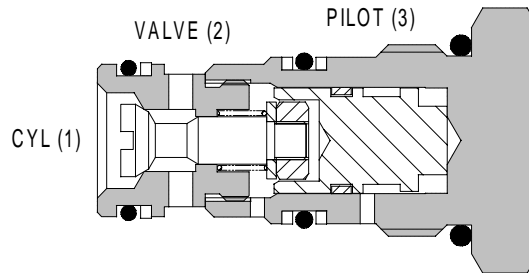
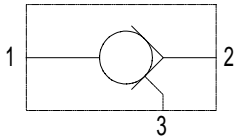




# 4CK SERIES CHECK VALVE

## PILOT TO OPEN

### 4CK30



7

### APPLICATION

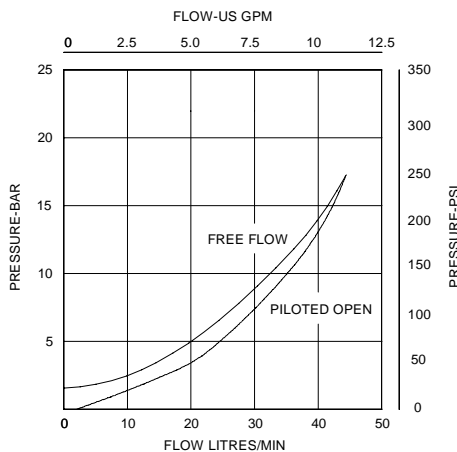
Pilot check valves allow flow to pass in one direction, with a low pressure drop, then prevent reverse flow until pilot pressure is applied. There are many applications for this valve type, the most common being to lock and hold a cylinder, or another hydraulic actuator, in position.

The 4CK30 is a small cartridge valve and is ideally suited for fitting directly into a cylinder, giving economy of installation, direct control of cylinder movement and ease of servicing.

### OPERATION

Pressure on the valve port causes the poppet to lift against the spring force, allowing the flow to the cylinder port. Reverse flow is prevented by the poppet reseating. Pressure applied to the pilot port will overcome the cylinder port pressure and lift the poppet from its seat, allowing flow from the cylinder to valve port.

### PRESSURE DROP



### FEATURES

Hardened and ground poppet gives excellent flow capability for valve size, positive sealing and long working life. Cartridge construction allows installation in actuators, manifold blocks and Hydraulic Integrated Circuits. Fits the same cavity as the 1CE30 overcentre valve. See page 6-111.

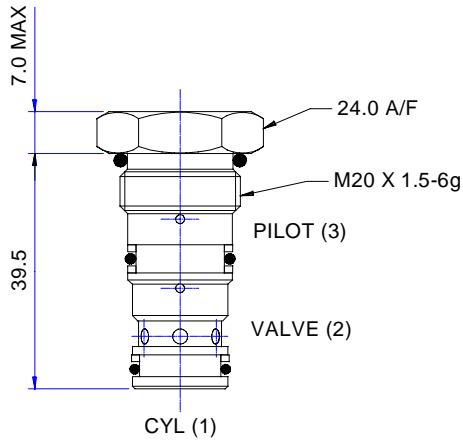
### SPECIFICATIONS

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

<b>Rated Flow</b>	30 litres/min (8 US GPM)	
<b>Max Pressure</b>	350 bar (5000 psi)	
<b>Pilot Ratio</b>	3:1	
<b>Cartridge Material</b>	Working parts hardened and ground steel. Electroless zinc plated body	
<b>Mounting Position</b>	Unrestricted	
<b>Cavity Number</b>	A6610 (See Section 17)	
<b>Torque Cavity into Cartridge</b>	45 Nm (33 lbs ft)	
<b>Weight</b>	4CK30	0.08 gms (0.18 lbs)
	4CK35	0.34 gms (0.75 lbs)
	4CKK35	0.76 gms (1.67 lbs)
<b>Seal Kit Number</b>	SK430 (Nitrile)	SK430V (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	
<b>Nominal Viscosity Range</b>	5 to 500 cSt	

