Counterbalance Cartridges Quick Reference

<mark>sun</mark> hydraulics°

SYMBOL	CHARACTERISTIC	SERIES 1	SERIES 2	SERIES 3	SERIES 4	PILOT RATIO
		T-11A	T-2A	T-17A	T-19A	
		15 gpm (60 L/min)	30 gpm (120 L/min)	60 gpm (240 L/min)	120 gpm (480 L/min)	
		CBCL	CBEL	CBGL	CBIL	2.3:1
		CBCY	CBEY	CBGY	CBIY	2:1
	Standard	CBCB	CBEB	CBGB	CBIB	1.5:1
	Standard	CBCA	CBEA	CBGA	CBIA	3:1
3-port non-vented		CBCG	CBEG	CBGG	CBIG	4.5:1
		СВСН	CBEH	CBGH	СВІН	10:1
•->_		10 gpm (40 L/min)	20 gpm (80 L/min)	40 gpm (160 L/min)		
		CBBB	CBDB	CBFB		1.5:1
	Comi vostvistivo	CBBL	CBDL	CBFL		2.3:1
	Semi-restrictive	CBBC	CBDC	CBFC		3:1
		CBBD	CBDD	CBFD		4.5:1
		5 gpm (20 L/min)	7.5 gpm (30 L/min)	15 gpm (60 L/min)	20 gpm (80 L/min)	
	De la circle a	CBBY				2:1
	Restrictive	СВВА	CBDA	CBFA	СВНА	3:1
		2.5 gpm (10 L/min)				
		СВАВ				1.5:1
		CBAA				3:1
	Ultra-restrictive	CBAG				4.5:1
		СВАН				10:1
		15 gpm (60 L/min)	30 gpm (120 L/min)	20 gpm (80 L/min)		
3-port non-vented,		CBCLX				2.3:1
fixed setting		CBCAX	CBEAX			3:1
└─ �──┐	Standard	CBCGX				4.5:1
>		СВСНХ				10:1
		10 gpm (40 L/min)	20 gpm (80 L/min)			
		CBBLX				2.3:1
		СВВСХ	CBDCX			3:1
1	Semi-restrictive	CBBDX	CBDDX			4.5:1
		CBDBX				1.5:1

www.sunhydraulics.com/models/cartridges/load-holding/counterbalance

Counterbalance Cartridges Quick Reference

SUN	hydraulics®

SYMBOL	CHARACTERISTIC	SERIES 1	SERIES 2	SERIES 3	SERIES 4	PILOT RATIO
		T-11A	T-2A	T-17A	T-19A	
3-port non-vented,		5 gpm (20 L/min)	7.5 gpm (30 L/min)			
fixed setting (continued)		CBBAX	CBDAX			3:1
(continued)	Restrictive	CBBGX	CBDGX			4.5:1
		CBDHX				10:1
		7.5 gpm (30 L/min)		1		
3-port vented		САВК				1:1
	Atmospherically vented	CABG				4.5:1
×		CABN				7:1
		15 gpm (60 L/min)	30 gpm (120 L/min)	60 gpm (240 L/min)	120 gpm (480 L/min)	
		CACK	CAEK	CAGK	CAIK	1:1
		CACL	CAEL	CAGL	CAIL	2:1
	Standard	CACA	CAEA	CAGA	CAIA	3:1
		CACG	CAEG	CAGG	CAIG	5:1
		CACH				10:1
4-port vented		T-21A	T-22A	T-23A	T-24A	
		15 gpm (60 L/min)	30 gpm (120 L/min)	60 gpm (240 L/min)	120 gpm (480 L/min)	
		СМСК	CWEK	CWGK	СШК	1:1
	Standard	CWCL	CWEL	CWGL	CWIL	2:1
, '' 3¦	Standard	CWCA	CWEA	CWGA	CWIA	3:1
3		CWCG	CWEG	CWGG	CWIG	5:1
Load-reactive			T-2A	T-17A	T-19A	
			30 gpm (120 L/min)	60 gpm (240 L/min)	120 gpm (480 L/min)	
				MBGB	MBIB	1.5:1
	Load reactive		MBEA	MBGA	MBIA	3:1
3				MBGG	MBIG	4.5:1
Load-reactive, vented			T-22A	T-23A	T-24A	
			30 gpm (120 L/min)	60 gpm (240 L/min)	120 gpm (480 L/min)	
			MWEB			1.5:1
	Load reactive, vented		MWEA			3:1
31			MWEG	MWGG	MWIG	4.5:1

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Load Holding Cartridges

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CBCB	1.5:1 pilot ratio, standard capacity counterbalance valve	1
CBEB	1.5:1 pilot ratio, standard capacity counterbalance valve	2
CBGB	1.5:1 pilot ratio, standard capacity counterbalance valve	
CBIB	1.5:1 pilot ratio, standard capacity counterbalance valve	4
CBCY	2:1 pilot ratio, standard capacity counterbalance valve	5
CBEY	2:1 pilot ratio, standard capacity counterbalance valve	6
CBGY	2:1 pilot ratio, standard capacity counterbalance valve	7
CBIY	2:1 pilot ratio, standard capacity counterbalance valve	
CBCL	2.3:1 pilot ratio, standard capacity counterbalance valve	9
CBEL	2.3:1 pilot ratio, standard capacity counterbalance valve	10
CBGL	2.3:1 pilot ratio, standard capacity counterbalance valve	
CBIL	2.3:1 pilot ratio, standard capacity counterbalance valve	13
CBCA	3:1 pilot ratio, standard capacity counterbalance valve	14
CBEA	3:1 pilot ratio, standard capacity counterbalance valve	15
CBGA	3:1 pilot ratio, standard capacity counterbalance valve	17
CBIA	3:1 pilot ratio, standard capacity counterbalance valve	
CBCG	4.5:1 pilot ratio, standard capacity counterbalance valve	19
CBEG	4.5:1 pilot ratio, standard capacity counterbalance valve	21
CBGG	4.5:1 pilot ratio, standard capacity counterbalance valve	
CBIG	4.5:1 pilot ratio, standard capacity counterbalance valve	
CBCH	10:1 pilot ratio, standard capacity counterbalance valve	



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CBEH	10:1 pilot ratio, standard capacity counterbalance valve	
CBGH	10:1 pilot ratio, standard capacity counterbalance valve	
CBIH	10:1 pilot ratio, standard capacity counterbalance valve	
CBBB	1.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBDB	1.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBFB	1.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBBL	2.3:1 pilot ratio, semi-restrictive counterbalance valve	
CBDL	2.3:1 pilot ratio, semi-restrictive counterbalance valve	
CBFL	2.3:1 pilot ratio, semi-restrictive counterbalance valve	
CBBC	3:1 pilot ratio, semi-restrictive counterbalance valve	
CBDC	3:1 pilot ratio, semi-restrictive counterbalance valve	
CBFC	3:1 pilot ratio, semi-restrictive counterbalance valve	
CBBD	4.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBDD	4.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBFD	4.5:1 pilot ratio, semi-restrictive counterbalance valve	
CBBY	2:1 pilot ratio, restrictive counterbalance	
CBBA	3:1 pilot ratio, restrictive counterbalance	
CBDA	3:1 pilot ratio, restrictive counterbalance	
CBFA	3:1 pilot ratio, restrictive counterbalance valve	
СВНА	3:1 pilot ratio, restrictive counterbalance valve	
CBBG	4.5:1 pilot ratio, restrictive counterbalance	



CBDG	4.5:1 pilot ratio, restrictive counterbalance
CBFG	valve 4.5:1 pilot ratio, restrictive counterbalance
CBHG	valve 4.5:1 pilot ratio, restrictive counterbalance
СВАВ	1.5:1 pilot ratio, ultra-restrictive counterbalance
CBAA	3:1 pilot ratio, ultra-restrictive counterbalance
CBAG	4.5:1 pilot ratio, ultra-restrictive counterbalance
СВАН	10:1 pilot ratio, ultra-restrictive counterbalance
CBCLX	Fixed setting, 2.3:1 pilot ratio, standard capacity counterbalance
CBCAX	Fixed setting, 3:1 pilot ratio, standard capacity counterbalance
CBEAX	Fixed setting, 3:1 pilot ratio, standard capacity counterbalance
CBCGX	Fixed setting, 4.5:1 pilot ratio, standard capacity counterbalance
CBCHX	Fixed setting, 10:1 pilot ratio, standard capacity counterbalance
CBBLX	Fixed setting, 2.3:1 pilot ratio, semi-restrictive counterbalance
CBBCX	Fixed setting, 3:1 pilot ratio, semi-restrictive counterbalance
CBDCX	Fixed setting, 3:1 pilot ratio, semi-restrictive counterbalance
CBBDX	Fixed setting, 4.5:1 pilot ratio, semi-restrictive counterbalance
CBDDX	Fixed setting, 4.5:1 pilot ratio, semi-restrictive counterbalance
CBBAX	Fixed setting, 3:1 pilot ratio, restrictive counterbalance
CBDAX	Fixed setting, 3:1 pilot ratio, restrictive counterbalance
CBBGX	Fixed setting, 4.5:1 pilot ratio, restrictive counterbalance
CBDGX	Fixed setting, 4.5:1 pilot ratio, restrictive counterbalance



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CAIG	5:1 pilot ratio, vented counterbalance valve - atmospherically referenced	91



CWCK	1:1 pilot ratio, vented counterbalance valve	
CWEK	1:1 pilot ratio, vented counterbalance valve	
CWGK	1:1 pilot ratio, vented counterbalance valve	
CWIK	1:1 pilot ratio, vented counterbalance valve	
CWCL	2:1 pilot ratio, vented counterbalance valve	
CWEL	2:1 pilot ratio, vented counterbalance valve	
CWGL	2:1 pilot ratio, vented counterbalance valve	
CWIL	2:1 pilot ratio, vented counterbalance valve	
CWCA	3:1 pilot ratio, vented counterbalance valve	
CWEA	3:1 pilot ratio, vented counterbalance valve	
CWGA	3:1 pilot ratio, vented counterbalance valve	
CWIA	3:1 pilot ratio, vented counterbalance valve	
CWCG	5:1 pilot ratio, vented counterbalance valve	
CWEG	5:1 pilot ratio, vented counterbalance valve	
CWGG	5:1 pilot ratio, vented counterbalance valve	
CWIG	5:1 pilot ratio, vented counterbalance valve	
MBIM	Balanced, load controlvalve	
MWEM	Vented, balanced, load control	
MWGM	Vented, balanced, load control	
MWIM	Vented, balanced, load control	
MBGB	1.5:1 pilot ratio, load reactive, load contro valve	ol112



MBIB	1.5:1 pilot ratio, load reactive, load control
MBEA	3:1 pilot ratio, load reactive, load control
MBGA	3:1 pilot ratio, load reactive, load control
MBIA	3:1 pilot ratio, load reactive, load control
MBEG	4.5:1 pilot ratio, load reactive, load control
MBGG	4.5:1 pilot ratio, load reactive, load control
MBIG	4.5:1 pilot ratio, load reactive, load control
MBIAX	Fixed setting, 3:1 pilot ratio, load reactive, load control
MBEGX	Fixed setting, 4.5:1 pilot ratio, load reactive, load control
MBGGX	Fixed setting, 4.5:1 pilot ratio, load reactive, load control
MBIGX	Fixed setting, 4.5:1 pilot ratio, load reactive, load control
MWEB	Vented, 1.5:1 pilot ratio, load reactive, load control
MWEA	Vented, 3:1 pilot ratio, load reactive, load control
MWEG	Vented, 4.5:1 pilot ratio, load reactive, load control
MWGG	Vented, 4.5:1 pilot ratio, load reactive, load control
MWIG	Vented, 4.5:1 pilot ratio, load reactive, load control
MWGAX	Fixed setting, vented, 3:1 pilot ratio, load reactive, load control
MWEGX	Fixed setting, vented, 4.5:1 pilot ratio, load reactive, load control
MWGGX	Fixed setting, vented, 4.5:1 pilot ratio, load reactive, load control
MBEP	LoadMatch™ counterbalance
MAEP	Atmospherically referenced LoadMatch™ counterbalance



MWEP	Vented LoadMatch™ counterbalance
СКВВ	Pilot-to-open check valve with standard
CKBG	Flush mount pilot-to-open check valve with sealed
СКСВ	Pilot-to-open check valve with standard137 pilot
CKEB	Pilot-to-open check valve with standard138 pilot
CKGB	Pilot-to-open check valve with standard139 pilot
CKIB	Pilot-to-open check valve with standard140 pilot
CKBD	Pilot-to-open check valve with sealed
CKCD	Pilot-to-open check valve with sealed
CKED	Pilot-to-open check valve with sealed
CKGD	Pilot-to-open check valve with sealed
CKID	Pilot-to-open check valve with sealed
CVCV	Vented pilot-to-open check
CVEV	Vented pilot-to-open check
CVGV	Vented pilot-to-open check
CVIV	Vented pilot-to-open check
CKCV	Vented pilot-to-open check valve - atmospherically
CKEV	Vented pilot-to-open check valve - atmospherically
CKGV	Vented pilot-to-open check valve - atmospherically
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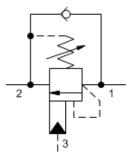
Series	Ports	Cavities
Series Z Cartridges /8-24 UNF Cartridge Thread mm Valve Hex Size	3-Port	T-382A
1 - 14 Nm Valve Installation Torque		
Series P Cartridges	2-Port	T-8A
M16 Cartridge Thread	2-Port (Deep)	T-8DP
22.2 mm Valve Hex Size	3-Port	T-9A
7 - 33 Nm Valve Installation Torque		
Series 0 Cartridges	2-Port	T-162A
•	2-Port (Deep)	T-162DP
/16 Cartridge Thread 9.1 mm Valve Hex Size	3-Port	T-150A
25.4 mm Valve Hex Size	3-Port	T-163A
27 - 33 Nm Valve Installation Torque	4-Port	T-30A
Series 0C Cartridges	4-Port (Common)	SC-08-04
8/4-16 UNF Cartridge Thread		
22,2 mm Valve Hex Size		
9-22 lbf ft Valve Installation Torque		
Series 1 Cartridges	2-Port	T-10A
M20 Cartridge Thread	2-Port	T-13A
22.2 mm Valve Hex Size	3-Port	T-11A
1 - 47 Nm Valve Installation Torque	4-Port	T-21A
	4-Port 6-Port	T-31A T-61A
Series 1C Cartridges	2-Port (Common)	SC-10-02
7/8-14 UNF Cartridge Thread	4-Port (Common)	SC-10-04
25.4 mm Valve Hex Size		
3-26 lbf ft Valve Installation Torque		
Series 2 Cartridges	2-Port	T-3A
I"-14 UNS Cartridge Thread	2-Port	T-5A
28,6 mm Valve Hex Size	3-Port	T-2A
51 - 68 Nm Valve Installation Torque	4-Port	T-22A
·	4-Port 4-Port (Dual path)	T-32A T-52AD
	6-Port	T-52AD T-52A
	6-Port	T-62A
	2-Port	T-16A
Series 3 Cartridges	3-Port	T-17A
	4-Port	T-23A
136 Cartridge Thread	4-Port	T-33A
1.8 mm Valve Hex Size	4-Port (Dual path)	T-53AD
	6-Port	T-53A
81,8 mm Valve Hex Size 203 - 217 Nm Valve Installation Torque		
	6-Port	T-63A

41,3 mm Valve Hex Size 474 - 508 Nm Valve Installation Torque

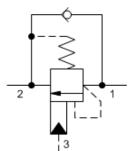
З-Роп	I-19A
3-Port (Undercut)	T-19AU
4-Port	T-24A
4-Port (Undercut)	T-24AU
4-Port	T-34A
4-Port (Dual path)	T-54AD
6-Port	T-54A
6-Port	T-64A



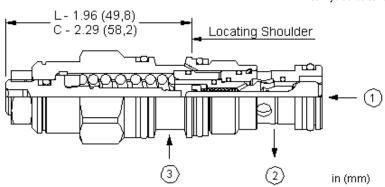
sunhydraulics.com/model/CBCB



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBCBLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

L - 2.31 (59,0) C - 2.50 (63,5)

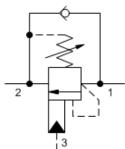
(L CONTROL SHOWN)



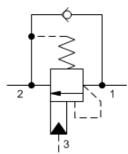


INLET

1



3-Port Non-vented



3-Port Non-vented, Fixed Setting

PILOT OUTLET in. (mm) Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

1.00

1120

3

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING

2

SHOULDER

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

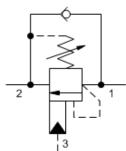
Model Code Example: CBEBLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting		
		I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70		

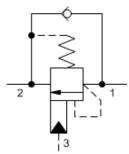
bar) Standard Setting



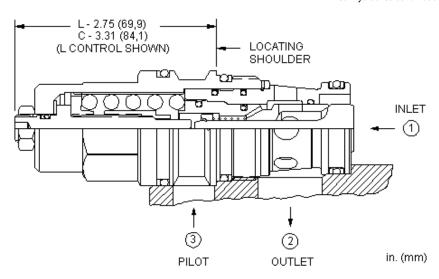
sunhydraulics.com/model/CBGB



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CBGBLHN

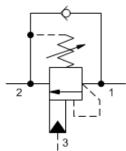
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /LH Mild Steel, Zinc-Nickel
		 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 			



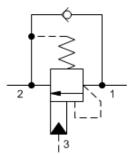
MODEL CBIB



sunhydraulics.com/model/CBIB



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

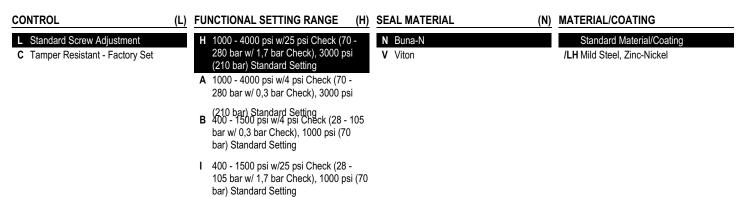
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CBIBLHN



MODEL CBCY

L - 1.97 (50,0) C - 2.29 (58,2)

(L CONTROL SHOWN)

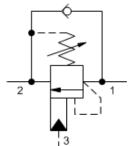


sunhydraulics.com/model/CBCY

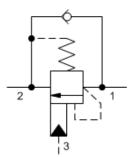
INLET

(1)

in (mm)



3-Port Non-vented



3-Port Non-vented, Fixed Setting

-Port Non-vented

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

3

PILOT

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING

SHOULDER

2

OUTLET

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBCYLHN

CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING 1000 - 4000 psi w/25 psi Check (70 · L Standard Screw Adjustment н N Buna-N Standard Material/Coating 280 bar w/ 1,7 bar Check), 3000 psi C Tamper Resistant - Factory Set Viton /AP Stainless Steel, Passivated (210 bar) Standard Setting /LH Mild Steel. Zinc-Nickel A 1000 - 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 -

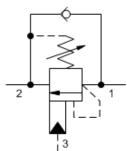
105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

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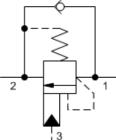
MODEL **CBEY**



sunhydraulics.com/model/CBEY



3-Port Non-vented



L - 2.31 (59,0) C - 2.50 (63,5) (L CONTROL SHOWN) LOCATING SHOULDER r Cá r INLET ш (1) 3 2 PILOT OUTLET in. (mm)

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBEYLHN

CON	ROL	

L Standard Screw Adjustment C Tamper Resistant - Factory Set

(L) FUNCTIONAL SETTING RANGE (

- Н 1000 - 4000 psi w/25 psi Check (70 -280 bar w/ 1,7 bar Check), 3000 psi
- (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi
- (210 bar) Standard Setting **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting

(H) SEAL MATERIAL

N Buna-N

V Viton

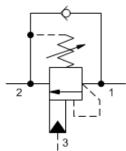
(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

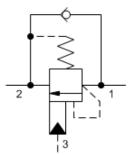
3-Port Non-vented, Fixed Setting



sunhydraulics.com/model/CBGY



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1			
Maximum Recommended Load Pressure at Maximum Setting	3075 psi			
Maximum Setting	4000 psi			
Factory Pressure Settings Established at	2 in³/min.			
Maximum Valve Leakage at Reseat 5 drops/min.				
Adjustment - No. of CCW Turns from Min. to Max. Setting 3.75				
Reseat >85% of setting				
Locknut Hex Size 9/16 in.				
Locknut Torque 80 - 90 lbf in.				
Seal kit - Cartridge	Buna: 990017007			
Seal kit - Cartridge Polyurethane: 99001700				
Seal kit - Cartridge Viton: 990017006				

CONFIGURATION OPTIONS

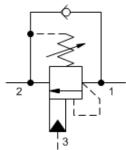
Model Code Example: CBGYLHN

CONTROL) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N) MAT	ERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set	280 bar w/ 1,7 bar Check), 3000 psi V Viton /AP	Standard Material/Coating Stainless Steel, Passivated Mild Steel, Zinc-Nickel
	 B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting 	
	 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 	

