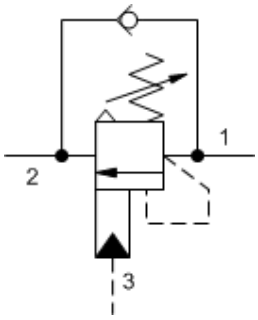
MODEL
CABN

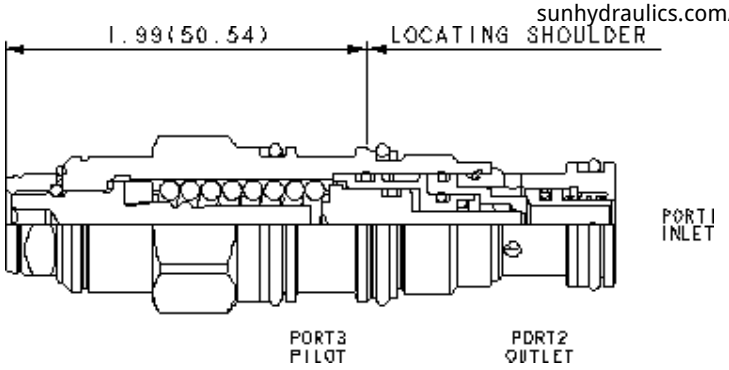
# 7:1 pilot ratio, vented counterbalance - valve atmospherically referenced

## SERIES 1 / CAPACITY: 7.5 gpm / CAVITY: T-11A

sunhydraulics.com/model/CABN




3-Port Atmospherically Referenced




Atmospherically vented 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. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

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

## CONFIGURATION

| | | |
|---|---|---|
| **L** | Control | Standard Screw Adjustment |
| **H** | Functional Setting Range | 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting |
| **N** | Seal Material | Buna-N |
| **(none)** | Material/Coating | |

## TECHNICAL DATA

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

| | |
|---|---|
| Cavity | T-11A |
| Series | 1 |
| Capacity | 7.5 gpm |
| Pilot Ratio | 7:1 |
| Maximum Recommended Load Pressure at Maximum Setting | 3075 psi |
| Maximum Setting | 4000 psi |
| Factory Pressure Settings Established at | 2 $in^3$/min. |
| Maximum Valve Leakage at Reseat | 5 drops/min. |
| Check Cracking Pressure | 25 psi |
| Reseat | >85% of setting |
| Valve Hex Size | 7/8 in. |
| Valve Installation Torque | 30 - 35 lbf ft |
| Adjustment Screw Internal Hex Size | 5/32 in. |
| Locknut Hex Size | 9/16 in. |
| Locknut Torque | 80 - 90 lbf in. |
| Seal kit - Cartridge | Buna: 990011007 |
| Seal kit - Cartridge | Polyurethane: 990011002 |
| Seal kit - Cartridge | Viton: 990011006 |
| Model Weight | 0.35 lb. |

© 2024 Sun Hydraulics

## CONFIGURATION OPTIONS

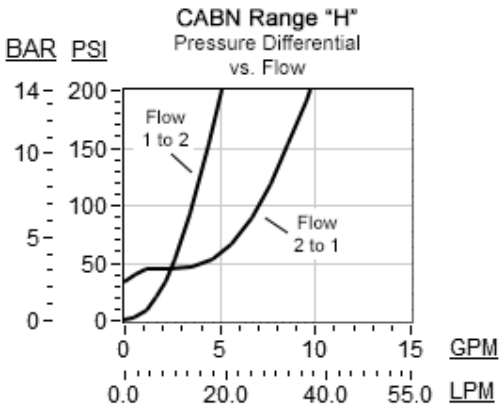
**Model Code Example: CABNLHN**

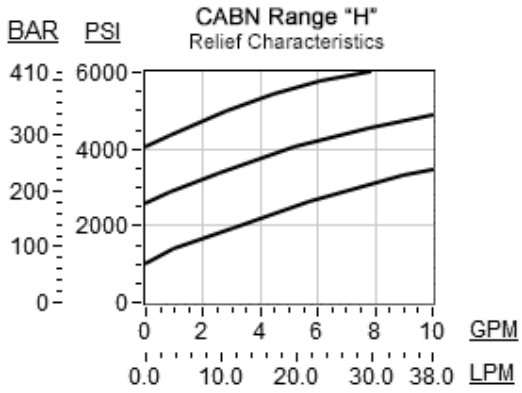
| CONTROL (L) | FUNCTIONAL SETTING RANGE (H) | SEAL MATERIAL (N) | MATERIAL/COATING |
|---|---|---|---|
| **L** Standard Screw Adjustment | **H** 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting | **N** Buna-N | Standard Material/Coating |
| **C** Tamper Resistant - Factory Set | | **V** Viton | **/LH** Mild Steel, Zinc-Nickel |

## 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 200 psi (14 bar).
- Free-flow check capacity (port 2 to port 1) is equivalent to the CAC* and CWC* models but the piloted-open flow capacity (port 1 to port 2) is reduced. See performance curve.
- Approximately 1 drop (0,07 cc) of fluid will pass from the pilot area to the vented spring chamber every 4000 cycles.
- 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.
- All 3-port counterbalance and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size), however, the model CABN has a reduced overall length, allowing for easier packaging.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- This valve has positive seals between all ports.
- With vented valves, a lower pilot ratio may be required to achieve machine stability compared to non-vented valves.
- 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




© 2024 Sun Hydraulics