**CARTRIDGE ONLY**

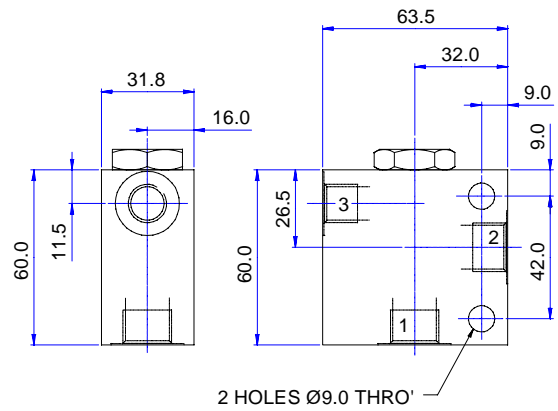
**BASIC CODE: 4CK30**



**SINGLE VALVE**

**3/8" PORTS**

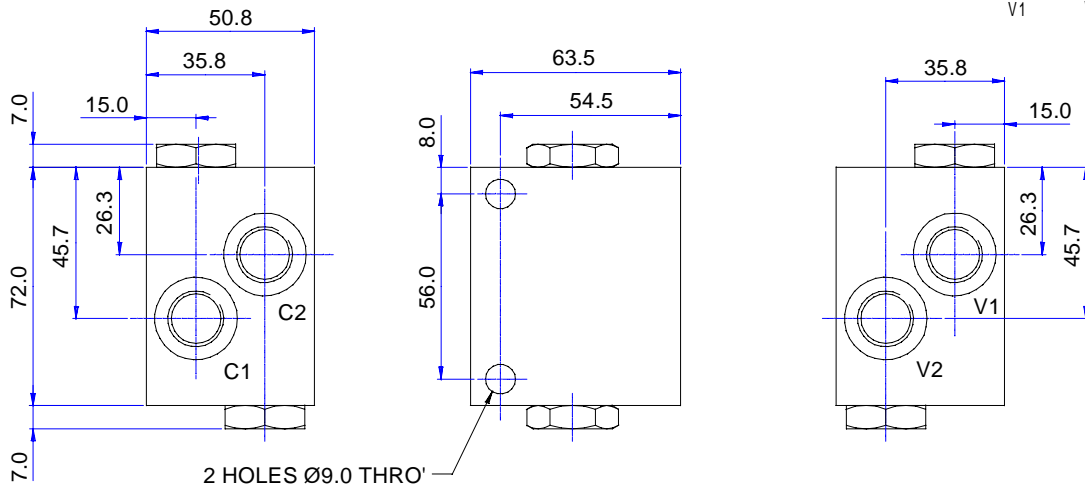
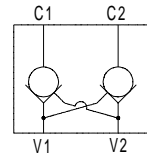
**BASIC CODE: 4CK35**



**DUAL VALVE**

**3/8" PORTS**

**BASIC CODE: 4CKK35 (INTERNALLY CROSS PILOTED)**



Where measurements are critical request certified drawings

**ORDERING CODE EXAMPLE**

**4CK\*\*\* 1 3W S 3**

**Basic Code**

**Pilot Port Sizes**

- 1 = Internal
- 2W = 1/4" BSP (External Pilot). Omit for bodied valves
- 4T = 1/4" SAE (External Pilot). Omit for bodied valves

**Port Sizes - Bodied Valves Only**

- 3W = 3/8" BSP. 1/4" BSP Pilot Port
- 6T = 3/8" SAE. 1/4" SAE Pilot Port

**Optional Pilot Seal**  
Omit if not required

**Seals**

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

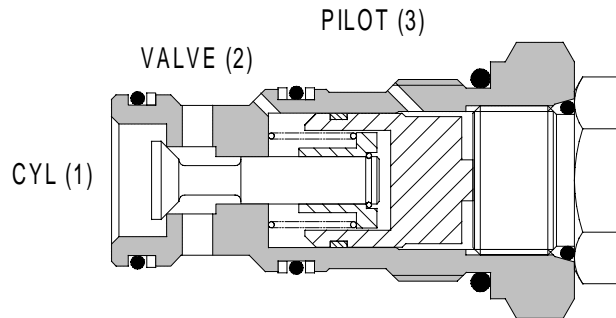
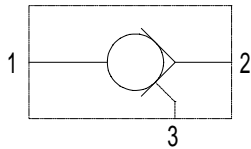
We reserve the right to change specifications without notice



