30515V-1)    |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B08-2-*4P)   |
| 6P   | 3/8" NPTF      | (B08-2-*6P)   |
| 4T   | SAE-4          | (B08-2-*4T)   |
| 6T   | SAE-6          | (B08-2-*6T)   |
| 6B   | 3/8" BSPG      | (B08-2-*6B)   |

\* Add "A" for aluminum, omit for steel.

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

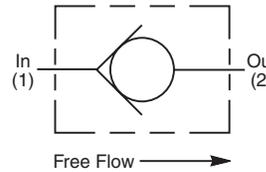
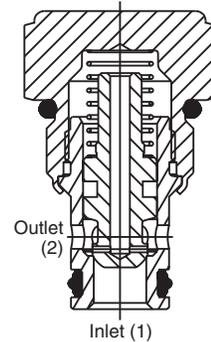
General Description

Cartridge Style Check Valve. For additional information see Technical Tips on pages CV1-CV4.



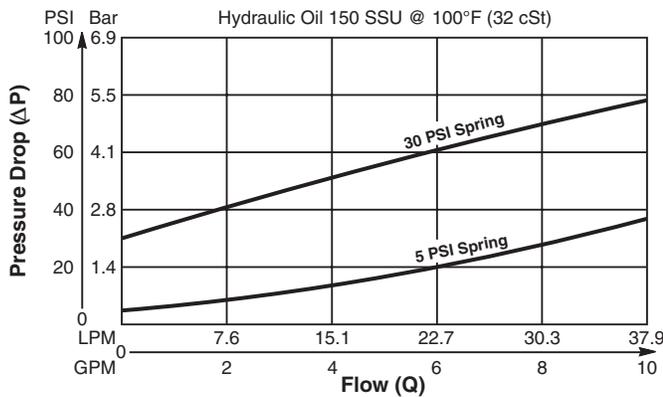
Features

- Spherical poppet for low leakage
- "D"-Ring eliminates back-up rings
- Dual sense paths for reduced ΔP
- All external parts zinc plated

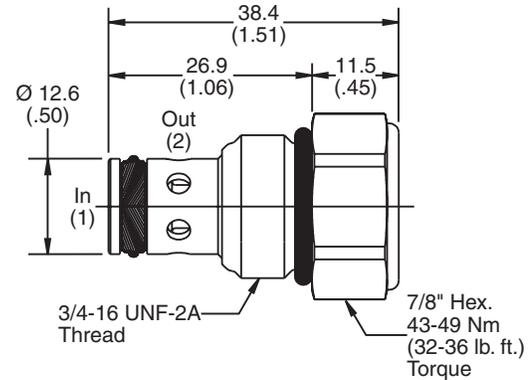


Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



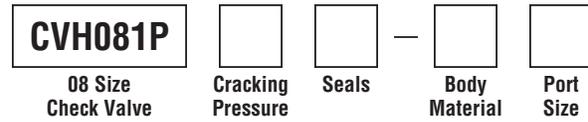
Dimensions Millimeters (Inches)



Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 38 LPM (10 GPM)  |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 2 drops/min. (.13 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -45°C to +93.3°C ("D" Ring) (-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)  |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .10 kg (0.2 lbs.)  |
| <b>Cavity</b>                        | C08-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT08-2F  |

Ordering Information



| Code | Cracking Pressure  |
|------|--------------------|
| Omit | 0.3 Bar (5 PSI)    |
| 10   | 0.7 Bar (10 PSI)   |
| 30   | 2.1 Bar (30 PSI)   |
| 65   | 4.5 Bar (65 PSI)   |
| 100  | 6.9 Bar (100 PSI)  |
| 150  | 10.4 Bar (150 PSI) |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK08-2)      |
| N    | Nitrile / (SK08-2N)      |
| V    | Fluorocarbon / (SK08-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B08-2-*4P)   |
| 6P   | 3/8" NPTF      | (B08-2-*6P)   |
| 4T   | SAE-4          | (B08-2-*4T)   |
| 6T   | SAE-6          | (B08-2-*6T)   |
| 6B   | 3/8" BSPG      | (B08-2-*6B)   |

\* Add "A" for aluminum, omit for steel.

**General Description**

Cartridge Style Check Valve. For additional information see Technical Tips on pages CV1-CV4.

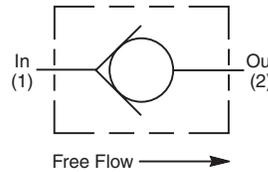
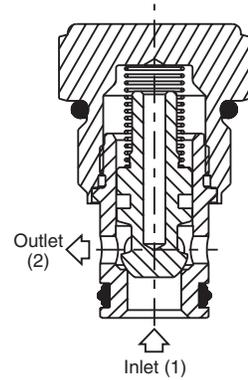
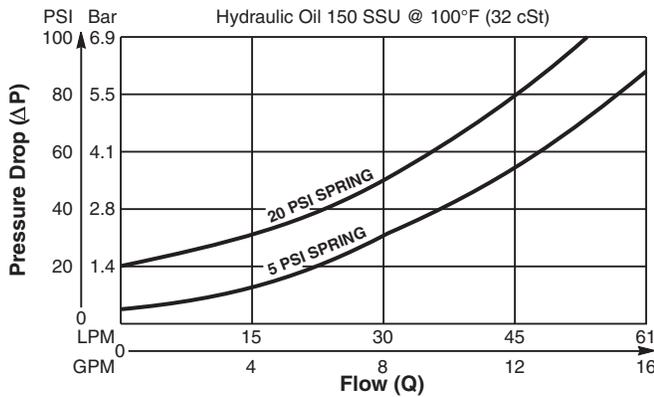


**Features**

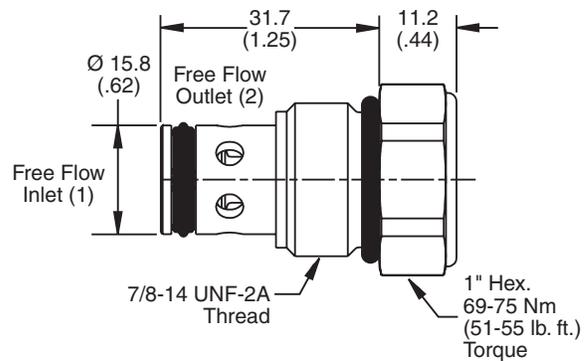
- Spherical poppet for low leakage
- “D”-Ring eliminates back-up rings
- Dual sense paths for reduced ΔP
- All external parts zinc plated

**Performance Curve**

**Pressure Drop vs. Flow (Through cartridge only)**



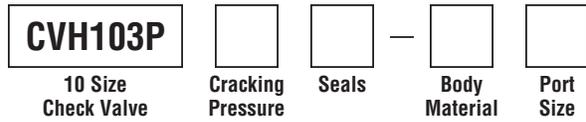
**Dimensions** Millimeters (Inches)



**Specifications**

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 60 LPM (16 GPM)  |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 2 drops/min. (.13 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -45°C to +93.3°C (“D” Ring) (-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)  |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .09 kg (0.2 lbs.)  |
| <b>Cavity</b>                        | C10-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT10-2F  |

**Ordering Information**



| Code | Cracking Pressure |
|------|-------------------|
| Omit | 0.3 Bar (5 PSI)   |
| 20   | 1.4 Bar (20 PSI)  |
| 50   | 3.5 Bar (50 PSI)  |
| 65   | 4.5 Bar (65 PSI)  |
| 80   | 5.5 Bar (80 PSI)  |
| 100  | 6.9 Bar (100 PSI) |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | “D”-Ring / (SK10-2)      |
| N    | Nitrile / (SK10-2N)      |
| V    | Fluorocarbon / (SK10-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4” NPTF      | (B10-2-*4P)   |
| 6P   | 3/8” NPTF      | (B10-2-*6P)   |
| 8P   | 1/2” NPTF      | (B10-2-*8P)   |
| 6T   | SAE-6          | (B10-2-*6T)   |
| 8T   | SAE-8          | (B10-2-*8T)   |
| T8T  | SAE-8          | (B10-2-T8T)†  |
| 6B   | 3/8” BSPG      | (B10-2-6B)†   |

\* Add “A” for aluminum, omit for steel.  
† Steel body only.

**CV** Check Valves

**SH** Shuttle Valves

**LM** Load/Motor Controls

**FC** Flow Controls

**PC** Pressure Controls

**LE** Logic Elements

**DC** Directional Controls

**MV** Manual Valves

**SV** Solenoid Valves

**PV** Proportional Valves

**CE** Coils & Electronics

**BC** Bodies & Cavities

**TD** Technical Data

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

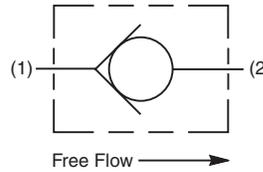
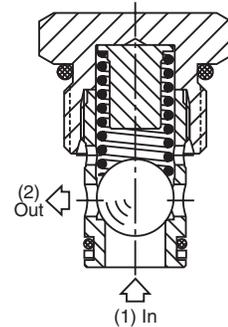
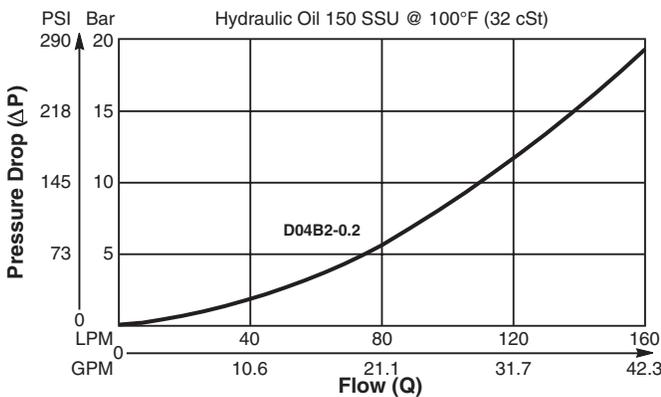
Ball Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

Features

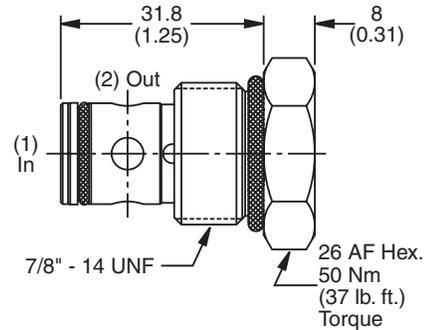
- Low leakage - less than 3 drops/min.
- Ball type construction for cost effective design
- Single and dual pilot pistons available to create pilot to open check
- Range of cracking pressures available
- Good contamination tolerance
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



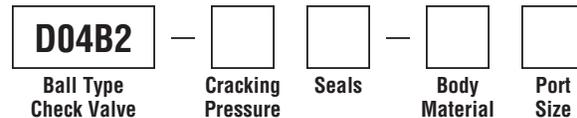
Dimensions Millimeters (Inches)



Specifications

|                                |  |
|--------------------------------|--|
| Rated Flow                     | 160 LPM (42 GPM)   |
| Nominal Flow @ 7 Bar (100 PSI) | 90 LPM (24 GPM)  |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | 3 drops/min.   |
| Cartridge Material             | Steel operating parts, hardened steel ball.  |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .08 kg (.18 lbs.)  |
| Cavity                         | C10-2 (See BC Section for more details)  |

Ordering Information



| Code | Cracking Pressure    |
|------|----------------------|
| 0.0  | 0.0 Bar (0 PSI)      |
| 0.2  | 0.2 Bar (3 PSI) Std. |
| 1.0  | 1.0 Bar (15 PSI)     |
| 2.1  | 2.1 Bar (30 PSI)     |
| 3.4  | 3.4 Bar (50 PSI)     |
| 6.9  | 6.9 Bar (100 PSI)    |
| 10.0 | 10.0 Bar (145 PSI)   |
| 15.0 | 15.0 Bar (217 PSI)   |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B10-2-*4P)   |
| 6P   | 3/8" NPTF      | (B10-2-*6P)   |
| 8P   | 1/2" NPTF      | (B10-2-*8P)   |
| 6T   | SAE-6          | (B10-2-*6T)   |
| 8T   | SAE-8          | (B10-2-*8T)   |
| T8T  | SAE-8          | (B10-2-T8T)†  |
| 6B   | 3/8" BSPG      | (B10-2-6B)†   |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30516N-1) |
| V    | Fluorocarbon / (SK30516V-1)    |

**General Description**

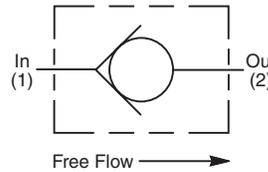
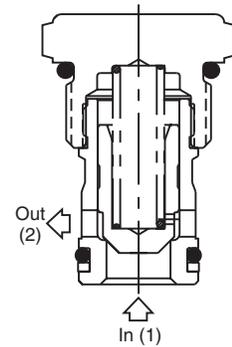
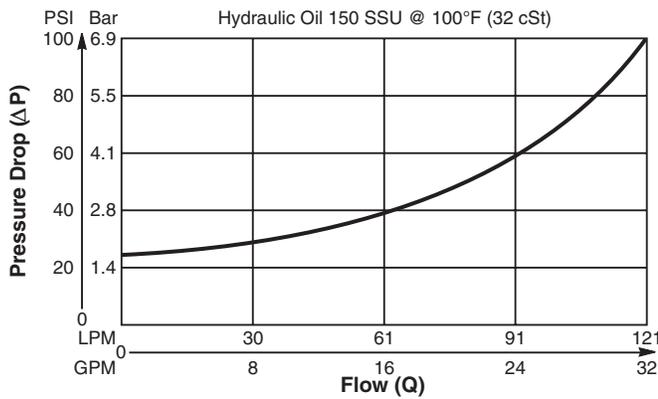
Cartridge Style Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

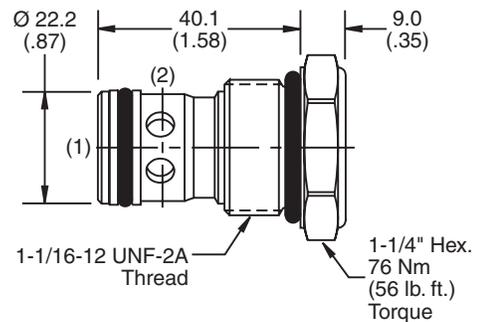
- Hardened, precision ground parts for durability
- Fully guided poppet for smooth operation
- All external parts zinc plated

**Performance Curve**

**Pressure Drop vs. Flow** (Through cartridge only)



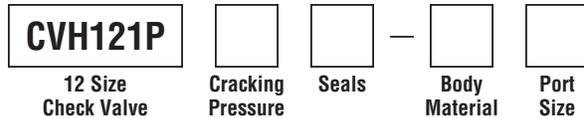
**Dimensions** Millimeters (Inches)



**Specifications**

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 121 LPM (32 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .14 kg (.30 lbs.)  |
| <b>Cavity</b>                        | C12-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT12-2F  |

**Ordering Information**



| Code | Cracking Pressure |
|------|-------------------|
| Omit | 1.7 Bar (25 PSI)  |
| 65   | 4.5 Bar (65 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK12-2)       |
| V    | Fluorocarbon / (SK12-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 12P  | 3/4" NPTF      | (B12-2-*12P)  |
| 8T   | SAE-8          | (B12-2-*8T)   |
| 12T  | SAE-12         | (B12-2-*12T)  |
| 12B  | 3/4" BSPG      | (B12-2-*12B)  |

\*Add "A" for aluminum, omit for steel.

