



# Counterbalance Valves Technical Information

## Dual Counterbalance - Hydraulic Vent CP441-2

### OPERATION

This dual counterbalance, internally piloted catalog HIC is a low leakage assembly with hydraulic vent. This HIC uses 2 CP441-1 12-size cartridges and allows free flow from the V port 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

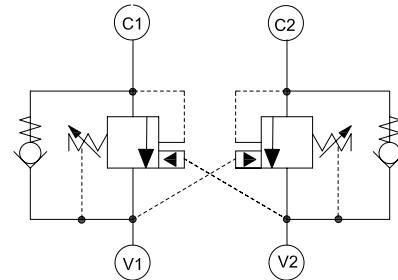
Dual counterbalance HIC's are used for controlling loads in bidirectional motion such as wheel motor applications or for cylinders going over center. They are also suitable for use on the boom and dipper cylinder on an excavator.

### SPECIFICATIONS

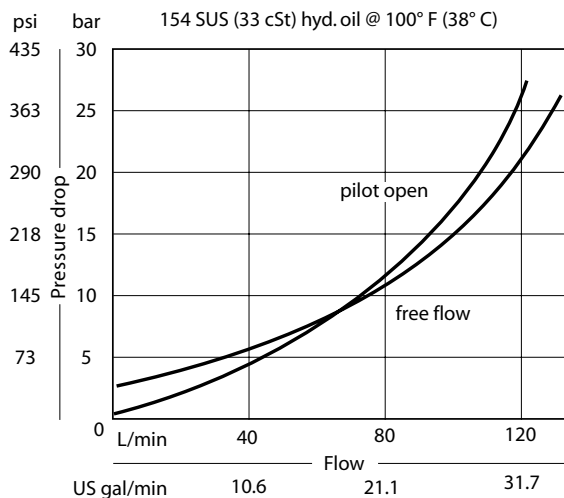
|                                |                           |
|--------------------------------|---------------------------|
| Rated pressure                 | 350 bar [5075 psi]*       |
| Rated flow at 22 bar (319 psi) | 115 l/min [30 US gal/min] |
| Weight                         | 1.26 kg [2.77 lb]         |
| Pilot ratio                    | 3:1, 4.5:1, 10:1          |
| Cavity                         | CIB                       |

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

### SCHEMATIC



### PERFORMANCE





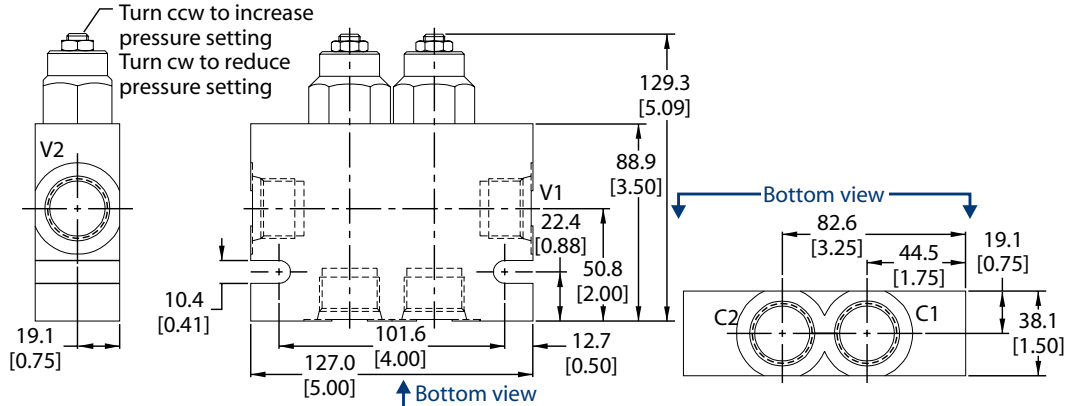
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## Dual Counterbalance - Hydraulic Vent

### CP441-2

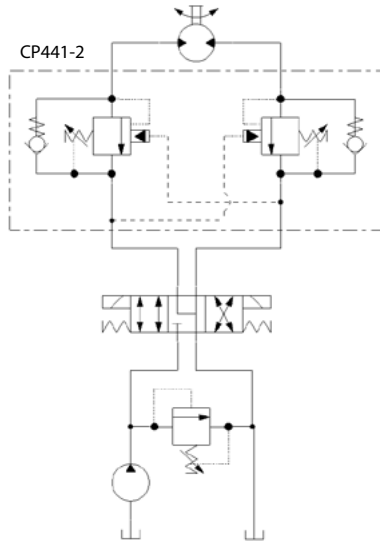
### DIMENSIONS

mm [in]

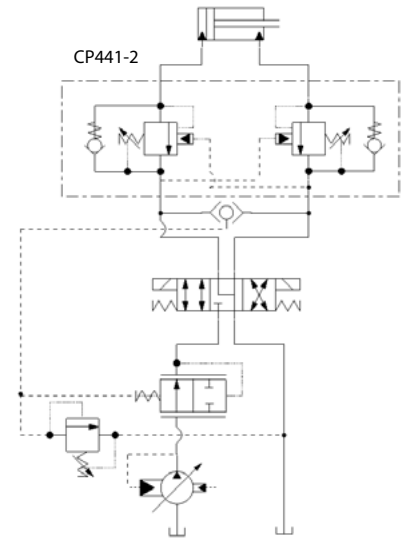


### EXAMPLE CIRCUITS

Bi-directional Motor Control



Bi-directional Load Control



### ORDERING INFORMATION

**CP441 - 2 - 12S - B - E - B - XXX - 4.5 - 015**

CP441-2:  
Dual counterbalance valve,  
12 size, hydraulic vent

| Housing & Ports | Housing P/N |
|-----------------|-------------|
| 4B AL, 1/2 BSP  | 221445      |
| 6B AL, 3/4 BSP  | 221446      |
| 10S AL, #10 SAE | 220752      |
| 12S AL, #12 SAE | 220753      |

E:  
External  
Adjustment

| Code | Seal Material | Seal Kit |
|------|---------------|----------|
| B    | Buna          | 120414   |
| V    | Viton         | 120415   |

| Code | Pilot Ratio |
|------|-------------|
| 3.0  | 3.0:1       |
| 4.5  | 4.5:1       |
| 10.0 | 10.0:1      |

Free flow check  
crack Pressure in psi

| Code | psi | [bar] |
|------|-----|-------|
| 005  | 5   | .34   |
| 015  | 15  | 1.03  |

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 3.0:1 psi [bar]                    | Pilot Ratio 4.5:1 psi [bar]                    | Pilot Ratio 10.0:1 psi [bar]                 |
|------|--|--|--|
| A    | 500-1500 [34-103]<br>Std. Setting 1000 [69]    | 500-2000 [34-138]<br>Std. Setting 1500 [103]   | 100-5000 [69-345]<br>Std. Setting 2500 [172] |
| B    | 1500-3000 [103-207]<br>Std. Setting 2500 [172] | 1500-5000 [103-345]<br>Std. Setting 3000 [207] |  |