

10:1 pilot ratio, standard capacity counterbalance valve

Capacity:
30 gpm (120
L/min.)

Functional Group:

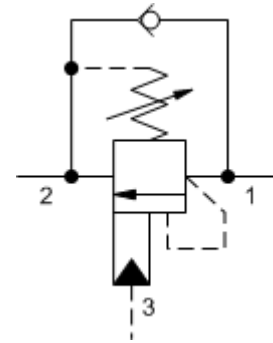
Products : Cartridges : Counterbalance : 3-Port Non-vented : Standard, 10:1
Pilot Ratio

Model:
CBEH-LCN

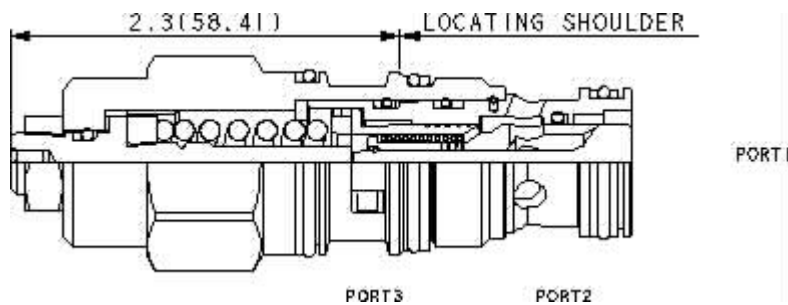
Product Description

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.



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Technical Features

- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- Turn adjustment clockwise to decrease setting and release load.
- Two check valve cracking pressures are available. Use the 25 psi (1,7 bar) check unless actuator cavitation is a concern.
- Full clockwise setting is less than 200 psi (14 bar).
- This valve does not have positive seals on the pilot section and will pass up to 2 in³/min. @1000 psi (32 cc/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.
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- 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).
- Reseat exceeds 85% of set pressure when the
- Incorporates the Sun floating style construction to

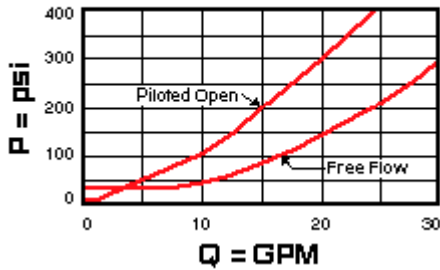
valve is standard set. Settings lower than the standard set pressure may result in lower reseal percentages.

minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

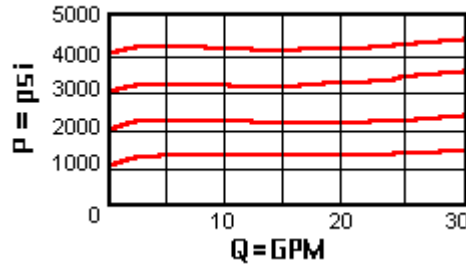
Technical Data

	U.S. Units	Metric Units
Cavity		T-2A
Capacity	30 gpm	120 L/min.
Pilot Ratio		10:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi	270 bar
Maximum Setting	5000 psi	350 bar
Adjustment - Number of Counterclockwise Turns to Increase Setting		3.75
Factory Pressure Settings Established at	2 in ³ /min.	30 cc/min.
Maximum Valve Leakage at Reseat	5 drops/min.	0,4 cc/min.
Series (from Cavity)		Series 2
Reseat		>85% of Set Pressure
Valve Hex Size	1 1/8 in.	28,6 mm
Valve Installation Torque	45 - 50 lbf ft	60 - 70 Nm
Adjustment Screw Internal Hex Size	5/32 in.	4 mm
Adjustment Nut Hex Size	9/16 in.	15 mm
Adjustment Nut Torque	108 lbf in.	12 Nm
Model Weight	0.63 lb.	0.29 kg.
Seal Kits - Cartridge		Buna: 990-202-007
Seal Kits - Cartridge		Viton: 990-202-006

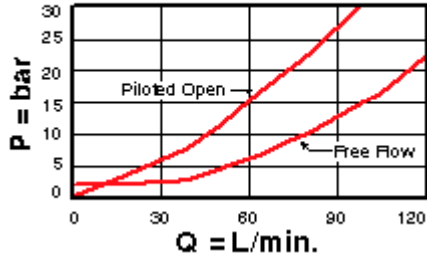
Free Flow and Piloted Open Pressure Drop



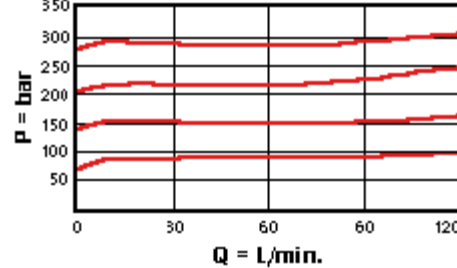
Typical Relief Characteristics



Free Flow and Piloted Open Pressure Drop



Typical Relief Characteristics



Control		Functional Setting Range	External Material/Seal Material
L Standard Screw Adjustment		2000 - 5000 psi w/4 psi Check (140 - 350 bar w/0,3 bar Check), 3000 psi (210 bar) Standard Setting	+2.00 N Buna-N +0.00
R* Lockwired Screw Adjustment	+5.10	400 - 1500 psi w/4 psi Check (28 - 105 bar w/0,3 bar Check), 1000 psi (70 bar) Standard Setting	+2.00
		400 - 1500 psi w/25 psi Check (28 - 105 bar w/1,7 bar Check), 1000 psi (70 bar) Standard Setting	+0.00

If the material/seal is P, the control must be L or C
If the material/seal is W, the control must be L or C

Customer specified setting stamped on hex \$1.10

- Explanation of Sun cartridge control options - US units.
- Explanation of Sun cartridge control options - metric units.

Special Notes

- No Special Notes Available for selected model.