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

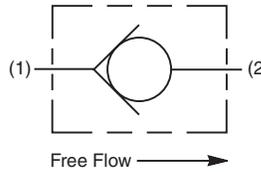
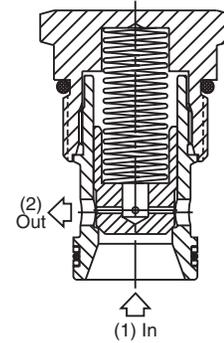
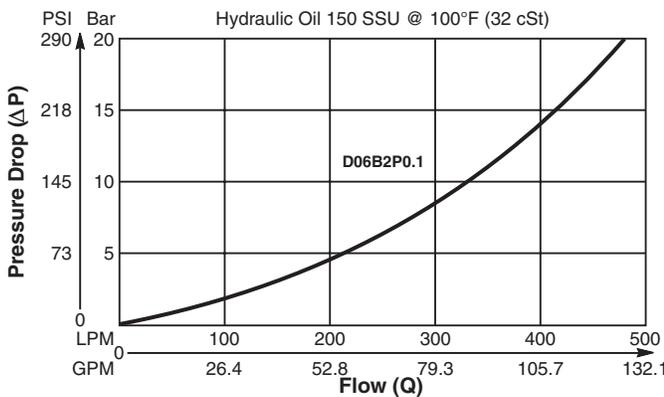
Poppet Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

Features

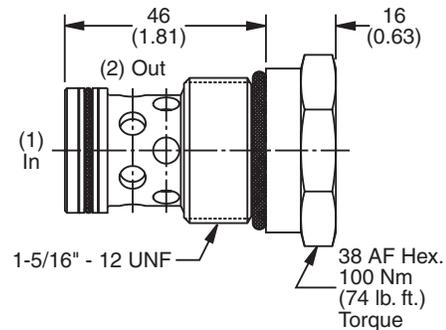
- Extra low pressure drop capability for systems up to 250 Bar
- Poppet type construction for minimal leakage - less than 3 drops/min.
- Hardened poppet for maximum durability
- Good contamination tolerance
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



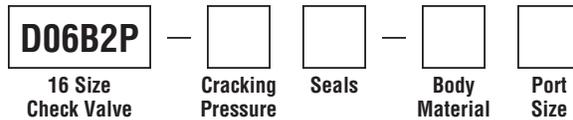
Dimensions Millimeters (Inches)



Specifications

|                                |  |
|--------------------------------|--|
| Rated Flow                     | 500 LPM (132 GPM)  |
| Nominal Flow @ 7 Bar (100 PSI) | 280 LPM (74 GPM)   |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | Less than 3 drops/min.   |
| Cartridge Material             | Steel operating parts, hardened steel poppet.  |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .27 kg (.60 lbs.)  |
| Cavity                         | C16-2 (See BC Section for more details)  |

Ordering Information



| Code | Cracking Pressure      |
|------|------------------------|
| 0.0  | 0.0 Bar (0 PSI)        |
| 0.1  | 0.1 Bar (1.5 PSI) Std. |
| 1.0  | 1.0 Bar (15 PSI)       |
| 2.1  | 2.1 Bar (30 PSI)       |
| 3.4  | 3.4 Bar (50 PSI)       |
| 4.1  | 4.1 Bar (60 PSI)       |
| 7.5  | 7.5 Bar (109 PSI)      |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 12P  | 3/4" NPTF      | (B16-2-*12P)  |
| 16P  | 1" NPTF        | (B16-2-*16P)  |
| 8T   | SAE-8          | (B16-2-*8T)   |
| 12T  | SAE-12         | (B16-2-*12T)  |
| 16T  | SAE-16         | (B16-2-*16T)  |
| 12B  | 3/4" BSPG      | (B16-2-12B)†  |
| 16B  | 1" BSPG        | (B16-2-*16B)  |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30507N-1) |
| V    | Fluorocarbon / (SK30507V-1)    |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

Technical Information

General Description

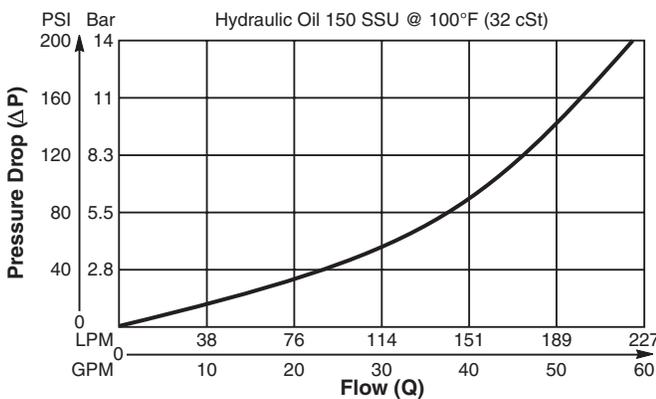
Cartridge Style Check Valve.  
For additional information see Technical Tips on pages CV1-CV4.

Features

- Hardened, precision ground parts for durability
- Fully guided poppet for smooth operation
- All external parts zinc plated

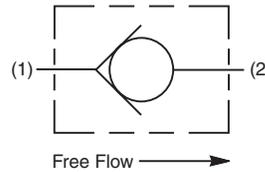
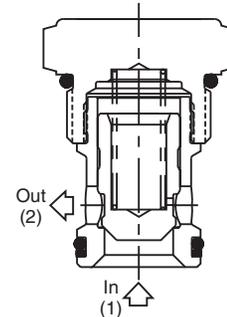
Performance Curve

Pressure Drop vs. Flow (Through cartridge only)

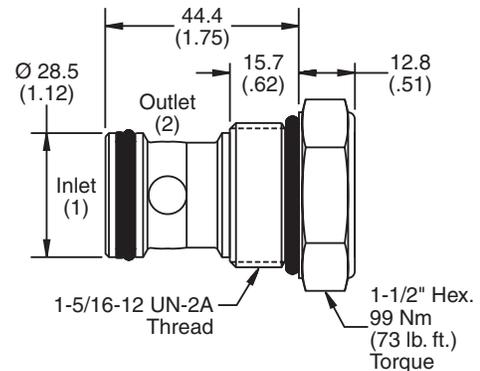


Specifications

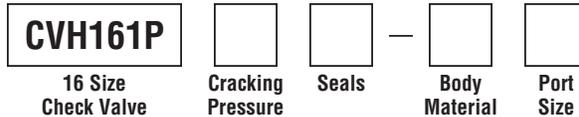
|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 225 LPM (60 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .27 kg (0.6 lbs.)  |
| <b>Cavity</b>                        | C16-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT16-2F  |



Dimensions



Ordering Information



| Code | Cracking Pressure  |
|------|--------------------|
| Omit | 0.3 Bar (5 PSI)    |
| 20   | 1.4 Bar (20 PSI)   |
| 65   | 4.5 Bar (65 PSI)   |
| 125  | 8.6 Bar (125 PSI)  |
| 175  | 12.1 Bar (175 PSI) |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK16-2)       |
| V    | Fluorocarbon / (SK16-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 12P  | 3/4" NPTF      | (B16-2-*12P)  |
| 16P  | 1" NPTF        | (B16-2-*16P)  |
| 8T   | SAE-8          | (B16-2-*8T)   |
| 12T  | SAE-12         | (B16-2-*12T)  |
| 16T  | SAE-16         | (B16-2-*16T)  |
| 12B  | 3/4" BSPG      | (B16-2-12B)†  |
| 16B  | 1" BSPG        | (B16-2-*16B)  |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

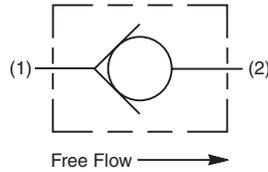
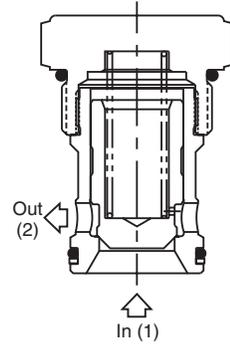
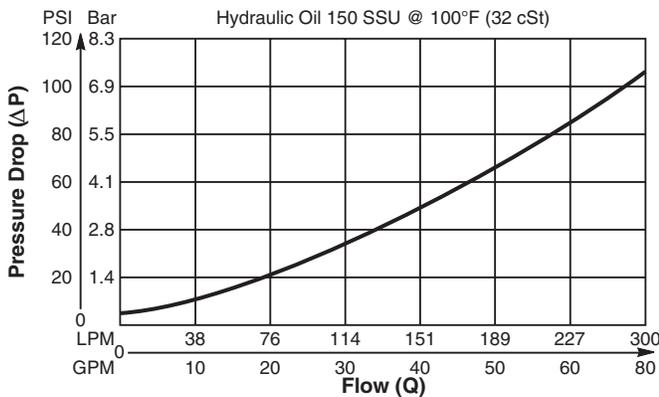
Cartridge Style Check Valve.  
For additional information see Technical Tips on pages CV1-CV4.

Features

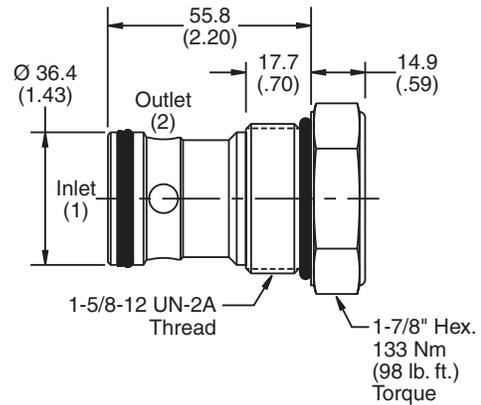
- Hardened, precision ground parts for durability
- Fully guided poppet for smooth operation
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



Dimensions Millimeters (Inches)



Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 303 LPM (80 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .27 kg (0.6 lbs.)  |
| <b>Cavity</b>                        | C20-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT20-2F  |

Ordering Information

**CVH201P**               

**20 Size**    **Cracking**    **Seals**    **Body**    **Port**  
**Check Valve**    **Pressure**    **Material**    **Size**

| Code | Cracking Pressure |
|------|-------------------|
| Omit | 0.3 Bar (5 PSI)   |
| 20   | 1.4 Bar (20 PSI)  |
| 65   | 4.5 Bar (65 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK20-2)       |
| V    | Fluorocarbon / (SK20-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 20T  | SAE-20         | (B20-2-20T)   |
| 20B  | 1-1/4" BSPG    | (B20-2-20B)   |

Technical Information

General Description

Side to Nose Style Check Valve. For additional information see Technical Tips on pages CV1-CV4.

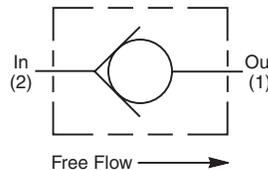
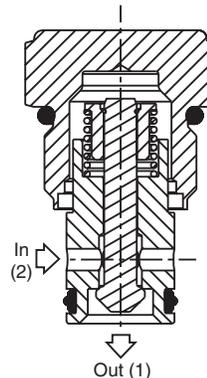
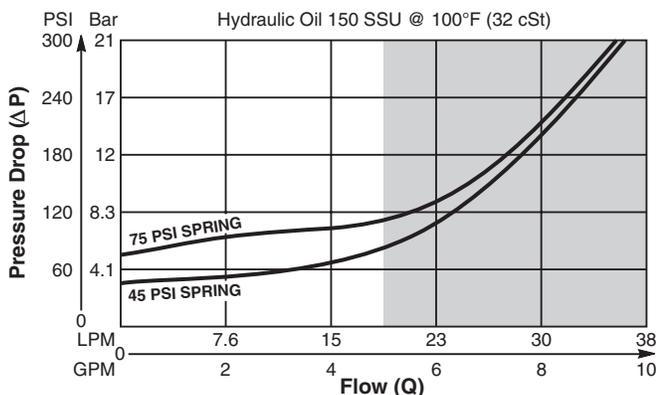


Features

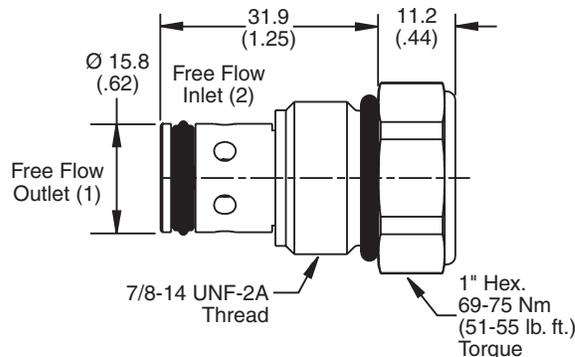
- Hardened, precision ground parts for durability
- Fully guided poppet for smooth operation
- Size to nose design for ease in manifold design
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



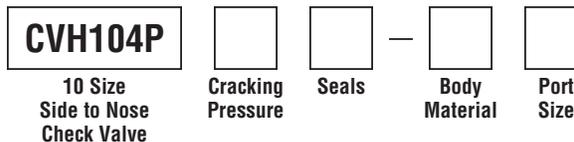
Dimensions



Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 34 LPM (5 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 2 drops/min. (.13 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -45°C to +93.3°C ("D"-Ring) (-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)  |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .08 kg (.18 lbs.)  |
| <b>Cavity</b>                        | C10-2 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher None<br>Finisher NFT10-2F  |

Ordering Information



| Code | Cracking Pressure |
|------|-------------------|
| Omit | 3.1 Bar (45 PSI)  |
| 75   | 5.2 Bar (75 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK10-2)      |
| N    | Nitrile / (SK10-2N)      |
| V    | Fluorocarbon / (SK10-2V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B10-2-*4P)   |
| 6P   | 3/8" NPTF      | (B10-2-*6P)   |
| 8P   | 1/2" NPTF      | (B10-2-*8P)   |
| T8P  | 1/2" NPTF      | (B10-2-T8P)†  |
| 6T   | SAE-6          | (B10-2-*6T)   |
| 8T   | SAE-8          | (B10-2-*8T)   |
| T8T  | SAE-8          | (B10-2-T8T)†  |
| 6B   | 3/8" BSPG      | (B10-2-6B)†   |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

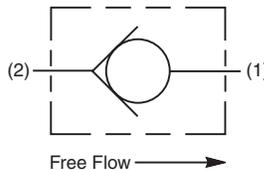
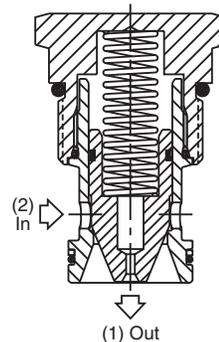
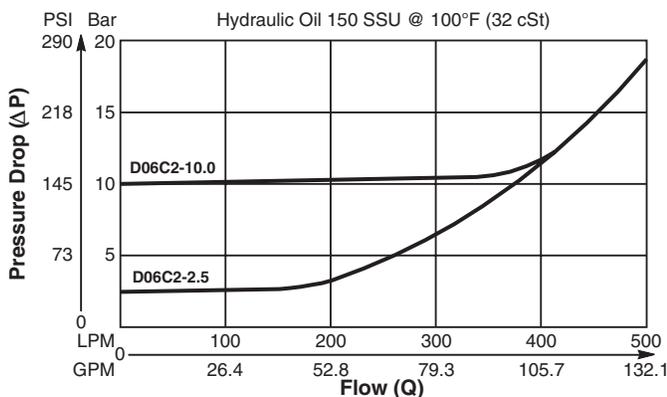
Poppet Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