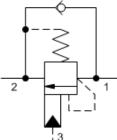
bar) Standard Setting



sunhydraulics.com/model/CBIY



3-Port Non-vented



3-Port Non-vented, Fixed Setting

L-3.50 (88,9) C - 4.09 (103,9) (L CONTROL SHOWN) LOCATING SHOULDER വ INLET വ 2 3 PILOT OUTLET in. (mm)

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1			
Maximum Recommended Load Pressure at Maximum Setting	3075 psi			
Maximum Setting	4000 psi			
Factory Pressure Settings Established at	2 in³/min.			
Maximum Valve Leakage at Reseat 5 drops/min.				
Adjustment - No. of CCW Turns from Min. to Max. Setting 3.75				
Reseat >85% of setting				
Locknut Hex Size 3/4 in.				
Locknut Torque 25 - 30 lbf ft				
Seal kit - Cartridge	Buna: 990019007			
Seal kit - Cartridge Polyurethane: 99001900				
Seal kit - Cartridge Viton: 990019006				

CONFIGURATION OPTIONS

CONTROL

- L Standard Screw Adjustment C Tamper Resistant - Factory Set
- (L) FUNCTIONAL SETTING RANGE
 - 1000 4000 psi w/25 psi Check (70 -280 bar w/ 1,7 bar Check), 3000 psi
 - (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi
 - (210 bar) Standard Setting **B** 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting
 - I 400 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

(H) SEAL MATERIAL

N Buna-N

V Viton

Model Code Example: CBIYLHN

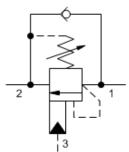
(N) MATERIAL/COATING

Standard Material/Coating /LH Mild Steel, Zinc-Nickel

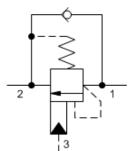




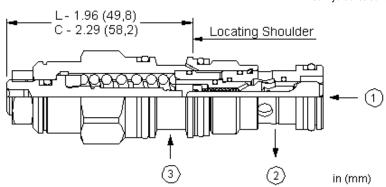
sunhydraulics.com/model/CBCL



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1			
Maximum Recommended Load Pressure at Maximum Setting	3850 psi			
Maximum Setting	5000 psi			
Factory Pressure Settings Established at	2 in ³ /min.			
Maximum Valve Leakage at Reseat	5 drops/min.			
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75			
Reseat	>85% of setting			
Locknut Hex Size	9/16 in.			
Locknut Torque 80 - 90 lbf in.				
Seal kit - Cartridge	Buna: 990011007			
Seal kit - Cartridge	EPDM: 990011014			
Seal kit - Cartridge	Polyurethane: 990011002			
Seal kit - Cartridge	Viton: 990011006			

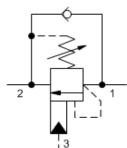
CONFIGURATION OPTIONS

Model Code Example: CBCLLJN

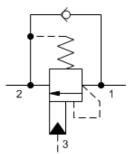
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL (I	N) MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting		



sunhydraulics.com/model/CBEL



3-Port Non-vented



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1			
Maximum Recommended Load Pressure at Maximum Setting	3850 psi			
Maximum Setting	5000 psi			
Factory Pressure Settings Established at	2 in³/min.			
Maximum Valve Leakage at Reseat	5 drops/min.			
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75			
Reseat	>85% of setting			
Locknut Hex Size	9/16 in.			
Locknut Torque 80 - 90 lbf in.				
Seal kit - Cartridge	Buna: 990202007			
Seal kit - Cartridge	Polyurethane: 990002002			
Seal kit - Cartridge	Viton: 990202006			

CONFIGURATION OPTIONS

Model Code Example: CBELLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		K 1000 - 2500 psi w/25 psi Check (70 -			

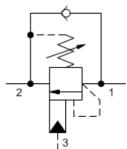
175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

3-Port Non-vented, Fixed Setting

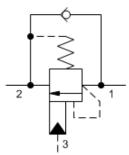




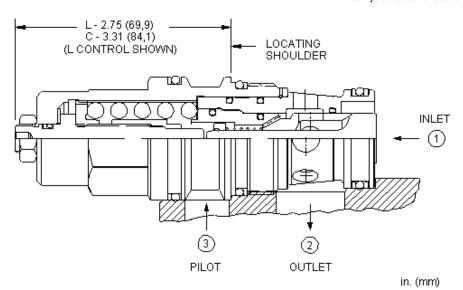
sunhydraulics.com/model/CBGL



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1				
Maximum Recommended Load Pressure at Maximum Setting	3850 psi				
Maximum Setting 5000 psi					
Factory Pressure Settings Established at	2 in³/min.				
Maximum Valve Leakage at Reseat	5 drops/min.				
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75				
Reseat	>85% of setting				
Locknut Hex Size	9/16 in.				
Locknut Torque 80 - 90 lbf in.					
Seal kit - Cartridge	Buna: 990017007				
Seal kit - Cartridge	EPDM: 990017014				
Seal kit - Cartridge Polyurethane: 990017					
Seal kit - Cartridge	Viton: 990017006				

CONFIGURATION OPTIONS

Model Code Example: CBGLLJN

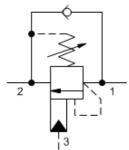
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	N Buna-N E EPDM		Standard Material/Coating /AP Stainless Steel, Passivated
		C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting	V Viton		/LH Mild Steel, Zinc-Nickel
		D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting			

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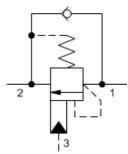




sunhydraulics.com/model/CBIL



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

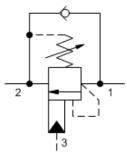
Pilot Ratio	2.3:1				
Maximum Recommended Load Pressure at Maximum Setting 3850 psi					
Maximum Setting 5000 psi					
Factory Pressure Settings Established at	2 in³/min.				
Maximum Valve Leakage at Reseat 5 drops/min.					
Adjustment - No. of CCW Turns from Min. to Max. Setting 3.75					
Reseat >85% of setting					
Locknut Hex Size 3/4 in.					
Locknut Torque	25 - 30 lbf ft				
Seal kit - Cartridge Buna: 990019007					
Seal kit - Cartridge Polyurethane: 990019002					
Seal kit - Cartridge Viton: 990019006					

CONFIGURATION OPTIONS

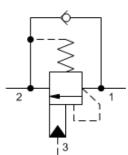
Model Code Example: CBILLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		D (210 bar) Standard Setting 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting			

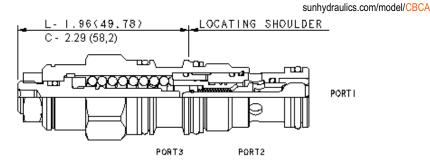




3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1				
Maximum Recommended Load Pressure at Maximum Setting 3075 psi					
Maximum Setting	4000 psi				
Factory Pressure Settings Established at	2 in ³ /min.				
Maximum Valve Leakage at Reseat	5 drops/min.				
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75				
Reseat	>85% of setting				
Locknut Hex Size	9/16 in.				
Locknut Torque 80 - 90 lbf in.					
Seal kit - Cartridge	Buna: 990011007				
Seal kit - Cartridge	EPDM: 990011014				
Seal kit - Cartridge	Polyurethane: 990011002				
Seal kit - Cartridge	Viton: 990011006				

CONFIGURATION OPTIONS

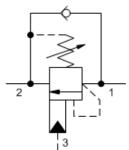
Model Code Example: CBCALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/2 psi Check (20 - 100 psi (20 - 100 p	N Buna-N E EPDM V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

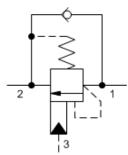
 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting







3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

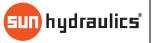
Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBEALHN

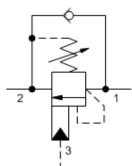
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		 B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 		

bar) Standard Setting

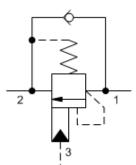




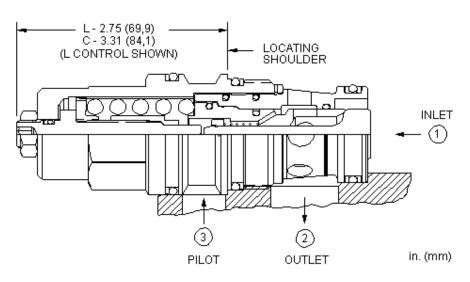
sunhydraulics.com/model/CBGA



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CBGALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

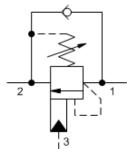
I 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting



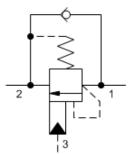
MODEL CBIA



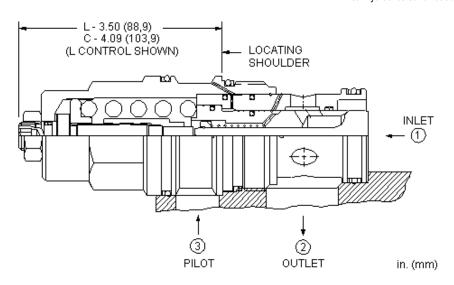
sunhydraulics.com/model/CBIA



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

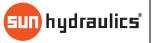
Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

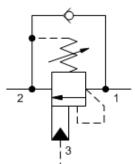
Model Code Example: CBIALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi 	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		B 400-bab ban w/ psrtineck (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting		
		I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70		

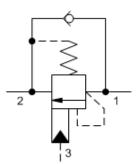
bar) Standard Setting



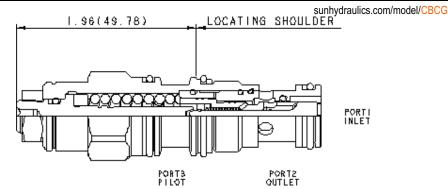




3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

A fixed setting version is available for this model. To view this product page, use Sun's search box and type in the 4 letter model code. The search result will include the fixed setting version.

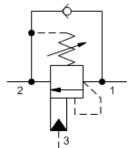
CONFIGURATION OPTIONS

Model Code Example: CBCGLJN

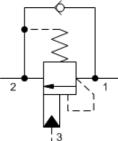
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL (N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting 	N Buna-N E EPDM V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

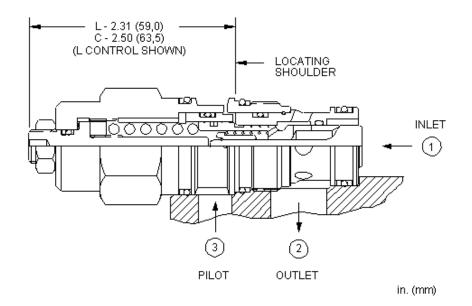


sunhydraulics.com/model/CBEG



3-Port Non-vented





Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBEGLJN

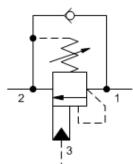
CONTROL	(L) FUNCTIONAL SETTING RANGE (J) SEAL MATERIAL	(N) MATERIA	L/COATING
L Standard Screw Adjustment	J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi	N Buna-N	Stand	ard Material/Coating
C Tamper Resistant - Factory Set	 (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 	₽ & BECHM	12A Rhains	Reel,Stend-Risselvated
	175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
	K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1.7 bar Check), 2000 psi			

3-Port Non-vented, Fixed Setting

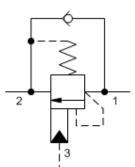
(140 bar) Standard Setting



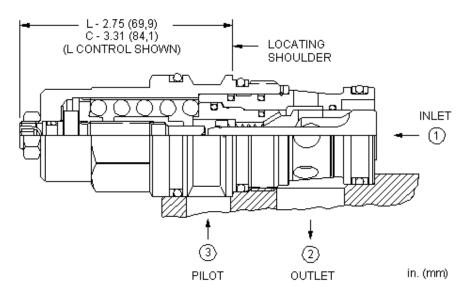
sunhydraulics.com/model/CBGG



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

<u> </u>	1
Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CBGGLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 	N Buna-NE EPDMV Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 -			

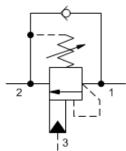
175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting



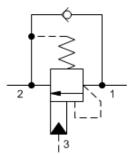
MODEL CBIG



sunhydraulics.com/model/CBIG



3-Port Non-vented



3-Port Non-vented, Fixed Setting

L- 3.50 (88,9) C - 4.09 (103,9) (L CONTROL SHOWN) INLET INLET

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

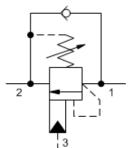
CONFIGURATION OPTIONS

Model Code Example: CBIGLJN

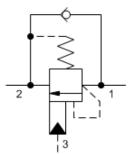
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		(210 bar) Standard Setting 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting			



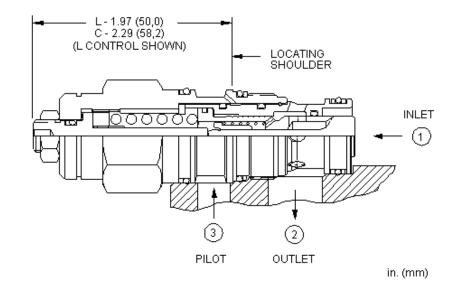
sunhydraulics.com/model/CBCH



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBCHLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment		J 2000 - 5000 psi w/25 psi Check (140 -	N Buna-N		Standard Material/Coating
C Tamper Resistant - Factory Set		350 bar w/ 1,7 bar Check), 3000 psi	E EPDM		/AP Stainless Steel, Passivated
		(210 bar) Standard Setting	V Viton		/LH Mild Steel, Zinc-Nickel
		C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting			
		D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 -			

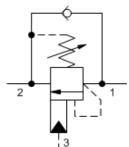
175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

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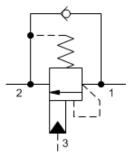




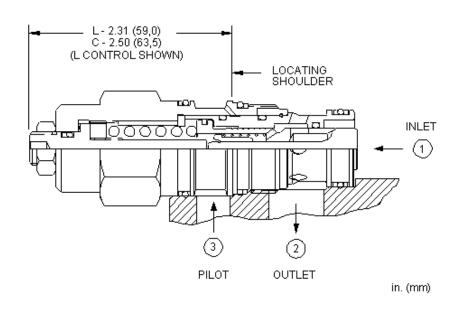
sunhydraulics.com/model/CBEH



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBEHLJN

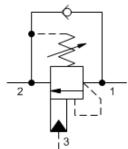
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment		J 2000 - 5000 psi w/25 psi Check (140 -	N Buna-N		Standard Material/Coating
C Tamper Resistant - Factory Set		350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	V Viton		/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting			
		D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 -			

175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

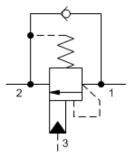
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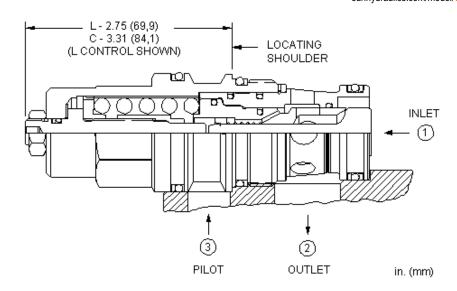
sunhydraulics.com/model/CBGH



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

CONTROL

Model Code Example: CBGHLJN

- L Standard Screw Adjustment C Tamper Resistant - Factory Set
- (L) FUNCTIONAL SETTING RANGE
 - 2000 5000 psi w/25 psi Check (140 -350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
 - 2000 5000 psi w/4 psi Check (140 -С 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
 - D 1000 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
 - K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

(J) SEAL MATERIAL

N Buna-N

V Viton

MATERIAL/COATING (N)

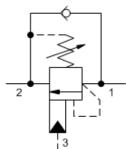
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



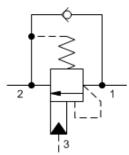
MODEL CBIH



sunhydraulics.com/model/CBIH



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1	
Maximum Recommended Load Pressure at Maximum Setting	3850 psi	
Maximum Setting	5000 psi	
Factory Pressure Settings Established at	2 in ³ /min.	
Maximum Valve Leakage at Reseat	5 drops/min.	
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75	
Reseat	>85% of setting	
Locknut Hex Size	3/4 in.	
Locknut Torque	25 - 30 lbf ft	
Seal kit - Cartridge	Buna: 990019007	
Seal kit - Cartridge	EPDM: 990019014	
Seal kit - Cartridge	Polyurethane: 990019002	
Seal kit - Cartridge Viton: 990019006		

CONFIGURATION OPTIONS

Model Code Example: CBIHLJN

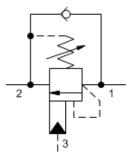
CONTROL	(L) FUNCTIONAL SETTING RANGE (J) SEAL MATER	RIAL (N) MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set	J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting N Buna-N C 2000 - 5000 psi w/4 psi Check (140 - V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
	350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting	
	D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting	
	K 1000 - 2500 psi w/25 psi Check (70 -	

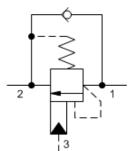
175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

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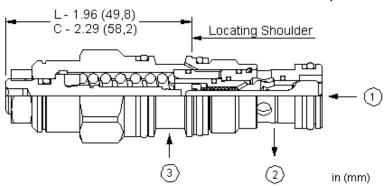








3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

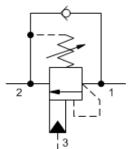
CONFIGURATION OPTIONS

Model Code Example: CBBBLHN

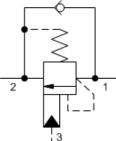
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

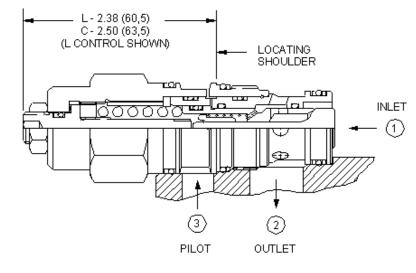


sunhydraulics.com/model/CBDB



3-Port Non-vented





in. (mm)

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDBLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 8 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 			

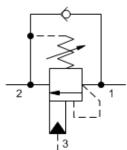
3

3-Port Non-vented, Fixed Setting

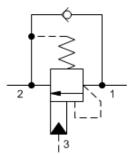
L - 2.75 (69,9) C - 3.31 (84,1)



sunhydraulics.com/model/CBFB



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

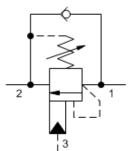
Model Code Example: CBFBLHN

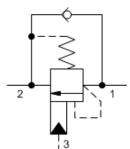
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /LH Mild Steel, Zinc-Nickel
		 B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 			



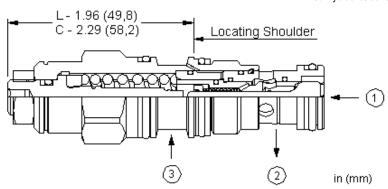


sunhydraulics.com/model/CBBL





3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

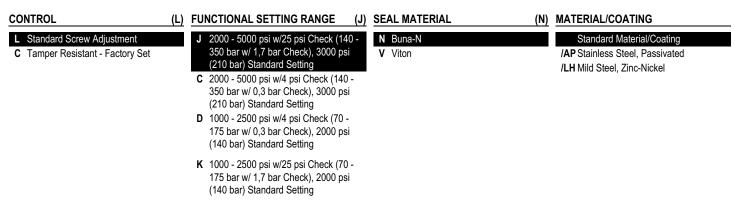
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1		
Maximum Recommended Load Pressure at Maximum Setting	3850 psi		
Maximum Setting	5000 psi		
Factory Pressure Settings Established at	2 in³/min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

NOTES A fixed setting version is available for this model. To view this product page, use Sun's search box and type in CBBLX and click on the resulting link.

