



HYDRAULIC CONTROLS Pty Ltd

Hydraulic Integrated Circuits

Australia's Most Trusted Fluid Power Experts

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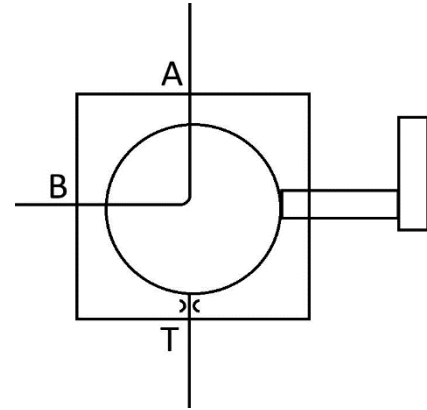
Single Pilot Operated Check
Valve, Line Mounted

PRESSURE BALANCED BALL VALVE

DVB40

APPLICATION

**** DESIGNED TO INCREASE SAFETY IN MINES ****



EASY TO OPEN AND CLOSE

- » The valve has a unique design that balances the ball when being opened and closed with minimum effort when the system is under pressure but with no flow.
- » Open and closed position is clearly identified at 90 degrees from each other. Unlike other valves, the operator knows exactly the position of the valve and therefore the safety of the system downstream of the valve. Handle is pad lockable in the closed position.
- » AUTOMATICALLY RELEASES DOWN STREAM RESIDULE PRESSURE
- » When the valve is turned to close, a port automatically releases residual downstream pressure to drain, thereby, making it safe from potential hazardous pressurized situations during maintenance activities.

OPERATION

The operation requires a 90° turn from open to closed and back again, following the convention of clockwise to close.

FEATURES

- » Easy to operate under pressure.
- » Automatic downstream pressure release on close.

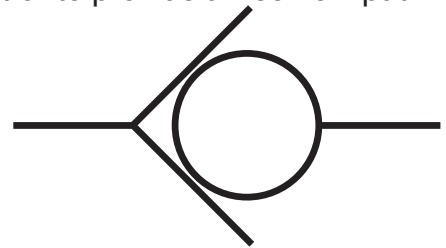
SPECIFICATION

Rated Flow	434L/pm
Rated Working Pressure	350 bar
Port Size	1-1/2 SAE code 62

Check Valve, Poppet Style

APPLICATION

- » To allow free flow in one direction and block flow in the reverse direction.
- » They can be used to isolate portions of a hydraulic circuit or to provide a free flow path around a restrictive valve.
- » Male and Female ended models are available.



OPERATION

Pressure on the inlet (port 1) of the check valve creates a force against the poppet, pushing it off its seat and permitting free flow to port 2. Reverse flow through the check is blocked by the poppet.

FEATURES

- » Robust and reliable
- » Long Life with all steel construction
- » Low pressure drop thru valve
- » Hardened and precision ground poppet assures good sealing

SPECIFICATION

Rated Flow	227L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C
Cracking Pressures	3,15, 45, 65PSI

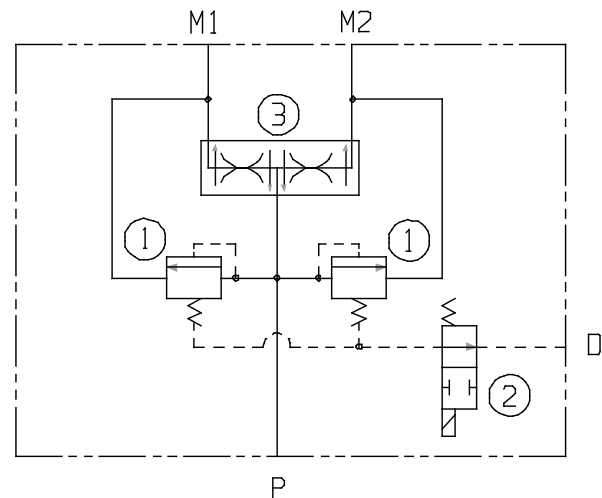
DIFFERENTIAL LOCK VALVE

HC-V 4519

APPLICATION

This pressure compensated flow divider/combiner valve provides an equal division of flow supplied to two parallel connected hydraulic motors. It also provides the motors with the ability to function independently when de-energised in bypass mode.