# 4CK SERIES CHECK VALVES

## PILOT OPERATED POPPET

### 4CK90



7

### APPLICATION

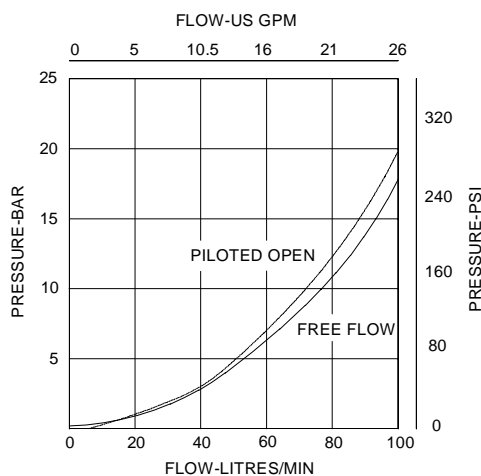
Pilot check valves allow flow to pass in one direction, with a low pressure drop, then prevent reverse flow until pilot pressure is applied. There are many applications for this valve type, the most common being to lock and hold a cylinder, or another hydraulic actuator, in position.

The 4CK90 is a small cartridge valve is ideally suited for fitting directly into a cylinder, giving economy of installation, direct control of cylinder movement and ease of servicing.

### OPERATION

Pressure on the valve port causes the poppet to lift against the spring force, allowing the flow to the cylinder port. Reverse flow is prevented by the poppet reseating. Pressure applied to the pilot port will overcome the cylinder port pressure and lift the poppet from its seat, allowing return flow.

### PRESSURE DROP



### FEATURES

Hardened and ground poppet gives excellent flow capability, positive sealing and long working life. The larger seat diameter restricts the pilot ratio to 4:1. Cartridge construction allows installation in actuators, manifold blocks and Hydraulic Integrated Circuits. Versions with sealed pilot pistons are available. Fits the same cavity as the 1CE90 overcentre valve. See page 6-151.

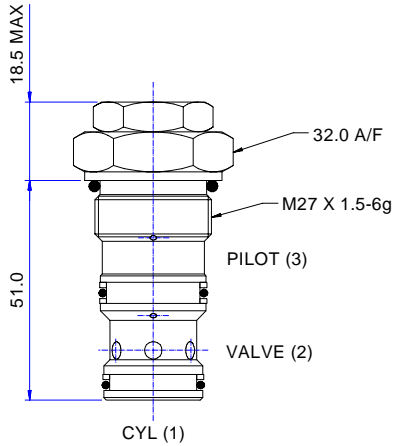
### SPECIFICATIONS

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

<b>Rated Flow</b>	90 litres/min (24 US GPM)	
<b>Max Pressure</b>	350 bar (5000 psi)	
<b>Pilot Ratio</b>	4:1	
<b>Cartridge Material</b>	Working parts hardened and ground steel. Electroless zinc plated body	
<b>Body Material</b>	Standard aluminium Add suffix '377' for steel option.	
<b>Mounting Position</b>	Unrestricted	
<b>Cavity Number</b>	A12336 (See Section 17)	
<b>Torque Cavity into Cartridge</b>	60 Nm (44 lbs ft)	
<b>Weight</b>	4CK90	0.27 kg (0.61 lbs)
	4CK95	1.33 kg (2.90 lbs)
	4CKK95	2.03 kg (4.51 lbs)
<b>Seal Kit Number</b>	SK832 (Nitrile)	SK832V (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	