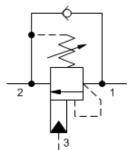
CONFIGURATION OPTIONS

Model Code Example: CBBLLJN

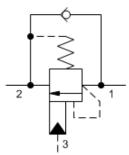




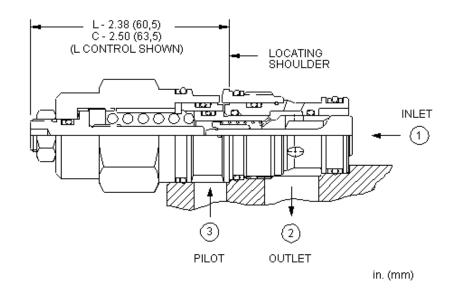
sunhydraulics.com/model/CBDL



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDLLJN

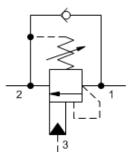
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	J) S	SEAL MATERIAL	(N)	MATERIAL/COATING	
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 		N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel	

175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

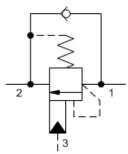




sunhydraulics.com/model/CBFL



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

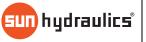
Pilot Ratio	2.3:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CBFLLJN

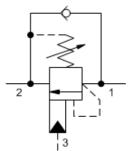
CONTROL (L) FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL (N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 	 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi 	N Buna-N V Viton	Standard Material/Coating /LH Mild Steel, Zinc-Nickel

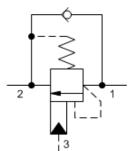
(140 bar) Standard Setting



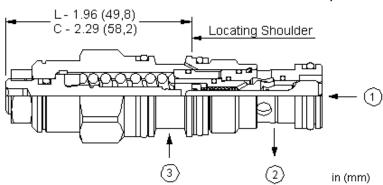








3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

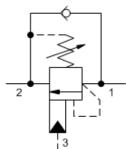
Model Code Example: CBBCLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 	N Buna-N E EPDM V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting			

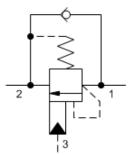
MODEL CBDC



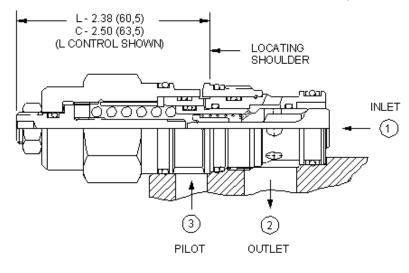
sunhydraulics.com/model/CBDC



3-Port Non-vented



3-Port Non-vented, Fixed Setting



in. (mm)

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDCLHN

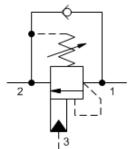
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 	N Buna-NE EPDMV Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 8 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 			

MODEL CBFC

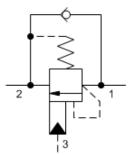
L - 2.75 (69,9) C - 3.31 (84,1)



sunhydraulics.com/model/CBFC



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

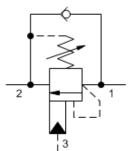
Model Code Example: CBFCLHN

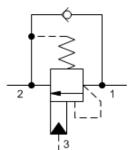
CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL (N) MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

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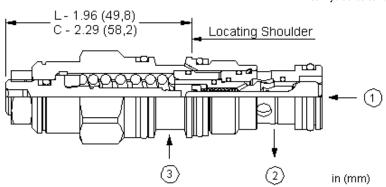


sunhydraulics.com/model/CBBD





3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

NOTES

A fixed setting version is available for this model. To view this product page, use Sun's search box and type in CBBDX and click on the resulting link.

CONFIGURATION OPTIONS

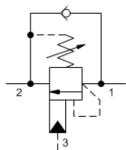
Model Code Example: CBBDLJN

CONTROL	JNCTIONAL SETTING RANGE (J) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set	2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting N Buna-N 2 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting V Viton 2 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting 0 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi	Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

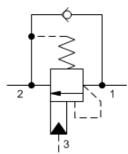
MODEL CBDD



sunhydraulics.com/model/CBDD



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDDLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		(210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi			

(140 bar) Standard Setting

MODEL CBFD

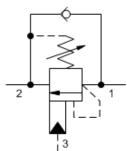
L - 2.75 (69,9) C - 3.31 (84,1)

(L CONTROL SHOWN)

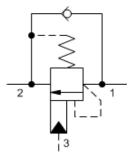
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sunhydraulics.com/model/CBFD



3-Port Non-vented



3-Port Non-vented, Fixed Setting

INLET

LOCATING

SHOULDER

ŪЛ

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

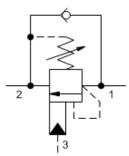
CONFIGURATION OPTIONS

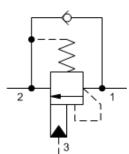
Model Code Example: CBFDLJN

CONTROL	JNCTIONAL SETTING RANGE (J) SEAL MATERIAL (N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 	2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting 2 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting 0 1000 - 2500 psi w/4 psi Check (70 -	Standard Material/Coating /LH Mild Steel, Zinc-Nickel
	175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting	
	 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting 	

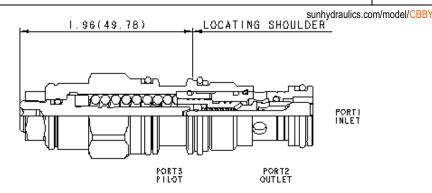
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3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

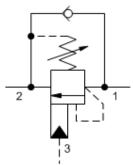
Model Code Example: CBBYLHN

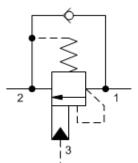
CONTROL (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL MATERIAL/COATING (N) 1000 - 4000 psi w/25 psi Check (70 -L Standard Screw Adjustment Н N Buna-N Standard Material/Coating 280 bar w/ 1,7 bar Check), 3000 psi C Tamper Resistant - Factory Set V Viton /AP Stainless Steel, Passivated (210 bar) Standard Setting /LH Mild Steel. Zinc-Nickel A 1000 - 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

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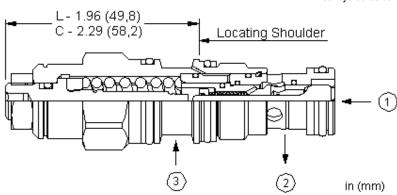


sunhydraulics.com/model/CBBA





3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

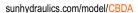
CONFIGURATION OPTIONS

Model Code Example: CBBALHN

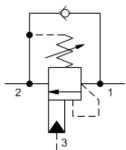
(L) FUNCTIONAL SETTING RANGE (N) MATERIAL/COATING CONTROL (H) SEAL MATERIAL L Standard Screw Adjustment 1000 - 4000 psi w/25 psi Check (70 -N Buna-N Standard Material/Coating Н 280 bar w/ 1,7 bar Check), 3000 psi C Tamper Resistant - Factory Set V Viton /AP Stainless Steel, Passivated (210 bar) Standard Setting /LH Mild Steel, Zinc-Nickel A 1000 - 4000 psi w/4 psi Check (70 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 -

 400 - 1500 psi w/25 psi Check (28 -105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting L - 2.38 (60,5) ____ C - 2.50 (63,5) (L CONTROL SHOWN)

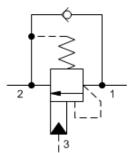




INLET



3-Port Non-vented



3-Port Non-vented, Fixed Setting

3 (2) PILOT OUTLET in. (mm) Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow

from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the

œ

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

pilot ratio.

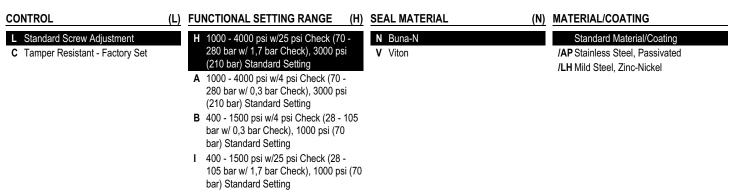
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING SHOULDER

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

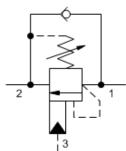
Model Code Example: CBDALHN



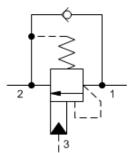
L - 2.74 (69,6) C - 3.31 (84,1)



sunhydraulics.com/model/CBFA



3-Port Non-vented



3-Port Non-vented, Fixed Setting

(L CONTROL SHOWN) SHOULDER ĽИ மை INLET (1)(3) (2) PILOT OUTLET in. (mm)

LOCATING

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

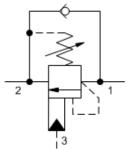
Model Code Example: CBFALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
 L Standard Screw Adjustment C Tamper Resistant - Factory Set 		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 	N Buna-N V Viton	Standard Material/Coating /LH Mild Steel, Zinc-Nickel	
		 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 			

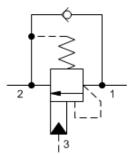
MODEL CBHA



sunhydraulics.com/model/CBHA



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

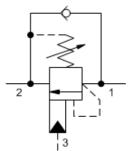
CONFIGURATION OPTIONS

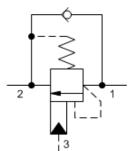
Model Code Example: CBHALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N)
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting N Buna-N V Viton A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi
		(210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting
		 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting

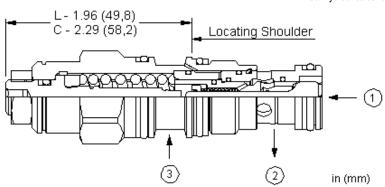








3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBBGLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



MODEL **CBDG**

L - 2.38 (60,5)

C - 2.50 (63,5)

(L CONTROL SHOWN)

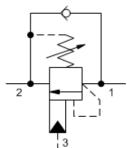


sunhydraulics.com/model/CBDG

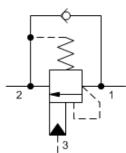
INLET

 $\begin{bmatrix} 1 \end{bmatrix}$

in. (mm)



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

3)

PILOT

ų c

1120 000

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

HEX DIMENSION

ACROSS FLATS: 1 1/8 (28,6)

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING SHOULDER

1.38 (35,1)

INSTALLED

T-2A CAVITY

2

OUTLET

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDGLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment		J 2000 - 5000 psi w/25 psi Check (140 -	N Buna-N		Standard Material/Coating
C Tamper Resistant - Factory Set		350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	V Viton		/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel
		C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting			
		D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting			
		K 1000 - 2500 psi w/25 psi Check (70 -			

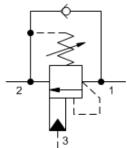
175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting

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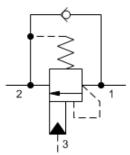




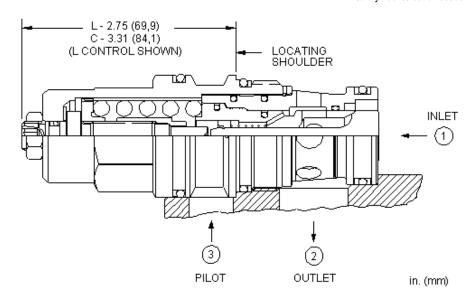
sunhydraulics.com/model/CBFG



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

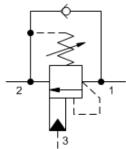
CONFIGURATION OPTIONS

Model Code Example: CBFGLJN

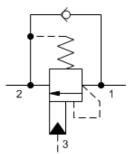
CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 	N Buna-N V Viton		Standard Material/Coating /LH Mild Steel, Zinc-Nickel
		 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (410 bar) Octoor psi (
		 (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting 			



sunhydraulics.com/model/CBHG



3-Port Non-vented



3-Port Non-vented, Fixed Setting

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

(N)

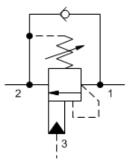
CONFIGURATION OPTIONS

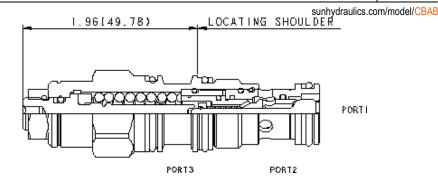
Model Code Example: CBHGLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL
L Standard Screw Adjustment		J 2000 - 5000 psi w/25 psi Check (140 -	N Buna-N
C Tamper Resistant - Factory Set		350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting	V Viton
		C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi	
		(210 bar) Standard Setting	

- D 1000 2500 psi w/4 psi Check (70 -175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting
- K 1000 2500 psi w/25 psi Check (70 -175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting







Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

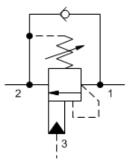
Pilot Ratio	1.5:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

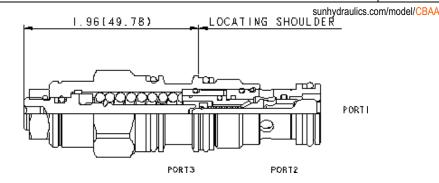
CONFIGURATION OPTIONS

Model Code Example: CBABLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set R Lockwired Screw Adjustment		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel







Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

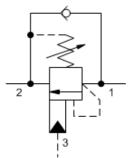
Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

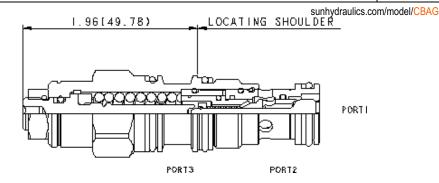
CONFIGURATION OPTIONS

Model Code Example: CBAALHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set R Lockwired Screw Adjustment		 H 1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting A 1000 - 4000 psi w/4 psi Check (70 - 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting B 400 - 1500 psi w/4 psi Check (28 - 105 bar w/ 0,3 bar Check), 1000 psi (70 bar) Standard Setting I 400 - 1500 psi w/25 psi Check (28 - 105 bar w/ 1,7 bar Check), 1000 psi (70 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel







Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

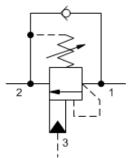
CONFIGURATION OPTIONS

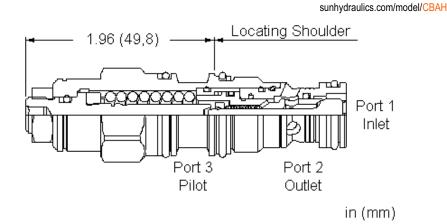
Model Code Example: CBAGLJN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set R Lockwired Screw Adjustment		 J 2000 - 5000 psi w/25 psi Check (140 - 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 - 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 - 175 bar w/ 1,7 bar Check), 2000 psi (140 bar) Standard Setting 	N Buna-N V Viton		Standard Material/Coating /LH Mild Steel, Zinc-Nickel









Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBAHLJN

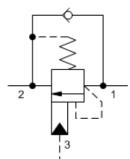
CONTROL	(L)	FUNCTIONAL SETTING RANGE	(J)	SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set		 J 2000 - 5000 psi w/25 psi Check (140 350 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting C 2000 - 5000 psi w/4 psi Check (140 350 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting D 1000 - 2500 psi w/4 psi Check (70 - 175 bar w/ 0,3 bar Check), 2000 psi (140 bar) Standard Setting K 1000 - 2500 psi w/25 psi Check (70 175 bar w/ 1,7 bar Check), 2000 psi 	-	N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

(140 bar) Standard Setting

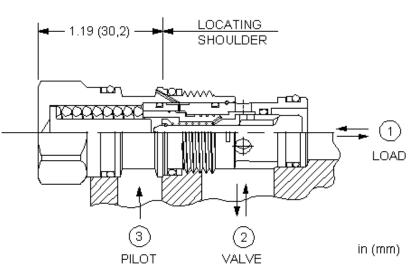




sunhydraulics.com/model/CBCLX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

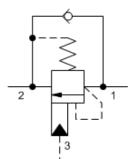
Model Code Example: CBCLXMN

FIXED PRESSURE RANGE	(M) SEAL MATERIA	(N) MATERIAL/COATING
M 4700 - 5600 psi (325 - 390 bar)	N Buna-N	Standard Material/Coating
V 3200 - 3800 psi (220 - 260 bar)	E EPDM	/LH Mild Steel, Zinc-Nickel
X 3500 - 4200 psi (245 - 290 bar)	V Viton	
Z 4125 - 4900 psi (285 - 340 bar)		

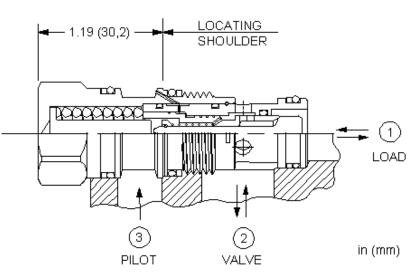




sunhydraulics.com/model/CBCAX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

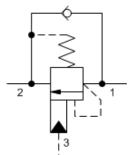
CONFIGURATION OPTIONS

Model Code Example: CBCAXNN

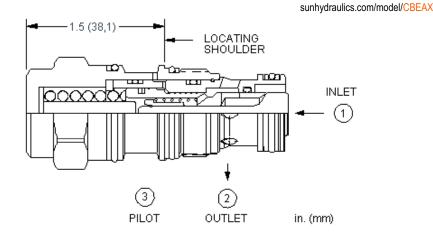
FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	E EPDM	/AP Stainless Steel, Passivated
	V Viton	/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

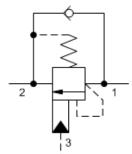
Model Code Example: CBEAXNN

FIXED PRESSURE RANGE	(N)	SEAL MATERIAL	(N)	MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)		N Buna-N		Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)		V Viton		/LH Mild Steel, Zinc-Nickel

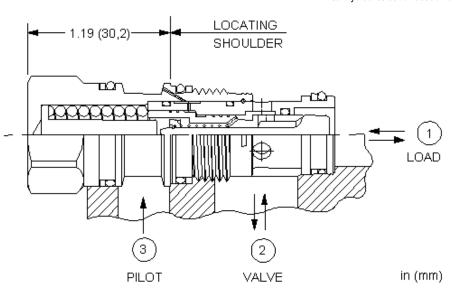




sunhydraulics.com/model/CBCGX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Z 4125 - 4900 psi (285 - 340 bar)

Model Code Example: CBCGXMN

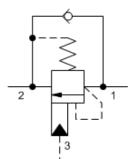
FIXED PRESSURE RANGE	(M)	SEAL MATERIAL	(N)	MATERIAL/COATING
M 4700 - 5600 psi (325 - 390 bar)		N Buna-N		Standard Material/Coating
V 3200 - 3800 psi (220 - 260 bar)		E EPDM		/LH Mild Steel, Zinc-Nickel
X 3500 - 4200 psi (245 - 290 bar)		V Viton		



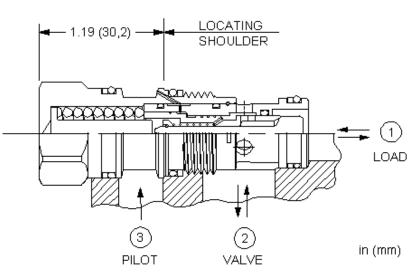
MODEL CBCHX



sunhydraulics.com/model/CBCHX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

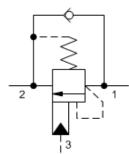
Model Code Example: CBCHXMN

FIXED PRESSURE RANGE	(M)	SEAL MATERIAL	(N)	MATERIAL/COATING
M 4700 - 5600 psi (325 - 390 bar)		N Buna-N		Standard Material/Coating
V 3200 - 3800 psi (220 - 260 bar)		E EPDM		/AP Stainless Steel, Passivated
X 3500 - 4200 psi (245 - 290 bar)		V Viton		/LH Mild Steel, Zinc-Nickel
Z 4125 - 4900 psi (285 - 340 bar)				

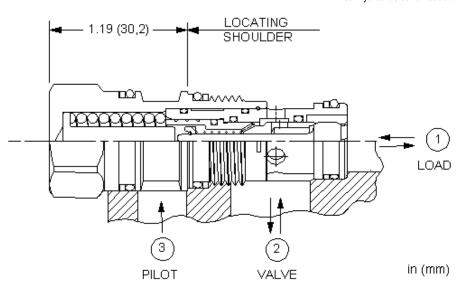




sunhydraulics.com/model/CBBLX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2.3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBBLXMN

FIXED PRESSURE RANGE (M) SEAL MATERIAL

N Buna-N V Viton (N) MATERIAL/COATING

M 4700 - 5600 psi (325 - 390 bar) V 3200 - 3800 psi (220 - 260 bar)

X 3500 - 4200 psi (245 - 290 bar)

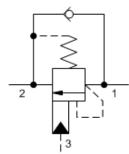
Z 4125 - 4900 psi (285 - 340 bar)

Standard Material/Coating /LH Mild Steel, Zinc-Nickel

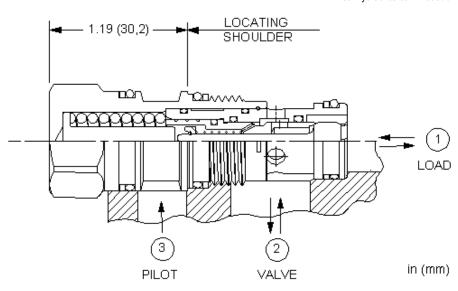




sunhydraulics.com/model/CBBCX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

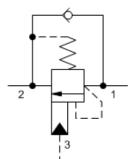
CONFIGURATION OPTIONS

Model Code Example: CBBCXNN

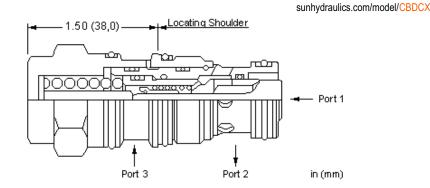
FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	E EPDM	/LH Mild Steel, Zinc-Nickel
	V Viton	







3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

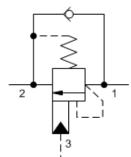
Model Code Example: CBDCXNN

FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	E EPDM	/LH Mild Steel, Zinc-Nickel
	V Viton	

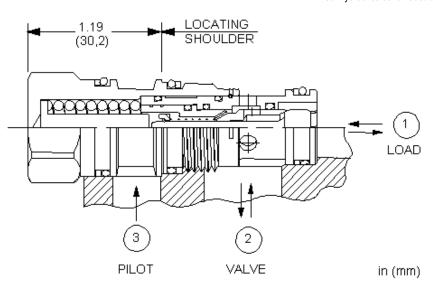




sunhydraulics.com/model/CBBDX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

V 3200 - 3800 psi (220 - 260 bar)

Z 4125 - 4900 psi (285 - 340 bar)

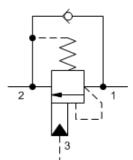
Model Code Example: CBBDXXN

FIXED PRESSURE RANGE	(X) SEAL MATERIAL	(N) MATERIAL/COATING
X 3500 - 4200 psi (245 - 290 bar)	N Buna-N	Standard Material/Coating
M 4700 - 5600 psi (325 - 390 bar)	E EPDM	/AP Stainless Steel, Passivated