Suggested uses include Lifting Devices, Harvesters, Agricultural Machinery, Ride-On Mowers and Forestry Equipment.



OPERATION

When the solenoid (2) is in the de-energised position, the bypass valves (1) allow hydraulic motors to rotate independently to each other as loaded.

When the solenoid (2) is energised, the bypass valves (1) close and the flow is equally divided through valve (3), driving the motors at the same rate and preventing wheel spin in conditions of poor traction.

Note that in reverse, the Combiner (3) functions without bypass.

FEATURES

- » Robust and reliable
- » Precision operation without the use of costly electronics
- » Attractive price/performance ratio

SPECIFICATION

Rated Flow	250L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C
Fluid Viscosity	5 to 500 cSt

HYDRAULIC SHUTTLE VALVE

HC-C5811

APPLICATION

Shuttle valves accept the flow and pressure from two different sources and direct the highest pressure to a single outlet port.

Shuttle valves are typically used in Load Sensing circuits as well as Brake circuits but shuttle valve has several applications including:

1. The use of more switches on one machine: by using the shuttle valve, more than one switch can be operated on a single machine for safety, and each switch can be placed at any suitable location.
2. Winch brake circuit: a shuttle valve provides brake control in winch applications.
3. Pilot control: converting from air to oil results in locking of the cylinder.
4. Standby and emergency systems: compressor systems requiring standby or purge gases capability are pressure controlled by the shuttle valve. This is used for instrumentation, pressure cables, or any system requiring continuous input. If the compressor fails, the standby tank—regulated to slightly under the compressor supply—will shift the shuttle valve and take over the function. When the compressor pressure is re-established, the shuttle valve shifts back and seals off the standby system until needed again.

OPERATION

The shuttle valve ball poppet shut-off valve. It has two inlets (port P1 and P2) and one outlet (port A). Therefore, the inlet with the higher pressure pushes the closing element towards the other inlet. The inlet with the higher pressure is therefore always automatically connected to the outlet. Therefore, it shuts off the other inlet.

FEATURES

- » Robust and reliable

SPECIFICATION

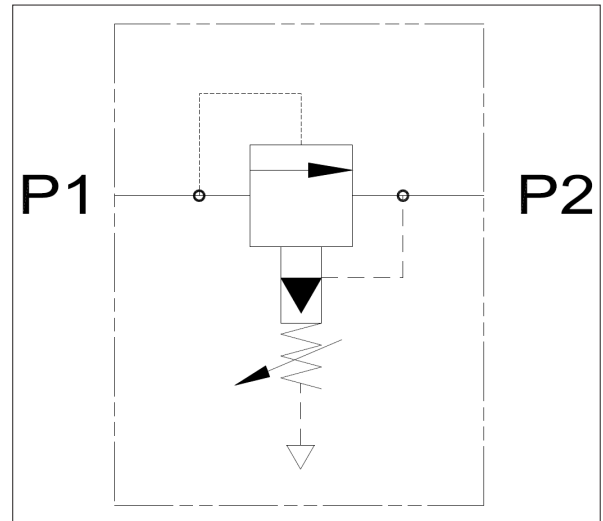
Rated Flow	8L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C

SEQUENCE VALVE

APPLICATION

Sequence cartridges are normally closed pressure control elements designed to modulate flow from port 1 (inlet) to port 2 (outlet) (like a relief valve) as long as the pressure at port 1 exceeds the pressure setting plus the back pressure at port 3 (the control chamber drain). Unlike relief valves, sequence valves generate a constant pressure at the inlet port irrespective of the pressure on the outlet port. When pressures at port 1 and port 2 both exceed the setting of the valve, the valve goes “full open”, or “sequences”.

