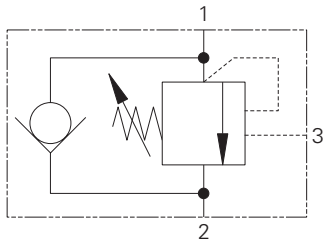


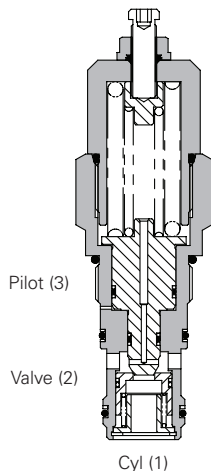
1CE140 - Overcenter Valve

Pilot assisted relief with check

140 L/min (37 USgpm) • 340 bar (4930 psi)



Sectional View



Description

Overcenter valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

The overcenter cartridge is ideal for mounting directly into a cavity machined in the body of the cylinder, motor or rotary actuator. The cartridge can also be mounted directly to the ports via a specifically machined body as part of a Hydraulic Integrated Circuit or single unit, or contained within one of our standard line bodies.

Single overcenter valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcenter valves are used for controlling loads in both directional for motor applications or for cylinders going over center.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

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 optimization 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:

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

Features

Cartridge is economical and fits simple cavity. Allows quick, easy field service - reduces down time. Interchangeable with pilot check valve of a similar size.

Pilot Ratio

4:1 Best suited for applications where load varies and machine structure can induce instability.

6:1 Best suited for applications where the load remains relatively constant.

Other options available upon request.

Performance Data

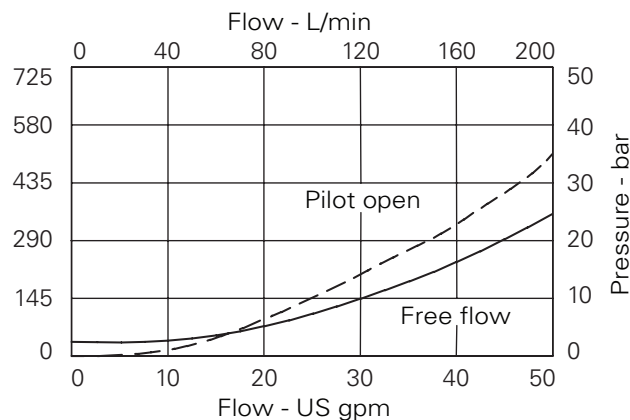
Ratings and Specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)

Rated flow	140 L/min (37 USgpm)	
Max relief setting	420 bar (6090 psi)	
Max load induced pressure	340 bar (4930 psi)	
Cartridge material	Working parts hardened and ground steel. External surfaces zinc plated.	
Standard housing material	Aluminum (up to 210 bar). Add suffix "377" for steel option.	
Mounting position	Unrestricted	
Cavity number	A20081	
Torque cartridge into cavity	150 Nm (110 lbs ft)	
Weight	1CE140	1.2 kg (2.5 lbs)
	1CE145 (aluminium)	2.2 kg (4.5 lbs)
	1CE145 (steel)	4.0 kg (8.8 lbs)
	1CEE145 (aluminium)	2.9 kg (6.4 lbs)
	1CEE145 (steel)	6.0 kg (13.2 lbs)
Seal kit number	SK1108	(Nitrile)
	SK1108V	(Viton)
Recommended filtration level	BS5540/4 Class 18/13 (25 micron nominal)	
Operating temperature	-30°C to +90°C (-22° to +194°F)	
Leakage	0.3 milliliters/min nominal (5 dpm)	
Nominal viscosity range	5 to 500 cSt	

Viton is a registered trademark of E.I. DuPont

Pressure Drop

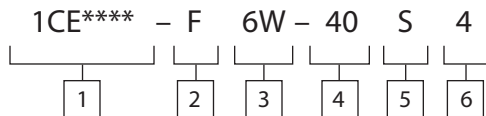


1CE140 - Overcenter Valve

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Model Code



1 Function

- 1CE140 - Cartridge only
- 1CE145 - Cartridge and body
- 1CEE145 - Cartridges and body

2 Adjustment Means

- F - Screw adjustment

3 Port Sizes

Code	Port Size	Housing Number - Body Only			
		Aluminium Single	Steel Single	Aluminium Dual	Steel Dual
6W	3/4" BSP Valve & Cyl Port. 1/4" BSP Pilot Port	B20105	B20106		
8W	1" BSP Valve & Cyl Port. 1/4" BSP Pilot Port	B20107	B20108	C20285	C20287
16T	1" SAE Valve & Cyl Port. 1/4" SAE Pilot Port	B11946	B11947	C30105	C30106

4 Pressure Range @ 4.8 l/min

Note: Code based on pressure in bar.

- 20 - 140-250 bar. Std setting 190 bar
- 30 - 220-330 bar. Std setting 270 bar
- 40 - 310-420 bar. Std setting 370 bar

Std setting made at 4.8 liter/min

5 Seals

- S - Nitrile (For use with most industrial hydraulic oils)
- SV - Viton (For high temperature and most special fluid applications)

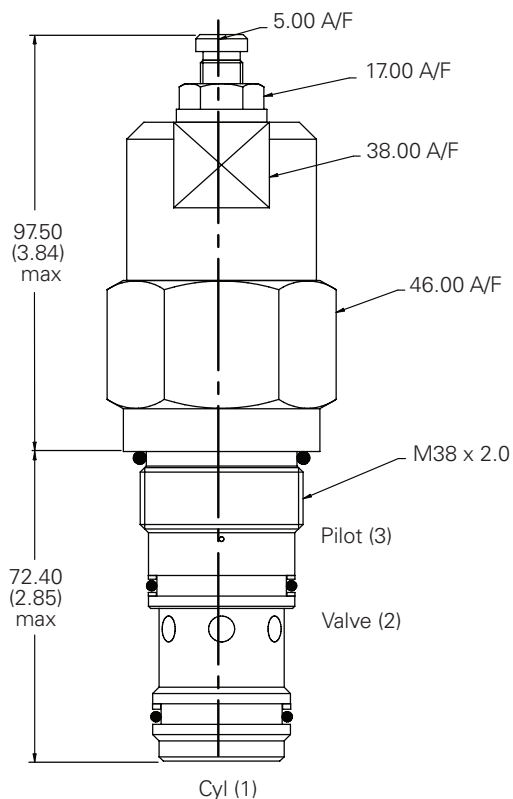
6 Pilot Ratio

- 4 - 4:1
- 6 - 6:1
- Other ratios available upon request

Dimensions

mm (inch)

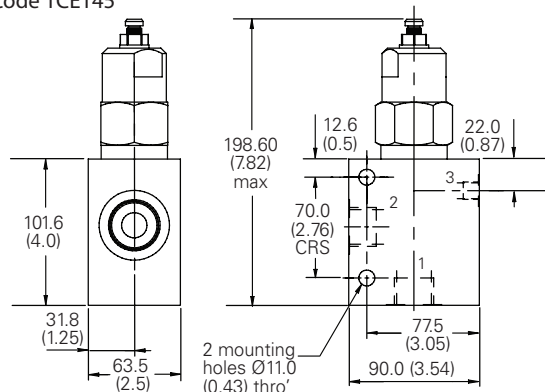
Cartridge Only
Basic Code
1CE140



Note: For applications above 210 bar - please consult our technical department or use the steel body option

Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

Single Valve
3/4", 1" Ports
Basic Code 1CE145



Dual Valve
1" Ports
Basic Code 1CEE145
Internally Cross Piloted

