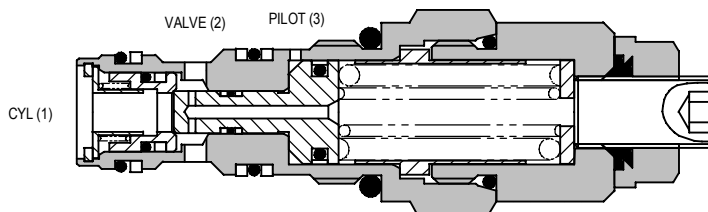
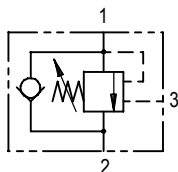




1CE SERIES OVERCENTRE VALVE

PILOT ASSISTED RELIEF WITH CHECK

1CE30



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

Rated Flow	30 litres/min (8 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	A6610 (See Section 17)
Torque Cartridge into Cavity	45 Nm (33 lbs ft)
Weight	1CE30 0.15 kg (0.33 lbs) 1CE35 0.41 kg (0.90 lbs) 1CEE34 0.90 kg (1.98 lbs)
Seal Kit Number	SK395 (Nitrile) SK395V (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

Integrated Hydraulics Ltd

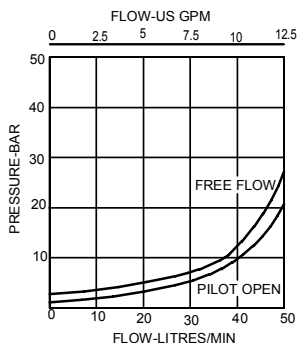
Collins Road, Heathcote Ind. Est., Warwick, CV34 6TF, UK.
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729
Website: www.integratedhydraulics.com

Integrated Hydraulics Inc

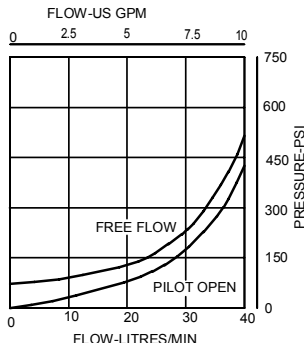
7047 Spinach Drive, Mentor, Ohio 44060, USA
Tel: (440) 974 3171 Fax: (440) 974 3170
Website: www.integratedhydraulics.com

PRESSURE DROP

2.5:1 & 5:1 version



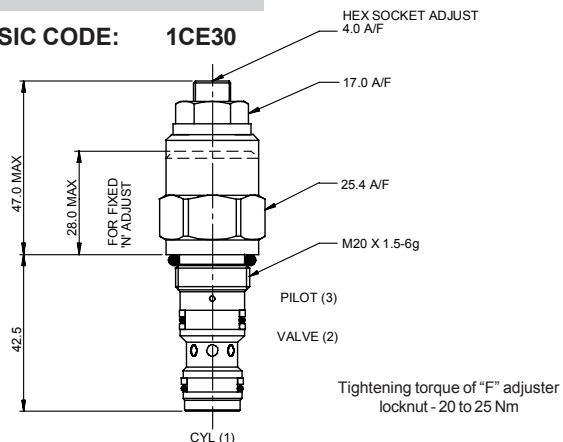
10:1 version



CARTRIDGE ONLY

BASIC CODE:

1CE30



SINGLE VALVE

3/8" 1/2" PORTS

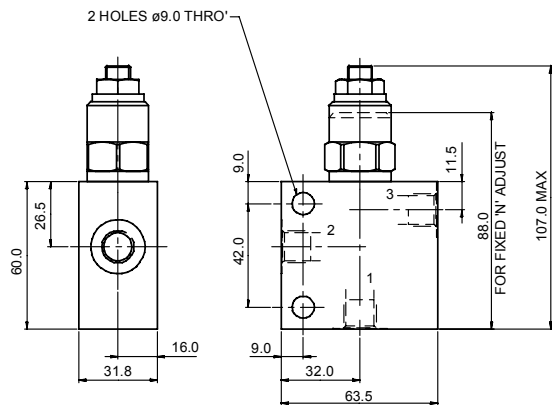
BASIC CODE: 1CE35

Body ONLY part numbers

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

BSP steel 3/8" B12823

SAE, steel 1/2" B11811



Where measurements are critical request certified drawings

DUAL VALVE

3/8" 1/2" PORTS

BASIC CODE: 1CEE34

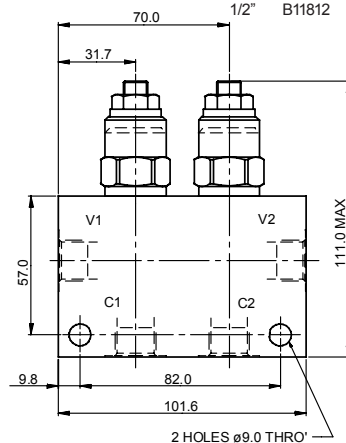
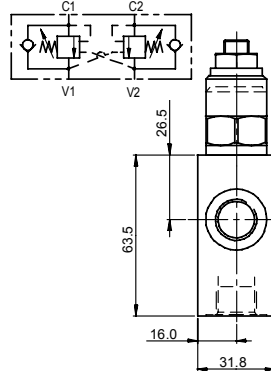
(INTERNALLY CROSSED PILOTED)

Body ONLY part numbers

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

BSP steel 3/8" B13803

SAE, steel 1/2" B11812



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 $\pm 10\%$ 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)