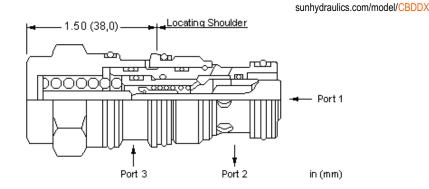
V Viton







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Z 4125 - 4900 psi (285 - 340 bar)

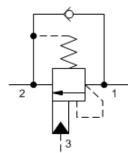
Model Code Example: CBDDXXN

FIXED PRESSURE RANGE	(X)	SEAL MATERIAL	(N)	MATERIAL/COATING
X 3500 - 4200 psi (245 - 290 bar)		N Buna-N		Standard Material/Coating
M 4700 - 5600 psi (325 - 390 bar)		V Viton		/LH Mild Steel, Zinc-Nickel
V 3200 - 3800 psi (220 - 260 bar)				

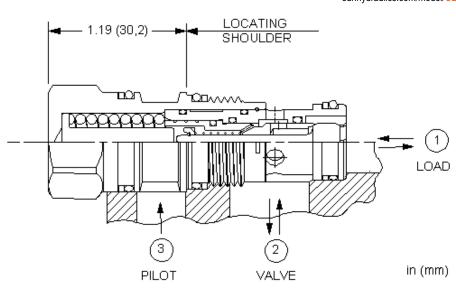




sunhydraulics.com/model/CBBAX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

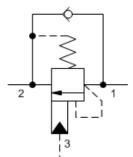
CONFIGURATION OPTIONS

Model Code Example: CBBAXNN

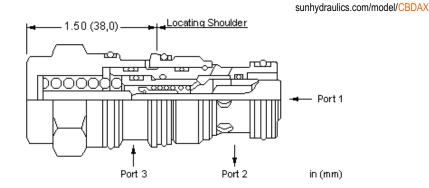
FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	V Viton	/AP Stainless Steel, Passivated
		/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDAXNN

FIXED PRESSURE RANGE

(N) SEAL MATERIAL

(N) MATERIAL/COATING

N 2900 - 3500 psi (200 - 245 bar)
 P 2250 - 2680 psi (155 - 185 bar)

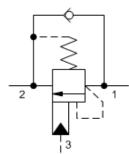
N Buna-N V Viton Standard Material/Coating

/LH Mild Steel, Zinc-Nickel

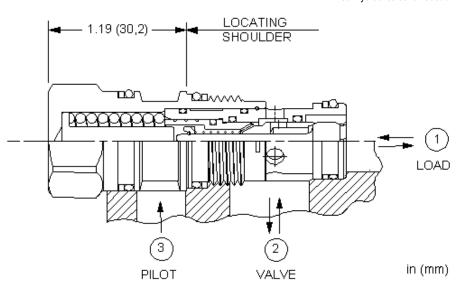




sunhydraulics.com/model/CBBGX



3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CBBGXMN

FIXED PRESSURE RANGE

(M) SEAL MATERIAL N Buna-N V Viton (N) MATERIAL/COATING Standard Material/Coating

M 4700 - 5600 psi (325 - 390 bar) V 3200 - 3800 psi (220 - 260 bar)

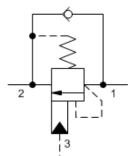
X 3500 - 4200 psi (245 - 290 bar)

Z 4125 - 4900 psi (285 - 340 bar)

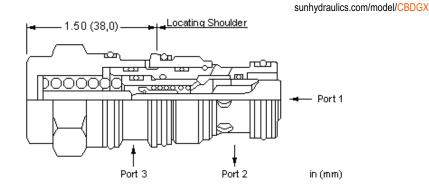
/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilotassisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure at Maximum Setting	3850 psi
Maximum Setting	5000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Reseat	>85% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CBDGXXN

FIXED PRESSURE RANGE

(X) SEAL MATERIAL

(N) MATERIAL/COATING

X 3500 - 4200 psi (245 - 290 bar) Buna-

M 4700 - 5600 psi (325 - 390 bar) V Viton

V 3200 - 3800 psi (220 - 260 bar)

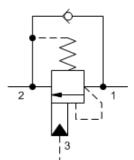
Z 4125 - 4900 psi (285 - 340 bar)

Standard Material/Coating

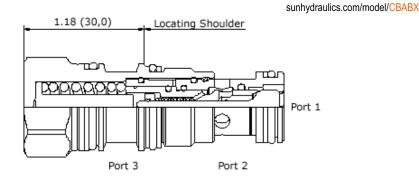
/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

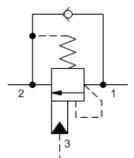
Model Code Example: CBABXNN

FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	V Viton	/LH Mild Steel, Zinc-Nickel

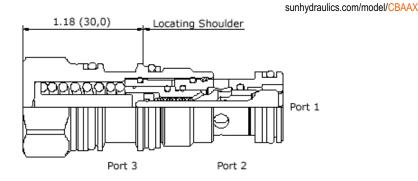


MODEL CBAAX





3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

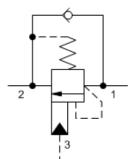
CONFIGURATION OPTIONS

Model Code Example: CBAAXNN

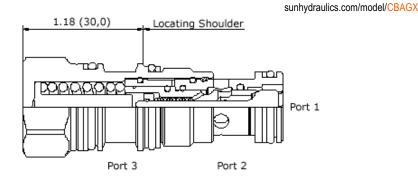
FIXED PRESSURE RANGE	(N) SEAL MATERIAL	(N) MATERIAL/COATING
N 2900 - 3500 psi (200 - 245 bar)	N Buna-N	Standard Material/Coating
P 2250 - 2680 psi (155 - 185 bar)	V Viton	/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

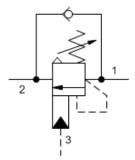
Z 4125 - 4900 psi (285 - 340 bar)

Model Code Example: CBAGXMN

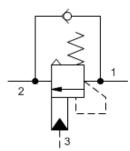
FIXED PRESSURE RANGE	(M) SEA	L MATERIAL	(N)	MATERIAL/COATING
M 4700 - 5600 psi (325 - 390 bar)	Ν	Buna-N		Standard Material/Coating
V 3200 - 3800 psi (220 - 260 bar)	V	Viton		/LH Mild Steel, Zinc-Nickel
X 3500 - 4200 psi (245 - 290 bar)				



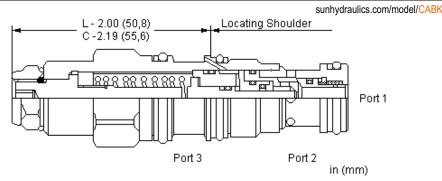




3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	3
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

(N)

CONFIGURATION OPTIONS

Model Code Example: CABKLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

Н

1000 - 4000 psi w/25 psi Check (70 -

N Buna-N V Viton

(H) SEAL MATERIAL

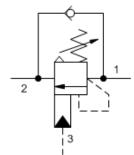
L Standard Screw Adjustment C Tamper Resistant - Factory Set

280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

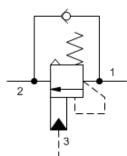




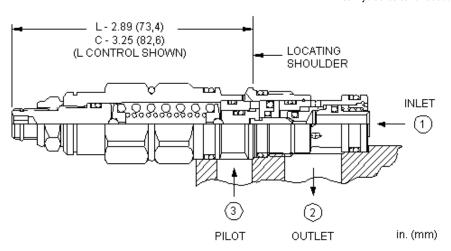
sunhydraulics.com/model/CACK



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

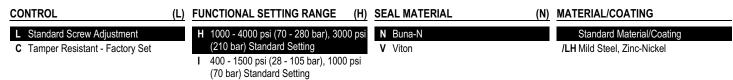
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

CONFIGURATION OPTIONS

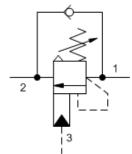
Model Code Example: CACKLHN



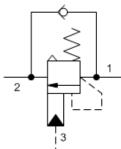




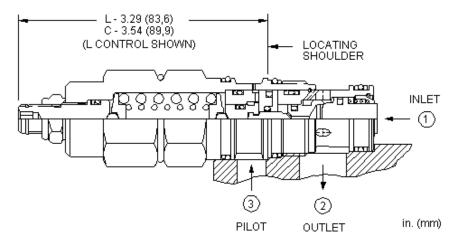
sunhydraulics.com/model/CAEK



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

CONFIGURATION OPTIONS

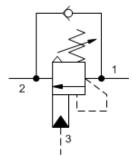
Model Code Example: CAEKLHN



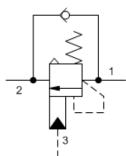
MODEL CAGK



sunhydraulics.com/model/CAGK



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

in. (mm)

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

CONFIGURATION OPTIONS

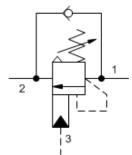
Model Code Example: CAGKLHN

CONTROL	(L)	FUNCTIONAL SETTING RANGE (H	<u>)</u> SI	EAL MATERIAL	(N)
L Standard Screw Adjustment		H 1000 - 4000 psi (70 - 280 bar), 3000 ps (210 bar) Standard Setting	i N		
C Tamper Resistant - Factory Set		 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting 		/ Viton	

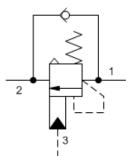




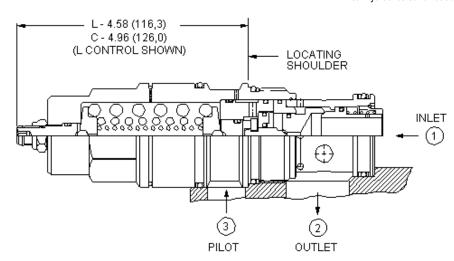
sunhydraulics.com/model/CAIK



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

(N)

CONFIGURATION OPTIONS

Model Code Example: CAIKLHN

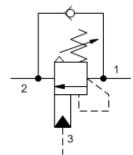
CONTROL	L) FUNCT	IONAL SETTING RANGE	(H)	SEAL MATERIAL
L Standard Screw Adjustment		0 - 4000 psi (70 - 280 bar), 300	00 psi	
C Tamper Resistant - Factory Set	I 400	0 bar) Standard Setting - 1500 psi (28 - 105 bar), 1000 bar) Standard Setting) psi	V Viton



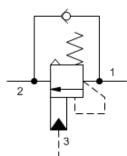
MODEL CACL



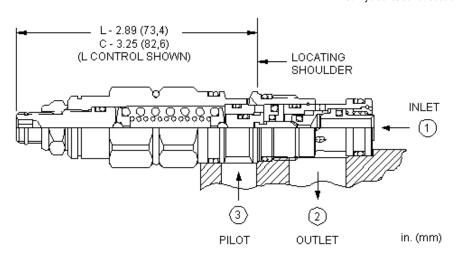
sunhydraulics.com/model/CACL



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

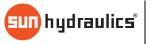
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

CONFIGURATION OPTIONS

Model Code Example: CACLLFN

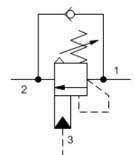




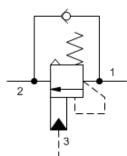
MODEL CAEL



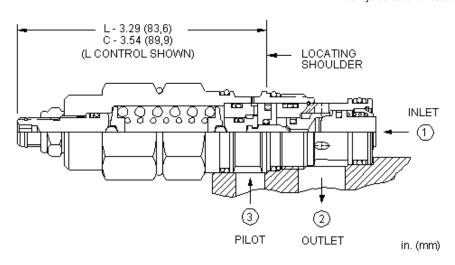
sunhydraulics.com/model/CAEL



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

CONFIGURATION OPTIONS

Model Code Example: CAELLGN





MODEL CAGL

L - 3.74 (95,0) C - 3.97 (100,8)

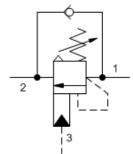
(L CONTROL SHOWN)



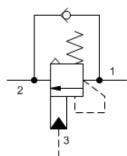
sunhydraulics.com/model/CAGL

INLET (1)

in. (mm)



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

3 PILOT

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING

SHOULDER

(2)

OUTLET

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

CONFIGURATION OPTIONS

Model Code Example: CAGLLGN

С

CONTROL	(L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment C Tamper Resistant - Factory Set	G 2000 - 6000 psi (140 - 420 bar), 4000 N Buna-N psi (280 bar) Standard Setting V Viton	Standard Material/Coating
	E 1000 - 2500 psi (70 - 175 bar) 2000 psi	

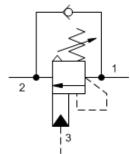
2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

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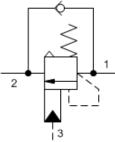
MODEL CAIL



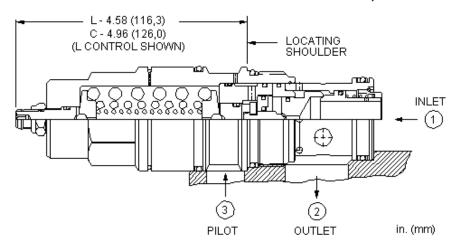
sunhydraulics.com/model/CAIL



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

CONFIGURATION OPTIONS

Model Code Example: CAILLGN

Viton

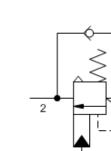
(L) FUNCTIONAL SETTING RANGE CONTROL (G) SEAL MATERIAL 2000 = 6000 psi (140 = 420 har)L Standard Screw Adjustment N Buna-N C Tamper Resistant - Factory Set ۷

-	
	psi (280 bar) Standard Setting
F	1000 - 2500 psi (70 - 175 bar), 2000 psi

(140 bar) Standard Setting

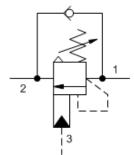
(N) MATERIAL/COATING

Standard Material/Co /LH Mild Steel, Zinc-Nickel

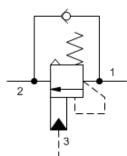




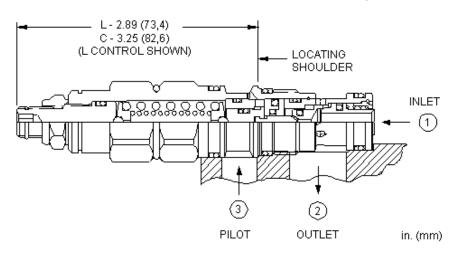
sunhydraulics.com/model/CACA



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

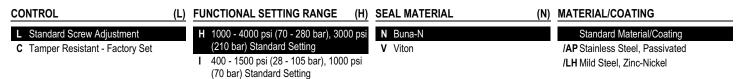
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

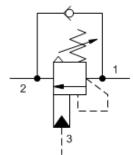
CONFIGURATION OPTIONS

Model Code Example: CACALHN

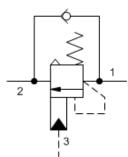




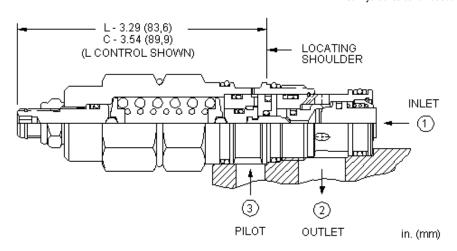
sunhydraulics.com/model/CAEA



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

CONFIGURATION OPTIONS

Model Code Example: CAEALHN



(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

Viton

(N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

) - 4000 bar) St), 3000	psi

 (210 bar) Standard Setting
 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting

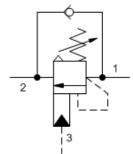
N Buna-N

N) MATERIAL/COATING

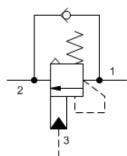
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



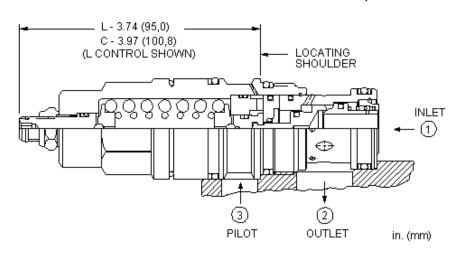
sunhydraulics.com/model/CAGA



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

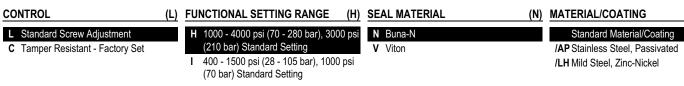
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

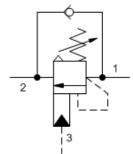
CONFIGURATION OPTIONS

Model Code Example: CAGALHN

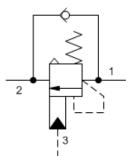




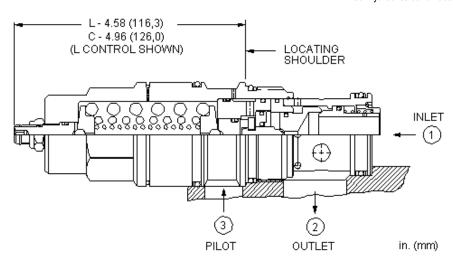
sunhydraulics.com/model/CAIA



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

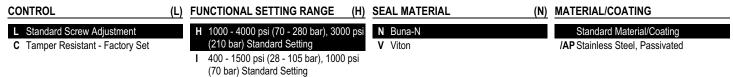
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

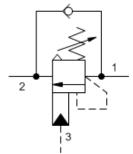
CONFIGURATION OPTIONS

Model Code Example: CAIALHN

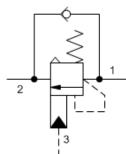








3-Port Atmospherically Referenced



sunhydraulics.com/model/CABG LOCATING SHOULDER C-2.29(58,2) 1.38 (35,0) 2.00 (50,8) INSTÀLLEÓ T-11A CAVITY IПОI ΠĽÛ \cap ᇢᇞ INLET 7/8 (22,2) HEX 3 2 PILOT OUTLET in (mm)

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

3-Port Atmospherically Referenced, Non-adjustable Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1		
Maximum Recommended Load Pressure at Maximum Setting 3075 psi			
Maximum Setting	4000 psi		
Factory Pressure Settings Established at	2 in ³ /min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Check Cracking Pressure	25 psi		
Adjustment - No. of CCW Turns from Min. to Max. Setting	3		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

CONFIGURATION OPTIONS

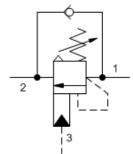
Model Code Example: CABGLHN

CONTROL	(L) FU	NCTIONAL SETTING RANGE (H)	<u>)</u> S	EAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set	_	1000 - 4000 psi w/25 psi Check (70 - 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting		N Buna-N V Viton		Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

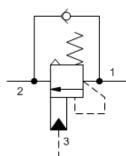




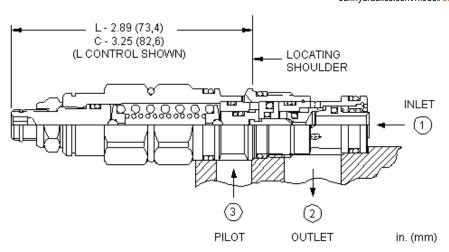
sunhydraulics.com/model/CACG



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Viton: 990211006

CONFIGURATION OPTIONS

Model Code Example: CACGLGN

CONTROL

L Standard Screw Adjustment C Tamper Resistant - Factory Set

(L)	FUNCTIONAL SETTING RANGE	(G)
<u> </u>		

- G 2000 6000 psi (140 420 bar), 4000 psi (280 bar) Standard Setting
 - V Viton

N Buna-N E EPDM

SEAL MATERIAL

MATERIAL/COATING (N)

> Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

1000 - 2500 psi (70 - 175 bar), 2000 psi F (140 bar) Standard Setting

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L - 3.29 (83,6) C - 3.54 (89,9)

(L CONTROL SHOWN)

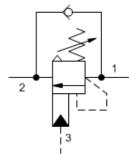


sunhydraulics.com/model/CAEG

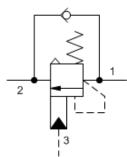
INLET

(1)

in. (mm)



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

(3)

PILOT

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

[2]

OUTLET

LOCATING

SHOULDER

naann

ᆸᅖᄤ

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006

CONFIGURATION OPTIONS

Model Code Example: CAEGLGN

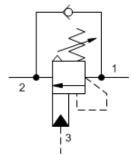
CONTROL (G) SEAL MATERIAL (N) MATERIAL/COATING NG RANGE L Standard Screw Adjustment N Buna-N Standard Material/Coating C Tamper Resistant - Factory Set V Viton /LH Mild Steel, Zinc-Nickel F

(L)	FU	NCTIC	NAL	SET	TIN
		0000	000		

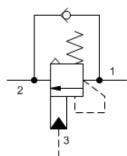
Ì	2000 - 6000 psi (140 - 420 bar), 4000	
	psi (280 bar) Standard Setting	1
	1000 - 2500 psi (70 - 175 bar), 2000 psi	
	(140 bar) Standard Setting	



sunhydraulics.com/model/CAGG



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

L - 3.74 (95,0) C - 3.97 (100,8) LOCATING (L CONTROL SHOWN) SHOULDER INLET (1)(2)(3) PILOT OUTLET in. (mm)

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990117007
Seal kit - Cartridge	Viton: 990117006

