



Counterbalance Valves Technical Information

Hydraulic Vent

CP448-1

OPERATION

This 3-ported, externally piloted counterbalance valve is 8-size, cartridge style, low leakage with hydraulic vent. The check section allows free flow from the directional valve (port 2) to the load (port 1), while normally blocking flow from port 1 to port 2. Reverse flow is blocked until pilot pressure is applied at port 3. When the load pressure at port 1 rises above the pressure setting, the relief valve is activated and pressure is relieved from port 1 to port 2.



APPLICATIONS

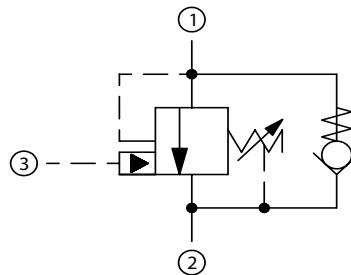
Single counterbalance valves are normally used when the load is unidirectional, such as aerial lifts, cranes, or winches. In load holding applications, they can be used as hose-break valves when installed close to or in an actuator. Dual valves can be used for controlling loads bi-directionally in motor applications, or for cylinders going over center.

SPECIFICATIONS

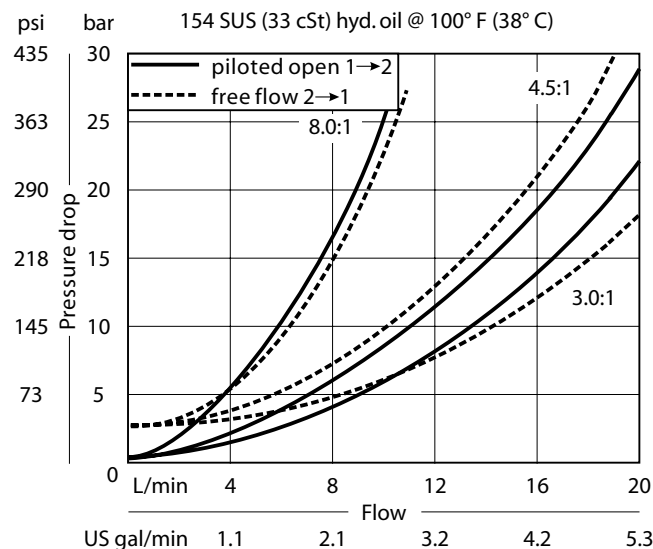
Rated pressure	350 bar [5075 psi]*
Rated flow at 22 bar (319 psi)	20 l/min [5 US gal/min]
Leakage	10 drops/min @ 70% of crack pressure
Weight	0.16 kg [0.36 lb]
Pilot ratio	3:1, 4.5:1, 8:1
Cavity	CP08-3L

* 350 bar with steel housing
210 bar with aluminum housing

SCHEMATIC



PERFORMANCE





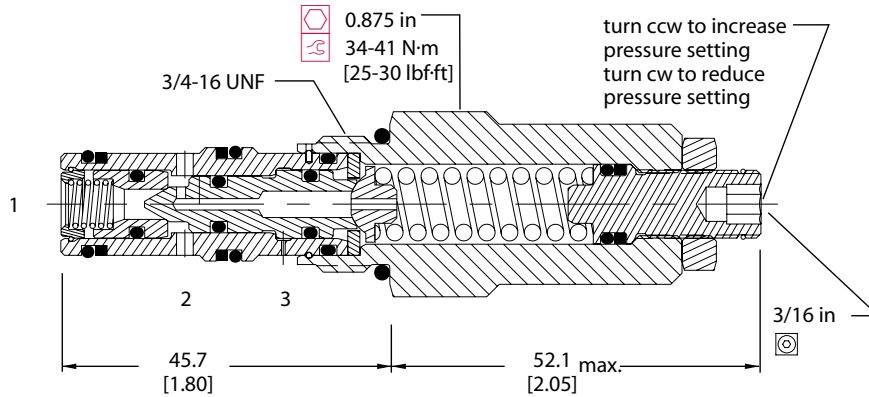
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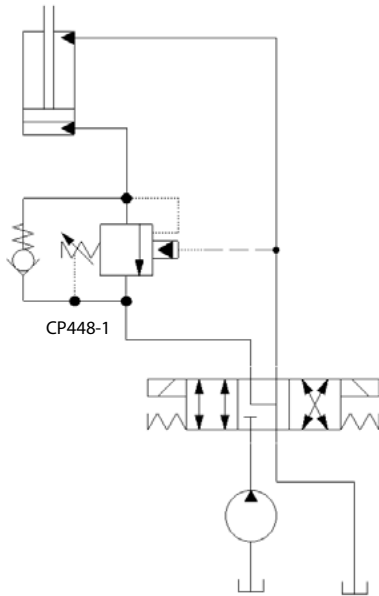
DIMENSIONS

mm [in]

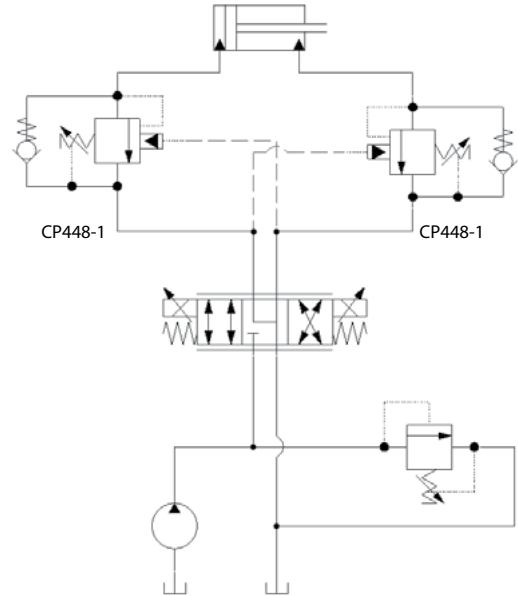


EXAMPLE CIRCUITS

Load Holding - Single Actuator



Load Holding - Double Actuator



ORDERING INFORMATION

CP448 - 1 - B - 6S - E - B - XXX - 4.5 - 040

CP448-1:
Counterbalance
valve, 8 size,
hydraulic vent

Code	Seal Material	Seal Kit
B	Buna-N	120238
V	Viton	120239

E:
External
Adjustment

Code	Pilot Ratio
3.0	3.0:1
4.5	4.5:1
8.0	8.0:1

Free flow check
crack pressure in psi

Code psi [bar]
040 = 40 2.76

Pressure Setting [in psi]

XXX - Standard setting with no stamping

For customer specified setting,
code x 10 = total psi
Example: 150 x 10 = 1500 psi (insert 150 above)

Housing & Ports	Housing P/N
0 Cartridge Only	No Body
2B AL, 1/4 BSP	CP08-3L-2B
3B AL, 3/8 BSP	CP08-3L-3B
S3B Steel, 3/8 BSP	CP08-3L-S3B
4S AL, #4 SAE	CP08-3L-4S
6S AL, #6 SAE	CP08-3L-6S
S6S Steel, #6 SAE	CP08-3L-S6S

Pressure Range

Code	Pilot Ratio 3.0 psi [bar]	Pilot Ratio 4.5 psi [bar]	Pilot Ratio 8.0 psi [bar]
A	600-1800 [41-124] Std. Setting 1000 [69]	800-2700 [55-186] Std. Setting 1500 [103]	1500-5000 [103-345] Std. Setting 2500 [172]
B	1000-3500 [69-241] Std. Setting 1500 [103]	1500-5000 [103-345] Std. Setting 2500 [172]	
C	1800-5000 [124-345] Std. Setting 2500 [172]		