Features

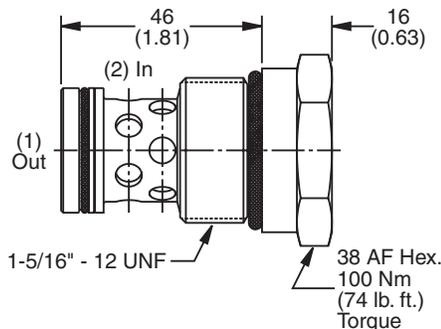
- High flow capacity
- Poppet type construction for minimal leakage - less than 3 drops/min.
- Hardened poppet for maximum durability
- Good contamination tolerance
- All external parts zinc plated

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



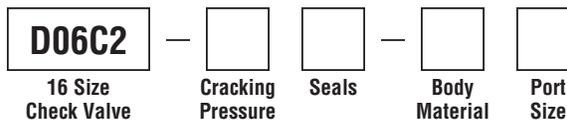
Dimensions Millimeters (Inches)



Specifications

|                                |  |
|--------------------------------|--|
| Rated Flow                     | 500 LPM (132 GPM)  |
| Nominal Flow @ 7 Bar (100 PSI) | 300 LPM (79 GPM)   |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | Less than 3 drops/min.   |
| Cartridge Material             | Steel operating parts, hardened steel poppet.  |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .26 kg (.57 lbs.)  |
| Cavity                         | C16-2 (See BC Section for more details)  |

Ordering Information



| Code | Cracking Pressure     |
|------|-----------------------|
| 2.5  | 2.5 Bar (36 PSI) Std. |
| 3.4  | 3.4 Bar (50 PSI)      |
| 6.9  | 6.9 Bar (100 PSI)     |
| 10.0 | 10.0 Bar (145 PSI)    |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30514N-1) |
| V    | Fluorocarbon / (SK30514V-1)    |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 12P  | 3/4" NPTF      | (B16-2-*12P)  |
| 16P  | 1" NPTF        | (B16-2-*16P)  |
| 8T   | SAE-8          | (B16-2-*8T)   |
| 12T  | SAE-12         | (B16-2-*12T)  |
| 16T  | SAE-16         | (B16-2-*16T)  |
| 12B  | 3/4" BSPG      | (B16-2-12B)†  |
| 16B  | 1" BSPG        | (B16-2-*16B)  |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

**Technical Information**

**General Description**

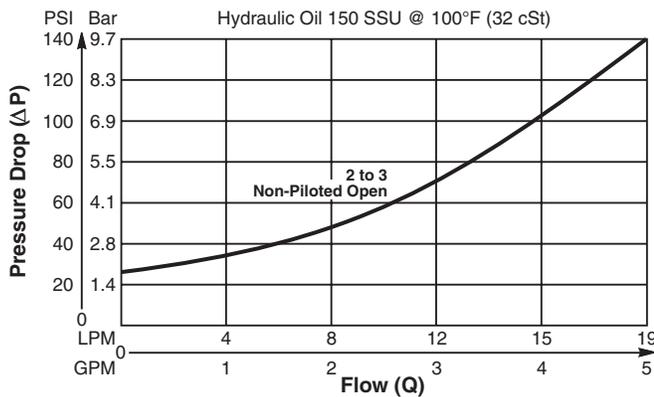
Cartridge Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened, precision ground parts for durability
- Internal pilot position simplifies manifold design
- All external parts zinc plated

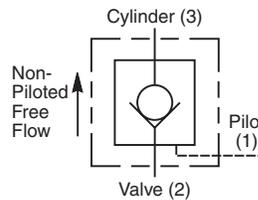
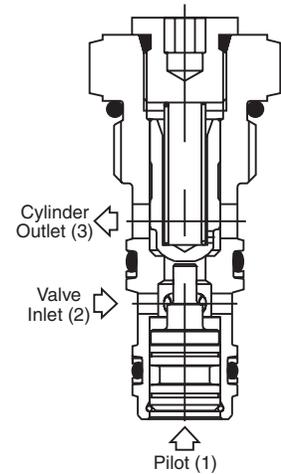
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

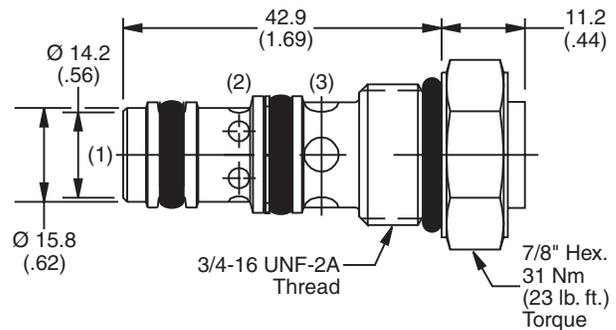


**Specifications**

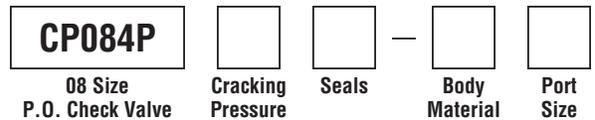
|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 19 LPM (5 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 207 Bar (3000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 207 Bar (3000 PSI)   |
| <b>Pilot Ratio</b>                   | 3:1  |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .05 kg (.11 lbs.)  |
| <b>Cavity</b>                        | C08-3 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher NFT08-3R<br>Finisher NFT08-3F  |



**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Cracking Pressure |
|------|-------------------|
| Omit | 1.7 Bar (25 PSI)  |
| 85   | 5.9 Bar (85 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK08-3N)      |
| V    | Fluorocarbon / (SK08-3V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B08-3-*4P)   |
| 4T   | SAE-4          | (B08-3-*4T)   |
| 6T   | SAE-6          | (B08-3-*6T)   |
| 6B   | 3/8" BSPG      | (B08-3-*6B)   |

\* Add "A" for aluminum, omit for steel.

**CV**  
Check Valves

**SH**  
Shuttle Valves

**LM**  
Load/Motor Controls

**FC**  
Flow Controls

**PC**  
Pressure Controls

**LE**  
Logic Elements

**DC**  
Directional Controls

**MV**  
Manual Valves

**SV**  
Solenoid Valves

**PV**  
Proportional Valves

**CE**  
Coils & Electronics

**BC**  
Bodies & Cavities

**TD**  
Technical Data

Technical Information

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

General Description

Cartridge Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

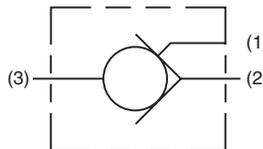
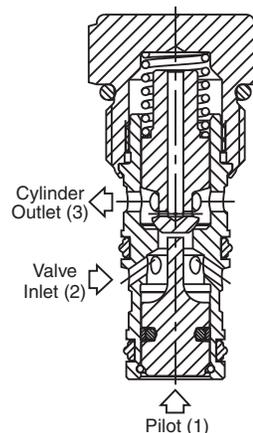
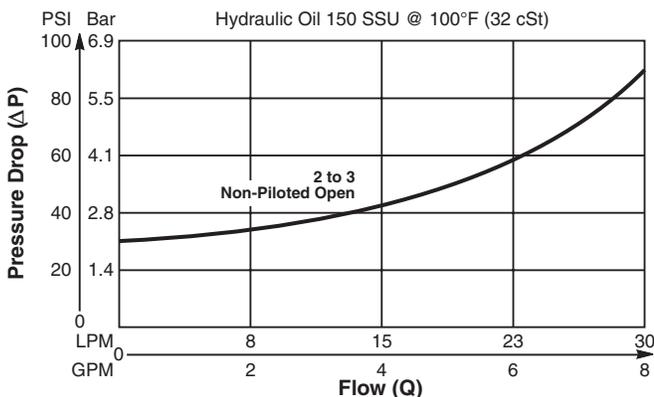


Features

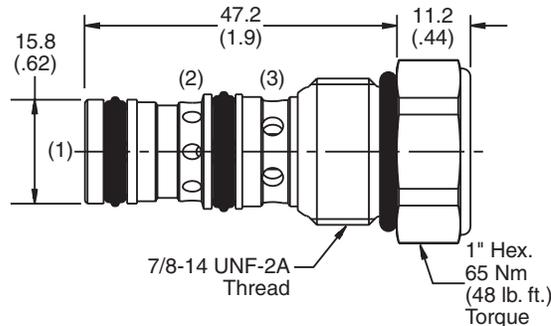
- Hardened, precision ground parts for durability
- Internal pilot position simplifies manifold design
- All external parts have yellow zinc dichromate. This coating is ideal for salt spray applications.

Performance Curve

Pressure Drop vs. Flow (Through cartridge only)



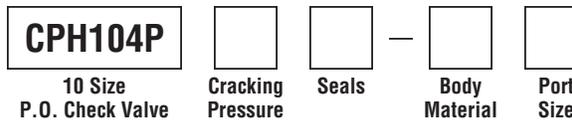
Dimensions Millimeters (Inches)



Specifications

|                               |  |
|-------------------------------|--|
| Rated Flow                    | 30 LPM (8 GPM)   |
| Maximum Inlet Pressure        | 350 Bar (5000 PSI)   |
| Leakage at 150 SSU (32 cSt)   | 2 drops/min. (0.13 cc/min.) at 350 Bar (5000 PSI)  |
| Pilot Ratio                   | 4:1  |
| Cartridge Material            | All parts steel. All operating parts hardened steel.   |
| Operating Temp. Range/Seals   | -45°C to +93.3°C ("D"-Ring) (-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)  |
| Fluid Compatibility/Viscosity | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| Filtration                    | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                | .09 kg (0.2 lbs.)  |
| Cavity                        | C10-3 (See BC Section for more details)  |
| Form Tool                     | Rougher NFT10-3R<br>Finisher NFT10-3F  |

Ordering Information



| Code | Cracking Pressure |
|------|-------------------|
| 15   | 1.0 Bar (15 PSI)  |
| Omit | 2.1 Bar (31 PSI)  |
| 50   | 3.5 Bar (50 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK10-3)      |
| N    | Nitrile / (SK10-3N)      |
| V    | Fluorocarbon / (SK10-3V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B10-3-*4P)   |
| 6P   | 3/8" NPTF      | (B10-3-*6P)   |
| 8P   | 1/2" NPTF      | (B10-3-*8P)   |
| 6T   | SAE-6          | (B10-3-*6T)   |
| 8T   | SAE-8          | (B10-3-*8T)   |
| 6B   | 3/8" BSPG      | (B10-3-6B)†   |
| 8B   | 1/2" BSPG      | (B10-3-*8B)   |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.



**Technical Information**

**General Description**

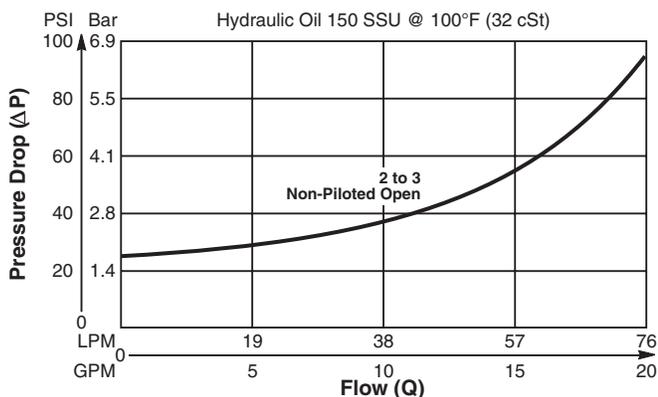
Cartridge Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened, precision ground parts for durability
- Internal pilot position simplifies manifold design
- All external parts have yellow zinc dichromate. This coating is ideal for salt spray applications.

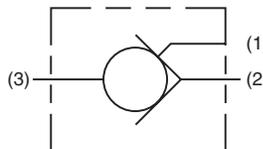
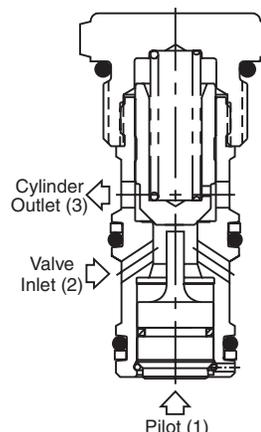
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

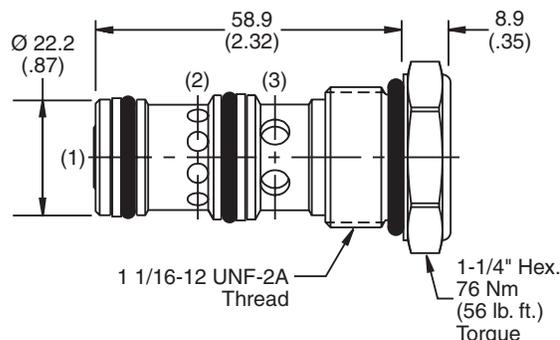


**Specifications**

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 75 LPM (20 GPM)  |
| <b>Maximum Inlet Pressure</b>        | 350 Bar (5000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 350 Bar (5000 PSI)   |
| <b>Pilot Ratio</b>                   | 3:1  |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | 0.2 kg (.44 lbs.)  |
| <b>Cavity</b>                        | C12-3 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher NFT12-3R<br>Finisher NFT12-3F  |



**Dimensions** Millimeters (Inches)



**Ordering Information**

**CPH124P** [ ] [ ] [ ] [ ] [ ]  
 12 Size P.O. Check Valve Cracking Pressure Seals Body Material Port Size

|             |                          |
|-------------|--------------------------|
| <b>Code</b> | <b>Cracking Pressure</b> |
| Omit        | 1.7 Bar (25 PSI)         |

|             |                      |
|-------------|----------------------|
| <b>Code</b> | <b>Body Material</b> |
| Omit        | Steel                |
| A           | Aluminum             |

|             |                          |
|-------------|--------------------------|
| <b>Code</b> | <b>Seals / Kit No.</b>   |
| Omit        | Nitrile / (SK12-3)       |
| V           | Fluorocarbon / (SK12-3V) |

|             |                  |                      |
|-------------|------------------|----------------------|
| <b>Code</b> | <b>Port Size</b> | <b>Body Part No.</b> |
| Omit        | Cartridge Only   |                      |
| 8T          | SAE-8            | (B12-3-*8T)          |
| 12T         | SAE-12           | (B12-3-*12T)         |
| 8B          | 1/2" BSPG        | (B12-3-8B)†          |

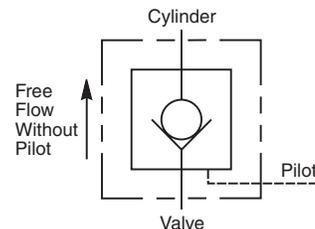
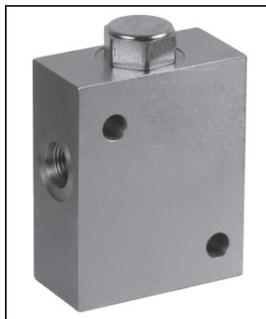
\* Add "A" for aluminum, omit for steel.  
† Steel body only.