CONFIGURATION OPTIONS

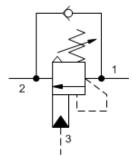
Model Code Example: CAGGLGN

CONTROL (L) FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL (N) MATERIAL/COATING G 2000 - 6000 psi (140 - 420 bar), 4000 N Buna-N justment Standard Material/Coating psi (280 bar) Standard Setting V Viton Factory Set /AP Stainless Steel, Passivated F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

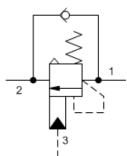
Standard Screw Adj
Tamper Resistant -



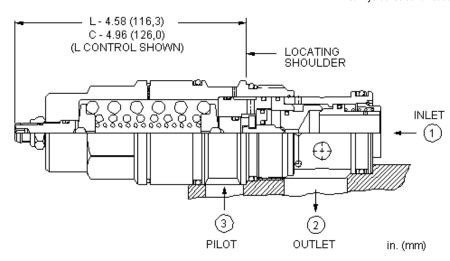
sunhydraulics.com/model/CAIG



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

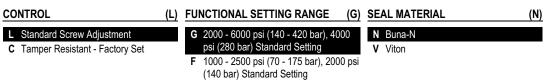
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Seal kit - Cartridge	Buna: 990119007
Seal kit - Cartridge	Polyurethane: 990119002
Seal kit - Cartridge	Viton: 990119006

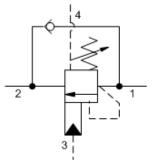
CONFIGURATION OPTIONS

Model Code Example: CAIGLGN

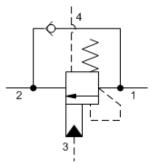




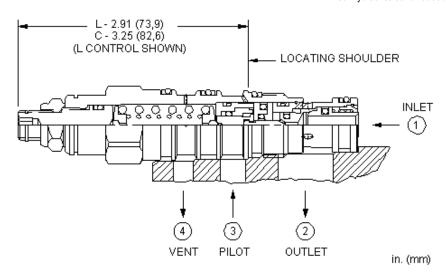
sunhydraulics.com/model/CWCK



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

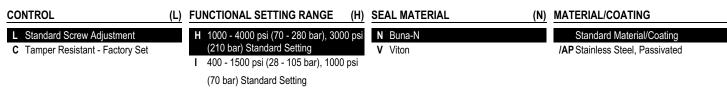
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

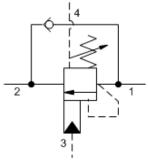
CONFIGURATION OPTIONS

Model Code Example: CWCKLHN

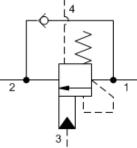




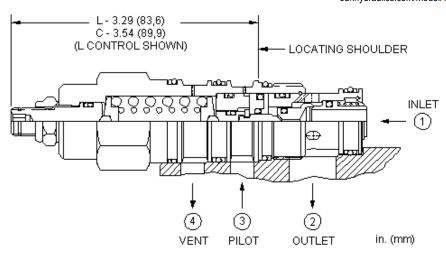
sunhydraulics.com/model/CWEK



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: CWEKLHN

CONTROL

L Standard Screw Adjustmen C Tamper Resistant - Factory Set

Η	1000 - 4000 psi (70 - 280 bar), 3000 ps
	(210 bar) Standard Setting

FUNCTIONAL SETTING RANGE

(L)

(H) SEAL MATERIAL Buna-N Ν V Viton

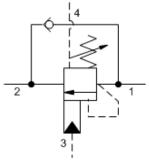
MATERIAL/COATING (N)

> Standard Material/ /LH Mild Steel, Zinc-Nickel

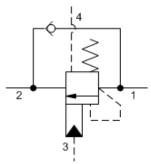
400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting



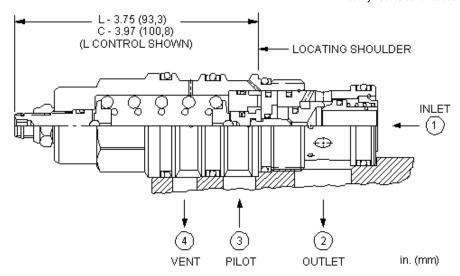
sunhydraulics.com/model/CWGK



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

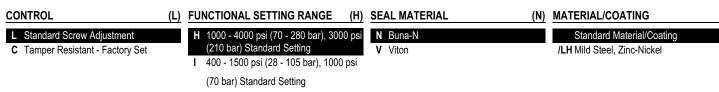
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

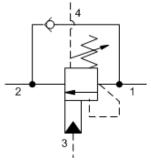
CONFIGURATION OPTIONS

Model Code Example: CWGKLHN

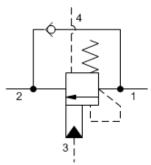




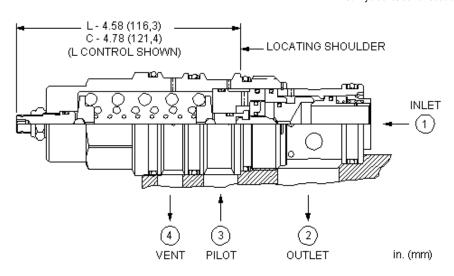
sunhydraulics.com/model/CWIK



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

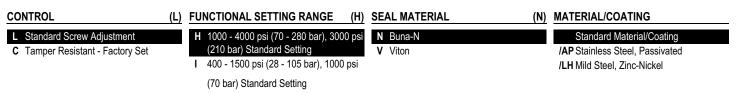
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

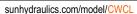
Pilot Ratio	1:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

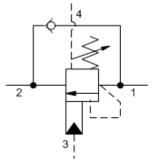
CONFIGURATION OPTIONS

Model Code Example: CWIKLHN

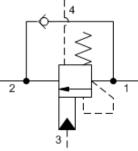




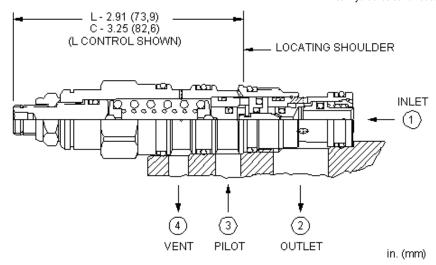




4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: CWCLLGN

(G) SEAL MATERIAL

N Buna-N

V Viton

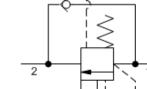
CONTROL

(L)	FUNCTIONAL SETTING RANGE		
	a aaaa aaaa ''''''''''''''''''''''''''		

- L Standard Screw Adjustmen C Tamper Resistant - Factory Set
- - 2000 6000 psi (140 420 bar), 4000 psi (280 bar) Standard Setting
 - 1000 2500 psi (70 175 bar), 2000 psi F (140 bar) Standard Setting

(N) MATERIAL/COATING

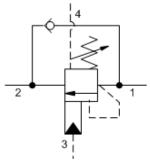
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



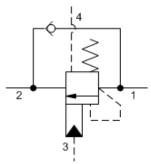




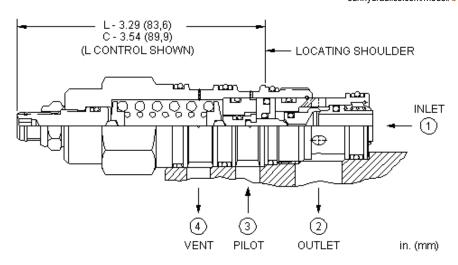
sunhydraulics.com/model/CWEL



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

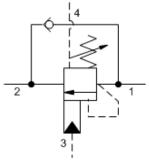
CONFIGURATION OPTIONS

Model Code Example: CWELLGN

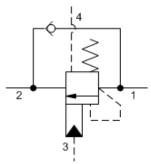
CONTROL	FUNCTIONAL SETTING RANGE (G) SEAL MATERIAL	(N)	MATERIAL/COATING
L Standard Screw AdjustmentC Tamper Resistant - Factory Set	G 2000 - 6000 psi (140 - 420 bar), 4000 psi (280 bar) Standard Setting N Buna-N F 1000 - 2500 psi (70 - 175 bar), 2000 psi V Viton		Standard Material/Coating /AP Stainless Steel, Passivated
	F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting		/LH Mild Steel, Zinc-Nickel



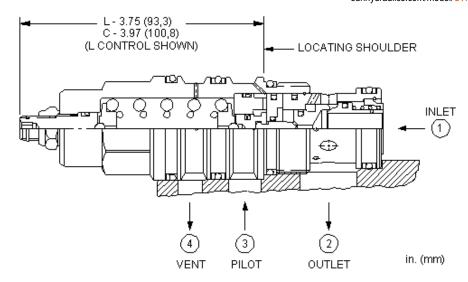
sunhydraulics.com/model/CWGL



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

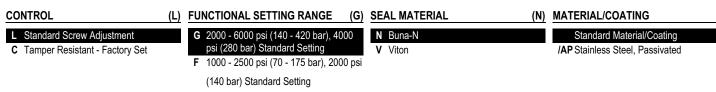
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

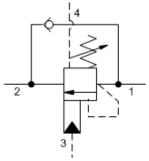
CONFIGURATION OPTIONS

Model Code Example: CWGLLGN

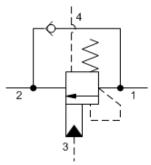




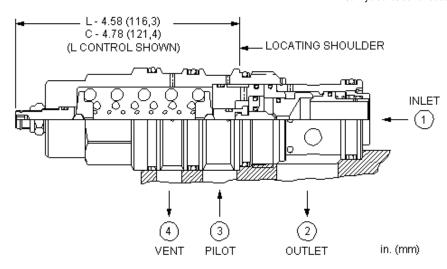
sunhydraulics.com/model/CWIL



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	2:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

Model Code Example: CWILLGN

(G) SEAL MATERIAL

N Buna-N

V Viton

CONTROL

(L)	FUNCTIONAL SETTING RANGE

- G 2000 6000 psi (140 420 bar), 4000 psi (280 bar) Standard Setting
- F 1000 2500 psi (70 175 bar), 2000 psi (140 bar) Standard Setting

(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

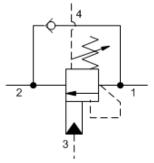




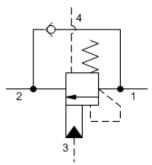
MODEL CWCA



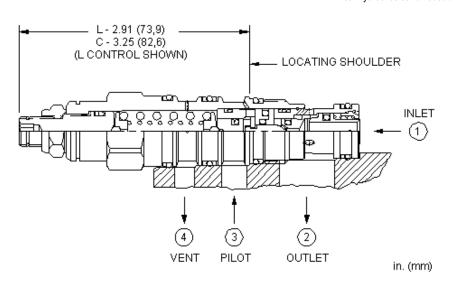
sunhydraulics.com/model/CWCA



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

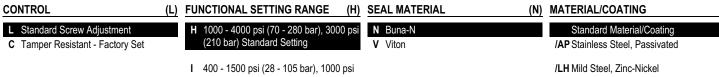
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: CWCALHN

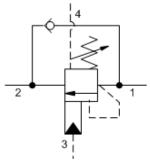


(70 bar) Standard Setting

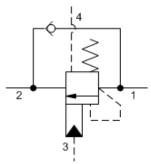




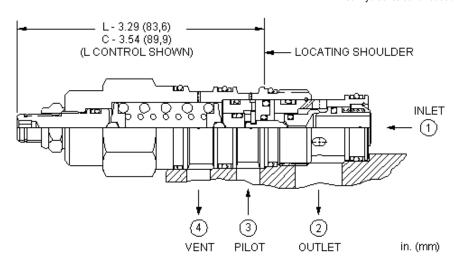
sunhydraulics.com/model/CWEA



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

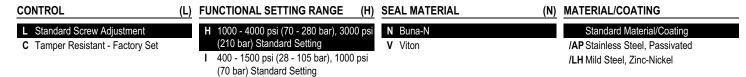
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

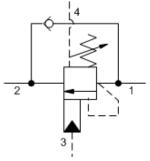
CONFIGURATION OPTIONS

Model Code Example: CWEALHN

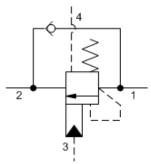




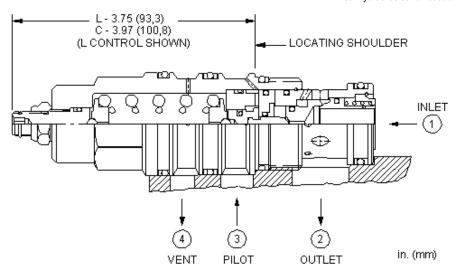




4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

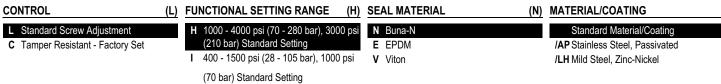
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

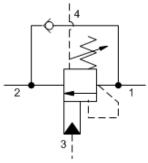
Model Code Example: CWGALHN



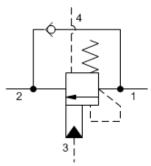
MODEL **CWIA**



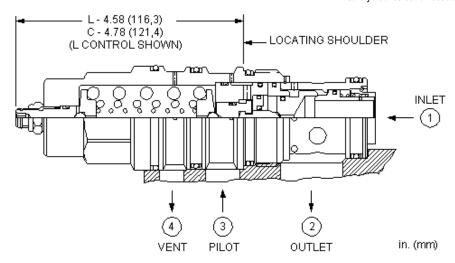
sunhydraulics.com/model/CWIA



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	20 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

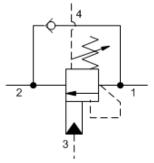
CONTROL

Model Code Example: CWIALHN

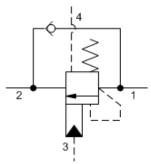
(N) MATERIAL/COATING (L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL L Standard Screw Adjustment N Buna-N 1000 - 4000 psi (70 - 280 bar), 3000 psi Standard Material/Coating (210 bar) Standard Setting E EPDM /AP Stainless Steel, Passivated C Tamper Resistant - Factory Set 400 - 1500 psi (28 - 105 bar), 1000 psi Т V Viton /LH Mild Steel, Zinc-Nickel (70 bar) Standard Setting



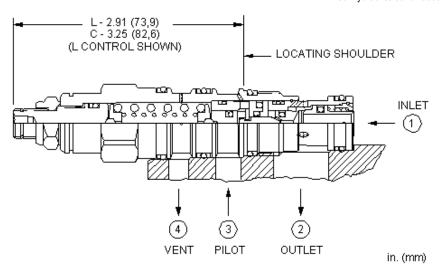
sunhydraulics.com/model/CWCG



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

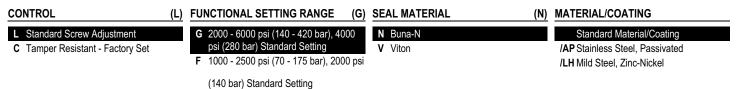
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

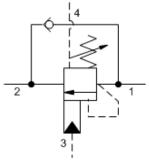
CONFIGURATION OPTIONS

Model Code Example: CWCGLGN

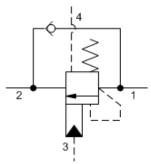




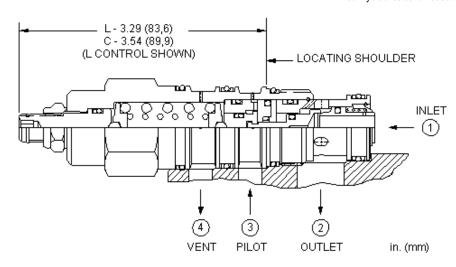
sunhydraulics.com/model/CWEG



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1			
Maximum Recommended Load Pressure at Maximum Setting	4615 psi			
Maximum Setting	6000 psi			
Factory Pressure Settings Established at	2 in ³ /min.			
Maximum Valve Leakage at Reseat	5 drops/min.			
Check Cracking Pressure	25 psi			
Adjustment - No. of CCW Turns from Min. to Max. Setting	5			
Reseat	>85% of setting			
Locknut Hex Size	9/16 in.			
Locknut Torque	80 - 90 lbf in.			
Seal kit - Cartridge	Buna: 990022007			
Seal kit - Cartridge	Polyurethane: 990022002			
Seal kit - Cartridge	Viton: 990022006			

CONFIGURATION OPTIONS

Model Code Example: CWEGLGN

N Buna-N

V Viton

CONTROL

L Standard Screw Adjustment C Tamper Resistant - Factory Science

rew Adjustment	G 2000 - 6000 psi (140 - 420 bar), 4000
istant - Factory Set	psi (280 bar) Standard Setting

psi (280 bar) Standard Setting F 1000 - 2500 psi (70 - 175 bar), 2000 psi (140 bar) Standard Setting

(L) FUNCTIONAL SETTING RANGE

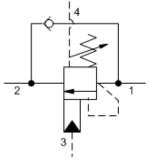
(G) SEAL MATERIAL (N

(N) MATERIAL/COATING

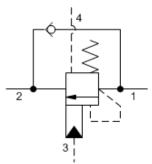
Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



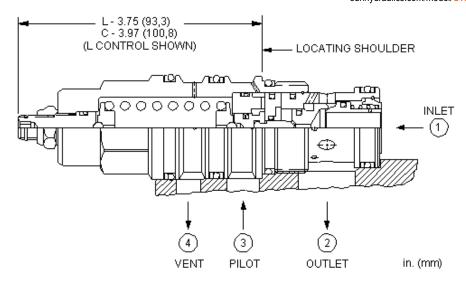
sunhydraulics.com/model/CWGG



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

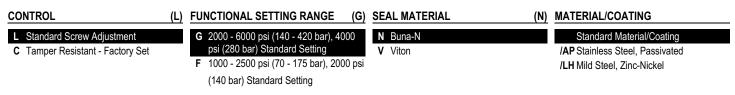
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

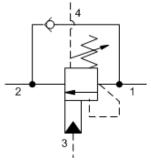
CONFIGURATION OPTIONS

Model Code Example: CWGGLGN

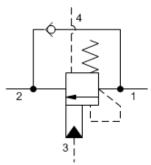




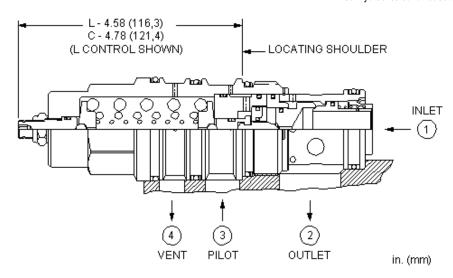
sunhydraulics.com/model/CWIG



4-Port Vented



4-Port Vented, Non-adjustable



Vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1			
Maximum Recommended Load Pressure at Maximum Setting	4615 psi			
Maximum Setting	6000 psi			
Factory Pressure Settings Established at	2 in³/min.			
Maximum Valve Leakage at Reseat	5 drops/min.			
Check Cracking Pressure	20 psi			
Adjustment - No. of CCW Turns from Min. to Max. Setting	5			
Reseat	>85% of setting			
Locknut Hex Size	9/16 in.			
Locknut Torque	80 - 90 lbf in.			
Seal kit - Cartridge	Buna: 990024007			
Seal kit - Cartridge	Polyurethane: 990024002			
Seal kit - Cartridge	Viton: 990024006			

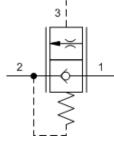
CONFIGURATION OPTIONS

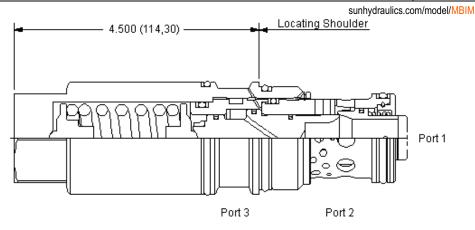
Model Code Example: CWIGLGN











Balanced load control valves combine a balanced modulating element with a reverse flow check. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while the pilot to open modulating element controls flow from port 1 to port 2. Pilot pressure at port 3 determines the flow setting.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi		
Maximum Valve Leakage at Reseat	See Technical Features		
Check Cracking Pressure	25 psi		

CONFIGURATION OPTIONS

Model Code Example: MBIMXKN

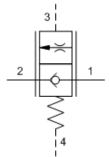
CONTROL	(X) MINIMUM CONTROL PRESSURE	(K) SEAL MATERIAL (N	MATERIAL/COATING
X Not Adjustable	K 450 psi (33 bar)	N Buna-N	Standard Material/Coating
	E 75 psi (5 bar)	E EPDM	/AP Stainless Steel, Passivated
	G 100 psi (7 bar)	V Viton	
	H 200 psi (14 bar)		
	I 300 psi (20 bar)		

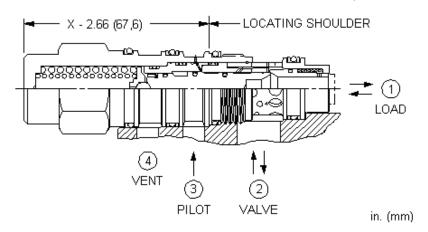


MODEL MWEM



sunhydraulics.com/model/MWEM





Vented, balanced load control valves combine a balanced modulating element with a reverse flow check. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while the pilot to open modulating element controls flow from port 1 to port 2. Pilot pressure at port 3 determines the flow setting. Backpressure at port 2 does not affect the flow setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

