



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves 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-11A
Series	1
Capacity	15 gpm
Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Check Cracking Pressure	25 psi
Factory Pressure Settings Established at	2 in <sup>3</sup> /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Operating Characteristic	Standard
Valve Hex Size	7/8 in.
Valve Installation Torque	30 - 35 lbf ft
Model Weight	0.27 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: CBCAXNN

FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	E EPDM	/AP Stainless Steel, Passivated
	V Viton	/LH Mild Steel, Zinc-Nickel

## TECHNICAL FEATURES

- The maximum recommended load pressure for the N range is 2200 psi (150 bar). The highest cracking pressure for the N range will be less than 3500 psi (245 bar).
- The maximum recommended load pressure for the P range is 1700 psi (120 bar). The highest cracking pressure for the P range will be less than 2680 psi (185 bar).
- Note: The pressures listed under RANGE are approximate, mean values and should not be used for inspection purposes.
- Note: The percentage difference between the cracking and reseal values for the fixed and adjustable versions of this valve are identical. However, the cracking point for the adjustable control can be set via the adjustment mechanism to within +/- 50 psi (3,5 bar) of the specified value. In the case of the fixed-setting version, the setting tolerance can only be maintained within a several hundred psi span, depending on the range. The maximum recommended load pressure for any given range is the minimum possible setting divided by 1.3.
- Fixed-setting counterbalance valves offer a shorter cartridge extension than the adjustable version.
- Fixed-setting counterbalance valves can be used to protect cylinder seals in outrigger circuits from damage due to thermal expansion, however, they probably should not be applied in circuits in which a matched valve setting may be required such as dual cylinder applications.
- 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 in<sup>3</sup>/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.
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- 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

