



# Counterbalance Valves Technical Information

## Hydraulic Vent

### VCB06-EN

### OPERATION

The VCB06-EN is a cartridge style, 6-size metric counterbalance valve with hydraulic vent. This valve is 3-ported, externally piloted and low leakage. The check section allows free flow from the directional valve (port 2) to the load (port 3). Reverse flow is blocked until pilot pressure is applied at port 1. When the load pressure at port 3 rises above the pressure setting, the integral relief valve is activated and pressure is relieved from port 3 to port 2.



### APPLICATIONS

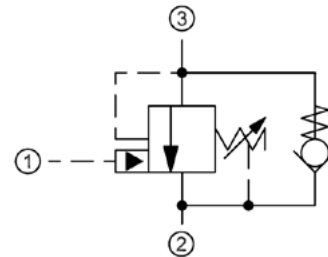
Single counterbalance valves are normally used when the load is unidirectional, such as aerial lifts, cranes, or winches. In load holding applications, they can be used as hose-break valves when installed near or within an actuator. Dual cartridges can be used for controlling loads bi-directionally in motor applications, or for cylinders going over center. Since this valve is piloted at port 1, no cross port drilling is required when dual cartridges are mounted nose to nose in an HIC.

### SPECIFICATIONS

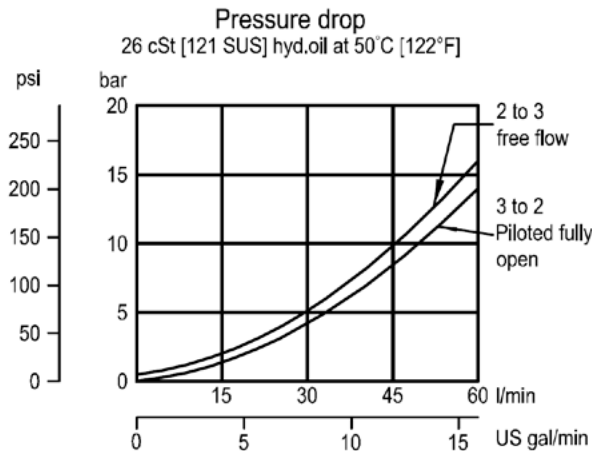
<b>Rated pressure</b>	350 bar [5075 psi]*
<b>Rated flow at 22 bar (319 psi)</b>	60 l/min [16 US gal/min]
<b>Leakage</b>	10 drops/min @ at 70% of crack pressure
<b>Weight</b>	0.21 kg [0.47 lb]
<b>Pilot ratio</b>	4.1:1, 7.1:1
<b>Cavity</b>	<b>NCS06/3</b>

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

### SCHEMATIC



### PERFORMANCE





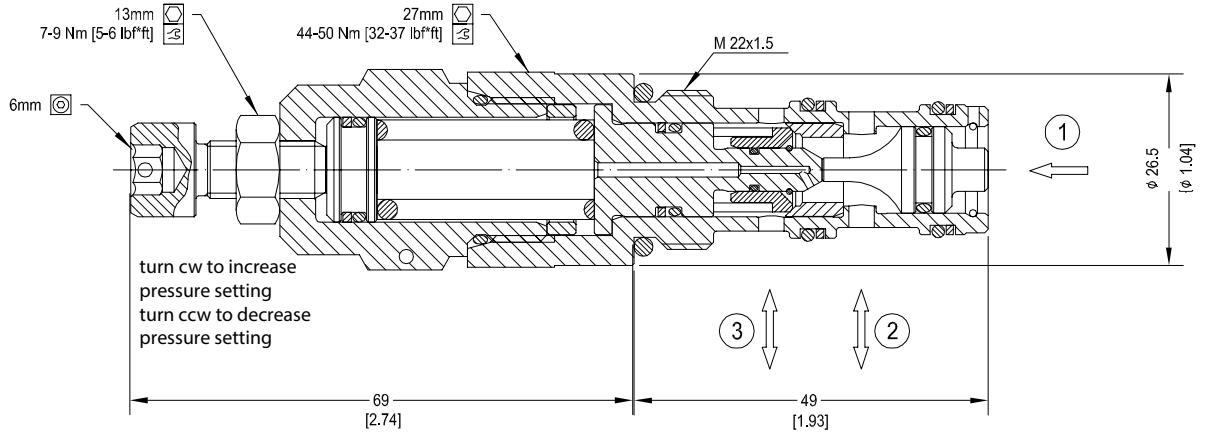
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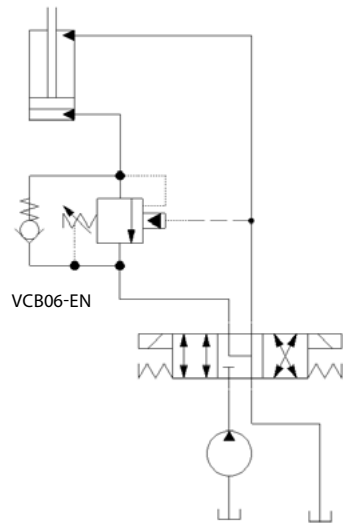
### DIMENSIONS

mm [in]

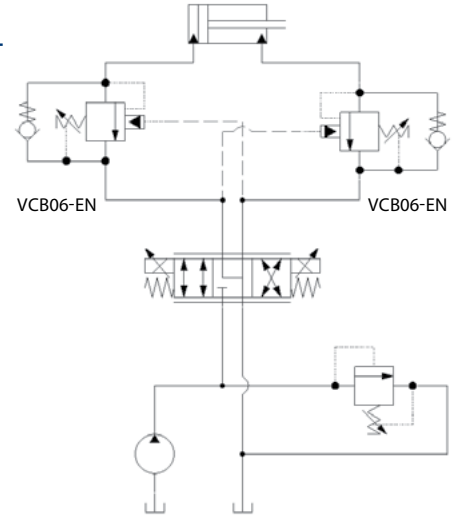


### EXAMPLE CIRCUITS

#### Load Holding - Single Actuator



#### Counterbalance - Double Actuator



### ORDERING INFORMATION

**VCB06 - EN - 2 - A - 00 - B - XXX**

VCB06-EN:  
Counterbalance Valve, Pilot Port 1,  
6 size (metric), external adjustment,  
hydraulic vent

Crack Pressure Setting [in bar]

XXX: No factory setting / no stamping

For customer specified settings,  
enter value in bar (Example 70 bar = 70;  
125 bar = 125 etc.)

Code	Seal Material	Seal Kit
B	Buna-N	230000070
V	Viton	230000110

Code	Pressure Range bar (psi)
1	25-140 [363-2030]
2	70 - 210 [1015-3045]
3	105 - 350 [1523-5075]

Code	Pilot Ratio
A	7.1:1
B	4.1:1

Housing & Ports	Housing Nomenclature
00: Cartridge Only	No Body
SE3B: AL, 3/8 BSP	NCS06-3-SE3B
SE4B: AL, 1/2 BSP	NCS06-3-SE4B
SE6S: AL, #6 SAE	NCS06-3-SE6S
SE6S: Steel, #6 SAE	NCS06-3-SE6S
SE8S: AL, #8 SAE	NCS06-3-SE8S