



CONFIGURATION

| | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------|
| L Control | Standard Screw Adjustment |
| A Functional Setting Range | 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting |
| N Seal Material | Buna-N |
| 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.

NOTE: DATA MAY VARY FROM TECHNICAL DATA SEE CONFIGURATION SECTION.

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|---------------------------------------------------------|---------------------------|
| Cavity | T-11A |
| Series | 1 |
| Capacity | 15 gpm |
| Pilot Ratio | 3:1 |
| Maximum Recommended Load Pressure at Maximum Setting | 3075 psi |
| Maximum Setting | 4000 psi |
| Adjustment - No. of CCW Turns from Min. to Max. Setting | 3.75 |
| Factory Pressure Settings Established at | 2 in ³ /min. |
| Maximum Valve Leakage at Reseat | 5 drops/min. |
| Operating Characteristic | Standard |
| Pilot Configuration | Bleed through |
| 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. |
| Model Weight | 0.35 lb. |
| Seal kit - Cartridge | Buna: 990-011-007 |
| Seal kit - Cartridge | EPDM: 990-011-014 |
| Seal kit - Cartridge | Polyurethane: 990-011-002 |
| Seal kit - Cartridge | Viton: 990-011-006 |

OPTION SELECTION EXAMPLE: CBCALAN

| CONTROL | (L) | FUNCTIONAL SETTING RANGE | (A) | SEAL MATERIAL | (N) | MATERIAL/COATING | (/LH) |
|---------|--------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------|---------------|--------|------------------|-----------------------------|
| L | Standard Screw Adjustment | A | 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting | N | Buna-N | /LH | Mild Steel, Zinc-Nickel |
| C | Tamper Resistant - Factory Set | B | 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting | E | EPDM | /AP | Stainless Steel, Passivated |
| | | H | 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting | V | Viton | | Standard Material/Coating |
| | | I | 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 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 reseal 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.
- 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).
- This valve does not have positive seals on the pilot section and will pass up to 3 in³/min.@1000 psi (45 ml/min.@70 bar) between port 2 and port 3. This is a consideration in master-slave circuits and in the leak testing of valve-cylinder assemblies.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- Corrosion-resistant cartridge valves are intended for use in corrosive environments and are identified by the model code suffix /AP for external stainless steel components, or /LH for external zinc-nickel plated components. See the CONFIGURATION section for all options. For further details, please see the Materials of Construction page located under TECH RESOURCES.
- 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