**CARTRIDGE ONLY**

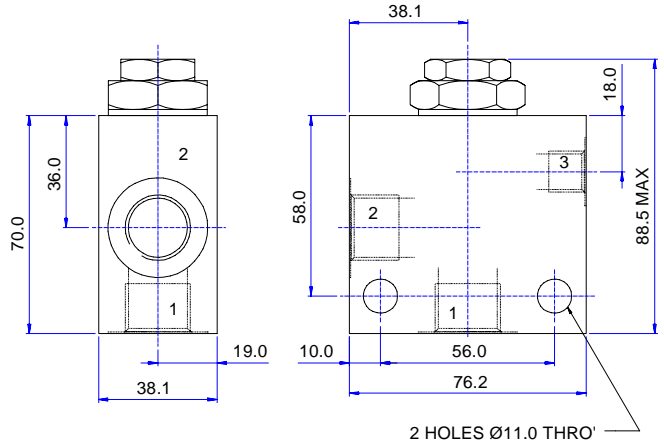
**BASIC CODE: 4CK90**



**SINGLE VALVE**

**1/2" 3/4" PORTS**

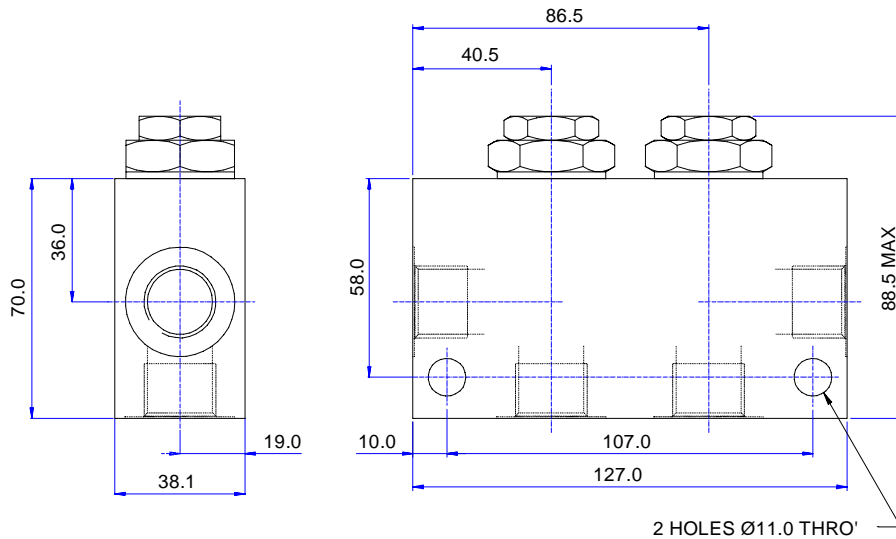
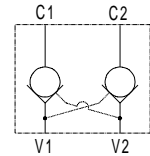
**BASIC CODE: 4CK95**



**DUAL VALVE**

**1/2" 3/4" PORTS**

**BASIC CODE: 4CKK95 (INTERNALLY CROSS PILOTED)**



Where measurements are critical request certified drawings

**ORDERING CODE EXAMPLE**

**4CK\*\*\* 1 4W S 3**

**Basic Code**

**Pilot Port Sizes**

- 1 = Internal
- 2W = 1/4" BSP (External Pilot). Omit for bodied valves
- 4T = 1/4" SAE (External Pilot). Omit for bodied valves

**Port Sizes - Bodied Valves Only**

- 4W = 1/2" BSP. 1/4" BSP. Pilot Port
- 6W = 3/4" BSP. 1/4" BSP. Pilot Port
- 8T = 1/2" SAE 1/4" SAE Pilot Port
- 12T = 3/4" SAE 1/4" SAE Pilot Port

**Optional Pilot Seal**  
Omit if not required

**Seals**

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

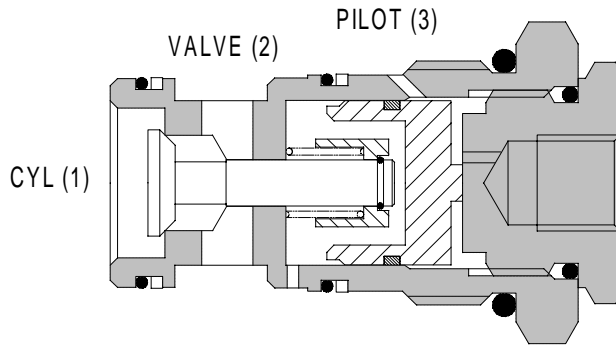
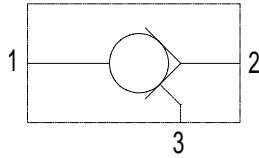
We reserve the right to change specifications without notice



