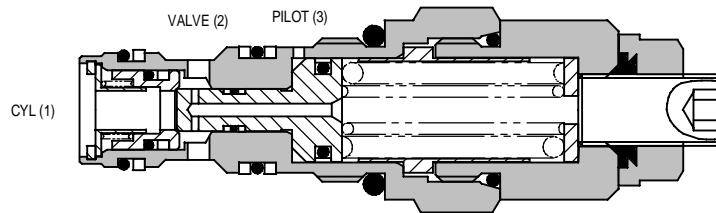
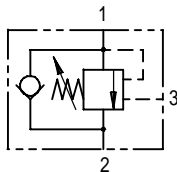




# 1CE SERIES OVERCENTRE VALVE

## PILOT ASSISTED RELIEF WITH CHECK

### 1CE30



6

### APPLICATION

Overcentre 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 overcentre valve will stop runaway in the event of hose burst and if open centre directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

The overcentre 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 overcentre valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcentre valves are used for controlling loads in both directions for motor applications or for 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:

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

### FEATURES

Cartridge is economical and fits into a simple cavity. Allows quick, easy field service - reduces down time. Directly interchangeable with 30 litres/min pilot check valve. See catalogue page 7-151.

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

### PILOT RATIOS

- 2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks.
- 5:1 (Standard) Best suited for applications where load varies and machine structure can induce instability
- 10:1 Best suited for applications where the load remains relatively constant.

### SPECIFICATIONS

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

<b>Rated Flow</b>	30 litres/min (8 US GPM)
<b>Max Setting</b>	Max Load Induced Pressure: 270 bar (4000 psi) Relief Setting: 350 bar (5000 psi)
<b>Cartridge Material</b>	Working parts hardened and ground steel. External surfaces zinc plated
<b>Body Material</b>	Standard aluminium (up to 210 bar*) Add suffix '377' for steel option
<b>Mounting Position</b>	Unrestricted
<b>Cavity Number</b>	A6610 (See Section 17)
<b>Torque Cartridge into Cavity</b>	45 Nm (33 lbs ft)
<b>Weight</b>	1CE30 0.15 kg (0.33 lbs) 1CE35 0.41 kg (0.90 lbs) 1CEE34 0.90 kg (1.98 lbs)
<b>Seal Kit Number</b>	SK395 (Nitrile) SK395V (Viton)
<b>Recommended Filtration Level</b>	BS5540/4 Class 18/13 (25 micron nominal)
<b>Operating Temp</b>	-20°C to +90°C
<b>Leakage</b>	0.3 millilitres/min nominal (5 dpm)
<b>Nominal Viscosity Range</b>	5 to 500 cSt

### Integrated Hydraulics Ltd

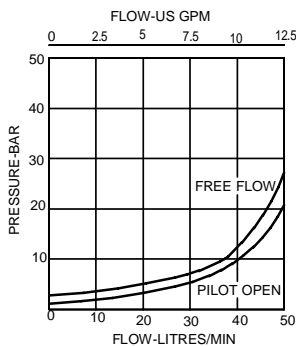
Collins Road, Heathcote Ind. Est., Warwick, CV34 6TF, UK.  
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729  
Website: [www.integratedhydraulics.com](http://www.integratedhydraulics.com)

### Integrated Hydraulics Inc

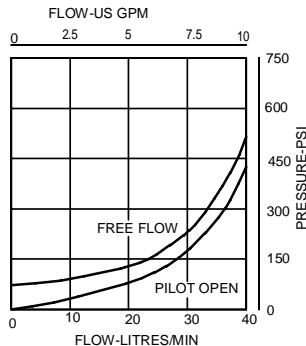
7047 Spinach Drive, Mentor, Ohio 44060, USA  
Tel: (440) 974 3171 Fax: (440) 974 3170  
Website: [www.integratedhydraulics.com](http://www.integratedhydraulics.com)

