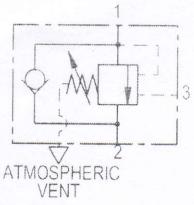
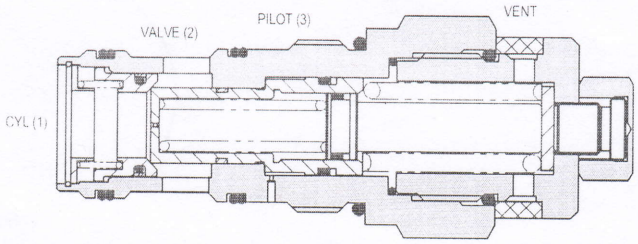
1CEB SERIES OVERCENTRE VALVE

FULLY BALANCED - PILOT ASSISTED

1CEB120*

POPPET RELIEF





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APPLICATION

Overcentre valves give static and dynamic control of loads by supplying a counterbalance pressure to the actuator. They prevent runaway in the event of hose burst and hold the load with minimal leakage.

The pressure balanced valve is unaffected by back pressure, allowing service line reliefs to operate and for the valve to be used in regenerative or proportional valve systems.

The overcentre valve should be mounted either into, onto or as close to the actuator as possible to give maximum protection.

Single overcentre valves control unidirectional loads such as in aerial platforms, cranes or winches and dual overcentres are suited to bi-directional motion such as wheel motor applications or cylinders going over centre.

OPERATION

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimisation of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

FEATURES

Cartridge is economical and fits simple 'dual purpose' cavity. Allows quick, easy field service - reduces down time. Overcentre is interchangeable with 120 litres/min pilot check cartridge. See page 7-171

PILOT RATIOS

3:1 (Standard)	Best suited for applications where load varies and machine structure can induce instability
8:1	Best suited for applications where load remains relatively constant.

SPECIFICATIONS

Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

Rated Flow	120 litres/min (32 US GPM)
Max Setting	Max Load Induced Pressure: 270 bar (4000 psi) Relief Setting 350 bar (5000 psi)
Cartridge Material	Working parts hardened and ground steel. External surfaces zinc plated
Body Material	Standard aluminium (up to 210 bar*) Add suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A877 (See Section 17)
Torque Cartridge into Cavity	100 Nm (74 lbs ft)
Weight	1CEB120 0.59 kg (1.30 lbs) 1CEB150 1.46 kg (3.20 lbs) 1CEEB150 2.58 kg (5.70 lbs)
Seal Kit Number	SK417 (Nitrile) SK417V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-20°C to +90°C
Leakage	0.3 millilitres/min nominal (5 dpm)
Nominal Viscosity Range	5 to 500 cSt

*For applications above 210 bar please consult our technical department or use the steel body option.

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