# 4CK SERIES CHECK VALVES

## PILOT OPERATED POPPET

### 4CK120



Optional External Pilot Port

### APPLICATION

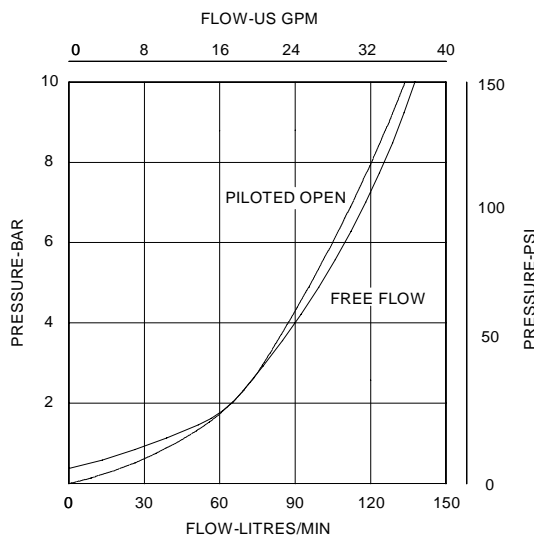
Pilot check valves allow flow to pass in one direction, with a low pressure drop, then prevent reverse flow until pilot pressure is applied. There are many applications for this valve type, the most common being to lock and hold a cylinder, or another hydraulic actuator, in position.

The 4CK120 cartridge valve is ideally suited for fitting directly into a cylinder, giving economy of installation, direct control of cylinder movement and ease of servicing.

### OPERATION

Pressure on the valve port causes the poppet to lift against the spring force, allowing flow to the cylinder port. Reverse flow is prevented by the check reseating. Pressure applied to the pilot port will overcome the cylinder port pressure and lift the poppet from its seat, allowing return flow.

### PRESSURE DROP



### FEATURES

Hardened and ground poppet gives excellent flow capability, positive sealing and long working life. The larger seat diameter restricts the pilot ratio to 3:1. Cartridge construction allows installation in actuators, manifold blocks and Hydraulic Integrated Circuits. Versions with sealed pilot pistons are available. Fits the same cavity as the 1CE100 overcentre valve. See page 6-181.

### SPECIFICATIONS

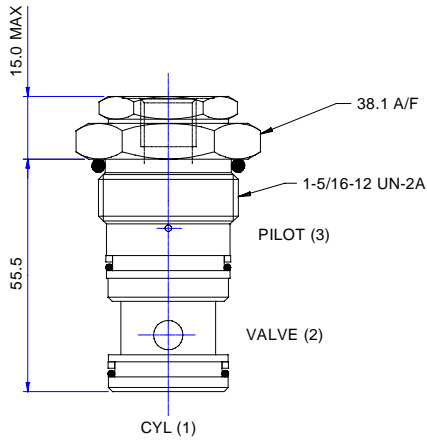
Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

<b>Rated Flow</b>	120 litres/min (32 US GPM)	
<b>Max Pressure</b>	350 bar (5000 psi)	
<b>Pilot Ratio</b>	3:1	
<b>Cartridge Material</b>	Working parts hardened and ground steel. Zinc plated body	
<b>Body Material</b>	Standard aluminium Add suffix '377' for steel option.	
<b>Mounting Position</b>	Unrestricted	
<b>Cavity Number</b>	A877 (See Section 17)	
<b>Torque Cavity into Cartridge</b>	100 Nm (74 lbs ft)	
<b>Weight</b>	4CK120	0.28 kg (0.62 lbs)
	4CK125	1.15 kg (2.54 lbs)
	4CKK125	1.96 kg (4.32 lbs)
<b>Seal Kit Number</b>	SK381 (Nitrile)	SK381V (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	

