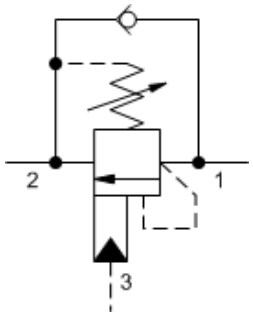
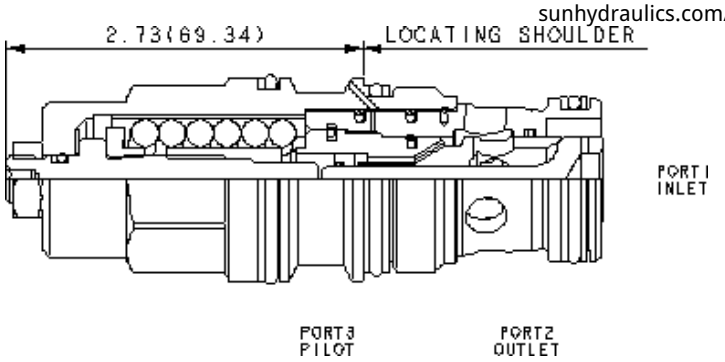
MODEL
CBFL

2.3:1 pilot ratio, semi-restrictive counterbalance valve
SERIES 3 / CAPACITY: 160 L/min. / CAVITY: T-17A

sunhydraulics.com/model/CBFL




3-Port Non-vented




## CONFIGURATION

| | | |
|---|---|---|
| **L** | Control | Standard Screw Adjustment |
| **C** | Functional Setting Range | 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting |
| **N** | Seal Material | Buna-N |
| **(none)** | Material/Coating | |

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

## TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

| | |
|---|---|
| Cavity | T-17A |
| Series | 3 |
| Capacity | 160 L/min. |
| Pilot Ratio | 2.3:1 |
| Maximum Recommended Load Pressure at Maximum Setting | 270 bar |
| Maximum Setting | 350 bar |
| Factory Pressure Settings Established at | 30 cc/min. |
| Maximum Valve Leakage at Reseat | 0,3 cc/min. |
| Adjustment - No. of CCW Turns from Min. to Max. Setting | 3.75 |
| Operating Characteristic | Semi-restrictive |
| Reseat | >85% of setting |
| Valve Hex Size | 31,8 mm |
| Valve Installation Torque | 203 - 217 Nm |
| Adjustment Screw Internal Hex Size | 4 mm |
| Locknut Hex Size | 15 mm |
| Locknut Torque | 9 - 10 Nm |
| Seal kit - Cartridge | Buna: 990017007 |
| Seal kit - Cartridge | Polyurethane: 990017002 |
| Seal kit - Cartridge | Viton: 990017006 |
| Model Weight | 0.62 kg. |

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## CONFIGURATION OPTIONS

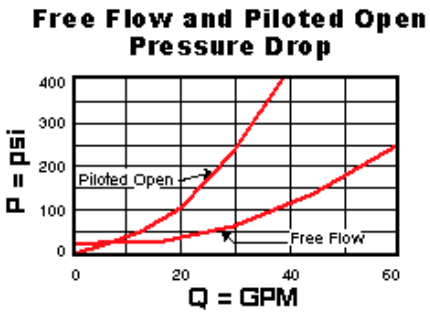
**Model Code Example: CBFLArray**

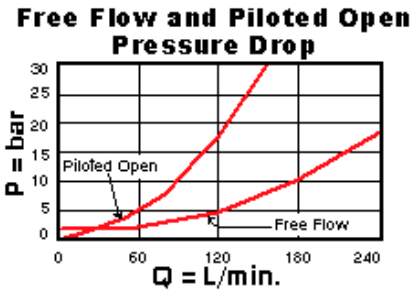
| CONTROL (L) | FUNCTIONAL SETTING RANGE (C) | SEAL MATERIAL (N) | MATERIAL/COATING |
|---|---|---|---|
| **L** Standard Screw Adjustment | **C** 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting | **N** Buna-N | Standard Material/Coating |
| **C** Tamper Resistant - Factory Set | **D** 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting | **V** Viton | **/LH** Mild Steel, Zinc-Nickel |
| | **J** 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting | | |
| | **K** 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting | | |

## TECHNICAL FEATURES

- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Turn adjustment clockwise to decrease setting and release load.
- Full clockwise setting is less than 200 psi (14 bar).
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- Reseat exceeds 85% of set pressure when the valve is standard set. Settings lower than the standard set pressure may result in lower reseat percentages.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- Two check valve cracking pressures are available. Use the 25 psi (1,7 bar) check unless actuator cavitation is a concern.
- This valve has positive seals between all ports.
- All 3-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

## PERFORMANCE CURVES




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