**Technical Information**

- CV** Check Valves
- SH** Shuttle Valves
- LM** Load/Motor Controls
- FC** Flow Controls
- PC** Pressure Controls
- LE** Logic Elements
- DC** Directional Controls
- MV** Manual Valves
- SV** Solenoid Valves
- PV** Proportional Valves
- CE** Coils & Electronics
- BC** Bodies & Cavities
- TD** Technical Data

**General Description**

Pilot Piston Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

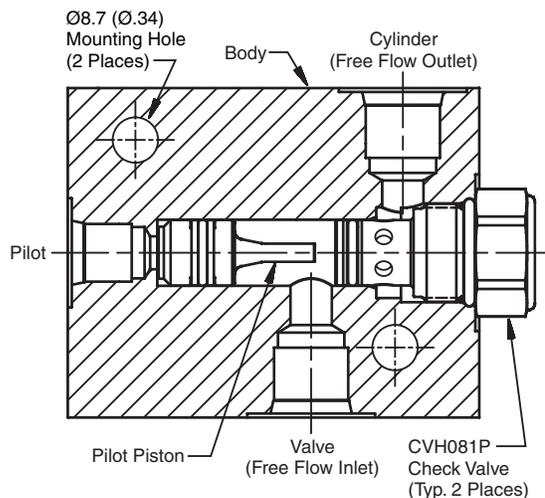


**Features**

- Spherical poppet for low leakage
- “D”-Ring eliminates back-up rings
- Optional sealed pilot piston

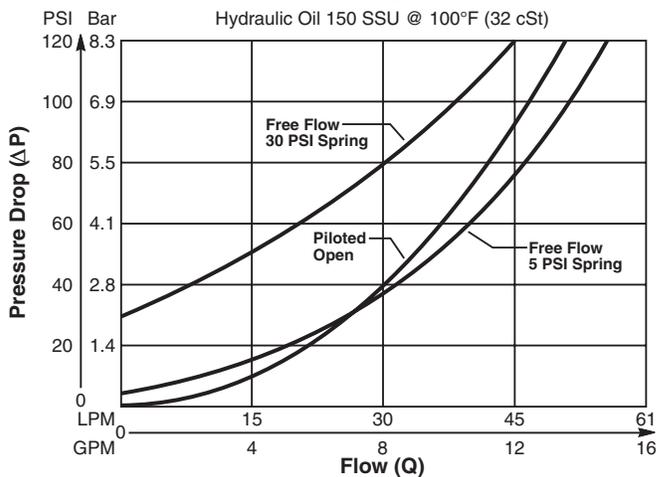
**Specifications**

|   |   |
|---|---|
| <b>Maximum Flow</b>                               | 56 LPM (15 GPM)   |
| <b>Maximum Inlet Pressure</b>                     | 210 Bar (3000 PSI) - CSP081<br>350 Bar (5000 PSI) - CSPH081   |
| <b>Leakage Across Check<br/>150 SSU (32 cSt)</b>  | 2 drops/min. (.13 cc/min.)  |
| <b>Leakage Across Pilot Piston<br/>(No Seals)</b> | 312 cc/min<br>0.3 LPM (.08 GPM)   |
| <b>Pilot Ratio</b>                                | 4:1   |
| <b>Pilot Piston Part Numbers</b>                  | No Seal - 718237<br>Nitrile Seal - 718237N<br>Fluorocarbon Seal - 718237V                                   |
| <b>Cartridge Material</b>                         | All parts steel. All operating parts hardened steel.  |
| <b>Body Material</b>                              | Aluminum - CSP081<br>Steel - CSPH081  |
| <b>Operating Temp. Range (Ambient)</b>            | -45°C to +93.3°C (“D”-Ring)<br>(-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| <b>Filtration</b>                                 | ISO code 16/13,<br>SAE Class 4 or better  |
| <b>Fluids</b>                                     | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)      |
| <b>Approx. Weight</b>                             |   |

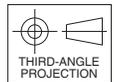
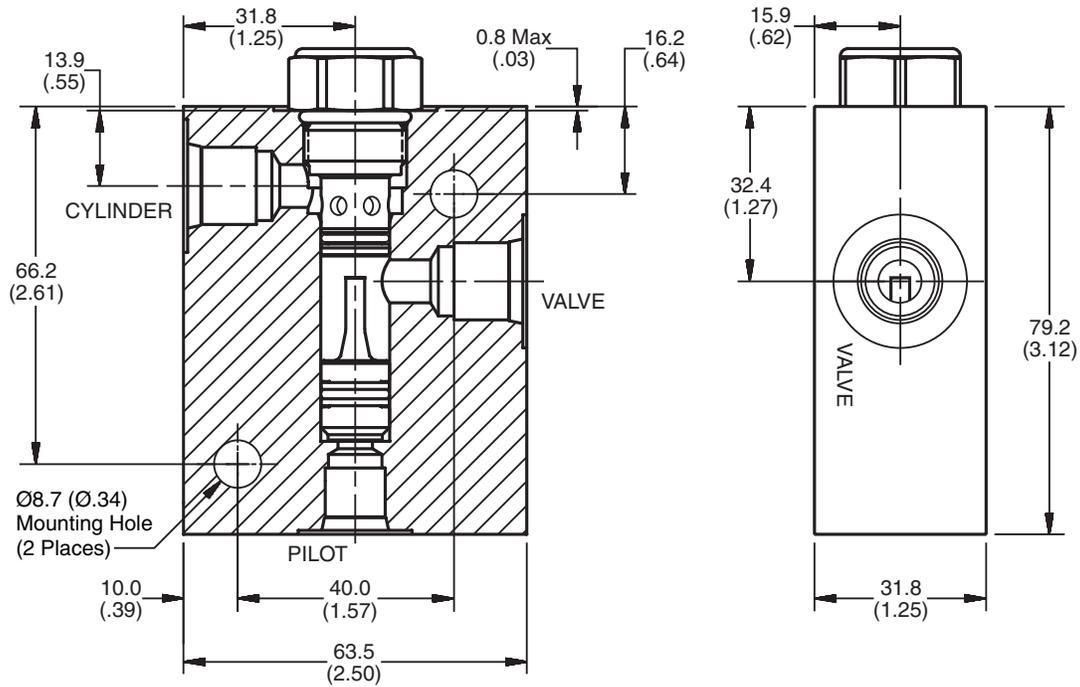


**Performance Curve**

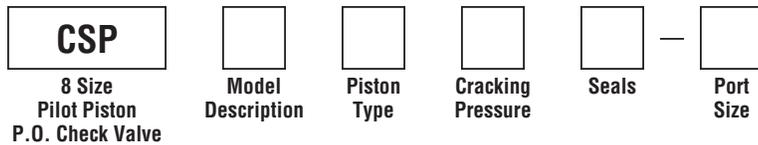
**Pressure Drop vs. Flow (Through cartridge only)**



**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 081  | 3000 PSI Series   |
| H081 | 5000 PSI Series   |

| Code  | Cracking Pressure  |
|-------|--------------------|
| *Omit | 0.3 Bar (5 PSI)    |
| 10    | 0.7 Bar (10 PSI)   |
| 30    | 2.1 Bar (30 PSI)   |
| 65    | 4.5 Bar (65 PSI)   |
| 100   | 6.9 Bar (100 PSI)  |
| 150   | 10.4 Bar (150 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK08-2)      |
| N    | Nitrile / (SK08-2N)      |
| V    | Fluorocarbon / (SK08-2V) |

| Code | Port Size      | Material               |
|------|----------------|------------------------|
| Omit | Cartridge Only |                        |
| A6T  | SAE-6          | Aluminum (CSP081 Only) |
| 6T   | SAE-6          | Steel (CSPH081 Only)   |

| Code | Piston Type  |
|------|--|
| P    | Pilot Piston without seal  |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar (20 PSI) crack minimum. |

\*Not available with "A" option.

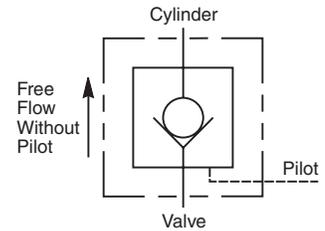
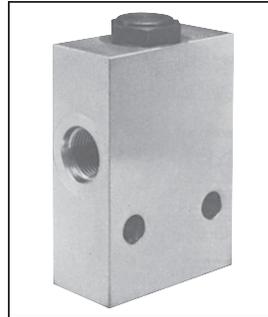
- CV  
Check Valves
- SH  
Shuttle Valves
- LM  
Load/Motor Controls
- FC  
Flow Controls
- PC  
Pressure Controls
- LE  
Logic Elements
- DC  
Directional Controls
- MV  
Manual Valves
- SV  
Solenoid Valves
- PV  
Proportional Valves
- CE  
Coils & Electronics
- BC  
Bodies & Cavities
- TD  
Technical Data

**Technical Information**

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

Pilot Piston Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

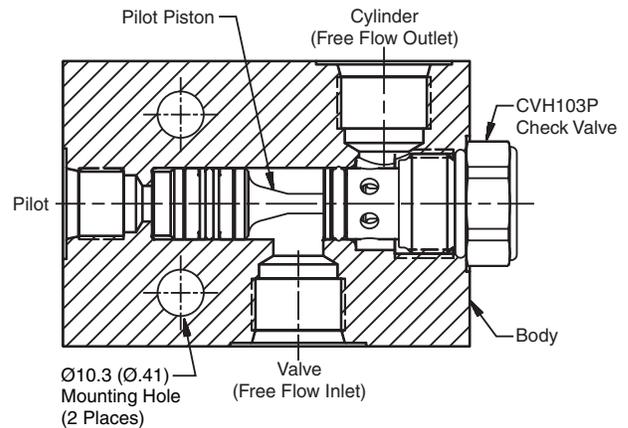


**Features**

- Spherical poppet for low leakage
- “D”-Ring eliminates back-up rings
- Optional sealed pilot piston
- Steel or aluminum body construction

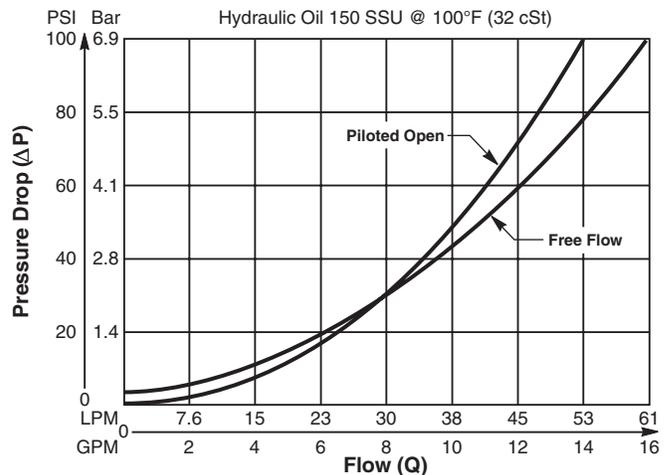
**Specifications**

|   |   |
|---|---|
| <b>Maximum Flow</b>                               | 56 LPM (15 GPM)   |
| <b>Maximum Inlet Pressure</b>                     | 210 Bar (3000 PSI) - CSP103<br>350 Bar (5000 PSI) - CSPH103   |
| <b>Leakage Across Check<br/>150 SSU (32 cSt)</b>  | 2 drops/min. (.13 cc/min.)  |
| <b>Leakage Across Pilot Piston<br/>(No Seals)</b> | 312 cc/min<br>0.3 LPM (.08 GPM)   |
| <b>Pilot Ratio</b>                                | 4:1   |
| <b>Pilot Piston Part Numbers</b>                  | No Seal - 717909<br>Nitrile Seal - 717909N<br>Fluorocarbon Seal - 717909V                                   |
| <b>Cartridge Material</b>                         | All parts steel. All operating parts hardened steel.  |
| <b>Body Material</b>                              | Aluminum - CSP103<br>Steel - CSPH103  |
| <b>Operating Temp. Range (Ambient)</b>            | -45°C to +93.3°C (“D”-Ring)<br>(-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| <b>Filtration</b>                                 | ISO code 16/13,<br>SAE Class 4 or better  |
| <b>Fluids</b>                                     | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)      |
| <b>Approx. Weight</b>                             |   |

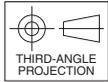
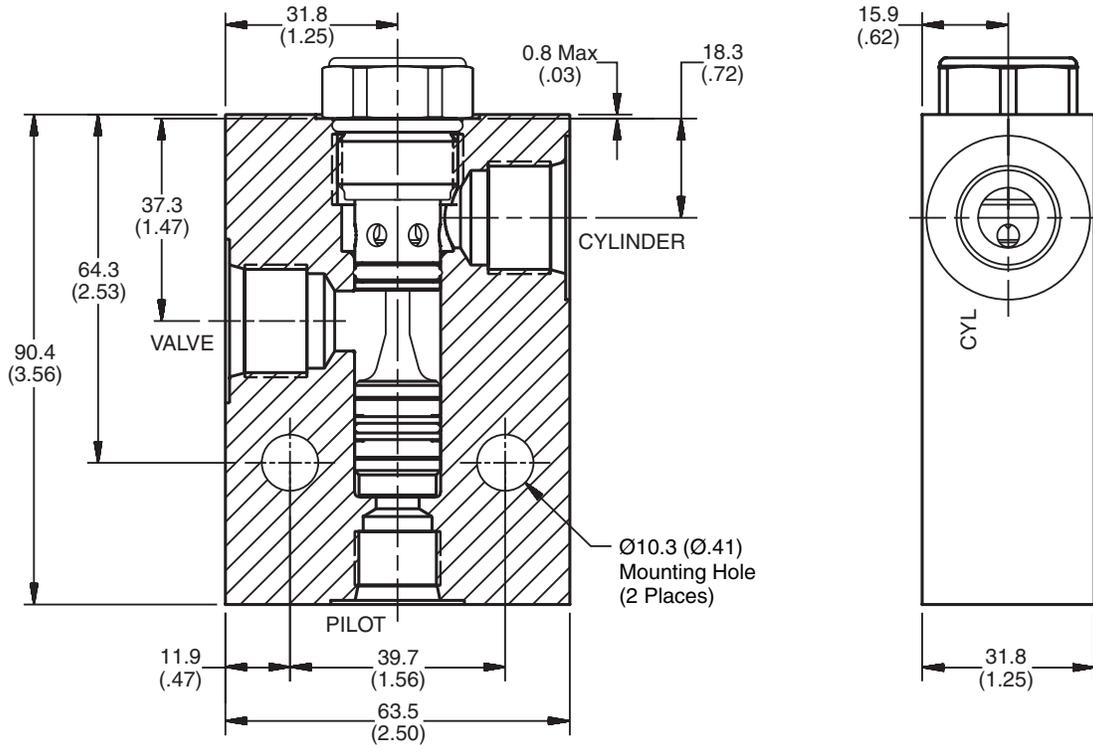


**Performance Curve**

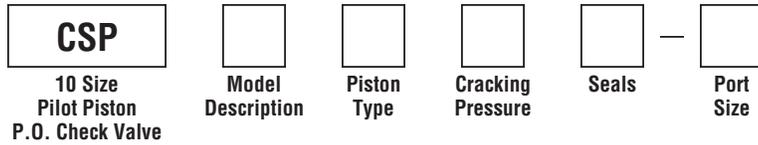
Pressure Drop vs. Flow (Through cartridge only)



**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 103  | 3000 PSI Series   |
| H103 | 5000 PSI Series   |

| Code  | Cracking Pressure |
|-------|-------------------|
| *Omit | 0.3 Bar (5 PSI)   |
| 20    | 1.4 Bar (20 PSI)  |
| 50    | 3.5 Bar (50 PSI)  |
| 65    | 4.5 Bar (65 PSI)  |
| 80    | 5.5 Bar (80 PSI)  |
| 100   | 6.9 Bar (100 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK10-2)      |
| N    | Nitrile / (SK10-2N)      |
| V    | Fluorocarbon / (SK10-2V) |

| Code | Port Size      | Material               |
|------|----------------|------------------------|
| Omit | Cartridge Only |                        |
| A8T  | SAE-8          | Aluminum (CSP103 Only) |
| 8T   | SAE-8          | Steel (CSPH103 Only)   |

| Code | Piston Type  |
|------|--|
| P    | Pilot Piston without seal  |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar (20 PSI) crack minimum. |

\*Not available with "A" option.