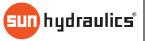
NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	See Technical Features
Check Cracking Pressure	25 psi
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: MWEMXIN

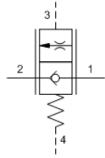
CONTROL	(X)	MINIMUM CONTROL PRESSURE	(I)	SEAL MATERIAL	(N)	MATERIAL/COATING
X Not Adjustable		I 300 psi (20 bar)		N Buna-N		Standard Material/Coating
		E 75 psi (5 bar)		V Viton		/AP Stainless Steel, Passivated
		G 150 psi (10,5 bar)				/LH Mild Steel, Zinc-Nickel
		H 200 psi (14 bar)				
		K 450 psi (33 bar)				

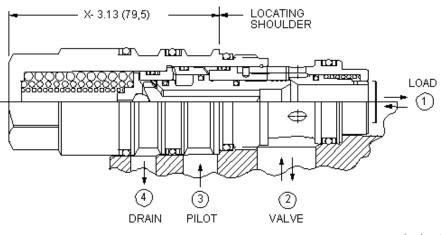


MODEL MWGM



sunhydraulics.com/model/MWGM





in. (mm)

Vented, balanced load control valves combine a balanced modulating element with a reverse flow check. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while the pilot to open modulating element controls flow from port 1 to port 2. Pilot pressure at port 3 determines the flow setting. Backpressure at port 2 does not affect the flow setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi		
Maximum Valve Leakage at Reseat	See Technical Features		
Check Cracking Pressure	25 psi		
Seal kit - Cartridge	Buna: 990023007		
Seal kit - Cartridge	Polyurethane: 990023002		
Seal kit - Cartridge	Viton: 990023006		

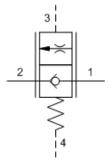
CONFIGURATION OPTIONS

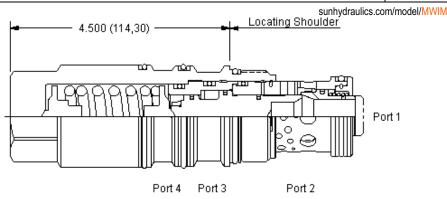
Model Code Example: MWGMXIN

CONTROL	MINIMUM CONTROL PRESSURE (I) SEAL MATERIAL (N) MATERIAL/COATING	3
X Not Adjustable	I 300 psi (20 bar) N Buna-N Standard Material	/Coating
	E 75 psi (5 bar) V Viton /AP Stainless Steel, P	assivated
	G 150 psi (10,5 bar) /LH Mild Steel, Zinc-N	ickel
	K 450 psi (33 bar)	

MODEL







Vented, balanced load control valves combine a balanced modulating element with a reverse flow check. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while the pilot to open modulating element controls flow from port 1 to port 2. Pilot pressure at port 3 determines the flow setting. Backpressure at port 2 does not affect the flow setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi		
Maximum Valve Leakage at Reseat	See Technical Features		
Check Cracking Pressure	25 psi		
Seal kit - Cartridge	Buna: 990024007		
Seal kit - Cartridge	Polyurethane: 990024002		
Seal kit - Cartridge	Viton: 990024006		

CONFIGURATION OPTIONS

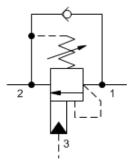
Model Code Example: MWIMXIN

CONTROL	(X)	MINIMUM CONTROL PRESSURE	(I)	SEAL MATERIAL	(N)	MATERIAL/COATING
X Not Adjustable		I 300 psi (20 bar)		N Buna-N		Standard Material/Coating
		E 75 psi (5 bar)		E EPDM		AP Stainless Steel, Passivated
		G 150 psi (10,5 bar)		V Viton		
		H 200 psi (14 bar)				
		K 450 psi (33 bar)				

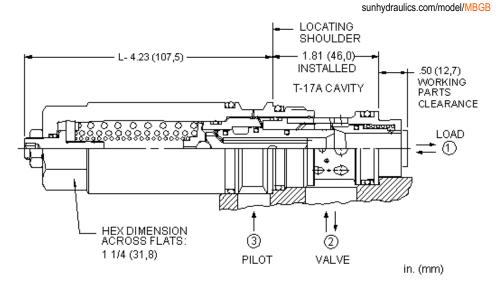


MODEL MBGB





3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

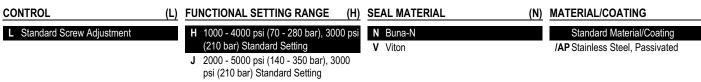
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

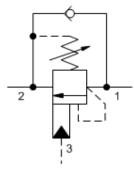
CONFIGURATION OPTIONS

Model Code Example: MBGBLHN

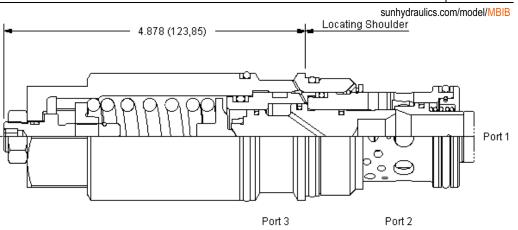








3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	7
Reseat	≥77% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: MBIBLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- H 1000 4000 psi (70 280 bar), 3000 psi
 - N Buna-N

V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

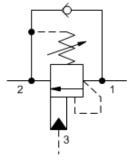
(210 bar) Standard Setting J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting



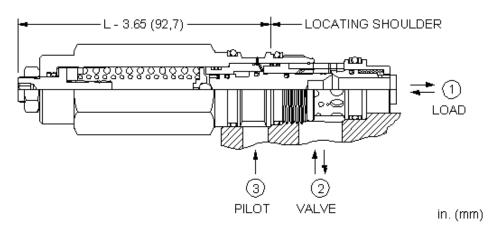
MODEL MBEA



sunhydraulics.com/model/MBEA



3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

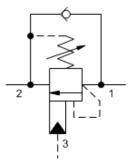
Model Code Example: MBEALHN



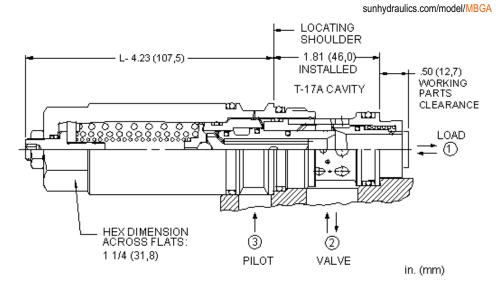


MODEL MBGA





3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: MBGALHN

N Buna-N

E EPDM

V Viton

CONTROL

L Standard Screw Adjustment

(L) FUNCTIONAL SETTING RANGE (

- H 1000 4000 psi (70 280 bar), 3000 psi (210 bar) Standard Setting
 J 2000 5000 psi (140 350 bar), 3000
- psi (210 bar) Standard Setting
- (H) SEAL MATERIAL

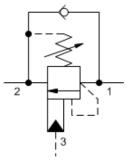
(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

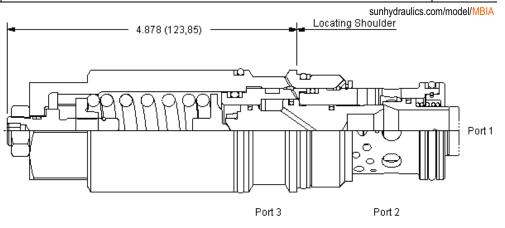


MODEL **MBIA**





3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	7
Reseat	≥77% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: MBIALHN

CONTROL

(L)	FU	NCTIONAL SETTING RANGE	(H)
	Н	1000 - 4000 psi (70 - 280 bar), 300	0 psi

(210 bar) Standard Setting

J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

N Buna-N

V Viton

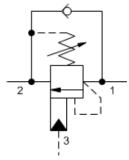
Standard Material/Coating /AP Stainless Steel, Passivated



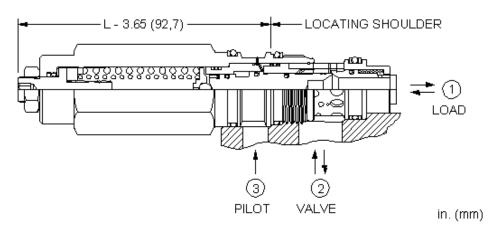
MODEL **MBEG**



sunhydraulics.com/model/MBEG



3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: MBEGLHN

(L) FUNCTIONAL SETTING RANGE (N) MATERIAL/COATING CONTROL (H) SEAL MATERIAL 1000 - 4000 psi (70 - 280 bar), 3000 psi L Standard Screw Adjustment Н N Buna-N Standard Material/Coating (210 bar) Standard Setting C Tamper Resistant - Factory Set V Viton /LH Mild Steel, Zinc-Nickel

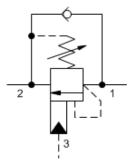
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

/AP Stainless Steel, Passivated

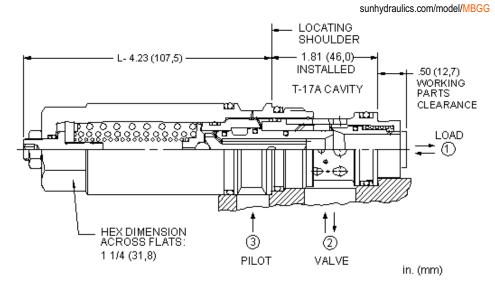


MODEL MBGG





3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: MBGGLJN



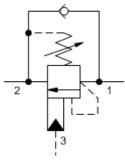
(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

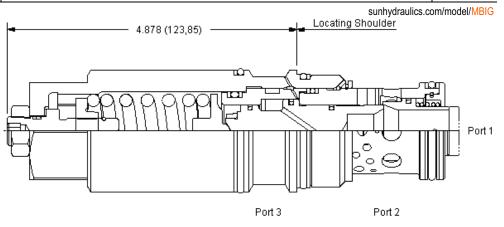


MODEL **MBIG**





3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1	
Maximum Recommended Load Pressure	See Technical Features	
Factory Pressure Settings Established at	2 in ³ /min.	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at Reseat	5 drops/min.	
Check Cracking Pressure	25 psi	
Adjustment - No. of CCW Turns from Min. to Max. Setting	7	
Reseat	≥77% of setting	
Locknut Hex Size	3/4 in.	
Locknut Torque	25 - 30 lbf ft	
Seal kit - Cartridge	Buna: 990019007	
Seal kit - Cartridge	Polyurethane: 990019002	
Seal kit - Cartridge	Viton: 990019006	

CONFIGURATION OPTIONS

Model Code Example: MBIGLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

H 1000 - 4000 psi (70 - 280 bar), 3000 psi N Buna-N

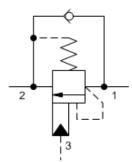
V Viton

Standard Material/Coating /LH Mild Steel, Zinc-Nickel

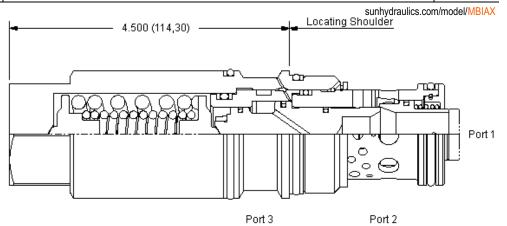
(210 bar) Standard Setting J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting







3-Port Non-vented, Fixed Setting



Fixed setting, load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: MBIAXLV

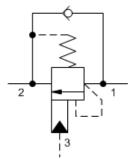
FACTORY SET	(L) SEAL MATERIAL	(V)
L 4000 psi (280 bar)	V Viton	
K 3000 psi (210 bar)	N Buna-N	
M 5000 psi (350 bar)		



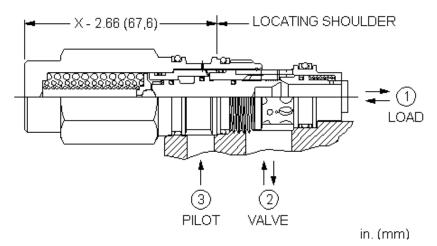
MODEL MBEGX



sunhydraulics.com/model/MBEGX



3-Port Non-vented, Fixed Setting



Fixed setting, load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: MBEGXLN

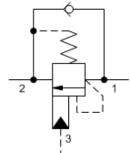
FACTORY SET	(L) SEAL MATERIAL	(N)
L 4000 psi (280 bar)	N Buna-N	
K 3000 psi (210 bar)	V Viton	
M 5000 psi (350 bar)		



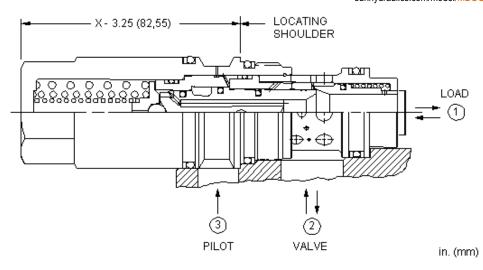
MODEL MBGGX



sunhydraulics.com/model/MBGGX



3-Port Non-vented, Fixed Setting



Fixed setting, load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

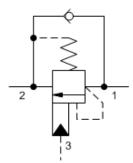
Model Code Example: MBGGXLN

FACTORY SET	(L) SEAL MATERIAL	(N) MATERIAL/COATING
L 4000 psi (280 bar)	N Buna-N	Standard Material/Coating
K 3000 psi (210 bar)	V Viton	/AP Stainless Steel, Passivated
M 5000 psi (350 bar)		/LH Mild Steel, Zinc-Nickel

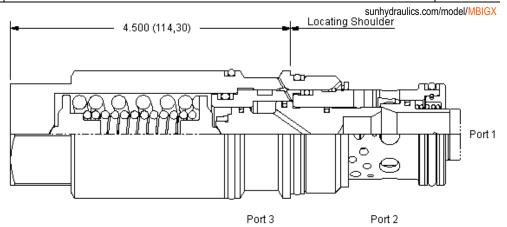


MODEL MBIGX





3-Port Non-vented, Fixed Setting



Fixed setting, load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

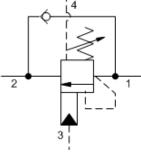
Model Code Example: MBIGXMN

FACTORY SET	(M) SEAL MATERIAL	(N) MATERIAL/COATING
M 5000 psi (350 bar)	N Buna-N	Standard Material/Coating
K 3000 psi (210 bar)	V Viton	/AP Stainless Steel, Passivated
L 4000 psi (280 bar)		/LH Mild Steel, Zinc-Nickel

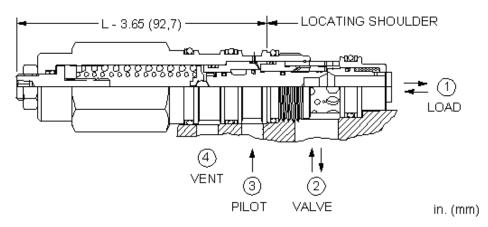




sunhydraulics.com/model/MWEB



4-Port Vented



Vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilotassisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: MWEBLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

- Н 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

N Buna-N V Viton

Standard Material/Coating /AP Stainless Steel, Passivated

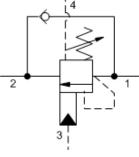
J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting



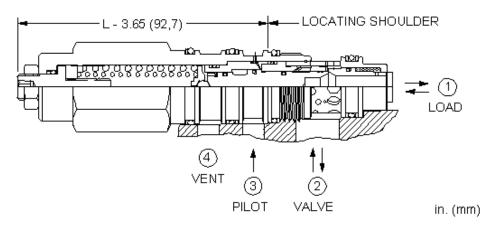
MODEL MWEA



sunhydraulics.com/model/MWEA



4-Port Vented



Vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

CONTROL

(L) FUNCTIONAL SETTING RANGE (

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw AdjustmentC Tamper Resistant - Factory Set

1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

00 psi N Buna-N V Viton

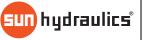
Model Code Example: MWEALHN

g V V 0 bar), 3000

J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

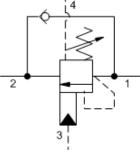
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

Standard Material/Coating

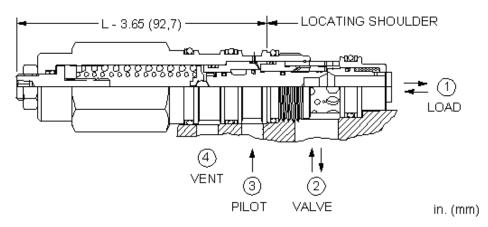




sunhydraulics.com/model/MWEG



4-Port Vented



Vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilotassisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	8.5
Reseat	≥77% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: MWEGLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(H) SEAL MATERIAL

(N) MATERIAL/COATING

L Standard Screw Adjustment

Н 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

psi (210 bar) Standard Setting

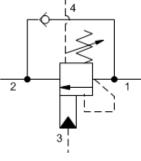
- J 2000 5000 psi (140 350 bar), 3000
- N Buna-N V Viton
- Standard Material/Coating
 - /AP Stainless Steel, Passivated



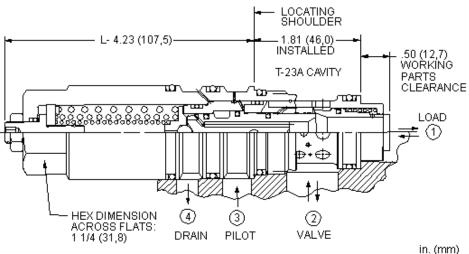
MODEL **MWGG**



sunhydraulics.com/model/MWGG



4-Port Vented



Vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilotassisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	9
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: MWGGLHN

N Buna-N

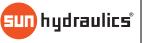
V Viton

CONTROL

(L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL (N)

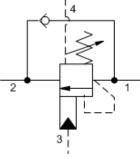
L Standard Screw Adjustment Н 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting

J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting

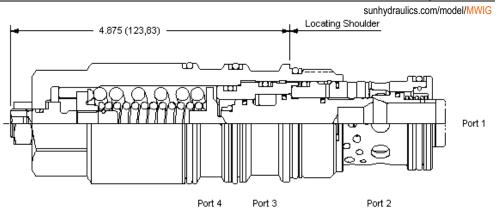


MODEL **MWIG**





4-Port Vented



Vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilotassisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	8.5
Reseat	≥77% of setting
Locknut Hex Size	3/4 in.
Locknut Torque	25 - 30 lbf ft
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: MWIGLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL

(N) MATERIAL/COATING

- 1000 4000 psi (70 280 bar), 3000 psi (210 bar) Standard Setting
 - N Buna-N
 - V Viton
- J 2000 5000 psi (140 350 bar), 3000 psi (210 bar) Standard Setting

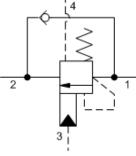
/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel



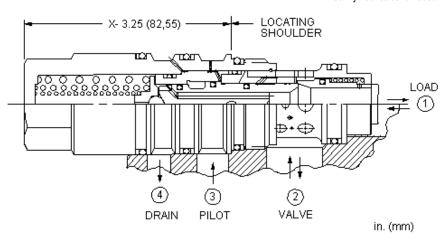
Model MWGAX



sunhydraulics.com/model/MWGAX



4-Port Vented, Non-adjustable



Fixed setting, vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a directacting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: MWGAXMV

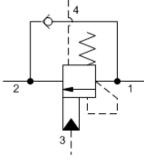
ACTORY SET	(M) SEAL MATERIAL	(V)
M 5000 psi (350 bar)	V Viton	
K 3000 psi (210 bar)	N Buna-N	

L 4000 psi (280 bar)

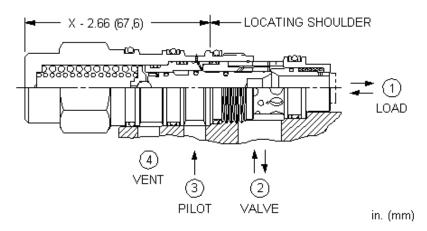




sunhydraulics.com/model/MWEGX



4-Port Vented, Non-adjustable



Fixed setting, vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a directacting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: MWEGXLN

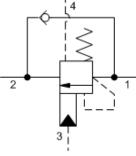
FACTORY SET	(L) SEAL MATERIAL	(N)
L 4000 psi (280 bar)	N Buna-N	
K 3000 psi (210 bar)	V Viton	
M 5000 mai (250 har)		



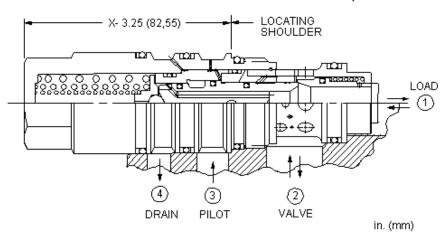
MODEL MWGGX



sunhydraulics.com/model/MWGGX



4-Port Vented, Non-adjustable



Fixed setting, vented, load reactive load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a directacting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

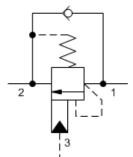
Model Code Example: MWGGXKN

FACTORY SET	(K) SEAL MATERIAL	(N)
K 3000 psi (210 bar)	N Buna-N	
L 4000 psi (280 bar)	V Viton	
M 5000		

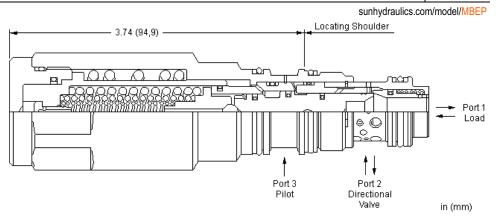


MODEL MBEP





3-Port Non-vented, Fixed Setting



These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

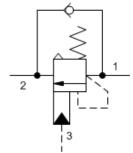
Model Code Example: MBEPDHN

CONTROL	(D)	FACTORY SET	(H)	SEAL MATERIAL	(N)
D LoadMatch™		H 4000 psi (280 bar)		N Buna-N	
		G 6000 psi (420 bar)			
		J 5000 psi (350 bar)			

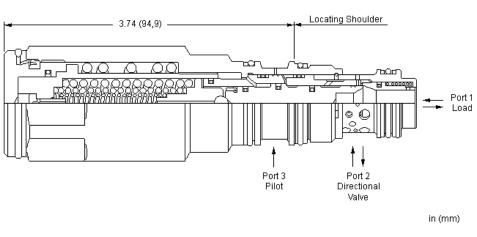




sunhydraulics.com/model/MAEP



3-Port Atmospherically Referenced, Non-adjustable



These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting. Backpressure at port 2 does not affect self setting performance because the spring chamber references the atmosphere.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

NOTES The pressures listed under FACTORY SET are approximate, mean values and should not be used for inspection purposes.