This function is achieved by draining the spring chamber separately to tank. Sequence valves can be used to sense pressure (port 1) in one circuit and then open and supply oil to a secondary circuit (port 2) at a predetermined pressure.



OPERATION

As in the pilot operated relief, when the setting of the valve is exceeded the pilot section opens. This pilot flow causes a pressure imbalance opening the main section and allowing flow to a secondary circuit (sequenced line)

FEATURES

- » Robust and reliable
- » Long Life with all steel construction
- » Hardened and precision ground

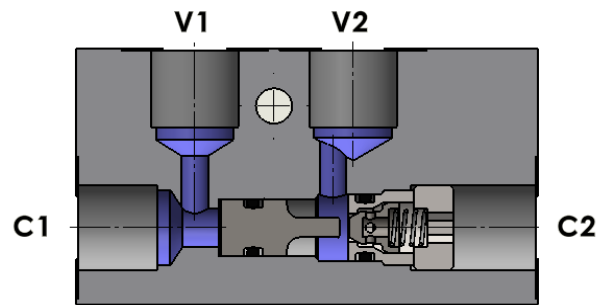
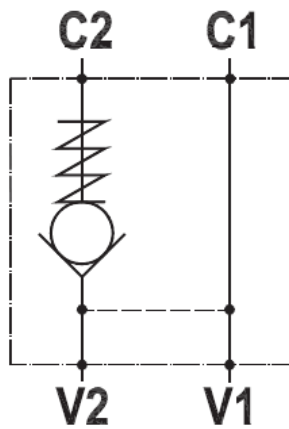
SPECIFICATION

