CBVs in Redundant Safety Circuits (1)

Machine: | **Actuator:** Cylinder | **Function:** Counterbalance, Load Holding

Prepared for :

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Prepared by :

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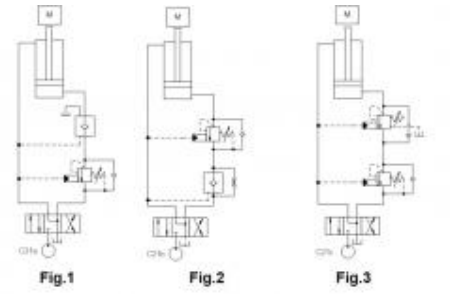
Schematics

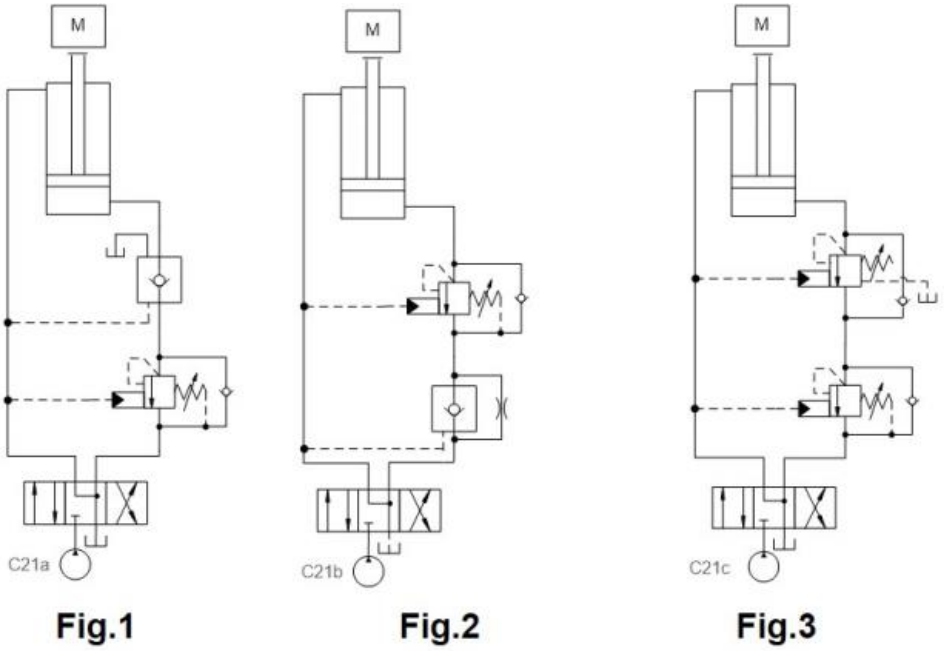


Related Products

Cartridges

CBEB - 1.5:1 pilot ratio, standard capacity counterbalance valve
CKCV - Vented pilot-to-open check valve - atmospherically referenced
CNBE - Pilot-to-open check valve with bypass orifice

Summary



The circuits show three examples for redundancy in load-holding applications with counterbalance valves.

- **Load-sensitive counterbalance:** **CB**, CW**,CA****
- **Vented pilot-to-open check :** **CV*V, CK*V**
- **Pilot-to-open check with bypass orifice:** **CN*E**

Benefits of this circuit arrangement:

- **Fig.1** includes a vented pilot-to-open check valve on the cylinder.
- A 3:1 pilot ratio is the only available option and can only be installed on the full bore side as shown. This is a solution where regulations prevent springs being used to keep cylinders in position.
- **Fig. 2** includes a pilot-to-open check below the CBV. Since there is no pressure build up between the two valves, the P.O. check valve can open at a low pressure. The orifice across the P.O. check valve limits the cylinder speed if the CBV upstream fails.
- **Fig.3** offers redundancy with two CBVs in series. The valve upstream is a vented CBV with a high pilot ratio and will open first. The second CBV (lower pilot ratio) will then open and control the cylinder speed.

For Sun technical support, contact Steve Weber.