- CV**  
Check Valves
- SH**  
Shuttle Valves
- LM**  
Load/Motor Controls
- FC**  
Flow Controls
- PC**  
Pressure Controls
- LE**  
Logic Elements
- DC**  
Directional Controls
- MV**  
Manual Valves
- SV**  
Solenoid Valves
- PV**  
Proportional Valves
- CE**  
Coils & Electronics
- BC**  
Bodies & Cavities
- TD**  
Technical Data

**Technical Information**

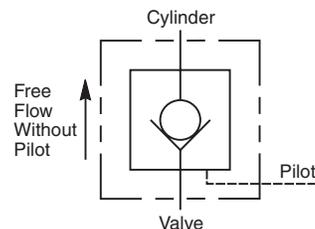
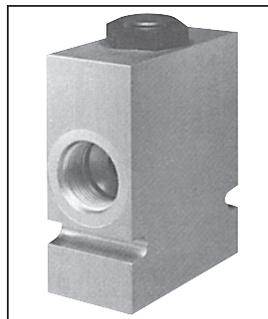
- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

Pilot Piston Style Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

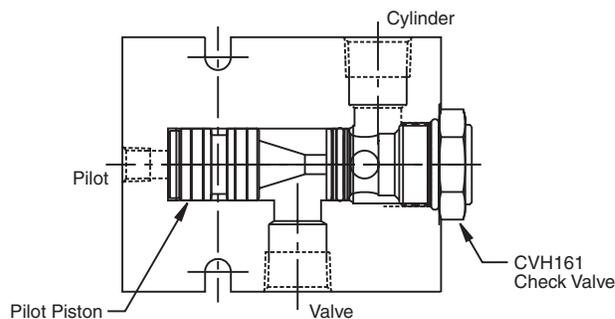
**Features**

- Hardened precision ground parts for durability
- Optional sealed pilot piston
- Steel or aluminum body construction



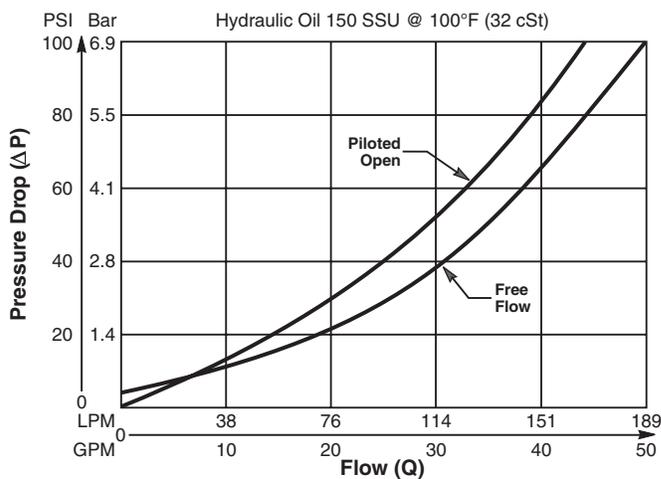
**Specifications**

|   |  |
|---|--|
| <b>Maximum Flow</b>                           | 187 LPM (50 GPM)   |
| <b>Maximum Inlet Pressure</b>                 | 210 Bar (3000 PSI) - CSP161<br>350 Bar (5000 PSI) - CSPH161  |
| <b>Leakage at 150 SSU (32 cSt)</b>            | 5 drops/min (.33 cc/min)<br>@ 350 Bar (5000 psi)   |
| <b>Leakage Across Pilot Piston (No Seals)</b> | 312 cc/min<br>0.3 LPM (.08 GPM)  |
| <b>Pilot Ratio</b>                            | 3:1  |
| <b>Pilot Piston Part Numbers</b>              | No Seal - 717910<br>Nitrile Seal - 717910N<br>Fluorocarbon - 717910V                                       |
| <b>Cartridge Material</b>                     | All parts steel. All operating parts hardened steel.   |
| <b>Body Material</b>                          | Aluminum - CSP161<br>Steel - CSPH161   |
| <b>Operating Temp. Range (Ambient)</b>        | -40°C to +93.3°C (Nitrile)<br>(-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| <b>Filtration</b>                             | ISO code 16/13,<br>SAE Class 4 or better   |
| <b>Fluids</b>                                 | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)     |
| <b>Approx. Weight</b>                         |  |



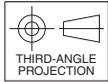
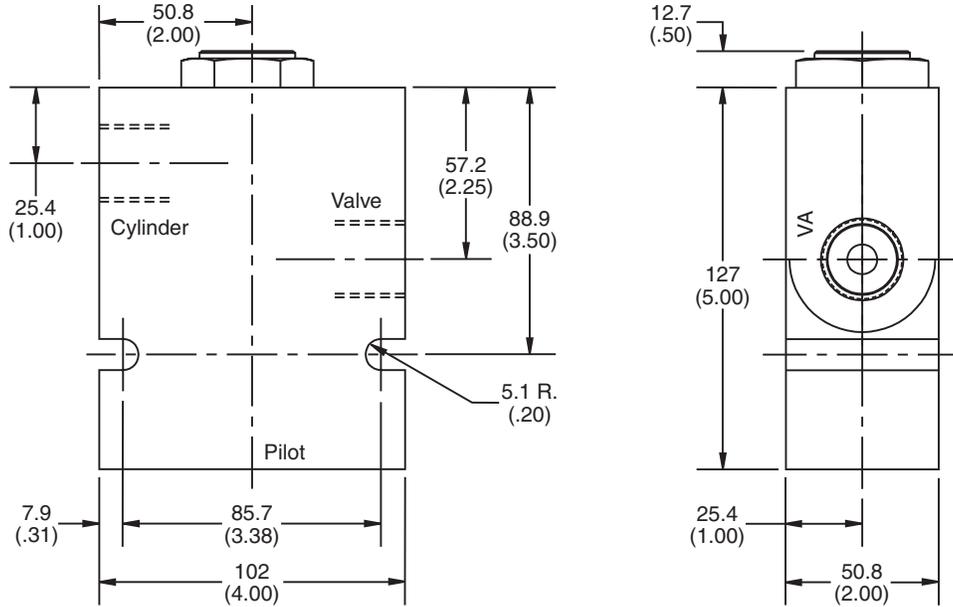
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

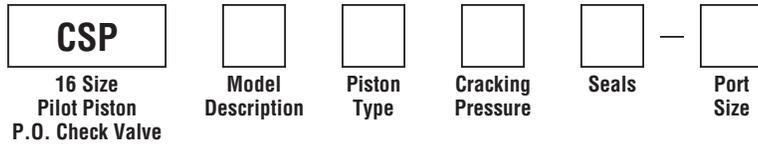


**Technical Information**

**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 161  | 3000 PSI Series   |
| H161 | 5000 PSI Series   |

| Code  | Cracking Pressure  |
|-------|--------------------|
| *Omit | 0.3 Bar (5 PSI)    |
| 20    | 1.4 Bar (20 PSI)   |
| 65    | 4.5 Bar (65 PSI)   |
| 175   | 12.1 Bar (175 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK16-2N)      |
| V    | Fluorocarbon / (SK16-2V) |

| Code | Port Size      | Material                  |
|------|----------------|---------------------------|
| Omit | Cartridge Only |                           |
| A16T | SAE-16         | Aluminum<br>(CSP161 Only) |
| 16T  | SAE-16         | Steel<br>(CSPH161 Only)   |

| Code | Piston Type  |
|------|--|
| P    | Pilot Piston without seal  |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar (20 PSI) crack minimum. |

\*Not available with "A" option.

**Technical Information**

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

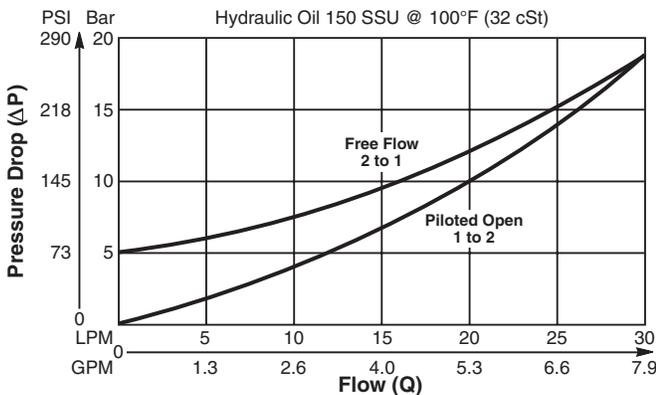
Miniature Pilot to Open, Poppet Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened poppet for maximum durability
- Low leakage - less than 3 drops/min.
- Sealed pilot
- Extremely compact construction - can be fitted directly into most cylinders
- Cavity commonality with load control valves
- Dual line blocks available
- All external parts zinc plated

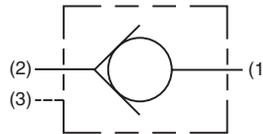
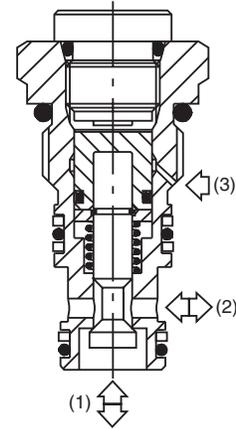
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

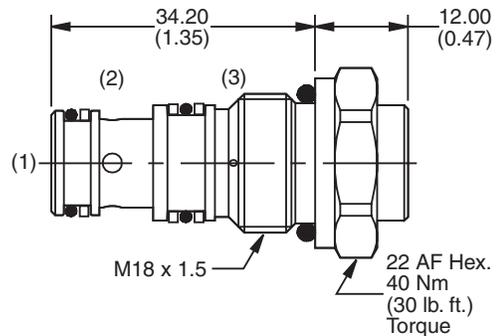


**Specifications**

|                                       |  |
|---------------------------------------|--|
| <b>Rated Flow</b>                     | 30 LPM (8 GPM)   |
| <b>Nominal Flow @ 7 Bar (100 PSI)</b> | 16 LPM (4.2 GPM) (Piloted Open)  |
| <b>Maximum Inlet Pressure</b>         | 420 Bar (6000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>    | Less than 3 drops/min.   |
| <b>Cracking Pressure</b>              | 5 Bar (72 PSI)   |
| <b>Pilot Ratio</b>                    | 4:1  |
| <b>Cartridge Material</b>             | Steel operating parts, hardened steel poppet.  |
| <b>Operating Temp. Range/Seals</b>    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Fluid Compatibility/Viscosity</b>  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| <b>Filtration</b>                     | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                 | .066 kg (.145 lbs.)  |
| <b>Cavity</b>                         | 53-1 (See BC Section for more details)   |



**Dimensions** Millimeters (Inches)



**Ordering Information**

**D4A020**    
 Check Valve      Seals

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30090N-1) |
| V    | Fluorocarbon / (SK30090V-1)    |

*Order Bodies Separately*

**LB10**    
 Line Body    Porting    Body Material

| Code | Porting                            |
|------|------------------------------------|
| 310  | 3/8" BSP (Main)<br>1/4" BSP (Aux.) |
| 318  | 3/8" SAE (Main)<br>1/4" SAE (Aux.) |
| 312  | 3/8" BSP Dual Cavity               |
| 319  | 3/8" SAE Dual Cavity               |

| Code | Body Material |
|------|---------------|
| A    | Aluminum      |
| S    | Steel         |



**Technical Information**

**General Description**

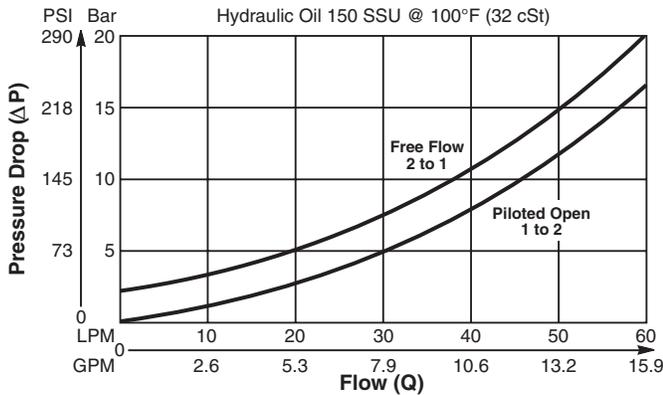
Pilot to Open, Poppet Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened poppet for maximum durability
- High flow capacity
- Low leakage - less than 3 drops/min.
- Sealed pilot
- Good contamination tolerance
- Cavity commonality with load control valves
- Dual line blocks available
- All external parts zinc plated

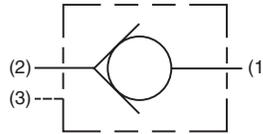
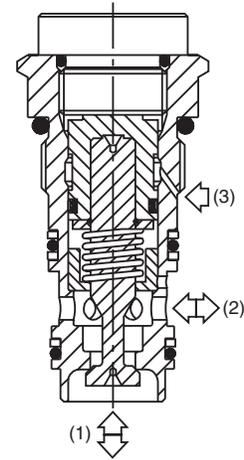
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

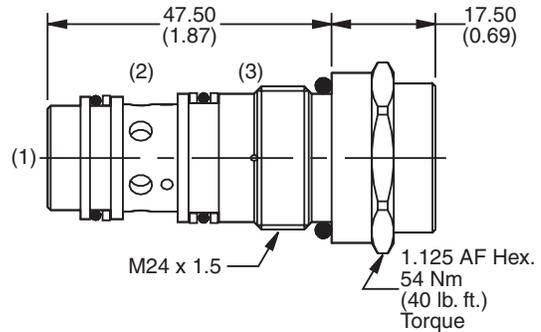


**Specifications**

|                                       |  |
|---------------------------------------|--|
| <b>Rated Flow</b>                     | 60 LPM (16 GPM)  |
| <b>Nominal Flow @ 7 Bar (100 PSI)</b> | 32 LPM (8.5 GPM) (Pilot Open)  |
| <b>Maximum Inlet Pressure</b>         | 420 Bar (6000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>    | Less than 3 drops/min.   |
| <b>Cracking Pressure</b>              | 3 Bar (43.5 PSI)   |
| <b>Pilot Ratio</b>                    | 4:1  |
| <b>Cartridge Material</b>             | Steel operating parts, hardened steel poppet.  |
| <b>Operating Temp. Range/Seals</b>    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Fluid Compatibility/Viscosity</b>  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| <b>Filtration</b>                     | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                 | .15 kg (.33 lbs.)  |
| <b>Cavity</b>                         | 68-1 (See BC Section for more details)   |