Rated Flow	150L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C

SINGLE PILOT OPERATED CHECK VALVE, LINE MOUNTED

15316.00.00-01

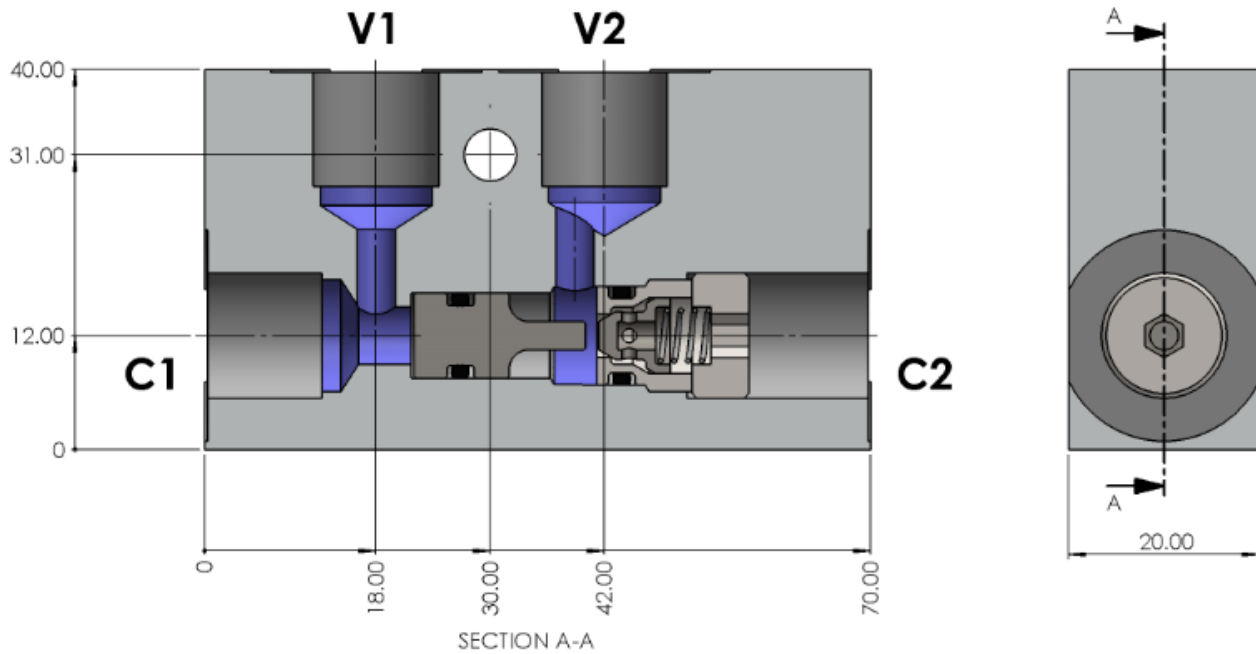
POPPET TYPE



SPECIFICATIONS

Rated Flow	10 litres/min
Max Working Pressure	210 bar (3000 psi)
Parts Material	Working parts hardened and ground steel
Body Material	Aluminium (210 bar)
Weight	0.14 kg
Cracking pressure	0.3 bar
Pilot ratio	1 : 4
Port size	1/4" BSP
Mounting hole size	M5 (Ø5.50)

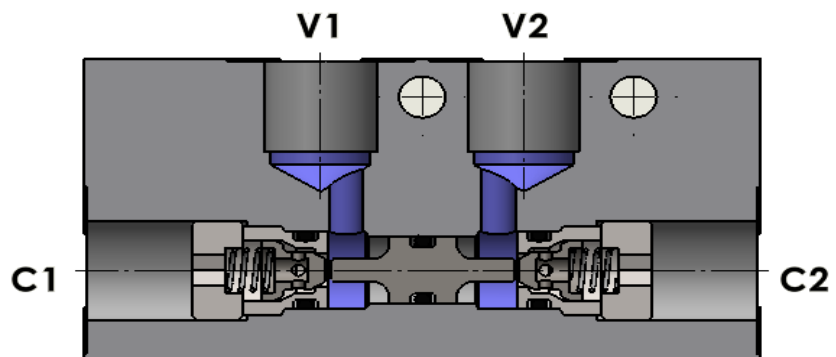
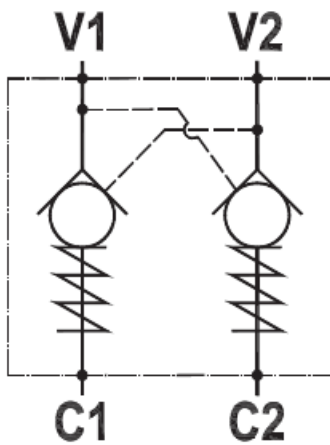
DIMENSIONS



