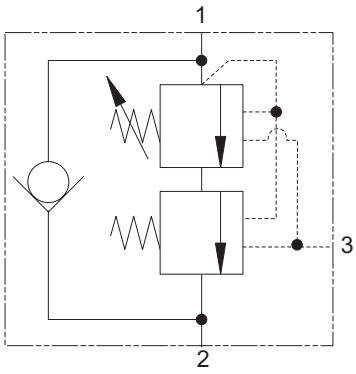
1CEL140 - Overcenter Valve

Counterbalance, pilot assisted relief with check
140 L/min (37 USgpm) • 380 bar (5510 psi)



Operation

The check section allows free flow and then locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied, maintaining a counterbalance pressure to prevent initial pressure loss and therefore instability. The total pressure setting will normally be set at 1.3 times the load induced pressure. The counterbalance pressure reduces as the pilot pressure increases.

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

Primary 6.1:1

Secondary 0.5:1

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 setting		380 bar (5510 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	1CEL140 1CEL145 (aluminium) 1CEL145 (steel) 1CEEL145 (aluminium) 1CEEL145 (steel)	1.2 kg (2.6 lbs) 2.2 kg (4.8 lbs) 4.0 kg (8.8 lbs) 2.9 kg (6.4 lbs) 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° to +90°C (-22° to +194°F)
Leakage		0.3 milliliters/min nominal (5 dpm)
Nominal viscosity range		5 to 500 cSt

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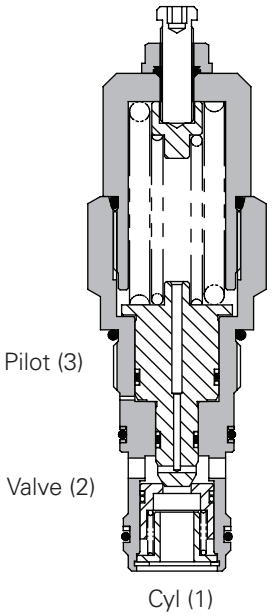
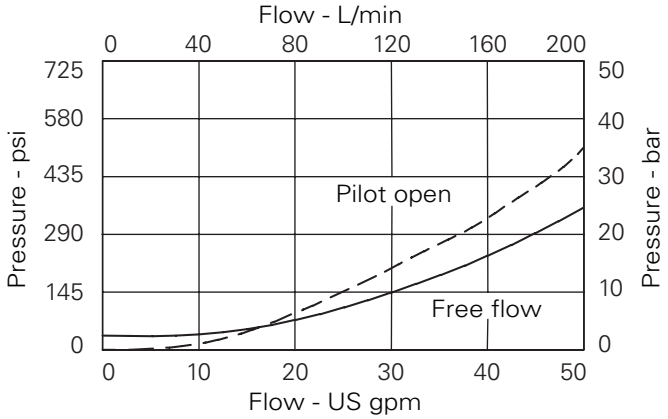
Sectional View



Description

The 1CEL overcenter valve performs all duties of a regular overcenter but maintains a counterbalance pressure to provide dampening of cylinders when there is a rapid loss in stored pressure. This counterbalance pressure reduces as the pilot pressure increases. Typical applications include extension cylinders on telescopic handlers where it is important to have a smooth operation when retracting from full extension.

Pressure Drop



Note: This valve has been designed to eliminate instability from flexible boom applications or where the load induced pressure varies greatly. To get the best results, the settings should be adjusted for each application and then factory set for production quantities. Please contact Eaton/Integrated Hydraulics for more information.

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Counterbalance, pilot assisted relief with check
140 L/min (37 USgpm) • 380 bar (5510 psi)

Model Code

1CEL*** – F 6W – 30 S 220 /

1 2 3 4 5 6 7

1 Function

1CEL140 - Cartridge Only
1CEL145 - Cartridge and Body
1CEEL145 - Cartridges and Body

2 Adjustment Means Counterbalance Setting

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 - 170-320. Std 220 (160/60)
30 - 230-380. Std 280 (220/60)
40 - 310-380. Std 350 (290/60)

5 Seals

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

7 High Pressure Setting Bar

(10 bar increments).
150 to 350 bar (2175 to 5000 psi)

6 Counterbalance Setting Bar

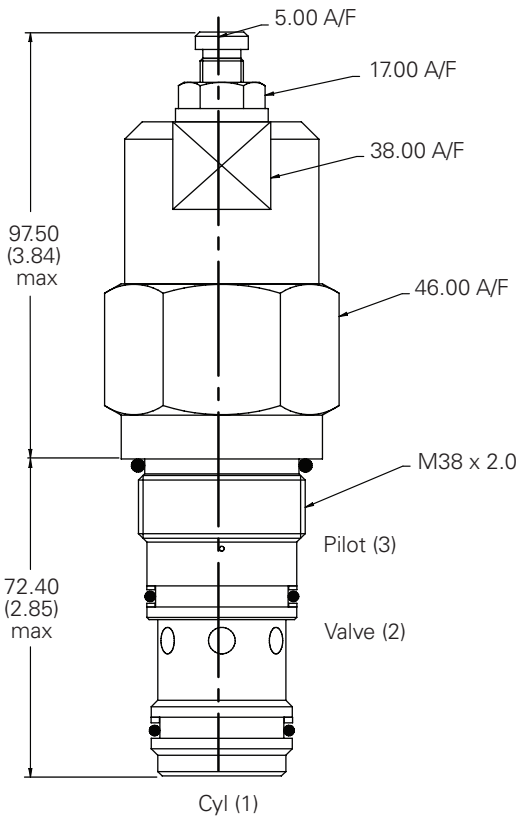
(10 bar increments).
20 to 100 bar (300 to 1500 psi)

F

Dimensions

mm (inch)

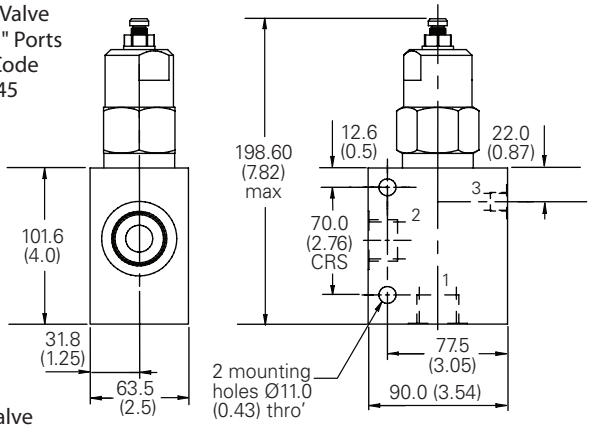
Cartridge Only
Basic Code
1CEL140



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
1CEL145



Dual Valve
1" Ports
Basic code 1CEEL145
Internally Cross Piloted