



# Counterbalance Valves Technical Information

## Dual Counterbalance - Hydraulic Vent CP448-2

### OPERATION

This dual valve, internally piloted HIC is a low leakage counterbalance assembly with hydraulic vent. The CP448-2 uses two CP448-1 8-size cartridges and allows free flow from the V ports to the C ports and blocks flow in the reverse direction until the relief setting is reached, or until adequate pilot pressure has been applied to the opposite V port.



### APPLICATIONS

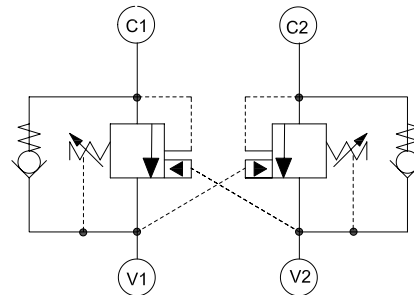
Dual counterbalance HIC's are used for controlling loads in bidirectional motion such as wheel motor applications or for cylinders going over center. They are also suitable for use on the boom and dipper cylinder on an excavator.

### SPECIFICATIONS

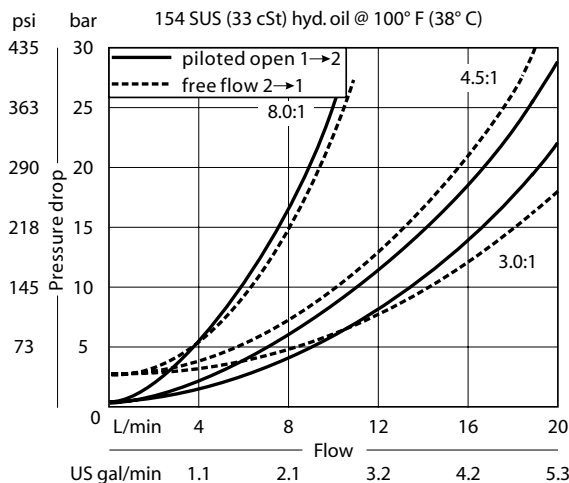
Rated pressure	350 bar [5075 psi]*
Rated flow at 22 bar (319 psi)	20 l/min [5 US gal/min]
Weight	0.78 kg [1.72 lb]
Pilot ratio	3:1, 4.5:1, 8:1
Cavity	CIB

\* 350 bar with steel housing  
210 bar with aluminum housing

### SCHEMATIC



### PERFORMANCE





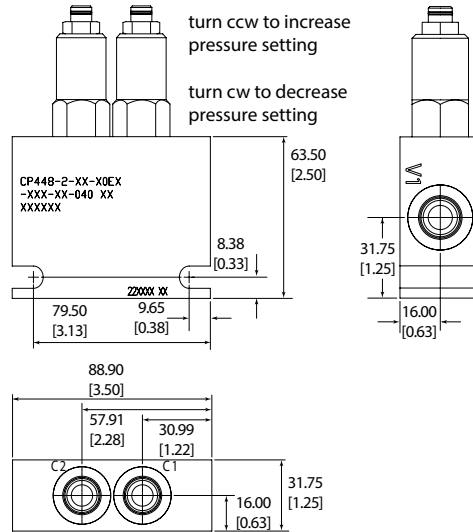
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## Dual Counterbalance - Hydraulic Vent

### CP448-2

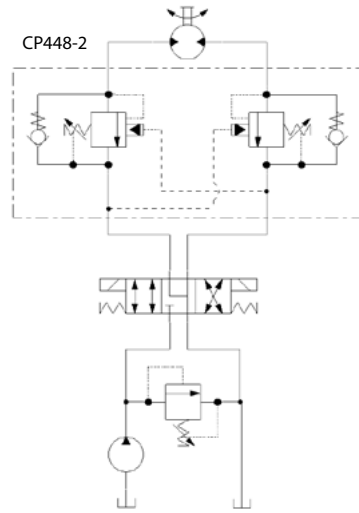
### DIMENSIONS

mm [in]

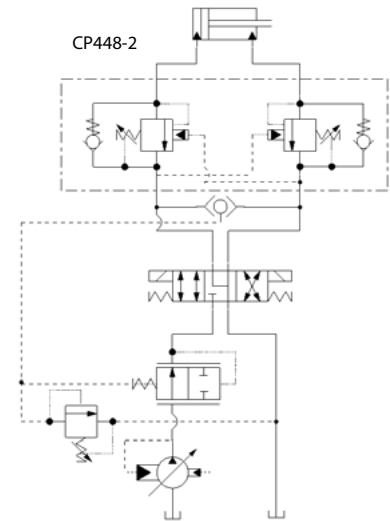


### EXAMPLE CIRCUITS

Bi-directional Motion Control



Bi-directional Load Holding



### ORDERING INFORMATION

CP448 - 2 - 6S - B - E - B - XXX - 4.5 - 040

CP448-2:  
Dual Counterbalance  
valve, 8 size,  
hydraulic vent

Housing & Ports	Housing P/N
3B AL, 3/8 BSP	CP448-2-3B
S3B Steel, 3/8 BSP	CP448-2-S3B
4S AL, #4 SAE	CP448-2-4S
6S AL, #6 SAE	CP448-2-6S

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    2.8

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)

Pressure Range

Code	Pilot Ratio 3.0 psi [bar]	Pilot Ratio 4.5 psi [bar]	Pilot Ratio 8.0 psi [bar]
A	600-1500 [41-103] Std. Setting 1000 [69]	363-1740 [55-172] Std. Setting 1500 [103]	1500-5000 [103-345] Std. Setting 2500 [172]
B	1000-3000 [69 - 207] Std. Setting 1500 [103]	870-2900 [103-345] Std. Setting 2500 [172]	
C	1800-5000 [124 - 345] Std. Setting 2500 [172]		

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