DOUBLE PILOT OPERATED CHECK VALVE, LINE MOUNTED

15316.00.00-02

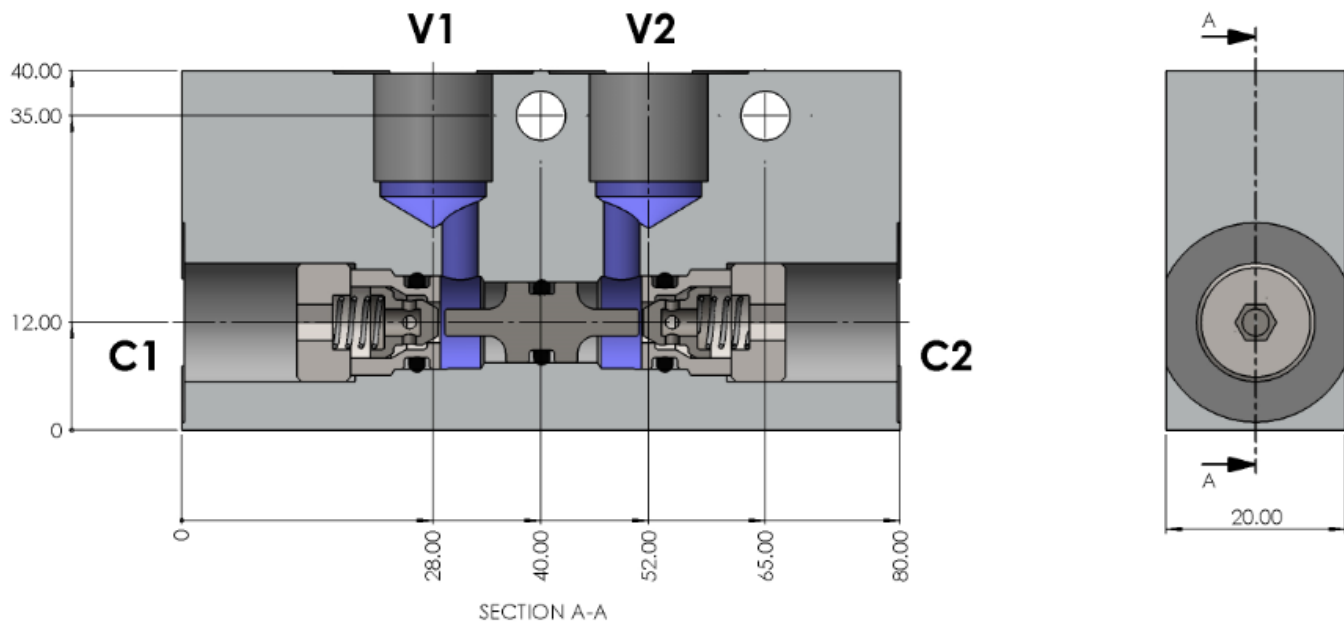
POPPET TYPE



SPECIFICATIONS

Rated Flow	10 litres/min
Max Working Pressure	210 bar (3000 psi)
Parts Material	Working parts hardened and ground steel
Body Material	Aluminium (210 bar)
Weight	0.16 kg
Cracking pressure	0.3 bar
Pilot ratio	1 : 4
Port size	1/4" BSP
Mounting hole size	M5 (Ø5.50)

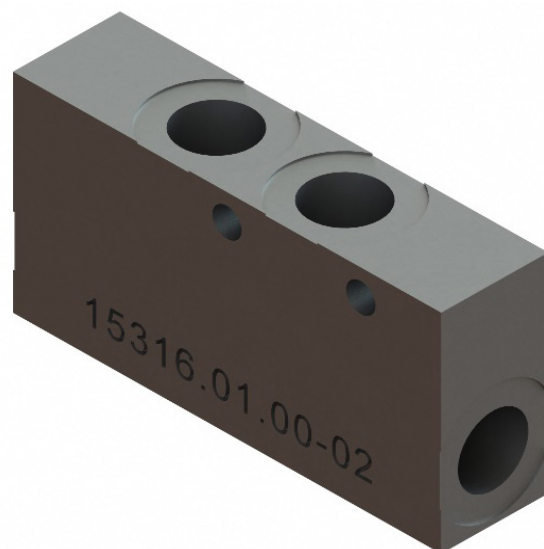
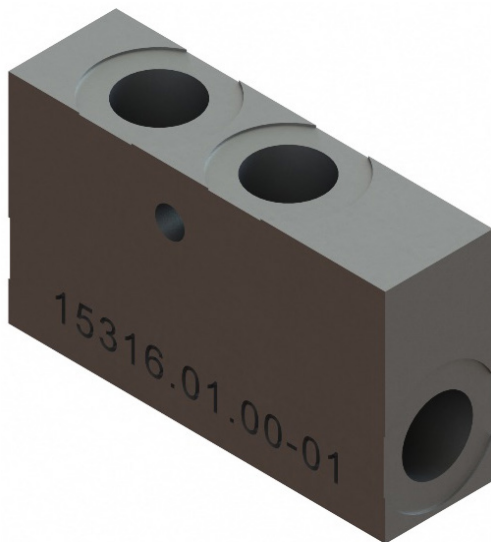
DIMENSIONS