## PRESSURE DROP

### 2.5:1 & 5:1 version

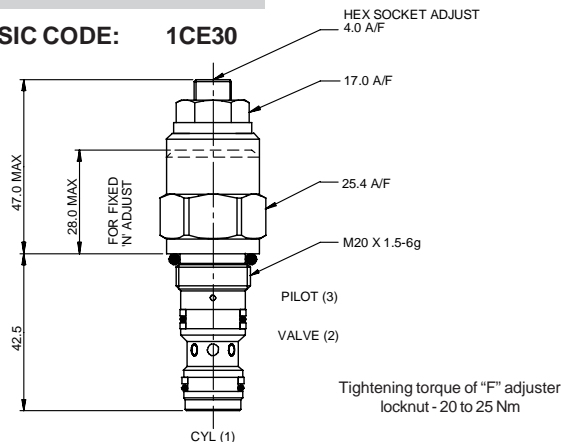


### 10:1 version



## CARTRIDGE ONLY

### BASIC CODE: 1CE30

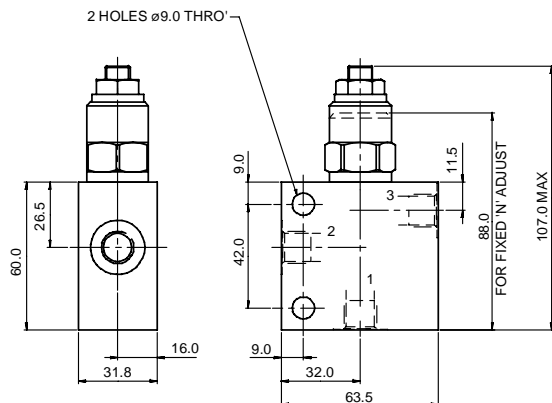


## SINGLE VALVE

### BASIC CODE: 1CE35

#### Body ONLY part numbers

BSP, aluminium	SAE, aluminium	BSP, steel	SAE, steel
3/8" B6743	3/8" B10536	3/8" B12823	1/2" B11811
	1/2" B7884		



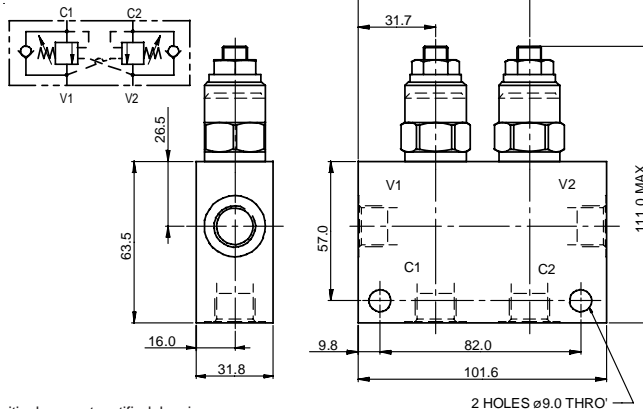
Where measurements are critical request certified drawings

## DUAL VALVE

### BASIC CODE: 1CEE34 (INTERNALLY CROSSED PILOTED)

#### Body ONLY part numbers

BSP, aluminium	SAE, aluminium	BSP, steel	SAE, steel
3/8" B6836	3/8" B10805	3/8" B13803	1/2" B11812
	1/2" B30237		



## ORDERING CODE EXAMPLE

**1CE\*\*\* F 3W 35 S 5**

#### Basic Code

1CE30 = Cartridge Only  
1CE35 = Cartridge and Body  
1CEE34 = Cartridges and Dual Body

#### Adjustment Means

F = Screw Adjustment  
N = Fixed - State pressure setting required  
For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

#### Port Sizes - Bodied Valves Only

3W = 3/8" BSP Valve & Cyl Port. 1/4" BSP Pilot Port  
6T = 3/8" SAE Valve & Cyl Port. 1/4" SAE Pilot Port  
8T = 1/2" SAE Valve & Cyl Port. 1/4" SAE Pilot Port

#### Pressure Range @ 4.8 l/min

20 = (2.5:1 and 5:1): 70-210 bar. Std setting 100 bar  
(10:1): 100-210 bar. Std setting 100 bar  
35 = (2.5:1 and 5:1): 100-350 bar. Std setting 210 bar  
(10:1): 120-350 bar. Std setting 210 bar

Std setting made at 4.8 litres/min

Other pressure ranges available on request

We reserve the right to change specifications without notice

#### Pilot Ratio

2 = 2.5:1  
5 = 5:1 (Standard)  
10 = 10:1

#### Seals

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