**Dimensions** Millimeters (Inches)



**Ordering Information**

**D4A040**  **Seals**  
Check Valve

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30059N-1) |
| V    | Fluorocarbon / (SK30059V-1)    |

Order Bodies Separately

**LB10**    
Line Body Porting Body Material

| Code | Porting                            |
|------|------------------------------------|
| 251  | 1/2" BSP (Main)<br>1/4" BSP (Aux.) |
| 253  | 1/2" SAE (Main)<br>1/4" SAE (Aux.) |
| 259  | 1/2" BSP Dual Cavity               |
| 261  | 1/2" SAE Dual Cavity               |

| Code | Body Material |
|------|---------------|
| A    | Aluminum      |
| S    | Steel         |

**CV** Check Valves

**SH** Shuttle Valves

**LM** Load/Motor Controls

**FC** Flow Controls

**PC** Pressure Controls

**LE** Logic Elements

**DC** Directional Controls

**MV** Manual Valves

**SV** Solenoid Valves

**PV** Proportional Valves

**CE** Coils & Electronics

**BC** Bodies & Cavities

**TD** Technical Data

**Technical Information**

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

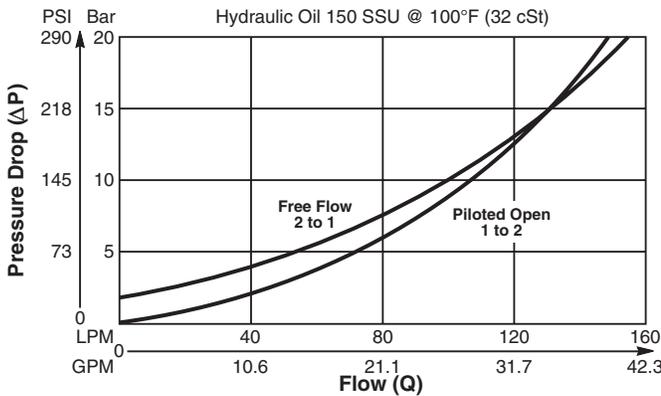
Pilot to Open, Poppet Type Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened poppet for maximum durability
- High flow capacity
- Low leakage - less than 3 drops/min.
- Sealed pilot
- Good contamination tolerance
- Cavity commonality with load control valves
- Dual line blocks available
- All external parts zinc plated

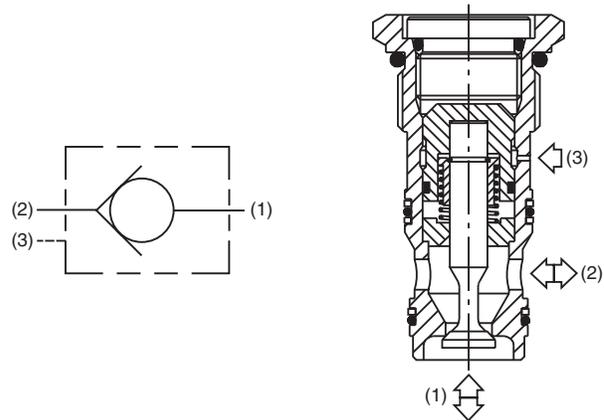
**Performance Curve**

**Pressure Drop vs. Flow (Through cartridge only)**

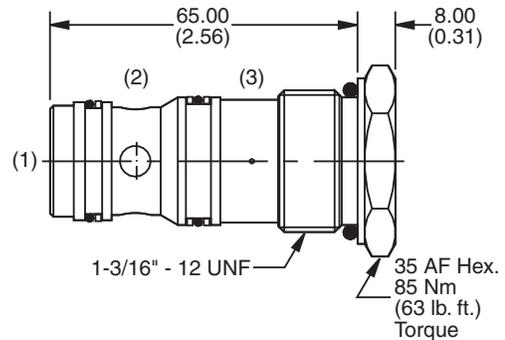


**Specifications**

|                                       |  |
|---------------------------------------|--|
| <b>Rated Flow</b>                     | 150 LPM (40 GPM)   |
| <b>Nominal Flow @ 7 Bar (100 PSI)</b> | 80 LPM (21 GPM) (Piloted Open)   |
| <b>Maximum Inlet Pressure</b>         | 420 Bar (6000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>    | Less than 3 drops/min.   |
| <b>Cracking Pressure</b>              | 2 Bar (30 PSI)   |
| <b>Pilot Ratio</b>                    | 4:1  |
| <b>Cartridge Material</b>             | Steel operating parts, hardened steel poppet.  |
| <b>Operating Temp. Range/Seals</b>    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Fluid Compatibility/Viscosity</b>  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| <b>Filtration</b>                     | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                 | .24 kg (.528 lbs.)   |
| <b>Cavity</b>                         | 3C (See BC Section for more details)   |



**Dimensions** Millimeters (Inches)



**Ordering Information**

**D3B125**  **Seals**  
Check Valve

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30008N-1) |
| V    | Fluorocarbon / (SK30008V-1)    |

*Order Bodies Separately*

**LB10**    
Line Body Porting Body Material

| Code | Porting                            |
|------|------------------------------------|
| 039  | 3/4" BSP (Main)<br>1/4" BSP (Aux.) |
| 069  | 1" SAE (Main)<br>1/4" SAE (Aux.)   |
| 034  | 3/4" BSP Dual Cavity               |
| 234  | 3/4" SAE Dual Cavity               |

| Code | Body Material |
|------|---------------|
| A    | Aluminum      |
| S    | Steel         |



**Technical Information**

**General Description**

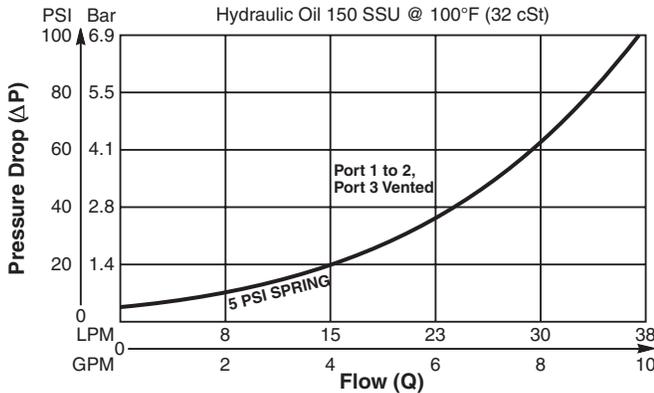
Pilot to Close Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened, precision ground parts for durability
- Fully guided poppet for smooth operation
- All external parts zinc plated

**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

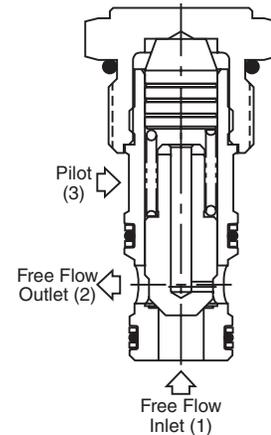
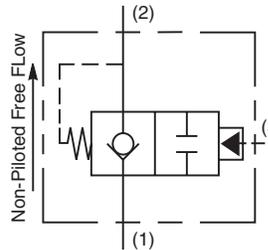
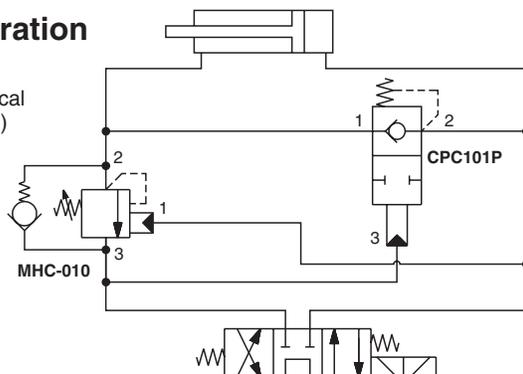


**Specifications**

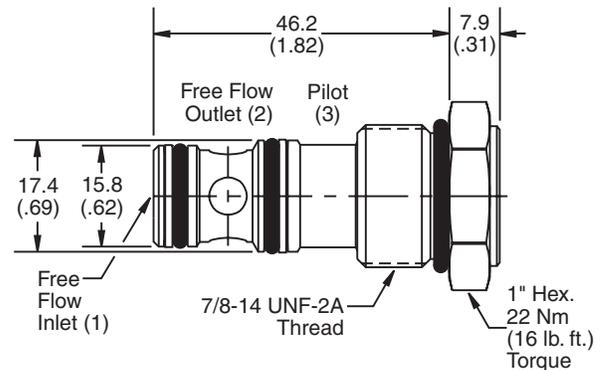
|                                    |  |
|------------------------------------|--|
| <b>Rated Flow</b>                  | 38 LPM (10 GPM)  |
| <b>Maximum Inlet Pressure</b>      | 240 Bar (3500 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b> | 15 drops/min. (.99 cc/min.) at 240 Bar (3500 PSI)  |
| <b>Pilot Ratio</b>                 | 2:1  |
| <b>Operating Temp. Range/Seals</b> | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| <b>Approx. Weight</b>              | .14 kg (0.31 lbs.)   |
| <b>Cavity</b>                      | C10-3 (See BC Section for more details)  |
| <b>Form Tool</b>                   | Rougher NFT10-3R<br>Finisher NFT10-3F  |

**Regeneration Circuit**

(See Technical Tips Section)



**Dimensions** Millimeters (Inches)



**Ordering Information**

|   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>CPC101P</b>                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>10 Size Pilot to Close Check Valve</b> | <b>Cracking Pressure</b> | <b>Seals</b>             | <b>Body Material</b>     | <b>Port Size</b>         |

| Code | Cracking Pressure |
|------|-------------------|
| Omit | 0.3 Bar (5 PSI)   |
| 50   | 3.5 Bar (50 PSI)  |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK10-3)       |
| V    | Fluorocarbon / (SK10-3V) |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B10-3-*4P)   |
| 6P   | 3/8" NPTF      | (B10-3-*6P)   |
| 8P   | 1/2" NPTF      | (B10-3-*8P)   |
| 6T   | SAE-6          | (B10-3-*6T)   |
| 8T   | SAE-8          | (B10-3-*8T)   |
| 6B   | 3/8" BSPG      | (B10-3-6B)†   |
| 8B   | 1/2" BSPG      | (B10-3-*8B)   |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.



- CV** Check Valves
- SH** Shuttle Valves
- LM** Load/Motor Controls
- FC** Flow Controls
- PC** Pressure Controls
- LE** Logic Elements
- DC** Directional Controls
- MV** Manual Valves
- SV** Solenoid Valves
- PV** Proportional Valves
- CE** Coils & Electronics
- BC** Bodies & Cavities
- TD** Technical Data



**General Description**

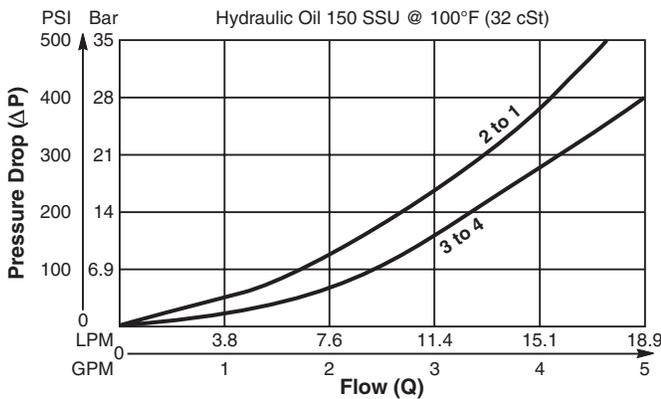
Cartridge Style Dual Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

**Features**

- Hardened, precision ground parts for durability
- Cost effective-replaces two cartridges
- Internal pilot position
- Common cavity
- All external parts zinc plated

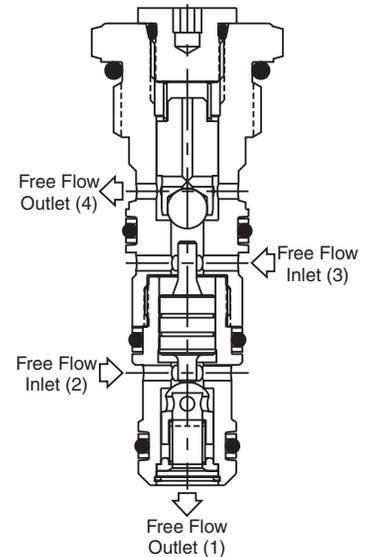
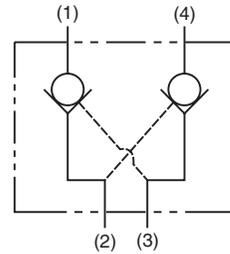
**Performance Curve**

**Pressure Drop vs. Flow (Through cartridge only)**

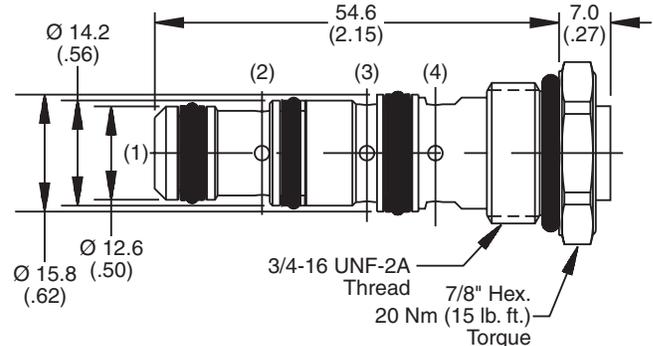


**Specifications**

|                                      |  |
|--------------------------------------|--|
| <b>Rated Flow</b>                    | 19 LPM (5 GPM)   |
| <b>Maximum Inlet Pressure</b>        | 207 Bar (3000 PSI)   |
| <b>Leakage at 150 SSU (32 cSt)</b>   | 5 drops/min. (.33 cc/min.) at 207 Bar (3000 PSI)   |
| <b>Pilot Ratio</b>                   | 3:1  |
| <b>Cartridge Material</b>            | All parts steel. All operating parts hardened steel.   |
| <b>Operating Temp. Range/Seals</b>   | -40°C to +93.3°C (Nitrile) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)   |
| <b>Fluid Compatibility/Viscosity</b> | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt) |
| <b>Filtration</b>                    | ISO code 16/13, SAE Class 4 or better  |
| <b>Approx. Weight</b>                | .05 kg (.11 lbs.)  |
| <b>Cavity</b>                        | C08-4 (See BC Section for more details)  |
| <b>Form Tool</b>                     | Rougher NFT08-4R<br>Finisher NFT08-4F  |



**Dimensions** Millimeters (Inches)



**Ordering Information**

**CPD084P**           

**08 Size**    **Seals**    **Body Material**    **Port Size**  
Dual P.O. Check Valve

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK08-4N)      |
| V    | Fluorocarbon / (SK08-4V) |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4T   | SAE-4          | (B08-4-*4T)   |
| 6T   | SAE-6          | (B08-4-*6T)   |
| 6B   | 3/8" BSPG      | (B08-4-*6B)   |

\* Add "A" for aluminum, omit for steel.



