

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.

**TECHNICAL DATA**

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

Cavity	T-11A
Series	1
Capacity	15 gpm
Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in <sup>3</sup> /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Operating Characteristic	Standard
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: 990211007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Viton: 990211006
Model Weight	0.44 lb.

**CONFIGURATION**

<b>L</b>	Control	Standard Screw Adjustment
<b>G</b>	Functional Setting Range	2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting
<b>V</b>	Seal Material	Viton
<b>(none)</b>	Material/Coating	Standard Material/Coating

**CONFIGURATION OPTIONS**
**Model Code Example: CACGLGV**

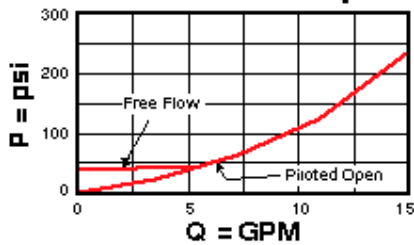
<b>CONTROL</b>	<b>(L) FUNCTIONAL SETTING RANGE</b>	<b>(G) SEAL MATERIAL</b>	<b>(V) MATERIAL/COATING</b>
<b>L</b> Standard Screw Adjustment	<b>G</b> 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting	<b>V</b> Viton	Standard Material/Coating
<b>C</b> Tamper Resistant - Factory Set	<b>F</b> 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting	<b>E</b> EPDM	/AP Stainless Steel, Passivated
		<b>N</b> Buna-N	/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).
- 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 reseal percentages.
- 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.
- 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.
- Three-port vented valves are atmospherically referenced and considered problem solvers for existing circuits using non-vented valves. Over time, the vented valves may leak externally or allow moisture into the spring chamber. Four-port vented counterbalance valves are recommended for new 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).
- 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

**Free Flow and Piloted Open Pressure Drop**



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