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Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729 Website: [www.integratedhydraulics.com](http://www.integratedhydraulics.com)

**CARTRIDGE ONLY**

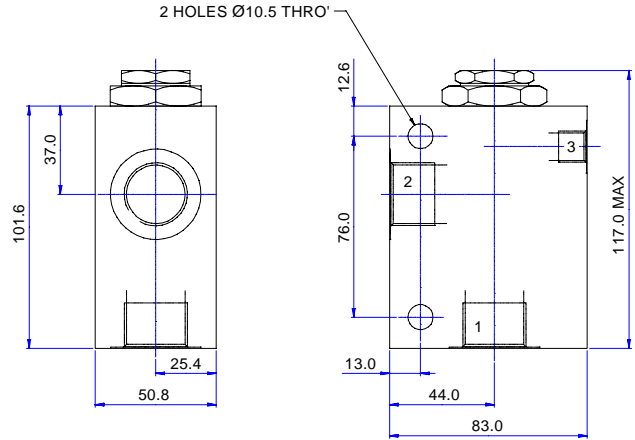
**BASIC CODE: 4CK120**



**SINGLE VALVE**

**3/4" PORTS**

**BASIC CODE: 4CK125**

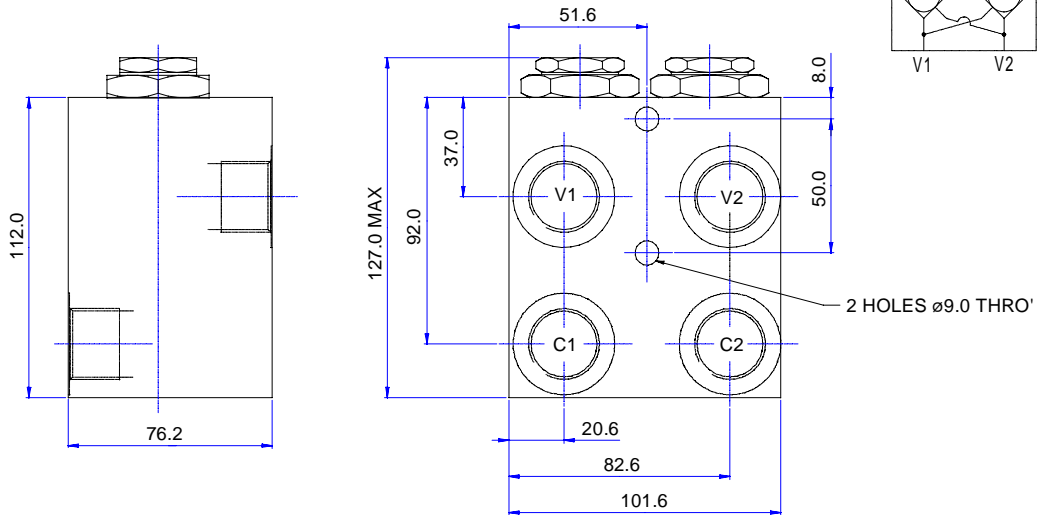


**DUAL VALVE**

**3/4" PORTS**

**BASIC CODE: 4CKK125**

(INTERNALLY CROSS PILOTED)



Where measurements are critical request certified drawings

**ORDERING CODE EXAMPLE**

**4CK\*\*\*\* 1 6W S 3**

**Basic Code** \_\_\_\_\_

**Pilot Port Sizes** \_\_\_\_\_

- 1 = Internal
- 2W = 1/4" BSP (External Pilot). Omit for bodied valves
- 4T = 1/4" SAE (External Pilot). Omit for bodied valves