**CV**  
Check Valves

**SH**  
Shuttle Valves

**LM**  
Load/Motor Controls

**FC**  
Flow Controls

**PC**  
Pressure Controls

**LE**  
Logic Elements

**DC**  
Directional Controls

**MV**  
Manual Valves

**SV**  
Solenoid Valves

**PV**  
Proportional Valves

**CE**  
Coils & Electronics

**BC**  
Bodies & Cavities

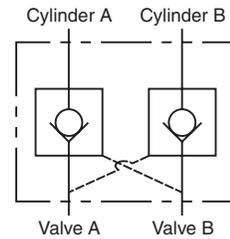
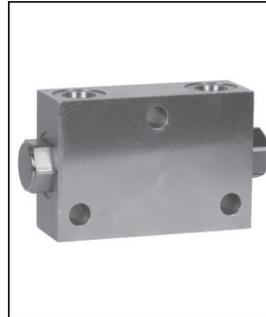
**TD**  
Technical Data

**Technical Information**

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

Pilot Piston Style Dual Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

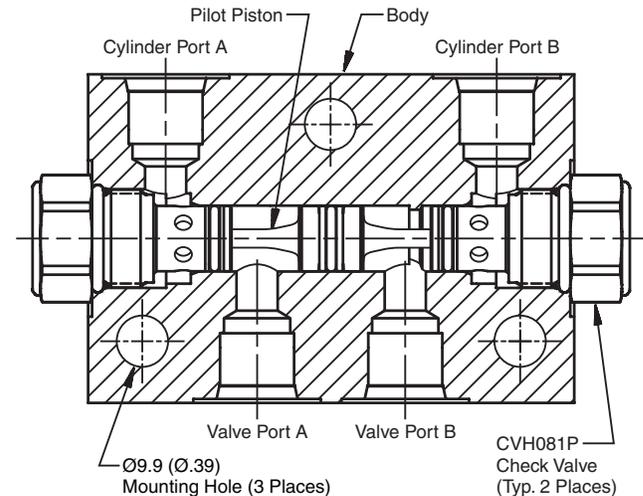


**Features**

- Spherical poppet for low leakage
- “D”-Ring eliminates back-up rings
- Optional sealed pilot piston

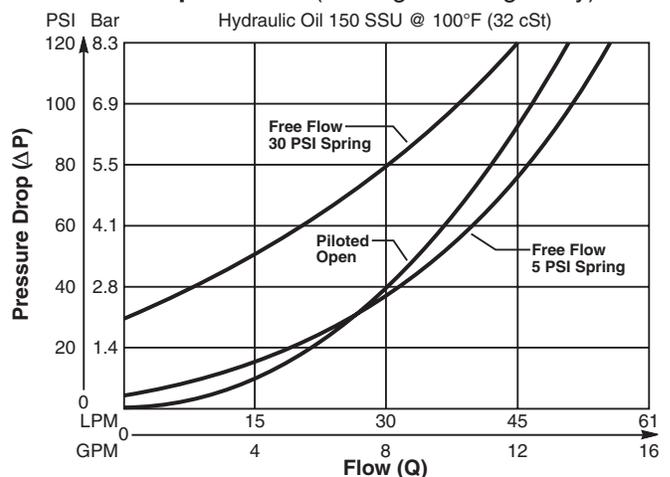
**Specifications**

|   |   |
|---|---|
| Maximum Flow                              | 56 LPM (15 GPM)   |
| Maximum Inlet Pressure                    | 210 Bar (3000 PSI) - CDP081<br>350 Bar (5000 PSI) - CDPH081   |
| Leakage Across Check<br>150 SSU (32 cSt)  | 2 drops/min. (.13 cc/min.)  |
| Leakage Across Pilot Piston<br>(No Seals) | 312 cc/min<br>0.3 LPM (.08 GPM)   |
| Pilot Ratio                               | 4:1   |
| Pilot Piston Part Numbers                 | No Seal - 718238<br>Nitrile Seal - 718238N<br>Fluorocarbon Seal - 718238V                                   |
| Cartridge Material                        | All parts steel. All operating parts hardened steel.  |
| Body Material                             | Aluminum - CDP081<br>Steel - CDPH081  |
| Operating Temp. Range (Ambient)           | -45°C to +93.3°C (“D”-Ring)<br>(-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| Filtration                                | ISO code 16/13,<br>SAE Class 4 or better  |
| Fluids                                    | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)      |
| Approx. Weight                            |   |

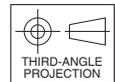
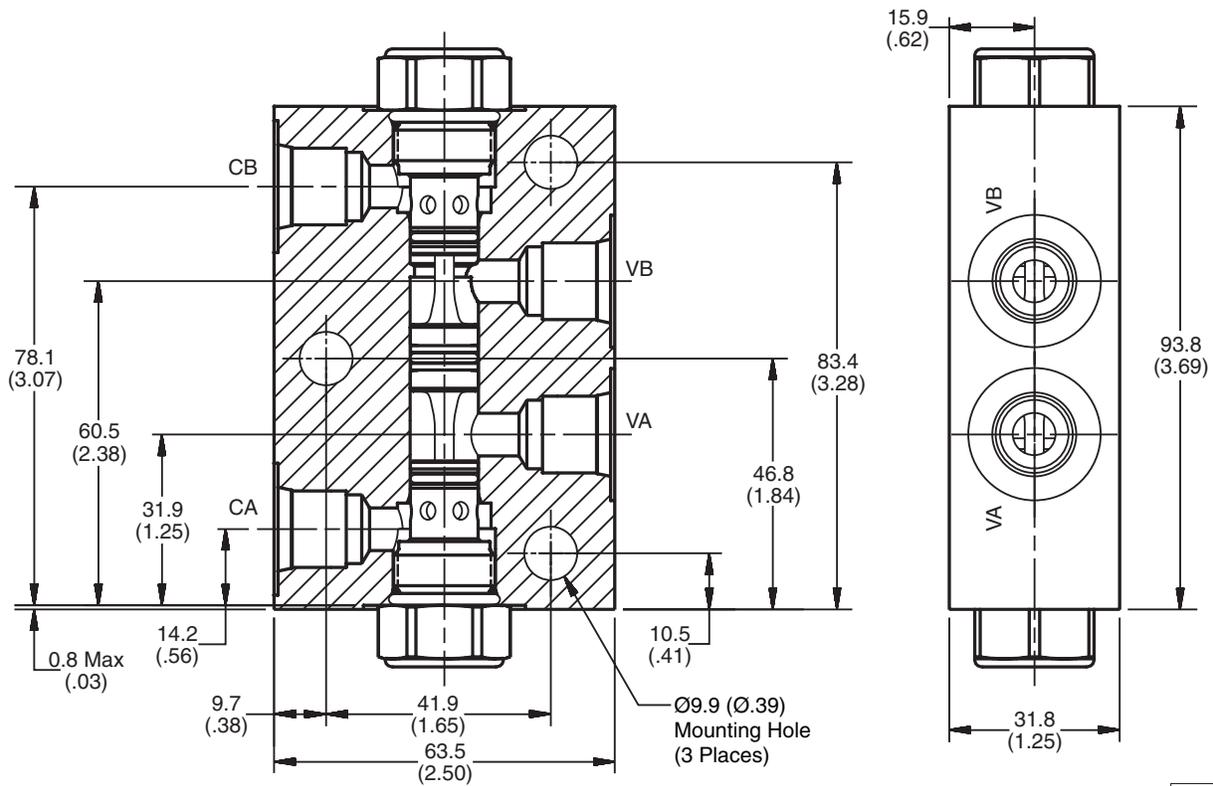


**Performance Curve**

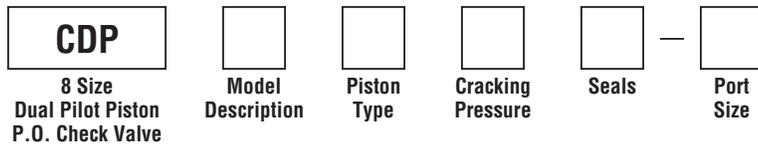
Pressure Drop vs. Flow (Through cartridge only)



**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 081  | 3000 PSI Series   |
| H081 | 5000 PSI Series   |

| Code  | Cracking Pressure  |
|-------|--------------------|
| *Omit | 0.3 Bar (5 PSI)    |
| 10    | 0.7 Bar (10 PSI)   |
| 30    | 2.1 Bar (30 PSI)   |
| 65    | 4.5 Bar (65 PSI)   |
| 100   | 6.9 Bar (100 PSI)  |
| 150   | 10.4 Bar (150 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK08-2)      |
| N    | Nitrile / (SK08-2N)      |
| V    | Fluorocarbon / (SK08-2V) |

| Code | Port Size      | Material                  |
|------|----------------|---------------------------|
| Omit | Cartridge Only |                           |
| A6T  | SAE-6          | Aluminum<br>(CDP081 Only) |
| 6T   | SAE-6          | Steel<br>(CDPH081 Only)   |

| Code | Piston Type   |
|------|---|
| P    | Pilot Piston without seal   |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar<br>(20 PSI) crack minimum. |

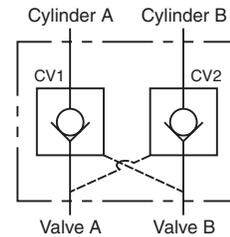
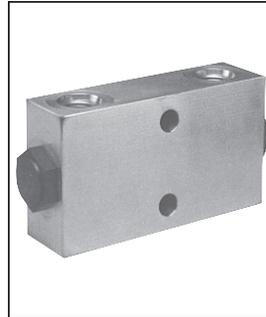
\*Not available with "A" option.

**Technical Information**

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**General Description**

Pilot Piston Style Dual Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

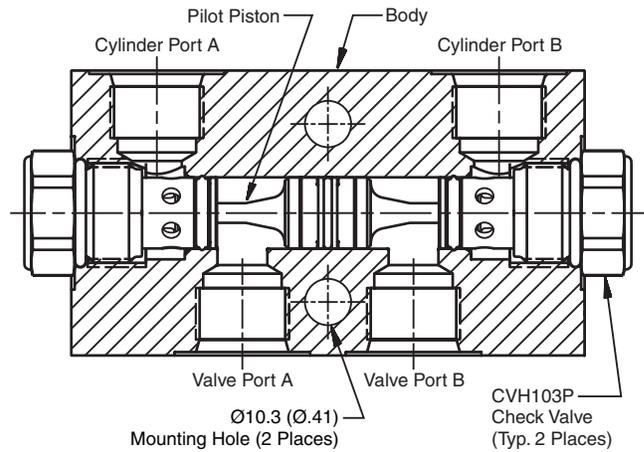


**Features**

- Spherical poppet for low leakage
- “D”-Ring eliminates back-up rings
- Optional sealed pilot piston

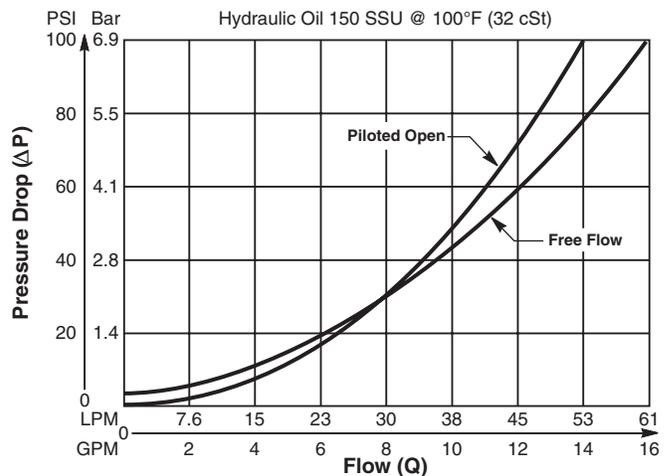
**Specifications**

|   |   |
|---|---|
| <b>Maximum Flow</b>                               | 56 LPM (15 GPM)   |
| <b>Maximum Inlet Pressure</b>                     | 210 Bar (3000 PSI) - CDP103<br>350 Bar (5000 PSI) - CDPH103   |
| <b>Leakage Across Check<br/>150 SSU (32 cSt)</b>  | 2 drops/min. (.13 cc/min.)  |
| <b>Leakage Across Pilot Piston<br/>(No Seals)</b> | 312 cc/min<br>0.3 LPM (.08 GPM)   |
| <b>Pilot Ratio</b>                                | 4:1   |
| <b>Pilot Piston Part Numbers</b>                  | No Seal - 717917<br>Nitrile Seal - 717917N<br>Fluorocarbon Seal - 717917V                                   |
| <b>Cartridge Material</b>                         | All parts steel. All operating parts hardened steel.  |
| <b>Body Material</b>                              | Aluminum - CDP103<br>Steel - CDPH103  |
| <b>Operating Temp. Range (Ambient)</b>            | -45°C to +93.3°C (“D”-Ring)<br>(-50°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| <b>Filtration</b>                                 | ISO code 16/13,<br>SAE Class 4 or better  |
| <b>Fluids</b>                                     | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)      |
| <b>Approx. Weight</b>                             |   |



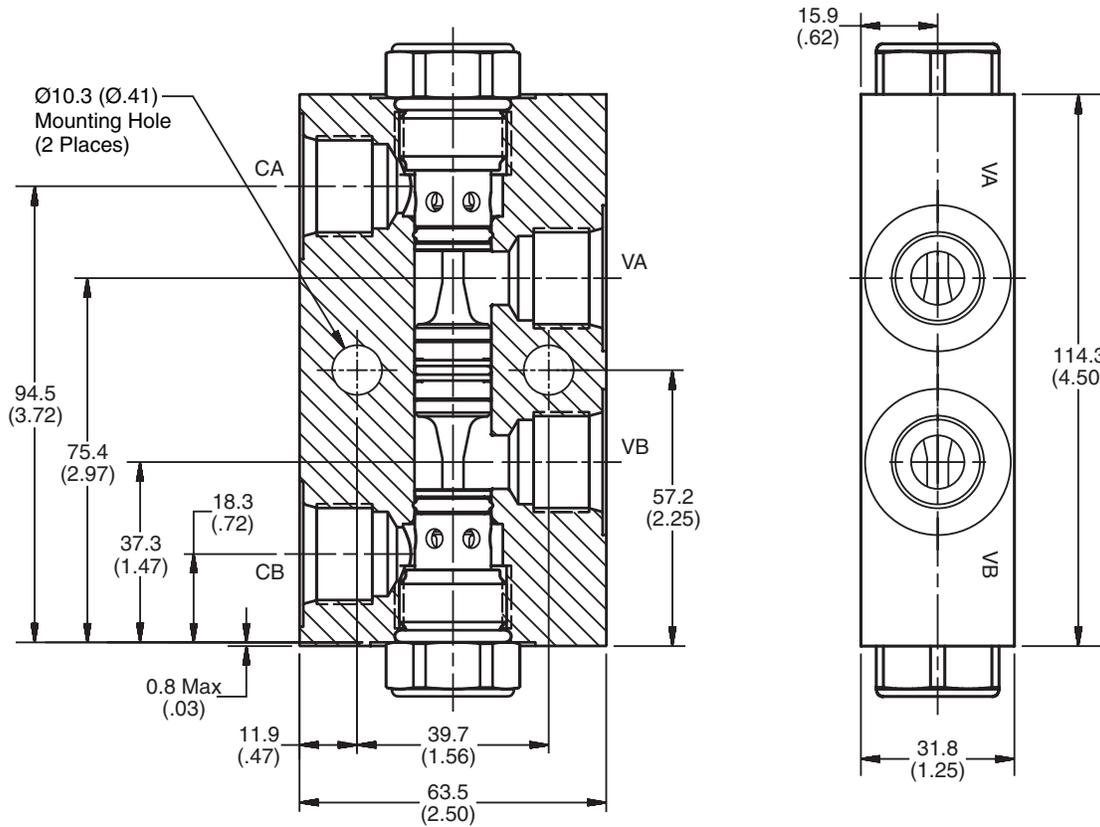
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

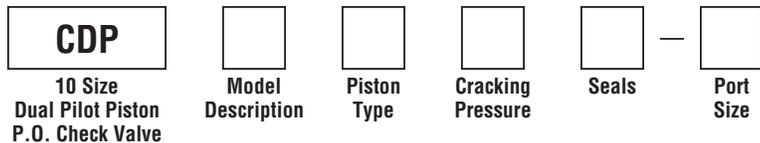


**Technical Information**

**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 103  | 3000 PSI Series   |
| H103 | 5000 PSI Series   |

| Code  | Cracking Pressure |
|-------|-------------------|
| *Omit | 0.3 Bar (5 PSI)   |
| 20    | 1.4 Bar (20 PSI)  |
| 50    | 3.5 Bar (50 PSI)  |
| 65    | 4.5 Bar (65 PSI)  |
| 80    | 5.5 Bar (80 PSI)  |
| 100   | 6.9 Bar (100 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | "D"-Ring / (SK10-2)      |
| N    | Nitrile / (SK10-2N)      |
| V    | Fluorocarbon / (SK10-2V) |

| Code | Port Size      | Material                  |
|------|----------------|---------------------------|
| Omit | Cartridge Only |                           |
| A8T  | SAE-8          | Aluminum<br>(CDP103 Only) |
| 8T   | SAE-8          | Steel<br>(CDPH103 Only)   |

| Code | Piston Type  |
|------|--|
| P    | Pilot Piston without seal  |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar (20 PSI) crack minimum. |

\*Not available with "A" option.

