

Counterbalance

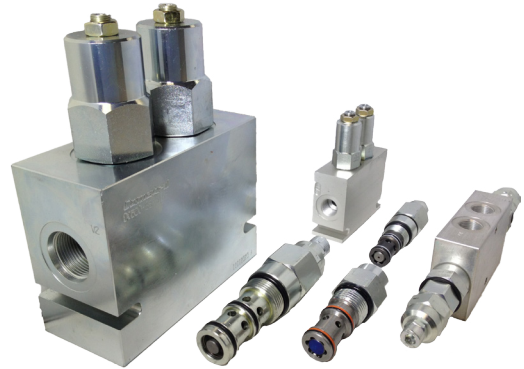
Valves

The Comatrol counterbalance portfolio includes nine cartridge valves - each available as pre-engineered dual-counterbalance HIC's (Hydraulic Integrated Circuits). This family covers a broad range of applications covering many sizes, venting options and piloting options, each to match the right solution to the application. These valves are designed for low leakage load holding, motion control, thermal expansion and hose break protection for cylinders and motors.

The NFPA cavity valves (CP & CB) are offered in 08, 10, 12 and 20 sizes and pilot on port 3; while the VCB valves, with the unique pilot on port 1, are available in metric 06 and 12 sizes. When applying the dual counterbalance VCB-DL's, no cross port drilling is required, allowing for a slimmer design. In addition to decreasing design and machining time, the VCB-DL's allow for all four ports to be on one plane, simplifying hydraulic piping connections for mounting on or near a cylinder.

As Comatrol, a member of the Sauer-Danfoss Group, we engineer, manufacture and supply screw-in Cartridge Valves and Hydraulic Integrated Circuits (HIC) to market-leading quality levels. We work closely with our customers around the world to deliver optimal machine control solutions based on their specific needs.

For more information on Comatrol cartridge valves and HICs, refer to Comatrol's Counterbalance Valve Catalog L1328326.



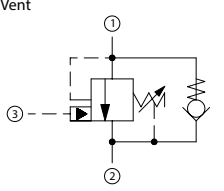
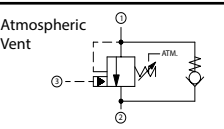
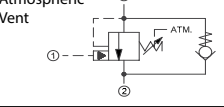
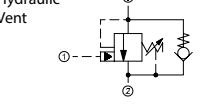
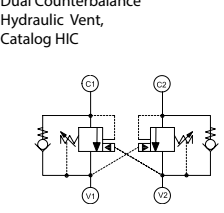
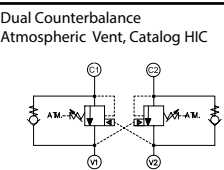
Features

- Circuit design flexibility
 - Nine cartridge style valves and nine pre-engineered dual counterbalance HIC's in the portfolio
 - Hydraulic and atmospheric vented options
 - Dual counterbalance HIC's with cartridges oriented vertically (DCB and CPXXX-2) or inline, nose to nose (DCB-DL)
- Wide flow range
 - VCBs: 06 and 12 size metric, piloted on port 1 (at the nose of the valve)
 - ~ When used in a dual counterbalance HIC, cross-drilling is not required.
 - ~ Creates a slimmer HIC design.
 - CB & CP valves: 08, 10, 12 and 20 sizes - standard SAE, piloted on port 3
 - Flow range extends from 20 LPM [5 US gal/min] to 266 LPM [70 US gal/min]*.
 - Pressure rating up to 350 bar (5075 psi)
- VCB-DL - Dual counterbalance pre-engineered HIC's
 - Nose to nose cartridge orientation ideal for narrow space claim applications
 - Allows for all four ports to be on one plane, making hydraulic piping connections easier for mounting on or near a cylinder
 - 06 size metric - flow rated up to 60 LPM [16 US gal/min]*
 - 12 size metric - flow rated up to 140 LPM [37 US gal/min]*
 - Hydraulically and atmospherically vented
- Dual Counterbalance DCB and CPXXX-2 Series
 - Vertically oriented dual cartridges
 - 08, 10, 12 and 20 sizes (standard SAE) available
 - Hydraulic and atmospheric vent options
- Multiple pilot pressure settings (2-3 depending on model)
 - Conserves power; allows the designer to properly match system requirements
- Proven Product
 - Over 1 million counterbalance valves in the field

* at 22 bar (319 psi)

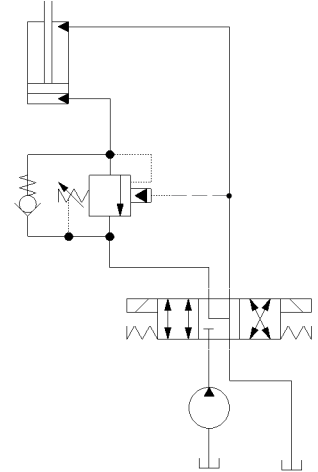
Local Address:

TECHNICAL INFORMATION

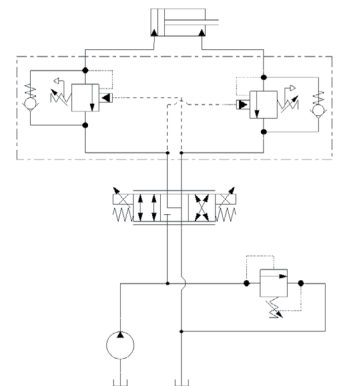
SCHEMATIC	MODEL/CAVITY	CAVITY	BAR (PSI)	LPM (GPM)	PILOT RATIOS
	CP448-1*	CP08-3S	350 (5075)	20 (5)	3.0, 4.5, 8.0
	CB10-HV*	SDC10-3S	350 (5075)	60 (16)	3.0, 4.5, 10.0
	CP441-1*	CP12-3S	350 (5075)	115 (30)	3.0, 4.5, 10.0
	CB20-HV*	CP20-3S	345 (5000)	266 (70)	3.0, 4.5, 10.0
	CB10-AV*	SDC10-3S	350 (5075)	60 (16)	3.0, 4.5, 10.0
	VCB06-CN**	NCS6-3	350 (5075)	60 (16)	4.1, 7.1
	VCB12-CN**	NCS12-3	350 (5075)	140 (36.8)	4.7, 5.9, 6.9
	VCB06-EN**	NCS6-3	350 (5075)	60 (16)	4.1, 7.1
	VCB12-EN**	NCS12-3	350 (5075)	140 (36.8)	4.7, 5.9, 6.9
		CP448-2	CIB	350 (5075)	20 (5)
VCB06-EN-DL		CIB	350 (5075)	60 (16)	4.1, 7.1
DCB10-HV		CIB	350 (5075)	60 (16)	3.0, 4.5, 10.0
CP441-2		CIB	350 (5075)	115 (30)	3.0, 4.5, 10.0
VCB12-EN-DL		CIB	350 (5075)	140 (36.8)	4.7, 5.9, 6.9
DCB20-HV		CIB	345 (5000)	266 (70)	3.0, 4.5, 10.0
		VCB06-CN-DL	CIB	350 (5075)	60 (16)
	DCB10-AV	CIB	350 (5075)	60 (16)	4.1, 7.1
	VCB12-CN-DL	CIB	350 (5075)	140 (36.8)	4.7, 5.9, 6.9

EXAMPLE CIRCUITS

Load Holding - Single Actuator



Counterbalance, Double Acting Cylinder



* Pilot port 3 ** Pilot port 1

VCB-DL Dual Counterbalance
 Nose to Nose Design

