

**OPERATION**

This 3-ported, externally piloted unit is a 12-size cartridge style, low leakage counterbalance valve 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 integral relief valve is activated and pressure is relieved from port 1 to port 2.



**APPLICATIONS**

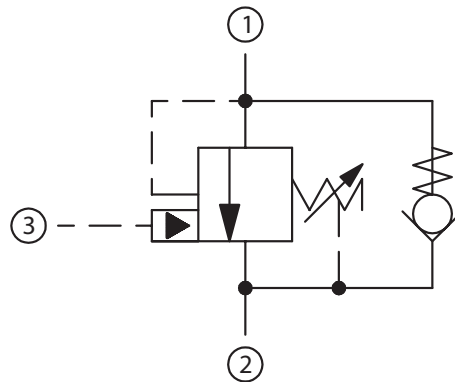
Single counterbalance valves are normally used when the load is unidirectional, such as aerial lifts, cranes, or winches. In load holding applications, they can be used as hose-break valves when installed near or within an actuator. Dual valves can be used for controlling loads bi-directionally in motor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

**SPECIFICATIONS**

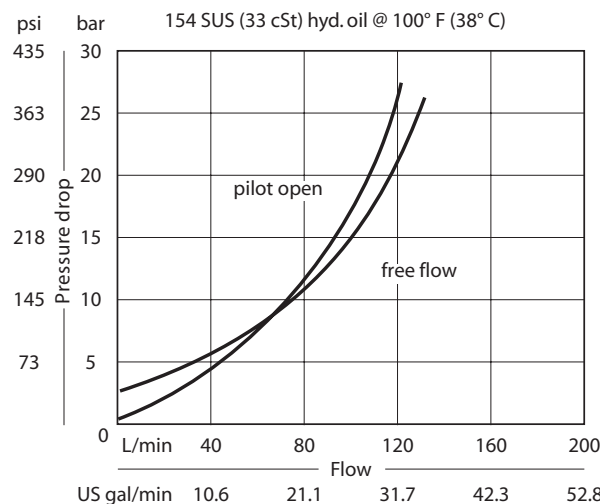
|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Rated pressure</b>                 | 350 bar [5075 psi]*                  |
| <b>Rated flow at 22 bar (319 psi)</b> | 115 l/min [30 US gal/min]            |
| <b>Leakage</b>                        | 10 drops/min @ 70% of crack pressure |
| <b>Weight</b>                         | 0.22 kg [0.48 lb]                    |
| <b>Pilot ratio</b>                    | 3:1, 4.5:1, 10:1                     |
| <b>Cavity</b>                         | CP12-3S                              |

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

**SCHEMATIC**

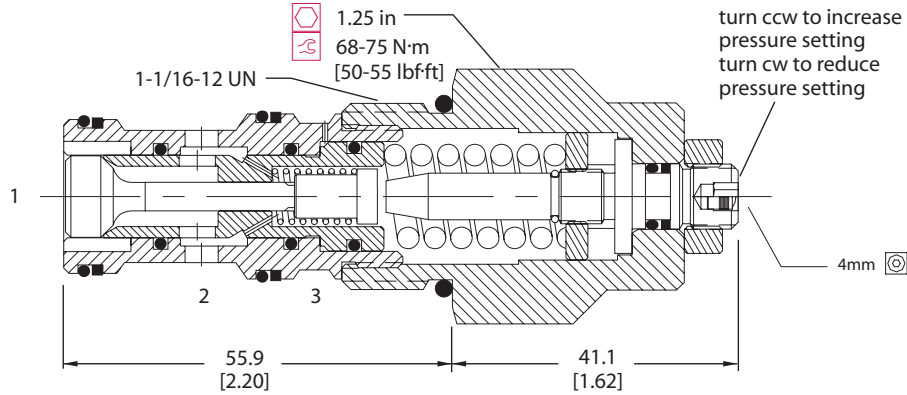


**PERFORMANCE**



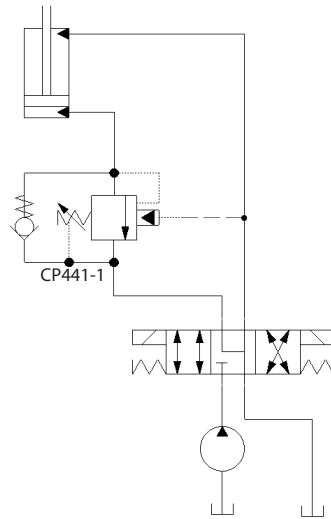
**DIMENSIONS**

mm [in]

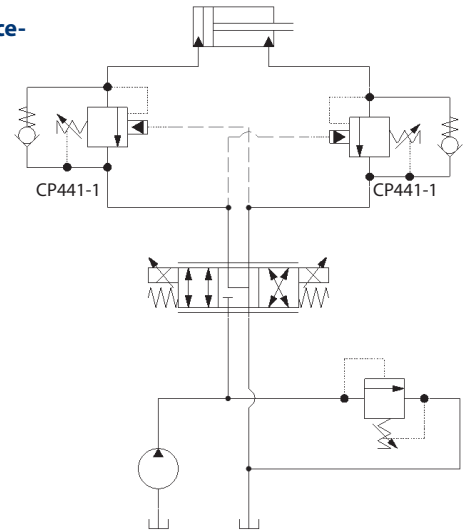


**EXAMPLE CIRCUITS**

**Load Holding - Single Actuator**



**Counterbalance - Double Actuator**



CB - Counterbalance Valves

**ORDERING INFORMATION**

**CP441 - 1 - B - 12S - E - B - XXX - 4.5 - 015**

CP441-1:  
 Counterbalance valve, 12 size, hydraulic vent

| Code | Seal Material | Seal Kit |
|------|---------------|----------|
| B    | Buna-N        | 120335   |
| V    | Viton         | 120336   |

E:  
 External Adjustment

| 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  | 1.05  |

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] |  |

| Housing & Ports     | Housing P/N    |
|---------------------|----------------|
| 0 Cartridge Only    | No Body        |
| 4B AL, 1/2 BSP      | CP12-3S-4B/2B  |
| 6B AL, 3/4 BSP      | CP12-3S-6B/2B  |
| S6B Steel, 3/4 BSP  | CP12-3-S6B/4S  |
| 10S AL, #10 SAE     | CP12-3S-10S/4S |
| 12S AL, #12 SAE     | CP12-3S-12S/4S |
| S12S Steel, #12 SAE | CP12-3-S12S/4S |