- CV Check Valves
- SH Shuttle Valves
- LM Load/Motor Controls
- FC Flow Controls
- PC Pressure Controls
- LE Logic Elements
- DC Directional Controls
- MV Manual Valves
- SV Solenoid Valves
- PV Proportional Valves
- CE Coils & Electronics
- BC Bodies & Cavities
- TD Technical Data

**Technical Information**

CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

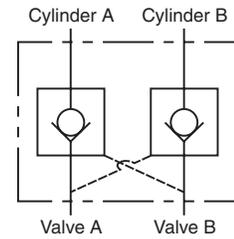
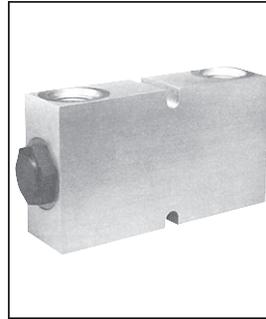
Technical Data

**General Description**

Pilot Piston Style Dual Pilot Operated Check Valve. For additional information see Technical Tips on pages CV1-CV4.

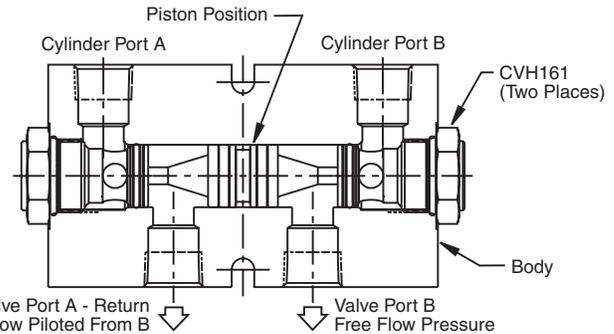
**Features**

- Hardened precision ground parts for durability
- Optional sealed pilot piston



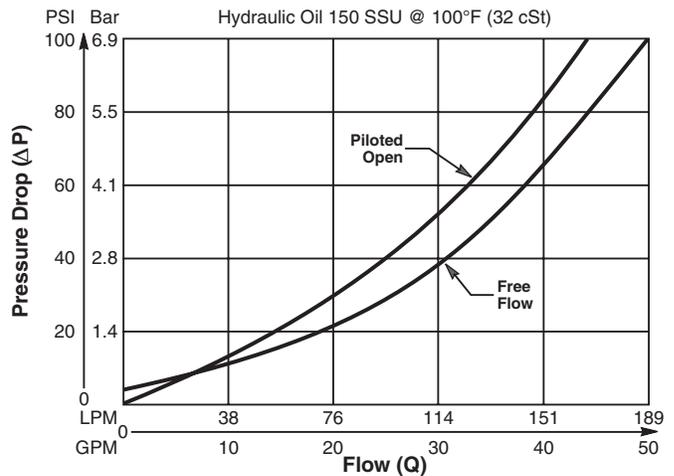
**Specifications**

|   |  |
|---|--|
| <b>Maximum Flow</b>                           | 187 LPM (50 GPM)   |
| <b>Maximum Inlet Pressure</b>                 | 210 Bar (3000 PSI) - CDP161<br>350 Bar (5000 PSI) - CDPH161  |
| <b>Leakage at 150 SSU (32 cSt)</b>            | 5 drops/min (.33 cc/min)<br>@ 350 Bar (5000 psi)   |
| <b>Leakage Across Pilot Piston (No Seals)</b> | 312 cc/min<br>0.3 LPM (.08 GPM)  |
| <b>Pilot Ratio</b>                            | 3:1  |
| <b>Pilot Piston Part Numbers</b>              | No Seal - 717918<br>Nitrile Seal - 717918N<br>Fluorocarbon - 717918V                                       |
| <b>Cartridge Material</b>                     | All parts steel. All operating parts hardened steel.   |
| <b>Body Material</b>                          | Aluminum - CDP161<br>Steel - CDPH161   |
| <b>Operating Temp. Range (Ambient)</b>        | -40°C to +93.3°C (Nitrile)<br>(-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon)<br>(-25°F to +250°F) |
| <b>Filtration</b>                             | ISO code 16/13,<br>SAE Class 4 or better   |
| <b>Fluids</b>                                 | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)     |
| <b>Approx. Weight</b>                         |  |



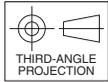
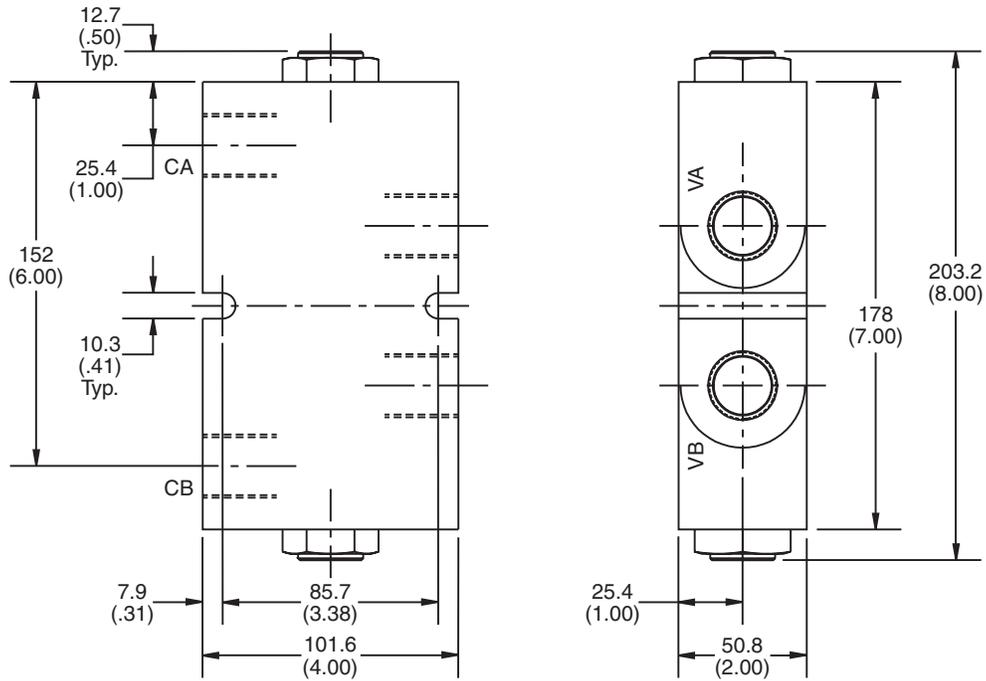
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

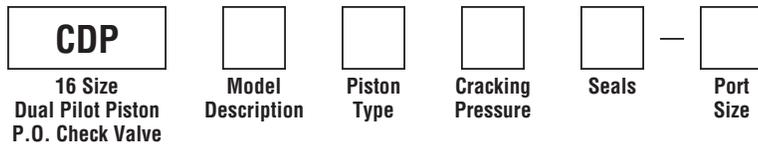


**Technical Information**

**Dimensions** Millimeters (Inches)



**Ordering Information**



| Code | Model Description |
|------|-------------------|
| 161  | 3000 PSI Series   |
| H161 | 5000 PSI Series   |

| Code  | Cracking Pressure  |
|-------|--------------------|
| *Omit | 0.3 Bar (5 PSI)    |
| 20    | 1.4 Bar (20 PSI)   |
| 65    | 4.5 Bar (65 PSI)   |
| 175   | 12.1 Bar (175 PSI) |

| Code | Seals / Kit No.          |
|------|--------------------------|
| Omit | Nitrile / (SK16-2N)      |
| V    | Fluorocarbon / (SK16-2V) |

| Code | Port Size      | Material                  |
|------|----------------|---------------------------|
| Omit | Cartridge Only |                           |
| A16T | SAE-16         | Aluminum<br>(CDP161 Only) |
| 16T  | SAE-16         | Steel<br>(CDPH161 Only)   |

| Code | Piston Type  |
|------|--|
| P    | Pilot Piston without seal  |
| A    | Pilot Piston with seal<br>Note: Requires 1.4 Bar (20 PSI) crack minimum. |

\*Not available with "A" option.

- CV  
Check Valves
- SH  
Shuttle Valves
- LM  
Load/Motor Controls
- FC  
Flow Controls
- PC  
Pressure Controls
- LE  
Logic Elements
- DC  
Directional Controls
- MV  
Manual Valves
- SV  
Solenoid Valves
- PV  
Proportional Valves
- CE  
Coils & Electronics
- BC  
Bodies & Cavities
- TD  
Technical Data

Technical Information

CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

Technical Data

General Description

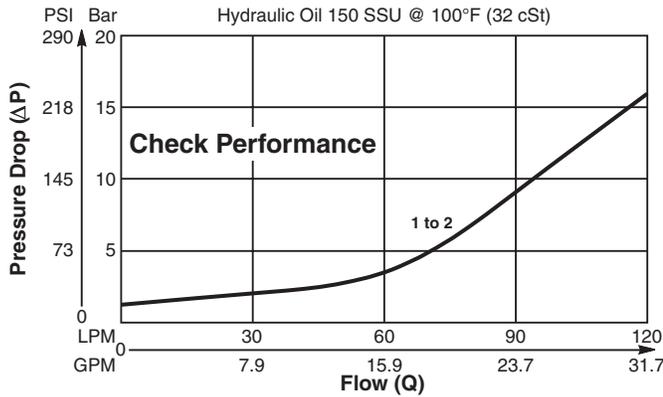
Poppet Type Check Valve with Relief Feature. For additional information see Technical Tips on pages CV1-CV4.

Features

- Poppet type for minimal leakage - less than 3 drops/min.
- Relief feature to give thermal and shock relief protection
- Compact space saving design
- Hardened working parts for maximum durability
- Single and dual pilot pistons available to create pilot to open check
- Good contamination tolerance
- All external parts zinc plated

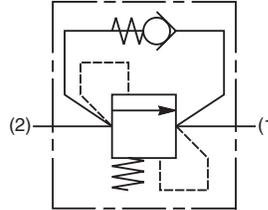
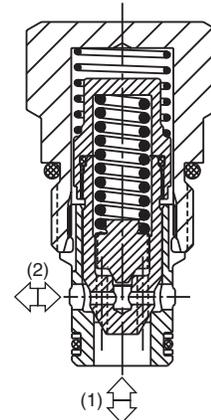
Performance Curve

Pressure Drop vs. Flow (Through cartridge only)

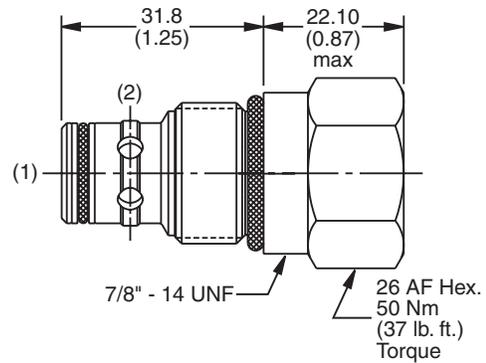


Specifications

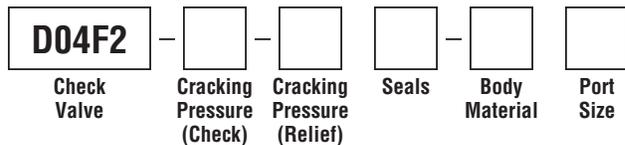
|                                |  |
|--------------------------------|--|
| Rated Flow                     | 130 LPM (40 GPM)   |
| Nominal Flow @ 7 Bar (100 PSI) | 72 LPM (19 GPM)  |
| Maximum Inlet Pressure         | 420 Bar (6000 PSI)   |
| Leakage at 150 SSU (32 cSt)    | Less than 3 drops/min.   |
| Cartridge Material             | All parts steel. All operating parts hardened steel.   |
| Operating Temp. Range/Seals    | -40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F)<br>-31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F) |
| Fluid Compatibility/Viscosity  | Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)       |
| Filtration                     | ISO code 16/13, SAE Class 4 or better  |
| Approx. Weight                 | .13 kg (.29 lbs.)  |
| Cavity                         | C10-2 (See BC Section for more details)  |



Dimensions Millimeters (Inches)



Ordering Information



| Code | Cracking Pressure (Check) |
|------|---------------------------|
| 2.5  | 2.5 Bar (36 PSI)          |
| 7.0  | 7.0 Bar (102 PSI)         |

| Code | Body Material |
|------|---------------|
| Omit | Steel         |
| A    | Aluminum      |

| Code | Cracking Pressure (Relief) |
|------|----------------------------|
| 35   | 35 Bar (507 PSI)           |
| 245  | 245 Bar (3553 PSI)         |
| 276  | 276 Bar (4000 PSI)         |

| Code | Port Size      | Body Part No. |
|------|----------------|---------------|
| Omit | Cartridge Only |               |
| 4P   | 1/4" NPTF      | (B10-2-*4P)   |
| 6P   | 3/8" NPTF      | (B10-2-*6P)   |
| 8P   | 1/2" NPTF      | (B10-2-*8P)   |
| 6T   | SAE-6          | (B10-2-*6T)   |
| 8T   | SAE-8          | (B10-2-*8T)   |
| T8T  | SAE-8          | (B10-2-T8T)†  |
| 6B   | 3/8" BSPG      | (B10-2-6B)†   |

| Code | Seals / Kit No.                |
|------|--------------------------------|
| N    | Nitrile, Buna-N / (SK30503N-1) |
| V    | Fluorocarbon / (SK30503V-1)    |

\* Add "A" for aluminum, omit for steel.  
† Steel body only.