**Port Sizes - Bodied Valves Only** \_\_\_\_\_

- 6W = 3/4" BSP. 1/4" BSP Pilot Port
- 12T = 3/4" SAE. 1/4" SAE Pilot Port

**Optional Pilot Seal**  
Omit if not required

**Seals**

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

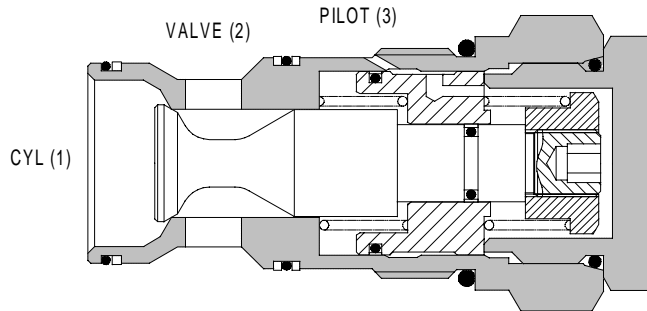
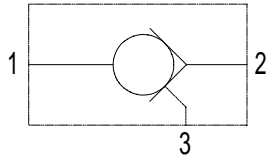
We reserve the right to change specifications without notice



## 4CK SERIES CHECK VALVE

### PILOT OPERATED POPPET

#### 4CK300



7

#### APPLICATION

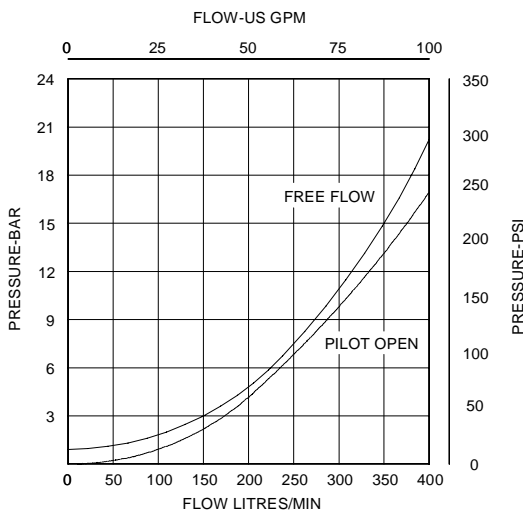
Pilot check valves allow flow to pass in one direction, with a low pressure drop, then prevent reverse flow until pilot pressure is applied. There are many applications for this valve type, the most common being to lock and hold a cylinder, or another hydraulic actuator, in position.

The 4CK300 cartridge valve is ideally suited for fitting directly into a cylinder, giving economy of installation, direct control of cylinder movement and ease of servicing.

#### OPERATION

Pressure on the valve port causes the poppet to lift against the spring force, allowing flow to the cylinder port. Reverse flow is prevented by the check reseating. Pressure applied to the pilot port will overcome the cylinder port pressure and lift the poppet from its seat, allowing return flow.

#### PRESSURE DROP



#### FEATURES

Hardened and ground poppet gives excellent flow capability, positive sealing and long working life. The larger seat diameter restricts the pilot ratio to 3:1. Cartridge construction allows installation in actuators, manifold blocks and Hydraulic Integrated Circuits. Versions with sealed pilot pistons are available. Fits the same cavity as the 1CE300 overcentre valve. See page 6-211.

#### SPECIFICATIONS

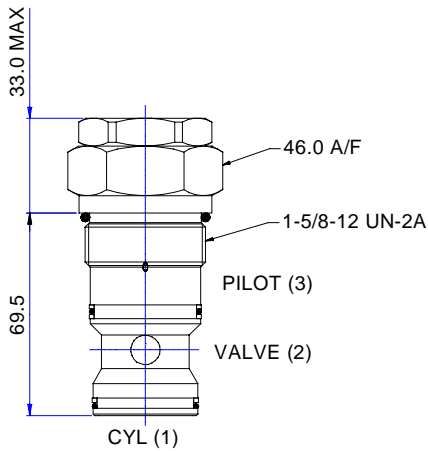
Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