CONFIGURATION OPTIONS

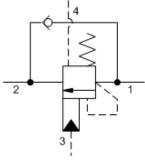
Model Code Example: MAEPDHN

CONTROL	(D) FAC1	ORY SET	(H)	SEAL MATERIAL	(N)	MATERIAL/COATING
D LoadMatch™	H 4	000 psi (280 bar)		N Buna-N		Standard Material/Coating
	G 6	000 psi (420 bar)				/LH Mild Steel, Zinc-Nickel
	J 5	000 psi (350 bar)				

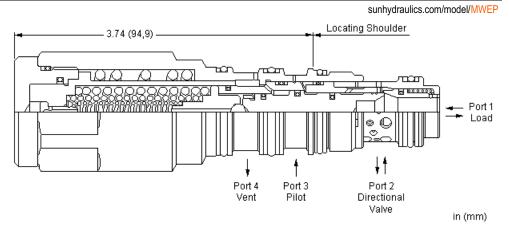


MODEL MWEP





4-Port Vented, Non-adjustable



These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting. Backpressure at port 2 does not affect self setting performance because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: MWEPDHN

CONTROL	(D)	FACTORY SET	(H)	SEAL MATERIAL	(N)	MATERIAL/COATING
D LoadMatch [™]		H 4000 psi (280 bar)		N Buna-N		Standard Material/Coating
		G 6000 psi (420 bar)		V Viton		/AP Stainless Steel, Passivated
		J 5000 psi (350 bar)				

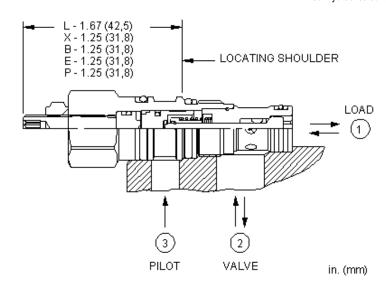
MODEL CKBB



sunhydraulics.com/model/CKBB







This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

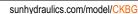
Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	EPDM: 990163014
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

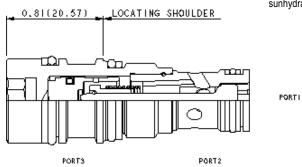
Model Code Example: CKBBXCN

CONTROL	(X) CRACKING PRESSURE	(C)	SEAL MATERIAL	(N)	MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)		N Buna-N		Standard Material/Coating
L Manual Load Release	E 75 psi (5 bar)		E EPDM		/AP Stainless Steel, Passivated
			V Viton		/LH Mild Steel, Zinc-Nickel









This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Valve Internal Hex Size	5/16 in.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

Model Code Example: CKBGXCN

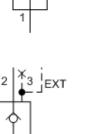
CONTROL (X)	BIAS PRESSURE	(C)	SEAL MATERIAL	(N)	MATERIAL/COATING
X Not Adustable, Standard Hydraulic Pilot	C 30 psi (2 bar)		N Buna-N		Standard Material/Coating
	E 75 psi (5 bar)		V Viton		/AP Stainless Steel, Passivated

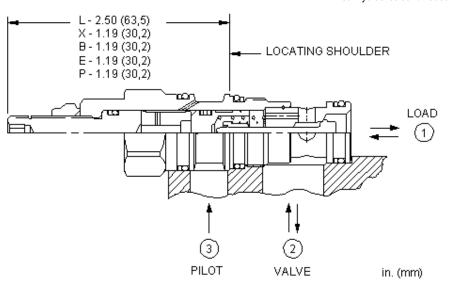
MODEL CKCB

Pilot-to-open check valve with standard pilot SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/CKCB





This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

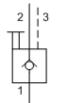
Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CKCBXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

E 75 psi (5 bar)F 100 psi (7 bar)



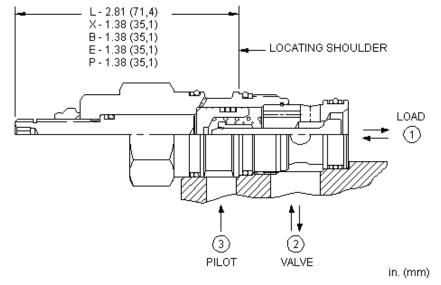


sunhydraulics.com/model/CKEB



un hydraulics





This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	EPDM: 990202014
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CKEBXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

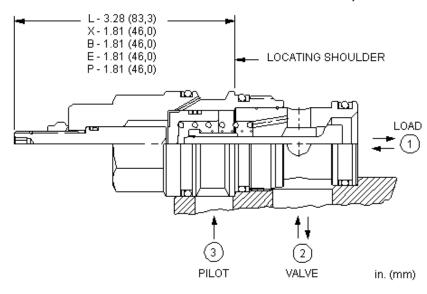
E 75 psi (5 bar)F 100 psi (7 bar)

3

13 ¦EXT



sunhydraulics.com/model/CKGB



This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CKGBXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

- E 75 psi (5 bar)
- F 100 psi (7 bar)



MODEL CKIB

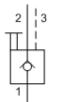
Pilot-to-open check valve with standard pilot SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A

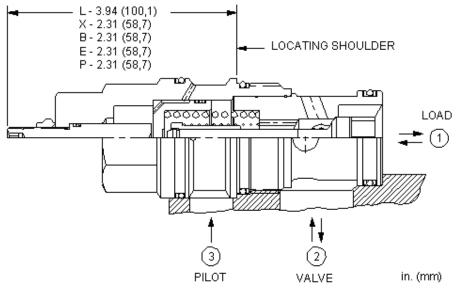


sunhydraulics.com/model/CKIB









This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	EPDM: 990019014
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CKIBXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

E 75 psi (5 bar)F 100 psi (7 bar)

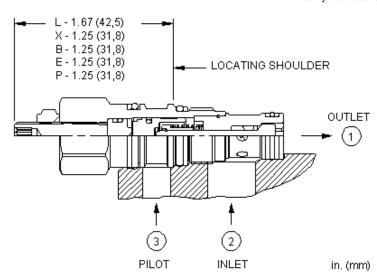
MODEL CKBD



sunhydraulics.com/model/CKBD







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990163007
Seal kit - Cartridge	EPDM: 990163014
Seal kit - Cartridge	Polyurethane: 990163002
Seal kit - Cartridge	Viton: 990163006

CONFIGURATION OPTIONS

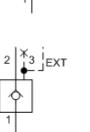
Model Code Example: CKBDXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING	
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating	ł
L Manual Load Release	E 75 psi (5 bar)	E EPDM	/AP Stainless Steel, Passivated	
		V Viton	/LH Mild Steel, Zinc-Nickel	

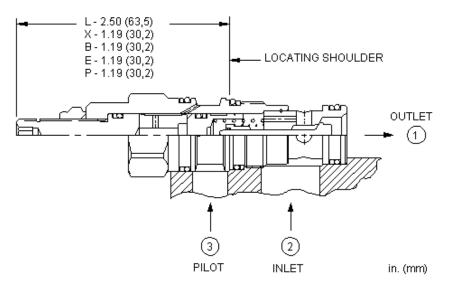
MODEL CKCD



sunhydraulics.com/model/CKCD



3



This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	EPDM: 990011014
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

Model Code Example: CKCDXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

E 75 psi (5 bar)

G 150 psi (10,5 bar)

F 100 psi (7 bar)

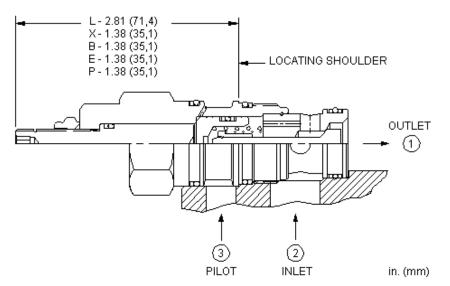


sunhydraulics.com/model/CKED



3





This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CKEDXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		

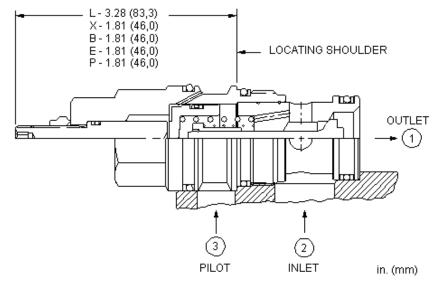
F 100 psi (7 bar)

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sunhydraulics.com/model/CKGD





This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	EPDM: 990017014
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

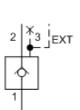
Model Code Example: CKGDXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		

F 100 psi (7 bar)

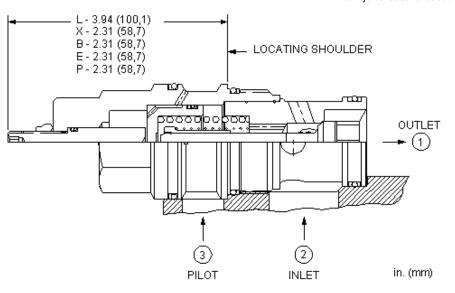


sunhydraulics.com/model/CKID



3

<mark>sun</mark> hydraulics"



This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1	
Maximum Operating Pressure	5000 psi	
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.	
Seal kit - Cartridge	Buna: 990019007	
Seal kit - Cartridge	Polyurethane: 990019002	
Seal kit - Cartridge	Viton: 990019006	

CONFIGURATION OPTIONS

Model Code Example: CKIDXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		
	E 75 psi (5 bar)		

F 100 psi (7 bar)

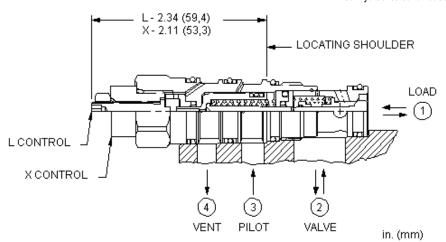
MODEL CVCV



sunhydraulics.com/model/CVCV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced to the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: CVCVXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	E EPDM	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

E 75 psi (5 bar)

F 100 psi (7 bar)

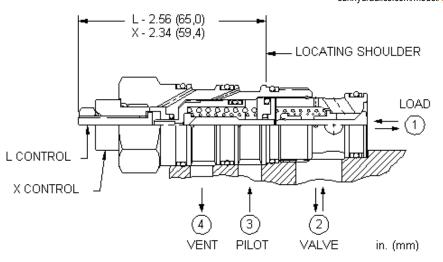




sunhydraulics.com/model/CVEV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced to the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990022007
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: CVEVXCN

CONTROL	(X)	CRACKING PRESSURE	(C)	SEAL MATERIAL	(N)	MATERIAL/COATING	
X Standard Pilot		C 30 psi (2 bar)		N Buna-N		Standard Material/Coating	
L Manual Load Release		A 4 psi (0,3 bar)		E EPDM V Viton		AP Stainless Steel, Passivated	
		B 15 psi (1 bar)D 50 psi (3,5 bar)		Viton			

E 75 psi (5 bar)

F 100 psi (7 bar)

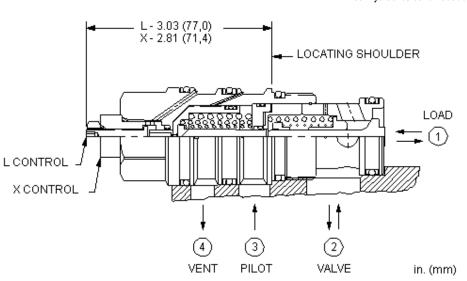




sunhydraulics.com/model/CVGV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced to the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: CVGVXCN

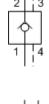
CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel
	D 50 psi (3.5 bar)		

- **E** 75 psi (5 bar)
- **F** 100 psi (5 bar)
- r iou psi (7 par)

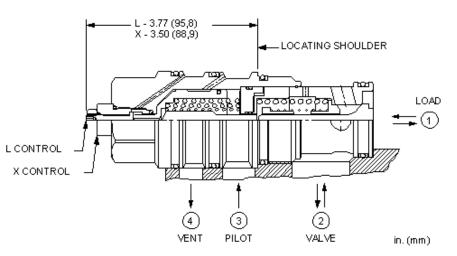




sunhydraulics.com/model/CVIV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced to the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Pilot Volume Displacement	.30 in ³
Pilot Passage into Valve	.09 in.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: CVIVXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating
L Manual Load Release	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel
	D 50 psi (3,5 bar)		

- E 75 psi (5 bar)
- F 100 psi (7 bar)

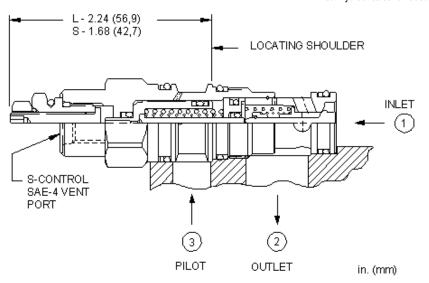
MODEL CKCV



sunhydraulics.com/model/CKCV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) pilot port will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced out the back of the hex body.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990311007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990311006

CONFIGURATION OPTIONS

Model Code Example: CKCVXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING	
X Standard Pilot, Atmospheric Vent	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating	
S External 4-SAE Vent Port	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated	
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel	
	D 50 psi (3,5 bar)			
	E 75 psi (5 bar)			

F 100 psi (7 bar)

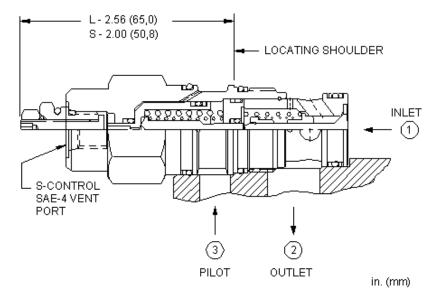
MODEL CKEV



sunhydraulics.com/model/CKEV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) pilot port will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced out the back of the hex body.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CKEVXCN

CONTROL	(X)	CRACKING PRESSURE	(C)	SEAL MATERIAL	(N)
X Standard Pilot, Atmospheric Vent		C 30 psi (2 bar)		N Buna-N	
S External 4-SAE Vent Port		A 4 psi (0,3 bar)		V Viton	
		B 15 psi (1 bar)			
		D 50 psi (3,5 bar)			

E 75 psi (5 bar)

F 100 psi (7 bar)

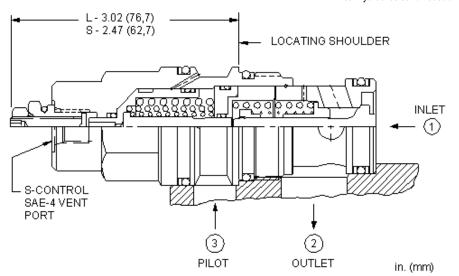
MODEL CKGV



sunhydraulics.com/model/CKGV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) pilot port will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced out the back of the hex body.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

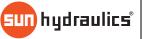
Model Code Example: CKGVXCN

CONTROL	(X)	CRACKING PRESSURE	(C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Standard Pilot, Atmospheric Vent		C 30 psi (2 bar)		N Buna-N	Standard Material/Coating
S External 4-SAE Vent Port		A 4 psi (0,3 bar)		V Viton	/AP Stainless Steel, Passivated
		B 15 psi (1 bar)			
		D 50 psi (3,5 bar)			

E 75 psi (5 bar)F 100 psi (7 bar)

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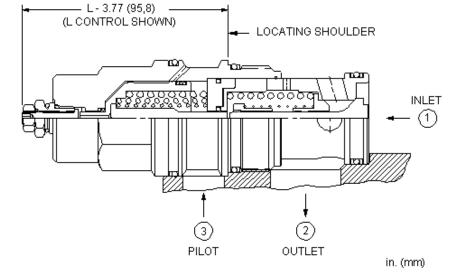
MODEL CKIV



sunhydraulics.com/model/CKIV







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) pilot port will open the valve from port 1 to port 2. Pilot pressure needed to open the valve is directly proportional to the load pressure at port 1. The valve is insensitive to pressure at port 2 because the spring chamber is referenced out the back of the hex body.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi
Pilot Ratio	3:1
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Locknut Hex Size	7/16 in.
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006

CONFIGURATION OPTIONS

Model Code Example: CKIVXCN

CONTROL	(X) CRACKING PRESSURE	(C) SEAL MATERIAL	(N) MATERIAL/COATING	
X Standard Pilot, Atmospheric Vent	C 30 psi (2 bar)	N Buna-N	Standard Material/Coating	
S External 4-SAE Vent Port	A 4 psi (0,3 bar)	V Viton	/AP Stainless Steel, Passivated	
	B 15 psi (1 bar)		/LH Mild Steel, Zinc-Nickel	
	D 50 psi (3,5 bar)			

E 75 psi (5 bar)

F 100 psi (7 bar)

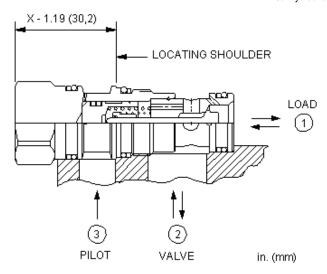


MODEL CNCE



sunhydraulics.com/model/CNCE





This valve is a pilot to open check valve with a bypass orifice. It incorporates a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and restricts flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. The pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes the pilot pressure. Note: The bypass orifice diameter is specified by the customer. See Technical Data below for the allowable orifice range.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1	
Maximum Operating Pressure	5000 psi	
Orifice Range	.016153 in.	
Seal kit - Cartridge	Buna: 990011007	
Seal kit - Cartridge	Polyurethane: 990011002	
Seal kit - Cartridge	Viton: 990011006	

CONFIGURATION OPTIONS

Model Code Example: CNCEXCN

CONTROL	(X)	SETTING RANGE	(C)	SEAL MATERIAL	(N)	MATERIAL/COATING
X Not Adjustable		C 30 psi (2 bar) Cracking Press	sure, .016 -	N Buna-N		Standard Material/Coating
		.153 in. (0,4 - 3,9 mm)		V Viton		/AP Stainless Steel, Passivated
		A 4 psi (0,3 bar) Cracking Pres 153 in. (0,4 - 3,9 mm)	sure, .016			/LH Mild Steel, Zinc-Nickel
		B 15 psi (1 bar) Cracking Press .153 in. (0,4 - 3,9 mm)	sure, .016 -			
		D 50 psi (3,5 bar) Cracking Pre .016153 in. (0,4 - 3,9 mm)	,			
		E 75 psi (5 bar) Cracking Press .153 in. (0,4 - 3,9 mm)	sure, .016 -			
		F 100 psi (7 bar) Cracking Pre- 153 in. (0,4 - 3,9 mm)	ssure, .016			

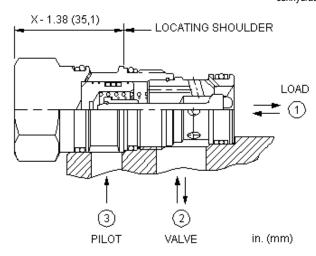


MODEL CNEE



sunhydraulics.com/model/CNEE





This valve is a pilot to open check valve with a bypass orifice. It incorporates a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and restricts flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. The pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes the pilot pressure. Note: The bypass orifice diameter is specified by the customer. See Technical Data below for the allowable orifice range.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Orifice Range	.016135 in.
Seal kit - Cartridge	Buna: 990202007
Seal kit - Cartridge	Polyurethane: 990002002
Seal kit - Cartridge	Viton: 990202006

CONFIGURATION OPTIONS

Model Code Example: CNEEXCN

CONTROL	(X)	SETTING RANGE	(C)	SEAL MATERIAL	(N)
X Not Adjustable		 C 30 psi (2 bar) Cracking F .135 in. (0,4 - 3,4 mm) A 4 psi (0,3 bar) Cracking F 135 in. (0,4 - 3,4 mm) B 15 psi (1 bar) Cracking F .135 in. (0,4 - 3,4 mm) D 50 psi (3,5 bar) Cracking F .016135 in. (0,4 - 3,4 m) E 75 psi (5 bar) Cracking F .135 in. (0,4 - 3,4 mm) 	Pressure, .016 Pressure, .016 - Pressure, mm)	N Buna-N V Viton	
		F 100 psi (7 bar) Cracking 135 in. (0,4 - 3,4 mm)	Pressure, .016		