Appendix

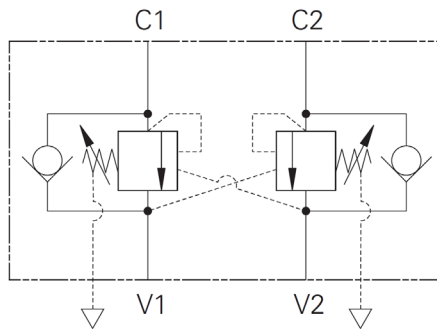
PART ORDER NUMBER	DESCRIPTION
15316.01.00-01	SINGLE POC MANIFOLD
15316.01.00-02	DOUBLE POC MANIFOLD
15316.02.00	CHECK VALVE (PARTS GROUP)
15316.02.01	G1/4"-19 BSPP PLUG
15316.02.02	POPPET
15316.02.03	SEAT
15316.02.04	SPRING
15316.03.00	SINGLE SIDE PISTON
15316.04.00	DOUBLE SIDE PISTON
2-010.N70	ORING
2-011.N70	ORING

CAD Model



DOUBLE OVERCENTER VALVE

HC-4661



APPLICATION

Overcentre valves give static and dynamic control of loads by supplying a counterbalance pressure to the actuator. They will stop runaway in the event of hose burst and hold the load with minimal leakage.

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.

FEATURES

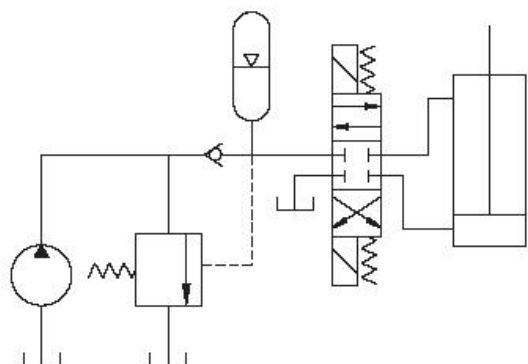
- » Robust and reliable
- » Precision operation without the use of costly electronics
- » Attractive price/performance ratio
- » Adaptable to any situation

SPECIFICATION

Rated Flow	80L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C
Fluid Viscosity	5 to 500 cSt

ACCUMULATOR UNLOADING VALVE

HCA-1641



APPLICATION

This Accumulator Unloading Valve automatically charge and Maintain a specific pressure range within accumulators by Loading and unloading pump flow.

OPERATION

Unloading valves are pressure-control devices that are used to dump excess fluid to tank at little or no pressure. A common application is in hi-lo pump circuits where two pumps move an actuator at high speed and low pressure, the circuit then shifts to a single pump providing high pressure to perform work

FEATURES

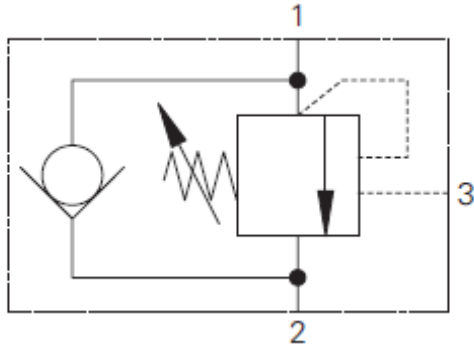
- » Robust and reliable
- » Precision operation without the use of costly electronics
- » Hardened working parts for maximum durability
- » Adaptable to any situation

SPECIFICATION

Rated Flow	130L/pm
Rated Working Pressure	420 bar
Operating Temp	-20°C to 90°C
Fluid Viscosity	5 to 500 cSt

SINGLE OVERCENTER VALVE

HC-1287



APPLICATION

Overcentre valves give static and dynamic control of loads by supplying a counterbalance pressure to the actuator. They will stop runaway in the event of hose burst and hold the load with minimal leakage.

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.

FEATURES


- » Robust and reliable
- » Precision operation without the use of costly electronics
- » Attractive price/performance ratio
- » Adaptable to any situation

SPECIFICATION

Rated Flow	80L/pm
Rated Working Pressure	350 bar
Operating Temp	-20°C to 90°C
Fluid Viscosity	5 to 500 cSt

 2 Grosvenor Place, PO Box 7462
Warringah Mall, NSW, Australia

 +61 (02) 9938 5400  +61 (02) 9939 6132

 customerservice@hydrauliccontrols.com.au

 www.hydrauliccontrols.com.au

ABN: 86 000 997 240