<b>Rated Flow</b>	300 litres/min (80 US GPM)	
<b>Max Pressure</b>	350 bar (5000 psi)	
<b>Pilot Ratio</b>	3:1	
<b>Cartridge Material</b>	Working parts hardened and ground steel. zinc nickel plated body	
<b>Body Material</b>	Standard aluminium Add suffix '377' for steel option.	
<b>Mounting Position</b>	Unrestricted	
<b>Cavity Number</b>	A6935 (See Section 17)	
<b>Torque Cavity into Cartridge</b>	150 Nm (110 lbs ft)	
<b>Weight</b>	4CK300	0.28 kg (0.62 lbs)
	4CK350	1.15 kg (2.54 lbs)
	4CKK350	1.96 kg (4.32 lbs)
<b>Seal Kit Number</b>	SK683 (Nitrile)	SK683V (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>	0.5 millilitres/min nominal (5 dpm)	
<b>Nominal Viscosity Range</b>	5 to 500 cSt	

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**CARTRIDGE ONLY**

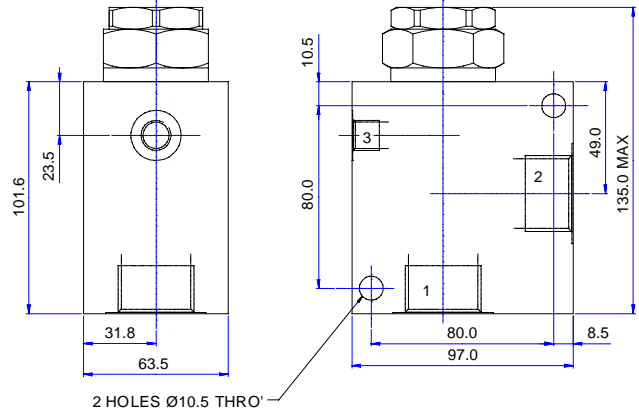
**BASIC CODE: 4CK300**



**SINGLE VALVE**

**1 1/4" PORTS**

**BASIC CODE: 4CK350**

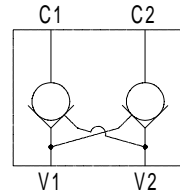
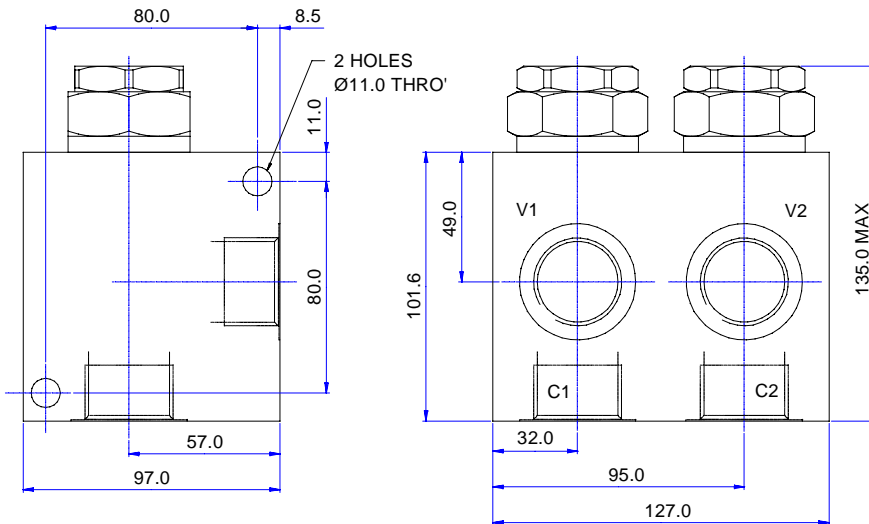


**DUAL VALVE**

**1 1/4" PORTS**

**BASIC CODE: 4CKK350**

(INTERNALLY CROSS PILOTED)



Where measurements are critical request certified drawings

**ORDERING CODE EXAMPLE**

**4CK\*\*\*\* 1 10W S 3**

**Basic Code**

**Pilot Port Size**

1 = Internal

**Port Sizes - Bodied Valves Only**

10W = 1 1/4" BSP. 1/4" BSP Pilot Port

20T = 1 1/4" SAE. 1/4" SAE Pilot Port

**Optional Pilot Seal**

Omit if not required

**Seals**

S = Nitrile (For use with most industrial hydraulic oils)

SV = Viton (For high temperature and most special fluid applications)

We reserve the right to change specifications without notice