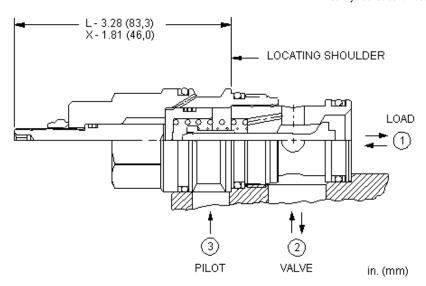
MODEL CNGE



sunhydraulics.com/model/CNGE







This valve is a pilot to open check valve with a bypass orifice. It incorporates a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and restricts flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. The pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes the pilot pressure. Note: The bypass orifice diameter is specified by the customer. See Technical Data below for the allowable orifice range. An 'L' control option is available to manually release the load. See Option Selection below.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1
Maximum Operating Pressure	5000 psi
Orifice Range	.016218 in.
Seal kit - Cartridge	Buna: 990017007
Seal kit - Cartridge	Polyurethane: 990017002
Seal kit - Cartridge	Viton: 990017006

CONFIGURATION OPTIONS

Model Code Example: CNGEXCN

	w) Quality Decayer 040 N. Duna N
A 4 psi (0,3 218 in. B 15 psi (1 .218 in. (D 50 psi (3 .0162 E 75 psi (5 .218 in. (Nar) Cracking Pressure, .0164 - 5,5 mm) bar) Cracking Pressure, .01645,5 mm)



MODEL **CABN**

nor

Port 3

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check

Pilot

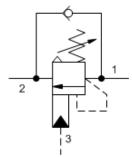
L - 2.00 (50,8) C - 2.19 (55,6) L Control Shown



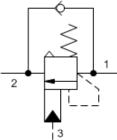
sunhydraulics.com/model/CABN

Port 1 Inlet

in (mm)



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced. Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

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Port 2 Outlet

Locating Shoulder

Pilot Ratio	7:1		
Maximum Recommended Load Pressure at Maximum Setting	3075 psi		
Maximum Setting	4000 psi		
Factory Pressure Settings Established at 2 in ³ /min.			
Maximum Valve Leakage at Reseat	5 drops/min.		
Check Cracking Pressure	25 psi		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge Polyurethane: 99001100			
Seal kit - Cartridge	Viton: 990011006		

CONFIGURATION OPTIONS

Model Code Example: CABNLHN

CONTROL

(L) FUNCTIONAL SETTING RANGE

(N) MATERIAL/COATING

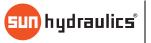
L Standard Screw Adjustment C Tamper Resistant - Factory Set

1000 - 4000 psi w/25 psi Check (70 · 280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting

N Buna-N V Viton

(H) SEAL MATERIAL

Standard Material/Coating /LH Mild Steel, Zinc-Nickel



L - 2.89 (73,4) – C - 3.25 (82,6) (L CONTROL SHOWN)

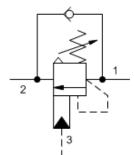


sunhydraulics.com/model/CACH

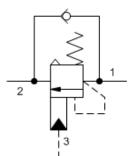
INLET

(1)

in. (mm)



3-Port Atmospherically Referenced



3-Port Atmospherically Referenced, Non-adjustable

Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

 \mathbf{n}_{2}

3

PILOT

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

LOCATING SHOULDER

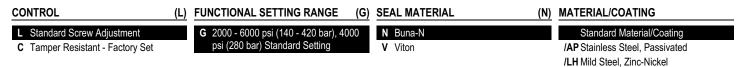
2

OUTLET

Pilot Ratio	10:1
Maximum Recommended Load Pressure at Maximum Setting	4615 psi
Maximum Setting	6000 psi
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	40 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Reseat	>85% of setting
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990211007
Seal kit - Cartridge	Viton: 990211006

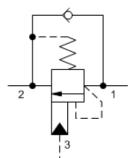
CONFIGURATION OPTIONS

Model Code Example: CACHLGN

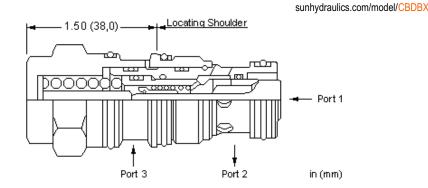








3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	1.5:1		
Maximum Recommended Load Pressure at Maximum Setting	3075 psi		
Maximum Setting 4000 psi			
Factory Pressure Settings Established at	2 in³/min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Reseat	>85% of setting		
Seal kit - Cartridge	Buna: 990202007		
Seal kit - Cartridge	Polyurethane: 990002002		
Seal kit - Cartridge	Viton: 990202006		

CONFIGURATION OPTIONS

Model Code Example: CBDBXNN

FIXED PRESSURE RANGE

(N) SEAL MATERIAL

(N) MATERIAL/COATING

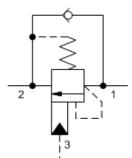
N 2900 - 3500 psi (200 - 245 bar)
 P 2250 - 2680 psi (155 - 185 bar)

N Buna-N V Viton Standard Material/Coating

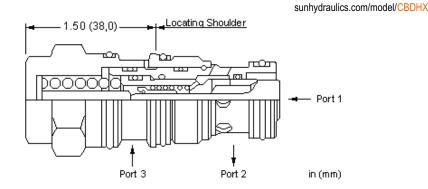
/LH Mild Steel, Zinc-Nickel







3-Port Non-vented, Fixed Setting



Fixed-setting, 3-port counterbalance valves with pilot-assist function similarly to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	10:1		
Maximum Recommended Load Pressure at Maximum Setting	3850 psi		
Maximum Setting 5000 psi			
Factory Pressure Settings Established at	2 in³/min.		
Seal kit - Cartridge	Buna: 990202007		
Seal kit - Cartridge	Polyurethane: 990002002		
Seal kit - Cartridge	Viton: 990202006		

CONFIGURATION OPTIONS

Z 4125 - 4900 psi (285 - 340 bar)

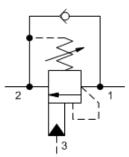
Model Code Example: CBDHXXN

FIXED PRESSURE RANGE	(X) SEAL MATERIAL	(N) MATERIAL/COATING
X 3500 - 4200 psi (245 - 290 bar)	N Buna-N	Standard Material/Coating
M 4700 - 5600 psi (325 - 390 bar)	V Viton	/LH Mild Steel, Zinc-Nickel
V 3200 - 3800 psi (220 - 260 bar)		

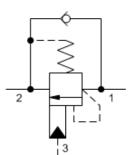




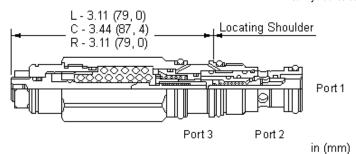
sunhydraulics.com/model/CEBA



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief value at a rate determined by the pilot ratio. The LoadAdaptive™ counterbalance valve has a higher pilot ratio when the load-induced pressure is less than the setting of the valve (is not moving yet) and when the moving load is a positive load (not overrunning). See P1-P3 diagrams under "Performance Curves." The P1 (Y axis) vs P3 (X axis) curves show the effective setting P1 of the valve for different flows depending on pilot pressure P3. Click Here for LoadAdaptive Technical Tip

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1		
Adaptive Pilot Ratio	See Performance Curves		
Maximum Recommended Load Pressure at Maximum Setting	3075 psi		
Maximum Setting	4000 psi		
Factory Pressure Settings Established at	2 in ³ /min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge Buna: 9900110			
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

U.S. Patent #9,850,919 NOTES

CONFIGURATION OPTIONS

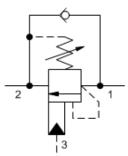
Model Code Example: CEBALHN

CONTROL (L) ADJUSTMENT RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING L Standard Screw Adjustment 1500 - 4000 psi w/ 25 psi check (105 -N Buna-N н Standard Material/Coating 280 bar w/ 1,7 bar Check), 3000 psi V Viton C Tamper Resistant - Factory Set /AP Stainless Steel, Passivated (210 bar) Standard Setting 1500 - 4000 psi w/ 4 psi check (105 -Α 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

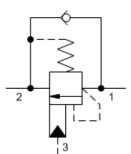




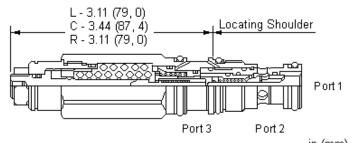
sunhydraulics.com/model/CEBC



3-Port Non-vented



3-Port Non-vented, Fixed Setting



in (mm)

Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief value at a rate determined by the pilot ratio. The LoadAdaptive™ counterbalance valve has a higher pilot ratio when the load-induced pressure is less than the setting of the valve (is not moving yet) and when the moving load is a positive load (not overrunning). See P1-P3 diagrams under "Performance Curves." The P1 (Y axis) vs P3 (X axis) curves show the effective setting P1 of the valve for different flows depending on pilot pressure P3. Click Here for LoadAdaptive Technical Tip

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	3:1		
Adaptive Pilot Ratio	See Performance Curves		
Maximum Recommended Load Pressure at Maximum Setting	3075 psi		
Maximum Setting	4000 psi		
Factory Pressure Settings Established at	2 in ³ /min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

U.S. Patent #9,850,919 NOTES

CONFIGURATION OPTIONS

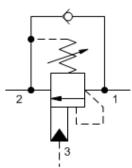
Model Code Example: CEBCLHN

CONTROL (L) ADJUSTMENT RANGE (H) SEAL MATERIAL (N) MATERIAL/COATING L Standard Screw Adjustment 1500 - 4000 psi w/ 25 psi check (105 -N Buna-N н Standard Material/Coating 280 bar w/ 1,7 bar Check), 3000 psi V Viton C Tamper Resistant - Factory Set /LH Mild Steel, Zinc-Nickel (210 bar) Standard Setting 1500 - 4000 psi w/ 4 psi check (105 -Α 280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting

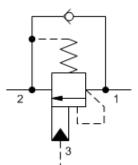




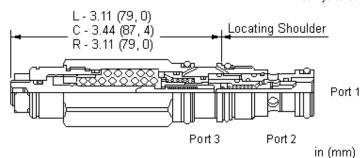
sunhydraulics.com/model/CECA



3-Port Non-vented



3-Port Non-vented, Fixed Setting



Counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. The LoadAdaptive™ counterbalance valve has a higher pilot ratio when the load-induced pressure is less than the setting of the valve (is not moving yet) and when the moving load is a positive load (not overrunning). See P1-P3 diagrams under "Performance Curves." The P1 (Y axis) vs P3 (X axis) curves show the effective setting P1 of the valve for different flows depending on pilot pressure P3. Click Here for LoadAdaptive Technical Tip

Other names for this valve include motion control valve and over-center valve.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio 3:1			
Adaptive Pilot Ratio See Performance C			
Maximum Recommended Load Pressure at Maximum Setting	3075 psi		
Maximum Setting	4000 psi		
Factory Pressure Settings Established at	2 in³/min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Adjustment - No. of CCW Turns from Min. to Max. Setting	3.75		
Reseat	>85% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

NOTES U.S. Patent #9,850,919

CONFIGURATION OPTIONS

CONTROL

L Standard Screw Adjustment

C Tamper Resistant - Factory Set

- Model Code Example: CECALHN
- (L) ADJUSTMENT RANGE
 - H 1500 4000 psi w/ 25 psi check (105 -280 bar w/ 1,7 bar Check), 3000 psi (210 bar) Standard Setting
 - A 1500 4000 psi w/ 4 psi check (105 -280 bar w/ 0,3 bar Check), 3000 psi (210 bar) Standard Setting
- (H) SEAL MATERIAL

N Buna-N

V Viton

(N) MATERIAL/COATING

Standard Material/Coating /AP Stainless Steel, Passivated

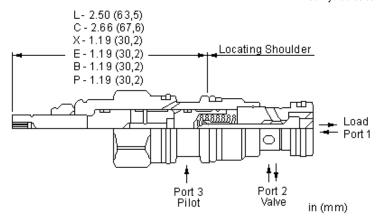




sunhydraulics.com/model/CKCR







This valve is a pilot to open check valve. It has a non-sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Polyurethane: 990011002
Seal kit - Cartridge	Viton: 990011006

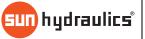
CONFIGURATION OPTIONS

Model Code Example: CKCRXCN

CONTROL	(X) CRACKING PRESSURE	(C) SI	EAL MATERIAL	(N)	MATERIAL/COATING
X Standard Pilot	C 30 psi (2 bar)	١	N Buna-N		Standard Material/Coating
B External 1/4 BSPP Pilot Port, Port 3	A 4 psi (0,3 bar)	<u> </u>	/ Viton		/AP Stainless Steel, Passivated
blocked	B 15 psi (1 bar)				/LH Mild Steel, Zinc-Nickel
C Manual Load Release - Tamper	D 50 psi (3,5 bar)				
Resistant	E 75 psi (5 bar)				
E External 4-SAE Pilot Port, Port 3	F 100 psi (7 bar)				
Blocked	Z 1 psi (0,07 bar)				

L Manual Load Release

P External 1/4 NPTF Pilot Port, Port 3 Blocked



MODEL CKCS

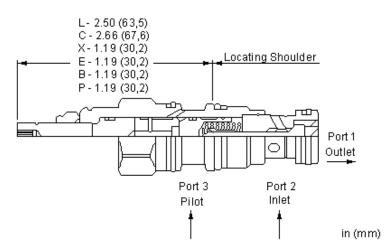
5:1 pilot ratio, pilot-to-open check valve with sealed pilot SERIES 1 / CAPACITY: 15 gpm / CAVITY: T-11A



sunhydraulics.com/model/CKCS







This valve is a pilot to open check valve. It has a sealed pilot, a steel seat, and is non-vented. It allows free flow from the valve (port 2) to the load (port 1) and blocks flow in the opposite direction. Pressure at the pilot (port 3) will open the valve from port 1 to port 2. Pilot pressure needed at port 3 to open the valve is directly proportional to the load pressure at port 1. Pressure at port 2 directly opposes pilot pressure.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Ratio	5:1
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	1 drops/min.
Seal kit - Cartridge	Buna: 990011007
Seal kit - Cartridge	Viton: 990011006

CONFIGURATION OPTIONS

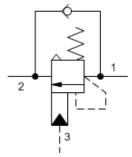
Model Code Example: CKCSXCN

<u>co</u>	NTROL	(X)	CRACKING PRESSURE	(C)	SEAL MATERIAL (N)
	Standard Pilot External 1/4 BSPP Pilot Port, Port 3		C 30 psi (2 bar) A 4 psi (0,3 bar)		N Buna-N V Viton
С	blocked Manual Load Release - Tamper Resistant		 B 15 psi (1 bar) D 50 psi (3,5 bar) E 75 psi (5 bar) 		
	External 4-SAE Pilot Port, Port 3 Blocked		F 100 psi (7 bar) Z 1 psi (0,07 bar)		
_	Manual Load Release External 1/4 NPTF Port, Port 3 block	ed			

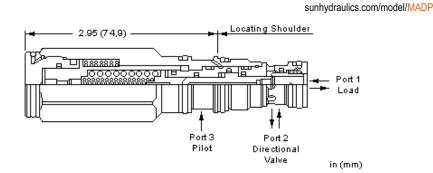


MODEL MADP





3-Port Atmospherically Referenced, Non-adjustable



These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting.

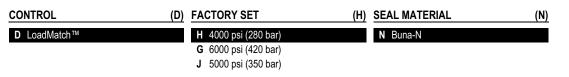
TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

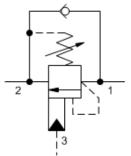
Maximum Recommended Load Pressure	See Technical Features				
Factory Pressure Settings Established at	2 in³/min.				
Maximum Operating Pressure	5000 psi				
Maximum Valve Leakage at Reseat	5 drops/min.				
Check Cracking Pressure	25 psi				
Reseat	≥77% of setting				
Seal kit - Cartridge	Buna: 990011007				
Seal kit - Cartridge	Viton: 990011006				

CONFIGURATION OPTIONS

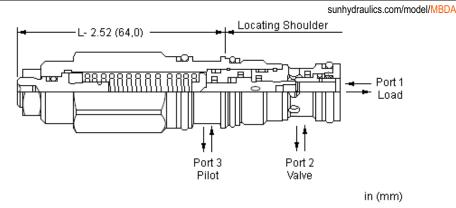
Model Code Example: MADPDHN







3-Port Non-vented



Load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi		
Pilot Ratio	3:1		
Maximum Recommended Load Pressure	See Technical Features		
Factory Pressure Settings Established at	2 in³/min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Check Cracking Pressure	25 psi		
Adjustment - No. of CCW Turns from Min. to Max. Setting	6.5		
Reseat	≥77% of setting		
Locknut Hex Size	9/16 in.		
Locknut Torque	80 - 90 lbf in.		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

CONFIGURATION OPTIONS

Model Code Example: MBDALHN

(N) MATERIAL/COATING

L Standard Screw Adjustment

CONTROL

(L) FUNCTIONAL SETTING RANGE (H) SEAL MATERIAL Η 1000 - 4000 psi (70 - 280 bar), 3000 psi

N Buna-N V Viton

andard M laterial/Coating

/AP Stainless Steel, Passivated

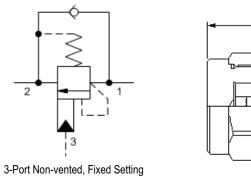
C Tamper Resistant - Factory Set

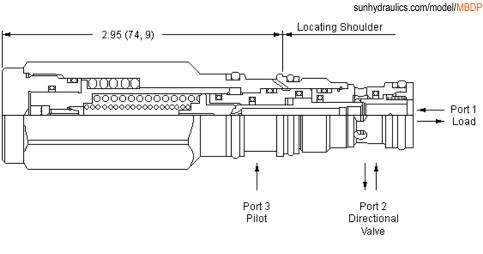
(210 bar) Standard Setting J 2000 - 5000 psi (140 - 350 bar), 3000 psi (210 bar) Standard Setting



MODEL MBDP







in (mm)

These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	5000 psi		
Maximum Recommended Load Pressure	See Technical Features		
Factory Pressure Settings Established at	2 in³/min.		
Maximum Valve Leakage at Reseat	5 drops/min.		
Check Cracking Pressure	25 psi		
Reseat	≥77% of setting		
Seal kit - Cartridge	Buna: 990011007		
Seal kit - Cartridge	Polyurethane: 990011002		
Seal kit - Cartridge	Viton: 990011006		

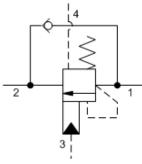
CONFIGURATION OPTIONS

Model Code Example: MBDPDHN

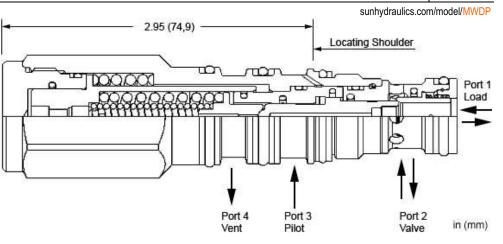
CONTROL	(D)	FACTORY SET	(H)	SEAL MATERIAL	(N)	MATERIAL/COATING
D LoadMatch™		H 4000 psi (280 bar)		N Buna-N		Standard Material/Coating
		G 6000 psi (420 bar)		V Viton		/AP Stainless Steel, Passivated
		J 5000 psi (350 bar)				







4-Port Vented, Non-adjustable



These valves are self-setting counterbalance valves which combine multiple functions in one package; reverse free flow, load, and thermal relief. The check allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting pilot function self adjusts to approximately 1.3 times the load induced pressure up to the thermal relief setting. Backpressure at port 2 does not affect self setting performance because the spring chamber references the vent (port 4).

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥77% of setting
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: MWDPDHN

CONTROL	(D)	FACTORY SET	(H)	SEAL MATERIAL	(N)	MATERIAL/COATING
D LoadMatch™		H 4000 psi (280 bar)		N Buna-N		Standard Material/Coating
		G 6000 psi (420 bar)		V Viton		/AP Stainless Steel, Passivated
		J 5000 psi (350 bar)				/LH Mild Steel. Zinc-Nickel

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Sun Hydraulics Headquarters Sarasota, Florida USA +1 941 362 1200

Custom Fluidpower Pty Ltd (A Sun Hydraulics Company) Newcastle, Australia +61 02 4953 5777 sales@custom.com.au Sun Hydraulics Limited Coventry, England +44 2476 217 400 sales@sunuk.com

Sun Hydraulics Korea Corp. Incheon, Korea +82 3281 31350 sales@sunhydraulics.co.kr Sun Hydraulik GmbH Erkelenz, Germany +49 2431 80910 sales@sunhydraulik.de

Sun Hydraulics China Co. Ltd. Shanghai, P.R. China +86 2162 375885 sunchinainfo@sunhydraulics.com Sun Hydraulics Corp. (India) Bangalore, India +91 8028 456325 sunindiainfo@sunhydraulics.com

Sun Hydraulics Corp. (S.America) Rosario, Argentina +54 9 341 584 3075 ventas@sunhydraulics.com

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